PUB. 194

SAILING DIRECTIONS (ENROUTE)

★

BALTIC SEA (SOUTHERN PART)

★

Prepared and published by the
NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
Springfield, Virginia

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2014

SEVENTEENTH EDITION

Preface

Pub. 194, Sailing Directions (Enroute) Baltic Sea (Southern Part) Seventeenth Edition, 2014, is issued for use in conjunction with Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas. Companion volumes are Pubs. 191, 192, 193, and 195.

Digital Nautical Chart 22 provides electronic chart coverage for the area covered by this publication.

This publication has been corrected to 27 September 2014, including Notice to Mariners No. 39 of 2014. Subsequent updates have corrected this publication to 2 July 2016, including Notice to Mariner No. 27 of 2016.

Explanatory Remarks

Sailing Directions are published by the National Geospatial-Intelligence Agency (NGA), under the authority of Department of Defense Directive 5105.40, dated 12 December 1988, and pursuant to the authority contained in U. S. Code Title 10, Sections 2791 and 2792 and Title 44, Section 1336. Sailing Directions, covering the harbors, coasts, and waters of the world, provide information that cannot be shown graphically on nautical charts and is not readily available elsewhere.

Sailing Directions (Enroute) include detailed coastal and port approach information which supplements the largest scale chart produced by the National Geospatial-Intelligence Agency. This publication is divided into geographic areas called "Sectors."

Bearings.—Bearings are true, and are expressed in degrees from 000° (north) to 360°, measured clockwise. General bearings are expressed by initial letters of points of the compass (e.g. N, NNE, NE, etc.). Adjective and adverb endings have been discarded. Wherever precise bearings are intended degrees are used.

Charts.—Reference to charts made throughout this publication refer to both the paper chart and the Digital Nautical Chart (DNC).

Coastal Features.—It is assumed that the majority of ships have radar. Available coastal descriptions and views, useful for radar and visual piloting are included in geographic sequence in each Sector.

Corrective Information.—Users should refer corrections, additions, and comments to NGA's Maritime Operations Desk, as follows:

1. Toll free: 1-800-362-6289
2. Commercial: 571-557-5455
3. DSN: 547-5455
4. DNC web site: http://msi.nga.mil/NGAPortal/DNC.portal
5. Maritime Domain web site: http://msi.nga.mil/NGAPortal/MSI.portal
6. E-mail: navsafety@nga.mil
7. Mailing address: Maritime Safety Office
   National Geospatial-Intelligence Agency
   Mail Stop N64-SFH
   7500 Geoint Drive
   Springfield VA 22150-7500

New editions of Sailing Directions are corrected through the date of the publication shown above. Important information to amend material in the publication is updated as needed and available as a downloadable corrected publication from the NGA Maritime Domain web site.

NGA Maritime Domain Website
http://msi.nga.mil/NGAPortal/MSI.portal

Courses.—Courses are true, and are expressed in the same manner as bearings. The directives "steer" and "make good" a course mean, without exception, to proceed from a point of origin along a track having the identical meridianal angle as the designated course. Vessels following the directives must allow for every influence tending to cause deviation from such track, and navigate so that the designated course is continuously being made good.

Currents.—Current directions are the true directions toward which currents set.

Dangers.—As a rule outer dangers are fully described, but inner dangers which are well-charted are, for the most part, omitted. Numerous offshore dangers, grouped together, are mentioned only in general terms. Dangers adjacent to a coastal passage or fairway are described.

Distances.—Distances are expressed in nautical miles of 1 minute of latitude. Distances of less than 1 mile are expressed in meters, or tenths of miles.

Geographic Names.—Geographic names are generally those used by the nation having sovereignty. Names in parentheses following another name are alternate names that may appear on some charts. In general, alternate names are quoted only in the principal description of the place. Diacritical marks, such as accents, cedillas, and circumflexes, which are related to specific letters in certain foreign languages, are not used in the interest of typographical simplicity. Geographic names or their spellings do not necessarily reflect recognition of the political status of an area by the United States Government.

Heights.—Heights are referred to the plane of reference used for that purpose on the charts and are expressed in meters.

Index-Gazetteer.—Navigational features and place names are listed alphabetically in the back of the book. The approximate position, along with the Sector and paragraph numbers (e.g. **1.1**), facilitate location in the text.

Internet Links.—This publication provides internet links to web sites concerned with maritime navigational safety, including but not limited to, Federal government sites, foreign Hydrographic Offices, and foreign public/private port facilities. NGA makes no claims, promises, or guarantees concerning the accuracy, completeness, or adequacy of the contents of the web sites and expressly disclaims any liability for errors and omissions of these web sites.

International Ship and Port Facility Security (ISPS) Code.—The ISPS Code is a comprehensive set of measures to enhance the security of ships and port facilities developed in response to the perceived threats to ships and port facilities in the wake of the 9/11 attacks in the United States. Information on the ISPS Code can be found at the International Maritime Organization web site:

International Maritime Organization Home Page
http://www.imo.org

Light and Fog Signals.—Lights and fog signals are not described, and light sectors are not usually defined. The Light Lists should be consulted for complete information.

Maritime Administration (MARAD) Advisories.—MARAD Advisories rapidly disseminate information on maritime dangers, safety, government policy, and other time-sensitive matters pertaining to U.S.-flag vessel operations. MARAD Advisories are issued by the Office of Security to vessel masters, ship operators, and other U.S. Maritime interests. Advisories are communicated via telex or other message formats and are published on the MARAD web site and in the National Geospatial-Intelligence Agency's Weekly Notice to Mariners.

Maritime Administration (MARAD) Home Page
http://www.marad.dot.gov/newsroom

Ports.—Directions for entering ports are depicted where appropriate by means of chartlets, sketches, and photos, which facilitate positive identification of landmarks and navigational aids. These chartlets and sketches are not always to scale, however, and should be used only as a general informational guide in conjunction with the best scale chart. Specific port facilities are omitted from the standard format. They are tabulated in Pub. 150, World Port Index.

Radio Navigational Aids.—Radio navigational aids are not described in detail. Publication No. 117 Radio Navigational Aids and NOAA Publication, Selected Worldwide Marine Broadcasts, should be consulted.

Soundings.—Soundings are referred to the datum of the charts and are expressed in meters.

Special Warnings.—A Special Warning may be in force for the geographic area covered by this publication. Special Warnings are printed in the weekly Notice to Mariners upon promulgation and are reprinted annually in Notice to Mariners No. 1. A listing of Special Warnings currently in force is printed in each weekly Notice to Mariners, Section III, Broadcast Warnings, along with the notice number of promulgation. Special Warnings are also available on the Maritime Division web site.

Time.—Time is normally expressed as local time unless specifically designated as Universal Coordinated Time (UTC).

Wind Directions.—Wind directions are the true directions from which winds blow.

Reference List

The principal sources examined in the preparation of this publication were:

British Hydrographic Department Sailing Directions.

Various port handbooks.

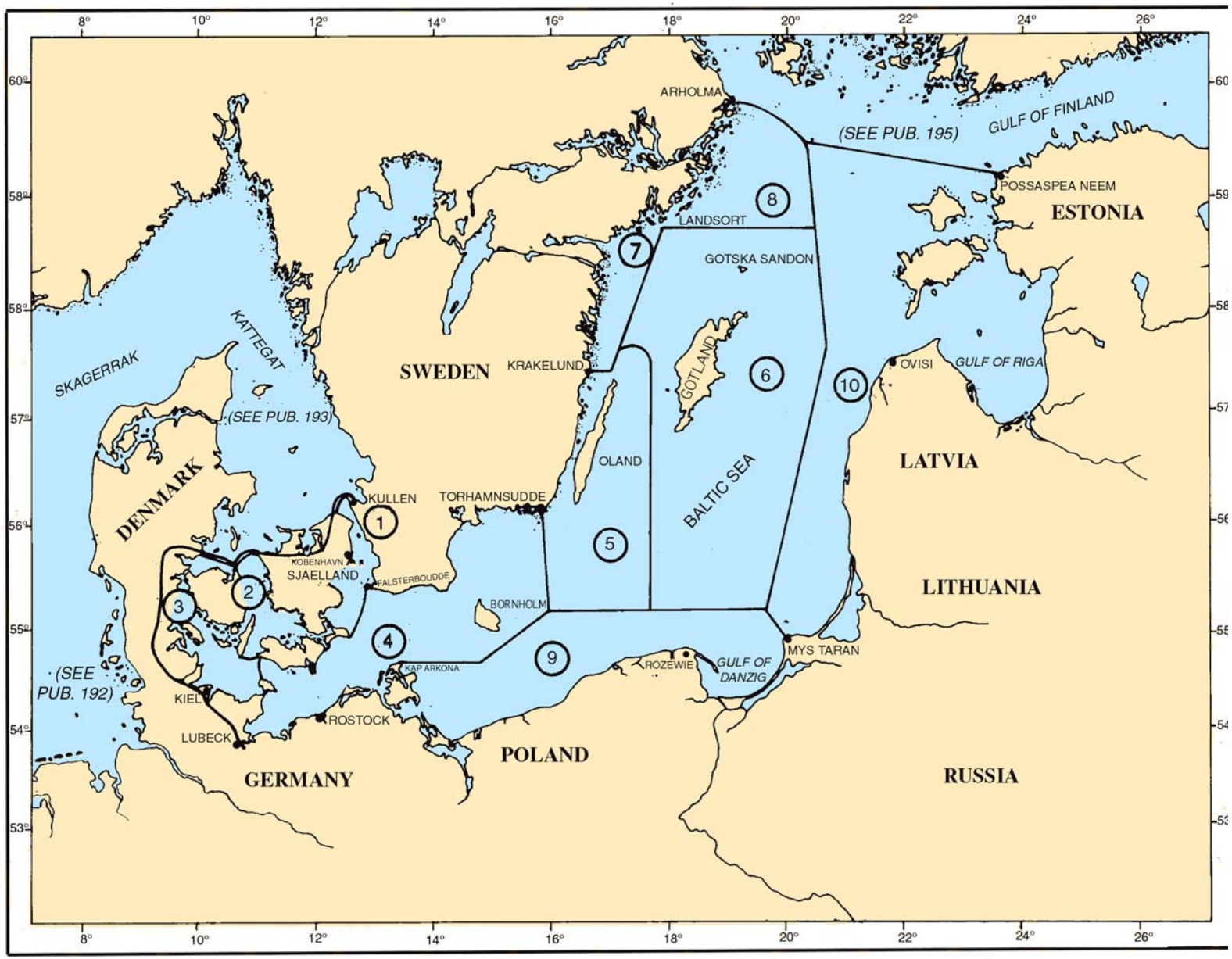
Reports from United States Naval and merchant vessels and various shipping companies.

Other U.S. Government publications, reports, and documents.

Charts, light lists, tide and current tables, and other documents in possession of the Agency.

Internet Web sites, as follows:

1. Aabenraa, Denmark
   http://www.aabenraa.dk
2. Anderson, Anders
   2xAnderson Media AB
   http://www.2xa.se
3. Carter, Donald and Diana
   Internet Public Library
   http://www.ipl.org/div/light
4. Copenhagen/Malmo Port Electronic Photo Archives
   Bech, Mogens
   Atelier Sorte Hest
   http://www.cmport.com
5. Helsingborgs Hamn AB, Sweden
   http://www.port.helsingborg.se
6. Kiel, Germany
   http://www.port-of-kiel.de
7. Nord-Ostsee Kanal (Kiel Canal) Home Page
   http://www.kiel-canal.org



SECTOR LIMITS — PUB. **194**

Feet to Meters

Feet	0	1	2	3	4	5	6	7	8	9
0	0.00	0.30	0.61	0.91	1.22	1.52	1.83	2.13	2.44	2.74
10	3.05	3.35	3.66	3.96	4.27	4.57	4.88	5.18	5.49	5.79
20	6.10	6.40	6.71	7.01	7.32	7.62	7.92	8.23	8.53	8.84
30	9.14	9.45	9.75	10.06	10.36	10.67	10.97	11.28	11.58	11.89
40	12.19	12.50	12.80	13.11	13.41	13.72	14.02	14.33	14.63	14.93
50	15.24	15.54	15.85	16.15	16.46	16.76	17.07	17.37	17.68	17.98
60	18.29	18.59	18.90	19.20	19.51	19.81	20.12	20.42	20.73	21.03
70	21.34	21.64	21.95	22.25	22.55	22.86	23.16	23.47	23.77	24.08
80	24.38	24.69	24.99	25.30	25.60	25.91	26.21	26.52	26.82	27.13
90	27.43	27.74	28.04	28.35	28.65	28.96	29.26	29.57	29.87	30.17

Fathoms to Meters

Fathoms	0	1	2	3	4	5	6	7	8	9
0	0.00	1.83	3.66	5.49	7.32	9.14	10.97	12.80	14.63	16.46
10	18.29	20.12	21.95	23.77	25.60	27.43	29.26	31.09	32.92	34.75
20	36.58	38.40	40.23	42.06	43.89	45.72	47.55	49.38	51.21	53.03
30	54.86	56.69	58.52	60.35	62.18	64.01	65.84	67.67	69.49	71.32
40	73.15	74.98	76.81	78.64	80.47	82.30	84.12	85.95	87.78	89.61
50	91.44	93.27	95.10	96.93	98.75	100.58	102.41	104.24	106.07	107.90
60	109.73	111.56	113.39	115.21	117.04	118.87	120.70	122.53	124.36	126.19
70	128.02	129.85	131.67	133.50	135.33	137.16	138.99	140.82	142.65	144.47
80	146.30	148.13	149.96	151.79	153.62	155.45	157.28	159.11	160.93	162.76
90	164.59	166.42	168.25	170.08	171.91	173.74	175.56	177.39	179.22	181.05

Meters to Feet

Meters	0	1	2	3	4	5	6	7	8	9
0	0.00	3.28	6.56	9.84	13.12	16.40	19.68	22.97	26.25	29.53
10	32.81	36.09	39.37	42.65	45.93	49.21	52.49	55.77	59.06	62.34
20	65.62	68.90	72.18	75.46	78.74	82.02	85.30	88.58	91.86	95.14
30	98.42	101.71	104.99	108.27	111.55	114.83	118.11	121.39	124.67	127.95
40	131.23	134.51	137.80	141.08	144.36	147.64	150.92	154.20	157.48	160.76
50	164.04	167.32	170.60	173.88	177.16	180.45	183.73	187.01	190.29	193.57
60	196.85	200.13	203.41	206.69	209.97	213.25	216.54	219.82	223.10	226.38
70	229.66	232.94	236.22	239.50	242.78	246.06	249.34	252.62	255.90	259.19
80	262.47	265.75	269.03	272.31	275.59	278.87	282.15	285.43	288.71	291.99
90	295.28	298.56	301.84	305.12	308.40	311.68	314.96	318.24	321.52	324.80

Meters to Fathoms

Meters	0	1	2	3	4	5	6	7	8	9
0	0.00	0.55	1.09	1.64	2.19	2.73	3.28	3.83	4.37	4.92
10	5.47	6.01	6.56	7.11	7.66	8.20	8.75	9.30	9.84	10.39
20	10.94	11.48	12.03	12.58	13.12	13.67	14.22	14.76	15.31	15.86
30	16.40	16.95	17.50	18.04	18.59	19.14	19.68	20.23	20.78	21.33
40	21.87	22.42	22.97	23.51	24.06	24.61	25.15	25.70	26.25	26.79
50	27.34	27.89	28.43	28.98	29.53	30.07	30.62	31.17	31.71	32.26
60	32.81	33.36	33.90	34.45	35.00	35.54	36.09	36.64	37.18	37.73
70	38.28	38.82	39.37	39.92	40.46	41.01	41.56	42.10	42.65	43.20
80	43.74	44.29	44.84	45.38	45.93	46.48	47.03	47.57	48.12	48.67
90	49.21	49.76	50.31	50.85	51.40	51.95	52.49	53.04	53.59	54.13

Abbreviations

The following abbreviations may be used in the text:

Units

°C	degree(s) Centigrade	km	kilometer(s)
cm	centimeter(s)	m	meter(s)
cu.m.	cubic meter(s)	mb	millibars
dwt	deadweight tons	MHz	megahertz
FEU	forty-foot equivalent units	mm	millimeter(s)
gt	gross tons	nrt	net registered tons
kHz	kilohertz	TEU	twenty-foot equivalent units

Directions

N	north	S	south
NNE	northnortheast	SSW	southsouthwest
NE	northeast	SW	southwest
ENE	eastnortheast	WSW	westsouthwest
E	east	W	west
ESE	eastsoutheast	WNW	westnorthwest
SE	southeast	NW	northwest
SSE	southsoutheast	NNW	northnorthwest

Vessel types

LASH	Lighter Aboard Ship	Ro-ro	Roll-on Roll-off
LNG	Liquified Natural Gas	ULCC	Ultra Large Crude Carrier
LPG	Liquified Petroleum Gas	VLCC	Very Large Crude Carrier
OBO	Ore/Bulk/Oil	VLOC	Very Large Ore Carrier
Lo-lo	Lift-on Lift-off	FSO	Floating Storage and Offloading
NGL	Natural Gas Liquids	FSU	Floating Storage Unit
FSRU	Floating Storage and Regasification Unit	FPSO	Floating Production Storage and Offloading

Time

ETA	estimated time of arrival	GMT	Greenwich Mean Time
ETD	estimated time of departure	UTC	Coordinated Universal Time

Water level

MSL	mean sea level	LWS	low water springs
HW	high water	MHWN	mean high water neaps
LW	low water	MHWS	mean high water springs
MHW	mean high water	MLWN	mean low water neaps
MLW	mean low water	MLWS	mean low water springs
HWN	high water neaps	TFW	Tropical Fresh Water
HWS	high water springs	HAT	highest astronomical tide
LWN	low water neaps	LAT	lowest astronomical tide

Communications

D/F	direction finder	MF	medium frequency
R/T	radiotelephone	HF	high frequency
GMDSS	Global Maritime Distress and Safety System	VHF	very high frequency
LF	low frequency	UHF	ultra high frequency

Navigation

LANBY	Large Automatic Navigation Buoy	SBM	Single Buoy Mooring
NAVSAT	Navigation Satellite	SPM	Single Point Mooring
ODAS	Ocean Data Acquisition System	TSS	Traffic Separation Scheme
CBM	Conventional Buoy Mooring System	VTC	Vessel Traffic Center
MBM	Multi-Buoy Mooring System	VTS	Vessel Traffic Service

The following abbreviations may be used in the text:

CALM	Catenary Anchor Leg Mooring

Miscellaneous

AIS	Automatic Identification System	MMSI	Maritime Mobile Service Identity Code
COLREGS	Collision Regulations	No./Nos.	Number/Numbers
IALA	International Association of Lighthouse Authorities	PA	Position approximate
		PD	Position doubtful
IHO	International Hydrographic Organization	Pub.	Publication
IMO	International Maritime Organization	SOLAS	International Convention for Safety of Life at Sea
IMDG	Intermational Maritime Dangerous Goods Code		
LOA	length overall	St./Ste.	Saint/Sainte
UKC	Under keel clearance	ISPS	International Ship and Port facility Security
ITC	International Convention on the Tonnage Measurement of Ships (1969)	ECDIS	Electronic Chart Display and Information System

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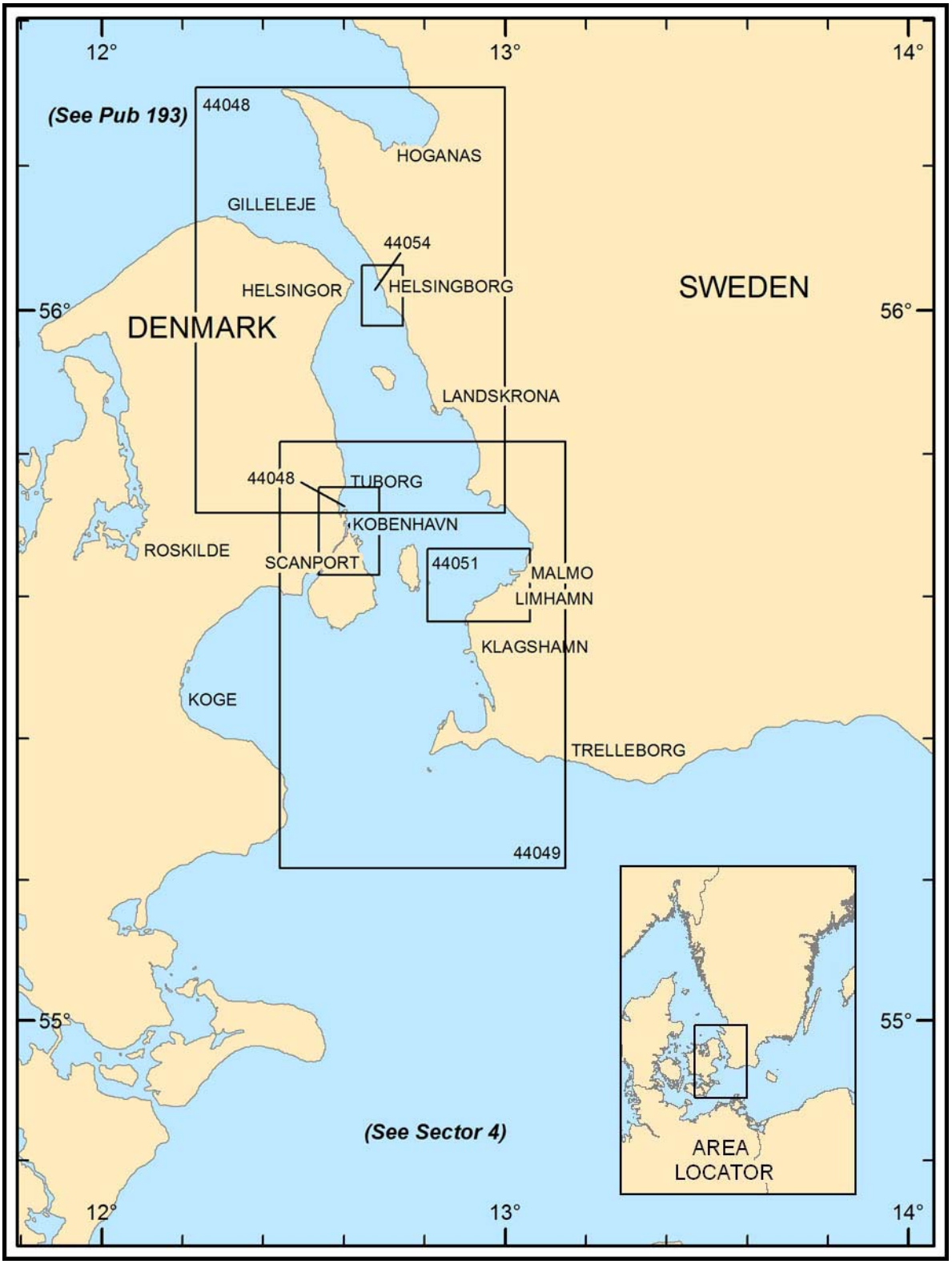
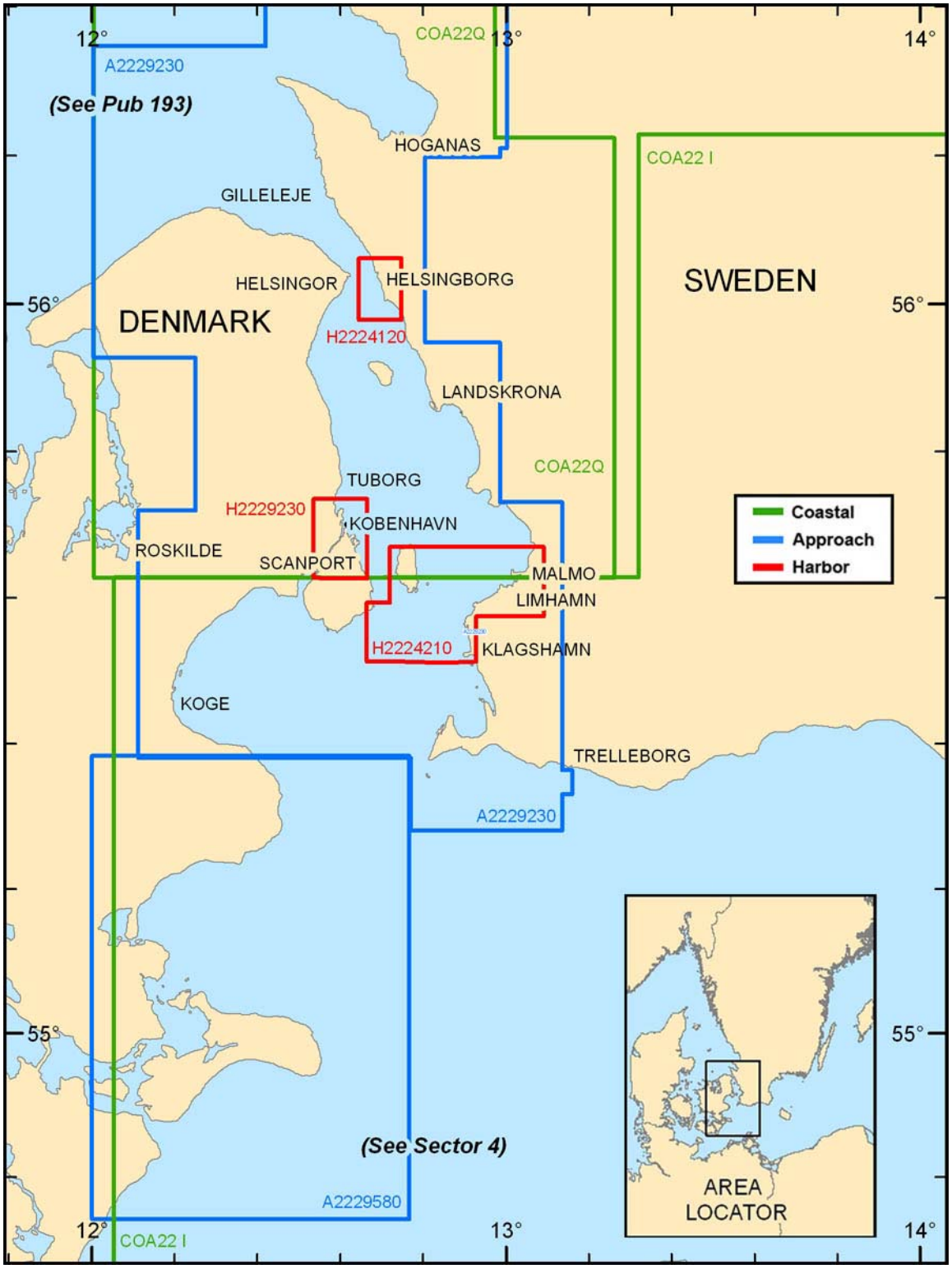


Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **1** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 22 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 1 — DNC LIBRARY INFORMATION

SECTOR 1

DENMARK AND SWEDEN—THE SOUND

Plan.—This sector begins with a description of the N end of The Sound; from Kullen Light to Helsingborg on the Swedish side and from Nakkehoved Light to Helsigor on the Danish side. The central part of The Sound is then described; continuing from Helsingborg to Barsebackshamn (55°45'N., 12°54'E.) on the Swedish side and from Helsingor to Kobenhaven on the Danish side.

The sector concludes with a description of the S end of The Sound, continuing to Falsterbo Udde Light (55°23'N., 12°49'E.) in Sweden and Mon Light (54°57'N., 12°33'E.) in Denmark.

General Remarks

1.1 The Sound, called Oresund in Swedish and Sundet, or Oresund, in Danish, is the E of three passages which connect the Kattegat with the Baltic Sea. It lies between the W coast of Sweden and the E coast of Sjaelland, and extends in a general S direction from a line joining Kullen (56°18'N., 12°27'E.) and Gilbjerg Hoved (56°08'N., 12°18'E.) to a line joining Falsterbo (55°24'N., 12°50'E.) and Stevns Light (55°17'N., 12°27'E.).

The coasts on both sides of The Sound are indented by bays. Lying close to the coast of Sjaelland is the large island of Amager, and E of Amager is Saltholm. Both islands are in Danish waters. Extensive coastal banks and numerous detached shoals encumber much of the S part of The Sound. Drogen, the deeper of the two main channels used by vessels proceeding through The Sound S of Kobenhavn and Malmo, leads between Amager and Saltholm. Flintrannan, the principal E channel, leads between Saltholm and the Swedish coast.

The port of Kobenhavn, lying with its N limit about 2.5 miles S of Skovshoved, comprises portions of the coast of Sjaelland and Amager and the greater part of the passage between those islands. On the Swedish coast, the port of Malmo lies nearly 9 miles SSE of Barsebackshamn, and about 2.5 miles SW of Malmo is the smaller port of Limhamn. There are also a number of small harbors and loading places on both the Swedish and Danish coasts.

The Oresund Link (55°38'N., 12°39'E.), a tunnel-bridge project, connects the Danish island of Sjaelland with Sweden (see paragraph 1.21 for details).

A description of the S approach to The Sound, with the coasts of Sjaelland and Mon forming the W side of that approach, is included in this sector.

The sector concludes with descriptions of the coast of Sjaelland from Stevns Klint Light to Jungshoved and the N and E coasts of Mon.

In all parts of Danish waters intensive fishing is carried out by large and small fishing vessels, and a large number of pleasure craft are also sailing in these waters during the summer season.

Ice.—In winter, certain buoys are withdrawn or replaced by winter buoys. When ice compels the withdrawal of lighted buoys, they are replaced by winter seamarks fitted with light reflective material, which, when illuminated, will show the colors in which the sea-mark is painted. In Danish and Swedish waters, the method used is the IALA Comprehensive Code.

Black is indicated by a blue reflector. The cardinal marks carry reflector bands, as follows:

1. North cardinal—One blue band over one yellow band.
2. East cardinal—Two blue bands.
3. South cardinal—One yellow band over one blue band.
4. West cardinal—Two yellow bands.

Lighted buoys marking transit routes TSS schemes are maintained as long as possible and are only replaced or withdrawn in severe ice conditions.

Ice may wear the color from buoys and topmarks may be lost or damaged.

Mariners should pay particular attention to the refraction and deflection of light sector projections caused by ice during the cold season. Where an angle of uncertainty exists, a frequent check must be made to determine whether the vessel is keeping on the desired course by the use of additional aids to navigation.

Ice-breaking services in the region are provided under a cooperative agreement between Sweden, Denmark, Finland, and Norway, with the purpose of having identical regulations. Requests for assistance should be made direct to the icebreaker, if close, or to the State Ice Service through any coastal radio station.

Contact Information.—Swedish ice breaking service: can be contacted, as follows:

1.	VHF:	VHF channel 16 (0800-1700 only during ice breaking season)
2.	Telephone:	46-771-630000 (switchboard) (0800-1640 local time) 46-771-632525 (operations) 46-10-478841 (head office)
3.	Facsimile:	46-11-103100
4.	E-mail:	opc@sjofartsverket.se
5.	Web site:	http://www.sjofartsverket.se

SMHI Ice Service in Norrkoping can be contacted, as follows:

1.	Telephone:	46-11-4958533
2.	Facsimile:	46-11-4958053
3.	E-mail:	ice@smhi.se
4.	Web site:	http://www.smhi.se

The Danish State Ice Service at Arhus can be contacted, as follows:

1.	Telephone:	45-7284-0000
2.	E-mail:	vfk@mil.dk
3.	Web site:	http://www.forsvaret.dk/sok

Detailed information regarding all three ice services can be found on the Internet at the following locations:

For additional information on icebreaker services, regulations, and related subjects, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Tides—Currents.—The range of tide in The Sound is negli-

gible. The water level depends mainly on the wind and the current. In the narrower channels, strong winds may cause a considerable change in the water level. Gales causing a N current may lower the water level by 0.6 to 0.9m below mean water level and gales causing a S current may raise it by the same amount. The highest water level usually occurs in July and August, and it continues to be fairly high in September and October. Low water levels occur most frequently in April and May, and to some extent in March.

In the other months, mean water level usually prevails. The direction and strength of the currents in The Sound depend to a large extent on wind and atmospheric pressure. In the wider parts of The Sound, it has been observed that a N current usually prevails for 7 months of the year, a S current prevails for 4.5 months, and during the remaining period there is no current. This proportion varies during the different months. During January and April, there is twice as much N current as there is S current. In March, May, and November, the N and S currents are of equal frequency. During February and December, the proportion is normal. In June, the S current occurs most frequently and during July, August, September, and October it is usually prevalent.

Depths—Limitations.—Vessels, with drafts up to 12.5m, may proceed to Malmo, in the N part of The Sound, and vessels, with drafts up to 10m, have been reported to reach Kobenhavn.

Vessels transiting the S part of The Sound and proceeding into the Baltic may pass through either Drogden or Flintrannan. Drogden has a dredged depth of 8m and may be used by vessels with drafts up to 7.7m. Flintrannan is swept to depth of 8.4m and may be used by vessels with drafts up to 7m. The Oresund Link Bridge spanning Flintrannan has a vertical clearance of 55m.

Pilotage.—The Baltic Pilotage Authorities Commission recommends that, when bound to or from ports in the Baltic Sea, masters should avail themselves for deep sea pilots, who are certified by the authority of a Baltic coastal state(s), as follows:

1. Masters of ships which are constrained by their draft.
2. Masters of ships, other than those registered in one of the Baltic States, infrequently sailing in the respective area.
3. Masters of loaded oil and chemical tankers and gas tankers, irrespective of their size.

Vessels requiring a licensed deep sea pilot in the Baltic Sea areas of Sweden should send a request at least 24 hours in advance to one of the following stations:

1. For the Baltic Sea, vessels should contact Lulea, Stockholm, or Malmo Pilots.
2. For the North Sea, Goteborg Pilots may be contacted.
3. For the Kattegat, Malmo Pilots, Helsingborg, or Goteborg Pilots may be contacted.

Requests for pilots for The Sound should be forwarded to Helsingborg Pilots for southbound vessels and to Malmo VTS for northbound vessels, at least 5 hours in advance.

Ice pilotage requests should be made 24 hours in advance through Stockholm, Goteborg, Lulea, or Malmo pilot stations.

The main Swedish pilot stations for The Sound (call: Swedish Sound Pilot) are located at Malmo and Helsingborg. Pilots can be contacted on VHF channel 80 by southbound vessels and on VHF channels 20 and 60 by northbound vessels.

Generally, pilots from these two stations board northbound vessels about 1 mile NNE of Lighted Buoy M41 (55°25'N., 12°40'E.) or in the vicinity of Trelleborg Roads Lighted Buoy (55°20'N., 13°08'E.) and southbound vessels in the vicinity of the M1 Lighted Buoy (56°07'N., 12°31'E.) or Malmo Roads Lighted Buoy (55°38'N., 12°57'E.).

Swedish pilots for The Sound can be contacted by e-mail, as follows:

southcoastpilot@sjofartsverket.se

Pilotage is compulsory in Swedish coastal waters and along certain fairways connecting ports along the coast. The vessels subject to compulsory pilotage vary in type and size according to location; these vessels are divided into the following categories:

1. Category 1—Vessels carrying or with uncleaned tanks which last carried:
   a. Liquefied gas.
   b. Liquid chemicals defined in MARPOL73 Supplement 2, Annex 2 as Category A, B, or (if vessel does not have a double-skin hull under all cargo tanks) C.
   c. Liquid chemicals which, according to the IMO Bulk Chemical Code, should be carried in Type 1 or 2 vessels.
2. Category 2—All other chemical tankers which are laden or have uncleaned tanks and all laden oil tankers.
3. Category 3—All other vessels.

It should be noted that extensive changes to pilotage procedures within Swedish waters are being carried out. Formerly, all initial ordering of pilots was carried out through the main VTS systems. However, procedures for the initial ordering of pilots via the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration internet website are being introduced. In exceptional cases, pilots may be ordered by e-mail, telephone, facsimile, or VHF. A preliminary request for pilotage should be made at least 24 hours in advance. A definitive request for pilotage must be made via the Pilot Request System at least 5 hours in advance.

It is reported that, initial ordering of pilots for The Sound and all ports located S and W of Vastervik (57°46'N., 16°39'E.) is to be carried out via the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration internet web site.

The table titled **Sweden—Pilot E-mail Addresses** gives the contact e-mail for ports on the W and S coasts of Sweden. The contact e-mail for the Lake Vanem Pilots, who provide pilotage for Lake Vanern and the Trollhatte Canal is (kctrollhattan@sjofartsverket.se).

For additional information, see the following internet web site:

Swedish Maritime Administration Home Page
http://www.sjofartsverket.se

Generally, pilotage is compulsory for vessels entering Danish waters, as follows:

1. Laden tankers over 1,500 dwt.
2. Laden chemical tankers carrying cargoes covered by the IMO Code of Chemicals.
3. Gas tankers unless constructed solely to carry CO^2.

4. Vessels with radioactive cargoes.
5. Vessels under tow of 150 gross tons and over, that are being towed in dredged or marked channels leading to a harbor or passing a pilot station.
6. Tankers not gas-free and not having an inert gas unit.

Additional pilotage requirements may be stated along with each port description.

Pilots should be ordered by inbound vessels at least 18 hours prior to the ETA at the boarding station. A confirmation or correction should then be sent 4 hours before arrival.

Vessels should state the following when ordering the pilot:
1. Vessel name, call sign, and IMO Number
2. Gross tonnage, length, beam, draft, and speed.
3. Nature of cargo.
4. ETA at boarding position.
5. Destination for pilotage.
6. Any faults affecting maneuverability.
7. Contact and payment information.
8. Payer's information.

Ordering Deep Sea Pilots or Harbor Pilots can be carried out directly with the State Pilot Service or with a private pilot. Contact information for the ordering offices which accept pilot bookings are given in the accompanying table titled **Denmark—Pilotage Ordering Offices.**

DanPilot provides pilotage for:
1. Aabenraa (55°02'N., 9°26'E.).
2. Aalborg (57°03'N., 9°56'E.).
3. Aggersund (57°00'N., 9°18'E.).
4. Aeroskobing (54°54'N., 10°25'E.).
5. Allinge (55°17'N., 14°48'E.).
6. Asnaesverkets (55°40'N., 11°04'E.).
7. Assens (55°16'N., 9°53'E.).
8. Bandholm (54°50'N., 11°30'E.).
9. Dragor (55°36'N., 12°41'E.).
10. Drogden (55°36'N., 12°42'E.).
11. Enstedsvaerket (55°01'N., 9°26'E.).
12. Esbjerg (55°29'N., 8°25'E.).
13. Faaborg (55°06'N., 10°14'E.).
14. Fredericia (55°33'N., 9°45'E.).
15. Fredrikshavn (57°26'N., 10°33'E.).
16. Fredrikssund (55°51'N., 12°03'E.).
17. Frederiksvaerk (Stalvalsvaerks Havn) (55°58'N., 12°01'E.).
18. Fur Havn (56°48'N., 9°01'E.).
19. Gedser (54°34'N., 11°56'E.).
20. Grenaa (56°25'N., 10°56'E.).
21. Helsingor (Elsinore) (56°02'N., 12°37'E.).
22. Holstebro-Struer (56°30'N., 8°35'E.).
23. Horsens (55°51'N., 9°52'E.).
24. Hundested (55°58'N., 11°51'E.).
25. Kalundborg (55°40'N., 11°05'E.).
26. Kobenhavn (55°42'N., 12°37'E.).
27. Koge (55°27'N., 12°12'E.).
28. Kolding (55°30'N., 9°30'E.).
29. Korsor (55°20'N., 11°07'E.).
30. Lemvig (56°33'N., 8°18'E.)
31. Logstor (56°58'N., 9°15'E.).
32. Mariager Fjord (56°42'N., 10°20'E.), including Hadsund (56°43'N., 10°07'E.), Hobro (56°38'N., 9°48'E.), and Kongsdal (56°41'N., 10°04'E.).
33. Marstal (54°51'N., 10°31'E.).
34. Middelfart (55°30'N., 9°44'E.).
35. Naestved (55°14'N., 11°45'E.).
36. Nakskov (54°50'N., 11°07'E.).
37. Nordjyllandsvaerket (57°04'N., 10°02'E.).
38. Nyborg (55°18'N., 10°48'E.).
39. Nykobing (54°46'N., 11°52'E.).
40. Nykobing (56°48'N., 8°52'E.).
41. Oddesund (56°35'N., 8°34'E.).
42. Odense (55°25'N., 10°23'E.).
43. Orehoved (54°58'N., 11°51'E.).
44. Randers Fjord (56°36'N., 10°18'E.), including Randers (56°28'N., 10°04'E.).
45. Rodby Havn (54°39'N., 11°42'E.).
46. Skagen (The Skaw) (57°43'N., 10°36'E.).
47. Skive (56°34'N., 9°03'E.).
48. Soby (54°57'N., 10°16'E.).
49. Stevns Pier (55°19'N., 12°27'E.).
50. Stigsnaes (55°12'N., 11°15'E.), including Gulfhavn.
51. Storebaelt (Great Belt) (55°20'N., 11°02'E.).
52. Studstrupvaerket (56°15'N., 10°21'E.).
53. Svendborg (55°03'N., 10°37'E.).
54. Sonderborg (54°55'N., 9°47'E.).
55. Thisted (56°57'N., 8°42'E.).
56. Thyboron (56°42'N., 8°14'E.).
57. Tuborg (55°54'N., 12°35'E.).
58. Vejle (55°42'N., 9°34'E.).
59. Vilsund (56°53., 8°38.).
60. Vordingborg (55°00'N., 11°55'E.).

The following ports utilize pilots not provided by DanPilot, but pilots may still be ordered using the above procedures:
1. Arhus (55°10'N., 10°14'E.).
2. Bogense (55°34'N., 10°05'E.).
3. Ebeltoft (56°12'N., 10°40'E.).
4. Egernsund (54°55'N., 9°36'E.).
5. Grasten (54°55'N., 9°36'E.).
6. Hantsholm Havn (57°08'N., 8°36'E.).
7. Hirstshals Havn (57°36'N., 9°58'E.).
8. Hvide Sande (56°00'N., 8°07'E.).
9. Kerteminde (55°27'N., 10°40'E.).
10. Nexo (55°04'N., 15°08'E.).
11. Romo Havn (55°05'N., 8°34'E.).
12. Ronne (55°06'N., 14°41'E.).
13. Saeby (57°20'N., 10°32'E.).
14. Skagen (57°43'N., 10°36'E.).
15. Thorsminde (56°22'N., 8°07'E.).

Danish Pilot Service A/S provides pilotage service for:
1. Aabenraa (55°02'N., 9°26'E.)—Sea and harbor pilotage.
2. Aalborg, Limfjorden (57°03'N., 9°56'E.).
3. Aggersund, Limfjorden (57°00'N., 9°18'E.).
4. Arhus (55°10'N., 10°14'E.)—Sea pilotage.
5. Enstedsvaerket (55°01'N., 9°26'E.)—Sea and harbor pilotage.
6. Fredericia (55°33'N., 9°45'E.)—Sea and harbor pilotage
7. Fur Havn, Limfjorden (56°48'N., 9°01'E.).
8. Gulfhavn (55°12'N., 11°15'E.)—Sea pilotage.
9. Holstebro-Struer, Limfjorden (56°30'N., 8°35'E.).
10. Kalundborg (55°40'N., 11°05'E.)—Sea and harbor pi-

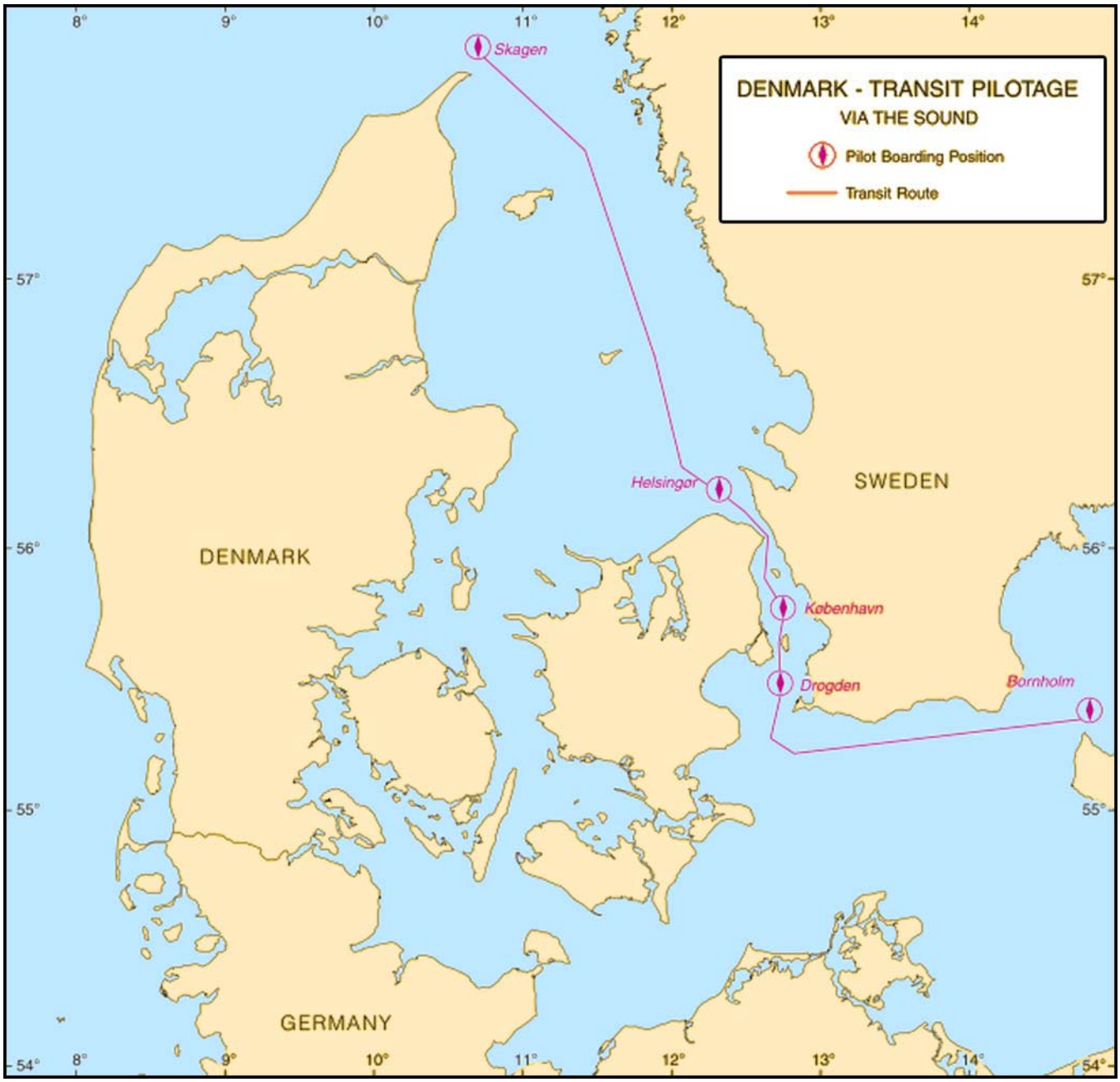
lotage.

11. Lemvig, Limfjorden (56°33'N., 8°18'E.).
12. Logstor, Limfjorden (56°58'N., 9°15'E.).
13. Nordjyllandsvaerket, Limfjorden (57°04'N., 10°02'E.).
14. Nykobing, Limfjorden (56°48'N., 8°52'E.).
15. Oddesund, Limfjorden (56°35'N., 8°34'E.).
16. Skive, Limfjorden (56°34'N., 9°03'E.).
17. Stignaes (55°12'N., 11°15'E.)—Sea pilotage.
18. Thisted, Limfjorden (56°57'N., 8°42'E.).
19. Thyboron, Limfjorden (56°42'N., 8°14'E.).
20. Vilsund, Limfjorden (56°53., 8°38E.).

Danish Pilot Service A/S can be contacted through the information contained in the table titled **Denmark—Pilotage Ordering Offices**.

Denmark—Pilotage Ordering Offices		
	DanPilot	**Danish Pilot Services A/S**
Call sign	DanPilot(name of station)	—
VHF	VHF channels 16 and 87	VHF channels 12 and 16
Telephone	45-63-256666	45-75-914496
Facsimile	—	45-75-914493
E-mail	danpilot@danpilot.dk	info@danishpilotservice.dk
Web site	http://www.danpilot.dk	http://www.danishpilotservice.dk

Sweden—Pilot E-mail Addresses			
Port served	**E-mail**	**Port served**	**E-mail**
South Coast Pilots		**West Coast Pilots**	
Ahus	southcoastpilot@sjofartsverket.se	Brofjorden	westcoastpilot@sjofartsverket.se
Bergkvara		Falkenberg	
Degerhamn		Goteborg	
Falsterbo Kanal		Halmstad	
Helsingborg	southcoastpilot@sjofartsverket.se	Hamburgsund	westcoastpilot@sjofartsverket.se
Hoganas		Lysekil	
Kalmar		Marstrand	
Karlshamn		Skarvikshamnen	
Karlskrona		Stenungsund	
Landskrona		Stromstad	
Malmo		Surte Hamn	
Oskarshamn		Uddevalla	
Ronneby		Varberg	
Simrishamn		Wallhamn	
Solvesborg			
The Sound			
Trelleborg			
Vastervik			
Verkeback			
Ystad			



Denmark Pilot Stations for the Sound Passage

Danish Deep Sea (Transit) Pilots board vessels at the following positions:

1. Via Route T:
   i. 57°47.0'N, 10°38.0'E or 57°44.0'N, 10°45.0'E (Skagens/The Skaw).
   ii. 56°24.0'N, 11°05.0'E (Grenaa).
   iii. 55°23.5'N, 11°00.0'E (Sprogo NE).
   iv. 54°46.0'N, 10°49.0'E or 54°47.5'N, 10°52.5'E (Store Belt-Great Belt).
   v. 54°37.0'N, 12°16.0'E (Gedser):
   vi. 55°20.0'N, 14°47.0'E (Bornholm).
2. Via The Sound.
   i. 57°47.0'N, 10°38.0'E or 57°44.0'N, 10°45.0'E (Skagen/The Scaw).
   ii. 56°07.5'N, 12°31.0'E (Helsingor).
   iii. 55°45.0'N, 12°41.0'E (Kobenhavn).
   iv. 55°31.0'N, 12°43.0'E (Drogden).
   v. 55°20.0'N, 14°47.0'E (Bornholm).

Attention is drawn to the fact that a greater risk of grounding exists during periods of icy conditions, when buoyage can not

be relied on expected to be in position and in order. Should the passage take place under such conditions, the following measures are further recommended:

1. When navigating S of latitude 56°N (Sjaellands Odde), the ship shall use two tugboats. Each of the tugboats shall be fitted with a suitable electronic position fixing system and have a pilot on board. The passage shall, if deemed necessary, take place in daylight and in good visibility.

2. For ships fitted with a special and workable position fixing system, e.g. a radar mapping system, the use of tugboats mentioned in 1 above may be limited to the passage between Keldsnor and Enstedvaerket.

On becoming aware of the fact that a ship bound for one of the four harbors mentioned above does not comply with these recommendations, vessels are requested to report the findings to the Danish Maritime Authority.bark two pilots.

Vessels requiring distance pilotage may be required to embark two pilots.

Regulations.—The following recommendations have been implemented by the IMO regarding vessel transits through the entrances to the Baltic Sea:

1. **The Sound.—**Loaded oil tankers with a draft of 7m or more, all loaded chemical tankers and gas carriers, irrespective of size, and vessels carrying shipments of irradiated nuclear fuel, plutonium, or high level radioactive wastes (INF cargoes) should use the pilotage service established by the governments of Denmark and Sweden when navigating in a designated part of The Sound described below.

The designated area lies SE of a line extending from Svinbaden Light (56°09'N., 12°33'E.) to Hornbaek, 4 miles SW, and N of a line extending from Skanor (55°25'N., 12°50'E.) to Aflandshage, the southernmost point of Amager Island, lying 12 miles NW.

Vessels should be aware that anchoring may be necessary owing to the weather and sea conditions, in relation to the size and draft of ship and the sea level. Vessels should also take into account information from the pilot or from the radio navigation information services in the area.

2. **Route T.—**Vessels with a draft of 11m or more, and vessels carrying shipments of irradiated nuclear fuel, plutonium, or high level radioactive wastes (INF cargoes), regardless of their size and draft, should use the pilotage services locally established by the coastal states between Gedser to Skagen or vice-versa.

Vessels should be aware that anchoring may be necessary owing to the weather and sea conditions, in relation to the size and draft of ship and the sea level. Vessels should also take into account information from the pilot or from the radio navigation information services in the area.

3. **Route T (Depth reductions).—**Charted depths may be up to 2m less due to unknown obstructions, sand migration, and tidal or meteorological effects. Vessels should not enter the area unless they have a draft which provides sufficient underkeel clearance, taking into account the draft increasing factors, including squat and the effect of a course alteration.

In certain area of the Storebaelt (Great Belt), Hatter Rev, Vengeancegrund, and in the narrow passage E of Langeland, vessels are to exhibit the signal for a vessel constrained by its draft as prescribed in Rule 28 of the 72 COLREGS.

Shipowners and masters should consider the full potential of new and improved navigation equipment in SOLAS chapter V, including Electronic Chart Display and Information System (ECDIS) when navigating in these narrow waters of The Sound and along Route T.

Two ship reporting systems have been established in the entrances to the Baltic Sea, as follows:

1. SOUNDREP—described in paragraph 1.2.

2. BELTREP—described in paragraph 2.2 and paragraph 2.13.

Directions.—For details of designated routes in the Kattegat, see Pub. 193, Sailing Directions (Enroute) Skagerrak and Kattegat (Sector 7). Route B, which may best be seen on the chart, leads SE into The Sound.

An IMO-adopted Traffic Separation Scheme (TSS), which may best be seen on the chart, lies in the N part of The Sound between Helsingborg, Sweden and Helsingor, Denmark. Its separation zones are marked by lighted buoys.

Lighted Buoy M4 (56°03'N., 12°39'E.), equipped with a racon, is moored near the central part of the TSS.

The central part of The Sound is divided into two passages by the island of Ven (56°55'N., 12°42'E.). The E passage is deeper and is used by deep-draft vessels proceeding to Kobenhavn. The W passage is shorter and is used by most vessels proceeding to and from the Baltic Sea.

The S part of The Sound is divided into two channels by Saltholm (55°38'N., 12°45'E.). Drogden leads S on the W side and is the deepest channel leading through the Sound. The deep-water route for Malmo leads SSE on the E side and then Flintrannan continues SW. Both channels rejoin in the vicinity of Drogden Light (55°32'N., 12°43'E.).

An IMO-adopted Traffic Separation Scheme (TSS), which may best be seen on the chart, lies in the S part of The Sound. Its circular separation zone is centered on Falsterborev Light (55°18'N., 12°40'E.).

Caution.—Several areas, within which submarine cables exist, lie in The Sound and may best be seen on the chart. Many of these areas are marked by lighted beacons on the adjacent shores. Large magnetic anomalies may occur in the vicinity of power cables.

High speed ferries may be encountered within The Sound. Ferry traffic is especially heavy during the summer.

Fishing is carried on extensively in The Sound throughout the year, but mainly during spring and fall. A sharp lookout should be kept to avoid drift nets and other fishing gear laid in these waters.

The waters on the Swedish side of the S entrance to the Sound lie within former NEMEDRI Mine Danger Area No. 10, within which anchoring, fishing, or any form of seabed activity could be dangerous.

On the Danish side, there are a few small areas S of Kobenhavn where anchoring, fishing, or underwater activities should be avoided due to the possible existence of mines. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further details.

Between April and November, numerous yacht racing buoys may be moored up to about 1 mile off the small harbors located along both coasts of The Sound.

SOUNDREP (Ship Reporting System)

1.2 All vessels of 300 gt and over shall participate in the SOUNDREP reporting system when navigating within the Operational Area.

The following categories of vessels are exempt from the reporting system, but are encouraged to participate:

1. Warships.
2. Naval auxiliaries.
3. Vessels owned by a contracting government and used only in the government non-commercial service.

The SOUNDREP Operational Area is bounded, as follows:

1. North.—A line joining the following positions:
   a. 56°46.58'N, 12°11.00'E. (Rageleje)
   b. 55°14.00'N, 12°11.00'E. (At sea N of Rageleje)
   c. 56°18.08'N, 12°17.39'E. (At sea W of Kullen)
   d. 55°18.08'N, 12°26.88'E. (Kullen Lighthouse)
2. South.—A line joining the following positions:
   a. 55°17.44'N, 12°27.28'E. (Stevns Light)
   b. 55°10.00'N, 12°27.28'E. (At sea S of Stevns)
   c. 55°10.00'N, 12°54.50'E. (At sea S of Falsterbo)
3. East.—A line joining the following positions:
   a. 55°10.00'N, 12°54.50'E. (At sea S of Falsterbo)
   b. 55°22.89'N, 13°01.93'E. (Fredshog)
1. West.—A line joining the following positions:
   a. 55°19.81'N, 12°27.30'E. (Mandehoved)
   b. 55°33.28'N, 12°35.53'E. (Aflandshage)

The SOUNDREP operational area is divided into two sectors at latitude 55°50.00'N. Each sector has an assigned VHF channel, as follows:

1. Sector 1—North:VHF channel 73
2. Sector 2—South:VHF channel 71

All communications should be English using IMO Standard Marine Communication Phrases.

Vessels entering the SOUNDREP operational area shall submit a report when crossing the entrance lines, or on departure from a port or anchorage within the operational area.

A Sailing Plan (SP) should be sent before entering the VTS operational area or as near as possible to the time of departure from a port within the SOUNDREP operational area.

A Dangerous Goods Report (DG) should be sent when an incident takes place involving the loss of packaged dangerous goods into the sea, including those in freight containers, portable tanks, road and rail vehicles, and shipboard barges.

All reports should be made on VHF channel 71or 73. Vessels can fulfill certain reporting requirements by using non-verbal means such as AIS, e-mail, or other alternative methods prior to entering the reporting area, as follows:

1. AIS can be used to accomplish the reporting requirements for designators A (part of), B, C, E, F, I, O, P, and W
2. E-mail or other alternative methods can be used to accomplish the reporting requirements for designators L, T, and X prior to entering the reporting area. The e-mail reports must also include designator A.

Vessels may select, for reasons of commercial confidentiality, to communicate that part of their report which provides information on the next port of call and cargo by facsimile or e-mail. A report from a vessel to SOUNDREP by non-verbal or voice transmission must contain the information listed in the table titled **SOUNDREP—Information Reports**.

SOUNDREP—Information Reports

ID	Function	Information Required	AIS	E-mail	VHF
A	Vessel information	Vessel name, call sign, and if available MMSI No. and IMO Number (AIS).	X	X	X
B	Date and time of event	Date and time in UTC (a 6-digit group giving day of month, hour, and minutes).	X		
C	Position	Position in degrees-minutes and decimals, (a 5-digit group for latitude suffixed with N and a 6-digit group for longitude suffixed by E).	X		
E	True course	True course (a 3-digit group).	X		
F	Speed	Knots and tenths of knots (a 3-digit group).	X		
I	Destination and ETA	Next port-of-call and ETA as described in B.	X		
L	Route information	A brief description of the vessel's intended route. Vessels navigating in The Sound have options on deciding their route in the following areas: 1. Disken Shoal—coded as DW for transiting W of Disken Shoal or DE for transiting E of Disken Shoal. 2. Ven Island—coded as VW for transiting W of Ven Island or VE for transiting E of Ven Island. 3. Drogden Channel—coded as D. 4. Flintrannan Channel—coded as F. For further information, see **Note** below.		X	

SOUNDREP—Information Reports					
ID	**Function**	**Information Required**	**AIS**	**E-mail**	**VHF**
O	Maximum present draft (in meters)	A 2-digit or 3-digit group giving the present maximum draught in meters (example 6.1 or 10.4).	X		
P	Cargo on vessel	Cargo and quantity and class of dangerous cargo, if applicable.	X		
Q	Defects and deficiencies or other limitations	Details of defects, deficiencies, or restrictions affecting navigation or maneuverability.			X
T	Vessel's representative or owner	Address and particulars from which detailed information on the cargo may be obtained.		X	
U	Vessel's size	Deadweight tons and air draft, when exceeding 35m including vessel's towing or other floating equipment. This information shall be given by voice transmission when entering the SOUNDREP area, even if the information is given by other means (example: e-mail, AIS, facsimile, etc.).			X
W	Total number of persons on board	State number	X		
X	Miscellaneous	Type and estimated quantity of bunker fuel for vessels of 1,000 gross tons or more.		X	

Note.—Examples of route coding are, as follows:

1. A northbound vessel leaving Malmo Port, intending to sail E of Ven Island and the TSS in the Sound (UN LOCODE format for Malmo Port is SE MMA) is L:SE MMA, VE.
2. A southbound vessel in transit planning to sail via the TSS in the Sound E of Disken Shoal, W of Ven Island, Drogden Channel, and the TSS Off Falsterbro, is L:DE, VW, D

All vessels reporting to VTS via non-verbal methods when entering or leaving a VTS reporting area or anchorage within a reporting area must always report the name of the vessel verbally on VHF radio. For safety reasons, only operational information relevant to shipping is may be given.

Vessels within the VTS operational area are monitored both by radar and by their AIS transmissions. Vessels within the Reporting Area are monitored by land-based AIS only.

For safety reasons, relevant information to shipping is given only in the Operational Area.

Further reports should be sent whenever there is a change in navigational status or circumstances, particularly in relation to Item Q of the reporting format.

SOUNDREP VTS will broadcast relevant information concerning the safety of navigation in the Operational Area, Such information may include, obstacles to traffic, failure of important navigation aids, currents and water levels, ice conditions, extraordinary meteorological conditions, suitable anchorages, and other safety information. Additional information may be given on request on VHF channel 68. Prior to the broadcast an announcement will be made on VHF channels 16 and 71. All vessels in the area should listen to the broadcast.

Contact Information.—Sound VTS can be contacted, as follows:

1. Call sign: Sound VTS
2. VHF: VHF channels 16, 68, 71, 73, and 79
3. Telephone: 46-771-630600
4. E-mail: contact@soundvts.org

North Entrance of The Sound to Helsingborg and Helsingor

1.3 The Swedish coast between Kullen (56°18'N., 12°27'E.) and Viken, a fishing village located about 10 miles SSE, is low and sparsely wooded. From Viken to Helsingborg, 7.5 miles farther SSE, the land becomes higher. There are no large coastal indentations. The port of Hoganas is situated about 7 miles SSE of Kullen and several small fishing harbors lie along the stretch between Kullen and Helsingborg.

The range of tide along this part of the coast is negligible, the water level change depending mainly on the wind and the current. The shore is fringed by a coastal bank and all dangers, with the exception of some wrecks, lie inside the 20m curve.

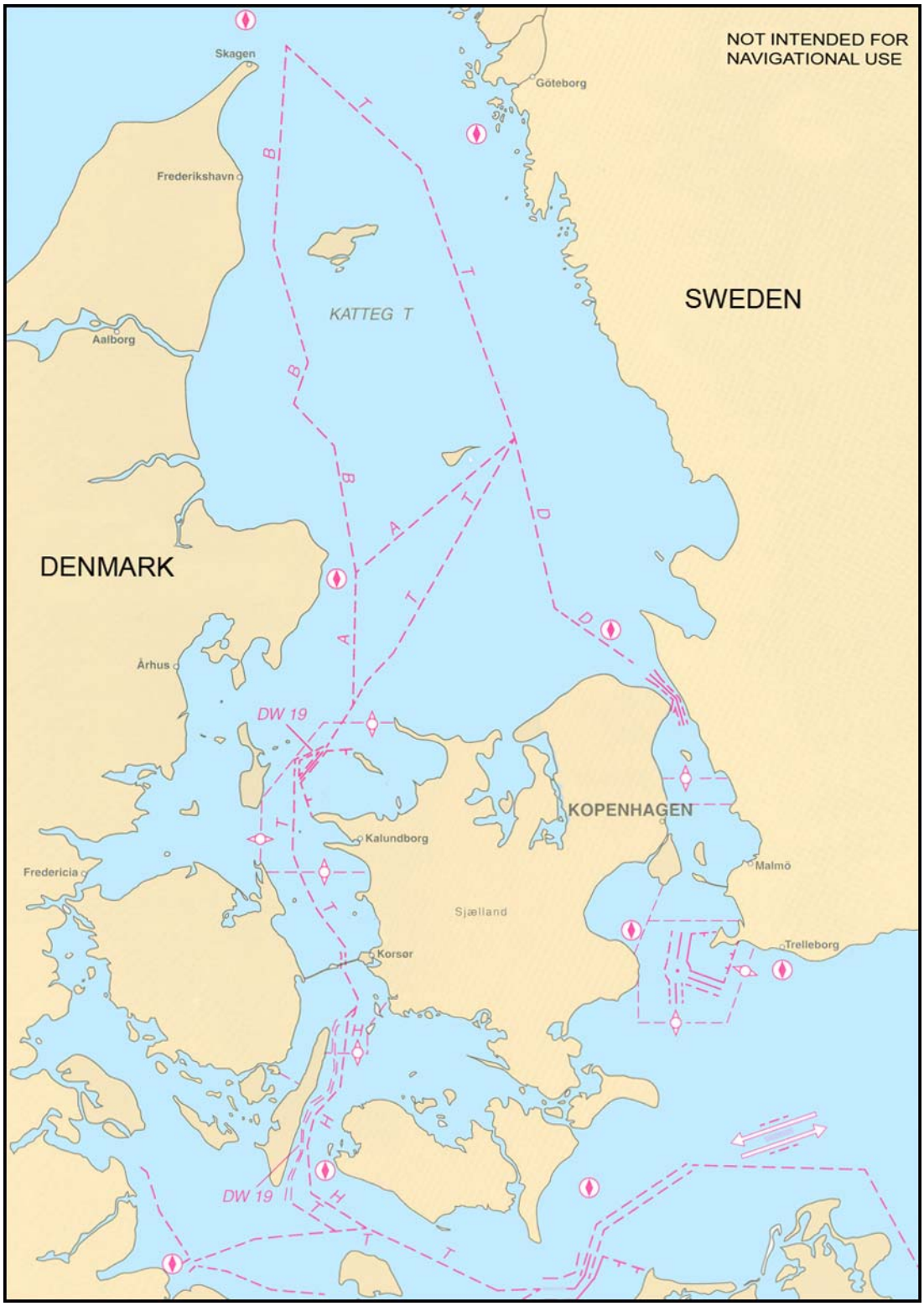
Kullen Light (56°18'N., 12°27'E.) is shown from a prominent tower, 15m high with an adjacent house, standing 0.2 mile SE of the NW extremity of the promontory. Hogkull, 188m high, rises 2.7 miles ESE of the light and is the tallest peak in this area.

Molle (56°17'N., 12°30'E.), a small fishing harbor, is situated 2 miles SE of Kullen Light. It is protected by breakwaters and has an entrance facing WNW.

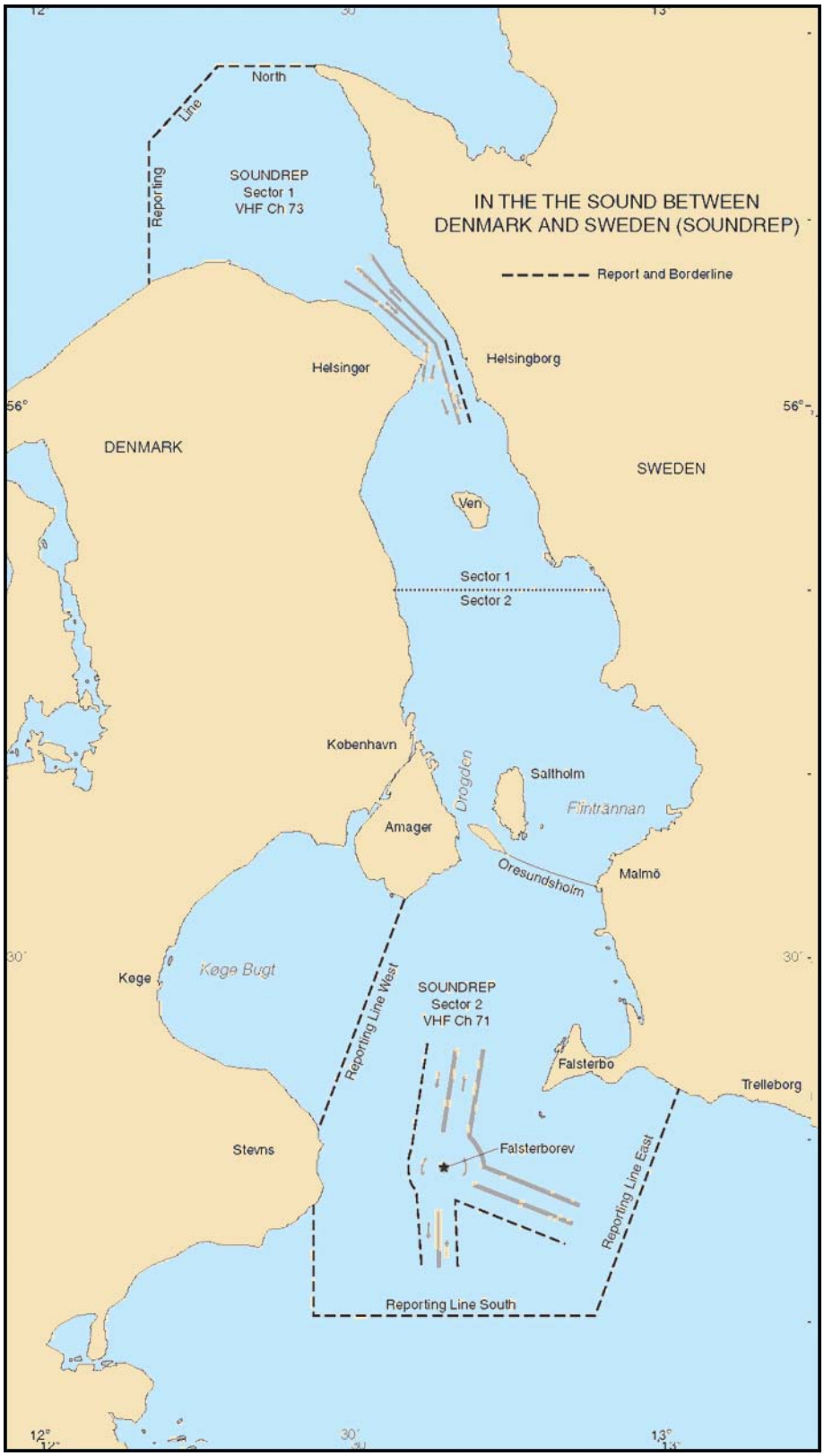
Krapperup Manor House, a prominent building, stands about 1.5 miles SE of Molle.

Lerhamn (56°15'N., 12°31'E.), a small harbor, is situated 2 miles SSE of Molle and is used only by small craft.

Nyhamnslage (56°15'N., 12°32'E.), a small fishing harbor, is situated 0.8 mile SSE of Lerhamn and has an entrance facing SSW.



Designated Routes Between Denmark and Sweden



SOUNDREP Boundaries

Kullen Light

Krapperup Manor House

1.4 Hoganas (56°12'N., 12°33'E.) (World Port Index No. 24100), a small port, is situated about 7 miles SE of Kullen Light. It is protected by a mole on the W side and the entrance faces SSE.

Winds—Weather.—During NW gales, in the fall, the water level in the harbor may rise about 1.6m above mean level. During SE gales, in the spring, it may fall about 1.1m below mean level. Normally, LW is about 0.6m below mean level.

Ice.—The harbor is seldom closed by ice.

Depths—Limitations.—The approach channel leads E through the coastal dangers and is dredged to a depth of 8.2m over a bottom width of 40m. The harbor has a depth of 8.2m. The W quay is 370m long and the loading pier, on the E side of the harbor, is 125m long. Vessels up to 130m in length and 7.4m draft can be accommodated.

Aspect.—An outer approach lighted buoy is moored about 1.6 miles W of the harbor entrance. The approach channel is indicated by a lighted range and marked by buoys at its inner end.

A prominent church stands in the town, 0.9 mile E of the harbor, and another church, with a prominent spire, is situated at Vasby, about 1.5 miles E of the harbor.

Pilotage.—Pilotage is compulsory for the following vessel categories (see paragraph 1.1 for category definitions):

1. All Category 1 vessels
2. Category 2 vessels of 80m loa and over or 15m beam and over.
3. Category vessels of 90m loa and over or 16m beam and over.

Generally, initial ordering of pilots should be carried out via the e-Services section on the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration web site (http://www.sjofartsverket.se), in conjunction with the reporting on the Vessel Reporting System (FRS) section (see paragraph 1.1).

A preliminary request for pilotage should be made at least 24 hours in advance. A definitive pilotage request must be made via the Pilot Request System at least 5 hours in advance.

In exceptional cases, the pilot may be ordered via email, telephone, facsimile or VHF (see the table titled **Pilot Contact Details**).

The pilot boards near Oresunds Norra Lighted Buoy (56°12'N, 12°30'E.) by arrangement only.

Contact Information—The Pilot Ordering Center may be contacted as follows:

1. Telephone: 46-771-630680
2. Facsimile: 46-40-301868
3. E-mail: southcoastpilot@sjofartsverket.se
4. Web site: http//.www.sjofartsverket.se

The Hoganas Pilot Station can be contacted, as follows:

1. Call sign: Helsingborg Pilot
2. VHF: VHF channel 80

The port of Hoganas is controlled from Malmo and can be contacted, as follows:

1. Telephone: 46-42-342320
2. Facsimile: 46-42-341130
3. E-mail: info@hoganasshipping.se

Regulations.—Vessels with drafts over 6.7m must use the services of a tug or the pilot launch when turning within the harbor.

Caution.—The daymarks for the approach range are reported to be difficult to distinguish against the trees behind them.

1.5 Lerberget (56°11'N., 12°34'E.), a small harbor, is situated 1.4 miles S of Hoganas. It is protected by breakwaters and has an entrance facing WSW. This harbor is used only by fishing boats and pleasure craft.

Viken (56°08'N., 12°35'E.), a resort town, is situated 3.4 miles S of Hoganas. The small harbor is used almost entirely by pleasure craft. A prominent church, white with a red roof and a pointed tower, stands in the town.

Kulla Gunnarstorp Manor House, a conspicuous building, is situated 3 miles SE of Viken.

Sofiero Castle, prominent from seaward, stands 1 mile E of the small town of Sofiero, about 1.2 miles SSE of Kulla Gunnarstorp Manor House.

Svinbadan Light (56°09'N., 12°32'E.) is shown from a prominent tower, 25m high and floodlit, standing about 1 mile offshore, 1.4 miles NW of Viken.

Domsten, a yacht harbor, is situated 1.5 miles SSE of Viken and is marked by a light.

Anchorage.—Anchorage can be taken, in a depth of 20m, blue clay, about 1 mile W of Viken, but this roadstead is exposed to winds from NW through W to S.

Helsingborg (56°03'N., 12°42'E.)

World Port Index No. 24120

1.6 The port of Helsingborg is situated on the E bank of the narrowest part of The Sound, directly opposite the Danish port of Helsingor. The industrial part of the city is situated at its

Kulla Gunnarstorp Manor House

Sofiero Castle

Svinbadan Light

S end. The port, which is a main ferry terminal, consists of three sheltered harbors and is open for navigation throughout the year.

The port area of Helsingborg includes the North Harbor, the West Harbor, the South Harbor, and the Bulk Harbor.

Tides—Currents.—Gales from between W and N usually raise the water level and gales from between E and S usually lower it. The maximum variations in water level are 1.7m above and 0.9m below mean level. During calm weather, the variation in water level is slight.

The currents outside the harbor are variable and frequently strong. There are often surface and bottom currents setting at the same time in different directions and with different velocities. The current usually sets N near the entrances. However, with winds from between W and N, the current may set S with the change occurring quickly.

Depths—Limitations.—Nordhamnen, or the North Harbor, is the old port fronting the center of the city. It is protected on the S side by a short detached breakwater and on the N side by a curved breakwater. The N entrance, which has a depth of 9m, is used only by small vessels due to the current setting across it. The S entrance has a depth of l0m and is 90m wide. Nordhamnen is composed of four basins, as follows:

1. Cityhamnen (Basin 1), the northernmost basin, has a depth of 6.8m and is used by small craft. A marina, with a separate entrance, lies N of this basin.
2. Inre Hamnen (Basin 2) has depths of 3.6 to 6m; the berths on the S side are used by ro-ro automobile ferries.
3. Sodra Hamnen (Basin 3) has depths of 6 to 8m; the berths on the N side are used by railroad ferry traffic.
4. Ocean Harbor (Basin 4) is the outermost basin. The E quay is 480m long and has depths of 8 to l0m alongside. The W quay provides one cargo berth and two ro-ro ferry berths, 90 to 130m long, with depths of 7 to 8.5m alongside.

Vessels up to 180m in length, 35m beam, and 8.5m draft can be accommodated in Nordhamnen.

Courtesy of Port of Helsingborg

Helsingborg—North Harbor

Vasthamnen, or West Harbor, is situated 0.7 mile S of Nordhamnen and has an entrance facing S, with a depth of 13m. The harbor has two basins and provides terminals for ferries, ro-ro, and container vessels. The large basin has two quays, 265m and 300m long, with depths of 13m alongside. The small basin has two quays, 184m and 220m long, with depths of 9m alongside. Vessels up to 225m in length and 11.7m draft can be handled.

Sydhamnen, or the South Harbor, lies close S of Vasthamnen and contains Basins 5, 6, and 7. Basin 5 provides two oil berths, with depths of 11m alongside, which can be used by tankers up to 10.5m draft. Basin 6 provides a grain terminal berth, 460m long, with depths of 10.5 to 13.5m alongside. Basin 7 has 1,350m of quayage and provides ten cargo berths, with depths of 8 to 11.5m alongside.

Bulkhamn, previously known as Kopparverkkshamnen, is situated 0.8 mile SSE of Sydhamnen. This bulk harbor is privately owned and serves the adjacent copper works.

The quay at the W side of the harbor basin is 440m long. It provides seven berths and has depths of 7 to 10.5m alongside. The quay at the E side is 180m long. It provides three berths,

Helsingor Harbor

Courtesy of Port of Helsingborg
Helsingborg—West Harbor

Courtesy of Port of Helsingborg
Helsingborg—Bulk Harbor

with a depth of 7m alongside. Vessels up to 10m draft can be handled.

The port can accommodate vessels up to 65,000 dwt, 230m in length, and 12.3m draft.

Courtesy of Port of Helsingborg
Helsingborg—South Harbor

Aspect.—A light is shown from a prominent tower on a house, 18m high, standing at the root of the curved breakwater at the N side of Nordhamnen.

The harbor entrance channels are indicated by lighted ranges, which may best be seen on the chart.

Karnan Tower, red and square, stands on high ground about 0.6 mile NE of the entrance to Nordhamnen and is prominent from seaward. A water tower and a radio mast, both conspicuous, are situated about 1 mile NNE and 0.6 mile ENE, respectively, of Karnan Tower.

A conspicuous chimney stands at a heating plant on the N side of Vasthamnen and several prominent silos are situated within Sydhamnen. A number of prominent chimneys stand in the N part of Bulkhamnen.

Pilotage.—A main pilot station is located at Helsingborg. This station provides pilots for that part of the Oresund Maritime Area extending between the vicinity of Hallands Vadero (56°30'N., 12°30'E.) and Landskrona. Pilotage for this part of the area is compulsory for the following vessels:

1. All Category 1 vessels.
2. Category 2 vessels of 80m length and over or 15m beam and over.
3. Category 3 vessels of 90m length and over or 16m beam and over.

Also see paragraph 1.1 for additional information.

Helsingborg Light

All ordering of pilots for the Oresund Maritime Area and the station at Helsingborg must be made through Malmo VTS (see paragraph 1.19).

It should be noted that extensive changes to pilotage procedures within Swedish waters are being carried out. Formerly, all initial ordering of pilots was carried out through the main VTS systems. However, procedures for the initial ordering of pilots via the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration internet web site are being introduced. For additional information, see paragraph 1.1.

Contact Information.—Pilots for the port of Helsingborg may be contacted on VHF channel 80. Generally, pilots for the harbors board northbound vessels in the vicinity of Lighted Buoy M7 (55°58.9'N., 12°41.5'E.) and southbound vessels in the vicinity of Lighted Buoy M1 (56°07.3'N., 12°31.7'E.) or Lighted Buoy M3 (56°04.6'N., 12°36.8'E.).

The Pilot Ordering Center can be contacted, as follows:

1. Telephone: 46-771-630680
2. Facsimile: 46-40-301868
3. E-mail: southcoastpilot@sjofartsverket.se
4. Web site: http://www.sjofartsverket.se

The Helsingborg Pilot Station can be contacted, as follows:

1. Call sign: Helsingborg Pilot
2. VHF: VHF channel 80

Regulations.—All vessels should send a report at least 24 hours in advance to the port authority.

Vessels should report at least 1 hour in advance of arrival or departure to the Harbor Radio on VHF channel 11 in order to obtain traffic information.

Vessels with a draft exceeding 2.4m are restricted to a speed of 4 knots within the harbors.

Vessel Traffic Service.—A Vessel Traffic Service (VTS) controls shipping movements, including ferries, within the approaches to the port.

Vessels should report to the VTS Port Control Center (Helsingborg) on VHF at least 30 minutes prior to entering the fairways leading to the harbors or departing a berth.

Contact Information.—Helsingborg VTS may be contacted by e-mail, as follows:

vts@port.helsingborg.se

The Local Port Service (Helsingborg Port Control) can be contacted, as follows:

1. VHF: VHF channel 11
2. E-mail: hpc@port.helsingborg.se

Anchorage.—Anchoring in the roadstead of the port should be avoided because of the close proximity to the inshore lanes of the TSS and the heavy volume of ferry traffic.

Caution.—Several marine reserve areas, within which anchoring is prohibited, lie in the approaches to Helsingborg and may best be seen on the chart.

1.7 The Danish coast is cliffy and devoid of trees in the vicinity of Gilbjerg Hoved (56°08'N., 12°18'E.) at the NW side of the entrance to The Sound. Between Nakkehoved, a bush-covered cliff located 2 miles ESE of Gilbjerg Hoved, and Helsingor, 10 miles ESE, the foreshore is low and the land within the coast is alternately high and low, with wooded areas in places. Much of the SE part of this stretch of coast is thickly populated. A number of small fishing harbors are located between Gilbjerg Hoved and Helsingor.

Gilleleje (56°08'N., 12°19'E.), a resort town, is fronted by a small harbor, which is protected by breakwaters. The entrance is 40m wide, has a depth of 4.5m, and faces NNE. The harbor is mostly used by fishing vessels and pleasure craft. A dredged channel leads SSW through the dangers lying in the approaches to the entrance. Vessels up to 40m in length, 9m beam, and 3.6m draft can enter.

A prominent water tower and a church, with a conspicuous black spire, stand in the town.

Gilleleje Flak, a shoal area, extends up to about 1.8 miles N of Gilleleje. It has depths of 2.5 to 7.2m and is marked by buoys.

Nakkehoved Light (56°07'N., 12°21'E.) is shown from a prominent tower, 21m high, standing 1 mile ESE of Gilleleje. A disused light tower is situated about 0.2 mile E of the light.

Nakkehoved Light

1.8 **Hornbaek** (56°06'N., 12°28'E.), a small fishing harbor, is situated 5 miles ESE of Gilleleje and protected by breakwaters.

Hornbaek Bugt, extending NW of the harbor, affords temporary anchorage to sailing vessels that have been prevented by

adverse current and wind from entering the narrow part of The Sound. A conspicuous windmill, without sails, stands at Dronninge, 2.5 miles W of Hornbaek.

Alsgarde (56°05'N., 12°32'E.), a fishing village, is situated about 3 miles ESE of Hornbaek. A pier, 150m long, fronts the E side of the village and has a depth of 1.5m alongside its head.

Odinshoj, a windmill without sails, stands about 0.3 mile WNW of Alsgarde and is conspicuous from seaward.

A conspicuous red factory, with a tall chimney, is situated at Hellebaek, about 3.5 miles ESE of Hornbaek.

Julebaek Light (56°04'N., 12°34'E.) is shown from a prominent hut, 4m high, standing about 1.5 miles SE of Alsgarde.

Kronborg Pynt (56°02'N., 12°37'E.), situated 2.2 miles SE of Julebaek Light, is steep-to. Kronborg Castle stands on this point and is very conspicuous. This castle was the setting for Shakespeare's Hamlet. A light is shown from a tower, 32m high, surmounting the NE part of the castle.

Helsingor Nordhaven (56°02'N., 12°37'E.), situated 0.3 mile NW of Kronborg Pynt, is an extensive marina. It is protected from N by a long curved breakwater. The entrance faces SE and is 35m wide. Small craft and yachts up to 35m in length, 6m beam, and 2.5m draft can enter.

Caution.—Several shoal patches, with depths of less than 10m, front the shore between Nakkehoved Light and Hornbaek, about 6 miles ESE. Large vessels should avoid proceeding into depths of less than 20m in this area.

Helsingor (Elsingor) (56°02'N., 12°37'E.)

World Port Index No. 29350

1.9 Helsingor, a commercial port, is situated close W of Kronborg Pynt. The ferry service between this harbor and Helsingborg, Sweden, provides the principal port activity.

Winds—Weather.—The water level may be raised by up to 1.5m by winds from between WNW and N. It may be lowered by up to 1.2m by winds from between ESE and S.

Ice.—Navigation may be hampered to some extent by ice during severe winters, but the harbor is always kept open by icebreakers.

Tides—Currents.—The tidal range is negligible.

The N current sets past the head of the S breakwater and toward the shore W of Kronhoved, a point lying 0.2 mile SW of Kronborg Pynt. At the same time an eddy often sets W along the shore, turning S toward the harbor entrance.

The S current sets SW from Kronborg Pynt and across the harbor entrance. The current can attain a velocity of 3 knots, at times.

Depths—Limitations.—The main harbor basin, which provides 2,100m of quayage, is entered between two breakwaters. The entrance is 61m wide and has a depth of 7.5m. The basin has 16 berths, 23 to 160m long, with depths of 4 to 7.5m alongside. There are facilities for ferries, general cargo, container, tanker, ro-ro, and cruise vessels. Vessels up to 170m in length, 30m beam, and 6.6m draft can be accommodated.

It is reported that a ferry berth, with a depth of 17m alongside, is located close S of the S breakwater.

Aspect.—Kronor Castle stands on Kronor Punt, close E of the harbor. Two prominent churches are situated in the town. Lights are shown from structures, 6m high, standing on the breakwater heads.

Kronborg Castle—Helsingor Harbor

Kronborg Castle in winter from seaward

Pilotage.—For information concerning the ordering of Danish pilots in The Sound, see paragraph 1.1.

Pilotage for the port is provided by the main station at Kobenhavn. Pilotage is compulsory for all tankers. Some exemptions are made for frequent visitors.

Pilotage is compulsory for tankers arriving at and departing from Helsingor Havn.

Pilotage is not required for tankers whose master has called at Helsingor at least five times within the last 6 months. These vessels must maintain a listening watch on VHF channels 12 and 16.

The pilot boards in position 56°07.5'N, 12°30.0'E (in the vicinity of M1 Lighted Buoy) or further NW on request.

Regulations.—Vessels departing must wait for vessels entering. Vessels entering should sound one long blast, in sufficient time.

Speed within the harbor is restricted to 3 knots, but vessels may maintain a speed of 6 knots during entry and departure.

Contact Information.—Helsingor may be contacted by e-mail (elsinore@helsingoerhavn.dk).

Deep Sea/Transit Pilots (DanPilot/Danish State Pilotage) can be contacted, as follows:

1. Call: DanPilot Helsingor/Elsinore
2. VHF: VHF channel 16 or 87

3. Telephone: 45-63-256666
4. E-mail: danpilot@danpilot.dk
5. Web site: http://www.danpilot.dk

Anchorage.—Anchorage may be obtained in Helsingor Redd (56°01'N., 12°37'E.), the roadstead area lying S of Kronborg Pynt. A strong current, which diminishes in strength as the distance from Kronborg Pynt increases, may be experienced in this roadstead. When approaching the anchorage, caution is required due the number of ferries transiting this area. Vessels are advised not to anchor in that part of the roadstead located close N of Snekkersten (56°01'N., 12°36'E.) because the holding ground is too soft and numerous abandoned cables and anchors lie on the bottom.

The Sound—Central Part

1.10 The central part of The Sound extends between Helsingborg and Barsebackshamn (55°45'N., 12°54'E.), on the Swedish side, and between Helsingor (Elsingor) and Kobenhaven, on the Danish side.

The coast between Helsingborg (56°03'N., 12°42'E.) and Landskrona, about 11 miles SSE, is mainly hilly, but is low near the shore in places. The island of Ven lies with its S end located 4 miles WNW of Landskrona. Between Landskrona and Barsebackshamn, 7 miles SSE, the coast recedes about 2.5 miles and forms Lundakrabukten. The land along the shore of this bight is low, but rises slightly inland.

Raa (56°00'N., 12°44'E.), situated 1.5 miles S of the Bulk Harbor at Helsingborg, is a harbor used by fishing vessels and yachts. The controlling depth in the entrance channel, which is subject to silting, is 3.5m. The basins provide 500m of berthage, with depths of 2.5 to 4m alongside.

A prominent octagonal water tower, with a conical roof, stands about 0.5 mile ENE of the harbor entrance.

Alabodarna (55°56'N., 12°47'E.), a small harbor formed by two curved moles, is situated 3.5 miles SSE of Raa. It is used by fishing vessels and yachts. The entrance faces S and has a controlling depth of 2m.

Borstahusen (55°54'N., 12°49'E.), situated 3 miles SSE of Alabodarna, is a small harbor protected by two breakwaters. It has a depth of 3m and is used by small craft and fishing vessels.

Anchorage.—An anchorage area, which may best be seen on the chart, lies centered 0.9 mile SW of Raa. It has depths of 11 to 16m, clay. This roadstead is located clear of the main traffic routes through The Sound and E of the strongest current. Vessels anchored in this area are usually not affected by the heavy swell from the Kattegat during strong N winds.

Caution.—A small area, within which anchoring and fishing are prohibited due to the possible existence of bottom mines, lies in the approach to Raa and may best be seen on the chart.

A prohibited anchorage area, which may best be seen on the chart, lies centered 2 miles SW of Raa, at the S end of the TSS.

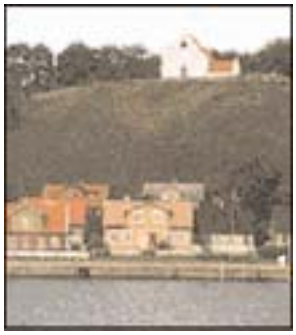
1.11 **Ven** (55°54'N., 12°42'E.), a Swedish island, lies 3 miles SW of Alabodarna. It consists of plateau, 35m high, which is partially covered by trees. The coasts of the island are formed by steep cliffs, especially on the N and W sides.

Sankt Ibb, a church with a conspicuous spire, stand in the center of the island.

Ven Light (55°55'N., 12°40'E.) is shown from a prominent tower, 8m high, standing near the NW extremity of the island.

A lighted buoy is moored about 0.4 mile W of Ven Light and marks the coastal bank in this vicinity.

Kyrkbacken (55°55'N., 12°40'E.), a small craft harbor, is situated 0.6 mile SE of Ven Light. It is protected by two moles and has a depth of 2.7m in the entrance. An old church, consisting of a white building with a red roof and no tower, stands close above the harbor and is prominent from seaward.



Kyrkbacken Church (above harbor)

Norreborg, a small yacht harbor, lies about 1 mile E of Ven Light and is protected by two breakwaters.

Haken Light (55°55'N., 12°44'E.) is shown from a prominent tower, 12m high with red dwellings, standing near the E extremity of the island.

Backviken (55°54'N., 12°43'E.), situated close S of Haken Light, is a small harbor, which is protected by two moles and a detached breakwater. It is used by yachts, fishing vessels, and a ro-ro ferry. The entrance has a controlling depth of 5m.

Sodra Udde Light (55°53'N., 12°43'E.) is shown from a prominent tower, 8m high, standing near the S extremity of the island.

Ven Island—Sodra Udde Light

Staffans Bank (55°53'N., 12°45'E.) lies centered 1.5 miles ESE of Sodra Udde Light and is marked by a lighted buoy at the SW end. It has depths of 10.5 to 16m and consists of sand, clay and shells.

Anchorage.—Large vessels can anchor about 1 mile NNE of Ven Light, in a depth of 25m. Anchorage may also be obtained, in a depth of 11m, in the vicinity of Staffans Bank.

Caution.—Several submarine cables, which may best be seen on the chart, extend between the E extremity of Ven and the Swedish mainland.

Landskrona (55°52'N., 12°50'E.)

World Port Index No. 24180

1.12 The port of Landskrona is situated on the mainland, about 4 miles SE of Ven. It is fronted and protected by Vasterflacket, an area of rocky and sandy shoals, which may best be seen on the chart.

Winds—Weather.—The water level is raised by W winds and lowered by E winds.

Ice.—The harbor is never closed by ice.

Tides—Currents.—The currents sometimes attain a velocity of 3 to 4 knots at the harbor entrance.

Depths—Limitations.—The main approach channel leads in a SE direction through extensive shoals to the harbor entrance and is dredged to a depth of 11m.

A minor channel, with a depth of 2.5m, leads NNW through the shoals to the harbor and is used by small craft with local knowledge.

The principal berths are situated on the N and E sides of the channel leading through the harbor. The port provides 2,220m of total quayage, with alongside depths of 5 to 11m. There are extensive facilities for bulk vessels. Vessels up to 190m in length, 30m beam, and 10.1m draft can be accommodated.

The Oresund Shipyard, at the SE end of the harbor, can handle vessels up to 30,000 dwt, 190m, in length, 30m beam, and 7.1m draft.

Landskrona

Aspect.—The main approach channel is indicated by a lighted range and marked by lighted buoys, which may best be seen on the chart.

The Citadel is situated close N of the harbor and is conspicuous from seaward. Graen, an old fort, stands on the S side of the harbor entrance and is prominent.

A very conspicuous water tower stands on the N side of the harbor entrance.

Twelve prominent wind turbines, 46m high, stand on the edge of Gipson, an island lying close S of Graen.

Landskrona—The Citadel

Landskrona Water Tower

Pilotage.—Pilots are provided by the station at Helsingborg (see paragraph 1.6). Pilots can be contacted on VHF channel 80 and board off Landskrona by advance arrangement. All ordering of pilots and traffic information is carried out by Malmo VTS (see paragraph 1.19).

For additional information concerning pilotage in The Sound and the initial ordering of pilots, see paragraph 1.1.

Regulations.—Vessels entering at night are limited to a maximum draft of 7m and a maximum length of 130m; vessels carrying ammonia are further limited to a maximum length of 110m.

Speed is restricted to a maximum of 10 knots in the approach channel and 5 knots in the harbor area for vessels with drafts over 2.5m.

Under normal circumstances, inbound vessels take precedence over outbound vessels.

Vessels exceeding 50 gt and vessels towing with an overall tow length of more than 50m must report their arrival on VHF 2 miles before entry.

Caution.—Anchorage is prohibited in the vicinity of a submarine pipeline which extends about 2.3 miles W from a position located close S of Graen.

1.13 Grasrannan Light (55°52'N., 12°48'E.), equipped with a racon, is shown from a prominent tower standing about 0.8 mile WSW of the harbor entrance at Landskrona.

Knolen (55°51'N., 12°44'E.), a detached shoal patch, lies about 2 miles SW of Grasrannan Light. It has a least depth of

9.6m and is marked by a lighted buoy, which is equipped with a racon.

Lundakrabukten (55°48'N., 12°53'E.) is a large bay entered between the S side of Landskrona and Barsebackshamn, about 7 miles SSE. The N part of this bay is encumbered by the shallow coastal bank, which extends up to about 3 miles seaward in places.

Barsebackshamn (55°45'N., 12°54'E.), a small harbor protected by breakwaters, is located at the S end of Lundakrabukten. It is used by fishing vessels and yachts. The harbor entrance faces SW and has a depth of 3m.

The shallow coastal bank extends up to about 0.5 mile seaward in the vicinity of Barsebacksham and its outer edge is marked by a lighted buoy.

Pinhatten Light (55°45'N., 12°52'E.), equipped with a racon, is shown from a conspicuous tower, 13m high and floodlit, standing on a rocky shoal, 1.3 miles W of Barsebacksham. A lighted buoy is moored 0.8 mile N of this light.

Pinhatten Light

A detached shoal patch, with a depth of 7.6m, lies about 0.4 mile SW of the light and is marked by a buoy.

Pilotage.—Pilots board vessels, with drafts over 11m, proceeding to Malmo about 1.5 miles NW of Pinhatten Light.

Anchorage.—Designated anchorage areas, centered 1.8 miles N and 3.5 miles NW of Pinhatten Light, lie in Lundakrabukten and may best be seen on the chart. These areas have depths of 15 to 27m, but the holding ground is poor.

Directions.—Two routes lead in a SE direction toward the Malmo approaches from a position located about 3.2 miles S of the S extremity of Ven. The route passing W of Pinhatten Light leads SSE for 12 miles and has a controlling depth of 8m.

The route passing E of Pinhatten Light leads SE for about 4 miles, using the white sector of this light, and then 2.5 miles ESE into the SW part of Lundakrabukten. From a position about 1 mile N of Pinhatten Light, the track leads SSE and S for 2 miles, passing between the light and the lighted buoy marking the coastal bank. This route has a controlling depth of 12.5m.

Caution.—Several submarine cables, which may best be seen on the chart, extend seaward from the vicinity of the S part of Lundakrabukten.

1.14 The Danish coast extending between Helsingor and Skovshoved, 16 miles S, has a number of wooded areas, with numerous houses and other buildings standing near the shore. Between Skovshoved and Vedbaek, about 5.5 miles N, the coast is so closely built over that structures and objects near the shore are difficult to identify from seaward.

Snekkersten (56°01'N., 12°36'E.), situated 2 miles SSW of Helsingor, is a small craft harbor formed by two breakwaters. The entrance faces ENE and has a depth of 2.8. The village is prominent from seaward.

Espergaerde (56°00'N., 12°34'E.), situated 1.4 miles SW of Snekkersten, is small craft harbor formed by two breakwaters. The entrance faces ENE and has a depth of 2.5m. A conspicuous church, with a square tower surmounted by a tall spire, stands in the N part of the village.

Tibberup Windmill stands about 0.7 mile SSW of Espergaerde and is conspicuous.

Tibberup Windmill

Humlebaek (55°58'N., 12°33'E.), situated 1.3 miles SSW of Espergaerde, is a small yacht harbor protected by two breakwaters. The entrance faces NE and has a depth of 2.5m. A prominent chapel, with a pointed tower, stands in the village.

Sletten (55°57'N., 12°32'E.), situated 1 mile SSW of Humlebaek, is a small craft harbor protected by two breakwaters. The entrance faces N and has a depth of 2.5m.

Niva Havn (55°56'N., 12°32'E.), a small craft harbor, lies 0.7 mile SSW of Sletten and is protected by two breakwaters. The entrance faces E and has a depth of 2.5.

Rungsted (55°53'N., 12°33'E.), situated 4 miles S of Sletten, is an extensive yacht harbor protected by two curved breakwaters. The entrance faces NW and has a depth of 3m.

Vedbaek (55°51'N., 12°35'E.), situated 2.2 miles SSE of Rungsted, is an extensive yacht harbor protected by two curving breakwaters. The entrance faces N and has a depth of 2.5m.

Eremitagen

Eremitagen, a large and conspicuous building, stands about 3.2 miles S of Vedbaek.

Tarbaek (55°47'N., 12°36'E.), a small harbor, lies 4 miles N of Kobenhavn and is protected by two breakwaters. It is used by fishing vessels and yachts. The entrance faces N and has a depth of 2m.

Skovshoved (55°46'N., 12°36'E.), situated 1.5 miles S of Tarbaek, is a small harbor formed by two breakwaters. The entrance faces E, has a depth of 4m, and is sheltered by a detached breakwater. The harbor is used by fishing vessels and yachts. Vessels up to 30m in length, 4.5m beam, and 3.5 draft can enter. A prominent church stands in the village.

Lous Flak (55°50'N., 12°38'E.), an area of shoals and flats, fronts the coast between Rungsted and Skovshoved. It extends up to 3.5 miles seaward in places and may best be seen on the chart. Lous Flak Lighted Buoy, equipped with a racon, is moored near the SE end of the area, about 4.8 miles NE of Skovshoved. This lighted buoy is replaced by a spar when ice forms.

Tarbaek Rev (55°47'N., 12°38'E.), a sand flat with rocky patches, extends up to about 2.3 miles seaward from the shore and is marked by a lighted buoy moored 2.5 miles E of Tarbaek.

Regulations.—The SOUNDREP Reporting Area is situated in this vicinity and its N limit extends along latitude 55°50.0'N. For further details of this ship reporting system, see paragraph 1.2.

1.15 Middelgrunds Fort (55°43'N., 12°40'E.) stands 3.2 miles SE of Skovshoved and is marked by lights at the NW and SE ends. It is situated at the N end of Middelgrund, an extensive shoal area, which extends up to about 3 miles S.

A foul ground area, which may best be seen on the chart, lies in the vicinity of this shoal area and is marked by buoys.

A prominent meteorological mast, 48m high, stands on the NW side of this foul area, 1.2 miles SSW of Middelgrunds Fort.

A wind farm area, in which 20 conspicuous wind generators stand, extends for about 2 miles along the E side of this foul area, about 0.4 mile E of the meteorological mast.

Middelgrunds Fort

Flakfort (55°42'N., 12°44'E.), marked by a light, is a prominent object situated 2.4 miles ESE of Middelgrunds Fort, on the NW part of Saltholm Flak.

Kongedybet (55°41'N., 12°39'E.) is the channel leading between the bank fronting the NE shore of Amager, on its W side, and Middelgrund shoal, on its E side. This channel provides access to Kobenhavn from the Baltic Sea and Drogden. It has a controlling depth of 11m lying between the coastal bank fronting the NE shore of Amager, on its W side, and Middelgrund shoal, on its E side. This channel provides access to Kobenhavn from the Baltic Sea and Drogden. It has a controlling depth of 11m.

Kobenhavn—Main Entrance

Hollaenderdybet (55°42'N., 12°41'E.) is the channel lying between Middelgrund, on the W side, and the NW part of Saltholm Flak, on the E side. This channel, which is marked by lighted buoys, leads into the N end of Drogden (see paragraph 1.29).

Caution.—During the months of September, October, and November, fishing nets are laid in an area located between Helsingor and Rungsted. They extend seaward to a depth of about 13m. Each net is marked by buoys, with red flags at the inner end and green flags at seaward end.

A prohibited area, which may best be seen on the chart, surrounds Middelgrunds Fort.

An area, within which anchoring and fishing are prohibited, lies centered about 0.4 mile SE of Middelgrunds Fort and may best be seen on the chart.

1.16 Tuborg (55°43'N., 12°35'E.) (World Port Index No. 29260), a small port, is situated close N of Kobenhaven and is the private property of Carlsberg Breweries.

During NW gales, the water level may be raised by about 1m; during SSW gales it may be lowered by the same amount.

The harbor consists of Yderbassin and Inderbassin, with a controlling depth of 3.7m in the entrance. Nordkanal, with depths of 1.5 to 3m; and Yderkanal, a marina, with a depth of 2.5m.

The port should be approached from the ESE. It is protected by two detached breakwaters, 140m and 55m long.

The entrance channel is marked by lighted buoys and buoys. For additional landmarks, see Kobenhaven (see paragraph 1.17).

Pilots may be obtained from Kobenhavn (paragraph 1.17).

Pilots board in Middelgrund in position 55°46.0'N, 12°42.0'E.

For further information, see paragraph 1.1.

Kobenhavn (55°42'N., 12°37'E.)

World Port Index No. 29230

1.17 Kobenhavn (Copenhagen) is the principal commercial port of Denmark and the main base of the Danish Navy. It is situated on the E coast of Sjaelland and includes most of the NW side of Amager, a flat island lying close offshore.

The port is composed of four main harbors. Nordhavnen (North Harbor), Inderhavnen (Inner Harbor), Sydhavnen (South Harbor), and Osthavnen (East Harbor).

Winds—Weather.—Gales from W to NW may raise the water level by up to 1.4m and gales from E to S may lower it by up to 1.1m.

Ice.—Only during occasional severe winters does ice hinder shipping in the harbor. At such times the port is usually kept open by icebreakers.

Tides—Currents.—The currents in i and the harbor usually follow the direction of the channel, but sometimes the N current sets rather strongly toward Stubben (55°44'N., 12°37'E.) and the S current sets toward Trekroner Fort (55°42'N., 12°37'E.). The maximum velocity of the currents in the harbor is 2 knots.

Depths—Limitations.—The main approach route leading into the port from N passes through Renden, the N part of Kongedybet. This route leads SW and lies between Stubben, a shoal extending about 1 mile NNE from the N end of the port, and Middelgrunds Fort. The route then continues SW through Kronlobet, a dredged entrance channel, which is 150m wide and has a depth of 10m.

Lynettelobet, situated 0.6 mile S of the main entrance, leads W from Kongedyb into the outer harbor. This channel, which is dredged to a depth of 7m, leads across a shallow sand flat and through a small entrance, 30m wide.

Vessels approaching the port from S are limited by the controlling depth of Drogden (see paragraph 1.29).

Skudelobet, a dredged channel, leads SSW to the northernmost group of basins in Nordhavnen. This channel passes between the coastal bank and the W side of Stubben. It has a controlling depth of 6.7m in the outer part and 6.3m in the inner part.

Kalvebodlobet, a narrow channel, leads NNE and NE from the N part of Koge Bugt (55°30'N., 12°30'E.) into the S part of the port. This channel has a controlling depth of 3.7m and a vertical clearance of 3m under the bridge in the S part of the port.

Nordhavnen (North Harbor) consists of Faergehavn Nord, Kalkbraenderihavnen, and Frihaven.

Faergehavn Nord, entered via Skudelobet, is a ferry harbor. It provides nine berths, with depths of 6.7m alongside.

Kalkbraenderihavnen, located 0.4 mile SSW of Faergehavn Nord, provides 11 berths, with depths of 6.3 to 6.7m alongside. An extensive marina lies on the NW side of this basin.

Frihaven, located close SW of the main entrance, consists of six basins. These basins provide 48 main berths, with depths of 8.1 to 10m alongside.

Yderhaven, the outer harbor, extends S between the main entrance of the port and Inderhavnen. A passenger ship terminal, 800m long, is situated at the W side and has depths of 9.1 to 10m alongside.

Inderhavnen (Inner Harbor) extends S between Yderhaven and Sydhavnen. The NE part is occupied by the naval dockyard. The SE part provides 19 berths, with depths of 6.2 to 8m alongside. Christianshavns Kanal, which lies parallel to Inderhavnen on the E side, provides 35 berths, with depths of 4 to 5m alongside. The W part of Inderhavnen provides 19 main berths, with depths of 6.2 to 8.1m alongside.

Knippelsbro, a bascule road bridge, spans Inderhavnen, about 2 miles SSW of the main entrance. This bridge has a navigable width of 34m when open and a vertical clearance of 5m when closed.

Kobenhavn—Osthavnen

Kobenhavn—Yderhavnen Passenger Terminal

Langebro, another bascule road bridge, spans Inderhavnen, about 0.4 mile SW of Knippelsbro. This bridge has a navigable width of 35m when open and a vertical clearance of 7m when closed.

Sydhavnen (South Harbor) provides 40 main berths, on the W side, with depths of 5 to 7m alongside, and 15 berths, on the E side, with depths of 6.2 to 7.7m alongside.

Osthavnen (East Harbor) is situated outside the main entrance on the NE coast of Amager. It consists of Amagervaeket and Provestenshavn.

Amagervaeket, the site of a power plant, provides ten berths, with depths of 6 to 12m alongside.

Provestenshavn, located S of Amagervaeket, is connected to the NE side of Amager by a bridge and consists of a single basin protected by breakwaters. The entrance, which is accessed directly from Kongedybet, faces ENE and is 140m wide. This basin provides 12 berths, with depths of 5 to 10.5m alongside. Provestens Oliepier, located 0.2 mile N of the entrance to the basin, is a T-shaped oil pier with a head, 50m long. Mooring dolphins situated at each side of the pier provide 310m of total berthage, with depths of 9.1 to 12m alongside.

Kobenhavn—Nordhavnen (Frihaven)

Trekroner Fort

Trekroner Fort Light

The port has facilities for general cargo, ro-ro, ferry, passenger, cruise, bulk, container, and tanker vessels. The maximum size of vessel handled is limited only by draft.

Little Mermaid Statue

Aspect.—The entrance channels are indicated by lighted ranges and marked by buoys, which may best be seen on the chart. A racon is situated at the light shown from the head of the S breakwater, at the main entrance. An outer approach lighted buoy is moored about 3 miles NE of the main entrance.

Trekroner, a prominent fort, is situated 0.2 mile S of the main entrance. A directional light is shown from a tower, 12m high, standing on the E side of the fort.

Three prominent chimneys stand in the vicinity of a power station at the NW side of Nordhavnen, 0.9 mile WNW of the main entrance. A gas works is situated 0.2 mile SW of the power station.

Jacobs Church, standing about 1.3 miles WSW of the main entrance, is prominent. It is situated between the gas works and an electricity plant.

A prominent silo is reported to stand at the N end of a pier in Frihavnen, 0.6 mile SW of Trekroner fort.

A conspicuous crane is situated on the E side of the entrance to Inderhavnen, about 1.2 miles S of the main entrance.

Frelsers Church, surmounted by a spire with an external spiral staircase, and Christians Church stand prominently in the city about 0.3 mile SE and 0.2 mile S, respectively, of the Knippelsbro Bridge.

Several prominent tank farms are situated in the vicinity of Provestenshavn. Two conspicuous towers, which mark sewers, stand on the W side of Provestenshavn.

A conspicuous silo, 58m high, stands on the NE part of Amagervaeket, about 1.3 miles SE of the main entrance.

Seven prominent wind turbines, 50m high, are reported to stand near the edge of the area of reclaimed land, about 0.9 mile SSE of the main entrance.

The Little Mermaid, a famous statue, stands on a rock near the shore of Langelinie, a shallow bay lying at the W side of the channel about 1 mile SSW of the main harbor entrance.

Pilotage.— Pilotage is compulsory for the following vessels:

1. Vessels over 80m loa passing through bridges to the S part of the port (including Knippelsbro Bridge and Langebro Bridge). Vessels need to use a tug when passing Knippelsbro and Langebro.
2. Vessels bound for or departing from Amagervaerket Havn and Provestens Havn, unless less than 90m loa and can

be steered by bow propellers and have sufficient engine power.

Pilots will board in the following positions:

a. 55°46.0'N 12°42.0'E (Middlegrund N).
b. 55°31.0'N 12°43.0'E (Drogden).
c. 56°07.5'N 12°30.0'E (Helsingor).

For further information, see pilotage in paragraph 1.1.

Regulations.—Foreign naval vessels are prohibited from anchoring in or passing through Kobenhavns Red, the port roadstead, without prior permission. The limits of the roadstead, which may best be seen on the chart, extend up to about 5 miles NE of the port and about 2 miles S and SW of Amager.

All vessels with an air draft of more than 35m, including towed vessels, must report to the control tower of Kobenhavn Airport, via Lyngby Radio, 30 minutes before passing through Drogden. For further information, see paragraph 1.29.

Unauthorized navigation is prohibited within ISPS Zones that have been established within the harbor.

Contact Information.—The Danish Coastal Authority is the designated authority for identification of these zones and may be contacted as follows:

1. Telephone: 45-99-636363
2. Facsimile: 45-99-636399
3. E-mail: kdi@kyst.dk
4. Web site: http://www.maritimsikring.dk

Kobenhavn may also be contacted by e-mail (cphport@cphport.dk).

Anchorage.—Three designated anchorage areas, which may best be seen on the chart, lie within Kobenhavns Red. Anchorage No. 1, centered 2.5 miles NE of Middelgrunds Fort, is for vessels with drafts of 6m or more; Anchorage No. 2, centered 2 miles NNW of Middelgrunds Fort, is for vessels with drafts of less than 6m; and Anchorage No. 3, centered 1 mile NNW of Middelgrunds Fort, is reserved for vessels proceeding to Kobenhavn. The bottom in these anchorage areas varies between fine sand, mud, and clay, with good holding ground.

Vessels are prohibited from anchoring in the approach channels, in the line of the directional lights and ranges, and in such a manner as to obstruct or interfere with the safe and clear passage of other vessels.

Caution.—Numerous submarine cables and pipelines are situated within the port and may best be seen on the chart.

Gas pipes are laid across in Yderhavnen, ESE from Langelinie Bugt (55°41.6'N., 12°36.0'E.) to a position close S of the shipyard at Refshaleoen. Outfall pipes are laid from the NE corner of Orientbassinet across Kronlobet and Middelpult to Middelgrundand leading to Askedepot.

It is reported that areas lying outside the main entrance are under extensive reclamation. Generally, the seaward limits of the works in progress are marked by buoys.

ISPS-code Security Zones, best seen on the chart, have been established in the harbor; unauthorized navigation is prohibited in these areas.

The Sound—South Part

1.18 The Swedish coast between Barsebackshamn (55°45'N., 12°54'E.) and Falsterbo (55°23'N., 12°50'E.) is closely built over. The land rises behind the shore and there are a few wooded areas.

Lommabukten (55°41'N., 13°00'E.) is entered between Barsebackshamn and Lernacken, 11 miles S.

Saltviken (55°45'N., 12°57'E.), a small bay, indents the N part of Lommabukten. A power station stands on the N side of the entrance to this bay and is fronted by Barsebacksvaerket, a small harbor. The harbor is protected by a breakwater and provides a ro-ro berth, 100m long, with a depth of 5.7m alongside. The entrance channel, which is 90m wide, leads NNW from the SW side of Saltviken and has a controlling depth of 6m. It is marked by buoys and indicated by a lighted range.

Vikhogs Hamn, a small and shallow harbor, is situated close SE of the S entrance point of Saltviken. It is formed by two breakwaters and used by fishing boats.

A church and a windmill, which are conspicuous from seaward, stand in the vicinity of Loddekopinge, about 3 miles NE of Vikhogs Hamn.

Lomma (55°41'N., 13°04'E.), a small craft harbor, is situated at the mouth of the Hojean River, 4.6 miles SE of Vikhogs Hamn and about 3 miles NNE of Malmo. It is formed by two breakwaters extending W from the mouth of the river. The entrance faces WSW and has a controlling depth of 2.5m. A quay, 270m long, is situated on the N side of the harbor has depths of 2.5 to 3.2m alongside. A church, with a prominent spire, and a conspicuous silo, with a chimney standing close S, are situated in the vicinity of Lomma.

Anchorage.—A designated anchorage area, with depths of 13.5 to 15m, lies centered 2.5 miles S of Barsebacksvaerket and may best be seen on the chart. This area is marked at its NE end by a buoy and at its NW end by a lighted buoy. Anchorage is available off Lomma, in depths of 7 to 10m, clay and fine sand, about 0.8 mile SW of the harbor entrance.

Caution.—A prohibited area, which may best be seen on the chart, fronts Barsebacksvaerket harbor.

An area, within which fishing is prohibited, fronts Lomma and may best be seen on the chart.

Malmo (55°37'N., 13°00'E.)

World Port Index No. 24210

1.19 The port of Malmo, situated on the S side of Lommabukten, consists of four main harbors. Oljeehamnen and Swede harbor, consisting of a single basin, is situated in the NE part of the port and is entered through a separate channel. Centralhamnen, consisting of four basins, is situated in the SW part of the port and is entered through the main entrance channel. Frihamnen, consisting of a single basin, is situated close E of Centralhamnen and is entered through the main entrance channel. Industrihamnen, consisting of two large basins and one small basin, is situated NE of Frihamnen and is entered through a separate passage leading E from the E side of the main entrance channel.

Winds—Weather.—Strong NW and N winds may cause the water level in the harbor to rise by up to 1.2m above the mean sea level. Strong SE and S winds, particularly in spring, may lower the water level by up to 1.3m.

Ice.—The harbor is seldom obstructed by ice, but even in normal winters there may be drift ice in the approach channels. Icebreakers are available when conditions necessitate their use.

Depths—Limitations.—The entrance channel leading SE to

Malmo

Oljehamnen and Swede Harbor, which is 3.2 miles long, is dredged to a depth of 13.5m and varies in width from 120 to 150m.

Oljehamnen, the oil terminal, consists of a single basin, with a depth of 13.5m. There are two tanker berths, each 70m long, with depths of 12m alongside. There are also five berths for coastal tankers with depths of 6m alongside. Tankers up to 260m in length and 11.4m draft can be accommodated.

Swede Harbor, a bulk terminal, is situated at the W side of Oljehamnen. The quay is 200m long and has a depth of 13.5m alongside. Vessels up to 60,000 dwt (100,000 dwt partly loaded), 260m in length, 40m beam, and 12.5m draft can be accommodated.

The main entrance channel leading SE into Centralhamnen is 120m wide and is dredged to a depth of 9.2m. Centralhamnen consists of Yttre Hamnen, Nyhamnen, Inrehamnen, and Sodra Varvsbassangen.

Yttre Hamnen, with a depth of 7.2m, has a quay belonging to the repair yard on its W side and a hovercraft terminal on its E side. Inrehamnen has a passenger terminal quay, 390m long, on its E side, with depths of 5 to 6m alongside.

Nyhamnen, the New Basin, has 4,230m of total quayage and provides ten berths with depths of 6 to 7.2m alongside. There are facilities for ferry, passenger, ro-ro, bulk, and general cargo vessels. Vessels up to 150m in length and 6.6m can be accommodated.

Sodra Varvsbassangen, with depths of 3 to 6.5m, is entered through a bascule bridge located at the SW end of Yttre Hamen. This basin provides eight berths for bulk grain vessels on its E and S sides.

Pilot Contact Details

Port	Telephone	VHF	Call sign
Hoganas	46-771-630680	VHF channel 80	Hoganas Pilot
Helsingborg	46-771-630680	VHF channel 80	Helsingborg Pilot
Landskrona	46-771-630680	VHF channel 80	Landskrona Pilot
Barseback	46-771-630680	VHF channel 20	Barseback Pilot
Malmo	46-771-630680	VHF channel 20	Malmo Pilot
Trelleborg	46-771-630680	VHF channel 20	Trelleborg Pilot
Ystad	46-771-630680	VHF channel 20	Ystad Pilot
Simrishamn	46-771-630690	VHF channel 18	Simrishamn Pilot
Ahus	46-771-630690	VHF channel 18	Ahus Pilot
Solvesborg	46-771-630690	VHF channel 18	Solvesborg Pilot
Elleholm	46-771-630690	VHF channel 18	Elleholm Pilot
Karlshamn	46-771-630690	VHF channel 18	Karlshamn Pilot
Ronneby	46-771-630690	VHF channel 18	Ronneby Pilot
Karlskrona	46-771-630690	VHF channel 18	Karlskrona Pilot
Bergkvara	46-771-630690	VHF channel 13	Bergkvara Pilot
Degerhamn	46-771-630690	VHF channel 13	Degerhamn Pilot
Kalmar	46-771-630690	VHF channel 13	Kalmar Pilot
Jatterson	46-771-630690	VHF channel 13	Jatterson Pilot
Oskarshamn	46-771-630690	VHF channel 13	Oskarshamn Pilot
Simpevarp	46-771-630690	VHF channel 13	Simpevarp Pilot
Flivik	46-771-630690	VHF channel 13	Flivik Pilot
Vastervik	46-771-630690	VHF channel 13	Vastervik Pilot

Industrihamnen, consisting of three basins, is entered through a side channel, 80m wide, with a depth of 9m. The harbor has 3,025m of total quayage and provides 38 berths, with depths of 6 to 9m alongside.

There are facilities for ro-ro, bulk, and general cargo vessels. Vessels up to 170m in length and 8.4m draft can be accommodated.

Frihamnen, the Freeport Harbor, has 1,500m of total quayage and provides 14 berths, with depths up to 9.2m alongside. There are facilities for container and ro-ro vessels. Vessels up to 225m in length and 8.6m draft can be accommodated.

A large shipyard, with two drydocks, is situated in the SW part of the port. The largest drydock, which is used for shipbuilding, is 405m long and 75m wide.

Aspect.—Malmo Vagbrytarbank Light (55°37.5'N., 12°58.6'E.) is shown from a prominent tower, 12m high, standing on the SW side of the main entrance channel.

The entrance channels are indicated by lighted ranges and marked by lighted buoys, which may best be seen on the chart. An outer fairway lighted buoy is moored about 1.8 miles NW of the entrance to Centralhamnen.

Saint Petri Church, with a high spire, and Malmo Citadel stand about 0.3 mile SE and 0.5 mile SW, respectively, of Inrehamnen basin and are conspicuous from seaward.

Turning Torso, a conspicuous building, 193m high, stands in position 55°36.8'N, 12°58.7'E. A wind turbine stands in position 55°37.9'N, 13°00.7'E.

Pilotage.—Pilotage is compulsory for the following vessels:

1. All Category 1 vessels.
2. Category 2 vessels, 80m in length or 15m or more in beam.
3. Category 3 vessels, 90m in length or 16m or more in beam.

In certain pilot channels to and from Barsebacksverket compulsory pilotage applies to the following types of vessels:

1. All Category 1 vessels.
2. Category 2 and 3 vessels, 80m in length, 15m or more in width, and a draft of 5m or more.

See paragraph 1.1 for definitions of vessel categories.

Generally, initial ordering of pilots should be carried out via the e-Services section on the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration web site (http://www.sjofartsverket.se), in conjunction with the reporting on the Vessel Reporting System (FRS) section (see paragraph 1.1).

A preliminary request for pilotage should be made at least 24 hours in advance. A definitive pilotage request must be made via the Pilot Request System at least 5 hours in advance.

In exceptional cases, the pilot may be ordered via e-mail, telephone, facsimile, or VHF (see the table titled **Pilot Contact Details**).

Pilots will board in the following positions:

1. Ystad redd (55°23.3'N., 13°48.0'E.).
2. Trelleborg redd (55°20.0'N., 13°08.0'E.).
3. For vessels northbound for Flintrannen (55°28.2'N., 12°43'E.).
4. Close to Malo Fairway Lighted Buoy (55°38.5'N., 12°56.8'E.).
5. In position 55°42.6'N, 12°53.7'E.
6. For all vessels with draft over 9m, bound for Malmo, in position 55°46.6'N. 12°51.7'E.

Malmo—The Turning Torso

The Vessel Traffic Service (VTS) at Malmo coordinates and administers all pilotage services within the Oresund Maritime Area. The VTS center at Malmo may be contacted by e-mail (vtsmalmo@sjofartsverket.se).

The Pilot Ordering Center can be contacted, as follows:

1. Telephone: 46-771-630680
2. Facsimile: 46-40-301868
3. E-mail: southcoastpilot@sjofartsverket.se

The Malmo Pilot Area can be contacted, as follows:

1. Call sign: Lotsarna Pilot
   Malmo Pilot
2. VHF: VHF channels 13, 18, 20, 60, and 80
3. Telephone: 46-40-204300
4. Facsimile: 46-40-204399

Limhamn (55°35'N., 12°56'E.)

World Port Index No. 24220

1.20 The port of Limhamn lies about 2 miles SW of Malmo and serves a number of nearby industrial establishments. It is under the jurisdiction of Malmo.

Winds—Weather.—Winds from SW through W to N may raise the water level by up to 1m and winds from N through E to SW may lower the water level by the same amount.

Ice.—Ice obstructs the harbor only in very severe winters.

Tides—Currents.—The currents set across the entrance channels and, at times, attain velocities of 3 to 4 knots.

Depths—Limitations.—The port has two separate commercial harbors. Centralhamnen, situated in the N part of the port, consists of a single large basin. The entrance channel leads SSW and is dredged to a depth of 8.6m. The harbor provides 12 berths and has depths of 7.7 to 8.4m alongside. Cargo vessels up to 170m in length and 7.8m draft can be accommodated.

Sodrahamnen, situated in the S part of the port, is used by ro-ro ferries and fishing vessels. The entrance channel leads E and is dredged to a depth of 5m. Vessels up to 4.5m draft can be accommodated.

Marinas, with extensive facilities for small craft and yachts, are situated close SW of Sodrahamnen and close NNE Centralhamnen.

Aspect.—The entrance channels are indicated by lighted ranges and marked by buoys, which may best be seen on the chart.

Numerous tall chimneys, including one 120m high, stand on the E side of Centralhamnen. A conspicuous church, with a tall red square tower and a dark gray spire, stands on high ground on the S side of the town, about 1 mile SE of Centralhamnen.

A prominent aeronautical beacon tower stands about 2 miles ESE of Centralhamnen. A useful mark is the Linhamn Norra Ligh in position 55°35.9'N, 12°55.8'E.

Pilotage.—See Pilotage for Malmo (paragraph 1.19).

Regulations.—A speed limit of 7 knots applies in the Centralhamnen.

Anchorage.—Vessels can anchor about 0.8 mile N of the submerged breakwater, which lies close W of the entrance to Centralhamnen, in a depth of 13m.

Caution.—Submarine breakwaters, 0.4 miles long, are located about 0.3 mile NW and 0.9 mile NE of the entrance to Centralhamnen.

1.21 Oresund.—The shallowest section of Oresund (The Sound) lies in the waters located between Malmo and the Danish island of Amager. Vessels are directed to transit this area through Flintrannan see paragraph 1.22, on the Swedish side, or through Drogden (see paragraph 1.29), on the Danish side.

The **Oresund Link** (55°35'N., 12°46'N.), a fixed railroad and motor traffic link, extends across The Sound from the vicinity of Kobenhavn Airport (55°37'N., 12°40'E.) to the vicinity of Lernachen (55°34'N., 12°55'E.), on the Swedish coast.

The W section of the Oresund Link extending across Drogden to the N end of Peberholm (see paragraph 1.27), the artificial island lying SW of Saltholm, consists of a submerged tunnel.

The E section of the Oresund Link extending across Flintrannan from the S end of Peberholm to the Swedish coast consists of a bridge. The elevated part of the bridge crossing the channel has a free span, 490m wide, with a vertical clearance of 55m.

The Oresund Link (Flintrannan) from S

1.22 Flintrannan (55°37'N., 12°53'E.) is the passage lying between the Swedish coast in the vicinity of Malmo, on the E side, and the shoal flat fronting Saltholm (55°38'N., 12°46'E.) on the W side. It is encumbered with numerous dangers, which may best be seen on the chart.

Depths—Limitations.—The main fairway through Flintrannan was dredged to a depth of 8.2m. Vessels up to 7m draft can transit this passage, but are recommended to proceed with re-

The Oresund Link (Flintrannan) from N

duced speed due to shoaling. The bridge span crossing the channel has a vertical clearance of 55m.

Trindelranna, a narrow channel, leads SW for 5 miles from close SW of Malmo Vagbrytarbank Light (55°37.5'N., 12°58.6'E.). It then leads about 1 mile SSW, passing under a span of the Oresund Link bridge, to a position close W of the lighted buoy marking the W extremity of the coastal bank in the vicinity of Lernacken (55°34'N., 12°54'E.). This channel, which has a least depth of 5.6m, can be used by vessels up to 4.5m draft. Local knowledge is required and transit during the herring fishing season is only allowed during daylight. The bridge span is 100m wide, with a vertical clearance of 40m.

Malmo VTS broadcasts details of current strength and water levels in the vicinity of Flintrannan.

Aspect.—Flintrannan NE Light (55°36.8'N., 12°53.4'E.), equipped with a racon, is shown from a prominent floodlit tower, 12m high, standing at the NE side of the N entrance to the main channel, about 1.8 miles NW of Limhamn.

Flintrannan SW Light (55°31.1'N., 12°44.7'E.), equipped with a racon, is shown from a prominent floodlit tower, 11m high, standing at the SW side of the S entrance to the main channel, about 1.6 miles SE of Drogden Light.

The main dredged fairway is marked by lighted buoys and lighted beacons, which may best be seen on the chart.

The main fairway routes under the bridge are indicated by lighted ranges, which are equipped with racons.

Sjollen, an extensive shoal, lies centered about 2.5 miles WNW of Malmo Vagbrytarbank Light (55°37.5'N., 12°58.6'E.) and 1 mile NNE of the N entrance to the dredged channel. It has depths of 2.5 to 6m and is marked by lighted buoys.

Lillgrund, a large shoal, lies centered about 1 mile ESE of Flintrannan SW Light and is marked by buoys. This shoal has depths of 1.7 to 5.7m and its N edge is situated adjacent to the S side of the dredged channel (see Caution).

Pilotage.—Pilotage is provided by Malmo. Pilotage must be requested through Malmo VTS (see paragraph 1.19).

The Oresund Link—Drogden

Vessels intending to transit Flintrannan should send a request for pilotage, along with their draft and their ETA, 5 hours in advance. Pilots can be contacted on VHF channels 20 and 60.

Pilots board in the vicinity of Malmo Redd Lighted Buoy (55°39'N., 12°57'E.) or about 1 mile NNE of Lighted Buoy M41 (55°25'N., 12°40'E.).

Vessel Traffic Service.—Details of the conditions in Flintrannen, comprising tidal stream direction, strength, and

water level are provided by SOUND VTS.

Contact Information.—The VTS center at Malmo can be contacted by telephone (46-771-630600).

Caution.—Depths in the main fairway leading through Flintrannan are subject to silting. A minimum depth of 8.4m is maintained by continuous surveying and dredging. Vessels with a draft close to the maximum of 7m are recommended to proceed through the channel at reduced speed.

An extensive wind generator farm is situated on the E part of Lillgrund. It lies within a prohibited area, marked by buoys, and may best be seen on the chart. A submarine cable leads ENE from a platform in the farm to close N of Klagshamn.

Several submarine cables, which may best be seen on the chart, extend across Flintrannan between 1 mile and 2.5 miles SW of the Oresund Link bridge.

Herring fishing, with drift nets, is carried out within Flintrannan. Generally, the nets are laid between dusk and midnight. Vessels are cautioned to stay in the recommended channels and tracks, especially from June to November.

A submarine gas pipeline, which may best be seen on the chart, extends W and NW from the vicinity of Klagshamn (55°31'N., 12°54'E.) to the SE coast of Amager. It crosses the dredged channel about 0.5 mile NNE of Flintrannan SW Light.

1.23 Between Limhamn and Hollviken, 8 miles S, the coast is low, but rises inland. The area near the coast is considerably built over, but there are occasional wooded patches.

Hollviken Light (55°31'N., 12°51'E.) is shown from a prominent floodlit tower, 10m high, standing about 3.5 miles ESE of Flintrannan SW Light.

Bredgrund (55°31'N., 12°51'E.), an extensive shoal, lies centered about 2.6 miles SW of Hollviken Light and may best be seen on the chart. It is marked on the W side by a lighted buoy and on the E side by several buoys. A prominent framework beacon, 4m high, stands on the shoal, 2.3 miles SW of Hollviken Light. This shoal has depths of less than 3m and consists of sand, rocks, and stones.

Viragogrund, a detached shoal patch, lies off the SW side of Bredgrund, about 4.5 miles SW of Hollviken Light. It has a depth of 5.6m and is marked by a buoy.

Klagshamn (55°31'N., 12°54'E.) (World Port Index No. 24230), a small harbor, is situated 4 miles S of Linhamn and protected by a two breakwaters. It is used by fishing vessels, small craft, and yachts. A dredged entrance channel, 24m wide, leads ENE from a position about 0.3 mile N of Hollviken Light. It is marked by buoys and has a controlling depth of 4m.

Caution.—A submarine outfall pipeline extends about 2 miles WNW from a point on the shore close N of the harbor and its seaward end is marked by a buoy.

The landing place for a submarine gas pipeline, which may best be seen on the chart, is located in the S part of the harbor.

1.24 The **Skanor Peninsula** (55°24'N., 12°53'E.) extends about 5 miles W from the coast, 7 miles S of Klagshamn. Falsterbokanalen, an excavated canal, cuts through the narrow neck of land at the E end of this peninsula. The W side of the peninsula is low and fronted by several islets.

Knosen (55°26'N., 12°52'E.), situated 4.5 miles S of Hollviken Light, is the NW extremity of the peninsula. It is fronted by a shoal flat, with depths of less than 2m, which extends up to about 1 mile seaward in places.

Skanor (55°25'N., 12°50'E.), a popular summer resort, is situated on the W side of the peninsula, 1.5 miles SSW of Knosen. It is fronted by a small harbor, which is protected by two breakwaters. The entrance, which faces NE, is 50m wide and has a controlling depth of 4m. The harbor is used by small craft and pleasure boats.

A conspicuous white church, with a dark red roof and a low tower, stands in Skanor and a prominent water tower is situated 1 mile S of it. Another conspicuous white church, with a high tower, stands in Falsterbo, a resort located about 1.7 miles S of Skanor.

Naset (55°27'N., 12°57'E.), a promontory, extends about 1.5 miles NNW from the N side of the root of the Skanor Peninsula. Kuddarna, a group of islets, lies centered about 1.2 miles NNW of the N end of this promontory. A conspicuous beacon, 11m high, stands on the southernmost islet.

Between Klagshamn and Naset, about 4 miles SSE, the shallow coastal bank extends up to 1.2 miles offshore.

Hollviken (55°26'N., 12°55'E.), a shallow bay, lies on the N side of the Skanor Peninsula and is entered between Knosen and the N end of Naset. This bay provides good anchorage for small vessels, sheltered in all but N winds, in depths of 3 to 5m, sand and clay.

Falsterbo Udde Light (55°23'N., 12°49'E.), marking the S end of the E side of The Sound, is shown from a prominent round tower with a square base, 25m high, standing near the SW extremity of the Skanor Peninsula. A conspicuous radar mast is situated about 1.6 miles ENE of this light.

The waters lying S and E of Falsterbo Udde Light are described beginning in paragraph 4.26.

Falsterborev Light (55°19'N., 12°38'E.) is shown from a tower standing 7 miles SW of Falsterbo Udde Light and is described in paragraph 4.26.

Caution.—An unsurveyed area, which may best be seen on the chart, lies centered 1.4 miles N of Knosen.

A nature reserve area, which may best be seen on the chart, lies centered 0.8 miles WSW of Knosen. Vessels are prohibited from entering this area between April and July.

Sailing races are frequently held within 2 miles of Skanor.

1.25 **Falsterbo Kanal** (55°24'N., 12°57'E.) is cut across Falsterbonaset, the inner part of the Skanor Peninsula. It connects the S part of Hollviken, in The Sound, with Kampingebukten, in the W part of the Baltic Sea. This route shortens the passage between Flintrannan and the Baltic Sea by 16 miles.

A dredged approach channel, about 6 miles long, leads SSE from the vicinity of Hollviken Light to the N entrance of the canal. It is marked by buoys and has a least depth of 5.6m.

The N entrance of the canal is protected by two breakwaters, which extend about 0.3 mile from the shore. The canal control tower can be contacted on VHF channel 73.

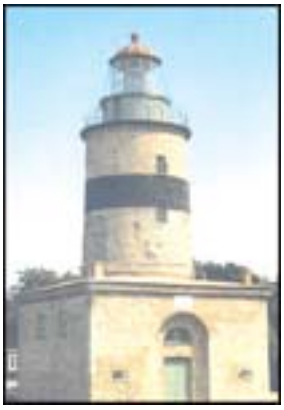
The canal can be transited by vessels up to 15,000 dwt, 20m beam, and 4m draft.

For further details of the Falsterbo Kanal, see paragraph 4.28.

Directions.—The main traffic route leads S from the S entrances of Drogden and Flintrannan to the vicinity of Falsterborev Light (55°19'N., 12°38'E.).

An IMO-adopted Traffic Separation Scheme (TSS) lies near

Nordre Rose Light



Falsterbo Udde Light

Falsterborev Light, in the S approach to The Sound, and may best be seen on the chart. A circular route is centered on the light and traffic lanes extend N, S, and ESE from its vicinity. An inshore traffic zone lies E of the main traffic lanes.

Lighted Buoy M41 is moored about 5 miles WNW of Falsterbo Udde Light and marks the N end of the TSS.

The main route into the Baltic Sea follows the ESE traffic lane and passes S of the entrance to Trelleborg (55°22'N., 13°09'E.).

Caution.—Numerous wrecks, which may best be seen on the chart, lie in the vicinity of the TSS and the S approach to The Sound.

Kobenhavn to Mon Light

1.26 Amager (55°35'N., 12°35'E.), a flat island, lies close S of Kobenhavn, on the Danish side of The Sound. This island is considerably built over and Kobenhavn Airport is situated at its E side. Kongelund, a wooded area, is located at the S end of the island.

Sunby Sejlforenings Havn and Kastrup Strandpark are two pleasure boat harbors situated about 0.7 mile and 2 miles, respectively, S of Provestenshavn, the oil terminal at Kobenhavn.

Kastrup Scanport Havn (55°38'N., 12°39'E.) (World Port Index No. 29250), situated about 2.5 miles SSE of Provestenshavn, is a small privately owned harbor. The approach channel, which is 40m wide and marked by buoys, leads WSW and is dredged to a depth of 5m. The harbor consists of a single basin with depths of 3 to 5m. The entrance is 40m wide and faces E. Vessels up to 75m in length can be handled.

Two small pleasure boat harbors are situated close S of Kastrup Scanport Havn.

Nordre Rose Light (55°38'N., 12°41'E.), equipped with a racon, is shown from a prominent tower, 17m high, situated near the edge of the coastal bank, about 1 mile E of Kastrup Scanport Havn. It is reported that a lattice radar mast stands on the foundation close to the light.

Kobenhavn Airport occupies most of the coastal land extending about 2 miles S of Kastrup Scanport Havn.

1.27 Dragor Havn (55°36'N., 12°41'E.), situated 3 miles SSE of Kastrup Scanport Havn, is a small harbor protected by two breakwaters. It has depths of 2 to 3.5m and is used by ferries and fishing vessels. The entrance channel has a controlling depth of 3.5m. Ferries have the right of way over all other vessels within the entrance channel. Vessels up to 45m in length, 10m beam, and 3m draft can be accommodated.

Dragor Ferry Harbor (55°35'N., 12°41'E.), situated close S of Dragor Havn, has an entrance, 60m wide, facing NE. The entrance channel has a controlling depth of 4.8m. Ferry vessels up to 80m in length, 20m beam, and 4.5m draft can be accommodated.

A water tower and a church, both conspicuous, stand in the town of Dragor. Dragor Fort Light is shown from a structure, 3m high, standing about 0.3 mile S of Dragor Havn.

The coastal bank fronting the SE side of Amager extends up to about 2 miles seaward. It has depths of less than 3m and may best be seen on the chart. Dragor Sandrev, a shoal with a depth of 2m, lies near the outer edge of this bank, about 2 miles S of Dragor Ferry Harbor.

Caution.—In the vicinity of Kobenhavn Airport, low flying aircraft can cause turbulence and wind eddies over the water surface for a distance of up to 3 miles from the airport. The wind velocity within these eddies can form violent waterspouts and constitute an extreme danger to small craft.

A prohibited area, which may best be seen on the chart, fronts the shore in the vicinity of Kobenhavn Airport. Vessels are prohibited from stopping within this area.

A restricted area, within which fishing is prohibited, lies close W of Nordre Rose Light and may best be seen on the chart. In addition, in order to reduce the amount of danger to aircraft caused by seabirds massing in the vicinity, fishing is prohibited within 150m of the coast between Nordre Rose Light and Redningshavn, about 1.5 miles S.

A submarine pipeline, which may best be seen on the chart, extends seaward from the SE side of Amager (see paragraph 1.26).

It is reported that mooring buoys may be situated from January to November in the vicinity of Dragor Sandrev (55°34'N., 12°40'E.).

1.28 Saltholm (55°39'N., 12°46'E.) lies with its N extremi-

ty located 3.5 miles NE of Nordre Rose Light. This island is low, flat, and devoid of woods. It has no conspicuous landmarks except for a few isolated houses. The island is surrounded by an extensive sandy bank, which nearly dries within about 0.5 mile of the shore. Numerous islets and above-water rocks lie on this bank and may best be seen on the chart.

Saltholm Flak (55°41'N., 12°45'E.), an extensive flat with depths of less than 5m, extends about 3 miles N from the N end of Saltholm and may best be seen on the chart.

Flakfort (55°42'N., 12°44'E.), previously described in paragraph 1.15, lies on the NW part of Saltholm Flak.

Peberholm (55°36'N., 12°45'E.), an artificial island, lies 0.5 mile SW of the SW side of Saltholm. This island is part of the Oresund Link (see paragraph 1.21). It forms the E end of the tunnel passing under Drogden and the W end of the bridge spanning Flintrannan.

Drogden Light (55°32'N., 12°43'E.), equipped with a racon, is shown from a prominent square tower, 20m high, standing about 3.4 miles SSE of Dragor Havn and 0.8 mile S of the S end of Drogden.

Drogden Light

Caution.—A protected area, within which navigation is prohibited, surrounds Saltholm and may best be seen on the chart. The outer limits of this area almost coincide with the 5m depth contour.

Several nature reserve areas lie off the S end of Saltholm and may best be seen on the chart. Entry into these restricted areas is subject to numerous regulations.

A danger area, which may best be seen on the chart, lies centered about 0.5 mile W of the N end of Peberholm. Anchoring, fishing, or underwater activities should be avoided in this area due to the possible existence of bottom mines.

A local magnetic anomaly exists in the vicinity of a position about 1.5 miles SW of Drogden Light.

1.29 Drogden (55°36'N., 12°42'E.), the fairway extending S from the S end of Hollaenderdybet (see paragraph 1.15) lies between the coastal banks fronting Amager and Saltholm. The S part of the channel, lying S of Dragor Fort Light, is known as Dragor Bro (Taerskelen).

Tides—Currents.—Because the current in the S part of Drogden does not follow the direction of the dredged channel, vessels should exercise great care to prevent being set onto the channel buoys or Drogden Light (55°32'N., 12°43'E.). The current flowing S, the greater part of which comes through Flintrannan, sets in a WSW direction. The current flowing N, which is deflected by the bank fronting the SE side of Amager, sets in a NE direction. The construction of the Oresund Link may have affected the direction and strength of these currents.

Depths—Limitations.—The fairway through Drogden is dredged to a depth of 8m. Vessels up to 7.7m draft can transit this passage.

Aspect.—The fairway within Hollaenderdybet is indicated by a directional sector of Nordre Rose Light. The dredged channel in Drogden is marked by lighted buoys.

Pilotage.—Pilots are provided by Kobenhavn. Pilots may be contacted by VHF and board about 1.5 miles N of Middelgrunds Fort or 1.3 miles S of Drogden Light.

For further information, see pilotage in paragraph 1.1.

Regulations.—Vessels with drafts exceeding the officially announced limitations may not pass through the channel.

Vessels using the channel must proceed at moderate speed.

Vessels are prohibited from anchoring in the dredged channel or within 50m of either side of it.

Vessels which, on account of their size, are obliged to keep in the deeper part of the channel may display the appropriate signal or lights for a constrained vessel. Such vessels may also make a sound signal consisting of one long blast followed by two short blasts. Other vessels must give way to those vessels displaying the above signal or lights.

All vessels with an air draft of more than 35m, including towed vessels, must report to the control tower of Kobenhavn Airport, via Lyngby Radio, 30 minutes before passing through Drogden dredged channel. The passage of such vessels may endanger low flying aircraft in the vicinity. The transmission of the report is free of charge (collect call). The message should include the following information:

1. Vessel's name.
2. Call sign.
3. Course.
4. Expected time (UTC) of passing Norde Rose Light (55°38'N., 12°41'E.).
5. Expected time (UTC) of passing No. 9 Lighted Buoy (55°36'N., 12°42'E.).
6. Maximum air draft of vessel or floating equipment.

Caution.—Numerous ferries, including high speed craft, may be encountered in the vicinity of Drogden.

Several submarine cables, which may best be seen on the chart, extend across Drogden from the vicinity of Dragor Havn.

1.30 Koge Bugt (55°30'N., 12°26'E.) is entered between Aflandshage, the S extremity of Amager and Koge Sonakke, a low point located about 12 miles SW. Koge stands at the head of this large bay and the area N of this town is devoid of woods. The coasts of Amager and Sjaelland bordering the bay are generally low.

A number of small harbors are situated along the shore of Koge Bugt and are used by fishing boats and pleasure craft.

Mosede Klint, a low, yellow cliff, stands about 10.5 miles W of Aflandshage and some comparatively high land backs the coast about midway between Koge and Koge Sonakke. Wood-

ed areas are situated 3 miles SSE and 7 miles SE of Koge.

Caution.—Fishing nets are laid in Koge Bugt, particularly in the N part, and may extend up to 4 miles offshore. Net fishing on the bottom is strictly regulated and may only take place in designated areas, which are marked by buoys.

A danger area, which may best be seen on the chart, lies centered about 3 miles SSW of Aflandshage. Anchoring, fishing, or underwater activities should be avoided in this area due to the possible existence of bottom mines.

A restricted area, which may best be seen on the chart, lies in the vicinity of a wreck, about 4.8 miles SW of Aflandshage. Anchoring, fishing, and underwater activities are prohibited within this area.

1.31 Avedorevaerkets Havn (55°36'N., 12°29'E.), a small privately-owned harbor, is situated in the N part of Koge Bugt, close W of the S entrance to Kalvebodlobet, the channel leading NE into the S part of Kobenhavn.

Depths—Limitations.—A dredged approach channel, 55m wide, leads NNW to the harbor and has a controlling depth of 7.3m. The harbor consists of a small basin and a main quay. It is protected by a curving breakwater on the W side and a detached breakwater on the E side. The quay provides a berth, 280m long, with a depth of 7.5m alongside. The harbor has facilities for handling oil and coal. Vessels up to 123m in length, 21m beam, and 6.5m draft can be accommodated.

Aspect.—The approach channel is marked by buoys and indicated by directional sector lights. A conspicuous chimney, 149m high, stands near a silo on the W side of the harbor.

Pilotage.—Pilotage is compulsory. Pilots are provided by Kobenhavn. Pilots board, as follows:;

1. Vessels approaching from N—position 55°31.0'N. 12°43.0'E. (Drogden Light).
2. Vessels approaching from S—position 55°26.5'N, 12°33.0'E. (Koge).

For further information, see paragraph 1.1.

Regulations.—Permission to enter the approach channel is required.

Caution.—A submarine cable, which may best be seen on the chart, extends S from a point on the shore located about 1.5 miles W of the harbor.

1.32 Avedore Rastofhavn (55°37'N., 12°30'E.), situated 0.9 mile NE of Avedorevaekets Havn, is a small privately-owned harbor, which can accommodate vessels up to 100m in length, 12m beam, and 4m draft.

Koge (55°27'N., 12°12'E.) (World Port Index No. 29220) is situated at the mouth of the Koge River, about 13 miles SW of Avedorevaekets Havn. The port consists of an outer harbor and two main basins, which are protected by two long breakwaters.

Ice.—The port is seldom closed by ice.

Tides—Currents.—Winds from NE to SE can raise the water level by up to 1.6m and winds from W can lower it by as much as 0.9m.

Depths—Limitations.—The entrance between the breakwater heads is 60m wide. The harbor provides about 3,000m of main quayage with depths of 4 to 7m alongside. There are facilities for general cargo, bulk, timber, ro-ro, tanker, and LPG vessels. Vessels up to 160m in length, 24m beam, and 6.7m draft can be accommodated.

Aspect.—The entrance channel is indicated by a directional sector light. A prominent church stands in the town.

Valloby Church, with a red tower, is situated about 3.5 miles SSE of the harbor and is conspicuous.

Vallo Castle, prominent from seaward, has a tall spire and stands 0.8 mile W of Valloby Church.

Koge

Koge—Valloby Church

Koge—Vallo Castle

Pilotage.—Pilots are provided by Kobenhavn. Pilotage is compulsory for all tankers and all other vessels over 450 gt or 1,000 dwt. Pilots can be contacted by VHF and board vessels from the N about 1 mile S of Drogden Light and vessels from the S about 9 miles SW of Drogden Light (Koge W).

Pilots board in the following positions:

1. 55°31.0'N 12°43.0'E (Drogden Light)
2. 55°26.5'N 12°33.0'E (Koge)

For further information, see pilotage in paragraph 1.31.

Vessels must report to the port 1 hour prior to arrival and announce their presence on VHF channel 16 to other vessels 30 minutes before arrival.

Contact information.—The port can be contacted, as follows:

1. VHF: VKF channels 12 and 16
2. Telephone: 45-56-646-260
3. Facsimile: 45-56-637-400
4. E-mail: info@koegehavn.dk
5. Website: http://www.koegehavn.dk

Anchorage.—Anchorage, with good holding ground, is available 1 to 2 miles E of the harbor.

Caution.—A submarine outfall pipeline, which may best be seen on the chart, extends about 2.7 miles ESE and ENE from a point on the shore located 0.5 mile N of the harbor.

1.33 From Koge Sonakke (55°24'N., 12°22'E.), the S entrance point of Koge Bugt, to Stevns Light, at the W side of the S limit of The Sound, the coast trends first in a general SE direction for about 5 miles to Mandehoved and then S for about 2.5 miles.

Precpitous chalk cliffs commence about midway between Koge Sonakke and Mandehoved and extend along the coast as far as Rodvig, 3.5 miles SW of Stevns Light. This cliffy stretch of coast, which is named Stevns Klint, attains a height of 41m about 1 mile NNW of the light. Kustirenden, a deep cleft, is situated about 1.2 miles NNW of Mandehoved and is conspicuous from seaward.

Stevns Light

Stevns Light (Stevns Klint Light) (55°17'N., 12°27'E.) is shown from a prominent tower, 26m high.

Stevns Pier (55°19'N., 12°28'E.), situated 2 miles N of Stevns Light, is a privately-owned terminal used by vessels loading chalk. The pier extends about 500m from shore and has a head, 205m long, with a depth of 8m alongside. Vessels up to 150m in length and 7.5m draft can be accommodated during calm weather.

Pilotage is compulsory for vessels over 5,000 dwt. Pilots may be contacted by VHF and board about 1.2 miles S or 9 miles SW of Drogden Light. For further information, see pilotage in paragraph 1.1.

Vessels should send an ETA via their agent 24 hours and 12 hours in advance. They should then contact the terminal on VHF channel 16 at least 2 hours before arrival.

1.34 Fakse Bugt (55°08'N., 12°19'E.) is entered between Stevns Light and Hellehavns Nakke, the NE extremity of Mon, about 17 miles S. The W part of this bay is mostly occupied by an extensive flat, with depths of less than 5m, which may best be seen on the chart. Between Stevns Light and Rodvig, 3.5 miles SW, the steep chalk cliffs of Stevns Klint decrease in height. From Rodvig to Fakse Havn, 7.5 miles WSW, the coast is low.

The old and new churches standing at Hojerup, about 0.7 mile SSW of Stevns Light, are conspicuous from seaward.

Rodvig (55°15'N., 12°23'E.), a small harbor, is protected by two moles extending from the shore. It has an entrance, 70m wide, which faces SW and has a controlling depth of 3.7m. The harbor is used by fishing vessels and yachts. Vessels up to 50m in length, 10m beam, and 3.1m draft can accommodated.

1.35 Fakse Ladeplads Havn (55°13'N., 12°10'E.) (World Port Index No. 329180), situated in the NW part of the bay, is a small commercial harbor used for the export of limestone.

Mon Light

A dredged channel, about 0.5 mile long, leads NNW to the harbor. It has a bottom width of 25m and a controlling depth of 4.2m. The harbor is also used by fishing vessels and yachts. Vessels up to 100m in length, 20m beam, and 4.1m draft can be accommodated. Both the entrance channel and the harbor basin are subject to silting. A conspicuous silo stands at the E side of the harbor.

Anchorage can be obtained, in a depth of 5m, blue clay and sand, about 0.3 mile from the harbor and W of the entrance channel.

Bogestrom (55°04'N., 12°10'E.), a passage leading SW and S into the W side of Stege Bugt (see paragraph 2.57), lies in the SW part of Fakse Bugt, and is described in paragraph 2.58.

Caution.—Bottom fishing nets are placed within 1.5 miles of the shore between Hojstrup Pynt, close SW of Rodvig, and Fakse Ladeplads Havn.

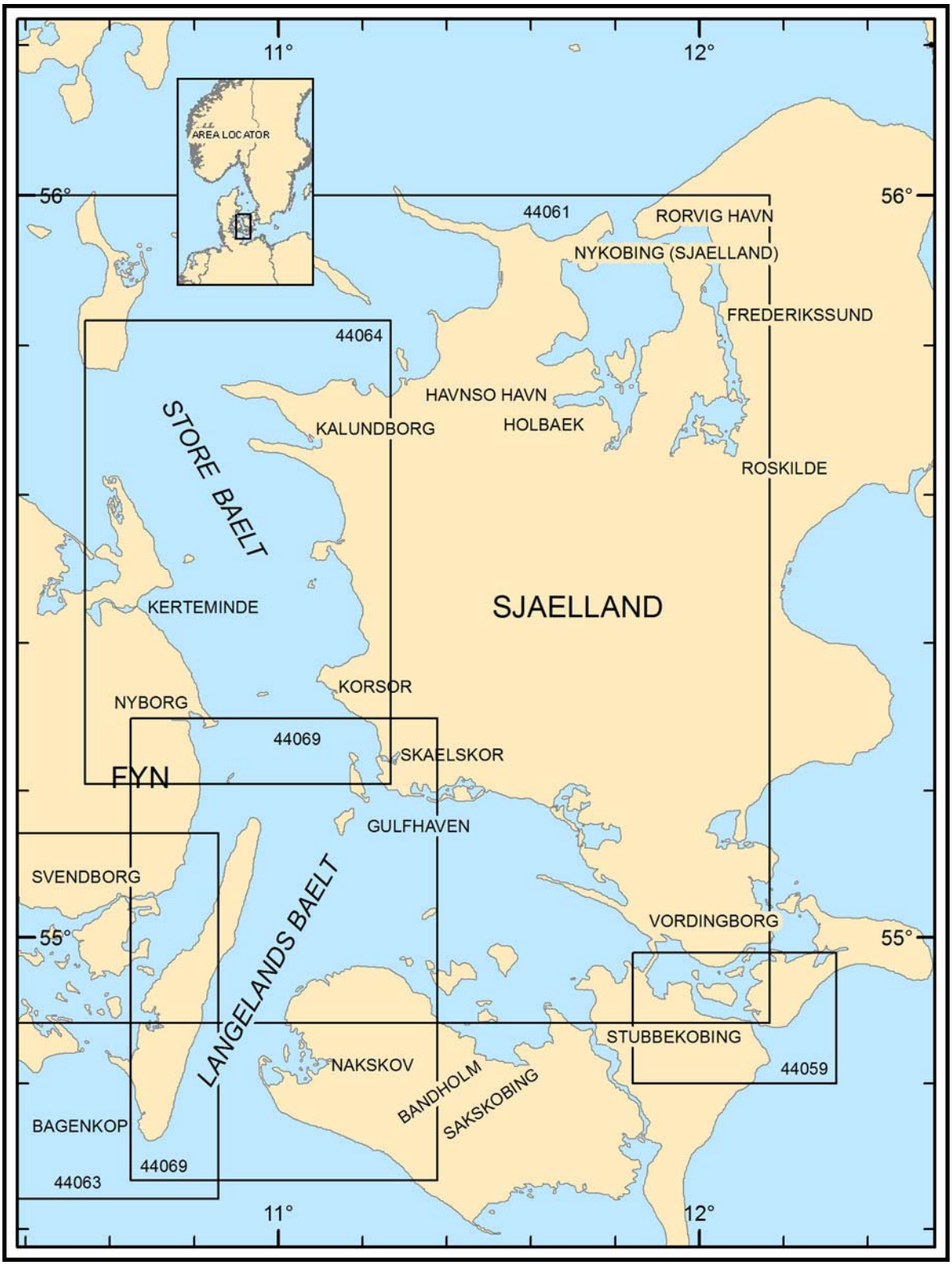
1.36 Hellehavn Nakke Light (55°00'N., 12°31'E.) is shown from a prominent tower, 6m high, standing on the NE extremity of Mon.

The N coast of Mon is generally low. The E part of Mon rises gradually toward the E coast, which consists mainly of steep chalk cliffs topped by wooded land. This cliffy stretch, known

as Mons Klint, commences about 0.7 mile SSE of Hellehavn Nakke Light and ends at the SE extremity of the island. The cliffs attain their greatest elevation about 2.5 miles SSE of the light.

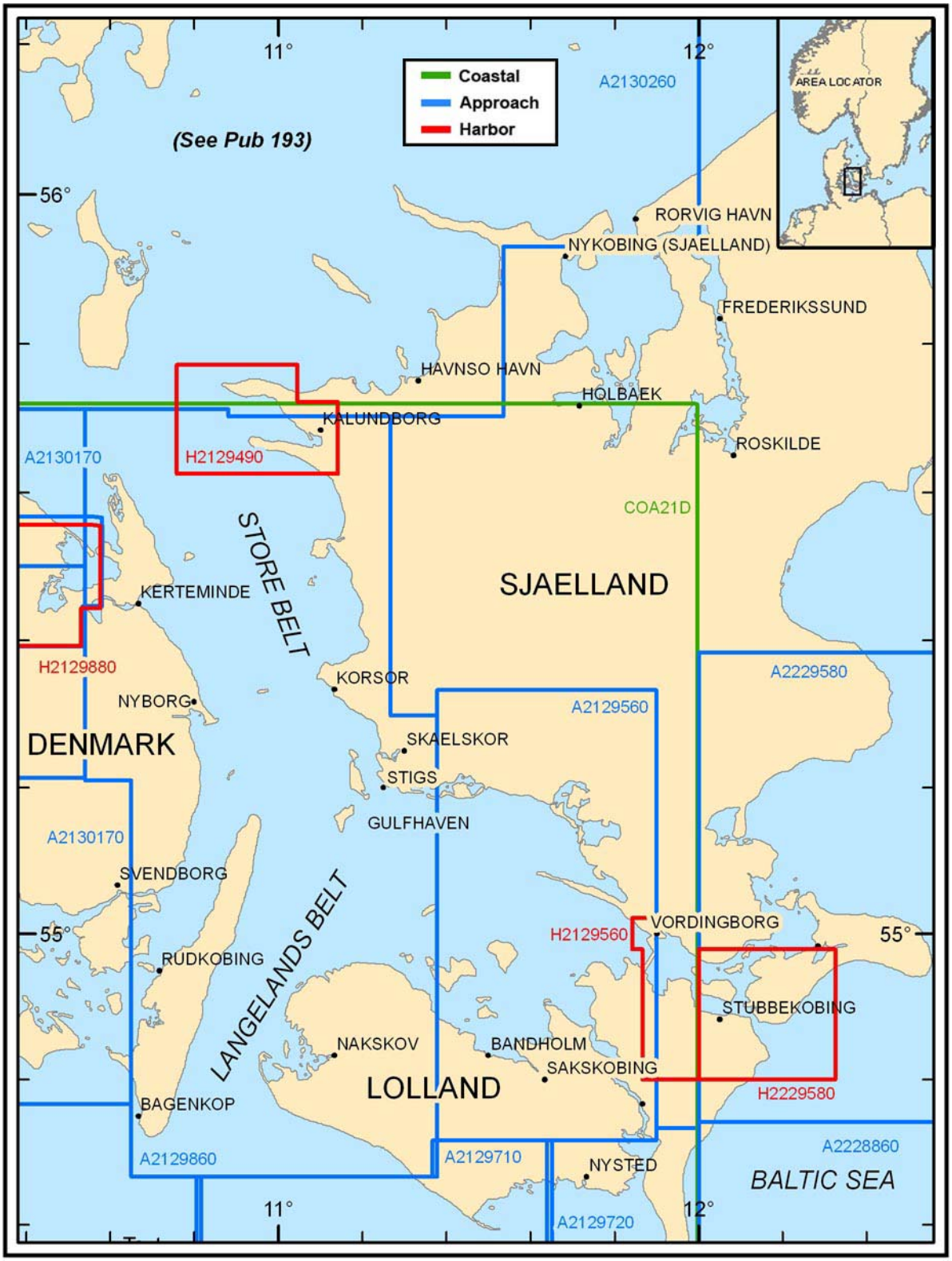
Mon Light (54°57'N., 12°33'E.) is shown from a prominent tower, 13m high, standing on the SE extremity of Mon.

A conspicuous church is situated at Magleby, 3 miles NW of Mon Light.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **2** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNCs 21 and 22 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 2 — DNC LIBRARY INFORMATION

SECTOR 2

DENMARK—STORE BAELT AND SMALANDSFARVANDET

Plan.—This sector begins with a description of the N part of the Store Baelt lying between Rosnaes (55°45'N., 10°52'E.) and Sprogo (55°20'N., 10°58'E.). The dangers lying in the triangle formed by the SE extremity of Samso (55°46'N., 10°37'E.), Rosnaes, and Fyn Hoved (55°37'N., 10°35'E.) are described first. The central part of the Store Baelt is then described; continuing S to Omo (55°10'N., 11°10'E.) on the E side and to Hov (55°10'N., 10°56'E.) and Stokkebaek Flak (55°10'N., 10°50'E.) on the W side.

The sector concludes with a description of the S end of the Store Baelt. First the W section, which includes the passage lying between Fyn and Langeland as far as Rudkoping (54°56'N., 10°43'E.), and then the E section, which includes Smalandsfarvandet and the passage lying between Langeland and Lolland.

General Remarks

2.1 Store Baelt (55°30'N., 10°55'E.), which is also known as the Great Belt, is the center of the three passages connecting the Kattegat to the Baltic Sea. It is the widest and deepest of the three passages and, therefore, the most suitable for deep-draft vessels.

The channel passes between Sjaelland and Lolland, on the E side, and Fyn and Langeland, on the W side. It is bounded at the N end by a line joining Rosnaes (55°45'N., 10°52'E.) and Fyns Hoved (55°37'N., 10°35'E.) and at the S end by a line joining Kappel Church (54°46'N., 11°02'E.), on Lolland, and the S extremity of Langeland (54°44'N., 10°42'E.).

Sprogo, an island, lies 25 miles S of Rosnaes and divides Store Baelt into two passages, Osterrendenon the E side and Vesterrenden on the W.

Store Baelt Link (55°19'N., 11°00'E.) is a major tunnel/bridge connecting Sjaelland with Fyn via Sprogo. The W section spanning Vesterrenden is formed by a low-level bridge while the E section spanning Osterrenden is formed by a high suspension bridge (see paragraph 2.13).

The W part of the S section of Store Baelt lies between Fyn and Langeland. Channels leading to Svendborg and Rudkobing extend from the S end of this part.

Smalandsfarvandet is the inlet lying between Sjaelland, on its N side, and Lolland and Falster, on the S side. It connects Store Baelt with the Baltic Sea via Gronsund, Guldborg, and Bogestrom.

Langelands Baelt is the E part of the S section of Store Baelt. It lies between the E side of Langeland and the W side of Lolland.

The bottom characteristic in the Store Baelt is mainly clay, which is covered in some places by a thin layer of rather fine sand or occasionally gravel. This layer usually increases in depth as the shore is approached. On many of the shoals, there is a considerable amount of rock imbedded in the clay.

Close to shore there is frequently a belt of clean white sand with grass. The amount of grass increases farther offshore and is gradually replaced by weed. The holding ground is good in nearly all parts of Store Baelt, but the nature of the bottom does not afford much information for determining position by the use of soundings.

Ice.—The formation of ice in Store Baelt frequently follows the freezing over of Smalandsfarvandet. Ice in the passages lying E and W of Sprogo is nearly always still. The ice in Nyborg Fjord and in the passage between Langeland and Fyn remains longer than that in other parts of Store Baelt. When the ice in the W part of the Baltic Sea breaks up, large masses of it often drift N through Store Baelt.

Mariners should pay particular attention to the refraction and deflection of light sector projections caused by ice during the cold season. Where an angle of uncertainty exists, a frequent check must be made to determine whether the vessel is keeping on the desired course by the use of additional aids to navigation.

Icebreaking services in the region are provided under a cooperative agreement between Sweden, Denmark, Finland, and Norway, with the purpose of having identical regulations. Requests for assistance should be made direct to the icebreaker, if close, or to the State Ice Service through any coastal radio station.

Ice information reports and icebreaker service for the Baltic coast of Denmark are made available on request from the State Ice Service or from any icebreaker. The Danish icebreakers and their call letters are Danbjom (OUDN), Isbjom (OUDO), and Thorbjom (OUDP). These icebreakers can be contacted on 2,182 kHz, on VHF channel 16, or through Lyngby CRS.

The Danish State Ice Service located at Arhus can be contacted, as follows:

1. E-mail: opsstaff@sok.dk
2. Web site: http://www.forsvaret.dk/sok

The Swedish State Ice Service can be contacted, as follows:

1. VHF: VHF channel 16
Available 0800 to 1640
2. Telephone: 46-771-630000 (Switchboard)
Available 0800 to 1640
46-11-191210 (Operations)
Available 24 hours during the icebreaking season.
3. Facsimile: 46-11-103100
4. E-mail: opc@sjofartsverket.se
5. Web site: http://www.sjofartsverket.se

For additional information on icebreaker services, regulations, and related subjects, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Tides—Currents.—The tidal range in Store Baelt is negligible. However, fluctuations in sea level result from changes in wind force and direction.

Because of the variable nature of the currents in Store Baelt, it is impossible to predict with certainty the direction in which they will set. A S current is prevalent only when the wind is between W and NNE. Winds from NW nearly always cause a strong S current. A N flowing current is caused by winds from between NNE, through E and S, and WSW.

Although the N current predominates, it seldom occupies the whole width of Store Baelt. At times, the current flows N on one side and S on the other side. At other times, there is a N current on each side of the passage and a S current of varying width between them. The adjacent edges of these opposing currents are indicated by rips, and are frequently marked by foam and seaweed; they are not constant, but depend on the velocities of the currents, the difference in water level on the opposite shores, and other factors.

The direction of the current is determined to a considerable extent by local conditions, but it is not constant at any given place. The current, either flowing N or S, sets in a different direction after it has been running for some time, even though conditions appear unchanged. After running for about 12 hours, the main current usually follows the direction of Dybe Rende, the deep channel.

Irregularities of the bottom and other local conditions may deflect the current in places, and undercurrents are also causes of diversion. An example of local conditions is the tidal current, which sets through the harbor entrance at Korsor. This action deflects the main current in Store Baelt well outside the harbor and beyond Halsskov Rev.

The larger irregularities of the bottom in Store Baelt are usually indicated by overfalls, which frequently appear on the side of a shoal opposite to that toward which the current is setting. These overfalls, which should not be confused with the previously-mentioned rips, sometimes give warning of underwater dangers, but they may also occur in the deeper parts of the fairway as, for instance, in places where the depths decrease abruptly from about 29 to 14m.

The velocity of the current depends on the width and depth of the fairway; it is also affected to some extent by the tidal currents. In the narrower and deeper parts of the fairway, the velocity increases, and it is greatest in Dybe Rende. A danger to be guarded against is the possible increase in the velocity near detached shoals and reefs, over which the direction of the current may vary according to the formation of the bottom. Even in calm weather and under apparently settled conditions, the rate of the current in Store Baelt may be as much as 3 knots.

The S current is the stronger in Vesterrenden and the N current is the stronger in Osterrenden. In places where the coastal banks are steep-to, both currents produce countercurrents which can be utilized by vessels having local knowledge. The strongest countercurrents are along the coast of Fyn between Kerteminde Bugt and Knudshoved, and, especially with a north-flowing current, along the coast of Langeland between Tranekaer and Gulstav. The E side of the latter countercurrent is frequently marked by strong rips. Along the W coast of Lolland there is a fairly strong countercurrent that extends offshore to a depth of about 7m.

From the N entrance of Store Baelt, the S flowing current follows the direction of the fairway SSE and passes on both sides of Elefantgrund. The greater part of the W branch passes between Elefantgrund and Romso, and then sets S toward Vesterrenden, where it is divided by Sprogo, one part setting S on the W side of Osterrenden and the other setting through Vesterrenden. Another part of the current W of Elefantgrund sets through the passage between Romso and Fyn, across Kerteminde Bugt outside a depth of about 16m, and then follows the Fyn coast outside the 10m curve to Knudshoved; only a small portion of this part of the current sets along the shores of Kerteminde Bugt.

After the current from the N entrance of Store Baelt bifurcates at Elefantgrund, the E branch passes between that shoal and Lysegrund and then sets S to Osterrenden, passing close W of Musholm and then toward the NW side of Halsskov, off which it turns SW and rounds Halsskov Rev.

The current W of Sprogo keeps mainly to the W side of Vesterrenden and sets from Knudshoved toward Vresen Puller, where it divides. A weak branch passes between Vresen and Fyn and extends as far S as Thuro; with strong W winds a portion of this current sets E through Kobberdyb. Strong NE and E winds cause large quantities of the water passing through Vesterrenden to be forced into the passage between Fyn and Langeland. The main part of the current through Vesterrenden passes E of Vresen Puller and sets across Broen, where it is influenced to a considerable extent by the wind. Strong W winds force the water from Vesterrenden so far E that the current crosses the entire width of Broen to the W side of Vengeancegrund, from which it sets toward the flats bordering the W side of Omo and then continues S.

A branch of the current which sets around Halsskov Rev passes through Agerso Sund; the remainder of this current sets along the W sides of Agerso and Omo. The current from Osterrenden sets through the narrow channel between Vengeancegrund and Agerso Flak, and then passes the flats extending from the W side of Omo. With strong NE and E winds, this current passes some distance W of Omo.

To the S of Broen, the combined current follows the general direction of the fairway, attaining its greatest velocity in Dybe Rende. The comparatively shallower portions of the bottom in Dybe Rende cause the current to divide as it sets across them.

In general, the N current through Store Baelt, like the S current, follows the direction of the fairway. It sets toward Naebberevler, on the E side of Langeland, with considerable strength. It crosses Broen in a N direction, its W portion passing close to Hov Sand, E of Vresen, and through Vesterrenden. The current across the central part of Broen sets directly toward Sprogo, but S of that island it is divided by Gaellegrund into two branches which pass respectively E and W of Sprogo. As the N current passes across Broen its direction is affected by strong winds in the same manner as the direction of the S current.

Between Fyn and Langeland there is a weak N current which passes W of Vresen and continues N to a junction with the current setting through Vesterrenden off Knudshoved. The E portion of the N current crosses the flats W of Omo and passes through the channel between Agerso Flak and Vengeancegrund. North of Egholm it is joined by the current from Agerso Sund, and the combined current, together with the E branch of the current which divides at Gaellegrund, then sets through Osterrenden. After setting through the passages on either side of Sprogo, the current continues N, passing on both sides of Elefantgrund. Like the S current, the N current is not strong in Kerteminde Bugt.

Depths—Limitations.—Depths in the Store Baelt are very irregular. Dybe Rende, the winding deep-water channel, has depths in excess of 27m, except in a few places, and extends through the entire length of the passage. In clear weather, ves-

sels can transit Store Baelt in a least depth of 12.8m without following all the meandering of Dybe Rende.

The controlling depth in the passage through Store Baelt for Route T is 19m, except for the northbound lane through Osterrenden, where the maximum depth is 17m.

The controlling depth in the passage for Route H is 12m. This route is mandatory for vessels, with drafts of 10m or less.

Pilotage.—Pilots for the Store Baelt and ports in this region are provided by DanPilot. For further information, see pilotage in paragraph 1.1.

Pilots for the Store Baelt can be contacted by VHF and board vessels proceeding N, as follows:

1. In Route T—at position 54°40.7'N, 10°46.2'E (northbound). and southbound at position 55°23.5'N, 11°00.0'E, (Sprogo NE)
2. In Route H (northbound)—at position 54°45.0'N, 10°52.4'E.

DanPilot can be contacted, as follows:

1. VHF: VHF channels 16 and 87
2. Telephone: 45-63-256666
3. Facsimile: 45-63-256649
4. E-mail: danpilot@danpilot.dk
5. Web site: http://www.danpilot.dk

An IMO resolution recommends that vessels with a draft of 11m or more and all vessels, irrespective of size, carrying a shipment of radiated nuclear fuel, plutonium, or highly radioactive waste use the services of a pilot when transiting Route T.

Directions.—For details of designated routes in the Kattegat, see Pub. 193, Sailing Directions (Enroute) Skagerrak and Kattegat (Sector 7). Route T, which may best be seen on the chart, leads S into Store Baelt.

Route T—Route T leads S for 4.5 miles from Lighted Buoy No. 20 (55°49'N., 10°49'E.) and enters the Store Baelt. It passes between Lighted Buoy No. 21 and Lighted Buoy No. 22, which are moored about 2.5 miles WNW of Rosnaes Puller Light (55°45'N., 10°51'E.). The route then continues SSW for 6 miles to Lighted Buoy No. 23 (55°39'N., 10°47'E.).

From Lighted Buoy No. 23, the route leads SSE for 9 miles to Lighted Buoy No. 25 (55°31'N., 10°52'E.), passing 0.5 mile ENE of Romso Tue Light No. 24 (55°34'N., 10°49'E.), which is equipped with a racon.

From Lighted Buoy No. 25, Route T continues SE for 10 miles to the N entrance of Osterrenden.

An IMO-adopted Traffic Separation Scheme (TSS), which may best be seen on the chart, extends S for 3.5 miles though Osterrenden. The TSS traffic lanes, which are about 475m wide, pass under the suspension bridge that forms the E section of the Store Baelt Link (see paragraph 2.13).

From Lighted Buoy No. 28A, moored at the S entrance of the Osterrenden TSS, Route T leads SSE for 5.5 miles and passes between Lighted Buoy No. 32 (55°14'N., 11°07'E.) and Vengeancegrund No. 31 Light, about 0.7 mile W. This section of the track passes close WSW of Egholm Flag No. 30 Light (55°15'N., 11°06'E.).

From the vicinity of Lighted Buoy No. 32, the route leads S for about 1.5 miles to pass between Lighted Buoy No. 33 and Agerso Flak No. 34 Light (55°12'N., 11°07'E.), which is equipped with a racon.

The track then divides with Route T leading SW and Route H leading SSW. Route T extends SW for 2.5 miles and then follows a designated Deep Water Route.

Deep Water Route.—The Deep Water Route, which is about 33 miles long, leads in a SSW direction through Langelands Baelt and may best be seen on the chart. It lies from 1 to 3 miles off the E coast of Langeland and is marked by lighted buoys, lights, and racons. The fairway varies in width from 0.2 to 0.8 mile and is swept to a least depth of 19m.

This Deep Water Route must be avoided by vessels capable of navigating outside it. However, mariners are to consider the possibility of changes in sea level caused by meteorological and other effects.

DW Lighted Buoy No. 61 (54°40'N., 10°45'E.) and DW Lighted Buoy No. 58, moored 1.5 miles NE, mark the S entrance of the Deep Water Route. From this entrance, Route T continues SE into Fehmarn Belt (see paragraph 4.1).

Route H.—Route H leads through Langelands Baelt on a track lying almost parallel to and on the E side of the Deep Water Route. It is marked by lighted buoys and may best be seen on the chart. This route has a minimum depth of 12m and must be used by vessels with a draft of 10m or less.

Northbound traffic passes to the E of the mid-channel aids; southbound traffic passes to the W of them.

Lighted Buoy No. 7 (54°42.0'N., 10°52.5'E.), moored 5.8 miles ESE of Keldsnor Light (54°44'N., 10°43'E.), marks the S limit of Route H within the Store Baelt. From Lighted Buoy No. 7, Route H continues SE into Fehmarn Belt (see paragraph 4.1).

BELTREP Reporting System

2.2 The BELTREP Reporting System (BELTREP) operational area covers the central and northern part of the Storebaelt (Great Belt) and the Hatter Barn area N of Storebaelt (Great Belt) at the entrance to the Baltic Sea. The area includes the routing systems at Hatter Barn, in the Storebaelt (Great Belt) area, and Langelandsbaelt. The BELTREP area also includes the central part of Route T.

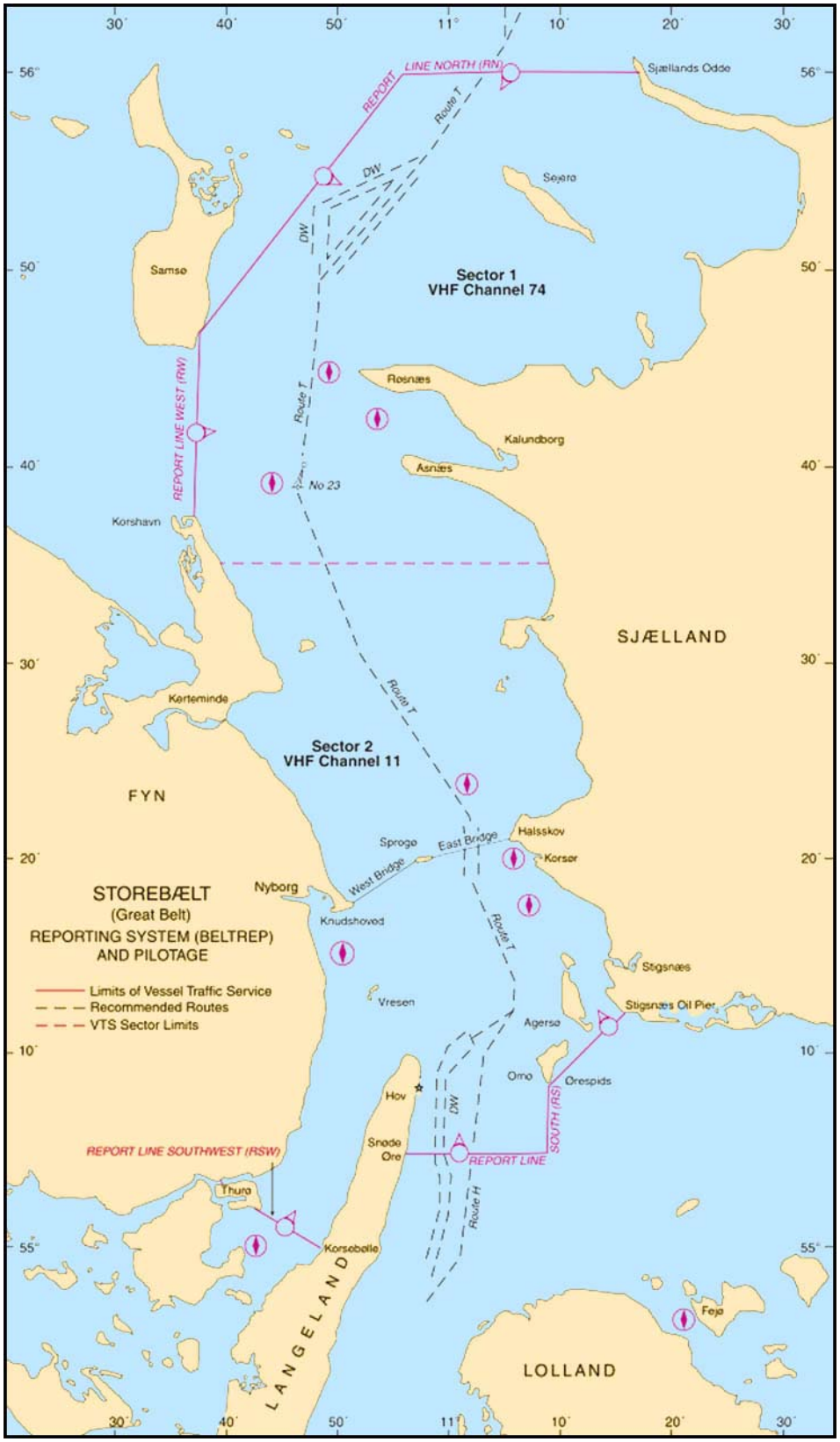
This is a Mandatory Reporting System under SOLAS Regulation V/11. The VTS Authority for the BELTREP system is the Admiral Danish Fleet. The following vessels are required to participate in the system:

1. Vessels of 50 gt and larger.
2. All vessels with an air draft of 15m and more.

Pleasure craft with length less than 15m or size less than 50 gt are exempted from participation.

Reporting Lines.—BELTREP Reporting Lines are, as follows:

1. Reporting Line West (RW)—a line joining the following positions:
   a. 55°36'N, 10°38'E. (Korshavn on Fyn)
   b. 55°47'N, 10°38'E. (E coast of Samso)
2. Reporting Line North (RN)—a line joining the following positions:
   a. 55°47'N, 10°38'E. (E coast of Samso)
   b. 56°00'N, 10°56'E. (at sea near Marthe Flak)
   c. 56°00'N, 11°17'E. (Saellands Odde)
3. Reporting Line South (RS)—a line joining the following positions:
   a. 55°12.0'N, 11°15.4'E. (Gulfhavn)
   b. 55°08.4'N, 11°09.0'E. (Orespids, Omo)



Route T and Route H

c. 55°05.0'N, 11°09.0'E. (at sea S of Orespids)
d. 55°05.0'N, 10°56.1'E. (Snode Ore)

4. Reporting Line Southwest (SW)—a line joining the following positions:
a. 55°00.0'N, 10°48.7'E. (S of Korsebolle Rev)
b. 55°01.2'N, 10°44.0'E. (Thuro Rev Lighted Buoy)

The Reporting Area is divided into two sectors at latitude 55°35'N. Each sector has an assigned VHF channel, as follows:

1. Sector 1 (N of 55°35'N)—VHF channel 74
2. Sector 2 (S of 55°35'N)—VHF channel 11

Procedure.—Reports to the VTS Authority should be made using VHF voice transmissions. However, vessels are encouraged to fulfill certain reporting requirements of the reporting system through the use of AIS, and by non-verbal means such as e-mail or similar, prior to entering the reporting area.

Vessels entering the BELTREP operational area shall submit a report when crossing the report line or on departure from a port or anchorage within the operational area.

The report shall be drafted in accordance with the standard reporting format shown in the table titled **BELTREP Reporting Format**.

Reporting.—Vessels entering the VTS area shall submit a report when crossing the report line or on departure from a port within the VTS area.

Verbal reporting is not required when a vessel passes the BELTREP sector line at latitude 55°35'N. However, sector change of VHF channel is required.

Further reports should be made whenever there is a change in navigational status or circumstance.

Vessels are required to maintain a continuous listening watch in the BELTREP area on the relevant VHF sector channel and VHF channel 16.

The use of correct and updated AIS information can accomplish the reporting requirements for designators A, B, C, E, F, G, I, O, and W as shown in the table titled **BELTREP Reporting Format**.

To minimize the time reporting on the VHF channels and to avoid interference with essential navigational duties, vessels are encouraged to forward the reporting requirements for designators L, P, T, and X by e-mail or similar method prior to entering the ship reporting area. Such non-verbal partial reports must also state designators A and H. Reporting designators L, P, T, and X prior to entry using mobile phone is also accepted as a means of communication.

A vessel which fulfills the reporting requirements of the BELTREP mandatory ship reporting system by the use of correct and updated AIS information and prior non-verbal means must, as a minimum, carry out a VHF voice transmission to communicate the name of the vessel (part of designator A), air draft and dwt (designator U) and the report line of entry to the Great Belt VTS when actually entering the area. The same procedure must be followed before departing a port or leaving an anchorage in the BELTREP area.

Designator Q or R, if applicable, shall at all times be given using VHF voice transmission to Great Belt VTS.

Previously forwarded reports can be submitted at any time after entering the Danish Exclusive Economic Zone (EEZ) and until in reach of VHF range of Great Belt VTS at an approximate distance of 20 miles from the BELTREP area. Since the Great Belt VTS must be able to timely handle incoming prior reporting, if it will not be possible to undertake pre-entry reports within the 20 mile VHF range, then the reporting option is to be verbal by VHF when crossing the report line of entry.

Vessels departing a port or leaving an anchorage within the 20 mile range of the BELTREP area or in the BELTREP area, may submit a pre-entry report for designators H, L, P, T and X if transmitted 1 hour before departure to enable the Great Belt VTS to handle incoming prior reports in a timely manner.

Reports to the VTS Authority by voice or by non-verbal means shall be made using the ID indicators found in the table titled **VTS Reporting Format** with the following examples of format for designator L given below:

1. A northbound vessel leaving the port of Gulfhavn planning to sail north Route T via the deep-water route Between Hatter Rev and Hatter Barn, leaving at Reporting Line North would have designator L coded, as follows—DK GFH, BE, DW-T3, RN.

Note.—The UN LOCODE for Gulfhavn is DK GFH.

2. A southbound vessel in passage and planning to enter at report line North, sailing through TSS at Hatter Barn then Route T, Route H and leaving at Reporting Line South would have designator L coded, as follows—RN, TSS-T5, BE, RH, RS.

3. A northbound vessel entering via deep water route off the E coast of Langeland, Route T, East Bridge and leaving through Reporting Line West, bound for the Port of Fredericia would have designator L coded, as follows—RS, DW-T4, BE, RW.

4. A vessel entering at report line North sailing via TSS at Hatter Barn, Route T, and then anchoring in Kalundborg Fjord would have designator L coded, as follows—RN, TSS-T5, KAL FJ.

Information Broadcasts.—Great Belt VTS provides information to shipping about specific and urgent situations, which could cause conflicting traffic movements as well as other information concerning safety of navigation including information about weather, currents, ice, water level, navigational problems or other hazards.

Information of general interest to shipping in the area will be given by request or will be broadcast by Great Belt VTS on a VHF channel specified by the VTS. A broadcast will be preceded by an announcement on VHF channel 16. All vessels navigating in the area should listen to the announced broadcast.

If necessary, Great Belt VTS can provide individual information to vessels particularly in relation to positioning and navigational assistance or local conditions.

If deemed necessary by the Great Belt VTS or upon request by a vessel, navigational assistance can be provided. Great Belt VTS will inform the subject vessel when the navigational assistance starts and subsequently terminates.

Should a vessel need to anchor due to breakdown, low visibility, adverse weather, changes in the indicated depth of water, or some other reason, BELTREP can recommend suitable anchorages and place of refuge within the VTS area.

The following IMO Standard Marine Communication Phrases (SMCP), sections A1 through A6 for VTS, the following message markers can be used—ADVICE, WARNING, INFORMATION, QUESTION, ANSWER, REQUEST and INTENTION.

The language used for communication shall be English, us-

ing IMO Standard Marine Communication Phrases, when deemed necessary by Great Belt VTS.

Contact Details.—BELTREP Reporting System can be contacted, as follows:

1. Call sign: Belt Traffic
2. VHF: Sector 1—VHF channel 74
   Sector 2—VHF channels 10, 11, and 16
3. Telephone: 45-58-376868 (Duty Officer)
4. Facsimile: 45-58-372819
5. E-mail: beltrep@sok.dk
6. Web site: http://www.beltrep.org
7. MMSI: 002190001

Note.—Ship-to-ship communications of navigational intentions should be carried out on the BELTREP working VHF Channels enabling Great Belt VTS and other vessels to be kept informed.

Large vessels bound for the Baltic Sea should transit Route T, which leads from Lighted Buoy No. 1 (57°48'N., 10°44'E.), off Skagens, through Store Baelt to the S end of Langelands Baelt.

Sections of Route T within Samso Baelt, Store Baelt, and NE of Gedser Rev have been designated as Deep Water Routes. These sections must be avoided by vessels capable, because of their draft, of navigating outside the route.

Route H, which is situated at the E side of Langelands Baelt, must be used by vessels, with drafts of 10m or less.

For further information concerning IMO recommendations for navigating through the entrances to the Baltic Sea, see paragraph 1.1.

BELTREP Reporting Format

ID	Function	Information required
A	Vessel	Vessel name, MMSI, call sign, and IMO number.
B	Date and time	A 6-digit group giving day of month and hours and minutes in UTC.
C	Position	A 5-digit group giving latitude in degrees and minutes, decimal, suffixed with N and a 6-digit group giving longitude in degrees and minutes, decimal, suffixed with E.
E	True course	A 3-digit group.
F	Speed in knots and tenths of knot	A 3-digit group.
G	Last port of call and next port of cal	The name of the last port of call and next port of call given in UN LOCODE by AIS.
I	ETA at next port of call	ETA date and time group as in B.
H	Date, time (UTC), and Reporting Line of entry into BELTREP area	This information is only required if reporting designators L, P, T, and X are transmitted non-verbally (e.g. e-mail) prior to entry into BELTREP.
L	Route information in the BELTREP area	A brief description of the intended route as planned by the master and stated by coded designators as given below: Reporting Lines: RN—Reporting Line North RW—Reporting Line West RS—Reporting Line South RSW—Reporting Line Southwest Routing Systems: DW-T3—Deep-water Hatter TSS-T5—Separation at Hatter Barn DW-T4—Deep-water Langeland Bridges: BE—East bridge/Route T BW—West bridge Route: RH—Route Hotel Anchorage: KAL FJ—Kalundborg Fjord
O	Maximum present draft in meters	A 2 or 3-digit group giving the present maximum draft in meters (e.g. 6.1 or 10.4).

BELTREP Reporting Format		
ID	**Function**	**Information required**
P	Cargo on board	Cargo. If dangerous goods present on board, include quantity and IMO class. Dangerous goods information must be summarized in total tons per IMO class when transmitted.
Q or R	Q. Defects and deficiencies R.Pollution or dangerous goods overboard	Q. Details of defects and deficiencies affecting the equipment of the vessel or any other circumstances affecting normal navigation and maneuverability. R. Pollution or dangerous goods lost overboard.
T	Vessel's representative and/or owner	Address and particulars from which detailed information on the cargo may be obtained.
U	Vessel size	Information of maximum air draft and dwt. required for all vessels, including vessel's tow or other floating equipment. This information shall be given by voice transmission when entering the BELTRP area, regardless of whether the information has also been given by, e.g. non-verbal means.
W	Total number of persons on board	State number.
X	Miscellaneous	Type and estimated quantity of bunker fuel, for vessels of 1,000 gt and above. Must be summarized in total tons per type when transmitted.

Store Baelt—North Part

2.3 The N part of Store Baelt is the area lying between the N entrance and Sprogo. Kalundborg Fjord, Jammerland Bugt, and Musholm Bugt lie on the E side and Kerteminde Bugt lies on the W side. The isolated dangers lying in the triangle formed by the SE extremity of Samso, Rosnaes, and Fyn Hoved are also described. Depths within this triangle are very irregular.

General depths within the Store Baelt as far as Osterrenden and Vesterrenden range from 18 to 60m.

Rosnaes (55°45'N., 10°52'E.), the W extremity of Sjaelland, is the NE entrance point of the Store Baelt. This peninsula rises to barren hills, 60m high, and terminates in a narrow point faced with cliffs, l0m high. Rosnaes Rev, a shallow reef, fronts the point and extends up to about 0.5 mile seaward. For landmarks in the vicinity of Rosnaes, see paragraph 2.5.

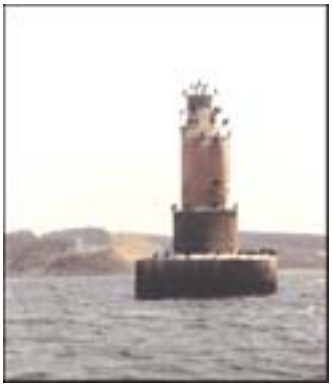
Rosnaes Light (Disused)

Rosnaes Light (55°45'N., 10°52'E.), now disused, is a prominent tower, 15m high, standing at the W extremity of Rosnaes.

A small fishing harbor is situated on the N shore of the peninsula, 2.5 miles E of the light. The entrance, 16m wide, faces SE and has a controlling depth of 2.8m.

A detached shoal patch, with a depth of 11.2m, lies about 1.8 miles SSW of Rosnaes Light and is marked by a lighted buoy.

Rosnaes Puller (55°45'N., 10°51'E.), a reef with large rocks, lies about 1.3 miles W of Rosnaes. A narrow channel, with a depth of 6.4m, leads between the inner side of this reef and the W extremity of Rosnaes Rev.



Rosnaes Puller Light

Rosnaes Puller Light (55°45'N., 10°51'E.) is shown from a prominent mast on a granite base, 9m high, standing on the NW part of the reef.

Lushage Light (55°46'N., 10°37'E.) is shown from a mast, 7m high, standing on the SE extremity of Samso.

2.4 **Falkse Bolsaks** (55°43'N., 10°43'E.), a rocky shoal, lies centered 4.2 miles SE of Lushage Light and about 4.5 miles WSW of Rosnaes Puller Light. It has a least depth of 3.5m and is marked by a buoy.

Bolsaks, a rocky shoal with a least depth of 1.3m, lies about 1.7 miles SW of Falkse Bolsaks is marked by a buoy.

Paludans Flak (55°44'N., 10°35'E.), a large shoal area with a least depth of 4.1m, lies about 2.7 miles SW of Lushage Light and is marked at the N side by a lighted buoy.

Fyns Hoved (55°37'N., 10°35'E.), a small peninsula located at the N end of Hindsholm, forms the NW entrance point of the Store Baelt. Baesbanke, 24m high, is a prominent hill standing on the W side of this peninsula.

Lillegrund (55°39'N., 10°38'E.), a shoal with a least depth of 1.2m, lies near the end of the rocky spit extending about 2.7 miles NNE from Fyns Hoved and is marked by a lighted buoy. A detached shoal patch, with a depth of 5.6m, lies about 1.5 miles N of Lillegrund and is marked by a buoy.

Ryggen (55°37'N., 10°45'E.), a detached rocky shoal with a depth of 5.9m, lies about 5 miles E of Fyns Hoved.

Directions.—Routes connecting the Store Baelt to the Lille Baelt lie between Fyns Hoved and the S side of Samso. A narrow passage leads WNW between Paludans Flak and the coastal bank fronting the S side of Samso. Vessels leaving Route T can approach this passage from NW of Rosnaes Puller Light. They may also approach it from SSW of the light by passing between Falkse Bolsaks and Bolsaks.

A new Deep Water Route leads W and SW between the N side of Lillegrund and the detached shoal, with a depth of 5.6m, lying about 1.5 miles N. From a position located 4 miles SSW of Rosnaes Puller Light, vessels may leave Route T and proceed WSW for about 5 miles to the E entrance of the channel. The fairway is marked by buoys and has a least depth of 15.7m.

Caution.—Between Rosnaes and Asnaes, 5 miles SE, the prevailing N current sets almost directly across the passage toward the shoals of Falkse Bolsaks and Bolsaks.

A submarine cable area, which may best be seen on the chart, extends WNW from the W extremity of Rosnaes to Samso.

The inshore traffic zone of an IMO-adopted Traffic Separation Scheme (TSS) is situated N of the Rosnaes Peninsula. For further information concerning this TSS, see Pub. 193, Sailing Directions (Enroute) Skagerrak and Kattegat (Sector 7).

Store Baelt—North Part—East Side

2.5 **Kalundborg Fjord** (55°41'N., 11°00'E.) is entered between Rosnaes and Asnaes, about 5 miles SE. This fjord extends about 7.5 miles ESE from its entrance and gradually narrows. There are general depths of 11 to 17m in the fjord but it shoals rapidly near the head. The S shore of the fjord is lower than that on the N side and is partly wooded. The N shore is hilly and devoid of woods.

Asnaes Nordvest Flak, a shallow and rocky shoal area, extends up to about 1 mile N of Asnaes and its seaward edge is marked by a buoy.

Aspect.—A prominent white church, with a red roof, is situated at Ulstrup, about 3 miles ESE of Rosnaes (disused) Light, and a conspicuous windmill stands close NW of it.

Another prominent white church, with a red roof, is situated on high ground at Rorby, about 0.8 mile inland and 7 miles ESE of Rosnaes (disused) Light.

An aeronautical light is shown from a conspicuous television mast, 321m high, standing at Jyderup (55°41.1'N., 11°27.8'E.), about 20.5 miles ESE of Rosnaes (disused) Light.

Regulations.—Tanker lightening operations must be carried out within an area, with a radius of 0.3 mile, centered on position 55°42.0'N, 10°59.8'E. During these lightening operations, the tankers must display the appropriate signals provided in the 72 COLREGS and other vessels must pass at slow speed.

Special regulations, limiting speed and wave heights, apply in the E part of the fjord to high-speed ferries carrying vehicles.

Anchorage.—Vessels may anchor mostly anywhere within the fjord in good holding ground. Winds from W to NW cause a swell in the fjord, but vessels should still remain safe.

Directions.—To enter the fjord in the deepest water, vessels may pass, in a least depth of 15m, between the bank extending S from Rosnaes (disused) Light and the lighted buoy marking the shoal patch, with a depth of 11.2m, moored about 1.5 miles SSW.

An alternative track, marked by lighted buoys, leads about 5 miles ESE, in a least depth of 13m, from a position located 2.5 miles NNW of Asnaes Light (55°40'N., 10°56'E.).

Kalundborg (55°41'N., 11°06'E.)

World Port Index No. 29490

2.6 Kalundborg harbor fronts the city and is situated on the N side of the head of the fjord. It is protected on the W side by Gisselore Pynt, a low tongue of land extending SE from the N shore of the fjord.

Winds—Weather.—The harbor area averages 65 days with fog or mist annually. The monthly average is 10 days for the months of December, January, and February. The average for the months of March, October, and November is 7 or 8 days. April, May, and September have a monthly average of 2 to 4 days. June, July, and August average 1 day each month.

Kalundborg Home Page
http://www.portofkalundborg.dk

Ice.—The approaches become encumbered with ice between January and March. However, the port is seldom closed.

Tides—Currents.—Gales from NW may raise the sea level as much as 1.3m and gales from SE may lower it by as much as 0.9m.

Depths—Limitations.—The entrance channel, 100m wide, has a dredged depth of 15m.

Kalundborg Havn, in the N part of the port, consists of Vesthavn, Osthavn, and Sydhavn.

Vesthavn, protected by a breakwater, has three main berths, 80 to 250m long, with depths of 6m alongside. It is mostly used by ro-ro ferries. The W part of this basin is used by yachts and fishing vessels.

Osthavn, located E of Vesthavn, has four main berths, 170 to 280m long, with depths of 7 to 10m alongside. This open basin

provides ro-ro and bulk facilities.

Sydhavn, located S of Osthavn, has a quay, 170m long, with a depth of 8.5m alongside and another quay, 450m long, with depths of l0 to 12m alongside. This basin provides ro-ro, oil, and general cargo facilities. Vessels up to 240m in length, 35m beam, and 11.5m draft can be accommodated in this basin.

Dokhavn, located S of Sydhavn, has three main berths, 120 to 160m long, with depths of 5 to 10m alongside. Vessels up to 140m in length, 20m beam, and 9.5m draft can be accommodated in this basin.

Statoil Oil Terminal, located S of Dokhavn, consists of a quay and a pier, which extends about 420m WNW from the shore. The quay is 330m long and has a depth of 15m alongside. Tankers up to 140,000 dwt, 270m in length, and 14.2m draft can be handled.

The pier has three berths, 73 to 274m long, with depths of 5 to 13m alongside. Tankers up to 70,000 dwt, 264m in length, and 12.5m can be handled at the S side of the pier. Tankers exceeding 70,000 dwt, up to a maximum of 130,000 dwt, are limited to a maximum draft of 12.2m at the pier. The maximum freeboard allowed is 15.85m.

Asnaesvaerkets Havn, located W of Statoil Oil Terminal, is a bulk terminal serving a power station. It is approached through a channel, 80m wide, with a dredged depth of 13.5m.

The coal berth has a depth of 13.5m alongside and can accommodate vessels up to 175,000 dwt, 290m in length, 45m beam, and 13.2m draft.

The oil berth has a depth of 9.5m alongside and can accommodate vessels up to 300m in length, 50m beam, and 9.2m draft.

The ash berth has a depth of 7.7m alongside and can accommodate vessels up to 120m in length, 20m beam, and 7.2m draft.

The gypsum berth has a depth of 9.5m alongside and can accommodate vessels up to 120m in length, 20m beam, and 9.2m draft.

Kalundborg Church

Aspect.—The entrance channel is marked by lighted buoys and indicated by a lighted range.

A light is shown from a prominent framework tower, 4m high, standing on the end of Gisselore Pynt (55°40.2'N., 11°04.6'E.). A radio mast, 145m high, and a disused light tower stand close N of this light. A narrow bank fronts Gisselore Pynt and its edge is marked by a lighted buoy.

A castle and a church, both prominent, stand in the city. The church has five high, pointed towers.

Two conspicuous chimneys, the taller one being 224m high, stand near the power station in the S part of the port.

Pilotage.—Pilotage for Kalundborg is compulsory for tankers of 60m in length and over, except for masters with a valid pilot exemption certificate (PEC). Pilotage for Asnaesvaerkets Havn is compulsory for vessels calling at the terminal for the first time and all vessels being towed. Pilotage for the Statoil Terminal is generally compulsory for vessels over 7,000 dwt. Pilotage is recommended for vessels without local knowledge.

Vessels should send a message requesting pilotage through the agent at least 24 hours in advance. This request may be sent through the agent along with the ETA message to:

Pilots can be contacted by VHF channel 12 and 16 and board in the following positions:

a. 55°44.5'N, 10°48.5'E (Rosnaes).
b. 55°43.5'N, 10°52.0'E (Rosnaes SE).

Kalundborg—Vesthavn

Kalundborg—Osthavn

Regulations.—Vessels must send an ETA message through the agent 72 hours and 24 hours in advance. Any changes to the ETA of over 2 hours should be reported. Vessels must then call their agent when 5 miles from the port to confirm their ETA.

Kalundborg—Sydhavn

Kalundborg—Dokhavn and Statoil Terminal

Vessels must maintain a continuous listening watch on VHF channel 16 when in Kalundborg Fjord.

Inbound vessels over 100 gt should broadcast their presence on VHF channels 12 and 16 when passing Asnaes Northwest Flak.

Departing vessels must wait until vessels entering the harbor have cleared the channel.

Contact Information.—Kalundborg may be contacted by e-mail, as follows:

info@portofkalundborg.dk

The oil terminal and tugs can be contacted, as follows:

1. VHF: VHF channels 9, 10, 12, 14, and 16
2. Telephone: 45-59-574521
3. Facsimile: 45-59-516298

Caution.—Numerous ferries, including high speed craft, may be encountered in the approaches to the port.

2.7 **Asnaes Light** (55°40'N., 10°56'E.) is shown from a structure, 4m high, standing on the W extremity of Asnaes, the peninsula separating Kalundborg Fjord from Jammerland Bugt.

Asnaes Rev (55°39'N., 10°53'E.), a shoal with depths of 2.2 to 7.8m, fronts the W end of Asnaes. It extends up to about 2 miles WSW of Asnaes Light and is marked by a buoy.

Jammerland Bugt (55°36'N., 11°04'E.) lies between Asnaes and Reerso, a small peninsula. It is seldom used by large vessels. The coastal bank, with depths of less than 10m, extends up to about 3 miles from the shore in places and several shoal lie in the approach to this bight.

A prominent church stands 1.3 miles inland at Svallerup, about 9 miles SE of Asnaes Light and near the middle of the bight. Another prominent church is situated at Udby, about 1.5 mile NE of Svallerup.

Lysegrund (55°35'N., 10°55'E.), an extensive shoal with depths of 4.3 to 9.1m, lies centered 4 miles S of Asnaes Light and in the outer approach to Jammerland Bugt.

Reerso (55°32'N., 11°06'E.), the small peninsula separating Jammerland Bugt from Musholm Bugt, is joined to Sjaelland by a low, narrow isthmus. The W side of this peninsula is faced with cliffs and rises to a height of 19m. A church, with a prominent spire, stands on the E side. A small fishing harbor is situated on the sheltered SE side of this peninsula.

2.8 **Elefantgrund** (55°32'N., 10°55'E.), a rocky shoal with a least depth of 3.4m, lies 5.5 miles W of Reerso and is marked by a buoy moored at its W side.

Musholm Bugt (55°28'N., 11°08'E.) lies between Reerso and the N extremity of Halsskov, 9 miles S. Its shores are devoid of woods except for a small plantation located near the middle. This bight has general depths of 7 to 16m lying between the shoals in the approaches and the coastal bank fronting the shore. A small and shallow fishing harbor is situated in the NE part of the bight, 2.3 miles SE of Reerso. A prominent church stands 1.4 miles inland at Kirke-Stillinge, about 4 miles SSE of the harbor.

Musholm, a low island, lies in the N part of the bight, about 2 miles SSW of Reerso. Its W side rises to a height of 9m and ends in a steep, yellow cliff.

Slettingsgrund, a shoal patch with a least depth of 4.3m, lies in the approach to the bight, about 3.5 miles SSE of Musholm.

Anchorage may be taken in most parts of this bight with good holding ground. The S part has depths of 11 to 15m; the N part, which is sheltered from almost all winds, has depths of 7 to 9m.

Hojbjerg, 29m high, is a prominent hill, with a pointed summit, standing about 1.3 miles ESE of the N extremity of Halsskov.

Caution.—Two submarine gas pipelines, which may best be seen on the chart, extend W and SW across Store Baelt from a point located on the shore of Musholm Bugt, about 6 miles SE of Reerso.

Restricted areas, 1 mile in diameter, are situated 3 miles and 6 miles W of Reerso and 1 mile N of Halsskovv. These areas, within which anchoring and trawling are prohibited due to the presence of unexploded ordnance, may best be seen on the chart.

Store Baelt—North Part—West Side

2.9 The E coast of Hindsholm, of which Fyns Hoved (55°37'N., 10°35'E.) is the N extremity, is hilly. The hills in the N part are barren, but those in the S have scattered wooded areas. A conspicuous white church, with a red roof, stands at Stubberup, about 5.5 miles SSE of Fyns Hoved.

Stubberup Knold (55°35'N., 10°45'E.), a small shoal area, has a least depth of 7.8m and lies 1.6 miles offshore, about 5 miles SE of Fyns Hoved.

Romso Tue No. 24 Light (55°33'N., 10°49'E.), equipped with a racon, is shown from a prominent green tower, 12m high, standing at the E side of Romso Tue Shoal. This detached shoal patch has a depth of 8.6m and lies about 8 miles SE of Fyns Hoved.

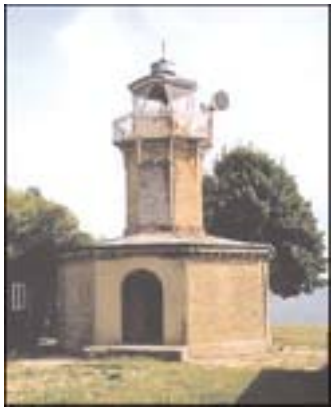
Polyphem, a shoal area with a least depth of 7.2m, lies about 1.5 miles WSW of Romso Tue.

Romso (55°31'N., 10°48'E.) is a low, wooded island with a cliff, 7m high on its E side. A rocky reef extends about 0.8 mile W from the low and narrow point forming the SW extremity of the island. Klaepen, a drying rock, lies at the seaward end of this reef and is marked by a buoy. A conspicuous disused light tower is situated on the E extremity of the island. A number of prominent buildings stand close behind the tower.

Romso Puller (55°30'N., 10°49'E.), a rocky shoal area with depths of 1.8 to 4.7m, lies at the outer edge of the coastal bank. It extends about 1 mile SE of Romso and is marked by a lighted buoy.

Large vessels may anchor, in a depth of 22m, about 2.3 miles SE of Romso.

Romso Sund (55°31'N., 10°45'E.), the passage leading between Romso and Hindsholm, can be used by vessels with local knowledge and drafts up to 4.5m.



Romso Disused Light Tower

Kerteminde Bugt (55°27'N., 10°43'E.) lies between Stavreshoved, the SE extremity of Hindsholm and Risinge Hoved, 4 miles S. Mollegrund, a shoal with a least depth of 5.6m, lies about 1.3 miles SSE of Stavreshoved, at the S edge of the coastal bank.

2.10 Kerteminde (55°27'N., 10°40'E.) (World Port Index No. 29870), a small port, lies at the head of Kerteminde Bugt and is situated between two long embankments at the entrance to Kertinge Nor, a shallow tidal lagoon.

Tides—Currents.—Tidal currents in the entrance attain rates up to 3 knots. During gales rates up to 5 knots may be experienced. Winds from NW to NE may raise the sea level by up to 1m and winds from SE may lower it by as much as 0.8m.

Depths—Limitations.—Two breakwaters protect the harbor entrance, which is 40m wide and has a controlling depth of 4.5m. A basin, used by fishing vessels, is situated on the S side of the harbor and has a depth of 3m. The quay on the N side of the harbor has depths of 4.2 to 5.5m alongside and can handle cargo vessels up to 120m in length and 4.2m draft. Vessels over 80m in length should be equipped with a bow thruster.

An extensive yacht marina is situated 0.2 mile N of the N breakwater.

Aspect.—The entrance fairway off the breakwater heads is marked by buoys. The approach is indicated by a lighted range. A prominent red church, with a square tower at its W end, stands in the town.

Pilotage.—Pilotage is not compulsory. Pilotage is advised for vessels with drafts over 3.7m without local knowledge. Pilots are provided by DanPilot. For further information, see pilotage in paragraph 1.1.

Contact Information.—Kerteminde may be contacted by e-mail, as follows:

aho@kerteminde.dk

Anchorage.—Vessels can anchor, according to draft, E of the port. This roadstead is sheltered from all but E winds and has good holding ground.

Caution.—Yacht races are held in the approaches to the port from April to November.

2.11 Risinge Hoved (55°25'N., 10°50'E.) forms the SE entrance point of Kerteminde Bugt. The shore between this point and Ostero, 8 miles SSE, is wooded. Ostero, a low peninsula, extends about 2 miles SE from the coast, in the vicinity of Nyborg.

Skalenbjerg (55°22'N., 10°44'E.), rising 3 miles S of Risinge Hoved, is a barren hill, 44m high, which is conspicuous from seaward. A windmotor is situated 1 mile E of this hill.

Knudshoved (55°17'N., 10°51'E.), a cliff-faced point, forms the SE extremity of Ostero. A light is shown from a prominent square tower, 12m high, standing on this point.

Knudshoved Light

Knudshoved Faergehavn (55°17'N., 10°51'E.), situated close N of Knudshoved Light, is a ferry terminal harbor. It is used only by the automobile ferries operated by the railroads. No other vessels, including pleasure craft, may use the harbor. The entrance fairway is indicated by range beacons and has a depth of 6m.

Caution.—Two submarine gas pipelines, which may best be seen on the chart, extend across the Store Baelt from a point on

the shore located about 2.5 miles SE of Risinge Hoved.

A submarine cable, which may best be seen on the chart, extends NE from a point on the shore located about 1.3 miles SE of Risinge Hoved.

An abnormal magnetic disturbance has been reported to exist in the area lying about 0.5 mile offshore, 4.2 miles NNW of Knudshoved.

Store Baelt—Central Part

2.12 The central part of Store Baelt is the area bounded to the N by a line joining Halsskov, Sprogo, and Ostero and to the S by a line extending across the N entrance of Langelands Baelt between Omo and Hov.

Sprogo (55°20'N., 10°58'E.), a hilly island lying between Halsskov and Ostero, divides the Store Baelt into two channels, Osterrenden on the E side and Vesterrenden on the W side. A prominent disused light tower stands on a hill, 25m high, at the E end of the island and is floodlit at night.

Sprogo Disused Lighthouse

The passage through Osterrenden is narrowed by Sprogo E-Rev, a narrow reef of clay and rocks, which extends 1.4 miles ENE from the E side of Sprogo and Hasskov Rev, a rocky shoal, which extends 1.2 miles W from Hasskov.

The passage through Vesterrenden is narrowed by Alehus Rev, a rocky spit, which fronts the coast in the vicinity of Knudshoved and Sprogo Puller, a number of detached clay and rock shoals, which extend up to 2.3 miles SW of Sprogo.

The above dangers and the aids marking them may best be seen on the chart.

Caution.—Landing on Sprogo without prior permission is prohibited.

2.13 Store Baelt Link (55°19'N., 11°00'E.) connects Ostero to Halsskov, 9 miles ENE, via Sprogo. The section spanning Vesterrenden, on the W side of Sprogo, consists of a low road and rail bridge. The section spanning Osterrenden, on the E side of Sprogo, consists of a high road bridge and two undersea tunnels.

Vesterrenden.—The W section of the link, which spans Vesterrenden, consists of a low-level bridge (West Bridge) supported by 62 piers, designated 2 through 63 as counted from Sprogo. The fairway channel for northbound traffic lies between piers 34 and 35, while the fairway channel for southbound traffic lies between piers 37 and 38. Each navigation channel has an overall width of 104m with a free vertical clearance at mean sea level of 18m over the central 70m.

Store Baelt Link

Navigation through West Bridge is restricted to vessels of less than 1,000 dwt. Vessels of 1,000 dwt or more are required to use the appropriate traffic lanes in Osterrenden.

The designated fairway channels leading under the bridge are marked by lighted buoys and indicated by range lights. Racons are situated at the center of both navigation spans. The racon on the E span is apparent only to vessels approaching from S, while the racon on the W span is apparent only to vessels approaching from N.

Vessels are advised that the prevailing current in Vesterrenden does not run parallel to the general direction of the traffic flow through the navigation channels.

To approach Vesterrenden from N, vessels should leave Route T at Lighted Buoy No. 25 (55°31'N., 10°52'E.) and steer in a S direction to pass W of Sprogo.

Store Baelt Link—East Bridge

Osterrenden.—The E section of the link, which spans Osterrenden, consists of a suspension bridge (East Bridge) with a total length of about 4.3 miles. The center span is 1,624m wide and has a vertical clearance of 65m at mean sea level.

The two conspicuous towers supporting the suspension bridge are 254m high.

An IMO-adopted Traffic Separation Scheme (TSS) is located in the vicinity of the main navigation span. Each lane is about 475m wide and marked by lighted buoys. The northbound lane, situated at the E side of the fairway channel, has a least depth of 17m. The southbound lane, situated at the W side of the fairway channel, has a least depth of 19m.

The traffic lanes of the TSS are marked by lights and lighted buoys, which may best be seen on the chart. Their entrances are indicated on the outer sides by racons. Racons, situated on the bridge span, indicate the directional fairways and are only apparent to vessels approaching in the designated lane. Range lights, situated on the underside of the bridge span, indicate the preferred line of passage through the lanes.

Vessels of less than 20m in length and sailing vessels are recommended to avoid the TSS lanes and use the adjacent spans. Fishing vessels are prohibited in the traffic lanes.

All vessels must reduce speed to a maximum of 20 knots prior to entering the appropriate lane of this TSS.

Route T follows the TSS through Osterrenden (see paragraph 2.1).

Regulations.—BELTREP, a mandatory ship reporting system, operates in the N and central parts of Store Baelt and is operated by Great Belt VTS (call sign: Great Belt VTS).

The N limit of the reporting area is bounded by lines joining the following positions:

a. Fyn—55°36.0'N, 10°38.0'E (Korshawn).
b. 56°00.0'N, 10°56.0'E (near Marthe Flak).
c. 55°47.0'N, 10°38.0'E (E of Samso).
d. Sjaelland—56°00.0'N, 11°17.0'E (Sjaellands Odde).

The S limit of the reporting area is bounded by lines joining the following positions:

a. 55°12.0'N, 11°15.4'E (Stigsnaes Oil Pier).
b. 55°08.4'N, 11°09.0'E (Orespids).
c. 55°05.0'N, 11°09.0'E (S of Orespids).
d. 55°05.0'N, 10°56.1'E (E coast of Langeland).
e. 55°00.0'N, 10°48.7'E (W coast of Langeland).
f. 55°01.2'N, 10°44.0'E (Thuro Rev Lighted Buoy).

The VTS area is divided into two Sectors at latitude 55°35'N. Sector 1 is located on the N side of this latitude; Sector 2 is located on the S side of this latitude.

All vessels of 50 gt and over and all vessels with an air draft of 15m and over must participate in this reporting system.

Vessels in Sector 1 should communicate with Great Belt VTS (call sign: Great Belt VTS) on VHF channels 16 and 74. Vessels in Sector 2 should communicate with Great Belt VTS (call sign: Great Belt VTS) on VHF channels 16 and 11. All vessels within the VTS area must maintain a continuous listening watch.

The language used for communication shall be English. IMO-standard marine phrases should be used when necessary.

Vessels entering the reporting area must submit a full report when crossing the limit lines or on departure from a port located within the area.

Vessels crossing the line between Sector 1 and Sector 2 must submit a short report. This report should include the vessel's name, call sign, IMO number, and position.

Additional reports must be made whenever there is a change in navigational status or circumstances.

Reports to the VTS should be made using VHF voice transmissions. However, vessels can fulfil certain reporting requirements through the use of AIS.

The full report may be submitted by using a combination of voice and non-verbal means. Vessels may select, for reasons of commercial confidentiality, to communicate that part of their report which provides information on the next port of call by non-verbal means prior to entering the area.

The full report to Great Belt VTS should be in the following format:

Designator	Information Required
A	Vessel name, call sign, and IMO number.
C	Position (a 4-digit group for latitude suffixed with N and a 5-digit group for longitude suffixed by E).
I	Next port of call.
L	Intended route.
O	Draft (in meters).
Q	Details of defects, deficiencies, or restrictions of maneuverability.
U	Deadweight tons and air draft.

A short report by voice from the vessels to VTS need only contain the following information.

Designator	Information Required
A	Vessel name, call sign, and IMO number.
C	Position (a 4-digit group for latitude suffixed with N and a 5-digit group for longitude suffixed by E).

Information of interest to shipping in the VTS area will be given on request or will be broadcast on a VHF channel specified by the VTS. Prior to the broadcast, an announcement will be made on VHF channel 16. All vessels in the area should listen to the broadcast.

Great Belt VTS can provide navigational assistance to individual ships, including the recommendation of suitable anchorages. Such assistance will be made on VHF channel 10 or other channels as assigned.

Anchorage.—Vessels waiting for pilots, improvements in weather conditions, or for any other reasons connected to their passage through Osterrenden can anchor within two designated areas, with a radius of 1 mile, which may best be seen on the chart. The area for southbound vessels lies centered 3.5 miles NNW of Sprogo and the area for northbound vessels lies centered 5 miles SSE of Sprogo. These areas have depths of 17 to 22m and are under the control of Great Belt Traffic VTS.

Caution.—Submarine cables, which may best be seen on the chart, extend across the Store Baelt between Hasskov and the Ostero Peninsula.

Store Baelt—Central Part—East Side

2.14 Halsskov (55°21'N., 11°06'E.), a small promontory, forms the E shore of Osterrenden. The coast, to the N of its

low-lying SW extremity is faced with prominent yellow cliffs.

Halsskov Rev, a shoal area, extends up to about 1.5 miles SW from the SW extremity of Halsskov. This area has depths of less than 6m lying up to 1 mile offshore and detached, rocky patches, with depths of less than 6m, extending up to 2 miles seaward.

Halsskov Harbor (55°21'N., 11°06'E.), situated on the S side of Halsskov, is used only by state-owned ferries. The entrance, protected by two breakwaters, faces SW. It is 120m wide and has a controlling depth of 7.5m. The ferry slips at the head of the harbor basin have depths of 6.5 to 8m alongside.

Korsor (55°20'N., 11°08'E.)

World Port Index No. 29520

2.15 Korsor, lying 1 mile SE of Halsslov, is a commercial port and naval base. The town stands on both sides of the entrance to Korsor Nor, a shallow tidal lagoon.

Ice.—The port is kept open mostly all year round by strong currents and ice breaker assistance.

Tides—Currents.—The mean range of tide is 0.3m. Gales from NW to NE may raise the sea level by up to 1.2m and gales from S may lower it by as much as 0.8m.

During calm periods, there are regular flood and ebb tidal currents in the harbor and the passage leading to Korsor Nor. These currents are irregular in places and are quite strong at times.

Depths—Limitations.—The main approach channel, with a controlling depth of 8m and a width of 103m, leads ENE between the offshore dangers to the harbor entrance. The harbor is protected by N and S breakwaters and a detached breakwater, 200m long, lying close SW. It provides about 2,000m of main quayage.

The naval basin is situated close inside the S breakwater. Gamlehavn, the main section of the harbor, extends SSE from the outer part to Halsskov Bridge and has depths of 6 to 8m. Inderhavn, the inner section, lies E of the bridge and has depths up to 7m.

The Halsskov Bridge, separating Gamlehavn from Inderhavn, is a fixed rail bridge with a single raising bascule at the S end. The navigable passage at the bridge is 25.5m wide with a vertical clearance of 26.8m alongside the bascule pillar. Vessels up to 100m in length, 25m beam, and 5.7m draft may proceed through this bridge passage.

The port has facilities for general cargo, bulk, ro-ro, and cruise vessels. Vessels up to 200m in length, 30m beam, and 7.5m draft can be accommodated.

Aspect.—Prominent cliffs form the part of the coast adjacent to a hill, 20m high, which rises between Halsskov Harbor and Korsor. The dredged approach channel is indicated by a lighted range.

A castle, with a conspicuous tower, stands on the S side of the entrance to the main harbor. Prominent water towers are situated 0.2 mile E and 0.7 mile SE of the castle.

Bonderup, an estate with a conspicuous white building, is situated 2 miles SE of the harbor.

Pilotage.—Pilotage is compulsory for all tankers and all other vessels over 100m in length passing the Halsskov Bridge. It is advised for all vessels without local knowledge. Pilots are provided by DanPilot. For further information, see pilotage in paragraph 1.1.

Pilots can be contacted by VHF and board in position 55°19.5'N, 11°04.0'E, about 2 miles WSW of the harbor entrance.

Regulations.—Vessels should send an ETA message 24 hours in advance.

All unauthorized vessels are prohibited from entry or approaching within 30m of the naval basin.

Under normal conditions, vessels entering and leaving the port have the right of way over vessels proceeding through the entrance of the naval basin. In an emergency, however, naval vessels have priority. Such emergencies are indicated by a quick red flashing light shown from the naval signal station.

Contact Information.—The port can be contacted as follows:

1. VHF: VHF channel 12
2. Telephone: 45-58-370-085
3. Facsimile: 45-58-352-598
4. E-mail: info@korsoerhavn.dk
5. Web site: http://www.korsoerhavn.dk

Anchorage.—Anchorage is available, in depths of 15 to 27m, about 2.3 miles SW of the harbor entrance.

2.16 **Egholm** (55°15'N., 11°11'E.) is a small and low island lying 5.5 miles SSE of Korsor. It is partly wooded with no prominent features. Egholm Flak, the bank fronting this island extends up to 2 miles N and 2.5 miles NW of the island.

Egholm No. 30 Light (55°15'N., 11°06'E.) is shown from a mast on a platform, 10m high, standing about 2.6 miles WNW of Egholm, near the outer edge of Egholm Flak.

Vengeancegrund No. 31 Light (55°18'N., 10°46'E.) is shown from a mast on a platform, 10m high, standing on the E side of an isolated shoal patch, with a depth of 9.7m, lying about 3.2 miles WSW of Egholm.

Agerso (55°13'N., 11°11'E.) is a low flat island rising to a height of 12m in its central part. A causeway leads over the drying bank and connects the N end of Agerso with Egholm.

Agerso Light is shown from a lattice mast standing on Naebbet, the SW extremity of the island.

Agerso Havn, a small harbor, is situated at the E side of the island, about 1 mile NE of Agerso Light. It is used by pilot boats and fishing vessels. The entrance, which is protected by two breakwaters, is 15m wide and has a controlling depth of 2.8m. A ferry terminal, formed by two moles, is situated close N of the harbor and has a controlling depth of 3m.

Helleholm Light (55°11'N., 11°13'E.) is shown from a prominent tower, 12m high, standing near the SW extremity of the low peninsula forming the S end of Agerso.

Agerso Flak, a large shoal area, extends up to about 2 miles W of Agerso Light.

Agerso Flak No. 34 Light (55°12'N., 11°07'E.), equipped with a racon, is shown from a mast on a platform, 10m high, standing about 2.3 miles W of Agerso Light, near the outer edge of Agerso Flak. A shoal, with a least depth of 5.9m, lies about 1.3 miles W of this light and is marked on its E side by a lighted buoy.

Omo (55°10'N., 11°10'E.) lies about 2 miles SW of Helleholm Light and is separated from the SW side of Agerso by Omo Sund. A conspicuous white church stands in a village near the center of the island. Skovbanke, 24m high, is a prominent barren hill that rises on the NE side of the island and

Helleholm Light

slopes steeply on its E side.

Langelandsore Light (Omo Light) (55°10'N., 11°08'E.) is shown from a prominent tower, 22m high, standing on the W extremity of the island.

Langelandsore Light (Omo Light)

Omo Havn, a small craft harbor, is situated on the N side of the island and protected by two breakwaters. It is entered from NE through a dredged channel, 25m wide, with a controlling depth of 3m.

Omo NW Flak, a shoal area, extends up to about 1.5 miles NW of the island and may best be seen on the chart.

Store Baelt—Central Part—West Side

2.17 **Nyborg Fjord** (55°17'N., 10°50'E.) extends in a NW direction for 2 miles on the SW side of the Ostero peninsula. The W shore of this fjord is comparatively high and wooded. The fjord affords sheltered anchorage from all winds, but the entrance channel is restricted by shoal flats extending from the shores.

Holckenhavn Fjord, a shallow arm, extends about 1 mile W from the W side of Nyborg Fjord. A castle, consisting of a yellow building with a square tower and a spire, stands on the S shore of the entrance to the fjord and is conspicuous from seaward.

A prominent white church, with a high-stepped gable, stands in Vindinge, about 2 miles NW of the castle.

Slipshavn (55°17'N., 10°50'E.), a small harbor, lies within a cove on the N side of Slipshavn Pynt, the SW extremity of Ostero. This harbor has depths of 2.7 to 3.9m and normally is only used by naval and government vessels. Unauthorized entry is prohibited.

Nyborg (55°19'N., 10°48'E.)

World Port Index No. 29860

2.18 Nyborg, a former main ferry terminal, is situated at the head of Nyborg Fjord. The port also includes Lindholm Havn, which is situated about 0.8 mile NNW of the SW extremity of Ostero.

Nyborg Home Page
http://www.adp-as.dk

Ice.—The port is normally kept open all year round by ice breakers.

Tides—Currents.—The mean range of tide is 0.3m. Gales, depending on direction, may raise or low the water level in the harbor by as much as 0.8m.

Depths—Limitations.—Nyborg Havn consists of the former ferry basin, Vesterhavn, and Osterhavn. The former ferry basin has five piers with depths of 5 to 8m alongside. Vesterhavn, close W of the ferry basin, has two ro-ro berths, with depths of 7 to 7.5m alongside. It can accommodate vessels up to 7.5m draft. Osterhavn, a small basin at the NE end of Vesterhavn, has a depth of 5m.

Avernakke Oil Pier is located S of Nyborg Havn. It has two main berths, 65 and 100m long, with depths of 6 to 10m alongside. Tankers up to 200m in length and 10m draft can be accommodated.

Lindholm Havn is approached through a dredged channel with a controlling depth of 11m. There are thee main quays, 80 to 240m long, with depths of 5 to 11m alongside. Vessels up to 230m in length and 10m draft can be accommodated.

The port has facilities for general cargo, ro-ro, bulk, container, tanker, and fishing vessels.

Aspect.—The approach channel leading into the fjord and the entrance fairways leading to the harbor are indicated by sector lights or lighted ranges. Slipshavn Light is shown from a framework tower, 6m high, standing on the SW extremity of Ostero. An outer approach lighted buoy is moored about 1mile SSE of this light.

A conspicuous church, with a tall slender spire, stands in the city, close N of the harbor.

Pilotage.—Pilotage is not compulsory, but is advised for vessels without local knowledge. Pilots are provided by Dan-Pilot. For further information, see pilotage in paragraph 1.1.

Pilots can be contacted on VHF channels 12, 13, and 16 and board about 0.6 mile E of the outer approach lighted buoy.

Regulations.—Vessels leaving Lindholm Havn must give way to vessels in the main channel proceeding to the harbor at

Nyborg.

Contact Information.—Nyborg can be contacted by e-mail, as follows:

post@adp-as.dk

Anchorage.—The best anchorage in the fjord is in its widest part, off the entrance to Holckenhavn Fjord. This roadstead has a depth of 10m and is sheltered from all quarters, but SE winds may raise some sea.

Caution.—It is reported that the structures of the lighted range indicating the harbor entrance channel are difficult to identify.

2.19 Vest-lige Puller (55°17'N., 10°54'E.), a detached shoal patch, lies about 1.6 miles E of Knudshoved Light. It has a least depth of 6.2m and is marked by a lighted buoy moored at its W side.

Ost-lige Puller (55°17'N., 10°56'E.), a shoal with a depth of 6m, lies about 2.8 miles ENE of Knudshoved Light and is marked by a lighted buoy moored at its N side. This shoal is located at the N end of a rocky ridge, which may best be seen on the chart.

Dronning Maries Puller, a shoal with a depth of 5.8m, lies on the ridge about 1 mile SSW of Ost-lige Puller.

Kloverhage Pynt (55°14'N., 10°49'E.), situated about 3.5 miles S of Ostero, is a low rounded point backed by a low bluff. Helvedbakke, 58m high, is a prominent hill, with a wooded summit, standing about 2 miles NW of the point.

A conspicuous red church, with a slender spire, stands at Tarup, about 1.4 mile WNW of the point. Another conspicuous church, white with a tall dark spire, stands at Svindinge, 3.2 miles WSW of Tarup.

Klintholm Warehouse, a large white building with a red roof, stands on the coast, 2.6 miles S of Kloverhage Pynt and is conspicuous from seaward.

Vresen (55°13'N., 10°53'E.), a narrow grass-covered islet, lies 2.5 miles ESE of Kloverhage Pynt. This islet, which is about 1 mile long, is marked at its N end by a beacon.

Vresen Puller (55°15'N., 10°54'E.) consists of a number of rocky shoals, with depths of less than 3m, extending up to about 2 miles N of Vresen.

2.20 Hov (55°10'N., 10°56'E.), the N extremity of Langeland, terminates in Lille Hov, a steep bluff, 6m high. Frankeklint, a prominent cliff, is located 0.3 mile SW of Hov. It is 14m high and appears yellow from seaward. A light is shown from a house, 4m high, standing on the top of this cliff.

Hov Light (55°15'N., 10°54'E.) is shown from a prominent tower, 12m high, standing about 1 mile SE of Hov.

Hov Sand, with depths of less than 5m, fronts Hov and extends up to about 1.8 miles N.

A shallow ridge of rocky shoals extends from a point on the W side of Langeland located about 3 miles SW of Hov to Vresen. This ridge is about 1 mile wide and may best be seen on the chart.

Kobberdyb (55°12'N., 10°54'E.), a narrow channel, is the deepest passage leading across the ridge. It lies about 0.8 mile S of Vresen and is used by small vessels with local knowledge.

Hov Light

The fairway has a controlling depth of 4.3m.

Stokkebaek Flak (55°10'N., 10°50'E.), a rocky shoal with a least depth of 3.7m, lies about 3.5 miles W of Hov. It is located about 1.2 miles offshore, near the outer edge of the coastal bank, and is marked by a buoy.

Directions.—Having passed S of the West Bridge in Vesterrenden, vessels may proceed to the E side of the Store Baelt by following a channel lying S of the banks fronting the S side of Sprogo. The track passes N of Ost-lige Puller and then leads ESE for about 5 miles to join Route T.

Vessels proceeding S into the passage lying between Fyn and Langeland should head SSW and pass WNW of Vest-lige Puller. They should then adjust course in a S direction to pass between the coastal bank on the W side and the rocky ridge extending S from Vresen on the E side.

Store Baelt—South Part—West Section

2.21 The W section of the S part of the Store Baelt consists of a passage bounded on the W side by the E coasts of Fyn and Thuro and on the E side by the N half of the W coast of Langeland. From the vicinity of Stokkebaek Flak (55°10'N., 10°50'E.), the channel leads 10 miles SSW between the coastal banks.

The fairway leading through the passage as far S as the E approach to Svendborg Sund has a controlling depth of 10m.

The E approach fairway leading to Svendborg Sund has a controlling depth of 6.7m (see paragraph 2.25).

The N approach fairway leading to Rudkobing has a controlling depth of 5m (see paragraph 2.26).

2.22 East coast of Fyn.—Lundeborg (55°08'N., 10°47'E.), a small fishing harbor, is situated 5.5 miles S of Kloverhage Pynt. The entrance, 10m wide, faces S and has a controlling depth of 2.5m.

The shore between Kloverhage Pynt and this harbor rises inland. There are several large woods and fields enclosed by hedges, which give a general wooded appearance.

Ore Flak (55°08'N., 10°48'E.), a rocky shoal with a depth of 4.3m, lies on the coastal bank, about 1 mile SE of Lundeborg.

Elsehoved Light (55°06'N., 10°47'E.) is shown from a prominent metal tower, 8m high, standing on a low point faced with a bluff, 7m high.

Elsehoved Light

Tiselholt Manor, a large red building with a small spire, stands 0.7 mile WSW of Elsehoved Light. The spire is visible above the trees, but the building is reported to be conspicuous from only ESE.

Thuro (Turo) (55°03'N., 10°42'E.), a low island, lies 0.5 mile off the SE coast of Fyn, 4.5 miles SW of Elsehoved Light. The island is well built over, particularly in the N part. A hill, surmounted by a prominent windmill, rises in the NW part. The E and S sides of the island are partially wooded.

Thuro Rev, a shoal with depths of less than 3m, extends up to about 1 mile SE from the SE extremity of the island and is marked by a lighted buoy.

Thuro Bund, a long and narrow inlet, indents the W side of Thuro island. It is used as a winter anchorage by small local vessels.

2.23 Skarupore Sund (Skaurup Sund) (55°04'N., 10°42'E.), the shallow passage leading between the coast of Fyn and the N side of Thuro, is only navigable by small craft. A low road bridge spans the passage at its W end.

Gronneodde (55°02'N., 10°40'E.), a shallow spit, fronts the SW extremity of Thuro and is marked by a buoy. Grasten Pier, 29m long, is situated close N of this spit and has a depth of 3.5m alongside its head.

Tasinge (55°00'N., 10°33'E.), well built over and wooded in places, is the largest island lying S of Fyn. Valdemarsslot, a prominent castle, stands near the shore in the NE part of the island. It appears from seaward as a large group of buildings, with the main structure having a dark blue roof.

A prominent red church, with a dark roof and spire, stands at Bregninge, 1.5 miles W of the castle, and surmounts the highest point of the island. A prominent windmill is situated close NE of this church. Another prominent church stands on the side of a hill at Bjerreby, in the S part of the island.

The peninsula of Vemmenaes forms the SE part of Tasinge. Lunke Bugt, a shallow bay, lies within the hook of this peninsula.

Caution.—Submarine cables, which may best be seen on the chart, extend between Fyn and Langeland in the vicinity of Elshoved Light and Dagelokke.

2.24 West coast of Langeland.—Lohals (55°08'N., 10°54'E.), a small harbor, lies 2 miles SW of Hov, the N extremity of Langeland. It consists of two basins protected by breakwaters. The S basin is used by small craft and yachts. The N basin has a berth for ro-ro ferries on the E side of the entrance. The entrance, 11m wide, faces S and has a controlling depth of 3.7m. Vessels up to 20m in length, 6m beam, and 3.5m draft can be accommodated.

The main approach to the harbor is through a channel, with a controlling depth of 12m, which leads in a SSW direction between the shoal bank fronting Hov and the shallow ridge extending N from the NW side of Langeland. Two alternate routes lead across the above ridge, but they may only be used by small vessels and require local knowledge.

Hove Chapel stands about 0.8 mile ESE of Lohals. It is prominent, but hidden by woods on the N and S sides.

A conspicuous white church is situated at Stoense, 2.7 miles S of Lohals, and another conspicuous church stands in Snode, 0.8 mile SSE of it.

Dagelokke Havn (55°04'N., 10°52'E.), a small harbor, lies 4.5 miles SSW of Lohals and is protected by two breakwaters. The entrance, 14m wide, faces W and has a controlling depth of 2.6m. Vessels up to 30m in length, 7m beam, and 2.4m draft can enter. The conspicuous chimney of a brick works stands in the vicinity of the harbor.

A prominent church stands at Bostrup, 1.3 miles SE of Dagelokke, but it is reported to be only visible above the trees from W.

Between Dagelokke and Rudkkoping, about 8.5 miles SW, the W coast of Langeland rises gradually from the shore and is mostly well built over.

Sio (54°57'N., 10°41'E.), a small and low island, lies midway between the SE side of Tasinge and Rudkobing. A farm is situated in the center of this island; several houses stand near the SE extremity. The island is separated from Tasinge by Sio Sund, which is shallow and spanned by a fixed highway bridge.

For a description of the fixed bridge extending between the SE side of Sio and Rudkobing, see paragraph 2.26.

Svendborg (55°04'N., 10°37'E.)

World Port Index No. 29830

2.25 Svendborg is situated on the S coast of Fyn, near the middle of Svendborg Sund. The port is an important commercial center and ferry terminal.

The harbor consists of three principal basins and several smaller ones. Frederikso, an island, occupies the central part of the harbor and is connected to shore by a fixed bridge on its W side. An oil depot is situated near the E end of the island.

Ice.—Ice may be encountered from early December through the end of March. The port is usually kept open by icebreakers, except during very severe winters.

Tides—Currents.—There is a tidal range of 0.3 to 0.6m. The water level is determined by wind force and direction. Gales from N to NE can raise the water level up to 1.5m and gales from S to SW can lower it by the same amount.

Currents in Svendborg Sund are very irregular and are greatly influenced by the wind. Gales from NW usually generate W setting currents and gales from E usually generate E setting currents. The currents usually attain rates of 2 to 3 knots, but rates of up to 6 knots can occur in the narrower parts.

Depths—Limitations.—The E approach fairway, which has a controlling depth of 6.7m, leads between the W side of Thuro and the NE side of Tasinge. The W approach fairway has a controlling depth of 6.9m.

Ostre Havn and Nordre Havn, on the N side of Frederikso, form the main commercial berthing areas. The port provides about 2,000m of quayage with depths of 4.3 to 7.5m alongside. The tanker berth at the E end of Frederikso is 78m long and has a depth of 7m alongside.

There are facilities for general cargo, passenger, bulk, tanker, ro-ro, ferries, and coastal vessels. Vessels up to 27,300 dwt, 180m in length, and 6.5m draft can be accommodated.

Aspect.—The fairway channels leading through the E approach to Svendborg are marked by buoys and indicated by lighted ranges.

Pilotage.—Pilotage is not compulsory but is recommended. Pilotage is provided by DanPilot.

Pilots can be contacted by VHF and board, as follows:

1. From the E—About 1 mile SE of the SE extremity of Thuro (Thuro Rev).
2. From the W and Faabourg—position 55°01.7'N, 10°11.2'E (Skrams Flak).
3. From the W—position 55°01.3'N, 10°31.9'E (Lehnskov).

Contact Information.—Svendborg may be contacted by e-mail, as follows:

havn@svendborg.dk

Anchorage.—Good anchorage is available, in depths of 7 to 11m, soft bottom, in the fairway lying between Thuro and Tasinge.

Caution.—Due to depths of less than 5m lying close adjacent to the fairway ranges in several places, the E approach can be transited only during daylight and under pilotage.

A number of small piers and marinas, used by pleasure craft, are situated in the vicinity of the port.

The direction of buoyage changes off Svendborg.

2.26 Rudkobing (54°56'N., 10°43'E.) (World Port Index No. 29760), a small port, is situated on the W coast of Langeland, about 5.5 miles S of the SE extremity of Thuro. It can be approached from N or S through Rudkobing Lob, a narrow channel leading between Thuro and Langeland.

Ice.—Ice can present serious difficulties to traffic navigating in the channels leading between Tasinge and Langeland.

Tides—Currents.—The tidal range is negligible. Wind force and direction are the determining factors for the water level. Winds from NW to NE raise the water level by up to 0.6m and winds from S to SW lower it by as much as 1.2m.

During calm weather, the tidal current in Rudkobing Lob changes direction regularly about every 6 hours and attains a rate of about 2 knots. In unsettled weather, the currents may set in the same direction for several days and attain rates of 4 to 5 knots. Winds from NW usually cause a strong S setting current and winds from NE usually cause a strong N setting current.

Depths—Limitations.—The section of Rudkoping Lob lying N of the harbor has a controlling depth of 5m over a bottom width of 30m. The section lying S of the harbor has a controlling depth of only 3.2m.

Langelandsbroen (Langelands Bridge), a fixed bridge, spans Rudkobing Lob and extends between the SE extremity of Sio and the harbor. The navigable span is located between supporting pier No. 11 and supporting pier No. 12, counted from Sio. It has a navigable width of 80m and a vertical clearance of 26m.

The Langelands Bridge

The main commercial harbor basin has an entrance, 18m wide, and depths 3.5 to 5m. A basin, used by fishing vessels, and a basin used by small ferries, are situated close NE and close SW, respectively, of the main basin. A marina lies close N of the harbor. There are facilities for general cargo, ferries, bulk, coasters, and fishing vessels. Vessels up to 82m in length, 15m beam, and 4.8m draft can be accommodated.

Aspect.—The approach channel is marked by lighted and unlighted buoys. Its outer section is indicated by a lighted range. An outer approach lighted buoy is moored about 1.8 miles NNE of Sio. The fairway leading under the bridge is marked by daymarks and synchronized flashing lights on pillars.

A prominent red church, with a tall spire, stands in the town and a conspicuous windmill is situated close SE of it. Another prominent church, with a chimney standing close SE of it, is situated about 0.3 mile E of the red church. A conspicuous silo stands in the vicinity of the main harbor basin.

Pilotage.—Pilotage is not compulsory but is recommended. Pilotage is provided by DanPilot. For further information, see pilotage in paragraph 1.1.

Regulations.—Vessels should send an ETA at least 12 hours in advance.

Caution.—The dredged sections of the approach channel are subject to silting and depths may be less than indicated.

The currents set across the harbor entrance.

Store Baelt—South Part—East Section

2.27 The E section of the S part of the Store Baelt consists of Langelands Baelt, a passage bounded on the W side by Langeland and on the E side by a line separating Smalandsfarvandet from the Store Baelt and by the W coast of Lolland. The coastal bank fronting the shore is generally narrow but it extends up to about 1 mile seaward at a point about 4 miles S of Hov.

For details of Route H and Route T (Deep Water Route), which lead through Langelands Baelt, see paragraph 2.1.

Langelands Baelt—West Side

2.28 The W side of Langelands Baelt is formed by the E

coast of Langeland, which extends 28 miles SSW from Hov (55°10'N., 10°56'E.) to Dovnsklint, the S extremity of the island. The land is hilly and there are many woods. The S part of the island, in the vicinity of Dovnsklint, is known as Gulstav.

A conspicuous large main building stands at Nedergard, about 7.5 miles SSW of Hov. It is red and surrounded by trees.

Tranekaer Castle (55°00'N., 10°52'E.), a conspicuous red building surmounted by a thin spire, stands on high ground about 10 miles SSW of Hov.

Tranekaer Castle

A prominent church, with a tall spire, is situated 0.5 mile SW of the castle. A square tower, 9m high, stands on the coast, 1.5 miles ESE of this church, and is conspicuous from seaward.

Spodsbjerg Havn (54°56'N., 10°50'E.), a small harbor, lies about 4 miles S of Tranekaer Castle. It consists of three basins protected by breakwaters. The S basin, with depths up to 3.5m, is used by pleasure craft and the center basin, with a depth of 2.5m, is used by fishing vessels. The N basin, with a depth of 5m, is used exclusively by the Spodsbjerg-Naskov ferry vessels. The entrance to this ferry basin is 60m wide and is indicated by a lighted range.

A prominent church stands at Tullebolle, 1.8 miles NW of Spodsbjerg Havn. It has a square tower, but is visible only from SE; a conspicuous windmill is situated close NE of this church.

A prominent white church stands at Longelse, 1.3 miles SW of Spodsbjerg Havn, but is partially obscured by trees. A conspicuous windmill is situated 0.5 mile W of this church.

A prominent church stands at Fuglsbolle, 3.2 miles NW of Spodsbjerg Havn. It has a slender black spire, but can only be seen from certain directions.

A prominent church stands at Lindelse, 5.7 miles SW of Spodsbjerg Havn, and a conspicuous windmill is situated 0.4 mile ENE of it. A prominent large red building, with a spire, stands 1.4 miles SE of the church.

Prominent churches stand at Humble and at Fodslette, which are located 6.8 miles N and 5.8 miles NNE, respectively, of the S extremity of Langeland. However, they are only visible from certain directions. A conspicuous farm house stands at Hjortholm, 0.9 mile ENE of Fodslette.

A prominent church, with a square tower, stands at Tryggelev, 5 miles N of the S extremity of Langeland. A conspicuous chimney and a windmill are situated close NE and on a hill close SW, respectively, of this church and are clearly visible from SE.

A prominent white church, with a slender spire, stands at Magleby, 3.1 miles NNE of the S extremity of Langeland. A conspicuous windmill is situated at Sondenbro, 1.4 miles SSW of this church.

Keldsnor Light (54°44'N., 10°43'E.) is shown from a prominent tower, 34m high, standing on the SE extremity of Langeland. Dovnsklint, the S extremity of Langeland, is located 1.2 miles WSW of the light and is formed by white cliffs, up to 16m high.

Caution.—An area, within which anchoring and fishing are prohibited, lies centered about 3.5 miles NE of Keldsnor Light. The area extends up to 3 miles seaward from the E coast of Langeland and may best be seen on the chart.

Danger Areas, which may best be seen on the chart, lie centered about 4 miles SE and 11 miles ESE of Keldsnor Light. Anchoring, fishing, and underwater activities should be avoided within these areas due to the possible existence of bottom mines.

Keldsnor Light

Langelands Baelt—East Side

2.29 The E side of Langelands Baelt is formed, in the N part, by the a line separating Smalandsfarvandet from the Store Baelt and, in the S part, by the W coast of Lolland.

An extensive flat, with depths of less than 10m, extends between Omo (55°10'N., 11°10'E.) and the N coast of Lolland, 11 miles S, and may best be seen on the chart.

Omo Tofte, extending up to about 3 miles S of the S extremity of Omo, and Omo Stalgrunde, lying centered about 4.5 miles S of Omo, are two shoal areas lying on this extensive flat.

Numerous unmarked shoals and rocky areas lie on this flat. Therefore, navigation in the area lying between Omo and Lolland is mostly limited to small vessels with local knowledge. An unmarked narrow passage, with a controlling depth of 7.3m, leads E across the flat, about 4 miles N of Lolland.

The W coast of Lolland bordering Langelands Baelt is low, flat, and wooded, with few prominent landmarks.

Onsevig (54°57'N., 11°07'E.), a shallow inlet with wooded shores, indents the NW side of Lolland. It is entered between Klinteodde and Nojsomheds Odde, 0.4 mile WSW. A small harbor basin lies close off the E side of this inlet and is con-

nected to the shore by a causeway, 180m long. The basin has an entrance, 10m wide, and is used only by small craft.

A wind farm area, in which 11 wind generators stand, is located about 1.8 miles NE of the entrance to Onsevig and may best be seen on the chart. The wind generators are conspicuous and floodlit.

Vensholm (54°56'N., 11°03'E.), a narrow islet, lies about 0.5 mile offshore, 2 miles WSW of the entrance to Onsevig.

2.30 **Tars** (54°53'N., 11°02'E.), a small harbor, is situated on the S side of Tars Vig, a small bay lying about 5 miles SW of Onsevig. It is used exclusively by local ferries. The approach channel is 40m wide and has a controlling depth of 5m. A small and shallow harbor, used by fishing vessels, lies 0.2 mile NW of the ferry harbor.

An aeronautical light is shown from a prominent TV mast standing at Karleby, about 6.5 miles E of Tars.

Nakskov Fjord (54°50'N., 11°00'E.) indents the W side of Lolland and extends about 5 miles SE. It is entered between Tars Vig and Albuen, 3.2 miles SW. The fjord is generally shallow and encumbered with numerous small islands. Several small bays indent the N shore.

Albuen Light (54°50'N., 10°57'E.) is shown from a prominent tower, 13m high, standing on the N end of a low peninsula, which is connected to the W side of Lolland by a long narrow isthmus.

Albuen Light

Enehoje (54°50'N., 11°01'E.), 16m high, lies 2 miles E of Albuen Light and is the largest island in the fjord. Range lights are situated at the E and W sides of this island. A pier, 150m long, extends seaward from the E side of the island and has a depth of about 1m alongside.

Lango Havn (54°49'N., 11°01'E.), a small harbor formed by two moles, is situated on the S shore of the fjord. It is used by yachts and fishing vessels. The entrance faces NW and has a controlling depth of 3m.

Albue Flak (54°49'N., 10°55'E.), a shoal area with depths of 0.9 to 6m, extends up to about 1.8 miles W of Albuen Light and is marked by a buoy.

Kappel Church (54°45'N., 11°02'E.), white with a prominent pointed steeple, stands 4.5 miles SE of Albuen Light and marks the E side of the S end of Langelands Baelt.

Caution.—A Danger Area, which may best be seen on the chart, lies centered about 1.2 miles W of Tars, in the N approach to Nakskov Fjord. Anchoring, fishing, and underwater activities should be avoided within this area due to the possible existence of bottom mines.

Nakskov (54°50'N., 11°08'E.)

World Port Index No. 29700

2.31 Nakskov, the largest port in Lolland, is situated in a narrow winding inlet at the E end of Nakskov Fjord.

Ice.—Ice may be encountered from early December through the middle of March. During average winters, ice may encumber the approaches from early January to late February, but icebreakers are available.

Tides—Currents.—Gales from NE to E may raise the sea level by up to 1.5m and gales from SW to W may lower it by as much as 0.9m. The tidal range is negligible. The tidal currents alternate regularly about every 6 hours during calm weather and follow the general direction of the channel.

Depths—Limitations.—Shoal flats, with depths of less than 5m, front the entrance to the fjord. A main dredged approach channel, with a controlling depth of 6.3m over a bottom width of 30 to 40m, leads between the dangers in the fjord to the port. At a position close S of Enehoje, a secondary channel, with a controlling depth of 3.2m, branches off and also leads to the port.

The harbor provides about 2,800m of total berthage, with depths of 4.5 to 6.3m alongside. There are facilities for general cargo, ro-ro, bulk, tanker, and fishing vessels. Vessels up to 200m in length, 30m beam, and 5.8m draft can be accommodated.

There are two drydocks in the harbor. The largest can handle vessels up to 33,000 dwt and 190m in length.

Aspect.—An outer approach lighted buoy is moored about 1.8 miles NNW of Albuen Light, at the seaward end of the narrow, winding channel. The fairway is marked by lighted buoys, buoys, and lighted ranges.

A prominent red church, with a spire, stands in the town. Two conspicuous chimneys, tall and thin, are situated in the town and are visible from all directions. Several prominent cranes and silos stand in the vicinity of the harbor.

Pilotage.—Pilotage is not compulsory but is recommended. Pilotage is provided by DanPilot. For further information, see paragraph 1.1.

Pilots can be contacted by VHF and board about 2.5 miles NW of Albuen Light.

Pilot boards in position 54°52'N, 10°55'E.

Vessel Traffic Service.—There is a VTS in place with the following requirements.

1. A Reporting System has been established between the approach to the channel towards Nakskov Fjord and Nakskov Port to ensure that vessels are informed of the movements of other vessels.
2. Vessels sailing in opposite directions are able to plan a safe passing of each other in the narrow navigation channel.
3. The Reporting System applies to all vessels equipped with VHF that are over 20m loa.

Vessels must adhere to the following procedures:

1. Vessels must send a Position Report on VHF channel 12 when passing the Reporting Points, as follows:
   a. Inbound vessels—Position 54°52.0'N, 10°55.8'E (about 0.3 miles NW of the approach to the channel).
   b. Inbound and outbound vessels—Position 54°49.5'N, 11°01.4'E (Ramso Light).
   c. Outbound vessels—Position 54°49.9'N, 11°07.3'E) (Nakskov Port).

   The Position Report must include the following information:
   a. Vessel's name.
   b. Navigation direction (inbound/outbound).
   c. Position.
   d. Draft.
2. Vessels departing Nakskov Port must additionally state the berth number.
3. Vessels must keep a listening watch on VHF channel 12 from 10 minutes before departure from Nakskov Port, and during navigation between the approach and Nakskov Port.
4. Two meeting vessels should mutually agree on a safe passage, if possible at established lay-bys located at Enehoje (54°49.6'N 11°01.2'E) or at Kuddeholm (54°49.7'N 11°04.8'E).
5. The broadcast language used should be English.

Regulations.—The inner part of the approach channel has a speed limit of 5 knots.

Vessels of 2,000 dwt and less may enter the port by day or at night. Other vessels can only navigate safely at night with the assistance of searchlights. Such searchlights can be provided by a tug for which 24 hours notice is required.

Contact Information.—Nakskov may be contacted by e-mail, as follows:

havnen@nakskov.dk

Anchorage.—Anchorage in the fjord is limited to small vessels, in depths of up to 5.5m. Local knowledge is advised.

Caution.—The inner part of the fjord is designated as a wildlife reserve and entry is subject to numerous regulations.

Smalandsfarvandet

2.32 Smalandsfarvandet comprises the waters lying between Sjaelland, on the N side, and Lolland and Falster, on the S side. It connects Store Baelt with the Baltic Sea by means of the passages leading between Falster and Lolland, between Falster and Mon, and between Mon and Sjaelland.

Smalandsfarvandet is considered as being divided into a W part and an E part by the meridian of 11°50'E. This meridian, which passes through Orehoved, the N extremity of Falster, lies 24 miles E of the line separating Smalandsfarvandet from the Store Baelt.

The principal entrances from the Store Baelt are Agerso Sund, lying between Agerso and the coast of Sjaelland, and Omo Sund, lying between Agerso and Omo (see paragraph 2.16).

The channels leading over the flat extending between Omo and the N coast of Lolland are suitable only for small vessels with local knowledge.

The W part of Smalandsfarvandet is wide but the channels narrow considerably in the E part. The coasts on both sides have numerous indentations. A few islands front the Sjaelland coast and several islands lie within about 7 miles of the N side of Lolland.

The principal entrances to the Baltic Sea are Gronsund, lying between the SW side of Mon and Falster; Guldborg Sund, lying between Falster and Lolland; and Bogestrom, lying between Sjaelland and Mon.

The main route through Smalandsfarvandet from the Store Baelt leads through Omo Sund and then SE through Gronsund. Most of the W part of Smalandsfarvandet has a controlling depth of 11m while most of the E part is relatively shallow. The dredged channel located at the E end of Gronsund has a controlling depth of 5m.

Secondary channels lead from the W entrances to the ports located on the N side of Lolland and on the S side of Sjaelland. There are also some small craft passages leading between the islands and shoal areas.

Guldborg Sund has a controlling depth of 6.1m as far as Nykobing, but it is then comparatively shallow S of this port.

Bogestrom, leading along the coast of Sjaelland and then NW of Mon, is comparatively shallow and may only be used by small vessels. The controlling depth in Bogestrom has been reported to be only 2m and is subject to silting.

Vessels with drafts of more than 5m must approach the ports located within Smalandsfarvandet only from the Store Baelt.

Ice.—Ice may appear in Omo Sund and the deeper fairways in the W and SW parts of Smalandsfarvandet as early as the third week of December. It may remain as late as the second week of April.

Among the islands off the N coast of Lolland, ice forms quickly and often remains for a long time. The coast of Sjaelland may be rapidly obstructed by ice or cleared of it by a shift in the direction of the wind.

In the E part of Smalandsfarvandet, the relatively shallow channels usually freeze over early in the season, and once ice has formed it is slow to disappear. A large amount of drift ice may be carried in both directions through Gronsund, but the channel is seldom entirely frozen over.

Tides—Currents.—The tidal range is small, but strong winds may raise or lower the water level a considerable amount. During calm weather, tidal currents in Smalandsfarvandet set regularly E with a rising tide and W with a falling tide. In unsettled weather, the direction of the current is determined by the wind. An E current is formed by N and W winds and a W current is formed by E and S winds.

In the narrow channels in the E part of Smalandsfarvandet, the currents sometimes attain a velocity of 3 to 4 knots, but in the W part they seldom exceed a rate of 1 knot.

Pilotage.—Pilotage is not compulsory but is recommended. Pilotage is provided by DanPilot. For further information, see paragraph 1.1.

Pilots can be contacted by VHF and board about 4.5 miles NW of the N extremity of Agerso.

Smalandsfarvandet—West Part

2.33 **Omo Sund** (55°11'N., 11°11'E.), the main entrance

channel leading from the Store Baelt, has depths exceeding 13m.

From a position about 0.5 mile S of Agerso Flak No. 34 Light (55°12'N., 11°07'E.), the route through the sound leads ESE for 2.5 miles and then SSE for 3 miles. A lighted buoy, marking the inner entrance of this sound, is moored about 2.5 miles SSE of the S extremity of Agerso.

Caution.—Several submarine cables, which may best be seen on the chart, extend across Omo Sund and are marked by directional beacons.

2.34 Agerso Sund (55°13'N., 11°14'E.), the northernmost passage leading from Store Baelt into Smalandsfarvandet, has depths of 10.2 to 61m in the fairway channel. It passes between Egholm and Agerso, on the W side, and the coast of Sjaelland, on the E side.

From a position about 4 miles NW of the N extremity of Egholm, the route through the sound leads ESE for 3.2 miles, SE for 1 mile, S for 3 miles, and SE for 3.5 miles.

The fairway is marked by lighted buoys and lighted ranges.

Anchorage.—Bogevig, a bay lying between Egholm and the N part of Agerso, provides anchorage for large vessels. The roadstead has depths of 9 to 11m and lies between the steep-to coastal bank and the channel leading through the sound.

Caution.—Several submarine cables, which may best be seen on the chart, extend across Agerso Sund.

Several dangerous wrecks, which may best be seen on the chart, lie adjacent to the sides of the fairway channel.

Yacht racing marks may be moored adjacent to the E side of the fairway channel from April to November.

2.35 Skaelskor (55°15'N., 11°18'E.) (World Port Index No. 29530) is a small harbor lying in the SW section of the passage connecting Skaelskor Fjord and Skaelskor Nor.

The entrance to Skaelskor Fjord lies at the E side of Agerso Sund, 1.7 miles E of Egholm, and is protected by two breakwaters. The fjord extends about 1.5 miles in an ESE direction and then 1 mile NE to the harbor. Skaelskor Nor, an extensive shallow inlet, lies N of the harbor and is connected to the fjord by a narrow passage.

Ice.—Ice may appear as early as the beginning of November and remain until the first week of April.

Tides—Currents.—Due partly to the shallow inlet lying N of the harbor, the tidal currents are very strong. In calm weather the currents change regularly every 6 hours and attain rates up to 5 knots.

Depths—Limitations.—A dredged channel, with a controlling depth of 4.5m, leads through the fjord to the harbor.

The harbor consists of two basins with depths of 3.8 to 4.6m alongside. Vessels up to 60m in length, 10m beam, and 4.1m draft can be accommodated.

It is reported that the harbor is used mainly by yachts and fishing vessels, and seldom by commercial vessels.

Aspect.—The entrance channel is marked by buoys and is indicated by a lighted range.

A prominent red church, with a red roof, stands in the town and a conspicuous chimney is situated 0.8 mile W of it. A prominent red church stands at Boeslunde, 3.4 miles NNE of the entrance to the fjord.

Pilotage.—Pilotage is not compulsory but is recommended due to the strong currents in the area.

Caution.—The fjord and inlet are designated as a nature reserve and entry is subject to numerous restrictions.

2.36 Stigsnaesvaerket Havn (55°12'N., 11°15'E.) (World Port Index No. 29545) lies on the E side of Agerso Sund, 1.7 miles NE of the S extremity of Agerso, and serves a power plant. The fairway channel leading to the harbor has a dredged depth of 18m.

Stigsnaesvaerket Havn

A T-shaped oil pier projects about 600m from the shore and has a depth of 16m alongside the head. The berth, formed by additional mooring dolphins, is 235m long. There are no length or beam restrictions at this berth but vessels are limited to a draft of 15m.

A coal discharge quay is situated close N of the oil pier. The berth is 300m long and has a depth of 18m alongside. Vessels up to 170,000 dwt, 300m in length, 45m beam, and 17m draft can be accommodated.

A coal-loading berth, 135m long, is situated close N of the discharge quay and has a depth of 9m alongside. It can accommodate vessels up to 150m in length, 19m beam, and 8.5m draft.

An ash quay is situated close S of the oil pier. The berth is 60m long and has a depth of 8m alongside. It can accommodate vessels up to 130m in length and 7.5m draft.

Stigsnaes Ferry Harbor is situated 0.5 mile NW of Stigsnaesvaerket Havn. This harbor is used exclusively by small ferries and is closed to all other traffic.

Pilotage.—Pilotage for Stigsnaesvaerket Havn is compulsory for dry cargo vessels over 8,000 dwt unless an exemption has been granted. Exemptions are made for vessels under 8,000 dwt which are frequent visitors. Pilots are provided by Dan-Pilot. For further information, see pilotage in paragraph 1.1.

Pilots can be contacted by VHF and board about 4 miles NW of the N extremity of Egholm.

Regulations.—Vessels should send an ETA 72 hours, 48 hours, and 24 hours in advance.

2.37 Gulfhavn (Stigsnaes Oil Pier) (55°12'N., 11°15'E.), situated 0.5 mile SE of Stigsnaesvaerket Havn, serves a refinery.

Tides—Currents.—The currents at Stigsnaesvaerket Havn and Gulfhavn run parallel with the pier heads and attain a maximum rate of about 2 knots.

Depths—Limitations.—The facility consists of a T-shaped

pier extending 306m from the shore. The pier head is 500m long and provides three main berths, with depths of 7.5 to 16m alongside. Tankers up to 120,000 dwt (170,000 dwt partly loaded), 280m in length, and 15.5m draft can be accommodated.

Gulfhavn—Stigsnaes Oil Pier

Aspect.—Two conspicuous chimneys stand near the power plant at Stigsnaesvaerket Havn. A prominent tank farm is situated in the vicinity of Gulfhavn.

A conspicuous castle stands at Borreby, about 2 miles NE of Stigsnaesvaerket Havn, and a prominent white church is situated about 1 mile E of it.

Pilotage.—Pilotage for Gulfhavn is compulsory for vessels over 1,500 dwt or over 4,500 gt. Pilots are provided by DanPilot. For further information, see pilotage in paragraph 1.1.

Contact Information.—Gulfhavn Terminal can be contacted on VHF channels 12 and 16.

The Oil Pier can be contacted on VHF channels 12, 14, and 16.

Contact Information.—The harbormaster can be contacted, as follows:

1. VHF: VHF channels 12 and 16
2. Telephone: 45-99-550520
3. Facsimile: 45-70-234258

2.38 Ferne Klint (55°11'N., 11°18'E.), the SE entrance point of Agerso Sund, is situated 1.2 miles ESE of Gulfhavn and formed by a small but conspicuous yellow cliff.

From Ferne Klint, the coast, for 7 miles E, is fronted by an extensive shallow lagoon, which is protected on its S side by a series of narrow strips of land and Glaeno, an island.

Glaeno (55°12'N., 11°26'E.) is situated 5 miles E of Ferne Klint. This island rises in steep, yellow bluffs to a height of 26m midway along its length. The part of the lagoon lying W of Glaeno is known as Basnaes Nor and the part lying E is known as Holsteinborg Nor. The coastal bank fronting this lagoon extends up to 1.5 miles seaward in places.

A prominent white church stands at Orslev, 1.5 miles NNW of Glaeno, and a conspicuous windmill is situated 0.5 mile ENE of it.

A conspicuous castle, with two thin spires, stands near extensive woodlands at Holsteinborg, 1.3 miles NE of Glaeno.

The land extending between the E end of the lagoon and Karrebaeksminde, 5 miles E, rises to an elevation of about 30m. Klinteby Klint, a steep and somewhat prominent cliff, stands about 4 miles E of Glaeno.

Knudshoved (55°05'N., 11°37'E.), a narrow peninsula, extends about 8 miles WNW from the S part of the Sjaelland coast. It is wooded except for a narrow isthmus near the W end.

Kirkegrund (55°06'N., 11°22'E.), marked by a buoy on the S side, is the westernmost of a chain of shoals and rocky areas extending about 9 miles WNW from the W end of Knudshoved.

Venegrunde (55°06'N., 11°28'E.), an area of rocky shoal patches, lies about midway between Kirkegrund and Knudshoved. It has a least depth of 1.7m near the E end and is marked by buoys.

Knudshoved Rev (55°05'N., 11°35'E.), an area of rocky patches with depths less than 10m, extends up to about 2 miles WNW of the W end of Knudshoved and is marked by a buoy.

Karrebaeksminde Bugt (55°07'N., 11°33'E.) is the water area lying N of Venegrunde and Knudshoved Rev. It has fairly regular depths up to 12m and is clear of dangers between the shoals on its S side and the coastal bank on its N side. In the middle of the bay the bottom is generally mud and toward the sides the bottom is sand.

2.39 Avno Fjord (55°05'N., 11°45'E.) is a shallow inlet, encumbered with rocks, which indents the coast at the SE end of Karrebaeksminde Bugt. It separates Knudshoved peninsula from the Sjaelland coast. A narrow and unmarked shallow channel leads to the head of this fjord.

From the head of Avno Fjord, at the root of Knudshoved peninsula, the E coast of Karrebaeksminde Bugt trends NW for 10 miles to Karrebaeksmind. Dybso Fjord and Karrebaek Fjord back the islands of Eno and Dybso, which together form the outer shore of the N part of this stretch of coast. Both of these fjords are shallow.

A prominent church, with a pointed tower, stands at Kong, about miles 4 miles N of the root of the Knudshoved peninsula. Another prominent red church is situated at Vester Egesborg, about 3 miles N of Kong.

Karrebaeksminde (55°11'N., 11°39'E.), a small harbor, is situated in the NE part of Karrebaeksminde Bugt. It is used by small craft but is no longer used by commercial vessels.

Karrebaeksminde Red is situated in the NE corner of Karrebaeksminde Bugt and provides anchorage. The roadstead lies within a small bight in the coastal bank close W of Karrebaeksminde and has depth of 7 to 8m, with good holding ground.

A dredged channel leads from the harbor area of Karrebaeksmind into a canal, which extends across Karrebaek Fjord to the port of Naestved.

Caution.—Designated nature reserve areas are situated within the waters of the lagoon (Basnaes Nor and Holsteinborg Nor), Dybso Fjord, and Karrebaek Fjord. Entry into these areas is subject to numerous restrictions.

Firing exercise areas, marked by buoys, occupy the central and E parts of Dybso Fjord.

A fish farm area, which may best be seen on the chart, lies centered about 2 miles SE of the SE extremity of Glaeno.

Naestved (55°14'N., 11°45'E.)

World Port Index No. 29555

2.40 Naestved, the port for an industrial center, is situated

5 miles NE of Karrebaeksminde.

Tides—Current.—The current at the port is negligible. The tidal currents at the entrance to Karrebaeksmind attain rates up to 4 knots, but are much influenced by the wind.

Winds from NW can raise the water level in the fjord by up to 1.2m and winds from E to SE can lower it by 0.5m.

Depths—Limitations.—A dredged channel, marked by buoys, leads from the harbor area of Karrebaeksmind into a canal, which extends across Karrebaek Fjord to the port.

The entrance to the dredged channel at Karrebaeksmind is protected by two breakwaters and is 70m wide. The dredged channel has a bottom width of 20m. The canal has a surface width of 40m and a minimum bottom width of 16m. The dredged channel and canal have a controlling depth of 6m.

A fixed bridge, with a single bascule, spans the canal about 0.4 mile E of Karrebaeksminde. It has a navigable width of 22m and, when open, a vertical clearance of 20m.

An overhead power cable, with a vertical clearance of 33m, spans the canal 1.5 miles SW of the port.

A double-section swing bridge spans the canal about 1.4 miles SW of the port and has a navigable width of 42m.

The basins at Naestved provide about 1,100m of total quayage, with a depth of 6m alongside. There are facilities for general cargo, timber, and bulk vessels. Vessels up to 118m in length, 14.4m beam, and 4.8m draft, or 12.2m beam and 5.6m draft, can be accommodated.

Pilotage.—Pilotage is compulsory for vessels of 55m in length and over proceeding to Naestved. Pilots can be contacted by VHF and board about 2 miles SW of the entrance to Karrebaeksminde. Vessels exceeding 1,700 dwt are advised to employ a tug.

Pilotage is provided by DanPilot. For further information, see paragraph 1.1.

Regulations.—Speed through the fjord is limited to a maximum of 6 knots.

Vessels proceeding against the tidal current are required to give way to vessels proceeding with it.

Vessels over 1,800 dwt must transit through the single-bascule bridge with the assistance of a tug unless they are equipped with an adequate bow thruster.

Contact Information.—Naestved may be contacted by e-mail, as follows:

port@naestvedport.dk

Caution.—Submarine cables and pipelines extend across the canal in several places and are marked by notice boards.

2.41 Vejro (55°02'N., 11°22'E.), a low island, lies 9.5 miles WSW of the W end of the Knudshoved peninsula and is well built over. A light is shown from a prominent tower, 16m high, standing on the NE side of the island.

Vejro Vestre Flak, a shallow area of rocks and stones, extends up to about 2.5 miles NW of the island and is marked by buoys.

A lighted buoy, marking the outer edge of the coastal bank in this vicinity, is moored about 3.4 miles NW of Vero Light.

Urne (54°57'N., 11°17'E.), a small harbor, is located on the NW coast of Lolland, about 5.5 miles SSW of Vejro. It consists of a basin connected to the shore by a causeway, 300m long.

Vejro Light

The harbor has a controlling depth of 1m and is only used by fishing boats.

The coast between Urne and Vigsnaes, 12 miles ESE, is generally low except for a short hilly stretch located 1 mile S of Kragenaes Havn. Numerous wooded areas fringe the shore and some extend to the waters edge.

Extensive shoal areas, which may best be seen on the chart, occupy most of the S half of the W part of Smalandsfarvandet. They surround the offshore islands and front the N coast of Lolland. Several shallow channels lead between the offshore islands but can be navigated only by small vessels.

2.42 Rago (54°58'N., 11°19'E.), a small and flat island, lies on the shore bank, about 1.3 miles NE of Urne. It is low and covered with bushes. A prominent disused lookout tower stands at the E end of this island. Rago Kalv, an islet, lies close W of Rago and is connected to it by a rocky ridge.

Rago Flak, a shoal area with depths of less than 5m, surrounds these islands and extends up to about 3 miles NW. Rago Sund is the shallow passage leading between these Rago and the coast of Lolland.

Kragenaes Havn (54°55'N., 11°22'E.), a small harbor, is situated 3 miles SE of Urne and used by ferries. The entrance, which faces E, is 15m wide and has a controlling depth of 3m. The two ferry berths are situated outside the harbor, close N of the entrance, and have a depth of 3m alongside.

Fejo (54°57'N., 11°25'E.), a mostly flat and built over island, lies centered 2.5 miles NE of Kragenaes Havn. A prominent mill, without sails, stands at Osterby, about 1.5 miles W of the E extremity of the island.

Skalo, an islet, lies close off the NW extremity of Fejo and is connected to it by a causeway.

Skalo Havn, a small and shallow fishing boat harbor, is situated on the S side of Skalo and Dybvig Havn, a small craft harbor, is situated on the SE side of Fejo.

Vesterby Havn, a small harbor, is situated on the W side of Fejo. The entrance, which faces SW, is 25m wide and has a controlling depth of 3.9m. The harbor basin has depths of 1.4 to 3.4m and is used by ferries and pleasure craft.

2.43 Femo (54°59'N., 11°32'E.) lies 2.5 miles NE of the E extremity of Fejo. This island is hilly in contrast to the adjacent ones and rises to a height of 22m in its SE part. A prominent church, with a pointed tower, stands on the W side of the island.

Skellerev, a reef with a narrow strip of sand, lies about 1 mile E of the E extremity of the island.

Femo Sund leads SE between Femo and Fejo. There is a controlling depth of 9.1m in the N part of this channel, but it is reduced to 3.7m in the S part lying between the islands. This channel is used only by small craft with local knowledge.

Lilleo (54°54'N., 11°29'E.), a small island with several houses, lies 2.3 miles S of the E extremity of Fejo.

Asko (54°53'N., 11°29'E.) lies close S of Lilleo and is connected to it by a causeway. This island is flat and a small village stands on its N side. A prominent church is situated close S of the village in the N part of the island. Asko Havn, a small craft harbor, lies close off the SW end of the island and is connected to the shore by a causeway. The entrance is 12m wide and has a controlling depth of 3m.

Lindholm (54°53'N., 11°27'E.), a partly wooded and comparatively high islet, lies on a shallow spit extending from the coast of Lolland, 1 mile WSW of Asko.

Vigsnaes (54°54'N., 11°39'E.), a low and partially-wooded peninsula, forms the NE extremity of Lolland. Vigso, an islet, lies on the coastal bank, close N of the N end of this peninsula. Vigso Skal, a rocky shoal with a least depth of 2.8m, extends about 1 mile NE of Vigso and is marked by a buoy.

Caution.—Several areas lying in the vicinity of Rago and Rago Flak have been designated as Wild Life Reserves. Entry into these areas is subject to numerous restrictions.

A marine farm area, marked by buoys, lies close NE of Rago Flak.

Several submarine cables, which may best be seen on the chart, extend between the offshore islands and the coast of Lolland.

2.44 Staldyb (55°00'N., 11°18'E.) is the channel leading in a SSE direction for about 9 miles between the bank fronting Lolland, on the SW side, and the shoals extending NW from Fejo, on the NE side. The fairway passes between Rago and Skalo and is marked by buoys.

Lindholm Dyb (54°54'N., 11°25'E.), marked by buoys, is a continuation of Staldyb. This channel leads in a SE direction for about 3.5 miles and passes close SW of Asko.

Bandholm Rende (54°51'N., 11°32'E.), a dredged approach channel, leads about 2 miles SE from the inner end of Lindholm Dyb to the outer entrance channel of Bandholm.

Oreby Rende (54°51'N., 11°32'E.), a dredged approach channel, leads in a SE direction from Bandholm Rende to Sakskobing.

Depths—Limitations.—The controlling depth through Stakyb and Lindholm Dyb is 9m, but the fairway is very narrow and intricate. The controlling depth through Bandholm Rende is 5.5m and the controlling depth through Oreby Rende is 3m.

Caution.—The banks on either side of Staldyb are steep-to and soundings give little warning of approaching the edges. The positions of the banks are generally indicated by the appearance of a lighter sheen in the water and by ripples along their edges.

2.45 Bandholm (54°50'N., 11°30'E.) (World Port Index No. 29670), a small port, serves the city of Maribo, 4 miles S.

Tides—Currents.—Gales from NW can raise the water level by up to 1m and gales from SW can lower it by the same amount.

Depths—Limitations.—The dredged entrance channel leading SSW from Bandholm Rende has a controlling depth of 5.8m. The harbor entrance faces NE and is 55m wide. The two harbor basins provide about 500m of total quayage with depths of 4.4 to 5.8m alongside. Vessels up to 5.1m draft can enter. There are facilities for general cargo and bulk vessels. Vessels up to 120m in length can be accommodated, dependent on their draft.

Aspect.—The entrance channel is indicated by a lighted range. A prominent silo stands on the E side of the harbor. A conspicuous red church, with a thin spire, is situated near the W end of the town.

Pilotage.—Pilotage is not compulsory, but is advised. Pilots are provided by DanPilot. For further information, see pilotage in paragraph 1.1.

Pilots can be contacted by VHF and board about 1.5 miles NNE of Kragenaes Havn.

2.46 Sakskobing (54°48'N., 11°38'E.) (World Port Index No. 29660), a small harbor, is situated at the head of Sakskobing Fjord.

Winds from NW to NE can raise the water level by up to 1m and winds from S to SE can lower it by the same amount. A small river flowing into the head of the harbor can sometimes cause an outgoing current. The range of tide is 0.3m.

The dredged entrance channel has a controlling depth of 3m. The harbor basin has depths of 2 to 3m alongside and is used by coasters and small craft. Vessels up to 82m in length, 12m beam, and 3m draft can be handled.

Pilotage is compulsory for vessels over 100 nrt. Pilots are provided by DanPilot. For further information, see pilotage in paragraph 1.1. Vessels generally navigate only during daylight as there are no lighted navigational aids.

Oreby Pier, 30m long, extends from the N shore at the entrance to the fjord. Between this pier and the harbor, vessels of 30 gt and over must not exceed a speed of 4 knots and vessels of less than 30 gt must not exceed a speed of 6 knots.

2.47 Falster (54°57'N., 11°48'E.), a large island, lies E of Lolland. Its NW part consists of a low partly-wooded peninsula indented by Valse Vig, a shallow and rock-encumbered bay.

Orehoved (54°58'N., 11°50'E.), a salient point on the N side of Falster, is the E entrance point of Valse Vig. Dyrefod, a wooded islet, lies close N of this point.

Vesterskov Flak and Dyrefod Flak, two rocky shoal areas with depths of less than 3m, extend up to about 3 miles W and 2.3 miles NW, respectively, of Orehoved.

The meridian dividing the W and E sections of Smalandsfarvandet passes through Orehoved.

Orehoved Havn (54°58'N., 11°51'E.), a small harbor, is located about 1 mile ESE of Orehoved. It consists of a pier, about 200m wide, extending 0.2 mile NNE from the shore. An approach channel, 50m wide, leads to the pier. It has a controlling

depth of 7m and is indicated by a lighted range. The pier has depths of 5 to 7m alongside and can handle vessels up to 150m in length and 6.5m draft. Prominent warehouses are situated on the pier. Pilotage is advised for vessels without local knowledge. Pilots can be contacted on VHF channel 16 and are provided by the Vordingborg (Masnedo) station.

A prominent church, with a black spire, stands at Gyldenbjerg, 1 mile S of Orehoved Havn. Another prominent church, red with a pointed tower, is situated at Valse, about 3 miles SW of Orehoved Havn.

Directions.—The entrance channels leading from the Store Baelt open into an area with depths of 9 to 29m. From this area, the main transit route through Smalandsfarvandet leads ESE and E, passing between Vejro and Kirkegrund. It then passes S of Knudshoved, N of Orehoved, and continues SE into the E section of Smalandsfarvandet.

2.48 Guldborg Sund (54°52'N., 11°45'E.), the passage leading SSE between Lolland and Falster, is used mainly by vessels proceeding through the N approach to Nykobing.

Ice.—Generally, ice appears in the N approach to this passage in early January and remains until early March. The fairway channel is seldom ice-free throughout the winter, but an icebreaker is available.

Tides—Currents.—During settled weather, the tidal currents in the sound change direction regularly and attain rates of 1 to 2 knots. In unsettled weather, especially immediately after the onset of a gale from SE, a current may run N for several days and attain rates up to 4 knots in the narrower parts of the channel.

Depths—Limitations.—The channel is entered about 4.5 miles N of the N end of Vigsnaes and leads in a SE direction between the dangers fronting the NE end of Lolland and the NW end of Falster.

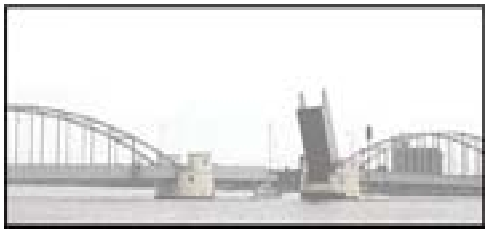
The fairway has a controlling depth of 6.1m as far as Nykobing. Navigation of the passage is allowed only in daylight.

The controlling depth of the S approach to Nykoping, which leads through the sound from Fehmarn Belt (see paragraph 4.1), is only 2.1m.

Aspect.—An outer approach lighted buoy is moored about 2 miles E of the E extremity of Femo and marks the seaward entrance of the channel leading through the sound. The fairway is marked by buoys and, in places, fluorescent beacons.

A prominent church, with a thin spire, stands at Klippinge, 2.6 miles NE of the Guldborg Bridge. Another prominent church, with a tower, stands at Brarup, 1.5 miles SSE of Klippinge.

A prominent red church, with a stepped tower, is situated at Majbolle, 2.3 miles SSW of the Guldborg Bridge.



The Guldborg Bridge

The **Guldborg Bridge** (54°52'N., 11°45'E.), a road bridge with a double bascule span, crosses the sound at Guldborg, about 4 miles above the mouth. The bascule span is situated between the two central pillars and provides a navigable width of 30m. The bascule span has a vertical clearance of only 4m when closed. The opening through the bridge is lighted on both sides.

From the Guldborg Bridge, a narrow, winding channel leads SSE for 7.5 miles to Nykobing.

Nykobing (54°46'N., 11°52'E.)

World Port Index No. 29630

2.49 Nykobing is the largest city on Falster. It is a commercial and industrial center and an important railroad junction. The port is situated near the middle of the E side of Guldborg Sund.

Tides—Currents.—The mean range of tide at the port is 0.4m. Gales from NW to NE can raise the water level by up to 1.5m and gales from SE to SW can lower it by as much as 0.8m.

Depths—Limitations.—The harbor consists of a continuous quay, 1,000m long, extending along the E side of the fairway channel and three small basins. The quay has a depth of 6.2m alongside; the basins have depths of 2 to 6.2m alongside.

There are facilities for general cargo, bulk, tanker, and fishing vessels. Vessels up to 5,000 dwt, 129m in length, 20m beam, and 5.8m draft can be accommodated.

Aspect.—A prominent silo and several tanks are situated near the N end of the main quay.

The King Frederik IX Bridge spans the sound close S of the harbor and is conspicuous. This road and railway bridge has a single bascule. When raised the bridge has a navigable width of 20m. It has a vertical clearance of only 4m when closed.

The King Frederik IX Bridge

Pilotage.—Pilotage is compulsory for tankers, but recommended for vessels without local knowledge. Pilots can be contacted by VHF and board about 2.3 miles E of the E extremity of Femo, near the outer approach lighted buoy.

Pilotage is provided by DanPilot. For further information, see paragraph 1.1.

Contact Information.—Nykobing may be contacted by e-mail, as follows:

havne@nyk-f-kom.dk

Caution.—Several areas within the sound located within about 1 mile of the harbor have been designated Wildlife Reserves; entry is subject to numerous restrictions.

Smalandsfarvandet—East Part

2.50 **Oringe** (55°00'N., 11°55'E.), a small peninsula, is located on the S coast of Sjaelland, 3 miles NE of Orehoved Havn. A conspicuous complex of hospital buildings, surrounded by woods, stands on the E part of this peninsula.

Vordinborg Nordhavn, a small and shallow harbor, is situated on the N side of a small bay lying on the N side of the peninsula. It is used only by small craft, yachts, and fishing boats.

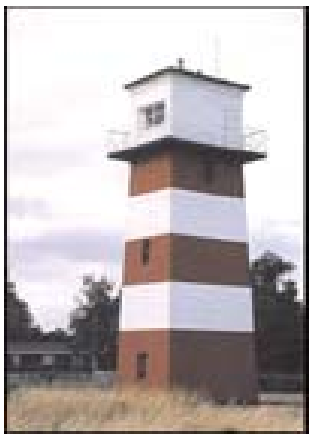
The shallow coastal bank fronting the S side of Slaelland in the vicinity of Oringe extends up to about 1.5 miles seaward.

Masnedo (54°59'N., 11°55'E.), a low island, lies close SW of Oringe. A prominent electric power plant stands on the N part of this island. A shoal area, with depths of less than 4m, fronts the W side of this island and extends up to about 0.7 mile seaward.

Masnedo Kalv, a low islet, lies close S of the island. A shoal area, with depths of less than 6m, fronts the NW side of this islet and extends up to about 1 mile seaward.

Ore Light (55°00'N., 11°52'E.) is shown from a prominent tower, 13m high, standing on the S shore of Sjaelland, about 1.5 miles W of Oringe.

Valdemars Tower, a conspicuous red building with a pointed roof, is situated in the town of Vordingborg, 1.5 miles E of Ore Light. A prominent church and a water tower stand 0.3 mile WNW and 0.4 mile NE, respectively, of this tower.



Ore Light

Masnedsund (55°00'N., 11°54'E.) is the narrow passage leading between the S side of Sjaelland and the N side of Masnedo. This sound, which is about 3 miles long, is marked by buoys and lighted ranges. The E end of the passage leads ESE between the shallow shoal areas fronting the NE side of Masnedo and the S side of Oringe.

The part of the fairway channel lying W of Masnedsund Bridge has a controlling depth of 6.7m while the part lying E of it has a controlling depth of 7m. Vessels up to 6.5m draft can use this passage.

Tides—Currents.—The tidal currents in the passage change direction regularly, every 6 hours, in settled weather and may attain rates of 3 to 4 knots. During stormy weather, they become irregular and a current may set in the same direction for several consecutive days. Gales from W to NW can cause an E current and gales from E to SE can cause a W current. These currents may attain rates up to 5 knots.

Caution.—An overhead cable, with a vertical clearance of 36m, spans the passage, about 0.3 mile NW of Masnedsund Bridge. The three pylons supporting the cable are conspicuous.

Fishing stakes and traps may be moored adjacent to the N side of the fairway in the NW part of Masnedsund from March to December.

2.51 The **Masnedsund Bridge** (55°00'N., 11°53'E.), situated 0.9 mile SE of Ore Light, spans Masnedsund and connects the S side of Sjaelland with the N side of Masnedo.

This road and railroad bridge has a single bascule span, which provides a navigable width of 24.8m. Because the bascule span does not raise to a vertical position, the navigable width is reduced to 18.4m at a height of 32.9m.

When the bridge is closed, there is a vertical clearance of 4.8m at its N end and a vertical clearance of 5.4m at its S end. Both sides of the navigable passage are marked by lights.

Vordjngborg Sydhavn—The Masnedsund Bridge

Pilotage.—Vessels of 1,500 dwt and over intending to pass through the Masnedsund Bridge are advised to employ the services of a pilot. Pilots are provided by DanPilot. For further information, see pilotage in paragraph 1.1.

Pilots can be contacted by VHF and board about 1.6 miles W of Ore Light.

Regulations.—Only one vessel at a time may pass through the bridge and vessels under sail take precedence over power-driven vessels.

Caution.—Submarine cables and a gas pipeline, marked by beacons and notice boards, extend between Sjaelland and the N side of Masnedo, in the vicinity of the bridge. Magnetic anomalies, with deviations up to 70°°, have been experienced in the vicinity of the cables.

2.52 **Vordingborg Sydhavn** (55°00'N., 11°54'E.) (World Port Index No. 29560), formerly known as Masnedsund Havn, is situated close E of Masnedsund Bridge, on the S side of Sjaelland. This harbor provides a quay, 460m long, with depths of 6.5 to 7m alongside and a small craft basin. Vessels up to 93m in length, 16m beam, and 6.5m draft can be handled. A

number of conspicuous silos stand near the quay.

Masnedovaerkets Havn (55°00'N., 11°53'E.), a private harbor, is situated close W of the Masnedsund Bridge, on the N side of Masnedo. This facility mainly services the power plant. The harbor provides a turning basin and a quay, 270m long, with a depth of 6.7m alongside. Vessels up to 100m in length, 17m beam, and 6.5m draft can be accommodated.

Masnedo Godningshavn (54°59'N., 11°54'E.), formerly known as Masnedo Benzinhavn, is situated near the S extremity of Masnedo. This small harbor consists of a single basin. It provides a tanker berth at the W side with a depth of 5m alongside. Vessels up to 100m in length, 15m beam, and 4m draft can be accommodated.

Caution.—Depths alongside the above facilities can be raised or lowered by strong winds.

2.53 Storstrom (54°58'N., 11°53'E.) is the passage lying between the coastal bank fronting the NW side of Falster and the S side of Masnedo. This passage is about 5 miles long and extends ESE as far as Faro (54°57'N., 12°00'E.).

A detached shoal patch lies about 0.9 mile S of the S end of Masnedo, near the center of the passage. It has a depth of 3.6m and is marked by a buoy. Generally, vessels pass on the N side of this danger.

Except for the above patch, the main fairway channel has depths of 7.3 to 23m, the greatest being in the E part.

Gabense Lystbadehavn, a small harbor, lies on the S side of the passage, 0.6 mile ESE of the S end of the Storstrom Bridge. This harbor has a controlling depth of 2.5m and is used only by small craft.

Tides—Currents.—The tidal currents in the passage change direction regularly in settled weather and attain rates of 1 to 2 knots. The flood current sets E and the ebb current sets W. In stormy weather they are irregular and a current may set in one direction for a long period. During these periods the current may attain a rate of 3 to 5 knots. Gales from W to NW can cause an E current and gales from E to SE can cause a W current.

Pilotage.—Pilots are provided by DanPilot. For further information, see pilotage in paragraph 1.1.

Pilots can be contacted by VHF and board southeastward bound vessels about 1.6 miles W of Ore Light. Pilots for northwestward bound vessels entering this passage from the Baltic Sea are provided by the station at Hesnaes (54°49'N., 12°09'E.).

Anchorage.—Anchorage can be taken anywhere in the passage, clear of the submarine cables, cable area, and bridges.

Caution.—A submarine cable area, 1.3 miles wide, extends SW across the passage from the S shore of Masnedo. A submarine cable extends N across the passage from close W of Orehoved Havn to the S side of Sjaelland.

2.54 The **Storstrom Bridge** (54°58'N., 11°53'E.) spans Storstrom and extends SSW between the S extremity of Masnedo and the N coast of Falster. It is a fixed bridge resting on 51 piers, which are numbered 0 to 50 from the N end. The central spans, numbered 21-22, 22-23, and 23-24, have conspicuous arched superstructures.

Span 21-22, the N arch, has a vertical clearance of 25.5m and a navigable width of 95m. It is reserved for northwestward bound traffic.

Span 22-23, the central arch, has a vertical clearance of 26m and a navigable width of 125m. It is reserved for southeastward bound traffic.

The Storstrom Bridge

Span 23-24, the S arch, has a vertical clearance of 25.5m and a navigable width of 95m. The remaining spans have a navigable width of 50m with vertical clearances decreasing toward the shores.

At night, the sides of the passages under the N and central arched spans are marked by lights visible to vessels approaching from either direction.

If necessary, because of the height of their masts, northwestbound vessels may pass through the central arched span, but priority must be given to southeastward bound vessels.

Caution.—Due to electric cables on the bridge, passage is exceptionally dangerous with aerials exceeding the height of the vertical clearances.

2.55 Faro (54°57'N., 12°00'E.), a low island, lies about midway between the S side of Sjaelland and the N side of Falster, 3.5 miles SE of the S end of Masnedo. This island is treeless but a few farms are situated on it.

Bogo (54°56'N., 12°03'E.), a hilly island, lies close SE of Faro and is built over at its E end. A prominent gray church, with a square tower, stands on the N part of the island and a conspicuous windmill is situated 0.7 miles S of it.

The NW end of this island is connected to the S side of Faro by a narrow causeway. Barholm, an islet, lies close off the SE end of Bogo. A narrow causeway extends across this islet from the SE extremity of the island and connects with Borgsted, a peninsula located at the SW end of Mon.

Bogo Havn, a small craft harbor, is situated on the S side of the island, about 1 mile W of the SE extremity. It has an entrance, 15m wide, with a controlling depth of 2.5m.

The **Sjaelland Faro Bridge** (54°58'N., 12°00'E.), a fixed road bridge, extends NNE from the N end of Faro to the S side of Sjaelland. The spans situated over the fairway channels have a navigable width of 40m between the piers and a vertical clearance of 20m.

The **Faro Falster Bridge** (54°57'N., 11°59'E.), a cantilever road bridge, extends SW from the SW side of Faro to the N side of Falster. The span situated over the fairway channel has a navigable width of 260m between the piers and a vertical clearance of 26m.

Caution.—A submarine cable extends NE between the N side Falster and the S side of Sjaelland, about 0.4 mile W of Faro. Another submarine cable extends N between the N side

The Faro Falster Bridge

of Falster and the SE end of Bogo.

2.56 Taero (54°57'N., 12°05'E.), a low island, is situated 3 miles E of Faro and a hillock, 11m high, rises in its E part. Lilleo, a low islet, lies on a shallow shoal flat, 0.5 mile W of the W end of the island.

Petersvaerft Havn is situated on the S side of Sjaelland, about 1 mile NW of the E extremity of Taero. This small craft harbor consists of a pier, 69m long, with a depth of 1.5m alongside the head and a shallow basin.

Lango (54°59'N., 12°07'E.), a small island, is located 1.2 miles NNE of Taero. It lies about 0.5 mile off the S side of Sjaelland to which it is connected by a causeway.

Boren, 33m high, is a prominent hill, which rises on the N side of Mon, 1.5 miles SE of the E end of Lango.

The **Dronning Alexandrines Bridge** (54°59'N., 12°10'E.), formerly known as the Ulvsund Bridge, is a fixed road bridge situated 1.5 miles NE of Lango. It extends between embankments projecting from the S side of Sjaelland and Kosterland, a peninsula on the N side of Mon.

The central navigational opening can easily be identified by its arched superstructure. This opening has an overall navigable width of 120m between the piers and a width of 80m under the central part of the arch. It provides a vertical clearance of 25m under the central part of the arch, which decreases to 6m alongside the piers.

The Dronning Alexandrines Bridge

Regulations.—Only one vessel at a time may pass through the bridge and vessels under sail take precedence over power-driven vessels.

Vessels proceeding W through under the arched opening take precedence over vessels proceeding E.

Caution.—Due to electric cables on the Dronning Alexandrines Bridge, passage under it is exceptionally dangerous with aerials exceeding the height of the vertical clearance.

Submarine cables extends NNW between Taero and the S side of Sjaelland.

2.57 Kalvehave Havn (55°00'N., 12°10'E.), a small craft harbor, is situated at the SE extremity of Sjaelland, close E of the Dronning Alexandrines Bridge. The entrance, which faces SE, is 30m wide and has a controlling depth of 2.5m.

A prominent white church, with a square tower, stands at Kalvehave, 0.8 mile W of the harbor.

Stege Bugt (55°00'N., 12°14'E.), a large bay, lies NE of Kalvehave Havn and is encumbered by extensive shallow flats.

Lindholm (55°00'N., 12°13'E.), a small island, lies near the center of Stege Bugt, 2.3 miles NE of the Dronning Alexandrines Bridge. A conspicuous chimney stands on this low islet. A small craft harbor, which services a veterinary research facility, is situated on the SW side of the island.

Nyord (55°03'N., 12°13'E.), a low island, lies on the N side of Stege Bught and is connected by a bridge at its E side to Ulvshale, a peninsula projecting NW from the N side of Mon. A large drying flat extends up to 2 miles NE from the N side of this island.

A small craft harbor, protected by two breakwaters, is situated near the SW end of the island. A conspicuous church, with a pointed spire, stands in the village close N of the harbor and a tall chimney is situated close E of it.

Stege Havn (54°59'N., 12°17'E.) (World Port Index No. 29600), a small harbor, is situated at the head of Stege Bugt, about 4 miles E of Kalvehave Havn. It lies at the entrance to Stege Nor, a shallow lake.

Koster Rende, the main approach channel, leads in an E direction across the shallow flats to the harbor. It is marked by buoys and has a controlling depth of 4.1m.

The outer and inner parts of the harbor are separated by a bascule bridge. A conspicuous chimney stands at a sugar factory close SW of the harbor. A prominent church, with a spire, is situated close NE of the harbor. The outer harbor, which has a depth of 4m, consists of a quay and two small basins. Vessels up to 80m in length and 3.9m draft can be accommodated.

Caution.—Several designated nature reserve areas lie within Stege Bught and in the vicinity of Nyord. Entry into these areas is subject to numerous restrictions.

Submarine cables extend E between Lindholm and the E side of Stege Bugt.

2.58 Faergestrom (54°59'N., 11°57'E.), a narrow channel, extends ESE across the shoal bank fronting the S side of Sjaelland. It connects the E end of Masnedsund to the W end of Ny Farvand, about 1.5 miles W of the Sjaelland Faro Bridge. The fairway has depths of 6.2 to 10.2m in mid-channel. A narrow passage branches SE from the junction of Faergestrom and Ny Farvand to connect with Kalvestrom.

Ny Farvand (54°58'N., 11°58'E.), a very narrow channel, extends E for about 1.5 miles. It connects the E end of Faergestrom to the W end of Ulvsund, in the vicinity of the Sjaelland Faro Bridge. This channel has a controlling depth of only 4.4m.

Ulvsund (54°58'N., 12°09'E.), entered from the E end of Ny Farvand, extends ESE and passes under the Sjaelland Faro Bridge. The channel continues NE and passes between Taero and the S side of Sjaelland and then between the N end of Tae-

ro and the S end of Lango. It then leads NE and passes under the Dronning Alexandrines Bridge.

From the above bridge, the channel continues in a N direction along the W side of Stege Bught. It then passes between the W side of Nyord and the Sjaelland coast to connect with the S end of Bogestrom.

Kalvestrom (55°04'N., 12°10'E.) leads E from close SE of the S end of Masnedo and has depths up to 11m in places. This narrow channel passes N of Faro and then between Bogo and Taero. It then ends at a shallow bar. This passage has a controlling depth of 2.5m at the W end, 1.5 miles WNW of Faro, and is used only by pleasure craft.

Bogestrom (55°04'N., 12°10'E.), a passage leading N and NE, lies in the SW part of Fakse Bugt (see paragraph 1.34). The channel, which connects with the N end of Ulvsund, leads between the NW end of Mon and the mainland coast of Sjaelland. This buoyed passage has a controlling depth of 2.3m and is used only by small craft and pleasure boats. It is subject to silting.

2.59 Sortso Gab (54°56'N., 12°00'E.) extends in a SE direction for about 3.5 miles from SW of Faro to the W end of Stubbekobing. This passage connects the E end of Storstrom to the W end of Gronsund. The fairway has depths of 10.9 to 38m, the greatest being in its central and NW parts.

Stubbekobing (54°53'N., 12°03'E.) (World Port Index No. 29580), a small harbor, is situated on the N coast of Falster. It consists of a main commercial basin with an entrance, 25m wide. A quay, 100m long, and a ferry berth are situated close W of the main basin and are protected by a detached breakwater. A pleasure craft basin is situated close E of the main basin.

An entrance channel, with a controlling depth of 5m, leads S across the coastal bank to the harbor. The main basin has depths of 2.5 to 5m alongside. Vessels up to 120m in length, 22m beam, and 4.8m draft can be accommodated.

The entrance channel is marked by buoys and indicated by a lighted range. A conspicuous red church, with a red tower, stands in the town, close S of the harbor. A prominent tall silo is situated at the SW end of the harbor.

A directional sector light is shown from a prominent house standing 0.7 mile W of the main harbor basin.

Pilotage is compulsory for vessels over 80m loa. Pilotage is provided by DanPilot. For further information, see paragraph 1.1.

Pilots board in the following positions:

1. Entrance to Grønsund W, Vordingborg, Masnedø, Orehoved, Stubbekøbing and Stege—55°00.5'N 11°49.4'E (Bredegrund).
2. Entrance to Grønsund E—54°49.0'N 12°12.5'E (Hestehoved).

Contact Information.—The harbor office can be contacted, as follows:

1. Telephone: 45-517-40109
2. E-mail: stubhavn@guldborgsund.dk
3. Web site: http://www.guldborgsundhavne.dk

Anchorage.—Vessels can anchor, according to draft, off the harbor.

Caution.—Marine farms may be moored along the SW side of Sortso Gab.

A detached shoal patch, with a depth of 3.4m, lies about 0.4 mile NW of the entrance to the main basin and is marked by a buoy.

2.60 Borgsted Light (54°53'N., 12°08'E.) is shown from a prominent hut, 4m high, standing on the SW side of Mon, about 2.2 miles ENE of Stubbekobing. A conspicuous white church is situated at the head of Fanefjord, 1.5 miles E of the light.

Borgsted Light

Harbolle Pynt (54°53'N., 12°08'E.), at the SW end of Mon, is located 1.8 miles SE of Borgsted Light. A small pier, situated close NW of this point, has a berth at its head, 25m long, with a depth of 3.8m alongside.

Harbolle Pynt Light (54°53'N., 12°08'E.) is shown from a prominent framework tower standing 0.6 mile NW of the point.

Harbolle Havn, a small harbor, lies close NW of the light and is protected by breakwaters. It is used only by pleasure craft and fishing boats. The entrance faces SW and has a controlling depth of 3m.

Madses Klint (54°53'N., 12°12'E.), located 2.2 miles E of Harbolle Pynt, is formed by a small yellow cliff, 22m high. This point, at the SE end of Mon, forms the SE entrance point of Gronsund.

Skansepynt (54°53'N., 12°07'E.), a prominent point at the E side of Falster, is located about 0.5 mile WSW of Harbolle Pynt Light. From this point, the coast extends 3.5 miles SSE to Hestehoved. It is wooded in the S part with some high steep cliffs.

A conspicuous high, white building is situated at Naesgard, about 1.2 miles SSW of Skansepynt. It stands between some woods and is visible from E.

Hestehoved Light (54°50'N., 12°10'E.) is shown from a prominent house, 4m high, standing on Hestehoved, the SW entrance point of Gronsund.

2.61 Gronsund (54°54'N., 12°05'E.) connects the E end of Sortso Gab to the Baltic Sea. This sound is entered in the vicinity of Stubbekobing and leads in a SE direction between the SW end of Mon and the NE part of Falster. The fairway channel

The coastal banks lying SE of Skansepynt and E of Harbolle Pynt, with depths of less than 4m, extend up to 0.6 mile seaward, in places. Stenpladerne, a detached rocky shoal, lies on the W side of the channel, 0.3 mile W of Harbolle Pynt. It has a

Hestehoved Light

least depth of 2.8m and is marked by a buoy.

The fairway channel rounds Skansepyn and then passes close off Harbolle Pynt. The W part of the passage has depths of 8 to 25m.

An extensive shallow bank of shifting sand occupies much of the NE part of Gronsund and its outer part is marked by a buoy moored about 2 miles ENE of Hestehoved Light. Tolke Dyb leads ESE from the vicinity of Harbolle Pynt, but the seaward end of this channel is obstructed by a shallow bar.

Nyt Lob and Hestehoved Dyb are dredged channels leading S and SE through the shoals in the SE part of Gronsund. The fairway, which is 80m wide, is marked by buoys and indicated by lighted ranges. The inner entrance lies 0.8 mile SSE of Harbolle Pynt and is marked by a lighted buoy. The outer entrance lies 0.6 mile E of Hestehoved Light and is marked by a lighted buoy, moored 0.4 mile SE of it. This dredged channel has a controlling depth of 5m, but is subject to silting. It has been reported (2014) that in the Nyt Lob Channel, depths of 4m exist within a distance of 30m from the edge of the channel between the port hand buoy (54°51.9'N., 12°09.1'E.), at the N end, and the port hand lighted buoy (54°51.4'N., 12°09.2'E.), 0.5 miles S.

Tides—Currents.—The tidal currents in the sound change direction regularly, every 6 hours, in settled weather and attain rates of 1 to 2 knots. In unsettled weather the direction and velocity of the current is governed by the wind. Winds from W to N can cause an E current; winds from E to S can cause a W current. The currents may attain rates of 3 to 4 knots, but in the narrow part of the fairway, off Harbolle Pynt, they may attain rates of 5 to 6 knots.

Directions.—The route through the E part of Smalandsfarvandet is divided into two passages.

The S and main passage leads generally SE through Storstrom, Sortso Gab, and Gronsund into the Baltic Sea. This passage has a controlling depth of 5m (Gronsund).

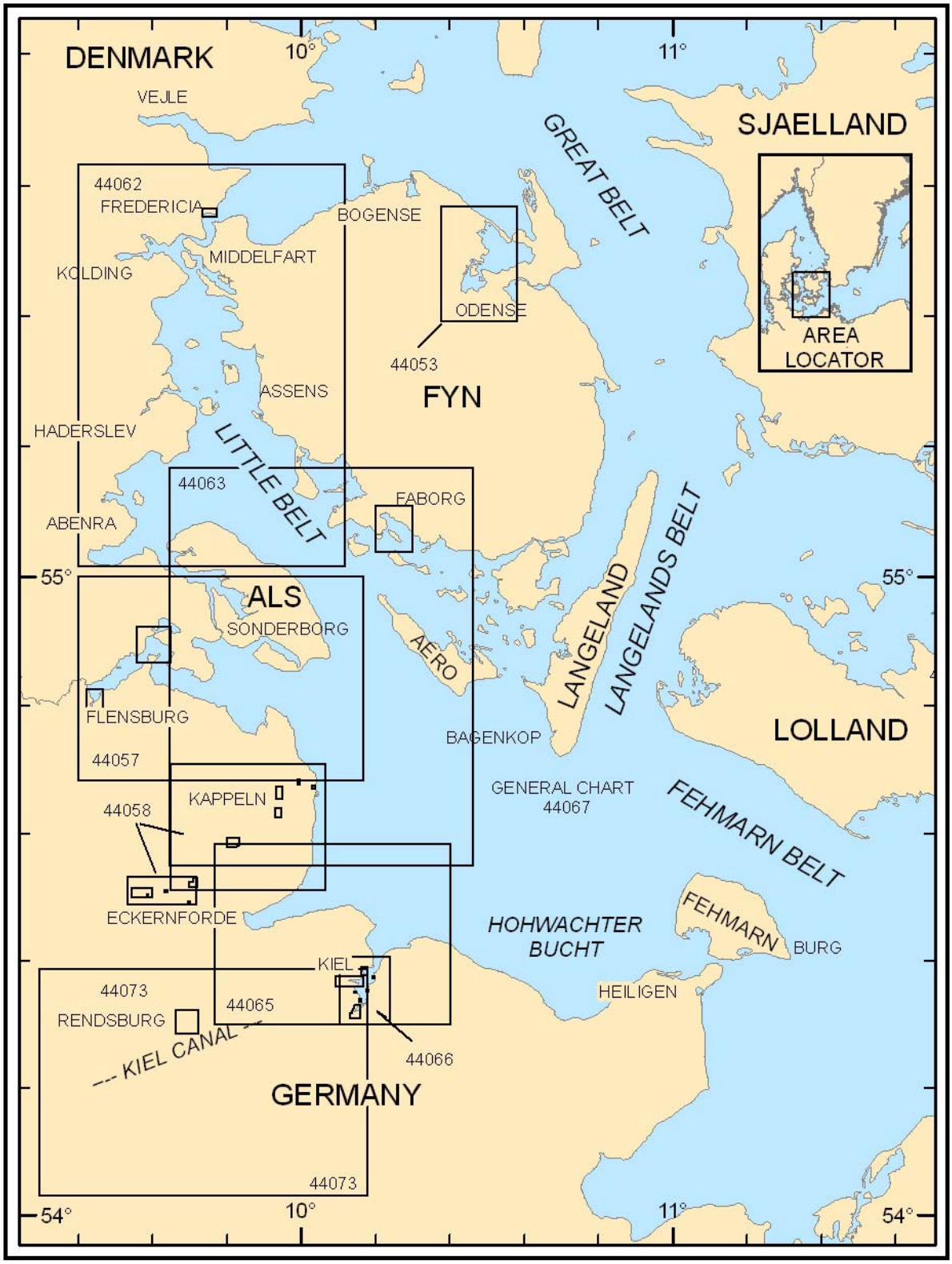
The N passage leads through Masnedsund, Faergestrom, Ny Farvand, Ulvsund, and Bogestrom. It has a controlling depth of 4.4m at the W end (Ny Farvand) and a controlling depth of 2.3m at the E end (Bogestrom).

The passage through Kalvestrom is insignificant to navigation.

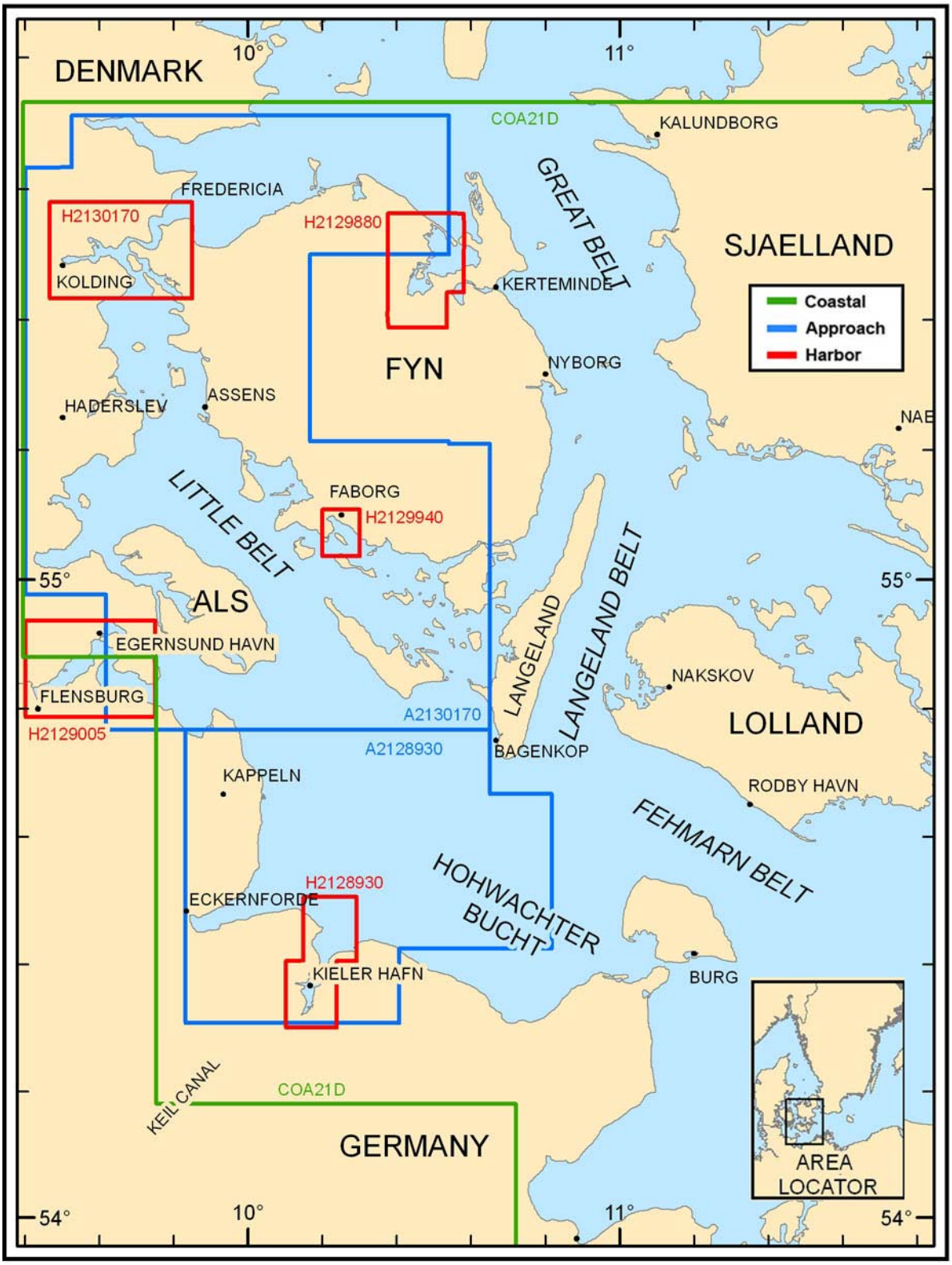
Caution.—Fishing stakes and traps may be moored adjacent to the S side of the channel close W of Skansepynt.

Gales from NE may cause a heavy swell within Nyt Lob and Hestehoved Dyb.

A submarine cable extends NE from the vicinity of Skansepynt to the SE end of Mon.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).



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SECTOR 3 — DNC LIBRARY INFORMATION

SECTOR 3

DENMARK AND GERMANY—LILLE BAELT, FLENSBORG FJORD, AND KIELER BUCHT

Plan.—This sector describes the approaches to and the passage through Lille Baelt. The coast extending W of Fyn Hoved (55°37'N., 10°35'E.), including Odense Fjord, and the coast extending W of Bjornsknude (55°42'N., 10°02'E.), including Vejle Fjord, are described first. This is followed by the passage through Lille Baelt, which is divided into N, central, and S parts. The fairways lying S of Fyn and Flensborg Fjord are then described. This is followed by the shores of Kieler Bucht as far as a line extending N between Markelsdorfer Huk (54°32'N., 11°04'E.), the NW extremity of Fehmarn, and Kappel Church (54°46'N., 11°02'E.), on Lolland. The main shipping routes through this area are then described. The descriptive sequences are N to S through Lille Baelt and then W to E along the coasts.

General Remarks

3.1 Lille Baelt (Little Belt) is the westernmost of the three passages that connect the Kattegat with the Baltic Sea. This passage is entered at the N end between Bjornsknude (55°42'N., 10°02'E.) and the island of Aebelo (55°39'N., 10°10'E.). It is entered at the S end between Pols Huk (54°53'N., 10°04'E.), on the island of Als, and Vejnaes Nakke (54°49'N., 10°26'E.), on the island of Aero.

The coastal terrain in the vicinity of Lille Baelt is generally low. The area is extensively cultivated with occasional large wooded tracts interrupting the farm lands.

In general, the bottom within Lille Baelt consists of sand, mud, and gravel, which is underlaid with clay and forms a good holding ground.

The Danish-German boundary runs approximately through the middle of Flensborg Fjord.

Kieler Bucht, at the W end of the Baltic Sea, is considered to include the waters lying between Die Schlei (54°40'N., 10°02'E.) and the NW side of Fehmarn (54°32'N., 11°04'E.), 35 miles ESE.

Winds—Weather.—Weather conditions in Lille Baelt and in the rest of the area covered by this sector are similar to those in Store Baelt, The Sound, and the Kattegat.

In the Baltic Sea proper the land drainage due to rains and melting snow is greatest in the spring. However, the water level does not reach its maximum during this season, as expected. In fact the lowest water level occurs during April and May and the highest during August and September. The cause of this phenomena may be attributed to the prevailing winds over the North Sea and the Baltic Sea areas. These prevailing winds are from E during March, April, and May and from W at the end of June or early July. During April and May the water level may fall by as much as 0.1 to 0.3m below the mean level and during September it may rise by as much as 0.1 to 0.2m above the mean level. The area is also affected by notable changes in the density of the water.

Ice.—Ice conditions in Lille Baelt vary with the severity of the winter. In the N part of the passage, strong currents usually prevent the formation of ice. However, in the S part, S of Assens (55°16'N., 9°53'E.), drift ice from the Baltic Sea may be encountered.

For details of Danish icebreaker services, see paragraph 2.1.

Germany provides icebreaker services during the winter in the Baltic Sea area from three Ice Service Centers.

The center at Kiel-Holtenau covers the area from Flensburg to the W coast of Fehmarn and the Nord-Ostsee Kanal (Kiel Canal). It can be contacted on VHF channel 22 (Kiel Traffic).

The center at Lubeck covers the area from the W coast of Fehmarn to the meridian of 11°42'E. It can be contacted on VHF channel 13 (Trave Traffic).

The center at Stralsund covers the area from the meridian of 11°42'E to the German-Poland border. It can be contacted on VHF channel 14 (Stralsund Traffic).

Requests for ice breaking assistance should be usually directed to the appropriate Ice Service Center. In exceptional circumstances, vessels may directly contact an ice breaker working in the corresponding area. The requests should include the vessels's name, call sign, nationality, size, ice class, engine power, position, and destination.

Tides—Currents.—The tidal range in these waters is negligible. However, fluctuations in sea level are caused by changes in wind force and direction.

The currents in Lille Baelt may set quite strongly, particularly within the narrows at the N end of the passage. The currents generally follow the direction of the fairways but eddies are formed along the shores in certain places. Where there are sharp bends in the narrower parts, the currents may set strongly toward the shore.

In general, the direction of the current is governed by the wind. Winds from ENE through S to SW produce a N current; winds from other directions cause a S current. In the spring when land drainage into the Baltic Sea is heaviest, the prevailing current sets N. Sometimes this current may set in the same direction for several days regardless of the wind conditions. In the succeeding months, the duration and strength of this current are more dependent on the prevailing winds.

Depths—Limitations.—The main channel through Lille Baelt is 68 miles long and has a controlling depth of 11m.

The East Lille Baelt Bridge (see paragraph 3.12), with a vertical clearance of 44m, and the West Lille Baelt Bridge (see paragraph 3.14), with a vertical clearance of 29m, span the passage in the N part and connect the peninsula of Jylland with the island of Fyn.

Pilotage.—Pilotage is not compulsory in Lille Baelt, but is advised for vessels without local knowledge. Vessels requiring pilotage for this passage can obtain pilots for the southbound transit at Skagen (57°47'N., 10°°44'E.) or from the main station at Frederica (55°34'N., 9°45'E.). For the northbound transit, as far as Vejle Fjord (55°9'N., 9°°50'E.), pilots can be obtained in a position 4.5 miles SW of Assens (55°16'N., 9°53'E.) or 5 miles ESE of Gammel Pol Light (54°53'N., 10°04'E).

Pilots are arranged through the DanPilot (Belt and Fjord Pilot), Fredericia station. Deep Sea (Transit) Pilots are also avail-

able for routes N to Skagen, E to Helsingor, to Skaebaekvaethet, and to other ports in the Store Baelt located N of 55°20'N.

Pilot Ordering:

1. Vessels should order pilots 18 hours in advance, providing the following information:
   a. Vessel name, call sign and IMO number.
   b. ETA at the pilot boarding position.
   c. pilot boarding position.
   d. gt, draft, LOA and beam.
   e. speed (sea speed if Deep Sea Pilotage).
   f. pilot disembarkation position (please state if non-stop pilotage is requested, Skagen-Gedser/Bornholm or vice-versa).
   g. any additional information (for example: scheduled bunkering operations or stop for stores/provisions en-route including geographical position, quantity and estimated turnaround time for any stops).
2. Vessels should confirm ETA on the VHF working channel or by e-mail, 4 hours prior to arrival.
3. Pilot boards in the following positions:
   a. Transit from the N: 55°40.5'N 10°42.4'E (Bolsaks SE).
   b. Transit from the S:
      i. 55°14.0'N 9°47.5'E (Aro SE).
      ii. 54°51.0'N 10°12.0'E (Pols Rev).
   c. Aabenraa Fjord: 55°07.5'N 9°46.0'E

Special Notes:

1. During certain weather or ice conditions, pilot boarding can take place at an alternative position given by the Pilots.
2. Private companies also provide pilotage services for Lillebælt.

For further information, see Pilotage in paragraph 1.1.

Caution.—Large vessels, which do not employ the services of a pilot, should attempt to navigate the passage through Lille Baelt only under good radar conditions or during good visibility.

Due to the strong currents in the narrow parts of the passage, vessels navigating at night are advised to continuously operate their depth-sounding instruments.

High-speed ferries may be encountered crossing the main fairway routes within Lille Baelt and its approaches.

Lille Baelt—North Approach and Entrance

3.2 The N approach to Lille Baelt, which extends W as far as Aebelo, is bounded, on the E side, by a line extending between Fyns Hoved (55°37'N., 10°35'E.) and the island of Samso, 9 miles N.

Vessels may approach from E via the channels leading through the dangers lying between Fyns Hoved and the S end of Samso. Vessels may also approach from N by passing W of Samso.

The S shore between Fyns Hoved and Aebelo, 14 miles W, is generally low and barren, with several small wooded areas lying near the coast.

The N side of the approach, which lies between Samso and Bjornsknude (55°42'N., 10°02'E.), is described in Pub. 193, Sailing Directions (Enroute) Skagerrak and Kattergat, Sector 8.

It is reported that a new Deep Water Route leads into Lille Baelt from the E. This route is entered about 3.5 miles N of Fyns Hoved. It is marked by buoys and has a least depth of 15.7m.

Fyns Hoved (55°37'N., 10°35'E.), previously described in paragraph 2.4, is the E entrance point of the bight which curves S to form the approach to Odense Fjord. This bight is entered between Fyns Hoved and Agernaes, a wooded point located 10 miles W. There are general depths of less than 18m within the bight, but the 10m curve lies up to 1.5 miles offshore in most parts.

The E side of the bight between Fyns Hoved and Skoven, 5.5 miles S, is irregular and mostly consists of a beach, backed by bare hills. The coast at the W side of the bight is low and bare.

A small and shallow bay lies close S of Fyns Hoved.

Korshavn Light (55°36'N., 10°37'E.) is shown from a tower, 3m high, standing on a low point extending S from the inner side of Fyns Hoved. A small and shallow bay lies close S of this light.

Skoven (55°32'N., 10°34'E.), located at the E side of the entrance to Odense Fjord, is formed by a bare, rocky peninsula, 15m high. A light is shown from a prominent framework tower, 7m high, standing on the N part of the peninsula.

Dalby Bugt, a small bay lying close E of Skoven, provides sheltered anchorage to small vessels, in depths of 5 to 8m, good holding ground.

Enebaerodde Light (55°31'N., 10°34'E.) is shown from a prominent tower, 14m high, standing at the SE end of Hals, a long and narrow peninsula forming the W side of the entrance to Odense Fjord.

Enebaerodde Light

3.3 **Odense Fjord** (55°31'N., 10°34'E.) is entered through Gabet, a narrow passage lying between Hals and Skoven. This extensive fjord is mostly shallow with several small islands lying within it.

A narrow winding channel, about 7 miles long, leads through the shallows to the outer entrance of the Odense Kanal. This canal continues in a SSW direction for about 4 miles to the port of Odense.

Bregnor (55°29'N., 10°36'E.), a small fishing harbor, is situated 2.3 miles SE of the entrance to the fjord. It consists of a basin connected to the shore by a causeway. The entrance is 15m wide and has a controlling depth of 2m.

Lindo Skibsvaerft (55°28'N., 10°32'E.), a private shipyard, is situated on the S side of the channel, about 2.7 miles SSW of the entrance. The facilities include a fitting-out quay, 650m

long, with a depth of 7.5m alongside and three drydocks. The largest drydock, which can handle vessels up to 650,000 dwt, is 415m long and 89.9m wide. Vessels up to 400m in length, 70m beam, and 8.4m draft have been accommodated at this yard.

Odense (55°25'N., 10°23'E.)

World Port Index No. 29880

3.4 Odense, a port serving the industrial area of the island of Fyn, is situated at the head of Odense Fjord.

Odense Home Page
http://www.odensehavn.dk

Ice.—Ice may occur in the fjord between January and March but the entrance channel is kept open by icebreaking tugs.

Tides—Currents.—The tidal range in the fjord varies up to 0.6m. Gales from W to NE may raise the water level by up to 1.8m and gales from E to SW may lower it by as much as 1.5m.

During settled weather, the regular flood and ebb currents in the fjord change every 6 hours. In Gabet the flood current runs strongly, being increased by gales from the W. The strength and direction of the ebb current depend on the prevailing wind.

Depths—Limitations.—The N part of the channel between the entrance and Lindo Terminal Quay has a controlling depth of 11m. The S part of the channel between this quay and the port, including the canal, has a controlling depth of 7.5m.

The fairway of the channel has a bottom width of 30 to 40m. In the straight sections of the canal the fairway has a surface width of about 60m and a bottom width of 25m. At the bends in the canal the fairway has a surface width of about 70m and a bottom width of up to 32m.

Three main harbor basins and several facilities alongside the canal provide about 4,200m of total quayage, with depths of 4.5 to 7.5m alongside. A tanker wharf, 420m long, is located outside the harbor, at the S side of the canal. It serves a power station and has depths of 7.5m alongside. There are facilities for general cargo, bulk, tanker, and LPG vessels. Vessels up to 160m in length and 6.8m draft can be accommodated at Odense.

The Lindo Terminal Quay is situated close NE of Lindo Skibsvaerft shipyard, about 2.7 miles SSW of the entrance to the fjord, and is operated by the port. It is 280m long and has a dredged depth of 7.5m alongside. Bulk vessels up to 250m in length, 35m beam, and 7.0m draft can be accommodated at this quay.

Odin's Bridge (55°25'N., 10°23'E.), a swing bridge with a vertical clearance of 6m when closed and a navigable width of 41m when open, crosses Odense Kanal about 1 mile N of Odense Havn. The bridge can be contacted 24 hours on VHF channel 12 and by telephone (45-72-282010). Bridge opening times are, as follows:

1. From 1 April until 30 September:
   a. Monday to Friday (0530-2030).
   b. Saturday, Sunday, and holidays (0830-2030).
2. From 1 October until 31 March—Monday to Friday (0530-2030).
3. Commercial vessels and pleasure craft over 25m loa must contact the harbormaster at least 30 minutes before desired passage.

Odense

Odense—Lindo Terminal

Aspect.—An outer approach lighted buoy is moored about 1.9 miles NW of Skoven Light. A shoal, with a depth of 6.9m, lies near the edge of the bank extending NE from Hals. It is located about 0.7 mile NW of Skoven Light and marked by a buoy moored close E. The white sector of Skoven Light indicates the approach track, which leads SSE from the outer approach lighted buoy and passes ENE of the shoal.

A lighted range, which may best be seen on the chart, then indicates a track leading SW toward the fjord entrance.

The fairway channel leading SSE through Gabet, the narrow entrance of the fjord, is indicated by the white sector of Enebaerodde Light and also marked by lighted buoys.

The fairway channel within the fjord is indicated by lighted ranges and is marked by beacons and buoys, which may best be seen on the chart. The sides of the canal are illuminated by sodium lights.

A conspicuous church stands 0.8 mile inland at Hasmark, about 4 miles WNW of Enebaerodde Light. A prominent

wooded area is located near the root of Hals, about 2.8 miles NW of Enebaerodde Light. Several conspicuous silos are situated in the port area.

Pilotage.—Pilotage is compulsory for the following vessels:

1. Between Gabet and Odense Port and vessels shifting within the Odense Port area:
   a. Vessels with an loa of 70m and longer.
   b. Vessels with a beam 11m and wider.
2. Between Gabet and Lindo:
   a. Vessels with an loa of 100m and longer.
   b. Vessels with a beam 15m and wider.

Pilots board in position 55°33.5'N 10°33.4'E (entrance to Odense Fjord).

Pilots board inbound vessels in the vicinity of the outer approach lighted buoy or in the vicinity of No. 23 Lighted Buoy (55°39'N., 10°46'E.) at Route T and Lille Baelt. and in position 55°33.5'N 10°33.4'E (entrance to Odense Fjord).

Pilots can be arranged through the DanPilot. For further information, see pilotage in paragraph 1.1.

Regulations.—A Reporting System has been established between Gabet and Odense Havn to ensure that vessels are informed of the movements of other vessels.

In the interests of safety, vessels sailing in opposite directions are able to plan a safe passing of each other in the narrow navigation channel.

The Reporting System applies to all vessels over 20m loa who are equipped with VHF.

Reporting Points	
Inbound	On passing latitude 55°33'·50N (at the Approach Lighted Buoy).
	Lindo Terminal:—55°28.6'N 10°32.3'E
	Klintebjerg—55°28.6'N 10°27.2'E.
Outbound	Position—55°24.7'N 10°22.8'E
	Position—55°25.1'N 10°22.7'E
	Position—55°25.7'N 10°23.5'E
	Klintebjerg—55°28.6'N 10°27.2'E
	Lindø Terminal—55°28.6'N 10°32.3'E

Position Reports must be sent on VHF channel 12 at designated Reporting Points. The reports must include the following information:

1. Vessel's name
2. Navigation direction (inbound or outbound).
3. Position.
4. Draft.
5. Vessels departing Odense Havn must additionally state the quay number.

Vessels in Odense Havn must keep a listening watch on VHF channel 12 from 30 minutes before departure, and vessels taking part must keep a listening watch on the same channel during navigation between the Approach Lighted Buoy and Odense Havn.

Vessels, upon hearing a transmission, must reply to the transmission and provide the following information:

1. Vessel's name.
2. Navigation direction (inbound or outbound).
3. Position.
4. Draft.

Vessels hearing a transmission must reply providing the same information. The two meeting vessels should mutually agree a safe passage.

The broadcast language used should be English.

Vessels at the port must keep a listening watch on VHF channel 12 for 30 minutes before departure.

In addition to the regulations for navigating in Danish inland waters, vessels must not exceed a speed of 6 knots in the channel or canal. In addition, anchoring in the channel or canal is prohibited.

Contact Information.—The harbormaster can be contacted, as follows:

1. VHF: VHF channel 12
2. Telephone: 45-72-282010 (24 hours)
3. Facsimile: 45-72-282030
4. E-mail: havnekontor@odensehavn.dk

The Port Authority can be contacted, as follows:

1. Telephone: 45-72-282000
2. Facsimile: 45-72-282030
3. E-mail: info@odensehavn.dk
4. Web site: http://www.odensehavn.dk

Anchorage.—Vessels can anchor, in depths of 10 to 14m, in the vicinity of the outer approach lighted buoy.

Caution.—Some sections of the fairway channel are subject to silting.

A small passenger ferry crosses the canal at Stige, about 2 miles below the port. It is propelled by hand along a cable that extends across the canal. Vessels should signal in time for the cable to be lowered.

Two power cables, with a vertical clearance of 45m, span the canal at Fynsvaerket, 0.7 mile SW of Stige. Another power cable, with a vertical clearance of 53m, spans the canal, 0.5 mile N of the harbor basins.

A target firing range area is situated in the S part of the fjord. A flashing light is shown from a signal mast standing 0.7 mile E of Stige when firing is in progress.

A nature reserve area lies in the NW part of the fjord and entry is subject to numerous restrictions.

3.5 Agernaes (55°37'N., 10°18'E.) is a low wooded point located at the W end of the approach to Odense Fjord. A prominent church stands about 1.5 miles inland at Krogsbolle, 3.8 miles SE of the point.

Aebelo (55°39'N., 10°11'E.) is located about 2 miles offshore, 4.5 miles WNW of Agernaes. This island, which forms the S entrance point of the N part of Lille Baelt, lies on the shallow shore bank that fronts the N coast of Fyn. It is connected at the S end by a narrow neck of land to Aebelo Holm, an islet lying 1.3 miles S. Aebelo Holm, along with two other islets, lies on a large sand flat fringing the coast.

Aebelo is wooded and has several steep light-colored bluffs on its seaward side. Aebelo Light is shown from a prominent tower, 18m high, standing on the NW extremity of the island.

Aebelo Rev, a shoal area with depths of less than 10m, extends up to about 1 mile N of the island and is marked by a lighted buoy. A large shoal bank, which dries in places, extends between the SE end of the island and Agernaes.

Aebelo Light

Vessels with local knowledge can anchor, in depths of 9 to 13m, about 1 mile SW of Aebelo Light. This roadstead is sheltered from all winds except those from NW.

Bjornsknude (55°42'N., 10°02'E.), a low and sandy point, forms the N entrance point of the N part of Lille Baelt. Bjornskunude Rev, a shoal bank with depths of less than 5m, extends about 1.5 miles SE from the point and is marked by a buoy. A sanitarium building stands near the point and is prominent from seaward.

A prominent church is situated 1.2 miles inland at Klakring, about 2.8 miles WNW of Bjornskunude. A conspicuous radio mast stands at an elevation of 110m about 1.2 miles NW of this church.

Lille Baelt—North Part

3.6 The N part of Lille Baelt as defined by this sector comprises the area W of Aebelo, the area W of Bjornskunude, Tragten, and Snaevringen. Tragten is the area lying close E of Fredericia, where the passage becomes narrow, and Snaevringen includes the narrows S of Fredericia. The S limit of Snaevringenarea is situated adjacent to Stenderup Hage (55°28'N., 9°42'E.). Vejle Fjord and Kolding Fjord are also included in the description of the N part.

Bogense (55°34'N., 10°05'E.), a small port, is situated 5.5 miles SW of Aebelo Light. The harbor, which is protected by a breakwater, consists of a narrow basin formed by two wide moles and a yacht basin.

A lighted range leads SSE and indicates the main approach from seaward through the off-lying dangers. From a position about 0.6 mile NNE of the harbor, the outer reach of the dredged entrance channel leads SSW. This reach is indicated by the white sector of the light shown from the head of the E mole and is marked by lighted buoys. The inner reach of the entrance channel then leads SSE into the harbor. A prominent church stands in the town and three conspicuous chimneys are situated in the vicinity of the harbor. The harbor entrance is 20m wide and has a controlling depth of 4.2m.

The harbor is used by coasters and small craft. Vessels up to 55m in length, 10m beam, and 3.5m draft can be accommodated.

Baring Vig (55°32'N., 9°55'E.) lies between Fogense Pynt, located 1.5 miles WSW of Bogense, and Stavrshoved, 6.5 miles W. This bay has general depths of 11 to 16m seaward of the 10m curve, which lies less than 1 mile from the shore in the greater part of the bay. At the E side of the bay, the shorebank, with depths of less than 5m, extends up to 1.5 miles N of Fogense Pynt.

Vessels with local knowledge can anchor within this bay during S winds, in depths of 10 to 14m, clay and mud.

Stavrshoved, the W entrance point, is 29m high and steep. The land to the S and W of the bay is comparatively high and rises to a height of about 70m.

3.7 **Vejle Fjord** (55°39'N., 9°50'E.) is entered between Bjornsknude and Trelde Naes, 7.2 miles SW. It extends about 14 miles W to the port of Vejle. The land is high and wooded on both sides of the fjord and there are no detached dangers lying outside the fringing shorebanks. The bottom within the fjord is mostly mud, with a large amount of weed near the head.

Trelde Naes (55°38'N., 9°52'E.), the S entrance point, consists of a wooded peninsula that rises from a low point to a height of 46m. A light is shown from a prominent framework structure, 21m high, standing at the E extremity of this point.

Kasserodde Flak, a shoal area with depths of 2 to 9m, extends up to about 2 miles E of the point and is marked by a buoy.

Hvidbjerg, 28m high, is a prominent white sandhill, which rises 4 miles WNW of Trelde Naes Light. A conspicuous water tower stands near a mental hospital at Brejninge, about 6.5 miles WNW of Trelde Naes Light.

A conspicuous manor house is situated on Rosenvold Point, 7.4 miles WSW of Bjornskunude. A prominent disused light tower, 16m high, stands on Traeskohage Point, 2.5 miles WNW of Rosenvold Point.

Caution.—Yacht racing marks may be moored within the fjord from April to November.

Vejle (55°43'N., 9°33'E.)

World Port Index No. 30190

3.8 The harbor at Vejle serves an industrial center and consists of a single basin fronting the town.

Vejle Home Page

http://www.vejleport.dk

Ice.—Icebreakers keep the port open as long as the The Sound and Lille Baelt are open to navigation.

Tides—Currents.—The tidal range is about 0.6m. Gales from NW to NE may raise the water level by up to 1.6m and gales from S to SW may lower it by as much as 1.4m. Winds from E may cause a strong current in the inner part of the approach channel.

Vejle

Approaches to Vejle

The Vejle Bridge

Depths—Limitations.—A dredged approach channel, at the head of the fjord, leads 1.3 miles W and then 1.2 miles WNW to the harbor. It has a dredged depth of 7m over a bottom width of about 30m.

A road bridge, with a vertical clearance of 40m, spans the fjord, 0.5 mile E of the harbor.

A quay, 1,100m long, is located at the S side of the main basin and a quay, 500m long, is located at the N side. Both quays have a depth of 7m alongside. There are facilities for general cargo, bulk, ro-ro, and tanker vessels. A pleasure boat basin is situated at the NE end of the harbor. Vessels up to 165m in length, 30m beam, and 6.8m draft can be accommodated.

Aspect.—The dredged approach channel is marked by stakes and buoys. Its seaward entrance is marked by a lighted buoy. The inner fairway reach is indicated by a lighted range.

Several prominent silos stand on the S side of the main harbor basin.

Pilotage.—Pilots may be contacted by VHF and board about 2.4 miles NE of Trelde Naes Light. Pilots can be arranged through the DanPilot. For further information, see pilotage in paragraph 1.1.

Regulations.—Vessels within about 0.4 mile of the harbor entrance must not exceed a speed of 4 knots. Vessels inside the harbor basin must not exceed a speed of 3 knots.

Prior to departure from the harbor, vessels must ascertain that no large ships are entering through the dredged approach channel.

Contact Information.—The port can be contacted by e-mail, as follows:

vejleport@vejleport.dk

Anchorage.—Vessels can anchor as convenient within the fjord. Small vessels can anchor, in a depth of 5m, clay, close W of Bjornsknude. Temporary anchorage can be taken by large vessels, in a depth of 9m, close W of Rosenvold Point (55°40'N., 09°49'E.), but the bottom is soft with poor holding ground.

Caution.—A designated nature reserve area extends across the fjord and up to 1 mile E of the road bridge.

3.9 Tragten (55°35'N., 9°52'E.) lies at the E approach to Snaevringen, where the fairway channel becomes narrow.

The NW side between Trelde Naes Light and Skanseodde, 5 miles SW, is cliffy and wooded in the N part. It becomes lower as Skanseodde and the port of Fredericia, close W, are approached. The S side between Stavrshoved and Strib Odde, 3 miles W, is steep and wooded for 1.2 miles before becoming lower. A conspicuous church stands at Rojleskov, 1 mile WSW of Stavrshoved.

Skanseodde E Light (55°33'N., 9°46'E.), equipped with a racon, is shown from a prominent floodlit mast, 12m high, standing at the edge of the coastal bank, 0.2 mile SE of Skanseodde.

Strib Light (55°33'N., 9°45'E.), a directional sector light, is shown from a prominent tower, 21m high, standing on Strib Odde. It marks the SW end of Tragten and the NE end of Snaevringen.

A detached shoal patch, with a least depth of 5.6m, lies about 0.6 mile offshore, 1.7 miles NE of Skanseodde E Light. This shoal is unmarked and is located adjacent to the N side of the fairway channel within Tragten.

A lighted buoy moored about 3.5 miles ESE of Trelde Naes Light marks the deepest depths in the NE part of Tragten. Lighted buoys moored about 3 miles, 2.3 miles, and 1.4 miles NE of Skanseodde E Light mark the deepest depths in the route leading through the SW part of Tragten. This route, which provides a depth of 16m, is also indicated by the white sector of Strib Light.

Caution.—A firing practice area, marked by buoys, extends up to 1.2 miles seaward from the N shore of Tragten, about 2 miles NNE of Skanseodde.

Strib Light (Strib Odde Light)

Fredericia (55°34'N., 9°46'E.)

World Port Index No. 30170

3.10 Fredericia, an old fortress town, stands on the low land close NW of Skanseodde at the entrance to Snaevringen. Its main part is situated within a quadrant of moats and ramparts. The harbor facilities front the SW side of the town.

Ice.—The port is kept open all year round by the use of icebreakers.

Tides—Currents.—The tidal range is about 0.3m. Winds from N to E may raise the water level by up to 1.4m and winds from S to W may lower it by as much as 1.6m.

The current off the harbor nearly always sets E because the main S current in Lille Baelt forms an eddy off the port and the N current follows the direction of the shore. This current off the harbor can attain a rate of up to 6 knots.

Depths—Limitations.—The commercial port facilities are described from E to W.

Skanseoddehavn (Shell) provides two oil and chemical berths. Quay No. 41 is 175m long, with the use of mooring dolphins, and has a depth of 10m alongside. Quay No. 42 is 275m long, with the use of mooring dolphins, and has a depth of 15m alongside.

Kastelshavn has 520m of total quayage. It provides three bulk berths with depths of 12m alongside.

Old Harbor (Vaerfthavn) has 200m of total quayage at the E side of the basin. It provides two bulk berths with depths of 5.6 to 7.5m alongside.

Shipyard Harbor has 500m of total quayage at the W side of the basin. It provides four berths, with depths of 5 to 6.5m alongside, in addition to two floating docks and a drydock. The largest floating dock is 227m long and 35m wide.

Vesthavn, the main cargo basin, has about 800m of total quayage and an entrance, 180m wide. It provides six berths, including ro-ro and container facilities, with depths of 7 to 10m alongside.

Oil Harbor consists of a T-head tanker berth, 275m long, with a depth of 15m alongside.

Center Harbor has about 300m of total quayage. It provides two berths for general cargo, bulk, and containers with depths of 15m alongside.

Fredericia—Skanseoddehavn and Kastelhavn

Fredericia—Center Harbor and Mollebugthavn

Fredericia—Vesthavn

Quay No. 23, a chemical tanker jetty, is situated in the center of the basin. It provides a berth, 115m long, with a depth of 7.5m alongside.

Mollebugthavn, located in the W part of the port, has about 700m of total quayage. It provides five berths, including container and ro-ro facilities, with depths of 9 to 13.5m alongside.

An extensive pleasure craft basin is situated close SW of the W end of Mollebugthavn.

Vessels up to 300m in length and 13.3m draft can be accommodated within the port (entry from NE).

Aspect.—A lighted range, which may best be seen on the chart, leads NW to the facilities in the NW part of the harbor.

A number of prominent tanks, chimneys, and silos are situated in the SE part of the port.

Pilotage.—Pilotage is compulsory for loaded tankers over 1,500 dwt and for all vessels using oil berth No. 23, regardless of size. Pilotage is also compulsory for all tankers in ballast with uncleaned tanks which last carried oil products. Some exemptions apply for frequent visitors.

Pilots can be contacted by VHF and board about 4.5 miles NE of Skanseodde E Light.

Pilots can be arranged through the DanPilot. For further information, see pilotage in paragraph 1.1.

Regulations.—Vessels should send an ETA message to the port at least 12 hours in advance.

Prior to departure from the harbor, vessels must ascertain that no other ships are entering.

Contact Information.—The port can be contacted by e-mail, as follows:

1. Call sign: Fredericia Port
2. VHF: VHF channels 16 and 28 (office hours)
3. Telephone: 45-79-215000
4. Facsimile: 45-79-215005
5. E-mail: post@adp-as.dk
6. Web site: http://www.adp-as.dk

Anchorage.—FA1 and FA2, two designated anchorage areas with depths of 16m, lie centered 1.5 miles SSW and 3.3 miles SSE, respectively, of Trelde Naes Light.

3.11 Snaevringen (55°32'N., 9°45'E.), leading from the SW end Tragten into the N part of Bredningen, follows a winding course for about 10 miles and has very irregular depths. The fairway within this passage is narrow and passes under two bridges. However, the route is not difficult to negotiate because it is deep, the shorebanks in most places are fairly steep-to, and there are numerous navigational aids.

3.12 Snaevringen—North Part.—The two reaches of the passage lying between Fredericia and Gals Klint comprise the N part of Snaevringen.

Strib Havn (55°32'N., 9°45'E.), a private harbor, is situated 0.3 mile SE of Strib Light and consists of two basins. The southernmost basin is used as a yacht harbor. The northernmost basin has a controlling depth of 5m and can be used by vessels up to 60m in length, 6m beam, and 4.5m draft. Pilots are available, with at least 3 hours prior notice, from the station at Fredericia but vessels can enter only during daylight. The current is reported to constantly set N across the entrances to the basins.

Anchorage is available, in depths of 11 to 13m, within the bight lying S of Strib Havn, at the E side of the passage. Although the bottom is steep, this anchorage area has no swell during NE winds.

Lyngs Odde (55°31'N., 9°45'E.) is situated 1.5 miles SSW of Strib Light, at the SW end of the first reach. Lyngs Odde Flak, a shoal with depths of less than 10m, extends up to about 0.4 mile S of the point.

A conspicuous church stands inland at Erritso, 2.2 miles NW of this point, and a prominent windmill, without sails, is situated 0.4 mile ESE of it.

Lyngs Odde Ammoniakhavn (55°31'N., 9°45'E.), situated 0.3 mile N of Lyngs Odde, is a private terminal. The quay, which has additional mooring dolphins, is 55m long and has a depth of 11m alongside. Vessels up to 207m in length can be handled at this terminal. Pilotage is compulsory for vessels over 500 gt or 60m and more in length. Pilots are provided by the station at Fredericia. Three prominent tanks stand in the vicinity of the terminal.

The **East Lille Baelt Bridge** (55°31'N., 9°45'E.), a suspension bridge, spans the passage between Lyngs Odde and Stavrby Skov, 0.6 mile ESE. It has a vertical clearance of 44m. Several lights shown from the bridge and the white sector of Strib Light indicate the navigable fairway.

The East Lille Baelt Bridge

Stavrby Skov Light

Stavrby Skov Light (55°31'N., 9°46'E.), a directional sector light, is shown from a hut, 2m high, standing on the E side of the passage, close S of the bridge.

Caution.—Several submarine gas pipelines, which may best be seen on the chart, extend across the passage close N and S of East Lille Baelt Bridge.

Middelfart (55°30'N., 9°44'E.)

World Port Index No. 29910

3.13 Middelfart is situated on the S side of the passage, about 1 mile SW of East Lille Baelt Bridge. The port consists

of three separate harbors. Gamle Havn, a quay at Ny Havn, Hansens Havn, and a berth fronting the Nordiske Cable and Wire Factory.

Ice.—Ice conditions occur occasionally, but traffic is seldom hindered. Ice may appear off the harbor by late December and in the harbor by the middle of January. Off the harbor, it may last until late March.

Tides—Currents.—The tidal range is about 0.3m. Gales from E to NE may raise the water level by up to 1.5m and gales from W to SW may lower it by as much as 1.2m. When the current is setting N in Lille Baelt, the current off the harbor usually sets W.

Depths—Limitations.—The port facilities are described from W to E. Gamle Havn, a small craft basin, is protected by a mole. It has a depth of 4.5m and an entrance, 20m wide. The Old Harbor, situated at the outer side of the mole, has two quays, 80m and 100m long, with depths of 6.5 to 6.8m alongside.

The New Harbor (Ny Havn) has two quays, 100m and 190m long, with depths of 5.2m and 6m, respectively, alongside.

AC Hansens Quay, which is approached through a dredged channel, is 90m long and has a depth of 4.2m alongside.

Nordiske Cable and Wire Factory Quay (NKT Quay) is 200m long and has a depth of 6.5m alongside.

There are facilities for general cargo, ro-ro, and bulk vessels. Vessels up to 150m in length, 30m beam, and 6.5m draft can be accommodated.

Aspect.—A conspicuous church is situated in the town. A prominent chimney stands at the factory in the E part of the port. A conspicuous silo is situated in the vicinity of New Harbor quays. A range formed by beacons indicates the buoyed channel leading S toward AC Hansens Quay.

Pilotage.—Pilotage is not compulsory, but is advised for vessels without local knowledge. Pilots are available at the port and may be contacted by VHF.

Pilots can be arranged through the DanPilot. For further information, see pilotage in paragraph 1.1.

Contact Information.—The port can be contacted during the daytime, as follows:

1. VHF: VHF channels 12 and 16
2. Telephone: 45-79-215000
3. Facsimile: 45-79-215005
4. E-mail: post@adp-as.dk
5. Web site: http://www.adp-as.dk

Anchorage.—Good anchorage is available in the roadstead off the port.

The West Lille Baelt Bridge

Middelfart—Old Harbor and New Harbor Quays

Middelfart—NKT Quay

3.14 Kongebro Lystbadehavn (55°31'N., 9°43'E.), a small yacht harbor, is situated 0.6 mile WNW of the W end of Middelfart. It consists of a basin protected by a mole and has a controlling depth of 2.5m.

The **West Lille Baelt Bridge** (55°31'N., 9°43'E.), a fixed railroad bridge, spans the channel about 1 mile W of Lyngs Odde. It is supported by four upright piers, which are numbered 1 to 4 from the S side.

The bridge has a vertical clearance of 29m; the main channel, between Pier 2 and Pier 3, has a navigable width of 210m, allowing for two-way traffic. The passage between Pier 1 and Pier 2 is 155m wide and may only be used by vessels, proceeding to the N, in an E direction. The passage between Pier 3 and Pier 4 is 155m wide and may only be used by vessels proceeding to the S, in a W direction. The passages between the shore and the outer piers at each end of the bridge may be used by small craft heading in either direction.

Red and green guide lights are shown from the bridge piers and a white light, in addition to a racon, is shown from each side of the bridge over the main channel.

Vessels that have passed under the bridge must allow approaching vessels sufficient room to enable them to adjust course toward the narrow passages.

Fishing, navigating across the fairway, and anchoring, except in emergency, are prohibited within 500m of the bridge.

Snoghoj Light (55°32'N., 9°42'E.), a directional light, is shown from a prominent building, 8m high, standing 0.6 mile WNW of the N end of the West Lille Baelt Bridge. The white sector of this light astern indicates the fairway leading WSW into the S part of Snaevringen.

Snoghoj Light

Borup N Light

Borup W Light

Borup N Light (55°32'N., 9°41'E.), a directional light, is shown from a house, with an orange tiled roof, standing 0.5 mile WNW of Snoghoj Light. The white sector of this light astern indicates the fairway leading SW toward the entrance of Kolding Fjord.

Borup W Light (55°32'N., 9°42'E.), a directional light, is shown from a hut, 7m high, standing 0.2 mile W of Borup Light. The white sector of this light indicates the route leading between Pier 3 and Pier 4 of the West Lille Baelt Bridge.

Damguard Light

Damgard Light (55°32'N., 9°40'E.), a directional light, is shown from a prominent building, 7m high, standing close WSW of Borup W Light. The white sector of this light indicates the route leading between Pier 2 and Pier 3 of the West Lille Baelt Bridge.

The village of Damgard, situated close NNW of the light, is surrounded by woods and can be identified by a high light-red colored building, which is prominent from seaward. A steep valley is located close SW of the village.

Gals Klint (55°31'N., 9°41'E.), the NW extremity of Fyn, is a wooded headland, 26m high, located about 0.8 mile WNW of the S end of the West Lille Baelt Bridge.

Caution.—When the tidal current sets S in the passage in the vicinity of the West Lille Baelt Bridge, it sometimes is deflected by as much as 40° from the line of the channel and flows from a SE direction; a similar situation occurs when the N tidal current is deflected and flows from a NW direction.

A submarine cable extends across the channel from the vicinity of Lyngs Odde to Middelfart.

Two overhead cables, with a vertical clearance of 44m, span the channel about 0.7 mile W of the West Lille Baelt Bridge. The westernmost cable is supported by two prominent pylons, 120m high, each exhibiting three red obstruction lights.

3.15 Snaevringen—South part.—The two remaining reaches lying in the passage between Gals Klint and Stenderup Hage, 3.5 miles S, form the S part of Snaevringen. This part of the route is wider and deeper than the N section.

Faeno (55°29'N., 9°42'E.), with its N extremity located 1.2 miles SSW of Gals Klint, is an island that divides this part of Snaevringen into two passages. The main passage leads W of the island and Faeno Sund leads between the E side of the island and Fyn.

The island has steep and cliffy coasts in most places and is wooded on the N and S ends. A hill, 39m high, rises in the middle of the island and is surmounted by a prominent mill.

Faeno Kalv (55°30'N., 9°40'E.), an islet, lies near the middle of the main passage, 0.7 mile SW of the N extremity of Faeno. It is 12m high, steep-to, and covered with grass.

Flessingen (55°30'N., 9°40'E.), an extensive shoal bank, lies centered 0.4 mile WNW of the N extremity of Faeno. It fronts the N entrance to Faeno Sund. This shoal has depth of 4.5 to 9m and is marked by a buoy moored at its W side.

Faeno Sund (55°29'N., 9°43'E.), the secondary channel leading E of Faeno, has general depths of 10 to 34m. It is free of detached dangers but somewhat constricted. This sound leads SE into Gamborg Fjord. A branch of this sound rounds the S end of Faeno and leads SW to rejoin the main passage through Snaevringen.

Middelfart Lystbadehavn, a yacht harbor, is situated on the N side of the sound, 2.1 miles SE of Gals Klint.

3.16 Gamborg Fjord (55°29'N., 9°44'E.), a continuation of Faeno Sund, extends inland for about 4 miles and leads between the Fonsskov Peninsula, on the W side, and the mainland, on the E side. This fjord has general depths of 5 to 7m between the shorebanks. A shallow bank extends up to 1.2 miles NW from the head of the fjord. Local knowledge is essential for entering this inlet.

Skaerbaek Light (55°31'N., 9°37'E.), a directional light, is shown from a structure standing on the roof of a factory, 1.8 miles NW of Faeno Kalv. The white sector of this light astern indicates the route leading SE between the coast of Jylland and Faeno Kalv to the vicinity of Stenderup Hage.

The shore bank, with depths of less than 5m, extends up to about 0.3 mile S in the vicinity of this light and is marked by a buoy.

A conspicuous church, with a tower, stands at Taulov, 1.8 miles N of Skaerbaek Light.

Faeno Light

Faeno Light (55°29'N., 9°42'E.), a directional light, is shown from a house, 8m high, standing on the S end of Faeno, 1.7 miles SE of Faeno Klav. The white sector of this light astern indicates the route leading SSE into Bredningen.

Stenderup Hage (55°31'N., 9°38'E.) is located at the S end of Snaevringen, 0.9 mile SSW of Faeno Light. A conspicuous yellow cliff is located 0.5 mile NW of the point. The coastal bank, with depths of less than 5m, extends up to about 0.4 mile seaward in the vicinity of this point and is marked by a buoy.

Caution.—A submarine cable area extend across the channel in the vicinity of Stenderup Hage.

A prohibited anchorage area, which may best be seen on the chart, extends across the channel in the vicinity of Stenderup Hage. This area extends up to about 0.7 mile N and 1.3 miles S of the point.

3.17 Kolding Fjord (55°30'N., 9°32'E.) is entered between Borup Sande and Loverodde, 0.8 mile SW, and extends W for about 4.5 miles to the port of Kolding. With the exception of the entrance, the greater part of this fjord is shallow.

Gudso Vig, a shallow bay, indents the N shore of the fjord and has general depths of less than 1m.

Borup Sande (55°31'N., 9°38'E.), the NE entrance point of Kolding Fjord, is located 0.8 mile E of Skaerbaek Light. This point is wooded and 30m high.

Skaerbaek Fiskerihavn (55°31'N., 9°38'E.), a fishing harbor, lies 0.4 mile NW Borup Sande, at the head of a small bight. The entrance, which faces S, is 15m wide and has a controlling depth of 2.8m.

A small yacht harbor, protected by two moles, is situated close W of this fishing harbor.

Skaerbaekvaerket Havn (55°31'N., 9°37'E.), consisting of a coal quay and an oil jetty, lies 0.8 mile W of Borup Sand and fronts a power plant, with two prominent chimneys.

The dredged channel leading to the quay, which is marked by buoys, is 49m wide and has a depth of 7m. The quay is 200m long and has a depth of 7m alongside. It can handle vessels up to 150m in length and 6.7m draft.

The dredged channel leading to the oil jetty, which is indicated by a lighted range, is 80m wide, and 500m long, and has a depth of 11.8m. The jetty extends 200m SSE from the shore at the E end of the harbor and has a depth of 11.9m alongside. It can handle vessels up to 250m in length and 11.6m draft.

The Harbor Office can be contacted by telephone (45-99-551250).

Tugs are available with a 24-hour notice.

Drejensodde Light

Drejensodde Light (55°30'N., 9°35'E.), a directional light, is shown from a hut, 4m high, standing on a point of the same name, 1.4 miles SW of Skaerbaek Light. A prominent sanitarium is situated on the N shore of the fjord, about 1 mile W of the light.

Caution.—A marine farm is established from April to December about 0.3 mile W of Borup Sande.

Protected bird sanctuary areas have been established in bights on either side of the head of the fjord.

Kolding (55°29'N., 9°30'E.)

World Port Index No. 30160

3.18 The port of Kolding serves an industrial center and is situated at the head of Kolding Fjord.

Kolding Home Page
http://www.koldinghavn.dk/engelsk

Ice.—An icebreaker is available and the port is usually kept open to navigation even in severe winters.

Tides—Currents.—The tidal range is only about 0.2m. Winds from E can raise the water level by 1.5m and winds from W can lower it by the same amount.

Depths—Limitations.—The approach channel is dredged to a depth of 7m. The harbor is protected by two breakwaters and has an entrance, 80m wide. A small pleasure craft basin is situated close inside the harbor on the N side.

The outer part of the harbor has 600m of quayage on the N side, with depths of 5 to 7m alongside, and 800m of quayage on the S side, with a depth of 7m alongside. The inner part of the harbor has 500m of quayage with depths of 4.5 to 7m alongside. There are facilities for general cargo, bulk, lumber, and ro-ro vessels. Vessels up to 190m in length, 30m beam, and 6.8m draft can be accommodated.

Aspect.—The white sector of Drejensodde Light indicates the route leading WSW into the fjord. The white sector of Skaerbaek Light, astern, then indicates the route leading SW to the outer entrance of the dredged approach channel. The fairway of the approach channel is marked by buoys and stakes. The entrance fairway leading into the harbor is indicated by a lighted range.

The town stands out prominently and the ruins of Koldinghus Castle are situated on high ground overlooking it. A number of silos stand on the S side of the harbor basin.

Kolding

Pilotage.—Pilotage is compulsory for vessels carrying dangerous goods. Pilotage is not compulsory for other vessels but is advised. Pilots can be contacted by VHF and board about 0.5 mile NW of Faeno Kalv.

Inbound vessels navigating without a pilot must give an announcement 10 minutes before arrival at the buoyed channel on VHF channels 16 and 12.

Pilots can be arranged through the DanPilot. For further information, see pilotage in paragraph 1.1.

Flensburg Pilots can be contacted, as follows:

1. VHF: VHF channels 12, 13, and 16
2. Telephone: 45-75-502066 (24 hours)
3. Facsimile: 45-75-502058
4. E-mail: koldingport@kolding.dk

Regulations.—All vessels must send an ETA to the port or the agent at least 1 hour prior to arrival.

Vessels in the harbor are limited to a speed of 4 knots.

Anchorage.—Good anchorage is available in the entrance of the fjord, in depths of 12 to 16m, mud and clay, about midway between Borup Sande and Loverodde.

Lille Baelt—Central Part

3.19 The central part of Lille Baelt as defined in this sector is bound on the N side by Snaevringen and on the S side by a line extending between Lindehoved (55°08'N., 9°59'E), the SW extremity of Helnaes, and Halk Hoved (55°12'N., 9°42'E).

The N section of this part, known as Bredningen, forms a spacious roadstead which lies, in general, between the S entrance to Snaevringen and the island of Brandso, 6 miles S.

To the S of Brandso, the S section of the central part of Lille Baelt is encumbered by extensive shoals on which lie several islands and islets. Bago (55°19'N., 9°48'E) and Aro (55°15'N., 9°45'E) are the largest of these islands. Bago Sund, the deepest and the most extensively used channel, leads between Fyn and Bago.

To the S of Aro, Lille Baelt broadens considerably and becomes deeper. Both shores of this part of Lille Baelt trend irregularly to form a number of bights, but these are of little commercial significance. On the E shore, the bights are separated by prominent, but fairly low peninsulas whereas on the W shore, the bights, although not as recessive, are separated by steep headlands. The terrain is characterized by rolling country, isolated hills, farmland, and wooded areas.

Haderslev Fjord, a narrow inlet, indents the coast of Jylland, 4 miles SSW of Brandso.

3.20 **Bredningen** (55°25'N., 9°43'E.), the N section of the central part of Lille Baelt, lies between Stenderup Hage and Brandso, 6 miles S. This spacious roadstead has general depths of 5 to 18m. The 5m curve lies less than 1 mile offshore in most places.

Flaekojet (55°26'N., 9°43'E.), a detached and steep-to shoal bank, lies centered in the middle of the N entrance to Bredningen, 1.6 miles SSE of Stenderup Hage. This shoal bank has a least depth of 4.3m and is marked by a buoy moored close SE of it.

Tonnes Odde (55°26'N., 9°45'E.), the W extremity of the Fonsskov Peninsula, is located 2.1 miles SE of Stenderup Hage and terminates in a prominent steep cliff.

Fons Vig is entered between Tonnes Odde and Alehoved, about 2 miles SE. Good anchorage, out of the current, is available within this bay, in depths of 10 to 12m. Alehoved Flak, a shoal bank with depths of less than 5m, extends up to about 1

mile W of Alehoved.

A prominent church stands at Fon, near the head of the bay.

Wedellsborg Hoved (55°22'N., 9°47'E.), a wooded bluff, is located 4.2 miles S of Tonnes Odde. The shore bank, with depths of less than 5m, extends up to about 0.5 mile seaward in the vicinity of this bluff. A prominent church stands at Husby, 2.5 miles E of the bluff.

Tybrind Vig is entered between Alehoved and Wedellsborg Hoved. Anchorage, out of the current, is available within this wide bight, in depths of 7 to 10m, but a stony bank, with depths of less than 5m, extends up to about 1.2 miles seaward from the head.

Vargard Hoved (55°23'N., 9°37'E.), located 4.8 miles SW of Stenderup, is a wooded yellow bluff. Mosvig, a bight, lies between the two points and provides anchorage, in a depth of 8m, soft bottom with mud and ooze.

A prominent church, with a spire, stands at Vejstrup (Sjolund), 3.2 miles WNW of Vargard Hoved.

Skamlingsbanken (55°25'N., 9°34'E.), 113m high, rises 2.5 miles NW of Vargard Hoved and forms the prominent summit of a ridge of hills. It is the highest elevation in this area and is surmounted by a monument.

Hejlsminde Bugt (55°22'N., 9°37'E.) lies between Vargard Hoved and Anslet Hage, 3.2 mile SSE. A short and narrow channel, marked by buoys on its S side, leads from the head of this bight into Hejls Nor, a shallow lake, lying close W.

Anslet Hage (55°21'N., 9°39'E.) is a wooded point. Knudshoved, a prominent point, is located 0.8 mile S of Anslet Hage and fringed by rocks.

Anslet Grund, a shallow shoal bank, extends up to 0.9 mile E of Anslet Hage and is marked by a buoy. Knudshoved Grund, a detached shoal with a depth of 5.8m, lies about 1.5 mile ESE of Anslet Hage.

Brandso (55°22'N., 9°43'E.), a low island, lies about midway between Anslet Hage and Wedellsborg Hoved. A shore bank, which dries in places, fronts this island and extends up to about 0.6 mile seaward in places. A small and shallow pier extends from the S side of the island. Small vessels can anchor off the pier, in a depth of 6m.

Anchorage.—The regular depths in Bredningen are convenient for anchoring throughout most of the area and the holding ground is good.

Directions.—Vessels proceeding S through Bredningen should pass E of Flaekojet. They should then steer to pass about midway between Brandso and Wedellsborg Hoved.

Caution.—Dangerous wrecks have been reported to lie about 1. 2 miles NW of Brandso and about 0.7 mile SW of Wedellsborg Hoved.

A submarine cable extends ENE between Brandso and Wedellsborg Hoved.

An outfall pipeline extends about 0.5 mile SE from a point on the shore located 1 mile S of Vargard Hoved.

3.21 Lille Baelt—Central Part—South Section.—The S section of the central part of Lille Baelt extends between Anslet Hage and Halk Hoved (55°12'N., 9°42'E.), on the W side, and between Wedellsborg Hoved and Lindehoved (55°08'N., 9°59'E), on the E side.

Bago (55°19'N., 9°49'E.), lying 3.5 miles S of Wedellsborg Hoved, is a low island. A prominent church, with a low tower and spire, stands in the village near the center of the island.

Bago Light is shown from a prominent tower, 8m high, standing on the SW extremity of the island. A small and shallow fishing harbor is situated close NE of the light.

Bago Light

Aro W Light

A shoal bank, with depths of less than 5m, surrounds the island and extends up to about 1 mile seaward on the NW and SE sides. Bago Flak, the outer part of this shoal, extends about 1.3 miles SSE from the S side of the island.

Egholm, a small grass-covered islet, lies on the shoal bank, close NW of the NW extremity of Bago.

Aro (55°16'N., 9°45'E.), a low island, lies on the W side of

the passage, 3 miles SW of Bago. The W side of the island is built up and several groves of trees stand on the E side. Aro Kalv, a peninsula, projects about 1.3 miles NE from the SE extremity of the island. Korso, another peninsula, extends 0.8 mile NW from the SW end of the island.

Aro W Light is shown from a prominent tower, 13m high, standing on the NW side of Korso peninsula. It is reported that some of the sectors of this light are partially obscured by vegetation.

Aro Flak, an extensive shoal area with depths of less than 5m, extends about 1.4 miles E and NE from the E side of Aro Kalv. Aro Sand, a rocky shoal area with depths of less than 5m, extends about 1 mile S from the S side of Aro.

Bardenfleths Grund (55°18'N., 9°44'E.), a rocky shoal, lies about 2.5 miles NNE of Aro W Light, near the edge of the shoal bank extending N from the N side of Aro. This shoal has depths of 2 to 3m and is marked by a buoy moored close NW.

Rodegrund (55°18'N., 9°43'E.), a detached shoal, lies 3.2 miles N of Aro W Light. It has a least depth of 4.8m and is marked by a buoy moored close SE.

Bastholm (55°17'N., 9°46'E.), a small islet, lies on the shoal bank, 0.5 mile N of the N extremity of the Korso peninsula. Smaholme, another small islet, and Graesholm, a drying sand bank, lie on the shoal bank 0.3 mile S and 0.6 mile E, respectively, of Bastholm.

Linderum (55°18'N., 9°43'E.), a small islet, lies 1.9 miles NNW of Aro W Light, on Linderum Grund, an extensive shoal area with depths of less than 5m.

Toro (55°15'N., 9°55'E.), a low and flat island, lies 4 miles SE of Bago Light and close off the coast of Fyn. Toro Rev, an extensive shoal area with depths of less than 5m, extends up to 2 miles W from the W side of the island.

Nordlige Lillegrund (55°12'N., 9°49'E.), a detached shoal with a least depth of 6.7m, lies about 3.2 miles SW of Toro and is the outermost of the dangers extending W from Fyn.

Toro Banke (55°12'N., 9°54'E.), a detached shoal bank, lies 3 miles E of Nordlige Lillegrund and has a least depth of 5.3m. Several other isolated shoal patches, with depths of less than 10m, lie between Nordlige Lillegrund and the coast of Fyn and may best be seen on the chart.

Caution.—A nature reserve area lies in the vicinity of Aro Kalv. Entry is subject to numerous restrictions.

A marine farm is established from March to December in the area lying 0.5 mile E of the E side of Bago.

3.22 East side—Tvingsbjerg N Light (55°19'N., 9°54'E.), a directional light, is shown from a house, 8m high, standing on the E side of the passage, 5 miles SE of Wedellesborg Hoved. A conspicuous church stands at Sandager, 1.5 miles NE of the light.

Mariendal, a large farm house surrounded by trees, stands about 1.6 miles S of Tvingsbjerg N Light and is prominent from seaward.

Sonderby Klint (55°13'N., 9°56'E.), situated 5.5 miles SSE of Tvingsbjerg N Light, is a prominent bare point, which rises to a height of 45m close inland. A prominent church, with a tower surmounted by a turret, stands at Dreslette, about 3.5 miles E of the point.

Lindehoved (55°08'N., 9°59'E.), located 5.5 miles SSE of Sonderby Klint, is the SW extremity of Helnaes, a peninsula extending about 5 miles S from the coast of Fyn. The peninsula narrows to an isthmus near its N end.

Helnaes Light (55°08'N., 9°59'E.), a sector light, is shown from a prominent tower, 28m high, standing on Lindehoved. A prominent church, with a tower, stands at Helnaes, 1.5 miles ENE of the light. This church can only be seen on certain bearings and a prominent mill, without sails, is situated 0.8 mile NNW of it.

Helnaes Light

The coastal shoal bank, with depths of less than 10m, extends up to about 1.2 miles WSW of the light in this vicinity and is marked by a buoy. A detached shoal, with a least depth of 6.9m, lies about 2.4 miles W of the light.

3.23 Assens (55°16'N., 9°53'E.) (World Port Index No. 29930), a small port, is located 2.5 miles S of Tvingsbjerg N Light. It lies within a small inlet that is formed by a peninsula projecting about 0.4 mile N from the coast.

Assens

Tides—Currents.—Gales from NW to NE may raise the water level by up to 1.4m and gales from W to S may lower it by as much as 1m.

Depths—Limitations.—Asnaes Rev, a sandy shoal area with depths of less than 5m, extends up to about 1 mile NW of the N extremity of the peninsula and is marked by a buoy.

A dredged channel leads SSE to the harbor through the dangers in the approaches. It passes on the E side of Asnaes Rev and has a controlling depth of 7m.

An extensive pleasure craft basin occupies the S part of the

harbor. Sydlige Havn, the southernmost basin, has about 300m of total quayage with a depth of 4m alongside. It is mostly used by small craft. Mellemhavn, located close N of Sydlige Havn, has a depth of 5m. It is narrow and mostly used by ferries.

Nordlige Havn, located close N of Mellemhavn, is the commercial basin. It has about 400m of total quayage with depths of 6.6 to7m alongside. There are facilities for general cargo and bulk vessels. Vessels up to 130m in length, 20m beam, and 6.8m draft can be accommodated

Aspect.—Assens Havn Light, a directional light, is shown from a structure, 4m high, standing at the N extremity of the peninsula. A breakwater extends about 120m NE from this structure and its head is marked by a light. The dredged approach channel leading SSE into the inlet is indicated by a lighted range.

A prominent church, with an octagonal tower surmounted by a spire, stands in the town and a conspicuous chimney is situated on a sugar factory 0.2 mile S of it. Several prominent silos are situated at the E side of the harbor.

Pilotage.—Pilotage is not compulsory, but is advised for vessels over 600 gt or those without local knowledge. Pilots are provided by the Lille Baelt pilot station at the port. They can be contacted by VHF and board about 1.5 miles NNW of the harbor entrance.

Caution.—It is reported that the lights at the port may be difficult to identify because of strong background illumination.

3.24 West side.—Avne Vig (55°19'N., 9°38'E.), a small and shallow bay, lies 1.5 miles S of Anslet Hage.

Orby Hage (55°18'N., 9°40'E.), a point located 2 miles SE of Avne Vig, is fronted by a shallow spit. Rumpgrund, a shoal area with depths of less than 5m, lies about 1.3 miles NE of the point, near the outer edge of the coastal bank.

Haderslev Fjord (55°19'N., 9°38'E.) is entered between Orby Hage and Stagodde, 0.4 mile SW. This narrow and winding inlet extends in a WSW direction for about 7 miles. It is too narrow for anchoring and has depths of only 2m. A dam, situated at the head, separates the fjord from a large lake.

The shallow coastal bank encumbers the entrance of the fjord and extends up to about 1.3 miles ESE of Orby Hage. A dredged channel, marked by buoys, leads through the dangers in the approaches and along the entire length of the fjord. It has a controlling depth of 6m.

3.25 Haderslev (55°15'N., 9°30'E.) (World Port Index No. 30120), a small port serving an agricultural area, is situated at the head of the fjord.

Ice.—The port is generally kept open all year round; icebreakers are used when necessary.

Tides—Currents.—The tidal range is about 0.2m. Winds from E may raise the water level by up to 1.3m and winds from W may lower it by the same amount.

Depths—Limitations.—The dredged entrance channel has a controlling depth of 6m over a width of 26m. The S side and inner part of the harbor basin are shallow and occupied by facilities for pleasure craft. The N side of the outer part of the basin provides about 500m of total commercial quayage with depths of 4 to 6m alongside. Vessels up 4,000 dwt, 110m in length, 17m beam, and 5.9m draft can be accommodated.

Aspect.—The dredged entrance channel is marked by buoys and stakes. The head of the harbor is shallow and a bridge crosses the waterway leading to the dam. A number of prominent silos stand on the N side of the harbor.

Regulations.—Vessels are restricted to a speed of 6 knots in the dredged channel.

Outbound vessels, not under pilotage, must avoid meeting inbound vessels in places where passing is difficult.

Caution.—A designated nature reserve is situated adjacent to the channel in the vicinity of the harbor. Entry is subject to numerous restrictions.

Assens Havn Light

3.26 Arosund (55°16'N., 9°43'E.), a small harbor, is situated 2 miles SE of Orby Hage and protected by a breakwater. It consists of an enclosed basin with a ferry berth situated close S of it. The entrance has a controlling depth of 3m. The harbor is only used by pleasure craft, fishing boats, and small ferries.

A sector light is shown from a prominent tower, 10m high, standing on the E extremity of the S mole at the W side of the entrance to Arosund harbor.

Rade Hoved (55°14'N., 9°43'E.), a steep and bare point, is located 1.5 miles S of Arosund. It is fronted by Rade Grund, a shoal with depths of less than 5m, which extends up to about 0.5 mile SE from the coast.

Halk Hoved (55°12'N., 9°42'E.), 28m high, is located 2.6 miles SSW of Rade Hoved. This steep and prominent headland is formed by nearly vertical cliffs. Halk Grund, a shoal with depths of less than 10m, fronts the headland and extends up to 0.5 mile seaward.

Schonheyder Banke, a detached shoal with a least depth of 7.6m, lies about 2 miles S of Halk Hoved.

3.27 Directions.—Bago Sund (55°18'N., 9°52'E.), the main shipping route, passes between Bago and the coast of Fyn. It consists of three reaches and has a least depth of 11.8m in the S part. On the E side, the channel is bordered by the dangers fronting the coast of Fyn. On the W side, the channel is bordered by the dangers extending from the N, E, and S sides of Bago and those extending from the SE and S sides of Aro. These dangers are marked at the outer edge by buoys.

The northernmost reach leads SE and is indicated by the white sector of Tvingsbjerg N Light. The central reach leads SSE and is indicated by the white sector of Assens Havn Light.

The southernmost reach is narrow and leads SW. It is indicated astern by a lighted range, the front light of which is situated on the same structure as Tvingsbjerg N Light.

Fyr Renden leads into the narrowest part of the fairway, 2 miles SE of the SW end of Bago. The W side of this fairway is formed by the extensive shoal area lying between Bago and Aro. The E side of the fairway is formed by the shoal bank extending from the coast close N of Assens. A lighted range indicates the fairway leading through the SW reach between these dangers.

Fyr Renden (55°18'N., 9°46'E.), a narrow and tortuous channel, has a controlling depth of 6m. It passes between the shoal banks extending W and SE from Bago and NE from Aro. The W side of the fairway, which has a least width of only about 300m, is marked by buoys. This channel can be used by small vessels with local knowledge.

Aro Sund (55°15'N., 9°43'E.), a narrow channel, leads through an extensive coastal shoal area fronting the E side of Jylland. The channel, which is marked by buoys and lights, passes W of Aro. This route is available to vessels of moderate draft. It has general depths of 9 to 23m and follows an intricate course. The currents do not always follow the direction of the fairway in this passage and sometimes set across it onto the shoals.

A secondary channel leads W of Linderum. It has a least depth of 3.8m and is limited to small craft with local knowledge.

Caution.—Magnetic anomalies have been reported to exist within an area lying about 1 mile W of the N part of Bago.

A submarine water pipeline lies across Bago Sund within an abandoned cable area. It extends from the SE side of Bago to Mariendal (farm house) and is marked by beacons on both shores.

Lille Baelt—South Part

3.28 The S part of Lille Baelt as defined by this sector, extends, on the E side, from Lindehoved to Dovnsklint (54°43'N., 10°42'E.), the S extremity of Langeland, and, on the W side, from Halk Hoved to Pols Huk (54°53'N., 10°04'E.), 23 miles SE. It also includes Abenra Fjord, Als Fjord, Marstal Bugt, and Als Sund as far as, but not including, the port of Sonderborg.

The main passage in this part of Lille Baelt is deeper, less encumbered with detached dangers, and wider than the central part. However, the coastal configuration on both sides of this part trends more erratically.

In general, the terrain on Jylland and the islands consists of rolling hills and low land. It is interspersed with highly-cultivated fields and wooded areas.

The main route through this part of Lille Baelt leads S from the S end of Bago Sund and passes W of Nordlige Lillegrund (55°12'N., 9°49'). It then leads in a SE direction, passing close off the NE coast of Als, into Kieler Bucht. This route, which has a least depth of 20.1m, passes through the channel lying SW of the detached dangers lying in the center of this part of Lille Baelt.

An alternate channel, which has a least depth of 11.8m, leads through the channel lying NE of the detached dangers.

Tides—Currents.—In the areas of open water, the mean change in water level is small. However, in the narrow channels and where the shoreline is irregular, the water level may vary by as much as 1.5m. Generally, winds from E to NE raise the water level by as much as 1.2m and winds from W to NW lower it by the same amount.

With winds from ENE to S, the current generally sets N; with winds from other directions, the current sets S.

3.29 Off-lying dangers—Schonheyder Banke (55°09'N., 9°43'E.) lies about 2 miles S of Halk Hoved and has a least depth of 7.6m. This detached shoal bank consists of clay mixed with sand and stones and a buoy, marking a firing area, is moored in its vicinity.

Holst Banke (55°08'N., 9°40'E.) lies centered 4 miles S of Halk Hoved and has a least depth of 7.3m. This large detached shoal bank consists of clay mixed with sand and stones and is marked by buoys.

Lillegrund (55°07'N., 9°55'E.), a stony patch, lies about 2.8 miles WSW of Helnaes Light. It has a least depth of 3.7m and is marked by a buoy. This detached shoal lies on a bank and an isolated shoal, with a depth of 6.9m, lies about 1.2 miles NNE of it.

Langgrund (55°06'N., 9°55'E.) lies about 2.8 miles SW of Helnaes Light. This detached shoal lies near the SE end of a bank and has a least depth of 5.9m.

Hesteskoen (55°05'N., 9°54'E.), a steep-to and partly drying reef, lies on a detached shoal, 4.1 miles SW of Helnaes Light. The shoal has depths of less than 5m and is marked by a buoy moored close NE of it.

The channel leading between Hesteskoen and Langgrund has a least depth of 10.9m.

Sondre Stenron (55°04'N., 9°57'E.), a stony patch, lies about 4.5 miles SSW of Helnaes Light. It has a least depth of 0.7m and lies at the N end of a sandy shoal bank, which is marked by buoys. Depths of less than 10m extend up to about 2.3 miles SE and 1.2 miles S of this patch. The channel separating Hesteskoen from this patch has depths of more than 18m.

3.30 West side—Sandvig (55°11'N., 9°36'E.) lies 3 miles WSW of Halk Hoved. The land extending SW of the latter point is high and steep. This bay affords anchorage, sheltered from N winds, in depths of 8 to 18m, sand and mud.

Diernaes Bugt (55°09'N., 9°31'E.), a small and shallow bay, lies 3.8 miles SW of Sandvig. Slibso, a lagoon, lies close inland of this bay.

Sonderballe Hoved (55°08'N., 9°31'E.), a prominent wooded headland, is located 1.7 miles SSE of Dierrrnaes Bugt.

Barso (55°07'N., 9°33'E.), a small island, lies off the entrance to Genner Fjord, 1.3 miles ESE of Sonderballe Hoved. Laddenhoj, with a saddle-backed summit, rises to a height of 38m at the N end of the island. The N, S, and W sides of the island are fairly steep-to.

Barso Grund, a shoal bank with depths of less than 5m, fronts the E side of the island and extends up to about 0.7 mile seaward.

Genner Fjord (55°07'N., 9°30'E.), a sheltered inlet, is entered S of Sonderballe Hoved and has general depths of 5 to 20m. Barso, lying in the approaches, can be passed on either side.

Kalvo (55°07'N., 9°28'E.), a small craft harbor situated at

the head of the fjord, has a controlling depth of 3.3m. Sheltered anchorage is available, in depths up to 14m, off this harbor.

Knivesbjerg (55°08'N., 9°27'E.), a prominent hill, stands 2.7 miles W of Sonderballe Hoved. It is 92m high and surmounted by a tower.

Knudshoved (55°05'N., 9°33'E.), a steep point, is located 2.6 miles SSE of Sonderballe Hoved. It is 15m high and forms the N entrance point of Abenra Fjord.

Starbeck Grund, a shoal spit, projects about 1.2 miles E from this point. It has depths of less than 5m and is marked by a buoy.

Abenra Fjord (55°02'N., 9°30'E.) is entered between Knudshoved and Varnaes Hoved, 2.8 miles SSE. This deep fjord extends about 5 miles WSW and is mostly free of dangers. Its sides are high and rather heavily wooded. Several mussel beds, marked by poles, are situated along the N shore of the fjord.

Caution.—An outfall pipeline extends about 0.5 mile SE from a point on the shore located 1.2 mile SW of Halk Hoved.

A restricted area, which may best be seen on the chart, lies 3.5 miles SW of Halk Hoved, in the approach to Sandvig. Anchoring, fishing, and sea bed activities within this area could be dangerous due to the existence of bottom mines.

A firing exercise area fronts the area lying between Sandvig and Diernaes Bugt. It extends up to 4 miles seaward and is marked by buoys.

Marine farms, marked by buoys, are established from March to December along the NW side of Barso and from April to December along the SW side.

A nature reserve area lies in the vicinity of Kalvo, at the head of Genner Fjord. Entry is subject to numerous restrictions.

Several mussel beds, marked by poles, front the points along the N shore of Abenra Fjord.

Abenra

3.31 Abenra (Aabenraa) (55°03'N., 9°26'E.) (World Port Index No. 30100), a small commercial port, is situated at the head of Abenra Fjord. A yacht basin lies close S of the harbor.

Abenra Home Page

http://aabenraaport.dk/?id=14463

Ice.—The port is generally open throughout the winter, but icebreaker assistance may be required at times.

Tides—Currents.—The water in the port is brackish. Gales from NE to E may raise the water level by up to 1.5m and gales from SW may lower it by as much as 1m.

Depths—Limitations.—The dredged entrance channel, which is about 0.5 mile long, has a depth of 11m and a minimum width of 120m.

Nyhavn, the N basin, provides about 800m of total quayage with depths of 6.5 to 11m alongside. Gammelhavn, the W basin, provides about 500m of total quayage with a depth of 7.5m alongside. Sydhavn, the S basin, provides 250m of total quayage. It has a depth of 4m and is used by fishing vessels.

Sonderjyllandskajan, 260m long, is situated S of the entrance to Sydhavn and has a depth of 11m alongside. A ro-ro jetty, 150m long, extends SSE from the S end of this quay and has a depth of 11m alongside.

The tanker terminal is situated on the E side of the entrance to Nyhavn. It has two berths with depths of 11m and 7m alongside.

Cargo vessels up to 250m in length and tankers up to 200m in length can be accommodated, with drafts up to 10.75m.

Aspect.—Sonderstrand Light is shown from a structure standing at the head of the fjord, 0.6 mile S of the port. The approach channel leads WSW and is indicated by the white sector of this light. The entrance fairway leads NW and is indicated by a lighted range.

A prominent red church, with a slate roof and slender spire, stands in the town, close W of the harbor. Several silos are situated in the vicinity of the harbor.

Pilotage.—Pilotage is compulsory for tankers over 1,500 dwt and carrying oil, gas, or dangerous chemicals. It is recommended for all vessels over 2,000 gt. Pilots can be contacted by VHF and board about 3 miles E of the harbor.

Pilots can be arranged through the DanPilot. For further information, see pilotage in paragraph 1.1.

Contact Information.—The port can be contacted by e-mail (port@aabenraaport.dk).

Anchorage.—A designated anchorage area, with depths of 26 to 30m, sand, lies centered about 2 miles E of Knudshoved and may best be seen on the chart.

3.32 Enstedvaerket (55°01'N., 9°26'E.) (World Port Index No. 30105) is situated at the head of Abenra Fjord, 1.2 miles S of Abenra. The main facilities, which are owned by an electric power company, consist of an oil terminal and a coal quay.

Enstedvaerket Home Page

http://www.dongenergy.com/en

Depths—Limitations.—The dredged approach channel, leading WSW, is about 2 miles long and has a depth of 18m.

The coal quay is 375m long and has a depth of 18m alongside. A jetty projects 270m ENE from the E end of this quay and has two oil berths, fronted by dolphins, at its head. The outer berth has a depth of 18m alongside and the inner berth has a depth of 15.5m alongside.

Three berths situated at the W side of the harbor have depths of 8m alongside and are used by coasters.

Vessels up to 350m in length and 17m draft can be accommodated.

Aspect.—The dredged approach channel is indicated by a lighted range. The limits of the dredged area in the harbor are indicated by lighted beacons.

A conspicuous chimney stands at the power station.

Enstedvaerkets

Pilotage.—Pilotage is compulsory for vessels of 13m draft and over and for tankers over 1,500 dwt carrying oil, gas, or dangerous chemicals. Pilots can be contacted by VHF and board about 3 miles E of the harbor. Pilots board large vessels about 3.5 miles NE of Nordborg Light.

Pilots can be arranged through the DanPilot. For further information, see pilotage in paragraph 1.1.

Contact Information.—The port can be contacted through e-mail (ensted@dongenergy.dk).

Anchorage.—A designated anchorage area, with depths of 26 to 30m, lies sand, centered about 2 miles E of Knudshoved and may best be seen on the chart.

3.33 Varnaes Hoved (55°03'N., 9°35'E.), 25m high, is a steep point. It forms the S entrance point of Abenra Fjord and also the W entrance point of Als Fjord.

Als Fjord (55°03'N., 9°38'E.) is entered between Varnaes Hoved and the NW extremity of Als, 2 miles ENE. It leads about 7 miles in a general SE direction to the junction with Als Sund and Augustenborg Fjord. This fjord is about 1 mile wide and has general depths of 11 to 33m in the fairway channel. The SW side of the fjord is higher and more wooded than the NE side. Several marinas are situated within the fjord.

Ballebro Light (55°00'N., 9°40'E.) is shown from a prominent tower, 6m high, standing on the W side of the fjord, about 4 miles SE of Varnaes Hoved. The white sectors of this light indicate the main fairway.

A prominent church stands at Ullerup, about 1.8 miles SSW of Ballebro Light.

Stegsvig, a bay, indents the E side of the fjord, 3 miles ESE of Varnaes Hoved. Several shoals, with depths of 5 to 8m, encumber the entrance. Dyvig, a shallow inlet, leads about 1.2 miles E from the head of the bay and has a pier at its head. A channel, 20m wide, leads to the pier and has a controlling depth of 3.5m. A small boat harbor lies close S of the pier.

Sandvig, a bay, lies 3.6 miles E of Ballebro Light, near the head of the fjord, and has general depths of 12 to 14m.

Ballebro Light

Stevning Nor, a narrow and shallow inlet, lies 0.7 mile S of Sandvig. It is used by small vessels with drafts up to 4m and local knowledge.

Augustenborg Fjord (54°59'N., 9°46'E.), the SE continuation of Als Fjord, is entered about 3.5 miles ESE of Ballebro Light. This fjord is about 4 miles long and has general depths of 5 to 13m. The head is encumbered by shallow shoals. Small vessels can anchor, in a depth of 9m, about 1.5 miles inside the fjord.

Augustenborg (54°57'N., 9°52'E.) (World Port Index No. 30095), a small port, lies in a shallow inlet extending NE from the head of Augustenborg Fjord. A road embankment, with a sluice at its N end, crosses the inlet near the town.

A dredged channel, marked by buoys, leads to the harbor and has a controlling depth of 4m. The harbor provides a quay, 170m long, with a depth of 4m alongside. Vessels of up to 80m in length, 15m beam, and 3.5m draft can be accommodated.

Caution.—Several submarine cables lie across Als Fjord, 3.5 miles SE of Varnaes Hoved. The landing places are marked by beacons on both shores.

A ferry crosses Als Fjord in the vicinity of Ballebro Light.

It is reported that hovercraft operate in Augustenborg Fjord.

3.34 Als Sund (54°58'N., 9°45'E.) leads S for 5 miles to Sonderborg and separates Als from the mainland. It is entered, at the N end, between Snogbaek Huk and Arnkilsore, 0.8 mile ESE. This narrow sound has low and wooded shores in the N part, becoming higher toward the S.

Snogbaek Huk (54°56'N., 10°03'E.), the W entrance point, is located 2.4 miles ESE of Ballebro Light. Snogbaek Hage, a shallow bank of sand and rock, extends about 0.4 mile NE from this point and is marked by a lighted buoy. A detached shoal, with a depth of 8.4m, lies about 0.8 mile NE of the point.

Sottrupskov Light is shown from a structure, 2m high, standing on the W side of the passage, 1 mile S of Snogbaek Huk. The white sector of this light indicates the entrance channel. A prominent church stands at Vester Sottrup, about 2 miles SW of the light.

The fairway in the sound is marked by lighted buoys on the W side and unlighted buoys on the E side. It varies from 100 to 250m in width and has a controlling depth of 10.5m, close N of Sonderborg.

Alssundbroens (Als Sund Bridge), a fixed bridge, spans the

sound about 0.9 mile N of Sonderborg. It has a navigable width of 50m and a vertical clearance of 33m.

For further details on Sonderborg, see paragraph 3.52.

Vessels without local knowledge are advised to use the services of a pilot as a considerable amount of local traffic use this passage. Pilots are available from Sonderborg and will board vessels N of Snogbaek Huk.

Caution.—The current in Als Sund usually flows N and attains rates of 3 to 4 knots. This makes navigation somewhat difficult for large vessels as the current tends to set toward one or the other shore.

3.35 The NE and E shores of Als form the W side of the main passage leading through the S part of Lille Baelt. The shore between Tontoft Nakke and Pols Huk, 17 miles SE, is fairly high with occasional steep cliffs.

Nordborg Light (55°05'N., 9°43'E.) is shown from a prominent tower, 20m high, standing about 4 miles ENE of the entrance to Als Fjord. The coast between is low and barren.

Nordborg Light

Tontoft Nakke (55°05'N., 9°45'E.), the N extremity of Als, is located 1.2 miles ENE of Nordborg Light. Tranesand, a shoal with depths of less than 3m, fronts the point. It extends up to about 0.6 mile seaward and is marked by a buoy.

Tranerodde Light (55°03'N., 9°51'E.) is shown from a prominent tower, 10m high, standing on a point of the same name, 4.2 miles SE of Tontoft Nakke. Tranerodde Grund, a shoal with depths of less than 10m, fronts the point and extends up to about 1 mile seaward.

A conspicuous white church, with a slender spire, is situated on high ground at Havnbjerg, 1.8 miles WSW of the light and a prominent windmill stands near it.

Taksensand Light (55°00'N., 9°58'E.) is shown from a prominent tower, 19m high, standing on a point of the same name, 4.5 miles SE of Tranerodde Light.

Fynshav Ferry Harbor (55°00'N., 9°59'E.), situated 1 mile SE of Taksensand Light, is protected by breakwaters. It is used exclusively by ferries from Bojden (55°06'N., 10°05'E.).

Mommark Havn (54°56'N., 10°03'E.), situated 5.2 miles SE of Taksensand Light, is protected by a breakwater. It is used by the ferries from Faaborg (55°06'N., 10°14'E.), small craft, fishing boats, and yachts. The entrance has a controlling depth

Tranerodde Light

Taksensand Light

of 3.5m. Vessels up to 25m in length, 8m beam, and 3m draft can be accommodated.

Pols Huk (54°53'N., 10°04'E.), the SE extremity of Als, is located 3.5 miles SSE of Mommark Havn. Pols Rev, a shoal bank with depths of less than 5m, extends up to about 1.5 miles SE from the point and is marked by a buoy.

Gammel Pol Light (54°53'N., 10°04'E.) is shown from a prominent column, 11m high, standing on the N part of Pols Huk. A prominent church stands at Lysabild, 2.6 miles NW of the light.

Directions.—The main route through this part of Lille Baelt passes close off the NE coast of Als. The channel leads SE and ESE to pass SW of the detached dangers lying offshore. The track is indicated by the white sectors of Tranerodde Light and Taksensand Light.

A fairway, 300m wide, lies 1.5 miles NNE of Tranerodde Light, between Tranerodde Grund and Hesteskoen. It is marked by lighted buoys and can be used by vessels with drafts up to 17m.

From a position located about 4 miles E of Taksensand Light, the route then leads SSE through the S part of Lille Baelt into Kieler Bucht (see paragraph 3.72).

Caution.—A marine farm lies 0.6 mile offshore, about 2 miles SE of Tranerodde Light. It is marked by lighted buoys and may best be seen on the chart.

Submarine cables, which may best be seen on the chart, lie across Lille Baelt and extend NE from close NW of Fynhavn

Gammel Pol Light

and ENE from a point located 1 mile N of Gammel Pol Light.

A marine farm lies close offshore, about 0.6 mile NW of Mommark Havn. It is marked by lighted buoys and may best be seen on the chart.

A restricted area, which may best be seen on the chart, lies centered 2.5 miles NE of Pols Huk. Anchoring, fishing, and sea bed activities are prohibited in this area due to the existence of unexploded ordnance surrounding a wreck.

3.36 East side—Hornenaes (55°05'N., 10°05'E.), located 4.8 miles SE of Helnaes Light, is the W end of an irregularly-shaped peninsula. This headland, which forms the S entrance point of Helnaes Bugt, has steep cliffs and rises to a height of 40m close inland. The 10m curve lies about 0.5 mile W of the point.

Helnaes Bugt (55°07'N., 10°04'E.) lies N of Hornenaes and its entrance is encumbered by shoals. This bay is divided into Sonder Fjord and Norre Fjord by a shallow bank extending in an E direction from the E side of Helnaes to the E shore. Three islets lie on this bank.

Kalvore, a small peninsula, projects from the E side of the entrance to the bay, 4 miles SE of Helnaes Light. Bojden Ferry Harbor, protected by two moles, is situated at the NW end of this peninsula. This small harbor is used exclusively by the ferries from Fynshav (55°00'N., 9°59'E.).

Several ramps, piers, and loading places, with depths of less than 3m alongside, are situated within Helnaes Bugt and used only by small craft.

A conspicuous church, with a tall spire at one end and two small towers at the other, stands on high ground at Horne, 4.2 miles E of Bojden Ferry Harbor.

Lyo (55°02'N., 10°09'E.), located 3 miles SE of Hornenaes, has steep cliffs along its W and S shores and is flat at the NW end. A prominent village church stands near the center of the island, but is generally obscured by trees. A conspicuous mill, without sails, is situated on high ground close W of the church.

A shore bank, with depths of less than 10m, fronts the W side of the island and extends up to about 0.8 mile seaward. Lyo Flak, a rocky shoal with a least depth of 4.7m, lies about 1.3 miles W of the W side of the island and is marked by a buoy.

Lyo Rev Light is shown from a mast, 4m high, standing on the low N extremity of the island. A sandy spit extends about 0.3 mile E from the light and is marked by a buoy. Lyo Sand, a shore bank with depths of less than 5m, fronts the E and SE sides of the island and extends up to about 0.8 mile seaward.

Skrams Flak, a detached shoal area with depths of less than 5m, lies centered 1.8 miles SE of the SE side of the island and is marked by a lighted buoy.

Lyo Havn, consisting of a pier and a yacht basin, is situated at the N side of the island. The head of the pier provides a berth for a ferry and has a controlling depth of 4.5m. Vessels up to 20m in length, 5m beam, and 3m draft can be accommodated alongside.

Aero (54°55'N., 10°20'E.), 12 miles long, lies with its N end located 4.5 miles SSE of Lyo. A ridge of hills extends along the longitudinal axis of this island and its summit, 67m high, rises near the middle. The island is mostly built over and, although there are no woods, the numerous hedge rows give it a wooded appearance.

3.37 Skjoldnaes (54°58'N., 10°12'E.), the N extremity of the island, is 24m high. Skjoldnaes Light is shown from a prominent tower, 22m high, standing on this point.

Skjoldnaes Light

A prominent church, with a tower surmounted by a small spire, stands at Sodby, 2.5 miles SE of the light. This church is surrounded by trees and is not visible on all bearings. A conspicuous windmill is situated on high ground 1.2 miles SE of the church.

Vejsnaes Nakke (54°49'N., 10°25'E.), the S extremity of Aero, is formed by a bluff surmounted by a hill, 22m high. A light is shown from a mast, 9m high, standing on this point.

A prominent church, with a tower surmounted by a spire, stands at Store Rise, 2.3 miles NNW of the light. Another prominent church, with a tower surmounted by an open belfry,

stands at Tranerup, 4 miles NW of the light.

A prominent windmill stands at Bregninge, 2.4 miles NW of Tranderup, and a church, with a slender spire, is situated 0.4 mile SSE of it.

Vodrup Flak (54°51'N., 10°16'E.), a detached shoal bank with a least depth of 8.2m, lies centered about 2.3 miles offshore, 5.6 miles NW of Vejsnaes Nakke Light.

Vejsnaes Flak (Sneedorffs Grund) (54°45'N., 10°26'E.), a detached shoal bank with a least depth of 6.4m, lies centered 4.2 miles S of Vejsnaes Nakke Light.

Caution.—A restricted area, which may best be seen on the chart, lies centered 8 miles W of Vejsnaes Nakke Light. Anchoring, fishing, and carrying out any seabed activities within this area are prohibited due to the existence of wartime gas shells on the bottom.

A submarine exercise area, which may best be seen on the chart, lies centered 7.5 miles W of Vejsnaes Nakke Light in the vicinity of the above restricted area.

3.38 Marstal Bugt (54°47'N., 10°35'E.) is entered between Vejsnaes Nakke and Dovnsklint, 11 miles SE. This bay is enclosed by the S side of Aero and the SW side of Langeland. A shallow and sandy flat, with several small islands lying on it, connects the SE end of Aero to Langeland and separates the bay from the waters lying S of Fyn. The bay has general depths of 9 to 20m throughout, but several detached shoals, with depths of less than 10m, lie near the center of the entrance.

The 10m curve lies within 1 mile of the shore except off the SE end of Aero where it extends up to 2 miles seaward. Both sides of the bay are mostly low.

Vessels can anchor as convenient within the bay, sheltered from N winds.

For details of Marstal (54°51'N., 10°31'E.), which can be entered from the bay, see paragraph 3.48.

Bagenkop (54°45'N., 10°40'E.), a small harbor, is situated 2 miles NNW of Dovnsklint and protected by breakwaters. The inner three basins have depths of 3 to 3.5m and are used by fishing vessels and small craft. The entrance channel, outer basin, and ferry berth have a depth of 6m. Vessels up to 50m in length, 10m beam, and 3m draft can be accommodated.

Dovnsklint (54°44'N., 10°43'E.) is the S extremity of Gulstav, the S part of Langeland. It is formed by white cliffs, up to 16m high. Keldsnor Light is shown from a tower standing 1.2 miles ENE of this point (see paragraph 2.28).

Snekke Grund, a shore bank with depths of less than 10m, fronts Dovnsklint and extends up to about 1.3 miles seaward.

Gulstav Flak (54°41'N., 10°43'E.), a detached bank of sand and stones with depths of less than 10m, extends up to about 4 miles S of Dovnsklint. A wreck, with a swept depth of 9m, is reported to lie on the S part of this bank.

Caution.—Restricted areas, which may best be seen on the chart, lie centered 4 miles SE of Vejsnaes Nakke Light, 3.5 miles SW of Dovnsklint, and 5 miles SSW of Dovnsklint. Vessels are prohibited from anchoring, trawling, dredging, or carrying out any seabed activities within these areas due to the residual danger from mines lying on the bottom.

High speed ferries operate in the vicinity of Marstal Bugt.

Fairways South of Fyn

3.39 The fairways S of Fyn lie within an area enclosed by the S coast of Fyn, the N coast of Aero, and the SW coast of Langeland. The E limit of this area is defined roughly by a line extending between Svendborg (55°03'N., 10°37'E.) and Rudkobing (55°56'N., 10°43'E.). Most of the area is foul and encumbered by numerous islands, islets, and shoals.

Tasinge, the largest island, forms the S side of Svendborg Sund. Ports of commercial importance in this area include the following:

1. Faborg (55°06'N., 10°15'E.).
2. Marstal Havn (54°51'N., 10°31'E.).
3. Soby (54°57'N., 10°16'E.).
4. Aeroskobing (54°53'N., 10°25'E.).

There are also numerous shallow small craft harbors and yacht marinas in the area.

For buoyage purposes, the channels lying S of Fyn are considered to run E from Lille Baelt toward Svendborg.

Ice.—Ice formation in this area may appear quite early in the season. However, the larger ports are generally open to navigation all year round and icebreakers are used when necessary. Ice has been known to appear as early as the first part of December off Rudkobing and remain as late as the first week of April. As a rule, the W part of this area, to the N of Aero, is the last to freeze over. Svendborg Sund is, for the most part, kept free of any extensive ice formation by the current.

Tides—Currents.—The tidal range in this area is small and may vary from negligible to about 0.6m. During certain wind conditions, a remarkable difference in the rise of the water level at various places occurs. For example, at Faborg, NE winds may raise the water level by up to 0.6m, whereas, with the same wind conditions, the water level may rise by up to 1.5m at Svendborg. In general, winds from N to E cause the water level to rise and winds from S to W cause it to fall.

In Svendborg Sund, the current is strongly affected by the winds and as a result is very irregular. The current may set in the same direction for 5 or 6 days and may attain a rate of up to 6 knots.

Pilotage.—Pilots are available from the station at Tankefuld (55°03'N., 10°34'E.) in the W approach to Svendborg Sund. They can be contacted by VHF and board in the vicinity of Lehnskov Pynt (55°02'N., 10°30'E.). The pilots will conduct vessels to Svendborg and also to ports situated in the Baltic Sea, Lille Baelt, the S part of Store Baelt, and the W part of Smalandsfarvandet. Local pilots are available at Aeroskobing and Marstal.

3.40 Lyo Krog (55°04'N., 10°08'E.), the passage lying between the S side of Horne Land and the N side of Lyo, leads 2 miles ENE and then 3 miles ESE. Horne Land is the peninsula separating Helnaes Bugt from Faaborg Fjord.

Lyo (55°03'N., 10°09'E.), an island lying 3 miles SE of Hornenaes, was previously described in paragraph 3.36.

Knolden (55°04'N., 10°13'E.), the S extremity of Horne Land, consists of a small peninsula connected to the coast by a narrow isthmus. It is faced on the S side by prominent light-colored cliffs, up to 30m high.

Knastegrund (55°03'N., 10°14'E.), a rocky shoal with depths of less than 1m, extends about 1.2 miles SE from

Knolden and is marked by a buoy.

Avernako (55°01'N., 10°17'E.), an island divided into two parts by a narrow strip of land, lies with its N end located 1.8 miles SE of Knolden. This island is mostly built over and its highest part is at the E end. A prominent church, with a gray roof and tower, stands near the center of the W part of the island.

Munke Sector Light is shown from a structure, 4m high, standing on the E side of the W part of the island.

Nakkeodde Sector Light is shown from a structure, 3m high, standing on the N side of the E part of the island.

Bjorno (55°04'N., 10°15'E.), a barren and hilly island, lies 1.5 miles E of Knolden and forms the S side of Faborg Fjord. A light is shown from a structure, 3m high, standing on the SW side of the island.

Bjornoholme Flak, a shoal with depths of less than 3m, extends up to 0.5 mile SE from the S end of the island and is marked by a buoy.

Lillegrund (55°03'N., 10°14'E.), a detached rocky area with depths of less than 1m, lies in the W approach to Faborg Fjord, 0.9 mile W of Bjorno Light, and is marked by buoys.

Store Svelmo (55°02'N., 10°20'E.), an islet, lies 0.8 mile offshore, about 2.3 miles SE of Bjorno Light. Svelmo Trille, a narrow spit, fronts the S side of this islet and is marked by a buoy.

A conspicuous white church, with a red roof, stands at Astrup, 2.5 miles N of Store Svelmo. Another prominent church, with a red roof and tower, is situated at Ulbolle, about 3 miles E of Astrup.

Caution.—A submarine cable and a submarine pipeline extend S from the SE end of Bjorno to the N end of Avernako and are marked by beacons.

A submarine cable extends NNE from the N side of Lyo to the coast of Fyn.

A submarine cable, which may best be seen on the chart, extends in a S direction from close NW of Knolden to the N end of Aero.

3.41 Faborg Fjord (55°05'N., 10°15'E.) and its approaches lie between Knolden and Store Svelmo. Except for some bluffs standing along the SE shore, the coast of the fjord is generally low. Several hills rise a short distance inland. The depths within the fjord are very irregular and there are several shallow shoal patches.

Two channels lead through the shallow dangers into this fjord. The E channel passes E of Bjorno and has a controlling depth of 3.4. The W channel, which passes W of Bjorno, may be entered by passing either E or W of Lillegrund. The fairway leading W of Lillegrund has a controlling depth of 3.7m. The main fairway leading E of Lillegrund has a controlling depth of 10m as far as the NW extremity of Bjorno and a controlling depth of 4.9m as far as Faborg.

3.42 Faborg (Faaborg) (55°06'N., 10°15'E.) (World Port Index No. 29940), a small port serving the surrounding agricultural area, is situated at the head of Faborg Fjord. A pleasure craft basin is situated in the NW part of the port.

Tides—Currents.—Winds from N may raise the water level by up to 1m and winds from SW may lower it by the same amount.

Depths—Limitations.—The main harbor has an entrance, 30m wide, protected by breakwaters. Its inner part has depths of 2.8 to 4.4m and is used by pleasure craft and fishing vessels. The outer part provides 200m of total commercial quayage and has depths of 3.2 to 5.6m alongside. A basin used by ferries is located in the SE part of the port and has a depth of 4.5m. Vessels up to 100m in length, 20m beam, and 4.2m draft may be accommodated.

Aspect.—The harbor approach channel is indicated by a lighted range. A prominent church, with a spire, stands in the town. A bell tower and a power station chimney, both conspicuous, are situated close SSW and 0.2 mile SSE, respectively, of the church.

Anchorage.—Vessels can anchor, in depths of 6 to 11m, close within the W entrance channel.

Caution.—The approach and entrance fairways are subject to silting.

3.43 Nakkebolle Fjord (55°03'N., 10°23'E.), a small and shallow bight, is entered 1.5 miles NE of Store Svelmo and is almost completely encumbered with shoals. The shores are low and densely built over.

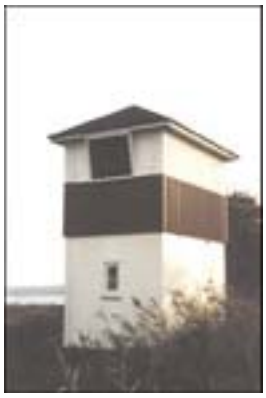
Lehnskov Pynt (55°02'N., 10°31'E.), located 6.2 miles E of Store Svelmo, is the NW entrance point of Svendborg Sund. Woods extend down almost to the water in the vicinity of this point. A prominent green bluff, 15m high, is located about 0.7 mile WNW of the point.

Skaro (55°00'N., 10°28'E.), a low island, lies 2 miles SW of Lehnskov Pynt. It is treeless with a few scattered houses.

Tasinge (55°00'N., 10°33'E.), the E part of which was described beginning in paragraph 2.23, is the largest island lying S of Fyn.

Baekkehave Light (55°00'N., 10°33'E.) is shown from a structure, 6m high, standing on the NW side of the island, 1.2 miles SE of Lehnskov Pynt.

Varo Knude, the SW extremity of this island, is located 4.3 miles S of the light. This point rises steeply on its S side to a prominent hillock, 8m high.



Baekkehave Light

Vornaes Pynt (55°01'N., 10°31'E.), the NW extremity of Tasinge, is located about 1 mile S of Lehnskov Pynt and forms the SW entrance point of Svendborg Sund.

Directions.—The main route leading through this area,

which connects Lille Baelt with Store Baelt, passes between Hornenaes and the N side of Lyo. It then passes between the N end of Avernake and Knastegrund shoal. The route continues in an E direction along the S coast of Fyn and into Svendborg Sund. The fairway channel is indicated by sector lights and has general depths of 10 to 22m.

An alternate secondary route passes S of Lyo, N of Avernako, and then joins the main fairway channel.

Caution.—Submarine cables extend NE across the channel from the N side of Skaro to the coast of Fyn.

3.44 Svendborg Sund (55°04'N., 10°37'E.), a narrow passage, leads between the S shore of Fyn and the NW side of Tasinge. The entrance, lying between Lehnskov Pynt and Vornaes Pynt, is comparatively wide and deep. Both shores are rather low and have scattered wooded areas located near the coast

Iholm, 5m high, is an islet lying near the edge of the shore bank on the S side, about 2 miles inside the entrance. The main fairway passes N of this islet.

The current in the sound is very irregular and greatly influenced by the wind. During prolonged calm periods, the current attains a rate of 2 to 3 knots. During gales, the current can attain a rate of 6 knots in the narrower parts.

The Svendborg Sund Bridge

The **Svendborg Sund Bridge** (Bratten Bridge) (55°03'N., 10°36'E.), a fixed road bridge, spans the sound about 1 mile SW of Svendborg. The piers of the navigable span are protected by underwater caissons, which extend 25m in the direction of the fairway. The center-most 50m of this navigable span has a vertical clearance of 33m.

Saint Jorgens Light (55°03'N., 10°36'E.) is shown from a structure standing on the N shore of the sound, close SW of the bridge. The white sector of this light indicates the fairway channel.

The fairway channel leading through the sound has a controlling depth of 6.9m. Vessels with drafts up to 6.5m can transit to the port of Svendborg.

For details of the port of Svendborg, see paragraph 2.25.

Caution.—Submarine cables and submarine gas pipelines extend across the channel within 0.5 mile of the Svendborg Sund Bridge and are marked by beacons.

The greater part of Svendborg Sund has been designated a nature reserve and numerous restrictions apply.

3.45 An extensive shallow flat, which can best be seen on the chart, fronts the W and S sides of Tasinge. It extends up to about 6 miles W of the island, on the S side of the channel leading to Svendborg Sund. This flat also extends from the SW end of Tansinge to the SE end of Aero and from the S side of Tasinge to the SW side of Langeland. A number of small islands and islets lie scattered on this flat and several channels, some buoyed, lead between them. These channels are used by small coasters with local knowledge.

Aero (54°53'N., 10°20'E.) lies with its SE end located about 6 miles SSW of Varo Knude, the SW extremity of Tasinge.

Billes Grunde (54°59'N., 10°18'E.), a detached shoal area, lies 3 miles ENE of Skjoldnaes, the N extremity of Aero. It has a least depth of 3.4m and is marked by a buoy.

An area of deep water, entered between the N end of Aero and Billes Grunde, extends SE for about 7 miles along the NE side of Aero. It is bordered on the E side by the seaward edge of the flat extending from the W side of Tassinge.

Odden (54°54'N., 10°24'E.) is a low and steep-to peninsula, 1.3 miles long, which extends NE and NW from the N side of Aero, 8 miles SE of Skjoldnaes.

Ommelshoved (54°53'N., 10°28'E.) is a low peninsula, about 2 miles long, which extends NW from the SE end of Aero. Halmo, an islet, lies close E of the N end of this peninsula. Its E end is formed by a low cliff.

Drejo (54°58'N., 10°25'E.), a low island, lies on the flat, 6 miles E of the N end of Aero. Skoven, the W part of the island is connected to the E part by a narrow isthmus. This island is almost entirely flat and treeless. A village, with a prominent church, is situated in its E part.

Stryno (54°54'N., 10°37'E.), 10m high, lies 3 miles SE of Varo Knude, the SW extremity of Tasinge. This island is well built over and a prominent church stands in the village near its center.

3.46 Soby (54°57'N., 10°16'E.), a small harbor, is situated on the NE side of Aero, about 2.5 miles SE of Skjoldnaes. The harbor consists of three basins and is protected by breakwaters. The entrance is 30m wide and has a controlling depth of 4.8m. A detached breakwater, 80m long, extends NNW on the W side of the entrance.

Gales from NE can raise the water level by up to 1.7m and gales from SW can lower it by the same amount.

The easternmost basin is used only by pleasure craft. The center basin has depths of 3 to 4m and is mostly used by fishing vessels. A ferry berth, with a depth of 4m alongside, is situated in the S part of this basin. The westernmost basin provides about 200m of commercial quayage, with depths of 3.5 to 4.8m alongside. Vessels up to m in length, 12m beam, and 3.5m draft can be accommodated.

The harbor master acts as a local pilot. Due to heavy passenger traffic, vessels of over 100 gt are required to notify the harbor authorities in advance of their arrival and departure times.

Good anchorage, sheltered from winds from SE through S to WNW, is available, in depths of 13 to 15m, blue clay, off the harbor.

3.47 Aeroskobing (54°53'N., 10°25'E.) (World Port Index No. 29800), a small harbor, lies 6.2 miles SE of Soby. It is located in the NW corner of a shallow bay, which is enclosed by Odden and Ommelshoved peninsulas. Dejro lies in the approaches to the harbor and may be passed on either side. A pleasure craft marina is situated close NW of the harbor.

Two channels pass W of Dejro. The westernmost of these channels has a controlling depth of 3.8m while the easternmost

has a controlling depth of 4.5m. The channel passing E of the island has a controlling depth of 3.6m.

Gales from E to SE can raise the water level by up to 2m and gales from W to SW can lower it by as much as 1.5m.

The harbor consists of a single basin, enclosed by two moles, which has depths of 3.5 to 4.5m. The entrance is 15m wide and has a controlling depth of 4.5m. Two ferry berths, located outside the basin close NNW of the N mole, have depths of 4m alongside. Vessels up to 80m in length, 13m beam, and 4.3m draft can be accommodated. Local pilots are available.

A prominent white church, with a dark spire, stands in the town and a conspicuous windmill is situated about 0.4 mile SW of it.

Aeroskobing Home Page

http://www.aeroehavne.dk/Welcome_uk

The port can be contacted by e-mail (havn@marstal.dk).

3.48 Marstal (54°51'N., 10°31'E.) (World Port Index No. 29790), a small harbor, is situated at the SE end of Aero. It can be approached from the NW through Morkedyb, from the E through Rudkobing Lob, and from the S through Marstal Sondre Lob.

Marstal

Tides—Currents.—Gales from NE to E can raise the water level by up to 1.2m and gales from SE to S can lower it by the same amount.

Depths—Limitations.—Morkedyb, a narrow buoyed channel, leads SE through the extensive flat extending W from Tasinge. It is entered S of Drejo and has a controlling depth of 3m.

Rudkobing Lob, a narrow passage, leads S from Rudkobing (see paragraph 2.26). It passes S of Stryno and has a controlling depth of 3.6m.

Marstal Sondre Lob, a buoyed channel, leads N from Marstal Bugt (see paragraph 3.38). It is indicated by a lighted range and has a controlling depth of 4.5m.

The harbor consists of a narrow channel fronting the town, which is protected on the E side by a detached breakwater, 3m high. This breakwater extends almost parallel to the shore and terminates at its S end near Aeroshale, a narrow tongue of land forming the SE extremity of Aero.

The harbor entrance, 32m wide, is protected by a short detached breakwater. The S part of the harbor is used only by pleasure craft. There are several shipyards and a floating dock, 115m long and 15.5m wide. Marstal Quay provides 518m of quayage, with depth of 3.2 to 4.5m alongside. There are facilities for general cargo, ferries, tankers, and passenger vessels. Vessels up to 115m in length, 20m beam, and 4.5m draft can be accommodated.

Aspect.—A prominent church, with a dark spire, stands in the town and a mill, without sails, is situated close SW of it. A prominent shipyard building is situated close NW of the harbor entrance.

Pilotage.—Pilots are available from the harbor. They may be contacted on VHF channel 71 and board in the vicinity of the seaward entrance to the buoyed channel leading through Marstal Sondre Lob. Pilotage is not compulsory but is recommended. Vessels should send their ETA at the boarding place 12 hours in advance and a confirmation message 3 hours prior to arrival.

Regulations.—Vessels with drafts over 4.2m must contact the harbormaster by VHF prior to entering Marstal Sondre Lob. Vessels entering by this channel must wait for vessels departing.

Anchorage.—Vessels may anchor in the roadstead off the harbor, to the N of the range line.

Caution.—A submarine cable extends across the harbor entrance.

High speed ferries operate in the approaches to the port.

Flensborg Fjord (Flensburger Forde)

3.49 Flensborg Fjord (54°50'N., 9°50'E.), known to the Germans as Flensburger Forde, is one of the largest coastal inlets in the W part of the Baltic Sea. It is about 27 miles long and very irregularly formed. The entrance to this fjord lies between Pols Huk (54°53'N., 10°04'E.), on the Danish island of Als, and Schleimunde, on the German Schleswig coast, about 12 miles S. The German port of Flensburg lies at the head of the fjord and is reached through an intricate channel. The fjord also provides access through Sonderborg Bugt to the Danish port of Sonderborg which lies at the S end of Als Sund, the latter passage emptying into the N part of the bay.

The fjord is divided naturally into an outer part and an inner part by a line extending between Borreshoved (54°50'N., 9°44'E.) and Habernis Huk, 2.8 miles SE. The outer part is wide whereas the inner part is comparatively narrow and tortuous.

Ice.—The fjord only freezes over completely during severe winters. During these times, the ice usually forms after the middle of January and closes the fjord for about two months. With winds from the E a hard frost can cause the fjord to freeze over completely in 24 hours.

Generally, the ice begins to thaw in the early part of March, when it melts along the shores and begins to move. Since W winds usually prevail in this area at that time, the ice drifts seaward over the entire fjord in very large floes.

Tides—Currents.—Although the tidal range in the fjord is negligible, the tides are noticeable in some places. For example, Sonderborg has a mean tidal range of only about 0.6m, whereas Egernsund has a mean tidal range of nearly 1.2m.

Winds from the E raise the water level and winds from the W lower it. Strong winds from NE cause the highest rise in the water level, up to 2.5m, and strong winds from SW to W can reduce the water level by 1.5 to 2.5m.

Aspect.—The centerline of the fairway channel leading through the fjord is the approximate boundary between Danish and German waters. In many places this boundary is indicated by beacons or lighted ranges.

Pilotage.—Pilotage is compulsory for vessels over 1,000 gt and for all oil, gas, and chemical tankers. Pilotage is recommended for all vessels with drafts over 6m proceeding to the inner part of the fjord.

Pilots can be contacted by VHF and board in the vicinity of Flensburger Forde Lighted Buoy (54°49'N., 9°44'E.). Vessels arriving from seaward must give an ETA at the boarding position to the pilot station at least 5 hours in advance.

Pilots from Germany and Denmark have the right to conduct pilotage within the territorial waters of both countries. Each country has the right to station pilots in the fjord and to pilot vessels as far as the approaches of any port. Within each port, the local pilot's nationality corresponds to that country in which the harbor is located.

Regulations.—Vessels are prohibited to approach within 200m of the coasts in the fjord without special permission. In the area lying NW of Holnis (54°52'N., 9°36'E.), an exception is made to this rule and vessels may approach the coast as closely as navigation necessitates.

Landing on Danish territory requires permission of the police.

Except in an emergency, vessels are prohibited from anchoring on range lines or within the fixed white sectors of the directional channel lights.

Caution.—Fishing gear, nets, and traps are laid along the shores of the fjord, annually, from September to the end of May. They extend offshore to a depth of about 3m and in most areas are marked by barrel buoys.

3.50 Flensborg Fjord Entrance.—The coast extending between Pols Huk (54°53'N., 10°04'E.), previously described in paragraph 3.35, and the W end of Kegnaes, 7 miles W, forms the N shore of the entrance to the fjord.

Kegnaes (54°52'N., 9°55'E.), a low peninsula, is connected at its E end by a narrow isthmus to the mainland. A prominent church is situated at the SW end of this peninsula.

A light is shown from a prominent tower, 18m high, standing on a bluff at the SE end of the peninsula.

Kegnaes Light

The coastal bank, with depths of less than 8m, extends up to about 0.7 mile S and SE from the shore in the vicinity of the light and is marked by a buoy. Flejmose Sand, a shallow and rocky bank, fronts the S side of the peninsula, 1.3 miles W of the light. This bank is steep-to and extends up to about 0.4 mile seaward. The water over this bank is usually visible from a distance due to its light color.

Fiskersand, a shoal bank with depths of less then 8m, extends up to about 0.7 mile S from the S side of the peninsula, 3.2 miles W of the light.

The coast extending between Schleimunde (54°40'N., 10°02'E.) and Birknack, 9 miles NW, forms the S shore of the entrance to the fjord. This low, sandy stretch of coast is diked for almost its entire length. Behind the dike, the land is marshy and partly cultivated. The coastal bank, with depths of less than 10m, extends up to about 1.7 miles seaward in places along the shore.

The prominent tower of a manor house stands near the shore at Oehe, 2.5 miles NW of Schleimunde. A conspicuous silo is situated at Schwackendorf, 2.3 miles W of this tower.

Birknack (54°48'N., 9°55'E.) is a low and barren point. Falshoft Tower, a disused light tower, stands near the shore, 2.7 miles SE of this point. It is 24m high and prominent.

Falshoft Disused Light Tower

Kalkgrund (54°48'N., 9°54'E.), a shallow spit, extends about 2 miles NNW from Birknack. It consists of fine sand and stones.

Kalkgrund Light (54°49'N., 9°53'E.), equipped with a racon, is shown from a prominent floodlit tower, 24m high, standing at the N end of this spit.

Bredgrund (54°49'N., 10°02'E.), an extensive shoal area, encumbers the entrance of the fjord and lies centered 3 miles SE of Kegnaes Light. It is marked on the S side by a buoy. This shoal area has a least depth of 4.3m, which lies near the center and is marked by a buoy moored about 0.5 mile N of it.

Directions.—The main entrance channel lies S of Bredgrund and is part of the Kiel-Flensburg Route, which may best be seen on the chart.

From the vicinity of Lighted Buoy No. 2, moored 5.5 miles SE of Schleimunde, the route leads NW for about 10 miles to the Lighted Buoy No. 3, moored 5.5 miles SE of Kalkgrund Light. It then leads NW for about 6 miles to Lighted Buoy No.

Kalkgrund Light

4, moored 1 mile NNE of Kalkgrund Light.

Vessels may then proceed WSW into the inner part of the fjord or NW toward Sonderborg Bugt.

A narrow channel lying between the N side of Bredgrund and the shore bank fronting the S part of Kegnaes also leads into the fjord. The fairway has a minimum width of about 0.2 mile and a least depth of 10.9m. Its narrowest part is marked by a buoy and indicated by light sectors.

The outer part of the fjord has a controlling depth of 18m.

Caution.—A disused ammunition dumping ground area, which may best be seen on the chart, lies centered 4 miles N of Schleimunde, in the S approach to Flensborg Fjord.

3.51 Sonderborg Bugt (54°52'N., 9°50'E.) is entered between the W end of Kegnaes and Borreshoved, about 4.8 miles SW. This bay has general depths of 21 to 31m.

Middelgrund (54°51'N., 9°52'E.), a steep-to and rocky detached shoal, lies centered 1.4 miles SW of the W extremity of Kegnaes, on the E side of the entrance. It has a least depth of 2.8m and is marked by buoys, moored at the E and W sides.

Heltsbanke (54°51'N., 9°47'E.), a detached shoal area, lies centered 1.3 miles ENE of Borreshoved, on the W side of the entrance. It has a least depth of 5.4m and is marked by a buoy moored at the SE side.

The main deep channel leading into the bay lies between Middelgrund and Heltsbanke. A secondary channel, with a controlling depth of 10.7m, leads NNW between Middelgrund and the W side of Kegnaes. A narrow channel, with a controlling depth of 5.2m, leads NNE between Heltsbanke and Borreshoved.

Vemmingbund (54°54'N., 9°44'E.), a small bight, indents the NW shore of Sonderborg Bugt. The land in the vicinity of the head of this bight is low.

Horup Hav (55°53'N., 9°57'E.), an inlet, indents the NE part of the bay and extends along the N side of Kegnaes. Horuphav Havn, a yacht harbor, is situated on the N side of the entrance to this inlet, 0.7 mile N of the N extremity of Kegnaes.

Borreshoved (54°50'N., 9°45'E.), the W entrance point of Sonderborg Bugt, is the N entrance point of the inner part of the fjord. This point is fringed by a steep-to and shallow shore bank, which extends up to about 0.3 mile seaward and is marked by a buoy.

Flensburger Forde Lighted Buoy (54°49'N., 9°44'E.), marking the entrance to the inner part of the fjord, is moored about 0.8 mile S of Borreshoved Point.

Caution.—Except for Danish vessels, navigation is prohibited within Horup Hav.

Sonderborg (54°55'N., 9°47'E.)

World Port Index No. 30060

3.52 Sonderborg, situated on the N side of Sonderborg Bugt, lies at the S entrance to Als Sund. This river port has berthing facilities extending along both shores of the sound. The main part of the town stands on the E side of the sound.

For details of the N entrance to Als Sund, see paragraph 3.34.

Sonderborg Home Page

http://www.sonderborg.dk/english

Ice.—Navigation within the port is impeded by ice only during severe winters.

Tides—Currents.—The current in the harbor generally sets N and may attain a rate of up to 3 knots. During such times, it is difficult to navigate within the harbor or through the passage of the bridge.

Winds from E can raise the water level by up to 1.2m and winds from W can lower it by the same amount.

Depths—Limitations.—The route leading through the bay to the port has depths of more than 18m as far as the entrance to Als Sund. The steep-to shore banks fronting both sides of the S entrance, which has a controlling depth of 7.5m, extend seaward and narrow the fairway channel to a width of only about 270m.

The Christian X Bridge (Kong Christian den X's Bro), a bascule bridge, spans the sound about 0.4 mile above the S entrance and divides the port into two harbors, Nordhavnen (North Harbor) and Sydhavnen (South Harbor). The navigable passage of this bridge is 30m wide. It has vertical clearance of only 5m when closed.

The Christian X Bridge

The commercial quays, situated along the E side of Nordhavnen. provide 800m of total berthage, with a depth of 7.5m alongside. There are also several offshore mooring dolphins, in depths of 9 to 10m, for the use of lay-up vessels.

Sydhavnen, which is mainly used by passenger ferries and fishing boats, has 500m of total quayage, with depths of 4 to 8m alongside. Vessels up to 4,000 gt and 6.5m draft can enter the harbor through the bridge from the S.

The N entrance has a controlling depth of 10.5m. Vessels up

to 33,000 gt, 200m in length, 32m beam, and 9.5m draft can enter the harbor through the N entrance of the sound, but may not proceed S of the Christian X Bridge.

The Als Sund Bridge, an elevated fixed bridge, stands 0.9 mile N of the Christian X Bridge. The navigable channel leading through the bridge has a width of 50m and a vertical clearance of 33m.

Aspect.—The outer limits of the E and W shore banks fronting the S entrance to the sound are marked by lighted buoys. An extensive marina, protected by breakwaters, is situated on the E side of the entrance, about 0.9 mile SSE of the Christian X Bridge. A light is shown from the head of its main breakwater.

A prominent beacon is situated on the shore at the W side of the entrance, 0.8 mile SW of the Christian X Bridge. A prominent church, with a spire, stands in the town, close E of the bridge. A prominent castle is situated on the E shore, about 0.3 mile S of the bridge and close N of the entrance.

Dybbol Windmill stands on a bare hill, 0.9 mile WSW of the Christian X Bridge, and is conspicuous. A prominent yellow pyramid-shaped monument is situated close SW this windmill.

Dybbol Windmill

The Als Sund Bridge

Pilotage.—Local harbor pilots are available. They may be contacted by VHF and generally board off Middelgrund. Tankers and all other vessels over 2,000 dwt are recommended to use the services of a pilot. In addition, see pilotage for Flensborg Fjord in paragraph 3.49.

Pilots can be contacted, as follow:

1. Telephone: 45-74-422765
2. Facsimile: 45-74-433019

Regulations.—Vessels must proceed only at speeds necessary to maintain steerageway when within 250m of either side of the bridge while passing through the navigable span.

Anchoring within 250m of the bridge, except in an emergency, is prohibited.

Vessels anchoring in the channel must do so in a manner that does not impede the passage of other vessels proceeding through the bridge.

Vessels must stay at least 100m from the bridge until the signal to pass through the span is given.

With the exception of recreational vessels, only one vessel at a time may pass through the bridge span. When a sailing vessel and a power-driven vessel are approaching the bridge from the same direction at the same time, the sailing vessel shall have precedence.

Vessels must proceed according to the directions given by the bridge watch.

Contact Information.—The port can be contacted by e-mail (havnen@sonderborg.dk).

Anchorage.—Vessels may anchor S of the lighted buoy marking the seaward limit of the shore bank on the E side of the entrance.

Caution.—The direction of buoyage changes at the Christian X Bridge.

Several submarine cables and pipelines extend across the harbor and may best be seen on the chart.

3.53 Geltinger Bucht (54°48'N., 9°51'E.) is entered between Kalkgrund Light and Habernis Huk, 3.7 miles SW. This bay has general depths of 7 to 23m between the shore banks. Jurgens Schott, a shoal area of sand and weed, has depths of 4.8 to 7.5m and projects about 1.7 miles N from the head of the bay.

Gelting, a small craft harbor, and two marinas are situated near the head of the bay.

Anchorage is available, according to draft, N of Jurgens Schott, but winds send in a sea that makes this roadstead unsuitable for small vessels.

Habernis Huk (54°48'N., 9°47'E.), the W entrance point of Geltinger Bucht, is the S entrance point of the inner fjord. The shore bank, with depths of less than 5m, fronts this point and extends up to about 0.5 mile seaward.

The village of Habernis stands on high ground about 0.5 mile W of the point and is conspicuous from seaward.

Neukirchen Grund (54°49'N., 9°46'E.), a steep-to and rocky shoal, lies about 1.2 miles NW of Habernis Huk. This shoal has a least depth of 2.3m and is marked by a buoy, moored close N of it.

Caution.—Former mine areas lie along the E and W sides of Geltinger Bucht. Vessels are cautioned that anchoring, fishing, or carrying out sea bed activities along the sides of this bay could be dangerous.

A nature reserve area lies along the NE side of Geltinger Bucht and extends up to 0.6 mile seaward. Entry is subject to numerous restrictions.

3.54 The inner part of the fjord, entered between Borreshoved and Habernis Huk, initially leads WNW for about 5 miles toward the Holnis peninsula. The route then consists of three reaches that lead generally NNE, WNW, and SW around this peninsula. It continues SW for about 7 miles to the head of the fjord.

Skelde Vig (54°51'N., 9°42'E.), a small bight, lies 1.7 miles WNW of Borreshoved. It affords sheltered anchorage to small vessels, in depths of 5 to 11m.

Brunsnaes Flak (54°52'N., 9°38'E.), a shoal, fronts the S and W sides of Brunsnaes, 4 miles WNW of Borreshoved. This shoal, with depths of less than 10m, extends up to about 0.8 mile seaward and is marked by buoys.

A conspicuous white church, with twin spires and a separate bell tower, stands at Broager, about 2 miles NNE of Brunsnaes.

Langballigau (54°49'N., 9°40'E.), a small fishing harbor, is situated at the mouth of a river, 5 miles WNW of Habernis Huk. The entrance is 15m wide and has a controlling depth of 2.1m. The pilot vessel used by German pilots is stationed at this harbor.

A prominent beacon stands near the shore, about 1 mile ESE of Langballigau. A conspicuous windmill is situated at Westerholz, 0.6 mile SE of Langballigau.

Langballig Bank (54°50'N., 9°40'E.), formed by two detached shoal patches, lies centered 0.7 mile NE of Langballigau. It has depths of 7.6 to 8.9m and is marked a buoy moored on the NW side.

3.55 Holnis (54°52'N., 9°36'E.), a peninsula, projects N for about 2 miles from the S shore of Flensborg Fjord. This peninsula is very low at its S end where it connects to the mainland. Holnishaken, a steep-to and sandy spit with several drying rocks, extends about 0.5 mile NE from the NE extremity of the peninsula. Schidenkind, a shorebank, extends up to about 0.5 mile N and NW from the marshy NW extremity of the peninsula.

Holnis Light (54°52'N., 9°34'E.), a directional sector light, is shown from a prominent tower, 26m high, standing on the W side of the peninsula. The route leading into the inner part of the fjord is indicated by the white sector of this light.

Holnis Light

Skodsbol Reach (54°54'N., 9°39'E.) leads NNE between Holnishaken and Holdnaes Middelgrunde, a detached shoal with a least depth of 8.8m, lying about 0.6 mile E of the NE extremity of Holnis.

Rinkenaes Reach (54°53'N., 9°35'E.) leads WNW and WSW between the bank fronting N side of Holnis and the S side of Rinkenaes Bugt.

Lagemade Reach (54°54'N., 9°37'E.) leads SW between the bank fronting the W side of Holnis and the dangers fronting the Danish coast.

Okseoer (54°51'N., 9°31'E.) is the outer of two islets lying close off the N shore of the fjord, 2.2 miles W of Holnis Light. A conspicuous beacon stands on the summit of this islet.

Farensodde (54°49'N., 9°28'E.), an extensive pleasure craft harbor, is situated on the S side of the fjord, 2.5 miles SW of Okseoer. The entrance is protected by two moles and has a controlling depth of 4.8m. The shore in the vicinity of this harbor consists of white sand.

Mittelgrund (54°49'N., 9°27'E.), a shoal area with a least depth of 4.6m, extends E from the W side of the head of the fjord. Its outer edge is marked by a lighted buoy, moored about 0.6 mile W of Farensodde.

Osbekgrund, a shoal area with a least depth of 4.5m, extends E from the W side of the head of the fjord. It lies about 0.5 mile S of Mittelgrund and is marked by a lighted buoy.

Murwik (54°49'N., 9°28'E.), the site of a maritime academy, is situated about 0.6 mile SW of Farensodde. It is fronted by several piers and boat harbors, with depths of 4 to 8m alongside, which are closed to civilian use. The conspicuous tower of the academy is visible from seaward.

Depths—Limitations.—The track leading WNW from the entrance to the inner part of the fjord has depths in excess of 12m in the fairway.

The recommended track leading through Lagemade Reach, NW of Holnis, has a controlling depth of 7m. However, a controlling depth of 10m can be maintained by using the fairway that turns sharply round the NW end of Holnis.

Vessels navigating the narrows off Holnis are limited to a maximum speed of 8 knots. Vessels with drafts over 7m may require the assistance of a tug in order to navigate the sharp turn and should not attempt the passage at night.

The fairway channel extending SW from the narrows to the head of the fjord has general depths of 10 to 20m.

Aspect.—The recommended track leading into the inner part of the fjord is indicated by the white sector of Holnis Light. The recommended tracks leading through the reaches, which may best be seen on the chart, are indicated by lighted ranges, range beacons, and lighted buoys.

Caution.—During the winter when ice forms, the lighted buoys in the inner part of the fjord and in the narrows off Holnis are liable to be replaced by unlighted spar buoys.

A foul area, within which entry is prohibited, lies centered 0.6 mile N of Holnis Light and is marked by buoys.

A spoil ground dumping area, which is occasionally buoyed, lies centered 0.8 mile WNW of Farensodde and may best be seen on the chart.

3.56 Rinkenaes Bugt (54°54'N., 9°37'E.), the bay lying N of Holnis, forms the approach to Egernsund and Nybol Nor. The E part of the bay has general depths of 6 to 9m and provides anchorage but the W part is shallow. An isolated shoal patch, with a depth of 4.6m, lies near the middle of the bay, 0.9 mile NW of the NE extremity of Holnis and is marked by a buoy, moored close S.

Marina Minde, an extensive pleasure craft harbor, is situated on the E side of the bay, 1.3 miles N of the NE extremity of Holnis, and is protected by a floating breakwater.

Egernsund (54°54'N., 9°36'E.), a short and narrow strait, leads from the head of Rinkenaes Bugt to Grasten Havn and Nybol Nor. An approach channel leads NW through the E part

of the bay to the entrance of the strait. It is indicated by a lighted range and marked by lighted buoys.

The entrance fairway, which leads between the steep-to shore banks, has a minimum width of 65m and a controlling depth of 8.6m.

A bascule road bridge spans the strait between Egernsund and Alnor, close inside the entrance, and has a navigable width of 25m.

The bridge is remotely controlled and monitored from Sønderberg Harbor Office. Vessels with an loa over 20 m must contact the bridge watch at least 1 hour prior to the opening of the bridge via VHF channels 12 and 16 or telephone (45-74-422765).

The hours of operation of the bridge are, as follows:

1. April to October: 0630-2200
2. November to March: 0630-1545

Egernsund Havn (54°55'N., 9°36'E.), a small harbor, lies in the middle of the strait and is used by coasters, fishing boats, and pleasure craft. There are several piers and a quay, 30m long, with depths of 2.5 to 4m alongside. Vessels up to 80m in length, 23m beam, and 4m draft can be handled.

Grasten Havn (54°55'N., 9°36'E.), a small harbor, lies at the head of Sildekule, a small bight extending N from Egernsund. The entrance channel, which is marked by buoys and indicated by lighted ranges, has a controlling depth of 5m. There is a quay, 160m long, and a pier, 50m long, which have depths of 5m alongside. Two prominent silos stands near the quay. Vessels up to 70m in length, 15m beam, and 4.8m draft can be handled.

Nybol Nor (54°55'N., 9°38'E.) is an enclosed body of water extending about 2 miles NE from the bridge at Egernsund. It is mostly used by pleasure craft. The entrance channel is marked by buoys and has a controlling depth of 7m.

Caution.—A submerged cable and a gas pipeline cross the strait in the vicinity of the bridge at Egernsund and are marked by beacons.

To the W of Farensort, the approach to Flensburg is 1.5 miles wide, but the entrance fairway is narrowed to a width of 0.2 mile by Mittelgrund and Osbekgrund.

Flensburg (54°48'N., 9°26'E.)

World Port Index No. 29005

3.57 Flensburg, a commercial port and ferry terminal, lies in a narrow inlet at the head of Flensburg Fjord. The harbor consists of a natural basin, over 1 mile long, and an artificial basin situated at Freihafen, on the E side of the entrance.

Ice.—The harbor freezes only during severe winters.

Tides—Currents.—Winds from S lower the water level and winds from NE raise it. The highest observed level was 3m above the mean sea level and the lowest was 2.4m below. Generally, the level ranges from 1.7m above to 1.5m below.

Depths—Limitations.—The entrance fairway has a controlling depth of 9.6m.

Harniskai, at the E side of the harbor, provides two cargo quays, 240m and 470m long, with depths of 6 to7m alongside. Ballastkai, a quay located close S of Harniskai, is 140m long. It has a depth of 5m alongside and is used by passenger vessels.

Innerkai, a quay located at the SW side of the harbor, is 320m long. It has a depth of 5m alongside and is used by passenger ferries. Schiffbruckkai, two quays located close N of Innerkai, provide 290m of total berthage, with depths of 5 to 6.5m alongside. Kraftwerk Kai, at the power station, is 180m long and has a depth of 9m alongside.

Vessels up to 8.5m draft can be accommodated in the port.

Aspect.—A conspicuous power station, with a tall chimney, stands on the NW side of the harbor entrance and a shipyard is situated close N of it. A prominent silo is situated on the E side, 0.3 mile SE of the power station. Several conspicuous churches stand in the town.

The approach channel leading SSW into the inlet between Mittelgrund and the coast is indicated by the white sector of Kielseng Light, which is shown from a mast, 5m high, standing on the E side of the harbor. The entrance fairway leading SW into the harbor is indicated by a lighted range.

Pilotage.—Local pilots are available at the harbor for departing vessels. For arriving vessels, pilot board for Flengburg in position 54°49.5'N, 9°44.5'E.

Vessels should request the port of Flenburg pilot 12 hours before arrival, and a 5-hour ETA confirmation to be sent prior arrival at pilot station. Pilotage is compulsory for following:

1. Tankers carrying gas, liquefied chemicals, bulk petroleum products; discharged cargo tankers with unclean tanks or cargo tanks not gas-freed shall have a pilot onboard. Tankers carrying or having carried any of the aforementioned product with a flash point below 35°C shall carry pilot.
2. Any vessel of 90m and above loa, or 13m and above width, or having a draft of 6m and above, shall carry a pilot.
3. All outbound vessels as stated in 1 and 2 above, should request for pilot, 5 hours before ETD from a port in Flensburger Forde.

Flensburg Pilots can be contacted, as follow:

1. VHF: VHF channel 14
2. Telephone: 49-461-41217
3. Facsimile: 49-431-361049
4. E-mail: etainfo@holtenaupilot.de
5. Web site: http://www.kielpilot.de

Vessel Traffic Service.—In the area along the Kiel-Flensburg Route between Bulk Light (54°27.3'N., 10°11.8'E.) and Kalkgrun Light (54°49.5'N., 9°53'E.) vessels can contact Kiel Bight Traffic, as follows:

1. VHF: VHF channels 16 and 73
2. Telephone: 49-4502-84750
3. Facsimile: 49-4502-8475527
4. E-mail: vkz-trave.wsa-luebeck@wsv.bund.de

Anchorage.—Anchorage is available, in depths of up to 19m, mud, in the roadstead lying NE of Mittelgrund. The harbor basin is too narrow and restricted for anchoring.

Flensborg Fjord to Kieler Forde

3.58 Directions.—Coastal route—The Kiel-Flensburg Route, which may best be seen on the chart, forms the main passage along this stretch of the coast.

From the vicinity of Lighted Buoy No. 3, moored 5.5 miles SE of Kalkgrund Light (54°49'N., 9°53'E.) in the approach to Flensborg Fjord, the track leads SE for about 10 miles to Lighted Buoy No. 2, moored 5.5 miles SE of Schleimunde (54°40'N., 10°02'E.). It then continues SE for about 9 miles to

a position lying 1.3 miles E of Kiel Light (54°30'N., 10°16'E.), in the approach to Kieler Forde.

3.59 Schleimunde (54°40'N., 10°02'E.), located close S of the entrance to Flensburger Forde, forms the entrance to Die Schlei. Two breakwaters extend seaward and protect the entrance to this narrow fjord.

Die Schlei extends inland for about 22 miles in a SW direction from Schleimunde to the town of Schleswig. The shore is very irregular and the fjord varies in width from about 100m to over 2 miles. Some sections are subject to silting and the fairway depths are maintained by dredging. Local knowledge is required. Several harbors used by small craft, pleasure boats, and fishing vessels are situated along the fjord.

Ice.—Generally, the fjord freezes over before the outer waters. Navigation for small craft is usually difficult from January to February.

Tides—Currents.—The current usually follows the direction of the channel and sets in or out according to the prevailing winds. In the narrow parts of the fjord the current may attain a rate of 3 knots. Tides are negligible.

Depths—Limitations.—Schleimunder Seegat, a dredged entrance channel, leads across the shallow coastal bank and is marked by buoys. It is 65m wide and has a controlling depth of 5m. The channel from Shleimunde has a controlling depth of 3.8m as far as Kappeln (54°40'N., 9°56'E.) and 3.5m as far as Arnis (54°38'N., 9°56'E.). Above Arnis the controlling depth is only 2.5m.

A highway drawbridge is situated at Kappeln; a highway and railroad bascule bridge is situated at Lindaunis (54°35'N., 9°49'E.). Both bridges have navigable widths of 22.3m.

An overhead cable, with a vertical clearance of 28m, spans the fjord about 1.2 miles NE of Kappeln and another overhead cable, with a vertical clearance of 26m, spans the fjord 0.9 mile NE of Lindaunis.

3.60 Kappeln (54°40'N., 9°56'E.) (World Port Index No. 28955), a small port, is situated on the W side of the fjord. Quays, 100m and 170m long, line the shore N and S, respectively, of the bridge and have depths of 4 to 5m alongside. There are facilities for bulk vessels and passenger ferries. Vessels up to 120m in length, 13m beam, and 4m draft can be accommodated, but entry is dependent on the controlling depth of the dredged fairway.

Aspect.—Schleimunde Light is shown from a prominent floodlit tower, 14m high, standing on the head of the N breakwater, at the entrance to the fjord.

The fairway channel of the fjord is marked by beacons and buoys. The reaches as far as Kappeln are indicated by four lighted ranges.

Pilotage.—Pilots are available and should be requested from Kiel Bight. See paragraph 3.57 for contact details.

Anchorage.—With W winds, anchorage can be obtained, in depths up to 14m, according to draft, about 2 miles E of the fjord entrance. However, this anchorage is unsafe with E winds.

3.61 Between Schleimunde and Eckernforder Bucht, 9 miles S, the coast is mostly low and wooded. In the vicinity of Schleimunde the shore is low, but at Schonhagen, about 2 miles S, it is steep and prominent from seaward. This stretch of coast is fringed by a shore bank, which is foul and weedy, with depths of less than 4m.

Schleimunde Light

Caution.—Special marine regulations are in force for navigation on Die Schlei.

Olpenitz Hafen (54°40'N., 10°02'E.), lying 0.6 mile S of Schleimunde, is a small military harbor which is closed to commercial shipping. The harbor is protected by breakwaters and has depths of 2.4 to 6.5m. A prominent chimney stands close S of this harbor.

A conspicuous castle stands at Schonhagen, about 1.5 miles S of Olpenitz Hafen. A prominent mill, without sails, is situated on the high ground at Brodersby, 1.5 miles WNW of the castle.

Schonhagener Grund (54°37'N., 10°04'E.), a rocky shoal patch, lies about 1 mile offshore, 2.5 miles SSE of Olpenitz Hafen. It has a depth of 4.8m and is marked by a buoy.

Bokniseck (Boknis Eck) (54°33'N., 10°01'E.), located about 7 miles S of Olpenitz Hafen, is the N entrance point of Eckernforder Bucht. Sporthafen Damp, an extensive yacht marina, is situated 2 miles N of this point.

Caution.—A prohibited area, the limits of which are shown on the chart, lies centered 3 miles SE of Schleimunde. It is used for mining exercises and is marked by buoys.

A mine laying practise area (restricted area), the limits of which are shown on the chart, lies with its N end located about 2.8 miles ENE of Schleimunde. This area, which extends in a S direction for 5 miles, is 0.8 mile wide.

A disused explosives dumping ground area, the limits of which are shown on the chart, lies centered 4.5 miles SSE of Schleimunde.

Submarine pipelines, marked by buoys, extend about 2.5 miles NE and 1.5 miles ESE from a point on the shore located about 1 mile N of Bokniseck.

A submarine exercise area, the limits of which are shown on the chart, lies centered 3 miles E of Bokniseck.

3.62 Eckernforder Bucht (54°30'N., 10°00'E.) is entered between Bokniseck and Danisch Nienhof, a poorly defined point located 5 miles SE. This bay, which extends SW for about 8 miles, narrows gradually to a width of 1.5 miles at its head. It is mostly free of dangers and has general depths of 9 to 27m.

The shores of the bay are high in places, with hills behind, and are thickly wooded. A conspicuous church stands on the S side at Krusendorf, 2.8 miles W of Danisch Nienhof.

A conspicuous chimney, 27m high, stands on the N side at Waabs, 1.6 miles SW of Bokniseck, and a prominent silo is situated 0.5 mile SW of it. A prominent church stands close N of the chimney but is reported to be often obscured by trees.

Mittelgrund (54°31'N., 10°03'E.), a large detached shoal, lies centered 2.6 miles SSE of Bokniseck in the middle of the entrance to the bay. It has a least depth of 5.5m and is marked by a buoy.

Eckernforde Light (54°28'N., 9°51'E.), a directional light, is shown from a prominent tower, 27m high, standing at the head of the bay. A prominent radio mast is situated 0.6 mile SSW of the light.

Eckernforde Light

Der Ort, a small craft harbor, is situated on the N side of the bay, 1 mile NE of the light. It is used exclusively by naval vessels. A yacht marina lies close NE of this harbor.

A conspicuous mill stands on a hill, 38m high, at Lindhoft, about 4 miles E of the light.

3.63 Eckernforde (54°29'N., 9°50'E.) (World Port Index No. 28950), a small port and resort, is situated in the NW part of the head of the bay.

Ice.—In general, ice conditions in the bay are similar to those in Kieler Forde. Occasionally, the inner bay will freeze over 1 week before Kieler Forde. Usually, the first ice appears in the middle of January and disappears during the last part of February.

Tides—Current.—Normally, the current flows into the bay with N or E winds and out with S and W winds. During strong N winds, the current flows in along the N shore and out again along the S shore. The currents attain rates of about 1 knot in the bay.

Winds from NE can raise the water level in the harbor by up to 0.9m and winds from SW can lower it by as much as 1.2m.

Depths—Limitations.—The approach route through the bay leads WSW and passes NNW of Mittelgrund. It is indicated by the white sector of Eckernforder Light. An outer entrance buoy is moored at the head of the bay, about 1 mile SE of the port. From this buoy, the entrance channel, which has a controlling depth of 6m, leads 0.9 mile NW and is indicated by the white sector of the harbor light.

A bascule bridge divides the harbor into inner and outer basins. The inner basin has depths of 3 to 3.5m and is used by pleasure craft. A small craft basin, protected by a mole, is situated on the SE side of the outer basin. The quays in the W part of the outer basin are used mostly by fishing vessels.

The commercial quays at the SE side of the outer basin provide 400m of total berthage, with depths of 5 to 6m alongside. There are facilities for general cargo vessels, bulk vessels, and passenger ferries. Vessels up to 5m draft can be accommodated.

Pilotage.—Pilots are requested from Kiel Bight, following the procedures for Flensburg (see paragraph 3.57).

Aspect.—The church standing in the town at Eckernforde is conspicuous. A prominent disused light tower, 12m high, stands near the root of the mole on the S side of the outer basin.

Anchorage.—Good anchorage is available, in depths of 18 to 20m, mud and clay, within the roadstead lying about 0.8 mile SE of the harbor.

Caution.—A small prohibited area, marked by buoys, lies 1 mile SE of Bokniseck and may best be seen on the chart.

A measured distance (2 miles) is situated close SW of Bokniseck and may best be seen on the chart. Its running course is marked by buoys and three pairs of range beacons. Vessels using this measured distance should display the flag signal SM.

A small prohibited area, which may best be seen on the chart, lies adjacent to the shore in the vicinity of a pier used by naval craft, about 2 miles W of Danisch Nienhof.

A torpedo firing range area lies parallel with the S shore of Eckernforder Bucht and extends from the head of the bay to the vicinity of Mittelgrund. It is marked by buoys and may best be seen on the chart. Vessels entering the bay are cautioned to stay N of this range area. Anchoring and fishing are prohibited within the area. When the range is in use, warning signals are shown from patrol vessels and from a signal mast on the S shore.

A small prohibited area, which may best be seen on the chart, lies centered 0.5 mile SE of Eckernforde Light.

A small prohibited area, which may best be seen on the chart, lies adjacent to the shore close E of Der Ort, the naval craft harbor.

It is reported that the tower of a hostel standing close S of Eckernforde Light is conspicuous and from a distance may be mistaken for the light structure.

Kieler Forde

3.64 Approaches.—Kiel Light (54°30'N., 10°16'E.), equipped with a racon, is shown from a prominent floodlit tower standing on a caisson in the outer approaches to Kieler Forde. Pilot vessels are stationed within a small sheltered basin at the base of the light structure, which is protected by two

moles extending S and W.

Bulk Light (54°27'N., 10°12'E.) is shown from a prominent tower, 25m high, standing on a wooded point at the W side of the approach, 3 miles SE of Danisch Nienhof. A stony shore bank, with depths of less than 5m, fronts the point and extends up to about 0.6 mile seaward in the vicinity of the light. Kleverberg, a stony foul area with depths of less than 10m, extends up to about 1.5 miles ENE of the light and is marked by a lighted buoy.

Kiel Light

Bulk Light

The coast extending NW of Bulk Light is high and sparsely wooded. It is fronted by a shore bank, with depths of less than 10m, which extends up to about 1.6 miles seaward.

Stollergrund (54°31'N., 10°12'E.), an extensive detached area of stony foul ground, lies centered 4 miles N of Bulk Light. It has a least depth of 6.6m and is marked by a buoy moored on its N side.

Stollergrund Rinne (54°30'N., 10°11'E.), a secondary channel leading into the W side of Kieler Forde, passes between the S side of Stollergrund and the shorebank fronting the coast. It has a minimum width of about 0.3 mile and a controlling depth of 10.6m.

3.65 Stein (54°25'N., 10°16'E.), a village, stands on the E side of the approach, 3.4 miles SE of Bulk Light. Sporthafen Wendorf, a small harbor, fronts the shore in the vicinity of this village and is used by fishing boats and pleasure craft. It is protected on the W side by a stone dam and has a controlling depth of 2.8m.

The coast extending to the E of Stein is low with salt flats, which are protected against flooding by dikes. Kolberger Heide, a coastal bank with depths of less than 5m, fronts the shore and extends up to about 0.4 mile seaward. A detached shoal patch, with a least depth of 4.5m, lies about 1 mile offshore, 2.5 miles NE of Stein.

Au Haken, a shorebank with depths of less than 5m, fronts the coast close W of Stein and extends up to about 1 mile seaward in places.

Several extensive shoals lie within 6 miles of the coast, on either side of the approaches to Kieler Forde. Outside these shoals, the depths are uneven and vary between 10m and 20m. The bottom consists mainly of rocks and large stones.

Gabelsflach (54°32'N., 10°21'E.), a detached shoal patch, is the outermost danger in the approach. It lies about 2.5 miles NE of Kiel Light and has depths of 9.3 to 9.8m.

Regulations.—An IMO-adopted Traffic Separation Scheme (TSS) lies at the N entrance to Kieler Forde and is centered 0.8 mile SE of Kiel Light.

The E end of the separation zone is marked by Lighted Buoy KO1/1, which is moored about 1.2 miles E of Kiel Light. The W end of the separation zone is marked by Kieler Forde Lighted Buoy, which is moored about 0.9 mile S of Kiel Light. Inbound traffic passes on the N side of these lighted buoys and outbound traffic passes on the S side.

Directions.—Vessels approaching from the Store Baelt or Fehmarn Baelt should use the Kiel-Ostsee Route and pass SW of Gabelsflach. The track, which is shown on the chart, leads in a WSW direction toward the vicinity of Lighted Buoy KO1/1.

Vessels approaching from Fehmarnsund should use the Kiel-Fehmarnsund Route. The track, which is shown on the chart, leads in a W direction toward the vicinity of the Lighted Buoy KO1/1.

Vessels approaching from Lille Baelt or Flensburger Forde should use the Kiel-Flensburg Route. The track, which is shown on the chart, leads in a SSE direction to the vicinity of the Lighted Buoy KO1/1.

All inbound vessels should proceed SW in the TSS traffic lane. From a position located about 0.8 mile S of Kiel Light, vessels should steer SSW for 2.5 miles, using the fixed white sector of Friedrichsort Light (54°23'N., 10°12'E.), to a position about 1.3 miles ESE of Bulk Light. They should then steer SW and SSW for about 3 miles, using the white isophase sector of Friedrichsort Light, to a position close E of the Lighted Buoy No. 7 (54°24'N., 10°12'E.). The track then continues S into the fjord.

Outbound vessels should proceed NNE for about 3 miles from close E of Lighted Buoy No. 7, using the fixed white sector of Friedrichsort Light, astern, to a position about 1.7 miles E of Bulk Light. They should then continue to steer NNE for about 1.5 miles, using the white sector of Kiel Light. From a position about 2 miles S of Kiel Light, vessels should then proceed NE through the TSS traffic lane.

Caution.—A submarine cable, marked by buoys, extends NE from the vicinity of Bulk Light to Kiel Light. Anchoring and fishing are prohibited within 300m of this cable.

Numerous foul patches and wrecks lie in the approach area

and may best be seen on the chart.

An explosives dumping ground area, within which anchoring is prohibited, lies centered 3.2 miles SE of Kiel Light and may best be seen on the chart.

It is reported that vessels using the TSS at the N entrance to Kieler Forde are often advised by the pilots to navigate within the outbound traffic lane when entering due to the deeper depths.

3.66 Kieler Forde (54°26'N., 10°13'E.) includes the area extending SSW for about 7.5 miles from Kiel Light. It is bounded on the W side by the stretch of coast extending between Bulk Light and Friedrichsort Light, 4 miles S. It is bounded on the E side by the stretch of coast extending between Stein and Jagersberg, 3 miles SW.

Strander Bucht (54°26'N., 10°12'E.), a bay, lies 1.4 miles S of Bulk Light and indents the W side of the fjord. Strande, a small harbor, is situated at the head of the bay. It has a controlling depth of 3.5m and is used by fishing vessels and pleasure craft. Schilsee, an extensive yacht marina, is situated close S of Strande. A conspicuous radio mast stands near the coast at the S end of the bay.

Kieler Forde—Pilot Contact Information		
	Kiel Lighthouse Pilots	**Kiel-Holtenau Pilots**
VHF	VHF channel 14	VHF channel 12
Telephone	49-171-8358445	49-431-362858
Facsimile	49-171-8316109	49-431-361049
E-mail	etainfo@kielpilot.de	etainfo@holtenaupilot.de
Web site	http://www.kielpilot.de	http://www.kielpilot.de

The bay provides anchorage, in depths of 10 to 16m, good holding ground, but the roadstead is untenable in E winds and there are several foul patches.

Friedrichsort Light (54°23'N., 10°12'E.), a directional sector light, is shown from a prominent floodlit tower, 32m high, standing on a small islet lying close off the W side of the fjord, about 4 miles S of Bulk Light. The islet is connected at its S end to the shore by a causeway. Three conspicuous radio masts are situated about 0.3 mile WNW of the light.

Freiderichsort Light

Laboe Hafen (54°24'N., 10°13'E.), a small and shallow harbor, is situated 2 miles WSW of Stein at the E side of the fjord. It is used by a fishing vessels. A yacht marina is situated close S of this harbor.

A prominent naval war memorial stands near the shore, 0.7 mile NE of the harbor.

3.67 Jagersberg (54°23'N., 10°13'E.), situated 1 mile S of Laboe, is fronted by a pier. A small explosives dumping ground area, which may best be seen on the chart, lies in the vicinity of this pier.

A lighted range at Jagersberg, indicates the route leading SW to the entrance of the Nord-Ostsee Kanal (Kiel Canal).

Ice.—During normal winters, Kieler Forde is frozen over from mid-January until the last half of February. Generally, navigation is obstructed for only about 15 days. In severe winters with strong NE winds, drift ice may form a barrier across the ford, particularly in the narrows off Friedrichsort Light.

Tides—Currents.—The tide in the fjord is negligible. The water level depends on the wind force and direction. Gales from the NE can raise the water level by up to 2m and gales from SW can lower it by the same amount.

With winds from S to W, the current flows out of the fjord and with winds from N to E it flows inward. The currents attain maximum rates of 2.5 knots in the narrows off Friedrichsort. With strong NE and SE winds, a current may set W at a rate of 2 knots in the vicinity of Kiel Light.

Depths—Limitations.—The controlling depth through Kieler Forde is 16m, decreasing to 11m near the head of the inner fjord.

Pilotage.—Pilotage in Kieler Forde is compulsory for all oil, gas, and chemical tankers and other vessels of 90m and over in length or 13m beam, with a draft exceeding 8m.

Pilotage is compulsory in the canal for the following vessels:

1. Tankers over 60m in length, 10m beam, or 3.1m draft carrying gas, chemicals, petroleum, or petroleum products in bulk, or unloaded tankers, if not cleaned, degassed, or completely inerted after carrying petroleum or petroleum products with a flashpoint below 35°C.
2. Other vessels or composite units over 45m in length, 9.5m beam, and 3.1m draft or 55m in length, 8.5m beam, and 3.1m draft.
3. Tows over 55m in length, 10m beam, or 3.1m draft.

Vessels bound for Nord-Ostee Kanal (Kiel Canal) entering from the E and vessels bound for Kieler Forde from sea must send a request for pilotage at least 3 prior to arrival off Kiel Light. If the transit time is less than 3 hours, requests for pilotage must be made immediately upon departure from the last port.

All vessels over 55m in length or 8m beam should contact

Kiel Pilot on VHF channel 14 on passing Kiel Light. Such vessels must state their name, beam, length, gt or net tons, whether their journey to the locks will be interrupted or not, whether the vessel is exempt from taking a pilot, and whether a sea pilot is required for the canal roads.

Vessels proceeding to the port facilities at Kiel, at the head of the fjord, should sent an ETA to the port at least 24 hours in advance.

Vessel Traffic Service.—A Vessel Traffic Service (VTS) has been established in Kieler Forde and the Nord-Ostsee Kanal (Kiel Canal).

The requirements for VTS Kiel Canal West are described in Pub. 192, Sailing Directions (Enroute) North Sea (Sector 9).

Participation in VTS Kiel Canal East/Kieler Forde is mandatory for vessels, as follows:

1. All vessels, including pushed or towed composite units, with a length of 50m and over.
2. All vessels carrying dangerous cargo (gas, chemicals, petroleum, or petroleum products) in bulk.
3. Vessels bound for Holtenau Anchorage (54°23'N., 10°10'E.) with a mast or superstructure height greater than 40m above the waterline.

Vessels entering the VTS area of Kiel Canal East must maintain a continuous listening watch on the appropriate VHF channel, as follows:

1. Kieler Forde—Kiel Traffic Station—VHF channel 22.
2. Kiel-Holtenau Locks approach, the outer harbor, and in the locks—Kiel Canal Station No. 4—VHF channel 12.
3. Canal area from Breitolz to Kiel-Holtenau—Kiel Canal Station No. 3—VHF channel 3.

A Sailing Plan (SP) must be sent (to VTS Kiel Traffic on VHF channel 22), as follows:

1. 30 minutes before passing Kiel Light (inbound only).
2. Before leaving a harbor or berth within Kieler Forde and bound for the canal.
3. When within Kieler Forde and bound for the Holtenau Anchorage.

A Sailing Plan (SP) must also be sent, as follows:

1. When in the canal locks (by a form available at the lock).
2. Before leaving a harbor or berth within the canal (to VTS Kiel Canal Station No. 3 on VHF channel 3).

The format for the SP is shown in the table titled **Sailing Plan (SP) Format**.

A Position Report (PR) must be sent on passing Kiel Light (inbound only).

A Deviation Report (DR) must be sent in case of amendments to the SP (e.g., when interrupting or commencing a canal transit without instruction from the VTS Center).

An Incident Report (IR) must be sent in case of an incident impairing safety or the environment.

When in the canal, the DR or IR should be sent to VTS Kiel Canal Station No. 3 on VHF channel 3. When in Kieler Forde or the Holtenau locks, the DR or IR should be sent to VTS Kiel Canal Station No. 4 on VHF channel 12.

The format for the PR, DR, and IR is shown in the table titled **Position, Deviation, and Incident Plan Format**.

Special regulations governing navigation, speed, anchorage, dangerous cargo, and quarantine within Kieler Forde are in force and a copy should be obtained from the authorities.

Information broadcasts are made at fixed times and as single reports on demand, as follows:

1. VTS Kiel Canal Station No. 2 broadcasts every H+15 and H+45 on VHF channel 2 in German, and on request in English.
2. VTS Kiel Canal Station No. 3 broadcasts every H+20 and H+50 on VHF channel 3 in German, and on request in English.
3. In cases of severe icing in Kieler Forde, VTS Kiel Traffic Situation broadcasts on VHF channel 67 in English and German every even hour on the hour according to the situation.

The broadcasts include information relevant to the safe passage through the VTS area and general traffic details including local storm warnings, weather, visibility, ice, casualties, and dredging operations.

Sailing Plan (SP) Format

Designator	Information Required
A	Vessel name and call sign.
D	Position.
U	Length (in meters), beam (in decimeters), and type.
O	Draft (in decimeters).
G	Port of departure.
I	Port of destination.
P	Indication if liquefied gases, chemicals, petroleum, or petroleum products are or were carried in bulk. If yes, type, quantity, and UN number and whether tanks are uncleaned or completely inerted.
Q	Deficiencies or restrictions on maneuverability.
T	Name of vessel's owner or agents.

Position, Deviation, and Incident Plan Format

Designator	Information Required
A	Vessel name and call sign.
B	Time of report (local time in four digits).
D	Position.
F	Speed.

Kieler Hafen (54°22'N., 10°10'E.)

World Port Index No. 28930

3.68 Kieler Hafen occupies the inner part of Kieler Forde to the S of Friedrichsort Light and includes the approach to the locks at the E end of the Nord-Ostsee Kanal (Kiel Canal) and the facilities at Kiel.

Friedrichsort (54°23'N., 10°11'E.), a manufacturing town and suburb of Kiel, stands 0.8 mile W of Friedrichsort Light. It

is fronted by several wharves, shipyards, and floating repair docks.

Stickenhorn (54°23'N., 10°10'E.), a large yacht harbor, is situated 1 mile WSW of Friedrichsort Light. The basin lies on the E side of a mole, which extends about 600m SSE from the shore. It has depths of 2 to 8m and is protected on the NE side by a breakwater. A shoal, with depth of less than 5m, extends about 200m SSE from the head of the mole and is marked by a buoy.

Pluschowhafen (54°23'N., 10°10'E.), a well-protected basin, lies close W of Stickenhorn. It is enclosed by the W side of the mole and the shore. The basin has depths of 3 to 7m and is used by fishing vessels, yachts, and naval craft. A small prohibited area lies in the SW part of this basin.

Holtenau Schleusen Light (54°22'N., 10°09'E.) is shown from a prominent tower, 20m high, standing 1.9 miles SW of Friedrichsort Light, on the N side of the entrance to the NordOstsee Kanal (Kiel Canal). A conspicuous church is situated 0.2 mile NW of the light.

Holtenau Schleusen Light

An aeronautical light is shown from a prominent structure, 16m high, standing near the airport, 0.5 mile NW of Holtenau Light.

Holtenau (54°22'N., 10°09'E.), also known as Kiel-Holtenau, is that part of Kiel extending along the N side of the entrance to the canal. Tiessenkai, the main quay, extends W from the vicinity of the light. It is 300m long and has depths of 4 to 5.5m alongside. Vessels up to 85m in length, 13m beam, and 3.5m draft can be accommodated alongside.

Scheerhafen Light (54°22'N., 10°09'E.) is shown from a prominent framework tower, 20m high, standing about 0.4 mile S of Holtenau Schleusen Light, at the E end of a mole on the S side of the entrance to the Nord-Ostsee Kanal (Kiel Canal).

Moltenort (54°23'N., 10°12'E.), a small harbor, is situated on the E side of the fjord, about 1 mile S of Friedrichsort Light. It has depths of 2 to 4m and is used by fishing vessels. A pleasure craft basin adjoins the S end of this harbor.

The Kiel Submarine Memorial Monument (54°22.8'N., 10°11.7'E.), a tall brown tower, stands on a point about 0.2 mile N of Moltenort and is conspicuous from seaward.

Anchorage.—Holtenau Reede (Holtenau Anchorage) (54°23'N., 10°11'E.), the limits of which are indicated on the chart, lies centered 0.8 mile NE of Holtenau Schleusen Light, at the W side of the fjord, and has depths of 12 to 13m.

Kiel Submarine Memorial Monument

Kieler Hafen from S

Caution.—An obstruction lies near the N limit of this anchorage.

Heikendorf Reede (Heikendorf Anchorage) (54°22'N., 10°11'E.), the limits of which are indicated on the chart, lies centered 1.1 miles E of Holtenau Schleusen Light, at the E side of the fjord, and has depths of 7 to 12m.

Caution.—Degaussing range areas, which may best be seen on the chart, front the shore of the fjord 0.3 mile SW of Friedrichsort Light and close W of the Submarine Memorial Monument. Vessels using the degaussing ranges must exhibit the International Code flag signal RU.

A submarine pipeline extends SE across the fjord close N of Friedrichsort Light and is marked by beacons.

A submarine cable extends SSE across the fjord from a point on the shore located 0.2 mile W of Friedrichsort Light.

3.69 Nord-Ostsee Kanal (Kiel Canal) (54°22'N., 10°09'E.) connects the North Sea to the Baltic Sea. The North Sea terminal, or W end, of the canal is at Brunsbuttel. The canal is 53 nautical miles long and has a depth of 11m.

The E entrance lies close S of Holtenau Schleusen Light and consists of two sets of locks, the New Locks and the Old

Locks. Generally, the New Locks are in service, but the Old Locks may be used temporarily.

Nord-Ostsee Kanal (Kiel Canal) Home Page

http://www.kiel-canal.org

The Old Locks, situated on the N side of the entrance, have a usable length of 125m and a usable width of 22m. These locks can be used by vessels with drafts of up to 7m.

The New Locks, situated on the S side of the entrance, have a usable length of 310m, a usable width of 42m, and a depth over the sill of 13.8m. Vessels up to 9.7m draft can use this lock and proceed to the facilities situated close W of it.

Nord-Ostsee Kanal (Kiel Canal) Entrance

Nordhafen (Nord-Ostsee Kanal)

To expedite traffic, each new lock has a third gate which can divide the lock into two chambers with usable lengths of 221m and 100m.

The mast heights of vessels are limited by a bridge, situated 1 mile inside the E entrance, which has a vertical clearance of 40m.

Approach areas, the limits of which are indicated on the chart, lie off the entrances of the canal. Generally, navigation within these areas is restricted to vessels entering or leaving the canal.

Vessels with a maximum length of 235m, a maximum beam of 32.5m, and a maximum draft of 9.5m can transit the canal. This maximum draft only applies to vessels of up to 160m in length. Vessels exceeding 160m in length are subject to a sliding scale with regard to the draft limitation.

The average time of transit of the canal and the locks at both ends usually requires from 8 to 10 hours.

It is reported that vessels transiting the canal must have operational AIS equipment on board. The position data of all vessels in the canal, except pleasure craft, will be recorded by the VTS system via AIS. In exceptional cases or emergencies, such as system failure, mobile AIS equipment may be leased from the authorities at the entry locks.

Pilotage.—Inbound vessels, at sea, should send the request to the Kiel Lighthouse Pilots at least 12 hours in advance of arrival at the pilot station, but only 2 hours in advance of ETA if at Kieler Forde. Outbound vessels should request pilots at least 1 hour prior to departure from berths between Konigforde and Kiel-Holtenau. For pilotage through Kieler Forde, requests should be made upon passing Grossnordsee.

See paragraph 3.67 for contact information.

For further information, including draft and size limitations, for the canal, see Pub. 192, Sailing Directions (Enroute) North Sea (Sector 9).

3.70 Nordhafen (Holtenau-Wik) (54°22'N., 10°07'E.) is situated on the S side of the canal at the W side of the bridge, which spans the waterway 0.6 mile W of the locks. The quay provides 1,068m of total berthage with a depth of 10m alongside. There are facilities for timber, bulk, ro-ro, and container vessels.

Stadtwerkekai, a bunkering quay, is situated on the S side of Binnenhafen, close W of the locks. It is 800m long and has depths of 10 to 10.5m alongside.

Two conspicuous chimneys stand at a power station located close S of the SE end of Stadtwerkekai.

Bunkerbrucke Projensdorf, another bunkering berth, is situated close W of Nordhafen and has a depth of 10.5m alongside.

Scheerhafen (54°22'N., 10°09'E.), a bulk terminal, is situated immediately S of the canal locks and is formed by two moles. The moles are 300m long and have depths of 8.8 to 10m alongside. A pier, used by tankers, projects from the shore midway between the moles. This pier is 170m long and has depths of 10m and 6m, respectively, alongside its N and S sides.

Tirpitzhafen (54°21'N., 10°09'E.), with depths of 5 to 10m, lies immediately S of Scheerhafen and is protected by breakwaters. The NE breakwater extends about 500m SSE from the head of the southernmost mole at Scheerhafen. This basin is closed to all commercial shipping.

Sporthafen Wik, a yacht marina, is situated 0.2 mile S of Tirpitzhafen and fronts the suburb of Wik.

Sporthafen Dusternbrook, an extensive yacht harbor with four basins, is situated 1 mile SSE of Tirpitzhafen. A conspicuous water tower stands at Ravensburg, about 1 mile W of the harbor.

Sporthafen Monkeberg, a yacht marina, is situated at the E side of the fjord, about 1 mile E of Tirpitzhafen. A conspicuous deviation beacon and a prominent water tower stand about 0.7 mile ESE and 0.9 mile ENE, respectively, of the marina.

The Schwentine River flows into the E side of the fjord, about 1.3 miles S of Sporthafen Monkeberg. A conspicuous chimney, 132m high, stands in an industrial area about 0.5 mile NNE of the river mouth.

Caution.—Submarine cables extend E across the fjord from the S part of Scheerhafen and a point on the shore located 0.3 mile N of Sporthafen Dusternbrook.

3.71 Kiel (54°20'N., 10°08'E.), a large city, stands at the head of the fjord. It is an important manufacturing and commercial center with extensive shipbuilding and repair facilities. The industrial complexes are concentrated on the E side in the communities of Gaarden, Ellerbek, Wellingdorf, Neumuhlen, and Dietrichsdorf. The latter three being situated in the vicinity of the Schwentine River. Kiel is also a major naval base.

Ice.—Navigation in the port is seldom hindered by ice.

Depths—Limitations.—Generally, vessels entering the harbor are limited to a length of 245m and a draft of 9.7m. Vessels up to 270m in length may enter with special permission.

The main facilities on the W side of the port are described from N to S below.

Osterkai, a ro-ro ferry terminal, is situated about 0.8 mile WSW of the mouth of the Schwentine River. It has a quay, 500m long, and two piers, with least depths of 7m alongside.

Satorikai, a cargo quay, is 200m long and has depths of 6 to 7m alongside.

Schwedenkai, a ferry terminal quay with a ro-ro ramp, is 180m long and has a depth of 10m alongside.

Bollhornkai Nord, with a ro-ro ramp, is 270m long and has a depth of 10m alongside.

Bollhornkai Sud, with a ro-ro ramp, is 300m long and has a depth of 10m alongside. It has facilities for cruise liners.

The main facilities on the E side of the port are described from N to S below.

Ostuferhafen, a ro-ro and container terminal, is situated close N of the mouth of the Schwentine River and consists of a wide pier and a basin. It provides 1,700m of total quayage, with five ro-ro berths, and has a depths of 6.6 to 10m alongside.

The Schwentine River is navigable for about 0.8 mile within its entrance. A fishing harbor is situated on the S side and has depths of 6 to 7m alongside. A scrapyard is situated on the N side. It is fronted by a quay with a depth of 7.3m alongside. There are also several small marinas.

Arsenalhafen, a naval dockyard, is situated close S of the mouth of the Schwentine River. It consists of a large basin and three floating docks. This facility is closed to commercial shipping.

Howaldtswerke, situated close SW of Arsenalhafen, is an extensive shipbuilding yard with several dry docks. The largest dock is 426m long, 88m wide, and has a depth of 10.2m on the sill. It can handle vessels up to 700,000 dwt. Several conspicuous large cranes stand in the vicinity of this yard.

Norwegenkai, a ro-ro passenger ferry terminal, is situated SW of Howaldtswerke. It consists of a quay, 300m long, and two ro-ro berths, with a depth of 10m alongside.

A railroad bridge spans the harbor close S of Norwegenkai. It has an opening section, which allows vessels up to 21.5m beam to enter Die Horn, the innermost part of the port.

Die Horn, a basin situated at the head of the fjord, is mostly used by passenger vessels. Bahnofskai, a quay at the W side, is 380m long and has depths of 4 to 6m alongside. Willy-Brandt-Ufer, a quay at the NE side, is 220m long and has depths of 3.7 to 6.7m alongside.

Kieler Bucht

3.72 Kieler Bucht (54°35'N., 10°30'E.), lying at the W end of the Baltic Sea, is considered to include the waters lying between the entrance to Die Schlei (54°40'N., 10°02'E.) and the NW side of Fehmarn (54°32'N., 11°04'E.), 35 miles ESE. Except in the approaches to the fjords and off the W side of Fehmarn, the area is free from obstructions and has general depths of 11 to 22m.

The N and W sides of this area, including the S entrances to Lille Baelt and Store Baelt, have previously been described. The S side of the area is formed by the German coast extending between Kieler Forde and the NW extremity of Fehmarn, 26 miles ENE.

Between the E entrance of Kieler Forde and the approach to Fehmarnsund, the coast for the first 4 miles is low and, in places, protected by dikes. Farther to the E, the coast becomes higher and is backed by hills. Hohwachter Bucht lies at the E end of this stretch of coast. The shore between the E entrance of Kieler Forde and this bay is fronted by a bank, with depths of less than 10m, which extends up to about 1.7 miles seaward in places.

Heidkate Signal Tower, a prominent structure, is associated with the nearby firing area. It stands near the shore about 4.2 miles SSE of Kiel Light. Three high-rise buildings are situated near the shore about 2 miles ESE of this tower and are very conspicuous from seaward.

Pilotage.—Pilots are provided for the following ports at any time:

1. Eckernforde.
2. Kappeln.

Pilotage is compulsory for the following vessels:

1. Tankers carrying gas/chemicals/petroleum products in bulk, or unloaded tankers, if not cleaned, degassed or completely inerted after having carried petroleum products or chemicals with a flash point below 35°C.
2. Other vessels and composite units of 90m LOA and over, or 13m beam and over, or 6m draft and over.

The following procedures are to be followed when requesting pilots:

1. Inbound vessels should send a request for pilots to Flensburg Pilots 12 hours in advance of ETA and confirm 5 hours prior to arrival.
2. Outbound vessels should send a request for pilots to Flensburg Pilots 5 hours before ETD from a port in Flensburger Forde.

When requiring/requesting a pilot, vessels should advise the following information:

1. Vessel name, loa, beam and gt.
2. Pilot boarding position.
3. ETA/ETD at/from pilot boarding position.
4. Destination of pilotage required.
5. Actual draft on arrival/departure (in decimeters).
6. Confirm whether the vessel is exempt from compulsory pilotage.

The pilot boarding position for Flensburg is in position 54°49.5'N 9°44.5'E.

Contact Information.—Flensburg Pilots can be contacted as follows:

1. Telephone: 49-431-362858

2. Facsimile: 49-431-361049
3. E-mail: etainfo@kielpilot.de
4. Web site: http://www.kielpilot.de

Keil-Holtenau Pilots can be contacted as follows:

1. Call sign: Holtenau Pilot
2. VHF: VHF channel 12
3. Telephone: 49-431-362858
4. Facsimile: 49-431-361049
5. E-mail: etainfo@kielpilot.de
6. Web site: http://www.kielpilot.de

Vessel Traffic Service.—A VTS center at Travemunde has been established along the Kiel-Flensburg Route between Bulk Light (54°27.3'N 10°11.8'E) and Kalkgrund Light (54°49.5'N 9°53.3'E) and the approaches to Flensburg, Kappeln and Eckernforde.

The following procedures should be followed in the VTS area:

1. Vessels should maintain a continuous listening watch on VHF channels 16 and 73.
2. Data will be collected by AIS, so no verbal reports are required.

The Travemunde VTS provides the following information:

1. Provides regulatory measures to prevent accidents and/or threat to the environment, and to control traffic flow.
2. Such information will be promulgated by instructions to vessels.

The Travemunde VTS provides a Maritime Assistance Service, as follows:

1. In the event of an incident involving a vessel, the VTS will receive the reports, consultations and notifications.
2. If a report discloses an incident that may give rise to a situation where the vessel is in need of assistance, the VTS will monitor the vessel's situation.

The Travemunde VTS will serve as the point of contact, as follows:

1. Between the master and the coastal state if the vessel's situation requires information exchanges between the vessel and the coastal state other than a distress situation that could lead to a search and rescue operation.
2. Between those involved in a marine salvage operation undertaken by private facilities at the request of the company and the coastal state if the coastal state considers that it should monitor the conduct of the operation.

The VTS can be contacted, as follows:

1. Call sign: Kiel Bight Traffic
2. VHF: VHF channels 16 and 73
3. Telephone: 49-4502-84750
4. Facsimile: 49-4502-8475527
5. E-mail: vkz-travemuende@wsv.bund.de
6. Web site: http://www.wsa-luebeck.wsv.de

Neuland Light (54°22'N., 10°36'E.) is shown occasionally from a prominent tower, with adjoining buildings, standing near the shore at the W side of Hohwachter Bucht. Several firing area signal structures are situated NW and within 2.5 miles of this light.

Hessenstein Tower (54°20'N., 10°33'E.) stands on Pilsberg, a hill, at an elevation of 128m, about 2.7 miles SW of Neuland Light. It is 17m high, surrounded by trees, and conspicuous.

Neuland Light

Hessenstein Tower

3.73 Hohwachter Bucht (54°20'N., 10°45'E.), a large bay, has general depths of 12 to 17m. Several lakes lie close inland at the head. Anchorage can be obtained in the S part of the bay, in a depth of 15m, fine sand. However, the bay is open and gives little protection and the bottom in the vicinity of the shore is foul in many places.

Since there are no commercial harbors here and navigation is often prohibited in the bay due to military firing exercises, it should be avoided by general shipping.

Caution.—Todendorf anti-aircraft firing range area and Putlos tank firing range area lie along the stretch of coast between the E entrance of Kieler Forde and the NE side of Hohwachter Bucht. These range areas extend up to about 12 miles offshore and their outer limits are marked by lighted buoys and buoys, which may best be seen on the chart.

During firing exercises these range areas are closed to shipping and fishing. Warning signals are shown from safety patrol vessels and from several signal towers standing along the coast. Firing times are disseminated in the German Notice to Mariners. For further information, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Extensive herring fishing takes place in the vicinity of Hohwachter Bucht from May through November. The nets,

which may be up to 1 mile long, are marked at each end by lighted buoys.

Numerous high-speed ferries operate within the waters of Kieler Bucht.

3.74 Heiligenhafen Light (54°22'N., 11°01'E.), a sector light, is shown from a tower with a dwelling, 13m high, standing near the shore, about 3 miles E of the NE end of Hohwachter Bucht.

Heilgenhafen Light

Klaustorf Tower

Klaustorf Tower stands, at an elevation of 134m, about 0.7 mile SSW of this light. It is 75m high and very conspicuous.

Heiligenhafen (54°22'N., 10°59'E.) (World Port Index No. 28920), a small harbor, is situated about 1 mile W of Heiligenhafen Light and is protected from seaward by a narrow strip of land. It is used by fishing vessels, coasters, local ferries, and pleasure craft.

Tides—Currents.—With continuous E winds, the water level may rise by up to 0.6m. With W winds, the level may be lowered by the same amount.

Depths—Limitations.—The dredged approach channel, which leads W between the narrow strip of land and the mainland, has a controlling depth of 4.5m and is 40m wide.

The harbor is protected from the E by a breakwater, 380m long, which extends NNE and N from the shore. There are extensive facilities for pleasure craft. The main commercial quay is 210m long and has depths of 3.8 to 5.1m alongside. Vessels up to 116m in length and 4m draft can be accommodated.

Aspect.—An outer lighted buoy is moored about 1 mile NE of Heiligenhafen Light at the seaward entrance to the approach channel. Vessels should steer SW toward this lighted buoy using the white sector of the light. The fairway of the dredged channel is indicated by lighted ranges and is marked by buoys.

The town, a resort, stands on the E slope of the higher land fronting Hohwachter Bucht. The harbor is not visible when approaching from the W until it bears S. A prominent church and a silo, 40m high, stand in the vicinity of the harbor.

Pilotage.—Pilotage is compulsory for vessels over 90m in length but is recommended for vessels without local knowledge. Local pilots are available and may be contacted on VHF channel 14. Vessels over 8m beam must report to the port authority on VHF at least 20 minutes prior to entering the seaward entrance of the approach channel.

Anchorage.—Sheltered anchorage is available, in a depth of 7m, mud, in a roadstead lying about 0.5 mile NE of Heiligenhafen Light.

Caution.—A submarine pipeline extends about 1 mile NE from a point located 0.2 mile E of Heilgenhafen Light.

3.75 Fehmarn (54°28'N., 11°08'E.), a comparatively-low island, lies centered 8 miles NE of Heilgenhafen. It is well cultivated with few trees.

Westermarkelsdorf Light (54°32'N., 11°04'E.) is shown from a prominent tower, 17m high, standing near Markelsdorfer Huk, the NW extremity of the island. The coast extending ESE for about 6 miles from the light is protected by dikes. Within these dikes, there is an almost continuous series of lagoons separated by dams.

Westermarkelsdorf Light

KO5/T62 Lighted Buoy (54°36'N., 11°01'E.), equipped with a racon, is moored about 4 miles NNW of Westermarkelsdorf Light. It marks the junction of the Kiel-Baltic (Kiel-Ostsee) Route and Route T.

KO6/T63 LANBY (54°36'N., 11°09'E.), equipped with a racon and floodlit, is moored about 5.2 miles NE of Westermarkelsdorf Light. It marks the junction of Route T and Route H.

Ojet Bank (54°37'N., 11°01'E.), a steep-to and detached shoal, lies 5.7 miles NNW of Westermarkelsdorf Light. It has a least depth of 9.4m and is located between Route T and Route H.

K06/T63 LANBY

Flugge Light (54°27'N., 11°01'E.) is shown from a prominent tower with a dwelling, 37m high, standing on the SW end of Fehmarn, 5.3 miles SSW of Westermarkelsdorf Light. The coast extending along the W side of the island is low and diked. It is backed by marshes and a few lagoons.

Flugge Light

A prominent church, with a spire, stands at Petersdorf, 2.8 miles NE of Flugge Light, and a conspicuous silo, 40m high, is situated close SE of it.

Orther Bucht, a shallow bay, lies between Flugge Light and Strukkamphuk, 3.2 miles SE. Krummsteert, a narrow peninsula, is located at the W side of the entrance and extends about 1 mile SE from Flugge Light. Orth, a shallow pleasure craft harbor, lies in the NW corner of this bay.

Strukkamphuk Light (54°25'N., 11°06'E.), a sector light, is shown from a prominent tower, 5m high, standing at the E side of the entrance to Orther Bucht.

Fluggesand (54°27'N., 10°57'E.), an extensive coastal bank with depths less than 10m, fronts the entire W side of Fehmarn. It extends up to about 3.5 miles seaward off the N and central parts of the W side and up to 9 miles W off the SW extremity of the island. This bank is mostly rocky and foul.

Caution.—A minelaying practice area, the limits of which are shown on the chart, lies centered 6.2 miles NW of Flugge Light, off the W side of Fehmarn.

3.76 Fehmarnsund (54°24'N., 11°06'E.) is the narrow passage, used by small vessels, leading between the S side of Fehmarn and the mainland. It is spanned by Fehmarnsund Brucke, a fixed road and rail bridge.

Strukkamphuk Light

Ice.—Fehmarnsund freezes over only during severe winters. The first ice usually appears in the middle of January and the last ice disappears around the first part of March. Generally, shipping is hindered for an average of about 20 days and the passage is closed by packed floes of drift ice for about 15 days. With winds from the E or the W, drift ice is driven into the sound making anchoring dangerous.

Tides—Currents.—Winds from the NE usually cause a W current in the sound and winds from SW to NW cause an E current. These currents usually attain a rate of about 2 knots, but they may occasionally set at 4 knots in the narrows. After a sudden shift in the wind direction during stormy weather, the wind and current sometimes oppose each other.

Winds from N to E can generally raise the water level by up to 1m and by up to 2m in the winter. Winds from SSW to W can lower it by as much as 1.5m in the winter.

Depths—Limitations.—Coastal banks, with depths of less than 10m, front the stretches of shore extending from Heiligenhafen to the bridge, on the S side, and from Flugge Light to the bridge, on the N side. These coastal banks occupy the entire approach to the sound and extend up to about 4 miles W of the bridge. Mittelgrund, a shoal with depths of less than 10m, occupies the E approach to the passage and extends up to about 4 miles E of the bridge.

A dredged channel leads E through the passage and ESE under the bridge. The fairway at the W side of the bridge has a controlling depth of 5.5m and the fairway at the E side of the bridge has a controlling depth of 3.8m. The channel is about 50m wide and subject to silting.

The Fehmarnsund Bridge has a vertical clearance of 22.1m and a navigable span width of 240m.

Aspect.—The channel leading E through the W approach of the sound is marked by buoys and its entrance is marked by a lighted buoy. The white sector of Fehmarnsund Bridge Light, which is equipped with a racon, indicates the approach fairway. The fairway leading ESE through the navigable span of the bridge is marked by buoys. The channel leading SE through Mittelgrund, in the E approach, is marked by buoys. The fairway is indicated by the astern alignment of Flugge Light and Strukkamphuk Light.

A conspicuous church stands on the mainland about 1.8 miles SSW of the bridge.

Pilotage.—Pilotage within the sound is not compulsory. Pilots are available at Heiligenhafen for vessels without local knowledge.

Regulations.—Speed is limited to 8.1 knots in the dredged channel at the E side of the bridge.

Rules for navigating in German restricted waters are in force within Fehmarnsund. Vessels proceeding E are considered to be incoming from seaward.

Anchorage.—Anchorage is available, in a depth of 8m, sand over mud, to the E of the bridge Anchorage is prohibited on the lighted range alignment at the E side of the bridge.

Caution.—Several submarine cables and pipelines extend across the passage in the vicinity of the bridge.

During winter, the positions of the channel buoys can not be relied upon.

Fishing with fixed nets, drift nets, lines, and eel baskets takes place in the approaches to the passage in depths up to 5m, clear of the channels.

Routes

3.77 Coastal Routes.—The Kiel-Fehmarnsund Route, which may best be seen on the chart, has been established for small vessels bound for Mecklenburger Bucht (54°15'N., 11°30'E.). This route leads ESE for 4 miles from the TSS located in the vicinity of Kiel Light to Lighted Buoy No. 2 (54°29'N., 10°25'E.). It continues SE for 9 miles to Lighted Buoy No. 3 (54°26'N., 10°40'E.). The route then leads ESE for about 10 miles to Lighted Buoy No. 4 (54°25'N., 10°56'E.), which is moored in the W approach to Fehmarnsund.

Vessels using this route should not confuse the lighted buoys marking the center of the track with the lighted buoys marking the outer perimeter of the firing practice areas, which extend up to 12 miles offshore in this vicinity.

The Kiel-Baltic Route (Kiel-Ostsee), which may best be seen on the chart, has been established for vessels proceeding E through Kieler Bucht and into the Baltic Sea. The centerline of the track is marked by lighted buoys.

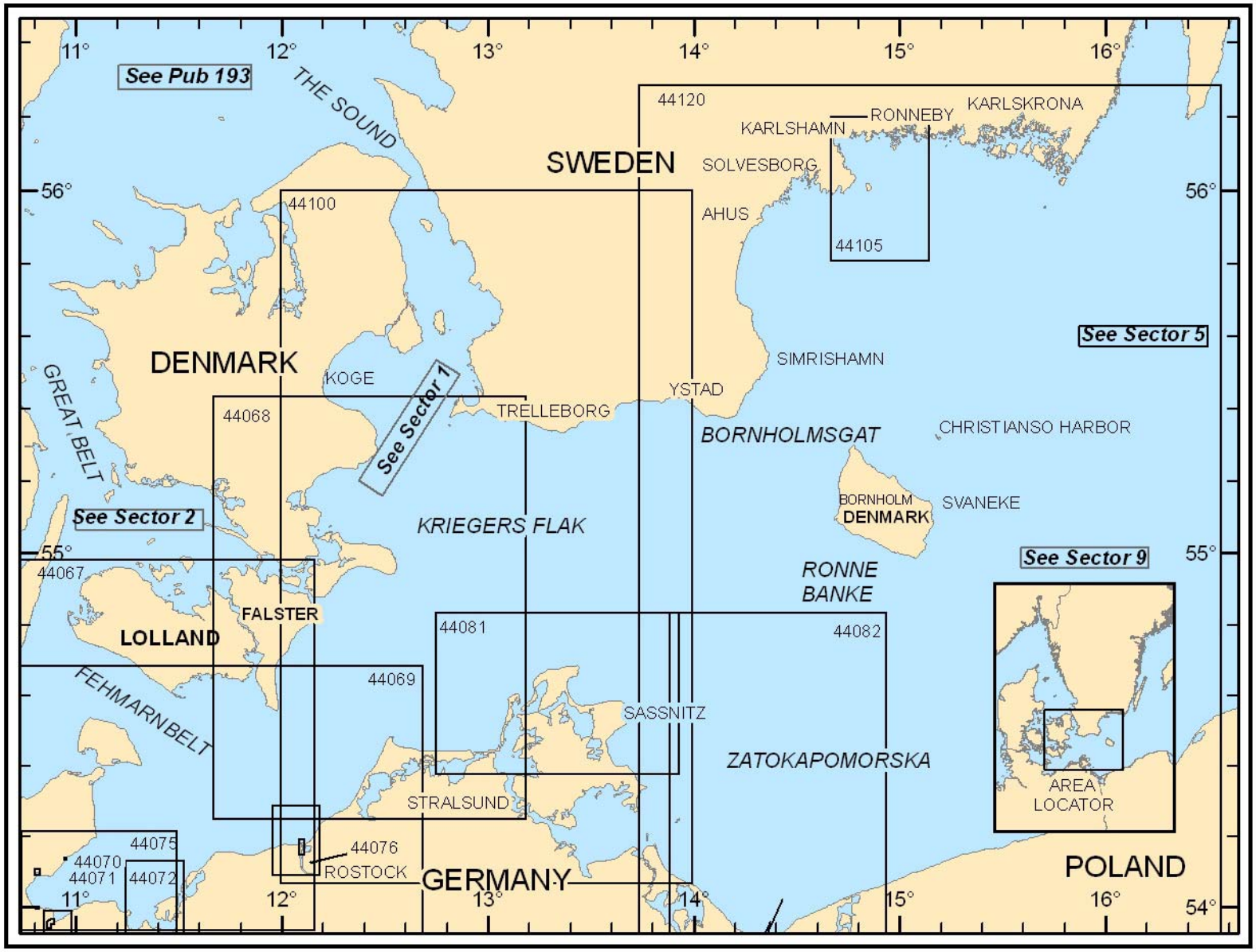
This route leads NE for 11 miles from the TSS located in the vicinity of Kiel Light to Lighted Buoy KO3 (54°34'N., 10°36'E.). The route then continues ENE for 15 miles to Lighted Buoy KO5/T62 (54°36'N., 11°01'E.) where the track joins Route T (see paragraph 2.1 and paragraph 4.1).

Deep Water Route.—A route for deep-draft vessels, with drafts of up to 17m, leads into the Baltic Sea from the S part of Lille Baelt. From a position located about 4 miles E of Taksensand Light (55°00'N., 9°58'E.), the track leads SSE through the S part of Lille Baelt into the N part of Kieler Bucht.

From a position located about 9.5 miles of Vejsnaes Light (54°49'N., 10°26'E.), a deep-water channel leads in an E direction for 12 miles. It is marked on the N side by Lighted Buoy No. 2, Lighted Buoy No. 4, Lighted Buoy No. 6, and Lighted Buoy No. 8 and on the S side by Lighted Buoy No. 1 and Lighted Buoy No. 3.

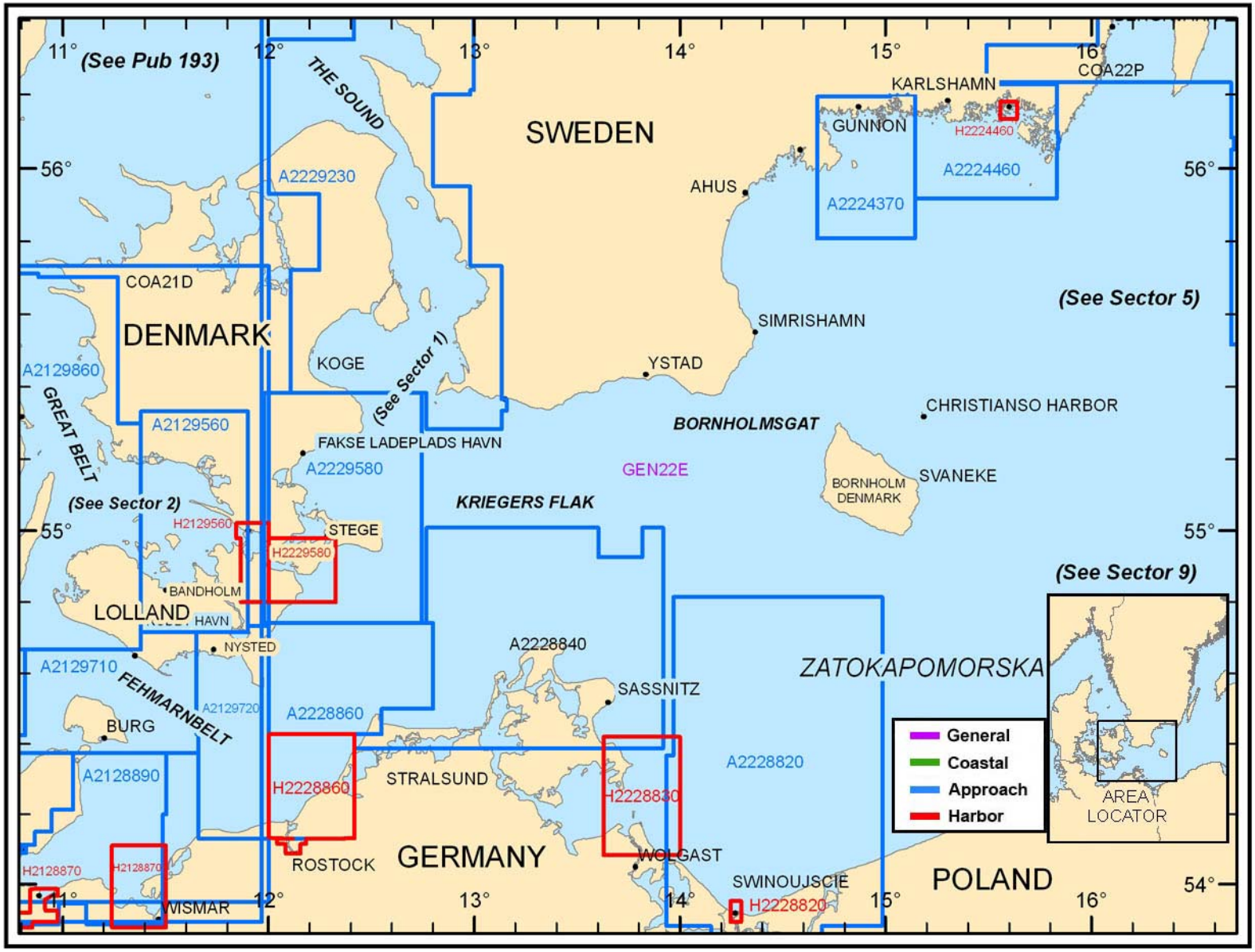
The channel then continues SE for 3.5 miles from a position located 5.5 miles SW of Keldsnor Light (54°44'N., 10°44'E.), close N of Lighted Buoy No. 3. This section of the route narrows to a width of only about 0.2 mile. It is marked by Lighted Buoy No. 10, Lighted Buoy No. 12, and Lighted Buoy No. 14 on the NE side and by Lighted Buoy No. 5 and Lighted Buoy No. 7 on the SW side.

From close S of Lighted Buoy No. 14, moored about 5.2 miles SSW of Keldsnor Light, vessels may proceed ENE to join Route T (see paragraph 2.1 and paragraph 4.1).



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **4** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNCs 21 and 22 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 4 — DNC LIBRARY INFORMATION

SECTOR 4

GERMANY—FEHMARN BELT TO KAP ARKONA AND SWEDEN—SOUTH COAST (INCLUDING BORNHOLM AND CHRISTIANSO)

Plan.—This sector first describes Fehmarn Belt, Mecklenburger Bucht, Lubecker Bucht, and Kadet Rinne. The shores bordering the SW part of the Baltic Sea are then described. These include the section of the German coast between Darsser Ort and Kap Arkona, the section of the Danish coast between Gedser Odde and Mon Light, and the section of the S coast of Sweden between Falsterbo Udde and Torhamnsudde. A description of the off-lying islands of Bornholm and Christianso is also included. The descriptive sequence is from W to E.

General Remarks

4.1 Fehmarn Belt (54°35'N., 11°12'E.), the passage leading between Fehmarn and Lolland, provides access to Mecklenburger Bucht from Kieler Bucht and the Store Baelt. It is 16 miles long, 6 miles wide, and has depths up to 27m.

To the E of Fehmarn Belt, the S shores of the Danish islands are fronted by shifting sand banks, islets, and extensive shoals. Shallow channels lead from this passage to several small fishing harbors lying along the coast.

Gedser Rev, the shore bank, extends up to 9 miles SE from Gedser Odde (54°34'N., 11°58'E.) and narrows the main passage.

Mecklenburger Bucht (54°25'N., 11°32'E.) indents the German coast between Staberhuk, the SE extremity of Fehmarn, and Darsser Ort, located on the mainland 42 miles ENE. It has general depths of 22 to 24m.

Lubecker Bucht (54°05'N., 11°02'E.) extends SW from the SW part of Mecklenburger Buct and Neustadter Bucht is entered at the NW side of its head.

Kadet Rinne (54°27'N., 12°15'E.), known to the Danes as Kadet Renden, lies about midway between Gedser Odde and Darsser Ort and is the deepest part of the channel leading SW and W into Mecklenburger Bucht. The main fairway is 1 to 3 miles wide and 15 miles long.

The E coast of Falster and the S coast of Mon form the NW limits of the water area described within this sector. Hjelm Bugt, a large bight, is bordered on its N side by the S coast of Mon.

The Swedish coast between Falsterbo Udde Light (55°23'N., 12°49'E.) and the island of Utlangan (56°01'N., 15°47'E.) forms the N limit of the water area in the W part of the Baltic Sea described within this sector.

The coast between Falsterbo Udde Light and Sandhammaren, 49 miles E, is generally low, sandy and backed by gently rolling plains. From Sandhammaren, the coast turns NNE and the terrain becomes higher with forested hills appearing in many places. At Listershuvud, a prominent point located 45 miles NNE of Sandhammaren, the coast continues E to Torhamnsudde. This low and partly wooded section of the shore is heavily indented and fronted by numerous islands and islets, which lie up to 3 miles seaward. With few exceptions, all of the dangers lie within 10 miles of the shore.

Bornholm and Christianso, both Danish possessions, lie 20 miles SE and 34 miles E, respectively, of Sandhammaren (55°23'N., 14°12'E.).

Winds—Weather.—Winds from the W and SW predominate throughout the year along the S coast of Sweden, but are not considered to be trade winds. In many areas the winds are variable. For example, a fresh breeze may blow on the W side of Bornholm, while a calm prevails on the E side. Winds from the E have occasionally been observed in late winter and spring. Land and sea breezes may also be encountered along the coastal regions of Sweden during the summer.

The weather in the S part of Sweden, under the influence of the Gulf Stream, is remarkably mild considering the latitude. Fog is most frequently encountered in the winter. Mild winds from the SW enter the Baltic Sea from the North Sea following a cold period and usually form dense fog. During periods of severe cold on the land, sea smoke is formed on the coastal waters. Precipitation along the S coast of Sweden is low and the snowfall is usually not heavy.

Ice.—Ice conditions for harbors are found with the respective description of the port. It is only during severe winters that the open waters of the Baltic Sea are frozen over. During the ice season, concentrations of drift ice move through the area toward the passages leading to the Kattegat.

Tides—Currents.—The prevailing current flows from the Baltic Sea toward Mecklenburger Bucht and Fehmarn Belt at a rate of 1 to 2 knots. During severe weather, the current generally sets with the wind in the open sea and attains rates of 3 to 4 knots near the shores.

Tidal action has little effect on the water levels in the W part of the Baltic Sea. In general, the water level rises 1.2 to 1.8m with winds from the N and NE and falls a like amount with winds from the SW and W. Particularly strong and prolonged winds from one direction are usually the main factor in changing the water level. At Hesnaes (54°49'N., 12°08'E.), on the Danish coast, winds from the NE may raise the water level by up to 1.5m and winds from the SW may lower it by a like amount. At Klintholm (54°57'N., 12°28'E.), farther NE, gales from the NE may raise the water level by 0.6 to 0.9m and those from WSW may lower it by the same amount. Severe storms may cause even higher rises in the water level. During such periods, flooding sometimes occurs over the low-lying land along the German coast.

Depths—Limitations.—Between the S entrance of Store Baelt and the Baltic Offshore Routes, Route T has a controlling depth of 17m.

Pilotage.—Deep Sea (Transit) Pilots for Store Baelt, Lille Baelt, The Sound, Kattegat, Kieler Forde, and the W part of the Baltic Sea are available at Gedser and are arranged by the Dan-Pilot stations. For further information, see pilotage in paragraph 1.1.

Pilots may be contacted by VHF and board in the vicinity of Lighted Buoy DW 74 (54°36'N., 12°15'E.).

An IMO resolution recommends that vessels with a draft of 11m or more and all vessels, irrespective of size, carrying a shipment of radiated nuclear fuel, plutonium, or highly radioactive waste use the services of a pilot when transiting Route T.

It should be noted that extensive changes to pilotage procedures within Swedish waters are being carried out. Formerly, all initial ordering of pilots was carried out through the main VTS systems. However, procedures for the initial ordering of pilots via the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration internet web site are being introduced. For additional information, see paragraph 1.1.

Regulations.—A voluntary reporting system BELTREP has been established within the Danish waters of the Baltic Sea and along Route T. It applies to vessels of 20,000 gt and over; all vessels 1,600 gt and over carrying oil, gas, or chemicals; all vessels carrying radioactive materials; and all vessels with drafts of 13m and over. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further details.

Several IMO-adopted Traffic Separation Schemes (TSS) have been established within the waters described in this sector and may best be seen on the charts. Two such extensive TSSs are located in Kadet Rinne (Kadet Renden) and Bornholmsgat, the passage leading between Bornholm and the mainland coast of Sweden (see Directions).

Caution.—Extensive fishing is carried out from May to November off the N and E coasts of Fehmarn and in the W part of Mecklenburger Bucht. From December through the middle of April, fishing is carried out within Lubecker Bucht.

Several restricted danger areas lie within the waters described in this sector and may best be seen on the chart. Vessels are cautioned not to anchor, trawl, dredge, lay cable, or conduct any similar type of operation in these areas due to the residual danger from mines on the bottom. Vessels anchoring within, or passing through, these mined areas during thunderstorms do so at their own risk. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further details of mined areas in Sweden and Denmark areas formerly published in NEMEDRI.

Numerous wrecks, some dangerous, lie within the waters described within this sector and may best be seen on the chart.

Several submarine exercise areas lie within Mecklenburger Bucht and Lubecker Bucht and may best be seen on the chart.

Numerous large rocks lie on the bottom throughout Mecklenburger Bucht and Lubecker Bucht, especially in the shallower parts.

High speed ferries operate in the waters described within this sector.

Defensive mine fields lie in the approaches to Solvesborg, Karlshamn, Guovik, Jarnavik, Ronneby, and Karlskrona. Vessels are cautioned not to anchor or fish in these fields and they should also avoid passing through them during a thunderstorm.

Directions.—Route T is the primary route leading through Store Baelt, Fehmarn Belt, and Mecklenburger Bucht. It is the recommended route for deep-draft vessels. Sections of the route are designated as Deep Water Routes. In the S section of Store Baelt, Route T is designated as a Deep Water Route and lies on the W side of the passage leading through Langelands Baelt (see paragraph 2.1).

Route H, which must be followed by vessels with drafts of 10m and less, lies on the E side of the passage leading through Langelands Baelt.

Route T.—Route T continues SE and E into the N part of Fehmarn Belt from the S end of the Deep Water Route. It extends about 10 miles SE to Lighted Buoy KO5/T62 (54°36'N., 11°01'E.) and then about 4.5 miles E to the KO6/T63 LANBY (54°36'N., 11°09'E.).

The Kiel-Baltic (Kiel-Ostsee) Route joins Route T at Lighted Buoy KO5/T62.

Route T then continues through Fehmarn Belt and across the N part of Mecklenburger Bucht. It leads SE for 24.5 miles from KO6/T63 LANBY to Lighted Buoy KO10/T67-68 (54°25'N., 11°47'E.) and then E for 7.5 miles to the W end of the extensive TSS situated within Kadet Rinne (Kadet Renden).

Route T follows the lanes of the TSS, which may best be seen on the chart, to a position located about 11.5 miles ENE of Gedser Odde Light (54°34'N., 11°58'E.). It then continues NE for about 19 miles to a position located about 25 miles WNW of Kap Arkona Light (54°41'N., 13°26'E.). This latter section of the route is marked by lighted buoys and is designated as a Deep Water Route. Deep-draft vessels are advised to proceed with great caution when navigating in the vicinity of the TSS due to a number of recent groundings in this area.

Vessels, other than those which are obligated to use the Deep Water Route because of their draft, must use the area outside the route. Such vessels proceeding to the E should stay on the E and S sides of the Deep Water Route and those proceeding to the W should stay on the N and W sides.

An IMO-adopted Inshore Traffic Zone lies between the TSS located in Kadet Rinne (Kadet Renden) and the German coast.

Route H.—Route H continues SE for 11.5 miles from Lighted Buoy No. 7 (54°42.0'N., 10°52.5'E.), at the S end of Store Baelt (Langelands Baelt), and joins Route T at the KO6/T63 LANBY (54°36'N., 11°09'E.).

Lubeck-Genser Route.—The Lubeck-Gedser Route, which may best be seen on the chart, leads through Mecklenburger Bucht and is marked by lighted buoys. From the entrance to Die Trave (53°58'N., 10°53'E.), the track leads 8 miles NNE and about 40 miles NE to join Route T at the W end of the TSS situated in Kadet Rinne. The approach route leading to Wismar (53°54'N., 11°27'E.) branches SSE from this route.

Baltic Offshore Routes.—From the E end of Route T, located 25 miles WNW of Kap Arkona Light (54°41'N., 13°26'E.), vessels bound for The Sound should proceed N in order to enter the TSS situated S of Falsterbo Rev Light (55°18'N., 12°40'E.); and vessels bound for German and Polish ports should proceed E and join the local designated tracks.

From the E end of Route T, vessels bound E into the Baltic Sea should proceed ENE towards the Rugen TSS, which lies centered about 14 miles NW of Kap Arkona Light (54°41'N., 13°26'E.). They should then continue in an ENE direction and enter the extensive Bornholmsgat TSS, which lies centered 13 miles WSW of Hammer Odde Light (55°18'N., 14°46'E.), in the passage lying between Bornholm Island and the Swedish mainland.

Bornholmsgat TSS consists of a Precautionary Area lying centered about 14 miles S of Sandhammaren Light (55°23'N., 14°12'E.). Separation zones and traffic lanes, which may best be seen on the chart, extend from the NE, SW, and W sides of this area.

Vessels following the offshore track around the S coast of Sweden should proceed in an E direction from a position 26 miles S of Kullagrund Light (55°18'N., 13°20'E.) and then enter the traffic lane of the Bornholmsgat TSS.

From the NE end of the Bornholmsgat TSS, vessels should continue in a NE direction to the Olands Sodra Grund TSS, which is situated in the viciinty of Olands Sodra Grund Light (56°04'N., 16°41'E.).

From the Olands Sodra Grund TSS, vessels proceeding to the Gulf of Finland should steer NE to the Off Gotland Island TSS, which is centered 11 miles SE of Hoburg Light (56°55'N,. 18°09'E.). They should then continue NE for about 180 miles to the TSS lying centered 20 miles NW of Kopu Light (58°55'N., 22°12'E.).

The above TSSs are IMO-adopted. For further information, including Areas to be Avoided, see paragraph 5.1 and paragraph 6.1.

For further information concerning the waters lying NE of the TSS centered 20 miles NW of Kopu Light (58°55'N., 22°12'E.), see paragraph 10.1 and Pub. 195, Sailing Directions (Enroute) Gulf of Finland and Gulf of Bothnia.

Vessels bound for the Gulf of Bothnia should proceed about 175 miles NNE from the Olands Sodra Grund TSS to a position located ESE of Landsort (58°44'N,. 17°52'E.). They should pass W of Stora Karlso (57°17'N,. 17°58'E.), E of Knolls Grund (57°32'N,. 17°29'E.), and E of Nielsengrund (58°17'N,. 18°00'E.). Vessels should then steer for about 84 miles in a NE direction to a position located W of Bogskar Light (59°30'N., 20°21'E.), at the S end of the Ahvenanmeren Deep-Draft Channel. Vessels should pass SE of Almagrundet Light (59°09'N,. 19°08'E.).

For a description of the routes lying N and W of Bogskar Light (59°30'N., 20°21'E.), see paragraph 8.1 and Pub. 195, Sailing Directions (Enroute) Gulf of Finland and Gulf of Bothnia.

Baltic Deep Water Route.—A Deep Water Route, recommended for vessels with drafts over 12m, has been established for vessels proceeding to the NE part of the Baltic Sea and may best be seen on the chart. It extends ENE and NE from the E end of the Bornholmsgat TSS to the S end of the TSS lying centered 20 miles NW of Kopu Light (58°55'N., 22°12'E.).

It is reported that this recommended route has a least depth of 25m and is recommended for vessels with drafts up to 15m. For further information, including Areas to be Avoided, see paragraph 5.1 and paragraph 6.1.

Fehmarn Belt

4.2 Fehmarn Belt (54°35'N., 11°12'E.), the passage leading between the SW coast of Lolland and Fehmarn, is entered at its W end between Markelsdorfer Huk (54°32'N., 11°04'E.), the NW extremity of Fehmarn, and a point on the coast of Lolland, 13 miles N. It is entered at the E end between Staberhuk, the SE extremity of Fehmarn, and Hyllekrog, a small and low island, located off the S end of Lolland.

Vessels are advised not to approach the N coast of Fehmarn or the S coast of Lolland within depths of less than 20m.

Westermarkelsdorf Light (54°35'N., 11°12'E.), previously described in paragraph 3.75, is situated in the vicinity of Markelsdorfer Huk.

Lighted Buoy **KO5/T62** (54°36'N., 11°01'E.), equipped with a racon, is moored about 4 miles NNW of Westermarkelsdorf Light. It marks the junction of the Kiel-Baltic (Kiel-Ostsee) Route and Route T.

KO6/T63 LANBY, equipped with a racon and floodlit, has been previously described in paragraph 3.75. It is moored about 5.2 miles NE of Westermarkelsdorf Light and marks the junction of Route T and Route H. For information concerning these routes, see paragraph 4.1.

Ojet Bank, a steep-to shoal patch, lies 5.2 miles N of Markelsdorfer Huk and was also previously described in paragraph 3.75.

Caution.—It is reported that the IMO proposes to reduce the controlling depth of the Deep Water Route situated NE of Gedser and within Route T from 17m to 16.5m. Vessels should contact the local authorities for the latest information.

4.3 South side.—Markelsdorfer Huk (54°32'N., 11°04'E.), the NW extremity of Fehmarn, is a low point backed by a lagoon. The coast extending ESE for about 7 miles from this point is protected by dikes. Within these dikes, there is an almost continuous series of lagoons separated by dams. Several churches standing along the shore are visible from seaward.

The conspicuous mast of the Niobe Denkmal Monument stands on the foreshore, about 3.2 miles ESE of Markelsdorfer Huk.

Ohlenburgs Huk (54°30'N., 11°15'E.) is the NE extremity of Fehmarn. Marienieuchte Light is shown from a prominent tower, 33m high, standing on the point. A prominent disused light tower with a dwelling, square and yellow, is situated close SE of the light.

Marienleuchte Light (Ohlenburgs Huk)

Puttgarden (54°30'N., 11°14'E.), a small harbor, is situated 0.6 mile NNW of Marienieuchte Light. It is protected by two breakwaters, which form an entrance, 85m wide. This harbor is the S terminal of the Lolland-Fehmarn ferry and is closed to general traffic. The approach channel is indicated by a lighted range and is marked by lighted buoys. It has a controlling depth of 8.5m.

A conspicuous radio mast stands 1.2 miles SW of the Puttgarden Harbor.

Staberhuk (54°24'N., 11°19'E.), the SE extremity of Fehmarn, is located 6 miles SSE of Ohlenburgs Huk and is fronted by rocks. The coast between is mostly formed by steep and crumbling cliffs. The shore bank, with depths of less than 10m,

Marienleuchte Disused Light Tower

consists of stony foul ground and extends up to about 2 miles seaward in places. A sector light is shown from a prominent tower with a dwelling, 23m high, standing on the point.

Caution.—An area, within which anchoring and fishing are prohibited, extends up to 3 miles NE from the vicinity of Ohlenburgs Huk and may best be seen on the chart. Several submarine cables are situated within this area.

A small prohibited area, marked by buoys, lies centered 2.8 miles NE of Ohlenburgs Huk and may best be seen on the chart.

Submarine cables, which may best be seen on the chart, extend NE across Fehmarn Belt from a point located close W of Puttgarden Harbor and extend ESE from a point located 1 mile S of Marienieuchte Light.

Care should be taken when identifying features on the N and W coasts of Fehmarn by radar due to the low shoreline.

4.4 North side.—The SW coast of Lolland forming the N side of Fehmarn Belt is low and protected by dikes. It is fronted by several detached shoal areas, which extend up to 3 miles seaward. Several conspicuous churches are situated at villages along this stretch of coast.

Staberhuk Light

Rodby Havn (54°39'N., 11°21'E.) (World Port Index No. 29710), a small harbor, is the N terminal of the Lolland-Fehmarn ferry.

Depths—Limitations.—It is protected by two breakwaters, which form an entrance, 90m wide. The approach channel is indicated by a lighted range and is marked by lighted buoys. The entrance channel is dredged to a depth of 8.5m but is subject to silting. The outer part of the harbor has four berths for ro-ro passenger ferries, with depths of 7 to 8.5m alongside. The inner part of the harbor provides about 400m of commercial berthage. Vessels up to 80m in length, 20m beam, and 4.5m draft can be accommodated.

Pilotage.—Pilotage is not compulsory and local assistance is available for entry. Pilot boards in position 54°37.6'N 11°18.2'E.

All vessels should advise ETA by e-mail 24 hours prior to arrival, stating the following information:

1. Vessel's name, call sign, flag, IMO Number, MMSI, gt and draft.
2. ETA and ETD.
3. Quay, cargo type, quantity, and if crane required.
4. Previous port and next port.
5. Details of agent and customer.
6. Waste information.

Vessels must not enter the port without prior permission.

Vessels must call "Rodby Ferry" on VHF channel 74 to obtain permission to enter or leave the port.

Contact Information.—Port Operations can be contacted as follows:

1. VHF: VHF channels 16 and 74
2. Telephone: 45-54-605-722
3. Facsimile: 45-54-600-934
4. E-mail: havne@lolland.dk
5. Web site: http://www.rodbyport.dk

Port Administration can be contacted as follows:

1. Telephone: 45-54-677-332
2. Facsimile: 45-54-925-113
3. E-mail: havne@lolland.dk
4. Web site: http://www.nakskovport.dk

The ferry terminal can be contacted as follows:

1. Call sign: Rodby Ferry
2. VHF: VHF channel 74
3. E-mail: havne@lolland.dk
4. Web site: http://www.nakskovport.dk

Vessels are advised to keep strictly within the fairway as obstructions lie close adjacent to the edges. Two conspicuous silos stand in the vicinity of the harbor. It is reported that a conspicuous wind generator, 100m high, stands on the coast close SE of the harbor.

Hyllekrog (54°36'N., 11°30'E.) is a narrow and low island lying off the S coast of Lolland, 10.7 miles NE of Marienieuchte Light. A conspicuous framework radio mast, 120m high, stands on the mainland, 3.5 miles NNE of this island.

Caution.—A restricted area, within which anchoring and fishing are prohibited, extends up to 3 miles offshore in the vicinity of Hyllekrog and may best be seen on the chart.

Mecklenburger Bucht

4.5 The N side of Mecklenburger Bucht is bordered by the S coast of Lolland and the S part of Falster. Several islets, rocks, and a shallow shoal flat front this stretch between Hyllekrog (54°36'N., 11°30'E.) and Gedser Odde, 17 miles ESE, and extend up to about 5 miles seaward. Rodsand, a shifting sand bank, extends across the shallow flat and is mostly awash.

Three channels lead N through the dangers fronting the coast. Ostre Maerker, a buoyed channel, leads across the mid-

dle of the sandbank and has a controlling depth of 2.8m.

Rodsand Rende (54°33'N., 11°58'E.), a narrow channel, leads between the E end of Rodsand and the S end of Falster. From a position located about 3 miles SSW of Gedser Odde Light the channel leads N and has a controlling depth of 6.2m. The fairway is marked by lighted buoys and is indicated by a lighted range.

Kroghage Dyb (54°33'N., 11°58'E.), a narrow channel, leads between the E end of Rodsand and the S end of Falster. From a position located about 1.5 miles SE of Gedser Odde Light the channel leads NW. The fairway lies close to the coast and has a controlling depth of 4m.

Nysted (54°40'N., 11°44'E.) (World Port Index No. 29720), a small harbor, is situated on the S coast of Lolland, 10 miles NW of Gedser Odde Light. It can be reached from seaward through Ostre Maerker or Rodsand Rende. The entrance channel is marked by buoys and has a controlling depth of 3.5m over a width of 20m.

The commercial quay is 80m long and has a depth of 3.5m alongside. Vessels up to 80m in length, 20m beam, and 3.4m draft can be accommodated. Pilotage is compulsory for vessels over 300 tons. Local knowledge is advised. The water levels in the harbor and fairways may vary with the wind direction and force.

A conspicuous castle, with a truncated tower and a pointed tower, stands on the W side of Nysted and a prominent church is situated about 0.4 mile E of it.

A wind farm area, in which 72 wind generators stand, is located on the flats, about 5 miles S of Nysted. The wind generators are 70m high and prominent.

4.6 Guldborg Sund (54°39'N., 11°52'E.) leads N between the E side of Lolland and the W side of Falster and forms the S approach to Nykobing (54°46'N., 11°52'E.). The channel is narrow, tortuous, and has a controlling depth of only 2.1m. For information concerning Nykobing, see paragraph 2.49.

Gedser Odde (54°34'N., 11°58'E.), the SE extremity of Falster, is fronted by low cliffs. Gedser Odde Light is shown from a prominent tower, 20m high, standing close NW of the point.

Gedser Odde Light

Gedser Rev (54°30'N., 12°10'E.), consisting of a chain of shoals, extends up to about 8 miles SE of Gedser Odde. It has depths of 2 to 8m and is marked by buoys. This shoal bank is formed mainly of chalk covered with sand and stones.

Gedser Rev Lighted Beacon (54°29'N., 12°06'E.), equipped with a racon, is situated 6.7 miles SE of Gedser Odde Light and marks the S part of Gedser Rev.

Gedser Rev Lighted Beacon

No. 71 Lighted Buoy (54°28'N., 12°12'E.), equipped with a racon, is moored about 10.5 miles SE of Gedser Odde Light and marks the TSS in Kadet Rinne (see paragraph 4.20).

Gedser (54°34'N., 11°56'E.), a small harbor, is situated 1.5 miles NW of Gedser Odde and is the terminal for passenger ferries sailing from Warnemunde. It can be approached through Rodand Rende or Kroghage Dyb. The entrance, which is protected by two breakwaters, is 100m wide and has a controlling depth of 6.2m. The ferry berths have depths of 4 to 6.3m alongside. There are also facilities for pleasure craft and fishing vessels.

It is reported that the fairway in Rodand Rende and the entrance have been dredged to a controlling depth of 7m.

Pilotage.—Pilots board in the following positions:

a. 54°30.4'N, 11°56.7'E.
b. 54°37.0'N, 12°16.0'E. (N of Lighted Buoy DW74)

The pilots can be contacted, as follows:

1. Call sign: Dan Pilot Gedser
2. VHF: VHF channels 16 and 87
3. Telephone: 45-63-256666
4. E-mail: danpilot@danpilot.dk
5. Web site: http://www.danpilot.dk

Caution.—Due to the constant changes in depths in the vicinity of Rodsand, large vessels are advised to stay in depths of at least 18m when proceeding through the N part of Mecklenburger Bucht.

Several submarine cables, which may best be seen on the chart, extend NE, SE, and SSE from the vicinity of Gedser Odde. The power cables extending SSE to Markgrafenheide have been reported to cause deviations of up to 70° to the magnetic compass.

4.7 The W side of Mecklenburger Bucht is bordered by the stretch of coast extending between Staberhuk, the SE extremity of Fehmarn, and Dahmeshoved, 14.5 miles SW. The shore is generally bare, low, and protected by dikes in places. The coastal bank, with depths of less than 10m, extends up to

about 2.5 miles seaward in places.

Burgstaken (54°25'N., 11°12'E.) (World Port Index No. 28908), a small harbor, is situated 4.3 miles WNW of Staberhuk. It lies on the N shore of Burger See, an inland bay, which is fronted by two narrow peninsulas. The entrance of the bay lies between two breakwaters, which extend from the extremities of the peninsulas. An approach channel, with a controlling depth of 4.5m over a width of 35m, leads NW into the inlet. It is marked by buoys and indicated by a sector light. The main commercial quay is 200m long and has depths of 3.5 to 5m alongside. The harbor is used by coasters, small craft, and fishing vessels. Anchorage, sheltered from N winds, can be taken, in depths of 5 to 7m, about 0.5 mile SE of the entrance to the bay. Local knowledge is advised. Several marinas are situated in the vicinity of the harbor.

A conspicuous church stands in the town of Burg, about 0.8 mile N of the harbor. A prominent watch tower is situated at the W end of the peninsula at the E side of the entrance to the bay.

Fehmarnsund (54°24'N., 11°06'E.), a narrow passage, leads between the S side of Fehmarn and the mainland. It is spanned by Fehmarnsund Brucke, a fixed road and rail bridge. For further information, see paragraph 3.76.

Grossenbroder Binnensee, a bay, lies 3.5 miles SSW of the Fehmarnsund Bridge and is protected from E by a curved breakwater, about 0.6 mile long. Grossenbroder Hafen, a disused ferry harbor, is situated close W of the root of the breakwater. It is reported that an extensive marina lies in the NW part of the bay.

Dahmeshoved Light

Dahmeshoved Light (54°12'N., 11°05'E.) is shown from a prominent tower, 28m high, standing close N of Dahmeshoved. A shoal, with a least depth of 4.8m, lies about 1 mile SE of the light and is marked by a buoy.

Sagas Bank (54°17'N., 11°12'E.), with a least depth of 6.9m, lies centered 4 miles offshore, about 6 miles NE of Dahmeshoved Light. Deep-draft vessels are advised not pass between this shoal bank and the coast.

Caution.—A mine laying practice area, which may best be seen on the chart, fronts the E approach to Fahmarnsund and lies centered 7.5 miles NE of Dahmeshoved Light.

4.8 Lubecker Bucht (54°05'N., 11°02'E.), with Neustadter Bucht at its head, forms the SW part of Mecklenburger Buct. This bay is entered between Dahmeshoved and Gross Klutzhoved, 11.5 miles SSE.

During severe winters, ice may close the inner parts of Lubecker Bucht, but as long as the bay areas remain passable, icebreakers generally keep the river approaches and ports open.

Between Dahmeshoved and Pelzerhaken, 10 miles SW, the coast is low and sandy for the first 5 miles and then becomes higher. It is fronted by foul ground.

Pelzerhaken Light (54°12'N., 11°05'E.) is shown from a prominent tower, 19m high, with several dwellings situated near it. A conspicuous gray tower stands 0.5 mile NE of this light.

Pelzerhaken Light

Lighted Buoy No. 1, marking the Lubeck-Gedser Route, is moored about 6 miles E of Pelzerhaken Light.

Walkyriengrund (54°07'N., 11°02'E.), an area of rocky shoals and foul ground, lies centered about 3 miles offshore, 6 miles ENE of Pelzerhaken Light. It has a least depth of 8.6m and lies on the N side of the recommended route.

Gromitz (54°09'N., 10°57'E.), an extensive yacht harbor, is situated 5.5 miles SW of Dahmeshoved. A church, with a prominent tower and surrounded by poplar trees, stands in the town, which is a tourist resort.

Between Gross Klutzhoved and the approaches to Travemunde, 11 miles WSW, the coast is hilly.

A conspicuous radio tower, 99m high, is reported to stand about 0.8 mile inland, 3 miles WSW of Gross Klutzhoved. Prominent churches are situated at Kalkhorst and Elmenhorst located about 5.5 miles and 3 miles, respectively, WSW of Gross Klutzhoved.

Caution.—An explosives dumping ground area, which may best be seen on the chart, lies centered 3 miles E of Pelzerhaken Light.

Several wrecks lie within Lubecker Bucht and may best be seen on the chart.

Several submarine exercise areas lie within Lubecker Bucht and may best be seen on the chart.

4.9 **Neustadter Bucht** (54°03'N., 10°49'E.) lies at the NW side of Lubecker Bucht between Pelzerhaken and the mouth of Die Trave, 7 miles SSE. The coast of this bay is alternately low and hilly with occasional wooded areas. Several tourist resorts, fronted by shallow piers, are situated along the shore.

Neustadt Hafen (54°06'N., 10°49'E.) (World Port Index No. 28900), a small harbor, is situated along the sides of a narrow inlet, which indents the NW shore of Neustadter Bucht and leads to a lake. It is used by coasters, small craft, fishing vessels, and yachts. A channel, marked by buoys, leads NNW into the harbor and is indicated by lighted ranges. The fairway has a controlling depth of 5.8m over a least width of about 40m.

The harbor provides about 600m of total commercial quayage, with depths of 4 to 5.5m alongside. Vessels up to 120m in length, 20m beam, and 5m draft can be accommodated. Vessels over 90m in length, 14.5m beam, and 4.2m beam must request special prior permission to enter. Local pilots are available and may be contacted on VHF channel 13.

A church, several radio masts, and several water towers, all prominent, are situated in the town. Several conspicuous chimneys stand next to a high-rise building in the E part of the town.

A conspicuous tower, 12m high, stands on Gomnitzberg, a prominent hill, which rises 2.5 miles W of the Neustadt and has an elevation of 92m.

Niendorf (54°00'N., 10°48'E.), a small harbor, lies on the S shore of Neustadter Bucht, about 5.8 miles SSW of Pelzerhaken Light. It is used by yachts and fishing vessels. The entrance, which is protected by breakwaters, is 15m wide and has a controlling depth of 3.1m. A conspicuous tower stands near the shore, about 1 mile E of this harbor.

Stein Riff (54°00'N., 10°54'E.), an extensive rocky shoal area, fronts the S side of Neustadter Bucht and extends up to about 3.4 miles NE of Niendorf. It has depths of 2 to 9m and is marked by buoys.

Caution.—A submarine exercise area lies in the E part of Neustadter Bucht and may best be seen on the chart.

An explosives dumping ground area lies in the W part of Neustadter Bucht and may best be seen on the chart.

A small area, within which unexploded ordnance exists, lies on the SE side of Stein Riff, about 2.3 miles ENE of Niendorf, and may best be seen on the chart.

Extensive fishing is carried out during the winter months in Neustadter Bucht and off the estuary of Die Trave.

Travemunde (53°58'N., 10°53'E.)

World Port Index No. 28880

4.10 Travemunde, the out-port for Lubeck, is situated at the mouth of Die Trave (Trave River), on the S side of Lubecker Bucht. It is a main passenger ferry terminal and fishing center in addition to being a popular tourist resort. The marine facilities and installations line both sides of the river up to 1 mile above the entrance.

Ice.—Generally, the channel from Travemunde to Lubeck is kept open by icebreakers as long as Lubecker Bucht is passable. When the bay is closed, navigation ceases on the river. Usually icebreakers are used on an average of 12 days per season, but they have been required up to 60 days.

Travemunde (Die Trave) Entrance

Normally, the ice season starts in the middle of January and lasts until the middle of February, but ice has appeared as early as the middle of December and remained until the beginning of April.

Tides—Currents.—Winds from NNW through N to E cause an inflowing current while winds from S to W cause an outflowing current. The rate of these currents seldom exceeds 2 knots.

Immediately outside the entrance, the inflowing current sets SW in the center of the approach channel and along the SE side. However, at the NW side of the channel, the inflowing current sets S across the port entrance. The outflowing current divides into two branches at the river entrance. One branch follows the direction of the approach channel as far as the roadstead and the other branch sets S towards the Mecklenburg coast. These branches have sometimes attained rates of up to 4 knots. Inside the entrance, the currents follow the direction of the river, but are deflected to the N by the curve of the harbor. Close inshore, a countercurrent may be encountered which usually attains a rate of half the rate of the current in the center of the river.

In exceptional cases, winds from N to ESE can raise the water level in the entrance by up to 3.3m and winds from N to ESE can lower it by as much as 2m. Generally, the fluctuations of the water level are limited to about 1m.

Depths—Limitations.—The fairway channel leading SW from the S end of the recommended route into the river entrance is 100m wide and dredged to a controlling depth of 10m.

The harbor is mostly used by yachts, fishing vessels, and passenger ferries. Several extensive marinas are situated on both sides of the river. The main commercial facilities are located at the N and W sides of the river.

Ostpreussenkai, 200m long, is situated on the N side of the harbor about 0.7 mile W of the entrance. This quay has a depth of 7.1m alongside and is mostly used by cruise vessels.

Kaiserbrucke, situated close E of Ostpreussenkai, is 52m long and has a depth of 8m alongside.

Kohlenhofkai, a coaling quay, is situated on the S side of the harbor opposite Ostpreussenkai. It is 200m long and has a depth of 8m alongside. This quay is not for commercial use.

Skandinavienkai is situated at the W side of the harbor and provides 2,050m of total quayage. It has nine berths with facil-

ities for container and ro-ro vessels. The berths are 135 to 290m long and have depths of 9.5m alongside.

Travemunde

Aspect.—A light, equipped with a calibration radiobeacon, is shown from the top of a conspicuous building, 118m high, standing 0.3 mile W of the harbor entrance. A prominent disused light tower stand on the S side of the entrance, 0.3 mile SSE of the light.

Trave Lighted Buoy, marking the outer approach, is moored about 3 miles NE of the light. The dredged approach channel is marked by lighted buoys and indicated by a lighted range. A light is shown from a prominent floodlit tower, 9m high, standing at the head of the N breakwater.

A prominent church, with a slender spire, stands on the N side of the river, about 0.7 mile SW of the light.

Potenitz Castle, a conspicuous white building, is situated about 1.7 miles SE of the light and may be seen from seaward.

Travemunde Light (building)

Pilotage.—Pilotage is compulsory for vessels of 60m or more in length, vessels with a beam of 10m or more, and all oil, gas, and chemical tankers.

Vessels should send a request for pilotage at least 12 hours in advance of arrival at the boarding station at Lubeck-Gedser Route No. 1 Lighted Buoy (54°04.6'N., 11°02.0'E.). Vessels should then send a confirmation by VHF 2 hours prior to arrival. Pilots can be contacted by VHF (Lubeck Pilot) on channel 12.

Vessels of 60m or more in length, or with a beam of 10m or more, passing Lubeck-Gedser Route No. 1 Lighted Buoy must provide their name, beam, gt and nrt, and the position to which pilotage is requested or whether the vessel is exempt from pilotage.

Travemunde Disused Light Tower

Travemunde Breakwater Light

Contact Information.—The pilotage service can be contacted, as follows:

1. Telephone: 49-4502-71117
2. Facsimile: 49-4502-753517
3. E-mail: etainfo@luebeckpilot.de
4. Web site: http://www.luebeckpilot.de

Vessel Traffic Service.—A Vessel Traffic Service (VTS) system operates in the approaches to Die Trave. It is mandatory for all vessels with a beam over 6m, including pushed or towed composite units.

Vessels must maintain a continuous listening watch with VTS Center Trave Traffic on VHF channels 13 and 16.

A Sailing Plan (SP) must be sent to VTS Center Trave Traffic on VHF channel 13 before transiting Travemunder Enge (narrows) or Trave-Strecke as follows:

1. Before transiting Travemunder Enge:
   a. Immediately before departing Travemunde.
   b. Before passing Lubeck-Gedser Route Lighted Buoy No. 1 (inbound only).
2. Before transiting Trave-Strecke:
   a. Immediately before departing Lubeck.
   b. Before passing Lubeck-Gedser Route Lighted Buoy No. 1 (inbound only).

A Position Report (PR) must be sent to VTS Center Trave Traffic on VHF channel 13 when passing the following reporting points:

1. Before transiting Travemunder Enge:
   a. Trave Outer Lighted Buoy (54°00.0'N., 10°56.3'E.) (inbound only).
   b. Lighted Buoy No. 1 (53°58.8'N., 10°54.7'E.) (inbound only).
   c. Light No. 8 (53°56.5'N., 10°52.0'E.) (outbound from Lubeck).
   d. A line joining Stulper Huk and Light No. 16 (53°55.1'N., 10°52.3'E.) (outbound from Lubeck).
2. Before transiting Trave-Strecke—Light No. 16 (inbound only).

A Deviation Report (DR) must be sent in case of amendments to the SP.

An Incident Report (IR) must be sent in case of an incident impairing safety or the environment.

For the format for the SP and the PR, see Regulations for Kieler Forde in paragraph 3.65.

Situation broadcasts are transmitted in English and German every hour at 15 minutes past the hour on VHF channel 13.

Vessels are not allowed to meet in Travemunder Enge, the narrows at the harbor entrance. If there is any uncertainty when meeting, vessels proceeding seaward have priority.

Speed restrictions apply within the harbor.

Contact Information.—The harbormaster can be contacted, as follows:

1. VHF: VHF channels 16 and 19
2. Telephone: 49-4502-74362

Anchorage.—Vessels can anchor, in depths of 15 to 17m, mud and clay mixed with sand, within a roadstead lying about 2 miles NE of the harbor entrance on the N side of the approach route. This roadstead is open to winds from the NE, which may create a choppy sea at times.

Caution.—A submarine power cable, which may best be seen on the chart, extends NE from a point located on the shore about 0.6 mile E of the harbor entrance. Magnetic compass deflections of up to 70° have been observed in the vicinity of this cable.

Several submarine gas pipelines and cables extend across the harbor and may best be seen on the chart.

Ferries cross the harbor about 0.3 mile and 0.9 mile above the entrance.

4.11 Die Trave (53°57'N., 10°52'E.), a narrow and tortuous river, extends in a SW direction to Lubeck, which stands about 10 miles above Travemunde. Untertrave, the fairway channel, is marked by buoys and beacons, and is indicated by lighted ranges.

A number of comparatively shallow bays, which may best be seen on the chart, can be entered from the river. In many places along the river the shore lies within nature reserve areas.

Depths—Limitations.—The fairway channel is dredged to a controlling depth of 10m over a bottom width of 100m as far as Sienchenbucht, about 1.4 miles above the mouth of the river. From Sienchenbucht to the port area of Lubeck, the fairway channel is dredged to a controlling depth of 9.5m over a bottom width that gradually decreases from 100m to 60m. There are three turning basins, up to 400m wide, situated within the river.

Herrenbrucke, a double-bascule lift bridge, spans the river at Siems (53°54.2'N., 10°46.2'E.) and has a navigable width of 52.9m. It has a vertical clearance of 21m when the span is closed. It has been reported that the bridge is being dismantled and is being replaced by a tunnel.

Herrenwyk (53°54'N., 10°48'E.), the site of a prominent smelting works on the N shore, is fronted by a small basin. There is a berth, 450m long, with depths of 8 to 10m alongside.

Flenderwerft A.G., a shipyard with two floating drydocks, is situated about 0.6 mile W of the above basin. Lehmannkai II, a quay, adjoins the E side of the shipyard. It is 350m long and has depths of 7 to 7.5m alongside.

An extensive power plant stands on the N shore at Siems, about 1 mile NW of the shipyard. It is fronted by several quays, with depths of 7.5 to 9m alongside.

Schlutup (53°54'N., 10°48'E.), a town standing on the S shore of the river, has a narrow basin on its W side with depths of 2 to 5m alongside. A quay, about 200m long, is situated on the E side of the town and has depths of 4 to 5m alongside.

Caution.—Several submarine pipelines and cables cross the channel leading to Lubeck and may best be seen on the chart.

Several ferries cross the channel leading to Lubeck.

Lubeck (53°53'N., 10°42'E.)

World Port Index No. 28890

4.12 The port of Lubeck lies within an important industrial center and is the N terminal of the Elbe-Lubeck Kanal (Elbe-Trave Kanal). The main part of the city is situated on an island which is surrounded by basins and waterways. The port area is divided into an outer and inner harbor. The outer harbor serves ocean-going vessels while the inner harbor is primarily used by small craft, barges, and canal traffic.

Lubeck

Depths—Limitations.—There are ten main quays, 550 to 1,200m long, with depths of 6 to 9.5m alongside. Vorwerker Hafen, a basin, is situated in the NW part of the harbor and is 940m long. Umschlaghafen consists of several quays fronting the E side of the river, S of Vorwerker Hafen. Burgtorhafen, with quays on both sides, is that part of the river lying between Umschlaghafen and Walhalbinsel.

Walhalbinsel is a peninsula located in the S part of the harbor. Wallhafen, a basin, lies on the N side of Walhalbinsel and is 1,118m long. Hansashafen, a basin, lies on the S side of Walhalbinsel and is 1,185m long.

Lubeck Passenger Quay

There are facilities for general cargo, bulk, tanker, container, cruise, and ro-ro ferry vessels. Vessels of up to 64,000 dwt and 9.3m draft can be accommodated.

The Elbe-Lubeck Kanal, with seven locks, leads S from the port and connects with the Elbe River at Lauenburg, a distance of about 42 statute miles. It can be used by lighters up to 1,200 dwt, 80m in length, 11.6m beam, and 2m draft.

Pilotage.—See Travemunde Port (paragraph 4.10) for information concerning pilotage and the VTS system operating in the approaches to Die Trave river, which flows into the S part of Lubecker Bucht.

4.13 Wismar Bucht (53°59'N., 11°20'E.), a large bight, is situated on the S side of Mecklenburger Bucht and lies between Gross Klutzhoved (54°01'N., 11°11'E.) and Wustrow, 14 miles ENE. It is encumbered with extensive sand banks. Wismar is situated at the S end of a bay at the head of the bight.

Wustrow, a peninsula, extends about 5 miles SW from the mainland at the E side of the bight. Salz Haff, a shallow area of water, lies on the inside of this peninsula. The coastal bank, with depths of less than 5m, extends about 1 mile W and 1.5 miles NW from the W end of Wustrow.

Tarnewitzer Huk (54°00'N., 11°14'E.) is located on the NW side of the bight, 3 miles SE of Gross Klutzhoved. Boltenhagen Bucht lies between these two points. This bay provides anchorage, in depths up to 18m, sand and mud with good holding ground.

Lieps (54°00'N., 11°17'E.), an extensive and shallow shoal area, extends about 3 miles NE from Tarnewitzer Huk across the W side of the entrance to the bight. A directional light is shown from a mast, 10m high, standing on the SE part of the shoal, about 2 miles E of Tarnewitzer Huk. Schweinskothel, a large shoal area with depths of less than 5m, lies centered 1 mile NE of Lieps Light. Sechersgrund, a detached shoal with a least depth of 4.7m, lies 0.5 mile ENE of Lieps Light.

Hannibal (54°02'N., 11°22'E.), an extensive rocky shoal with depths of less than 5m, lies near the middle of the entrance to Wismar Bucht and is centered 4.7 miles NE of Tarnewitzer Huk.

Wohlenberger Wiek, a large bay, lies S of Lieps and provides sheltered anchorage, in depths of 7 to 9m.

Poel (54°00'N., 11°27'E.), a low and treeless island, occupies the SE part of Wismar Bucht and lies on an extensive shore bank. This large island is connected to the mainland at its SE side by a road bridge, which spans a shallow sound. Langenwerder, an islet, lies close off the NE extremity of the island.

Kirch See, a narrow and shallow inlet, indents the S side of the island and extends about 2 miles N. A narrow fairway, marked by buoys and indicated by a lighted range, leads N into the inlet and to the village of Kirchdorf, which stands at the head. The village is fronted by a small harbor, which is used by fishing boats, and two marinas. A conspicuous church, with a steeple, stands on the W side of the head of this inlet.

Walfisch, an islet, lies 1.2 miles SSW of the entrance to Kirch See.

Timmendorf Light

4.14 Timmendorf Light (53°59'N., 11°23'E.), a directional light, is shown from a prominent tower with a dwelling, 21m high, standing on the W extremity of the island. A small harbor, with a controlling depth of about 3m, is situated close W of the light and is used by pilot boats, fishing vessels, and pleasure craft.

Mittelgrund, a detached shoal patch, with a least depth of 4.7m, lies about 1.3 miles WSW of Timmendorf Light and is marked by a buoy.

Die Platte, a large shoal area with depths of less than 5m, lies centered 1.1 miles NW of Timmendorf Light.

Flagtief, a narrow channel, leads S between the E side of this shoal area and the W side of the shorebank fronting the NW part of Poel. It may be used by small vessels with drafts up to 4m. Local knowledge is required.

Gollwitz N Light

Gollwitz N Light (54°01.5'N., 11°28.3'E.), a sector light, is shown from a prominent tower on a building, 10m high, standing on the NE part of the island, 3.8 mile ENE of Timmendorf Light.

Gollwitz W Light (54°01.5'N., 11°28.0'E.), a sector light, is shown from a prominent tower on a building, 13m high, standing close WNW of Gollwitz N Light.

Wismar Lighted Buoy (54°06'N., 11°26'E.), marking the entrance to Grosses Tief, is moored about 4.7 miles NNW of Gollwitz N Light.

Offen Tief Lighted Buoy (54°02'N., 11°17'E.), marking the entrance to Offen Tief, is moored about 4 miles NW of Timmendorf Light.

Grosses Tief (54°05'N., 11°27'E.), the main approach channel, is entered about 3.5 miles NW of the NW side of Wustrow. It leads SSE for 2.5 miles from the vicinity of the Wismar Lighted Buoy and passes W of the shorebank fronting the W side of Wustrow. The track lies in the white sector of Gollwitz N Light. The channel then leads SW and W, passing between Hannibal and the shore bank fronting the N side of Poel, into Krakentief, a pool lying on the E side of Lieps.

From Krakentief, a dredged fairway leads S, SE, and SSE to the port of Wismar. This fairway passes between Die Platte and Schweinskothel and then between Mittelgrund and Sechersgrund. It rounds the SW side of Poel and passes between Walfisch and Fliemstorf Huk, a point on the mainland 0.7 mile SW.

The channel is marked by lighted buoys and indicated by lighted ranges, which may best be seen on the chart.

Lighted Buoy No. 17, moored 1.8 miles WSW of Timmendorf Light, marks the turn in the channel and is equipped with a racon.

4.15 **Offen Tief** (54°02'N., 11°18'E.), a secondary channel, leads SE from the vicinity of Offen Tief Lighted Buoy over the narrow neck of the shoal bank connecting Lieps and Hannibal into Krakentief. It is marked by buoys. Local knowledge is advised.

Depths—Limitations.—Grosses Tief has a controlling depth of 9.5m and can be used by vessels with drafts up to 8.2m.

Offen Tief has a controlling depth of 5.1m and can be used by small craft with drafts up to 3.1m.

Caution.—A spoil ground dumping area lies about 1 mile S of Offen Tief and may best be seen on the chart.

Several nature reserves, which are closed to commercial shipping and fishing vessels, lie within the coastal areas of Wismar Bucht and may best be seen on the chart.

Navigation outside the main fairway channel at night is not recommended for vessels without local knowledge.

Wismar (53°54'N., 11°28'E.)

World Port Index No. 28870

4.16 Wismar, situated in an industrial area, is a shipbuilding and repair center in addition to being a commercial port.

Ice.—Ice conditions in Wismar Bucht are much the same as those elsewhere within the Lubecker Bucht area. However, due to the shallowness of the channels and the lack of currents, ice may appear earlier in the season, usually around the beginning of January. The winter season lasts until the end of March. Icebreakers generally maintain an open channel from the sea to the port of Wismar.

Tides—Currents.—Winds from the N, and winds from the E if winds from the W have previously prevailed, can cause a rise in the water level. Winds from S or W can lower the water level. Fluctuations of up to 0.9m occur frequently. Gales from NE can raise the water level by up to 2.8m and gales from SW can lower it by as much as 1.9m.

The currents in the bight are caused by the winds and are normally slight, being noticeable only in the deeper channels during prolonged winds from the same direction.

Wismar Tanker Terminal

Wismar Bulk Terminal

Wismar

Depths—Limitations.—The port is fronted by a turning area, 280m wide, with a depth of 9.5m. A shipyard, with a drydock, is situated at the W side of the port. It is fronted by

Werfthafen, a basin, which has depths of 6.5 to 9.5m and provides fitting-out berths. Westhafen, a basin located in the S part of the port used by small craft, is 600m long. It has a depth of 6.5m and provides shipyard berths. Alter Hafen, a basin located in the SE part of the port, has depths of 6.0 to 8.4m. Its outer section is used by timber vessels and its inner section is used by fishing vessels.

Olhaven, located in the N part of the port on the NE side of the channel, is a chemical and oil terminal. Uberseehafen and Kalihafen, located in the E part of the port, are two commercial basins. They provide about 1,600m of total quayage with depths of 5.1 to 8.2m alongside.

There are facilities for timber, bulk, tanker, chemical, passenger, general cargo, and ro-ro vessels.

Vessels up to 210m in length, 28m beam, and 8.4m draft can be accommodated. Tankers up to 150m in length and 8.4m draft can be handled.

Aspect.—The fairway channels leading to the port are marked by sector lights, lighted ranges, and lighted buoys.

A church, with a conspicuous steeple, stands at Klutz, 3 miles SSW of Gross Klutzhoved. A prominent church is situated at Hohenkirchen, 5 miles SE of Klutz. A prominent high building is reported to stand at Wendoff, about 0.7 mile WNW of the port. Numerous cranes standing at the shipyards in the port area are conspicuous.

Pilotage.—Pilotage is compulsory for the following:

1. Tankers carrying gas, chemicals, petroleum, or petroleum products.
2. Unloaded tankers, if not cleaned, degassed, or completely inerted after having carried petroleum or petroleum products with a flashpoint below 35°C.
3. Other vessels over 70m in length or with a beam greater than 11m.

Vessels should send a request for pilotage and an ETA at the boarding place at least 4 hours in advance. The message must state the following information:

Designator	Information Required
A	Vessel name and call sign.
U	Length (in meters), beam (in decimeters), and gt.
H	ETA at pilot boarding position.
O	Draft (in decimeters).
I	Port of destination.

Pilots will board, as follows:

1. Vessels over 90m in length or 5.2m draft in the vicinity of Wismar Lighted Buoy (54°06'N., 11°26'E.).
2. Vessels of 90m in length or 5.2m draft and less in a position about 2.2 miles NW of Gollwitz N Light.
3. Vessels of 3.1m draft and less in the vicinity of Offen Tief Lighted Buoy (54°02'N., 11°17'E.).

Contact Information.—The pilots can be contacted, as follows:

1. Call sign: Timmendorf Pilot
2. VHF: VHF channels 14 and 16
3. Telephone: 49-38425-20256
4. Facsimile: 49-38425-20213
5. E-mail: station@wismarpilot.de

Wismar Pilotage Service Home Page

http://www.wismar-rostock-stralsund-pilot.de

Vessel Traffic Service.—A Vessel Traffic Service (VTS) is in operation in the approaches to Wismar Bucht and is mandatory for the following:

1. Vessels of 17m in length and over, including composite units.
2. Vessels carrying dangerous goods in bulk (gas, chemicals, petroleum, or petroleum products).
3. Unloaded tankers if not cleaned, degassed, or completely inerted after carrying petroleum or petroleum products with a flashpoint below 35°C.
4. Nuclear-powered vessels.

The VTS may be contacted on VHF channels 12 and 16. Vessels entering the VTS area must maintain a continuous listening watch. It is mandatory to send the following reports:

1. Sailing Plan (SP)—An SP must be sent to VTS Center Wismar Traffic on VHF channel 12, as follows:
   a. When entering the VTS area from seaward 1 hour before passing Wismar Lighted Buoy or Offen Tief Lighted Buoy.
   b. Before leaving a harbor or berth within the VTS area.
2. Position Report (PR)—A PR must be sent to VTS Center Wismar Traffic on VHF channel 12, as follows:
   a. After embarking the pilot.
   b. When leaving the fairway.
   c. When entering or leaving an anchorage or berth within the VTS area.
   d. When passing the following reporting points:
      i. Wismar Lighted Buoy.
      ii. Offen Tief Lighted Buoy.
      iii. Lighted Buoy No. 12 (54°01.1'N., 11°22.2'E.), stating if Flaggtief fairway is to be used.
      iv. Lighted Buoy No. 22 (53°58.1'N., 11°21.4'E.) stating if Flaggtief fairway is to be used.
3. A Deviation Report (DR) must be sent in case of amendments to the SP.
4. An Incident Report (IR) must be sent in case of an incident impairing safety or the environment.

For the format for the SP and PR, see Regulations for Kieler Forde in paragraph 3.65.

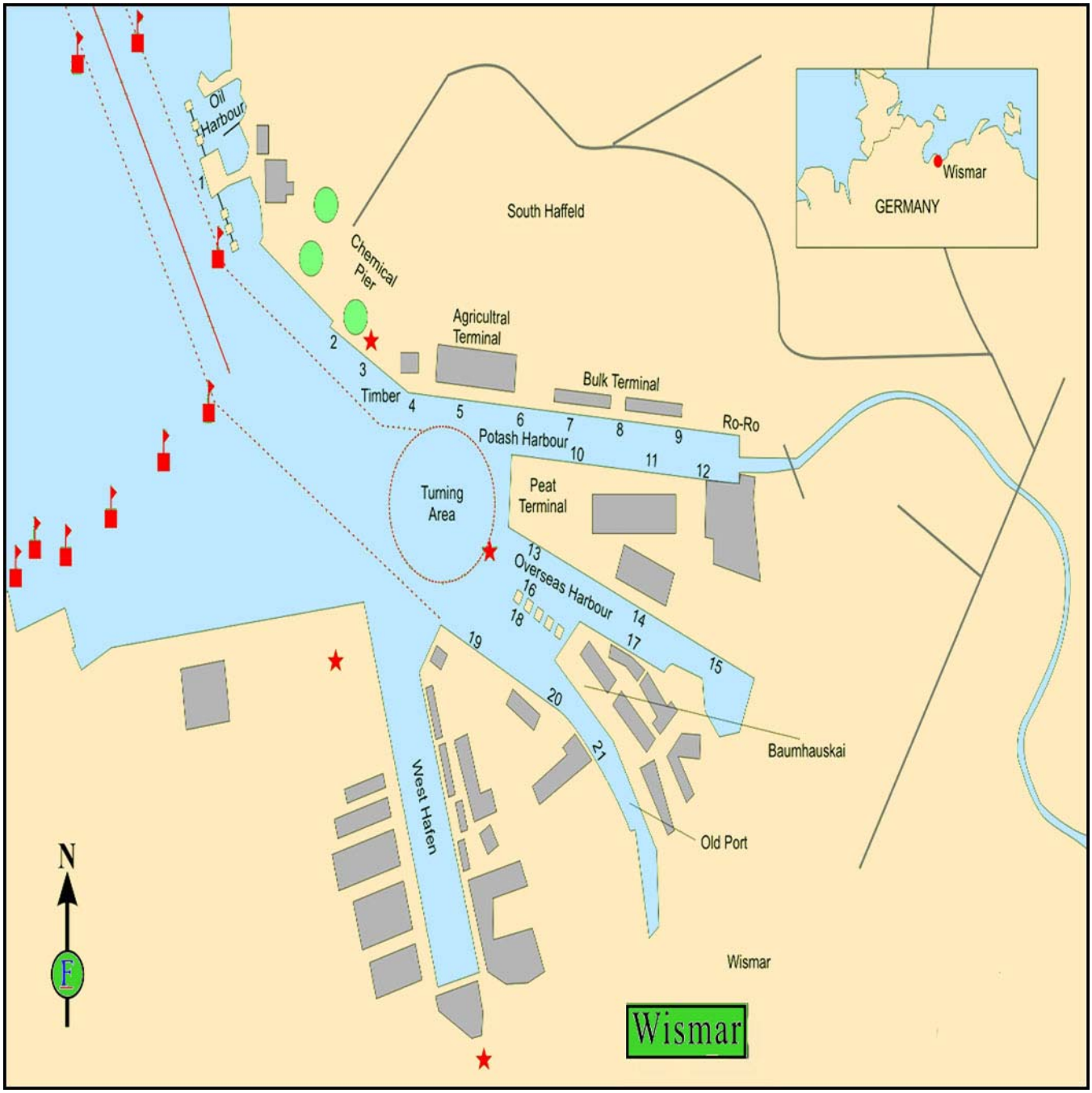
Situational information broadcasts are made by VTS Wismar Traffic on VHF channel 12, in German and English, every hour at 45 minutes past the hour. The broadcast includes information relevant to the safe passage through the VTS area and general traffic situation details including local storm warnings, weather, visibility, ice, casualties, and dredging operations.

Speed is limited to 5 knots within the harbor.

Tugs are mandatory for vessels over 1,600 gt and for all vessels carrying dangerous cargoes.

Vessels over 125m in length or 7.3m draft are not permitted to transit the approach fairway channels in Wismar Bucht without permission from the Captain of the Port of Wismar.

Anchorage.—A designated outer anchorage area, which



Wismar Port

may best be seen on the chart, lies centered 3 miles N of Hannibal. It has depths of 11 to 16m, with a sand and stone bottom.

A designated inner anchorage area, which may best be seen on the chart, lies centered 0.9 mile WSW of Timmendorf Light. It has depths of 6 to 9m, with a bottom of mostly mud.

Directions.—Vessels should use the Lubeck-Gedser Route, which may best be seen on the chart, and then proceed in a S direction toward the Wismar Lighted Buoy (54°06'N., 11°26'E.).

Caution.—High speed ferries, many of which use the Offen Tief channel, may be encountered in the approaches to Wismar.

4.17 From Wustrow, at the E side of the entrance to Wismar Bucht, the S coast of Mecklenburger Bucht continues E for 15 miles to Warnemunde. The Warnow River discharges at Warnemunde and the town of Rostock is situated 5 miles above its mouth.

Buk Light (54°08'N., 11°42'E.) is shown from a prominent

tower with a dwelling, 21m high, standing 1.2 miles SSE of Buk Spitze, a low-lying point.

A prominent hill, 128m high, rises 2.8 miles SE of the light. A conspicuous church stands near the shore at Rerik, 3.2 miles SW of the light.

Between Buk Spitze and the village of Heiligendamm, 5.5 miles E, there are hills and woods, but then as far as Warnemunde the land becomes lower and less wooded. The shore bank fronting this section of the coast is encumbered with numerous large stones and extends up to about 1.5 miles seaward in the vicinity of Buk Spitze.

Warnemunde Light (54°11'N., 12°05'E.) is shown from a prominent tower, 31m high, standing on the W side of the entrance to the Warnow River. A conspicuous circular building is situated near the light. A conspicuous church, with a slender spire, stands at Bad Doberan, 7.7 miles SW of the light.

It is reported that prominent groups of wind generators are situated at Diedrichshagen, 2.5 miles WSW of the light, and at Nienhagen, 5 miles WSW of the light.

Buk Light

Warnemunde Light

Caution.—An explosives dumping area, which may best be seen on the chart, extends up to about 5 miles offshore between Wustrow and Buk Spitze.

A measured distance area, which may best be seen on the chart, lies 2.5 miles offshore and is centered 4 miles NE of Buk Light. It is indicated by pairs of beacons. Anchoring and fishing are prohibited in the vicinity of this measured distance area.

A marine farm area, which may best be seen on the chart, lies centered 2.8 miles NNE of Buk Light.

A marine farm area, which may best be seen on the chart, lies 0.7 mile offshore, 5 miles W of Warnemund.

Rostock (54°06'N., 12°08'E.)

World Port Index No. 28860

4.18 The town of Rostock stands 5 miles above the mouth of Die Warnow (Warnow River). The extensive industrial port of Warnemunde-Rostock extends along the river and includes several shipyards. The port is also an important transshipment center and ferry terminal.

Ice.—Due to its position on the open sea, Warnemunde remains ice free longer than Wismar and the other German harbors to the E. In average years, the first ice appears around the end of December and remains until the last days of February. The mouth of the river seldom freezes and then only for short periods. As long as the open sea and approaches remain ice free, the river channel and harbor basins are kept open by icebreakers.

Tides—Currents.—The coastal current sets mostly E and may attain a rate of 3 knots. The current only sets W after persistent E winds. The current in the river flows mostly seaward and with little strength in calm weather. After persistent N winds followed by sudden offshore winds, the outgoing current can attain a rate of 4 knots, particularly along the E breakwater. With strong onshore winds the current flows inshore and across the entrance from the W breakwater. Strong SW winds may cause a current to flow E across the entrance.

Generally, the water level is decreased by winds from SSE to W and increased by winds from NW to NE. The daily fluctuations seldom exceed 0.3m. However, the water level can be raised by up to 2.5m by isolated gales from NW to NE and lowered as much as 1.6m by gales from SSE to W.

Depths—Limitations.—Depths in the approach channel and main entrance fairway (Seekanal) are maintained by dredging. The main channel (Seekanal) leads SSE for 2 miles to Rostock-Uberseehafen. It then leads S for 4 miles, following the river, to Rostock-Stadthafen. This channel has controlling depths of 14.5m as far as the oil terminal in Uberseehafen, 12m as far as Dorf Schmarl (54°08.2'N., 12°05.7'E.), 9m as far as the entrance to Marienehe Basin (54°07.1'N., 12°05.8'E.), and 6.5m as far as Rostock-Stadthafen.

A secondary channel (Neuer Strom), lying close W of the main channel, leads SSE to the harbor of Warnemunde, located at the W side of the river. It has a controlling depth of 6m. This channel joins the main fairway about 2 miles S of the river entrance.

Alter Strom, a shallow basin, is entered close S of the root of the W breakwater. It is used by fishing vessels and pleasure craft. A ferry terminal basin lies 0.3 mile SSE of the entrance to Alter Strom. It has a depth of 6.4m and can handle passenger ferry vessels, with drafts up to 5.5m.

Passagierkai, 240m long, extends SSE from the ferry termi-

Rostock

nal basin and has a depth of 9m alongside. It is approached through the main channel (Seekanal) and can handle passenger vessels up to 180m in length and 7.9m draft. A turning basin, with a depth of 9m, lies close S of the S end of this quay.

A shipyard is situated on the W side of the river, S of the turning basin. It is fronted by several fitting out berths, with depths of 5 to 9m alongside. Vessels up to 200,000 tons can be constructed in this yard. There is also a floating repair drydock, which is 230m in length and 50.3m wide.

Breitling, a shallow area of water, lies on the E side of the river, 1 mile S of the entrance. A naval base is situated on the N side of this area and is fronted by several berths, with depths of 4 to 6m alongside. The N part of the area is prohibited to commercial marine traffic.

The main commercial harbor (Rostock-Uberseehafen) lies on the S side of Breitling and consists of three basins, an oil terminal, and a chemical terminal. A turning basin, with a depth of 14.5m, lies in the entrance. There is about 9,000m of total quayage, providing 43 berths, with depths of 10.5 to 14.5m alongside. There are facilities for ro-ro, container, general cargo, bulk, and tanker vessels.

Vessels up to 260m in length, 40m beam, and 13m draft can be accommodated. Chemical tankers are limited to a length of 180m and a draft of 9.5m. Vessels over 230m in length, 36m beam, or 12m draft must obtain special permission from the authorities prior to entering.

Marienehe Basin is situated at the W side of the river, about 2 miles S of Rostock-Uberseehafen. It provides 850m of total quayage, with a depth of 6.5m alongside, and is used by fishing vessels with drafts up to 5.5m.

Warnowkai, about 900m long, extends N from the N side of Marienehe Basin. It provides four berths and has a depth of 9m alongside. There are facilities for reefer cargo and vessels with drafts up to 7.9m can be handled.

Rostock-Stadthafen, the old section of the port, lies 3 miles S of Rostock-Uberseehafen and fronts the city. There are seven commercial berths, with depths of 6 to 7.3m alongside, and facilities for small craft and yachts. Vessels up to 125m in length and 6.3m draft can be accommodated.

Aspect.—The entrance channel is marked by lighted buoys and is indicated by a lighted range. Rostock Lighted Buoy is moored about 7.5 miles NNW of the river entrance and marks the outer approaches.

Warnemunde Light, previously described in paragraph 4.17, is located on the W side of the entrance to the river. A conspicuous hotel, 64m high, stands 0.3 mile WSW of the light. Prominent churches are situated at Lichtenhagen, about 3 miles SW of the light, and in Warnemunde, 0.3 mile S of the light.

Numerous prominent chimneys, radio masts, and towers are situated within the port area. Several conspicuous high buildings and churches, with prominent spires, stand in the vicinity of the city of Rostock and are also visible from seaward.

Pilotage.—Pilotage is compulsory for the following:

1. Tankers carrying gas, chemicals, petroleum, or petroleum products.
2. Unloaded tankers, if not cleaned, degassed, or completely inerted after having carried petroleum or petroleum products with a flashpoint below 35°C.
3. Other vessels over 100m in length or 15m beam or 7.5m draft (up to Berth No. 60 Warnowpier).

Warnemunde Harbor (Rostock)

Rostock

4. Other vessels over 60m in length or 10m beam or 5m draft (further upriver to Stadhafen Rostock).

Contact Information.—Pilots can be contacted on VHF channels 14 and 16 and usually board in the following places:

1. Vessels with drafts over 11.58m in position 54°17'N, 12°00'E, about 7 miles NNW of the river entrance.
2. Vessels with drafts over 6.5m in position 54°14.5'N, 12°02.3'E (near Lighted Buoy No. 5), about 4 miles NW of the river entrance.
3. Vessels with drafts of 6.5m and less in position 54°12.43'N, 12°03.90'E (near Lighted Buoy No. 11 and Lighted Buoy No. 13), about 1.7 miles NW of the river entrance.

Pilots disembark in the following positions:

a. 54°12.90'N, 12°04.91'E.
b. 54°14.35'N, 12°04.00'E.
c. 54°17.20'N, 12°02.50'E.

Inbound vessels should send their ETA 3 hours before arrival at the pilot boarding position, stating the following:

Designator	Information Required
A	Vessel name and call sign.
U	Length (in meters), beam (in decimeters), and gt.
H	ETA at pilot boarding position.
O	Draft (in decimeters).
I	Port of destination.

The Rostock/Wismar/Warnemunde pilotage service can be contacted by e-mail, as follows:

station@rostockpilot.de

Vessel Traffic Service.—A Vessel Traffic Service (VTS) operates in the approaches to Die Warnow. It is mandatory for the following:

1. Vessels 30m in length and over, including composite units.
2. Vessels carrying dangerous goods in bulk (gas, chemicals, petroleum, or petroleum products).
3. Unloaded tankers if not cleaned, degassed, or completely inerted after carrying petroleum or petroleum products with a flashpoint below 35°C.
4. Nuclear-powered vessels.

The format for the Sailing Plan and Position Report is found in Kieler Forde in paragraph 3.65.

Vessels entering the VTS Area of Warnemunde/Rostock must maintain a continuous listening watch on VHF channel 16 or 68. Situation broadcasts are transmitted in English and German every hour at 15 minutes past the hour on VHF channel 68.

It is mandatory to send the following reports:

1. Sailing Plan (SP)—An SP must be sent to VTS Center Warnemunde Traffic on VHF channel 73, as follows:
   a. Two hours before arrival at Fairway Lighted Buoy (54°17.9'N., 12°01.6'E).
   b. Thirty minutes before entering the fairway for Warnemunde/Rostock.
   c. Before leaving a harbor or berth within the VTS Area of Warnemunde/Rostock.
2. Position Report (PR)—A PR must be sent to VTS Center Warnemunde Traffic on VHF channel 73, as follows:
   a. After embarking the pilot
   b. When leaving the fairway and after mooring.
   c. When turning in the Uberseehafen Turning Basin (beginning and completion of the turning maneuver).
   d. When passing Lighted Buoy No.1 and Lighted Buoy No. 2 (about 5 miles NNW of the port entrance) or when entering the Warnemunde/Rostock fairway.
   e. When passing the moles (54°11.1'N., 12°05.4'E.); Berth No. 60 Warnowpier (54°08.3'N., 12°05.8'E.); and Marienehe Channel (54°07.1'N., 12°05.7'E.).
3. A Deviation Report (DR) must be sent in case of amendments to the SP.
4. An Incident Report (IR) must be sent in case of an incident impairing safety or the environment.

The format for the Sailing Plan and Position Report is found in Kieler Forde in paragraph 3.65.

Information broadcasts are made by VTS Warnemunde Traffic on VHF channel 73 in German (and on request, in English) on request and at 0115 and every 2 hours between 0515 and 2115. The broadcast includes information relevant to the safe passage through the VTS area and general traffic situation details including local storm warnings, weather, visibility, ice, casualties, and dredging operations.

Anchorage.—A designated anchorage area, which may best be seen on the chart, lies W of the approach channel. It is separated into two sections and marked by lighted buoys. Anchorage is available, in depths of 13 to 17m, mixed clay and sand with good holding ground, but this roadstead is exposed to winds from W through N to NE. The E section (No. 1) of this anchorage is for general vessels; the W section (No. 2) is for tankers and vessels with dangerous cargo.

Caution.—The W breakwater at the river entrance is very low, only 1.5m above the mean water level. It covers during periods of high water and rough seas.

Ferries cross the channel at several places within the port and their routes may best be seen on the chart.

An abnormal magnetic disturbance has been observed in a position about 8 miles N of Warnemunde.

Prohibited areas, which may be best seen on the chart, lie E and W of the river entrance and extend up to about 1.3 miles seaward. These areas are for fishery protection and entry into them is not permitted between 1 March and 31 May.

A dumping ground area, which may best be seen on the chart, lies centered 1 mile offshore, 3.5 miles NE of the river entrance.

Submarine cables, which may best be seen on the chart, extends N from points on the shore located about 1.5 miles E and 1.9 miles ENE of the river entrance.

4.19 From Warnemunde Light, the E coast of Mecklenburger Bucht extends NE for 23 miles to Darsser Ort. With the exception of the steep cliffs N of Wustrow Light, this section of coast is generally low and flat. It is wooded except at Fischland. The coastal bank, with depths of less than 10m and large stones, extends up to about 3 miles seaward in places along this stretch, but extends less than 1 mile W of the shore in the vicinity of Darsser Ort.

A conspicuous radio mast, 103m high, stands about 3.5 miles NE of Wustrow Light.

A conspicuous water tower stands at Graal Muritz, about 6.8 miles NE of Warnemunde. Prominent chimneys, 46m and 54m high, are situated 0.4 mile NW and 0.3 mile W, respectively, of this tower.

Wustrow, a resort, is situated on Fischland, an area extending up to about 2 miles NE and SW of the light. This area is protected by groynes and consists of alternate dunes and hills.

Wustrow Light (54°21'N., 12°23'E.) is shown from a tubular mast, 11m in height, with red and white bands. A conspicuous church and a wind generator, 36m high, are situated close to this light.

Several wrecks lie along this stretch of the coast and may best be seen on the chart. A wreck, with a depth of 5m, lies about 1.5 miles offshore, 4.8 miles NE of Wustrow Light, and is marked by a lighted buoy. A wreck with a swept depth of 5m and marked by a lighted buoy lies about 3.75 miles NNE of Wustrow Light.

Darsser Ort (54°29'N., 12°32'E.), a low and sandy point, is situated about 10 miles NE of Wustrow Light and backed by dunes and woods. A shallow harbor, used by small craft, is situated at the E side of the point.

Darsser Ort Light

The shore bank, with depths of less than 10m, extends up to about 4.5 miles N and NE of this point. Prerow Bank, with depths of less than 5m, lies on the shorebank, about 3 miles ENE of the point, and is marked by a lighted buoy.

A light is shown from a prominent tower with a dwelling, 35m high, standing on the W side of the point. A conspicuous radio mast is situated close NNE of the light.

Tides—Currents.—Off Darsser Ort, in extreme cases, winds from NNW to ENE can raise the water level by up to 2.5m and winds from SE to W can lower it by as much as 1.6m.

Caution.—A submarine cable, which may best be seen on the chart, extends NW and then NE from the vicinity of Wustrow Light.

An area, within which anchoring and fishing are prohibited, lies centered 2.5 miles WNW of Wustrow Light and may best be seen on the chart.

It is reported that the harbor and fairway are closed until further notice.

Wustrow Light

4.20 Kadet Rinne (54°27'N., 12°15'E.), known to the Danes as Kadet Renden, lies about midway between Gedser

Odde (see paragraph 4.6) and the coast extending SW of Darsser Ort. It is the deepest part of the channel leading SW and W into Mecklenburger Bucht. The main fairway is 1 to 3 miles wide and about 18 miles long.

Kadet Bank (54°34'N., 12°22'E.), with a least depth of 11m, lies centered about 7 miles NNW of Darsser Ort, close SE of the recommended track leading through Kadet Rinne.

Directions.—A Traffic Separation Scheme (TSS) is situated in Kadet Rinne and may best be seen on the chart. For more information about this TSS and Route T, see paragraph 4.1.

Caution.—Traffic proceeding E in the southernmost lane of the TSS within Kadet Rinne should be aware that vessels bound for Warnemunde-Rostock (54°11'N., 12°05'E.) may be crossing this lane between Lighted Buoy No. E69 (54°23.5'N., 12°00.0'E.) and Lighted Buoy No. E70, 5.5 miles E.

Several submarine cables lie within Kadet Rinne and may best be seen on the chart.

Several wrecks, with swept depths, lie within Kadet Rinne and may best be seen on the chart.

A seaplane landing area, which may best be seen on the chart, is located in the S part of the port.

German Coast—Darsser Ort to Kap Arkona

4.21 The **Zingst Peninsula** (54°26'N., 12°41'E.), a narrow strip of the mainland, extends E for about 16 miles from Darsser Ort to the prominent village of Pramort. Alternating sand dunes and pine forests back the low-lying shore and several islands lie close E of the E end of the peninsula. A series of interconnected and shallow bays extends W to Fischland along the inland side of the peninsula. The shorebank, with depths of less than 10m, extends up to about 4 miles seaward along this stretch of coast.

A conspicuous church stands at Prerow, 3.2 miles SE of Darsser Ort Light. A prominent chimney is situated at Zingst, 4.3 miles E of Prerow and a conspicuous church stands 0.5 mile W of it.

Plantagenet Grund (54°38'N., 12°48'E.), a group of shoal areas with depths of less than 10m, extends up to 10 miles offshore, N of the Zingst Peninsula. This group is marked on its N side by a lighted buoy moored about 15.5 miles NE of Darsser Ort Light.

EnBW Baltic 2 Offshore Wind Farm (54°59'N., 13°10'E.) lies within the German EEZ (Exclusive Economic Zone) and is surrounded by a safety zone marked by lighted buoys extending 500m around the outer boundary of the wind farm. Entry into the safety zone by unauthorized vessels is prohibited.

BO Platform (54°36.7'N., 12°37.8'E.) marks the NW corner of Baltic 1 Wind Farm. This wind farm is equipped with an Automatic Identification System providing virtual marking of the NE corner (54°38'N., 12°41.7'E.) and the SW corner (54°35'N., 12°37.7'E.) of the wind farm.

A conspicuous tide gauge, 8m high and lighted, stands about 15 miles NNE of Darsser Ort and is marked by lighted buoys.

Der Bock (54°27'N., 13°00'E.), an extensive drying sand bank, extends E for about 5 miles from the E part of the Zingst Peninsula and almost reaches the S end of Hiddensee. Several islands lie on this sand bank and the shore bank, with depths of less than 10m, extends up to about 8 miles N and NW of them.

4.22 **Hiddensee** (54°33'N., 13°07'E.), a narrow island, extends about 9 miles NNE. It lies across the entrance to the passage which leads between the mainland and Rugen. Several villages stand on this island which is generally low and sandy except at Dornbusch, at the N end, where it rises to a height of 72m and is faced with steep cliffs.

Dornbusch Light

Dornbusch Light (54°36'N., 13°07'E.) is shown from a prominent tower, 27m high, standing near the highest point on the N part of Hiddensee.

Gellen Light (54°31'N., 13°05'E.), a sector light, is shown from a prominent tower, 12m high, standing on the W side of Hiddensee, 5.8 miles SSW of Dornbusch Light.

Gellen Light

Gellenstrom (54°27'N., 13°04'E.), a narrow passage leading to Stralsund, lies between the S end of Hiddensee and Der Boek.

Rugen (54°41'N., 13°26'E.) is a large and irregularly-shaped island of which Wittow, its N section, rises from low-lying land at the W side to a height of 45m at Kap Arkona, its N extremity. The W part of Wittow is generally wooded and the E part is barren with steep, chalk cliffs.

Der Bug, a low-lying peninsula, extends SW from Dranske, at the W end of Wittow, and forms the E shore of the passage leading between Hiddensee and Rugen.

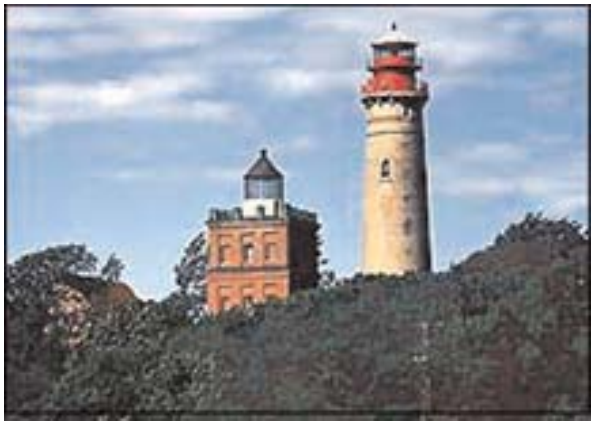
Kap Arkona (54°41'N., 13°26'E.), the N extremity of Rugen, is a conspicuous headland consisting of chalk and barren cliffs, up to 46m high. A light is shown from a prominent

round tower, 35m high, standing on this headland. A disused square light tower is situated close SE of the light.

Foul ground, with several large rocks, extends up to about 0.5 mile E from the E extremity of the headland.

For a description of the waters to the E of Kap Arkona, see Sector 9.

To the S of the Zingst Peninsula and along the W shore of the N part of Rugen lie numerous interconnected, shallow, and irregularly formed bays and coves. Several small harbors and loading places are situated within this area, but local knowledge is required. The buoyed channels leading into and through this area have general depths of less than 3m.



Kap Arkona Light

Tides—Currents.—Within the waters in the vicinity of Rugen, winds from N to E can raise the water level by up to 1.2m and winds from S to W can lower it by the same amount.

Regulations.—Vessels transiting the waters N of Rugen must follow the local designated recommended routes which are shown on the chart.

Caution.—In poor visibility, vessels are cautioned not to mistake the high land in the vicinity of Baken Berg (54°41'N., 13°21'E.) for Kap Arkona.

An area, within which anchoring and fishing are prohibited, extends up to 10 miles seaward of the coast of the Zingst Peninsula and may best be seen on the chart. This area is also used occasionally for military firing practice.

A small explosives dumping area, which may best be seen on the chart, lies close N of Plantagenet Grund, about 12.5 miles WNW of Dornbusch Light.

Nature reserve areas have been established in many places along the coast between Darsser Ort and Dornbusch. Entry into these areas is subject to numerous restrictions.

Several submarine cables lie in the waters to the N of the coast between Warnemunde and Kap Arkona and may best be seen on the chart.

Stralsund (54°19'N., 13°06'E.)

World Port Index No. 28848

4.23 The port of Stralsund is situated on the mainland, 8.5 miles S of the S end of Hiddensee. The port can be approached from the E through Greifswalder Bodden and from the N via channels passing E and W of Hiddensee. Entry through Greifswalder Bodden, the principal approach, is described beginning in paragraph 9.7.

Stralsund Harbormaster Home Page
http://www.seehafen-stralsund.de

Ice.—Ice may appear as early as November in the inner waters and remain until the first day of April. In average winters, the ice season lasts from the middle of December until early March. Winds from the N drive floe ice from the open sea into the entrances of both the N and the E approach channels. Heavy concentrations of ice may hinder shipping and at times close the port. Generally, Stralsund is closed for 27 days annually by ice, but the port has been closed for up to 99 days during very severe winters. Icebreakers maintain a channel from Greifswalder Bodden for as long as possible.

Tide—Currents.—In Gellenstrom, winds from N to E can raise the water level by up to 1m and winds from S to W can lower it by as much as 0.4m. During very severe storms, when flooding occurs, the water level may rise by up to 2m and fall by as much as 1m. The maximum recorded variations are 2.7m above and 1.2m below the mean water level. Both channel are subject to silting.

In the main N approach channel to Stralsund, the current sets S with winds from W through N to ENE and sets N with winds from E through S to WSW. With light breezes, the current may change direction several times during one day. Gales from NE, NW, SW, or SE cause the strongest currents.

Aspect.—Gellen Outer Approach Lighted Buoy is moored about 2 miles W of Dornbusch Light. The approach channel is marked by buoys and indicated by lighted ranges.

Stralsund

A conspicuous radio mast, 56m high, stands on the mainland at Barhoft, about 5 miles SSW of Gellen Light. A prominent watch tower, 53m high, is situated 0.3 mile NNW of this mast near the steeply falling shore. A conspicuous large building stands at the shipyard in the S part of the port.

Depths—Limitations.—The inner passage from N leading E of Hiddensee has a controlling depth of only 2.0m during the day and 1.8m at night. The waterway tends to silt.

The approach channel leading W of Hiddensee and through Gellenstrom has a controlling depth of 3.5m and is 60m wide. It can generally be used by vessels up to 95m in length, 13m beam, and 3.7m draft.

The channels leading from E through Greifswalder Bodden (see paragraph 9.7 through paragraph 9.10) can generally be used by vessels up to 120m in length, 17.5m beam, and 6m draft. However, with permission from the port authorities, larger vessels with drafts up to 6.3m can proceed to Stralsund.

Several breakwaters and the island of Danholm protect the N part of the port area. Rugendamm, a dam, connects Rugen with the mainland at Stralsund. It runs in a NE direction across the NW part of the island of Danholm and carries both a road and a railway.

The N section of the dam, which crosses the fairway channel NE of Danholm, consists of several fixed bridges. It provides two openings for traffic, which have a navigable width of 50m and a vertical clearance of 8m. The S section of the dam, which extends between the port and the island, provides three openings. The E and W openings are 50m wide and are spanned by two fixed bridges with vertical clearances of 6m. The central opening is spanned by two bascule lift bridges, which have a navigable width of 24.5m and a vertical clearance of 6m when closed. One bascule bridge carries the road and the other carries the railway so that both bridges must be raised for vessels to pass.

Two power cables, with a vertical clearance of 42m, span the fairway channel in the vicinity of the port.

The harbor fronts the town and has about 1,830m of total quayage, providing 19 berths, with depths of 6 to 6.6m alongside. A shipyard is situated in the S part of the port and a basin used by fishing vessels lies at the SW side of Danholm. There are facilities for general cargo, bulk, passenger, ferry, and ro-ro vessels. Vessels up to 150m in length, 22m beam, and 6m draft can be accommodated. However, vessels with drafts up to 6.3m can enter only with special permission.

Pilotage.—The pilotage area is, as follows:

1. The N and E approaches to Stralsund.
2. The waters around Rügen and Usedom up to the Polish border.

Pilotage is compulsory for the following vessels:

1. Tankers carrying gas, chemicals, petroleum, or petroleum products.
2. Unloaded tankers, if not cleaned, degassed, or completely inerted after having carried petroleum or petroleum products with a flashpoint below 35°C.
3. Other vessels over 60m in length, over 10m beam, or exceeding 3.3m draft.

Inbound vessels should send ETA to Stralsund Pilot Station at least 6 hours before arrival at Pilot boarding position stating the following information:

1. Vessel's name and call sign.
2. Vessel's beam, loa, and gt.
3. ETA at pilot boarding position.
4. Destination of pilotage required.
5. Actual draft.
6. Speed.
7. Agency.

Outbound vessels should send their ETD to Stralsund Pilot Station at least 4 hours before departure (from Stralsund 3 hours only). For departures between 1900-0700 the request for pilots should be sent before 1700.

Pilots board in the following locations:

1. Stralsund Northern Approach—in the vicinity of Lighted Buoy No. 1 (54°34'N., 13°03'E.).
2. Stralsund Eastern Approach (Sassnitz, Mukran, and Wolgast)—in the vicinity of Landtief B Lighted Buoy (54°17'N., 13°46'E.) or Osttief 2 (02) Lighted Buoy (54°12'N., 13°52'E.).

Pilots will board at the following positions if requested:

1. Sassnitz—in the vicinity of Sassnitz Lighted Buoy (54°33'N., 13°46'E.).
2. Mukran—in the vicinity of Mukran Lighted Buoy (54°26'N., 13°43'E.).

Inbound vessels should send an ETA and a request for pilotage 6 hours prior to their arrival at the pilot boarding position. The message should state the following information:

Designator	Information Required
A	Vessel name and call sign
U	Length (in meters), beam (in decimeters), and gt
F	Speed (knots)
H	ETA at pilot boarding position
O	Draft (in decimeters)
I	Port of destination

The pilots can be contacted, as follows:

1. Call sign: Stralsund Pilot
2. VHF: VHF channels 14 and 16
3. Telephone: 49-3831-280633
4. Facsimile: 49-3831-297033
5. E-mail: station@stralsundpilot.de
6. Web site: http://www.stralsundpilot.de

Vessel Traffic Service.—A Vessel Traffic Service (VTS) operates in the approaches to Rugen and is mandatory for the following:

1. Vessels of 20m in length and over, including composite units.
2. Vessels carrying dangerous goods in bulk (gas, chemicals, petroleum, or petroleum products).
3. Unloaded tankers if not cleaned, degassed, or completely inerted after carrying petroleum or petroleum products with a flashpoint below 35°C.
4. Nuclear-powered vessels.

Vessels entering the VTS Area of Stralsund North must maintain a continuous listening watch on VHF channel 16 or 67.

It is mandatory for vessels to send the following reports:

1. **Sailing Plan** (SP)—An SP must be sent to VTS Center Stralsund Traffic on VHF channel 67, as follows:
   a. Northern Approach—When entering the VTS area from seaward 30 minutes before passing Gellen Lt buoy.
   b. Eastern Approach—When entering the VTS area.
   c. Before leaving a harbor or berth within the VTS area.

The SP must contain the following information:

Designator	Information Required
A	Vessel name and call sign
U	Position
F	Length (meters), beam (decimeters) and type
H	Draft (decimeters)
O	Port of departure
I	Port of destination
P	Indication if liquefied gases, chemicals, or petroleum/petroleum products are/were carried in bulk, and in case: type, quantity, UN number and if tanks are not cleaned or if they are completely inerted
Q	Indication of deficiencies, restriction of maneuverability
T	Names of the vessel's owners or the latter's agents

1. **Position Report** (PR)—A PR must be sent to VTS Center Stralsund Traffic on VHF channel 67, as follows:
   a. When passing the Reporting Points.
   b. After pilot embarkation.
   c. When entering or leaving the fairway.

The PR must contain the following information:

Designator	Information Required
A	Vessel name and call sign
B	Passing time
D	Position
F	Speed

1. **Deviation Report** (DR)—A DR must be sent by vessels changing their Sailing Plan (SP) (e.g. when entering or leaving an anchorage). The DR must be sent to VTS Centre Stralsund Traffic on VHF channel 67.
2. **Incident Report** (IR) (DG/HS/MP)—An IR must be sent by all vessels when an accident impairs safety or environment. The IR must contain details of the incident and in the case of a Dangerous Goods Report (DG), (Harmful Substances Report (HS), or Marine Pollutants Report (MP) all data of the written pre–entry report. The IR must be sent to VTS Center Stralsund Traffic on VHF channel 67.

The **Reporting Points** are, as follows:
1. Northern Approach
   a. Gellen Lighted Buoy (54°36.3'N 13°03.6'E)
   b. Lighted Buoy No. 30 (54°26.2'N 13°02.6'E)
   c. Buoy No. 48 (54°20.3'N 13°06.6'E)
   d. Strelasund Bridge (54°18.5'N 13°06.7'E)
2. Eastern Approach
   a. Lighted Buoy No. 17 (54°14'.0N 13°19.7'E)
   b. Lighted Buoy No. 34 (54°17.3'N 13°07.8'E)
   c. Strelasund Bridge (54°18.5'N 13°06.7'E)

Tankers carrying gas, chemicals, petroleum, or petroleum products and intending to enter the VTS area must ensure the following conditions are in effect:
1. All tankers:
   a. Visibility must be greater than 1,000m.
   b. The vessel's radar and VHF radio are in an operational state
2. Tankers up to 2,000 dwt—Visibility is greater than 500m.

The VTS provides regulatory measures to prevent accidents and/or threat to the environment, and to control traffic flow. Such information will be promulgated by instructions to vessels. The broadcast includes the following:
1. Information relevant to the safe passage through the VTS area.
2. General fairway and traffic situation (e.g. weather conditions, casualties, dredging operations, and pilot information).

The VTS provides regulatory measures to prevent accidents and/or threat to the environment, and to control traffic flow. Such information will be promulgated by instructions to vessels.

The VTS provides a Maritime Assistance Service, as follows:
1. In the event of an incident involving a vessel, the VTS will receive the reports, consultations and notifications.
2. If a report discloses an incident that may give rise to a situation where the vessel is in need of assistance, the VTS will monitor the vessel's situation.

The VTS will serve as the point of contact:
1. Between the Master and the coastal state if the vessel's situation requires exchanges of information between the vessel and the coastal state other than a distress situation that could lead to a search and rescue operation.
2. Between those involved in a marine salvage operation undertaken by private facilities at the request of the company and the coastal state if the coastal state considers that it should monitor the conduct of the operation.

Ostteif Channel (54°12'N., 13°52'E.), leading into the S part of Greifswalder Bodden, lies outside the Stralsund East VTS area and within Wolgast VTS area (see paragraph 9.7).

Speed is limited to a maximum of 10 knots in the approach channel and 4 knots in the vicinity of the harbor. The maximum size of vessels allowed to enter is reduced during darkness and in periods of poor visibility.

Vessels departing the port have the right of way in the fairway over vessels entering.

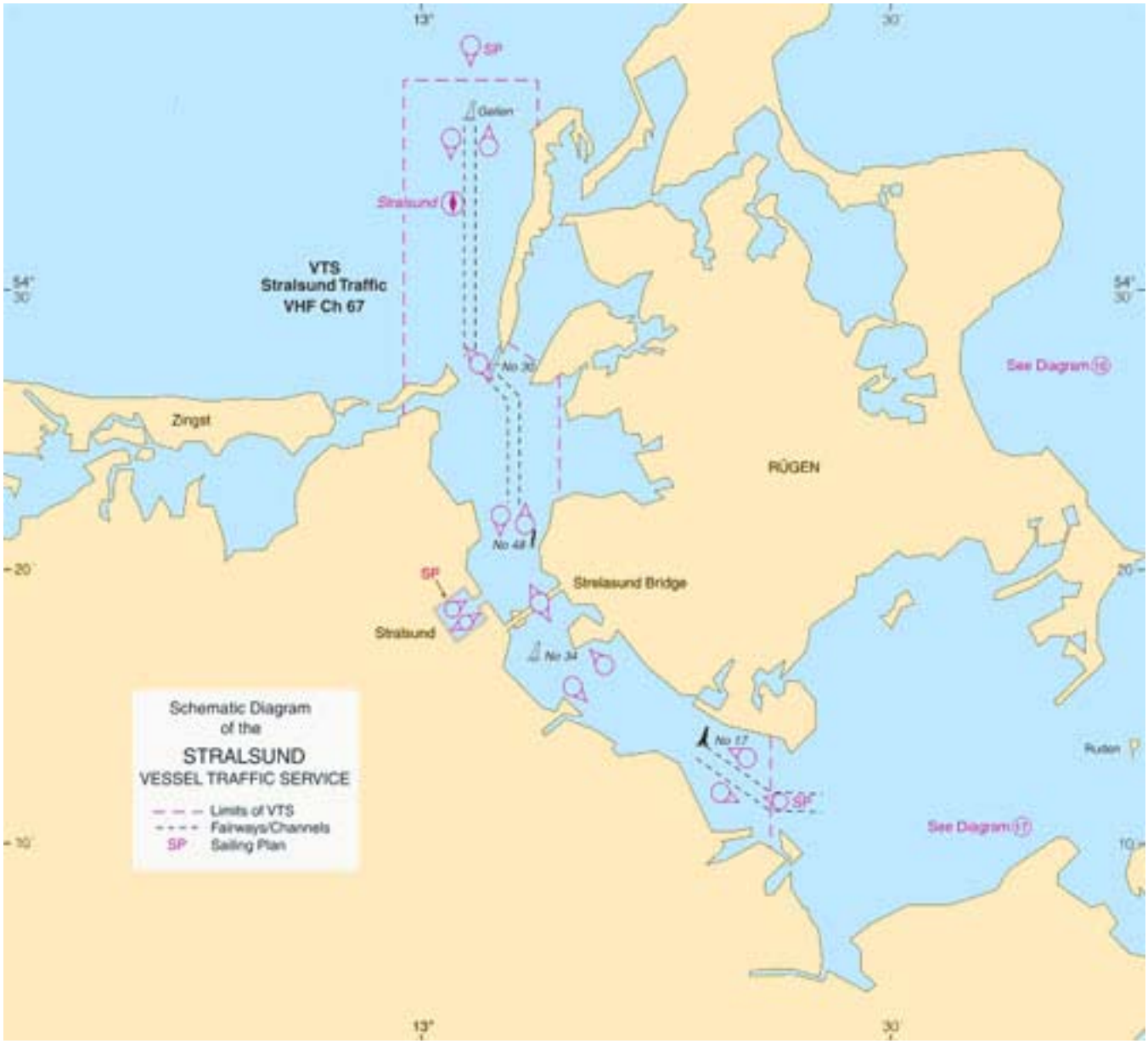
Contact Information.—The VTS can be contacted as follows:
1. Call sign: Stralsund Traffic
2. VHF: VHF channels 16 and 67
3. Telephone: 49-381-2067-1843
4. Facsimile: 49-381-2067-1846
5. E-mail: na-stralsund.wsa-stralsund@wsv.bund.de

The harbormaster can be contacted as follows:.
1. Call sign: Stralsund Port

2. VHF: VHF channels 11
3. Telephone: 49-3831-260130
4. Facsimile: 49-3831-260135

The port operators can be contacted as follows:

1. Telphone: 49-3831-25420
   49-3831-254215
2. Facsimile: 49-3831-254297
   49-3831-254298
3. E-mail: shl@seehafen-stralsund.de
4. Web site: http://www.seehafen-stralsund.de



Stralsund VTS

Directions.—Vessels from the N must follow the designated recommended route, which is indicated on the chart. This route leads SE toward Gellen Outer Approach Lighted Buoy, which is moored about 2 miles W of Dornbusch Light. The track then leads S for 4 miles, in the white sector of Gellen Light, to the seaward entrance of the approach channel.

The channel leads SSW and SSE along the W side of Hiddensee and through Gellenstrom. The entrance fairway then continues SE and S for about 8 miles to the port.

Caution.—Numerous fishing boats, nets, and traps may be encountered in the waters off Rugen.

The channels leading to Stralsund are subject to silting and the authorities should be contacted for the latest information concerning dredged depths and maximum allowable drafts.

Danish Coast—Gedser Odde to Mon Light

4.24 Gedser Odde (54°34'N., 11°58'E.) has been previously described in paragraph 4.6. This point, the S extremity of

Falster, is fronted by low cliffs. A dike protects the low-lying E coast of Falster which extends N from Gedser Odde for about 10 miles. A high bank, 2 miles long and formed of clay, extends N from the end of the dike and then the coast becomes wooded, with steep bluffs, as far as Hestehoved. A prominent church stands at Gedesby, 2.5 miles NNW Gedser Odde.

The shore bank along this stretch, with a depth of less than 10m, extends up to about 4 miles seaward in places.

Hestehoved (54°50'N., 12°10'E.), a headland, is the E extremity of Falster and also the SE entrance point of Gronsund. It is marked by a light (see paragraph 2.60).

Hesnaes, a small harbor, lies 1.2 miles SW of the headland and is used by fishing vessels. It is protected by breakwaters which form an entrance, 25m wide. The harbor basin has a controlling depth of 3.1m, but is subject to silting. A conspicuous chimney stands in the vicinity of this harbor.

Gronsund (54°50'N., 12°10'E.), a passage leading to Smalandsfarvandet, is entered between Hestehoved and Madses Klint, 3 miles NNE. The entrance is encumbered by Tolken, a steep-to and shallow shoal area formed of shifting sands, which extends up to 3 miles offshore.

4.25 **Madses Klint** (54°53'N., 12°12'E.), the NE entrance point of Gronsund, is formed by a small, yellow cliff, 22m high. Hjelm Klint, located 4 miles NE of Madses Klint, is a prominent white cliff and Hjelm Mill, a conspicuous landmark, stands 1mile SW of it.

Hjelm Bugt, a bight, indents the S coast of Mon between Madses Klint and Mon Light, about 12 miles ENE. With offshore winds, vessels can anchor as convenient within this bight, over mainly sandy bottom.

Mon Light (54°57'N., 12°33'E.) is described in paragraph. 1.36. Bjelkes Flak, a rocky shoal with depths of less than 7m, extends up to about 1.8 miles S of Mon Light.

A group of remarkable white chalk cliffs stand along the E end of Mon and are conspicuous from a considerable distance to seaward.

Klintholm, a small harbor, lies 2.5 miles W of Mon Light and is used by fishing vessels and pleasure craft. The entrance is 30m wide and has a controlling depth of 3m. A prominent church stands at Magleby, 2 miles NNE of this harbor.

Caution.—The depths within the waters lying between Gedser Odde and Mon Light are rather irregular. Seaward of the 10m curve, the depths increase to 26m, but general depths are less than 18m.

Survey equipment, marked by buoys, is frequently moored off the coast between Gedser Odde and Mon Light, especially within Hjelm Bugt.

Swedish Coast—Falsterbo Udde Light to Torhamnsudde

4.26 The **Skanor Peninsula** (Falsterboudde) (55°23'N., 12°49'E.) forms the low SW extremity of Sweden. The coast extending 18 miles ESE from this point to Smygehuk, the S extremity of Sweden, is mostly low and fronted by sandy beaches. The shore is partly wooded and partly bare.

Falsterbo Udde Light (55°23'N., 12°49'E.), marking the SE end of The Sound, stands near the SW extremity of the Skanor Peninsula and is fully described in paragraph 1.24.

Falsterborev (55°20'N., 12°50'E.) extends up to about 6 miles SW and 5 miles S of the SW end of the Skanor Peninsula and may best be seen on the chart. This extensive reef is formed of sand and gravel. It has depths of less than 2m and is marked by buoys. Maklappen, a low and sandy islet, lies on the reef, 1.3 miles S of Falsterbo Udde Light.

Falsterborev Light (55°19'N., 12°38'E.), equipped with a racon, is shown from a prominent floodlit tower, 30m high with a helicopter platform, standing 7 miles SW of Falsterbo Udde Light (see paragraph 1.24).

Falsterborev Light

Blenheim Lighted Buoy (55°16'N., 12°53'E.), equipped with a racon, is moored about 6.7 miles SSE of Falsterbo Udde Light. It marks the S end of Blenheimgrund, which has a least depth of 7.4m and is the southernmost shoal lying in this vicinity. Several dangerous wrecks lie on this shoal.

A dangerous wreck lies about 3.2 miles SW of Blenheim Lighted Buoy and is marked by two lighted buoys. The northernmost lighted buoy is equipped with a racon.

Kriegers Flak (55°02'N., 13°02'E.), an off-lying bank, lies centered 20 miles SE of Falsterborev Light. It is formed of sand and stones and has a least depth of 15m. Several wrecks, with depths of 11.7m to 17.5m, lie in the vicinity of this bank and may best be seen on the chart.

Skare (55°22'N., 13°03'E.), a small harbor, is situated on the mainland 8 miles E of Falsterbo Udde Light. It is used by fishing vessels and pleasure craft. The entrance is 14m wide and has a controlling depth of 2m.

A church, with a prominent steeple, stands at Maglarp, 1.2 miles NE of Skare. A prominent radio mast, 136m high, is situated 0.7 mile W of this church.

A prominent monument stands on Stavstensudde, a point located about 1 mile SE of Skare. A shoal, with depths of less than 5m, extends up to about 1.5 miles SSE of this point and is marked by buoys.

Caution.—It is reported that an extensive wind generating farm, with 128 turbines and several platforms, is being constructed in the vicinity of Kriegers Flak (55°02'N., 13°02'E.).

4.27 Trelleborg Light (55°21.4'N., 13°09'E.), equipped with a racon, is shown from a prominent floodlit tower, 15m high, standing 0.6 mile offshore, about 3.5 miles ESE of Skare.

Trelleborg Light

For details of the waters lying W of Falsterbo Udde Light and The Sound, see paragraph 1.24.

Directions.—An IMO-adopted Traffic Separation Scheme (TSS) is situated in the vicinity of Falsterborev Light, in the S entrance to The Sound, and may best be seen on the chart.

A circular traffic route is centered on the light and traffic lanes extend N, S, and ESE from its vicinity. An inshore traffic zone is located E and N of the main traffic lanes.

Lighted Buoy M41 is moored about 5 miles WNW of Falsterbo Udde Light and marks the N end of the TSS. Lighted Buoy M42 and Lighted Buoy M43 are moored about 2 miles and 8 miles, respectively, ESE of Falsterborev Light and mark the easternmost traffic separation zone.

The main route into the Baltic Sea follows the ESE traffic lane and passes S of the entrance to Trelleborg (55°22'N., 13°09'E.). The main route leading toward Kadet Rinne follows the S traffic lane and passes E of Mon Light. The main route leading to the S entrances of the Drogden and Flintrannan channels follows the N traffic lane.

Caution.—Numerous wrecks, which may best be seen on the chart, lie in the S approaches to The Sound and in the vicinity of the TSS.

Several submarine cables lie in the S approaches to The Sound and three submarine cables extend S from the mainland in the vicinity of Skare. These cables may best be seen on the chart.

A large danger area, the limits of which are shown on the chart, lies across the S approaches to The Sound. It extends 24 miles SW from a position located 5 miles SE of Falsterbo Udde Light. Anchoring, fishing, and seabed activities are prohibited within this area due to the residual danger of bottom mines.

A danger area, which may best be seen on the chart, lies centered 13 miles SE of Blenheim Lighted Buoy. Anchoring, fishing, and sea bed activities are prohibited within this area due to the residual danger of bottom mines.

During heavy winter gales, the sea level off the S coast of Sweden may vary by as much as 0.9m.

A restricted natural preservation area, which may best be seen on the chart, lies in the vicinity of Maklappen. The islet is a bird sanctuary and entry into the area is prohibited without permission.

4.28 Falsterbo Kanal (55°24'N., 12°57'E.) has been cut across Falsterbonaset, the inner part of the Skanor Peninsula. This canal extends about 1 mile NW from Kampingebukten, in the W part of the Baltic Sea, to Hollviken, in The Sound. It shortens the passage between Flintrannan and the Baltic Sea by 16 miles.

Kampingebukten Lighted Buoy is moored about 3 miles SE of the S entrance. A dredged approach channel, 100m wide, leads NW from the vicinity of this buoy to the canal entrance, which is protected by two breakwaters. The fairway is indicated by a lighted range and has a least depth of 7m.

The canal is 40m wide and 5.6m deep. It can be used by vessels up to 15,000 dwt, 20m beam, and 4m draft.

The canal can be navigated both by day and at night, except when the difference in the water level between Hollviken and Kampingebukten exceeds 1m. A lock, 0.5 mile long, has been constructed in the canal and maintains an equal water level whereby vessels can normally transit the canal at any time without interruption.

The Hollviksbron Bridge, a road and rail bascule bridge, spans the canal near the N entrance and has a navigable width of 25m. The bascule has a vertical clearance of 3.9m when closed. Usually, rail traffic across the bridge has priority over marine traffic through the canal.

The lock gates and bascule bridge are remotely operated from the canal center in Trollhattan. Traffic signals and warning signs for the lock are displayed at the N and S gates. The signal for Hollviksbron on the S approach is located next to the bridge. A red isophase light is displayed until the lock gates are fully opened. The lock gates are also marked by red buoys, illuminated at night, when closed.

A dredged channel, with a least depth of 5.6m, leads SE into the N entrance. For details of the N approach to the canal, see paragraph 1.25.

Pilotage.—Pilotage is available and recommended for vessels without local knowledge. Pilots are provided by the main pilot station at Malmo (see paragraph 1.19). They can be contacted by VHF and board off Malmo or Trelleborg. Vessels must communicate with the canal control tower at Hollviksbron on VHF channels 16 and 73, and maintain a continuous listening watch. Information concerning water levels and traffic in the canal is available on VHF from the control center. Requests for bridge opening can be made through the center.

The conventional direction of buoyage in the approach channel leading to the S entrance of the canal is N to S.

Special regulations are in force within the approaches to the canal and should be obtained from the local authorities prior to transit.

For further information, see paragraph 1.1.

Regulations.—It is reported that passage through the canal is permissible, as follows:

a. 15 April to 30 September—Every hour from 0600 to 2200 except 0800 and 1700.

b. 1 October to 14 April—At 0630 and 1830.

c. 24 to 26 December and 1 January—Canal closed.

Trelleborg (55°22'N., 13°09'E.)

World Port Index No. 24250

4.29 The port of Trelleborg, a ferry terminal, is situated about 11.5 miles E of Falsterbo Udde Light.

Winds—Weather.—Although the harbor is unprotected from S and SW winds, there is no sea or suction felt because of the shallow water lying in the approaches. A comparatively smooth sea prevails during onshore winds, but NW and SW gales sometimes cause an extensive lowering of the water level.

Ice.—Inclement weather or ice seldom hinders traffic proceeding in or out of the harbor.

Depths—Limitations.—The shore bank, with depths of less than 5m, extends up to about 1.6 miles seaward in the vicinity of the port. The port is approached from the SSW through a channel dredged to a depth of 9.4m, shallowing to 9m inside the outer breakwaters and then to 8m in the inner harbor. The authorized is draft 8m.

The harbor is entered between two breakwaters, which form an entrance, 130m wide. It is divided into three main basins.

The Nyhamnen Basin provides a quay about 455m long, with depths of 7.5 to 8m alongside. Ro-ro berths are located at the outer and inner ends of the NE side of the basin. On the SW side are an oil berth, about 220m long, and a ro-ro berth; both have a depth alongside of about 8.9m on the S side. A quay located on the S side of the inner part of this basin has a depth of about 5m; this basin is used by local fishing vessels.

Centralhamnen, in the N part of the port, is divided into two basins by Hamnbron, a short pier. A quay, 275m long, is located at the W side of Centralhamnen and has a depth of 8m alongside. Ferry berths, with depths of 8m alongside, are situated in the outer part of the E section of Centralhamnen and at both sides of the pier. There are also seven ro-ro berths in the port with depths of 6.5 to 8m alongside. Generally, vessels up to 15,000 dwt and 7.6m draft can be accommodated.

Aspect.—Trelleborg Redd Lighted Buoy marks the outer entrance of the approach channel and is moored about 1.5 miles SSW of Trelleborg Light. The approach fairway is marked by buoys and indicated, along its edges, by lighted ranges.

A church, with a prominent stepped gabled, a green silo, and a group of cistern tanks are situated on the W side of the harbor. A group of prominent chimneys, one of which is 65m high, and a gray silo are situated on the E side of the harbor. A prominent water tower stands in the town and a radar mast, 42m high, is situated close W of it. Another prominent water tower is situated about 1 mile NNE of the town.

A conspicuous radio mast, 130m high, stands 2 miles NE of the harbor entrance.

Pilotage.—All ordering of pilots in the Oresund Maritime Area must be made through Malmo VTS (see paragraph 1.19). Vessels should send a request for pilotage and an ETA at least 5 hours in advance. Requests for deep-sea pilots for The Sound should be sent at least 24 hours in advance.

The pilot station at Trelleborg provides local pilots and coastal pilots for The Sound, Store Baelt, Kiel-Holtenau, and other ports in the Baltic Sea. Harbor pilots can be contacted on VHF channel 20 and usually board in the vicinity of Trelleborg Redd Lighted Buoy (55°19.6'N., 13°08.6'E.).

It should be noted that extensive changes to pilotage procedures within Swedish waters have taken place. Formerly, all initial ordering of pilots was carried out through the main VTS systems. However, procedures for the initial ordering of pilots via the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration internet web site are being introduced. For additional information, see paragraph 1.1.

Vessel Traffic Service.—A Vessel Traffic Service (VTS) has been established in the port; the procedures apply to all arriving or departing merchant vessels.

Inbound vessels should give a first announcement 5 minutes before arriving at Trelleborg Fairway entrance, over the VHF channel 74. Such vessels should also give a second announcement upon arrival at the Fairway entrance.

Outbound vessels should announce their intention to depart on VHF channel 74. After announcing their departure, outbound vessels shall await the passage of any inbound traffic before proceeding unless another agreement has been made.

The VTS center will assist any outbound vessels with limited radar information concerning the movements of other vessels in the harbor.

All fishing vessels and other small craft intending to enter the port should announce their arrival on VHF channel 74, twenty minutes before passing the outer breakwater heads. Their departure should also be announced.

The VTS center can also be contacted by telephone. Any communications with the center should preferably be spoken in English.

Trelleborg VTS can be contacted by e-mail, as follows:

tic@port.trelleborg.se

Signals.—Fixed green and yellow lights are shown from the E inner pier head when ferries are entering or departing.

Anchorage.—With offshore winds, anchorage can be taken, in depths of 7 to 12m, clay mixed with sand and stones, to the W of the track leading between Trelleborg Redd Lighted Buoy and Lighted Buoy No. 1, marking the seaward entrance of the dredged channel.

Directions.—Vessels from SW should proceed ENE for 5 miles, using the white sector of Trelleborg Light, to the vicinity of Trelleborg Redd Lighted Buoy. Vessels from SE should proceed WNW for 7 miles, using the white sector of Trelleborg Light, to the vicinity of Trelleborg Redd Lighted Buoy. Vessels should then steer NNE for 1.5 miles to the seaward entrance of the dredged approach channel, which is situated close W of Trelleborg Light.

Caution.—Due to numerous dangers lying in the approaches, including a detached breakwater, vessels without local knowledge are advised not to deviate from the designated dredged fairway.

4.30 **Smygehuk** (55°20'N., 13°21'E.), the S extremity of Sweden, is located 7 miles ESE of Trelleborg. The coast between is low and partly wooded. A light is shown from a prominent tower, 17m high, standing on this point.

Gislov, a small harbor, lies 2.7 miles ESE of Trelleborg and is used by fishing vessels and pleasure craft. The entrance faces SSW and has a controlling depth of 2.8m. A conspicuous church, with a steep gable, is situated at Dalkopinge, 0.8 mile

WSW of this harbor.

Smygehamn, a small harbor, lies close E of Smygehuk and is used by fishing vessels and pleasure craft. The entrance faces S and has a controlling depth of 2m.

It is reported that a prominent radio mast, 147m high, stands about 4 miles inland, 5 miles NE of Trelleborg.

Romeleasen (Romeleklint), a hill, stands 18 miles NE of Trelleborg. It is 186m high and is reported to be very conspicuous, especially from the S. The hill has two mounds, the E one being the higher, and joins a lower range of hills which are blue in appearance.

Kullagrund Light (55°18'N., 13°20'E.), equipped with a racon, is shown from a prominent floodlit tower, 20m high, standing 2.5 miles SSW of Smygehuk.

Kullagrund Light

Kullagrunden, a group of shoals with depths of less than 4m, extends up to about 2 miles from the coast, NW of Kullagrund Light, and is marked by a buoy.

The coast trends 29 miles E from Smygehuk to Sandhammaren and recedes to form a bight with the port of Ystad situated at its head. A conspicuous warehouse and a prominent church stand near Ostra Klagstorp, 3.5 miles NNE of Smygehuk.

Abbekas (55°23'N., 13°36'E.), a small and shallow fishing harbor, is situated 8.5 miles ENE of Smygehuk. The town standing behind the harbor is relatively large and can easily be identified as the coast is low. A prominent castle, with two towers, stands 5.5 miles NE of the town. A conspicuous church is situated at Balkakra, 0.5 mile S of this castle.

Caution.—The water level along this part of the coast is unusual in that it falls rapidly with an onshore wind and rises rapidly with an offshore wind. Storms from the NW are reported to cause strong onshore currents.

Extensive drift net fishing is conducted off this part of the coast between Trelleborg and Sandhammaren. Vessels should exercise caution in order to prevent net damage.

Eel bottom nets, which may be either secured to piles on the sea bed or moored to floats, may be laid up to 1.5 miles offshore from May to December. Vessels are advised not to approach within 1.5 miles of this stretch of coast without local knowledge.

A danger area, the limits of which are shown on the chart, lies centered 22 miles S of Smygehuk. Anchoring, fishing, and sea bed activities are prohibited within this area due to the residual danger of bottom mines.

Ystad (55°26'N., 13°50'E.)

World Port Index No. 24260

4.31 The commercial port of Ystad lies at the head of a broad open bight; steep bluffs are located in its vicinity.

Winds—Weather.—Although the harbor is sheltered, S and SW gales sometimes raise a heavy sea outside the entrance. The greatest difference between the mean and low water levels is 1m, with the normal level varying up to 0.6m.

Ice.—During a normal winter, ice offers no impediment to navigation in the harbor. If necessary, an icebreaker will render assistance.

Depths—Limitations.—A reef, with a least depth of 5.5m, fronts the shore at the W side of the harbor. Foul ground, with depths of less than 5m, extends up to about 1.2 miles S and 1 mile SW of Revnabben, a point located 0.5 mile ESE of the harbor entrance. Klostergrund, a rocky shoal, lies about 1.5 miles S of Revnabben and has a least depth of 6m.

Vessels should steer NE toward the outer approach lighted buoy and then enter the main approach channel. This channel leads in a NE direction through the off-lying dangers and has a controlling depth of 7.2m. The harbor is protected by two inner breakwaters, which form an entrance 150m wide, and two detached breakwaters, located 0.4 mile seaward. A basin for pleasure craft and fishing boats is situated at the W side of the harbor.

The main harbor basin provides 1,100m of total quayage with depths of 5 to 7.2m alongside. There are facilities for general cargo, passenger, bulk, ro-ro, and ferry vessels. Vessels of up to 150m in length, 20m beam, and 6.8m draft can be accommodated.

Aspect.—An outer approach lighted buoy is moored about 1.5 miles SW of the harbor entrance. The main entrance fairway leads in a 035.3° direction and is indicated by a lighted range which leads between the inner and outer breakwaters into the harbor. The seaward edges of the shoal areas lying in the approaches are marked by buoys.

A large green silo stands on the W mole and is prominent. A church, a water tower, and several silos stand in the town and are prominent. A tall and conspicuous chimney stands at a sugar mill, 4.5 miles ENE of the harbor.

Pilotage.—All ordering of pilots in the Oresund Maritime Area must be made through Malmo VTS (see paragraph 1.19). Vessels should send a request for pilotage and an ETA at least 5 hours in advance. Local pilots can be contacted on VHF channel 20 and generally board in the vicinity of the outer approach lighted buoy.

For further information, see paragraph 1.1.

It should be noted that extensive changes to pilotage procedures within Swedish waters are being carried out. Formerly, all initial ordering of pilots was carried out through the main VTS systems. However, procedures for the initial ordering of pilots via the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration internet web site are being introduced.

Regulations.—Inbound vessels should send an ETA to the

port authority 24 hours in advance stating their name, length, draft, and if tugs are required or not.

Inbound vessels should maintain a continuous listening watch on VHF channel 16 in order to receive information in regard to ferry traffic.

Contact Information.—The port can be contacted by e-mail (ort@ystad.se).

Anchorage.—Anchorage can be taken within Spanska Redden, an area lying 1.5 miles SSW of the harbor entrance. This roadstead has depths of 14 to 16m and consists of sand, clay, and stones. It has good holding ground, but is exposed to S gales.

Caution.—Submarine cables, which may best be seen on the chart, extend SW and SE from a point on the shore close W of Ystad.

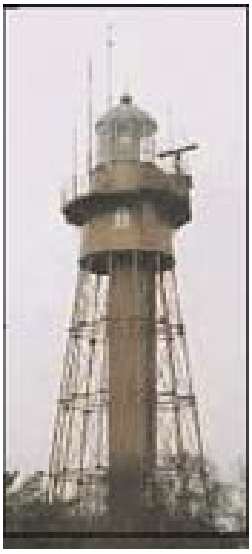
4.32 Kasehuvud (55°23'N., 14°03'E.), a high and bare flat-topped headland, slopes steeply seaward and dominates the landscape 8 miles ESE of Ystad. The coast between this headland and Sandhammaren, 5 miles ESE, is unindented. The shore is fringed by a sandy bank and fronted by several shoals.

A conspicuous tall chimney stands 4.5 miles ENE of Ystad.

Anchorage can be taken in depths of 9 to 16m, good holding ground with sand and clay, between Ystad and Kasehuvud. Vessels are advised to anchor closer to the headland than the town. The headland and adjoining hills protect this roadstead from NE winds.

Kaseberga, small and shallow fishing boat harbor, is situated close E of Kasehuvud and is formed by two breakwaters.

Sandhammaren (55°23'N., 14°12'E.), a low and sandy point, is the SE extremity of Sweden. A light is shown from a prominent tower, 29m high, standing on the point; a conspicuous radio mast is situated 0.8 mile NNW of it.



Sandhammaren Light

Svartgrund (55°14'N., 14°15'E.), a detached bank, lies about 9 miles S of Sandhammaren. It has a least depth of 14m and is marked by a lighted buoy. During gales, seas are reported to break heavily on this bank. An isolated shoal patch, with a depth of 10.2m, lies about 4 miles WNW of the bank.

Caution.—The water level in the vicinity of Sandhammaren falls rapidly with an onshore wind and rises rapidly with an offshore wind.

Stormy weather, especially from the NE, may cause variable depths within the 20m curve. Storms from the SW usually cause strong onshore currents. Large vessels are advised to stay at least 7 miles offshore when passing Sandhammaren.

Several wrecks, some dangerous, lie in the waters to the S of Kasehuvud and Sandhammaren and are best seen on the chart.

It is reported that a large (lighted) ODAS buoy is moored about 31 miles SSW of Sandhammaren Light.

4.33 The coast turns abruptly NNE from Sandhammaren and increases in height. The land is more wooded and several churches, standing along the shore, are visible from seaward. A prominent church, with a tower, is situated inland at Borrby, 4.5 miles N of Sandhammaren.

Ornhokaknosen (55°26'N., 14°16'E.) lies about 1.2 miles offshore, 3.5 miles NE of Sandhammaren Light. This shoal has a least depth of 10.2m and choppy seas break over it.

Skillinge (55°28'N., 14°17'E.), a small harbor, lies 6 miles NNE of Sandhammaren. It is used by fishing boats and small craft. The entrance channel leads WNW and has a controlling depth of 4.5m. It is marked at the seaward end by a lighted buoy and indicated by a lighted range.

A prominent windmill is situated on the N side of the town, 0.2 mile NW of the harbor. A conspicuous radio mast and a prominent church stand 1.7 miles NW and 1.8 miles W, respectively, of the harbor.

Anchorage can be taken, in depths of 12 to 15m, sand and clay, good holding ground, about 1 mile off Skillinge. Vessels can also anchor, in a depth of 25m, about 2 miles off Skillinge. This roadstead has good holding ground during W gales.

Brantevik, a small harbor, lies 3.5 miles NE of Skillinge and is used by fishing boats. It is protected by two breakwaters and has a controlling depth of 3m. It can easily be recognized by a windmill and a church, both conspicuous, standing in the town.

A prominent church, with a spire, is situated at Ostra Nobbelov, 1.5 miles W of Brantevik.

Langagrund (55°32'N., 14°29'E.), a detached shoal, lies about 4.5 miles offshore, 8 miles NE of Skillinge. It has a least depth of 5m and is marked by a lighted buoy.

Caution.—Submarine power cables, which may best be seen on the chart, extend SE from a point on the shore about 3 miles SSW of Skillinge.

4.34 Simrishamn (55°33'N., 14°22'E.) (World Port Index No. 24280), a small commercial harbor, is situated 2.5 miles N of Brantevik and is protected by two breakwaters. It is a major fishing center and also has facilities for pleasure craft.

Winds—Weather.—The harbor is exposed to strong E winds which sometimes cause a heavy swell to set into the outer part. Entry should not be attempted during such times. During W gales, the water level usually falls by as much as 1.1m below mean sea level.

Ice.—The harbor is usually ice free, but it may form off the entrance in January and February during severe winters. An icebreaker is available.

Tides—Curr7ents.—Winds of gale force cause the usually weak currents outside the harbor to attain rates of up to 2 knots.

Gales from the E and SE cause a current to set into the harbor entrance.

Depths—Limitations.—An approach channel leads WSW through the off-lying dangers to the harbor. Nedjan, a shoal patch, lies about 1.2 miles ENE of the light standing close S of the harbor entrance. It has a least depth of 2.7m and is marked at the E side by a lighted buoy. The fairway, which has a least depth of 6m, passes SSE of Nedjan. The entrance, between the two outer breakwaters, is 50m wide. The outer basin has a single berth, 100m long, with a depth of 5m alongside. The inner basin has 400m of total quayage with depths of 5 to 5.5m alongside. The fishing basin provides 470m of total quayage with a depth of 5m alongside. Small vessels with drafts up to 4.2m can be accommodated.

Aspect.—The approach channel is marked by buoys and indicated by a lighted range. A light is shown from a tower, 15m high, standing close S of the harbor entrance.

A prominent church, with a low tower, is situated in the town. A conspicuous windmill, with sails, and a conspicuous chimney stand 0.7 mile WSW and 0.5 mile SW, respectively, of the S outer breakwater head. A prominent radio mast is situated 2.3 miles NW of the harbor.

Pilotage.—Pilots are provided by the station at Ahus. However, all ordering of pilots and traffic information is carried out by Malmo VTS (see paragraph 1.19). For details of compulsory pilotage in this area, see Karlshamn in paragraph 4.42. Vessels must send an ETA and request for pilotage 5 hours prior to arrival. Pilots can be contacted on VHF channel 13 and generally board off the seaward entrance to the approach channel. For additional information concerning the initial ordering of pilots, see paragraph 1.1 and paragraph 4.1.

Anchorage.—Anchorage can be taken, in depths of 12 to 15m, sand and clay, good holding ground, N of the harbor. Anchorage is also available, in a depth of 25m, sand and clay, SE of the harbor.

Caution.—When strong E winds prevail, it is dangerous for vessels to attempt entry.

An outfall pipeline extends seaward from a point on the shore located 1.5 miles S of the harbor. The landing place is marked by lighted beacons.

4.35 Baskemolla (55°36'N., 14°19'E.), a small fishing harbor, lies 2.5 miles NNW of Simrishamn. It is formed by a breakwater and a jetty. The entrance, which faces N, is 15m wide and has a controlling depth of 2.5m.

Vik, a small and shallow fishing boat harbor, lies 1.5 miles NNW of Baskemolla.

Stenshuvud (55°40'N., 14°17'E.), a conspicuous sloping promontory, is located 7 miles NNW of Simrishamn. It is 96m high and wooded. Inland, the rising terrain is interspersed by wooded hills. A light is shown from a prominent tower, 9m high, standing on this promontory.

A prominent church, with a windmill standing close N of it, is situated on high ground, 2 miles W of the light. A prominent radio mast, 110m high, stands at an elevation of 285m about 4 miles W of the light.

It is reported that a conspicuous aeronautical light is situated about 11 miles WNW of Stenshuved Light.

Hanobukten (55°58'N., 14°35'E.), an extensive bay, lies between Stenshuvud and Listershuvud, a salient point located about 28 miles NE. It is open to E winds, which can raise a considerable sea, and contains the ports of Ahus and Solvesborg.

Kivik, a small harbor, lies 2.3 miles NW of Stenshuvud and is used by fishing boats and pleasure craft, with drafts up to 1.4m. It is formed by two moles and has a controlling depth of 3m. Anchorage can be taken, with offshore winds, in a depth of 15m, sand and clay, about 1 mile E of this harbor.

Vitemolla, a small fishing harbor, lies 1 mile NW of Kivik and is formed by two breakwaters. It has a controlling depth of 2.4m, but is subject to silting.

Yngsjo, a small fishing harbor, lies about 0.5 mile inside a river mouth, 10 miles N of Kivik. It has a controlling depth of 3m, but the river entrance is subject to silting.

Ahus is located about 16 mile N of Stenshuved, at the W side of Hanobukten. Solvesborg is located in the NW part of the bay, about 11 miles NE of Ahus. The shorebank, with depths of less than 10m, extends up to about 7 miles seaward between these two ports.

Tosteberga, a small fishing harbor, lies 6 miles N of Ahus and is protected by two breakwaters. The entrance is 13m wide and has a controlling depth of 2.3m.

4.36 Lagerholmen Light (55°58'N., 14°28'E.) is shown from a prominent tower, 17m high, standing on a rocky islet of the same name, about 5 miles NE of Ahus.

Lagerholmen Light

A detached shoal patch, with a least depth of 7.3m, lies almost in the center of Hanobukten, about 9 miles S of the light.

Fjalkinge Backe (56°03.4'N., 14°17.4'E.) consists of two conspicuous barren hills rising about 7.5 miles N of Ahus, which are connected by a low and flat area. The highest hill has an elevation of 101m and the other an elevation of 66m. A tower surmounting the highest peak is reported to be radar conspicuous.

Sillnasudde Light (56°00'N., 14°37'E.) is shown from a prominent tower, 11m high, standing on an islet lying close off a headland, 5.3 miles NE of Lagerholmen Light.

Taggen Lighted Buoy (55°54'N., 14°35'E.), marking the outer shoals in the approaches to Ahus and Solvesborg, is moored about 5.5 miles SE of Lagerholmen Light.

Vastra Torsviken and Ostra Torsoviken are two bights which indent the coast between Sillnasudde Light and Bjorknabben, a

Sillnasudde Light

point located 2 miles E. Halleviksviken, another bight, indents the coast between Bjorknabben and Kraknabben, 1.5 miles E. The terrain at the heads of these bights is wooded and backed by prominent hills which rise about 1 mile inland.

Torso, a small and shallow fishing harbor, lies at the head of Ostra Torsoviken and is formed by two breakwaters.

Hallevik, a small fishing harbor, lies at the head of Halleviksviken. It has a controlling depth of 3m and is protected by two moles and a detached breakwater.

From Kraknabben, the coast trends 3.5 miles NE to Listershuvud and is high and steep.

Nogersund (56°00'N., 14°44'E.), a small harbor, is situated 1 mile NE of Kraknabben. It is used by fishing vessels and small craft. This harbor, which provides 500m of berthage, is formed by two breakwaters and has depths of 2 to 4m. A short dredged channel, with a depth of 4.5m over a width of 40m, leads N to the entrance. The fairway is marked by buoys and indicated by a lighted range.

It is reported that a conspicuous wind generator, 35m high, stands close E of Nogersund.

Ahus (55°56'N., 14°19'E.)

World Port Index No. 24300

4.37 Ahus lies at the mouth of the Helge River, 16 miles N of Stenshuvud. It serves as the port for the city of Kristianstad which is situated 9 miles NW.

Winds—Weather.—The harbor is protected against winds from any quadrant, but the low coastal area in the vicinity is open to S and E gales. Strong E winds raise the water level by up to 0.7m and W winds lower it by as much as 0.5m.

Ice.—Ice is seldom a hindrance and the port usually remains open all year.

Tides—Currents.—Currents in the entrance fairway flow in N or S directions at rates of 1 to 2 knots. The direction and strength of the currents may vary in different sections of the channel due to shoals.

Depths—Limitations.—The main approach channel leads WNW and WSW through the off-lying dangers from the vicinity of Taggen Lighted Buoy. It has a least depth of 8.5m over a minimum width of 70m. A secondary channel leads NNW for 9 miles to join the main fairway about 1.2 miles E of the harbor. It can be used by small craft with local knowledge and drafts up to 4m.

The harbor entrance is protected by two short breakwaters. It is 65m wide and has a dredged depth of 8m. Quays line both banks of the river mouth. The harbor provides 1,480m of total main quayage with depths of 5.8 to 8m alongside. There are facilities for bulk, general cargo, and timber vessels. Vessels up to 170m in length and 7.6m draft can be accommodated.

Aspect.—Numerous shoals and rocky patches, which may be best seen on the chart, lie in the approaches to the port and extend up to about 10 miles seaward. The principal fairway channel is indicated by lighted ranges and marked by buoys.

The terrain in the vicinity of the harbor is mostly low and flat. Several silos, tanks, and chimneys standing in the vicinity of the harbor are conspicuous from seaward.

Pilotage.—Pilots are available at any time and their use is compulsory for the following vessels (see paragraph 1.1 for further definitions of categories and other information):

1. All Category 1 vessels.
2. Category 2 and 3 vessels that are 70m loa, with beam of 14m or more, and draft of 4·5m or deeper.

Pilot ordering should normally be carried out via the e-Services section on the Swedish Maritime Administration web site (http://www.sjofartsverket.se), in conjunction with the reporting on the Vessel Reporting System (FRS) section. The request should be made in the following order:

1. A preliminary request must be made via the FRS at least 24 hours in advance o expected arrival.
2. The definitive request must be made via the FRS at least 5 hours in advance.
3. In exceptional cases, the pilot may be ordered, using e-mail, telephone, or VHF.

Pilots will board the vessel in position 55°54.9'N, 14°28.8'E.

Regulations.—Inbound vessels of more than 200 gt, or over 40m in length (including towing vessels with a combined length of over 40m), must report 30 minutes prior to arrival at the quay on VHF channel 18.

Contact Information.—The pilots can be contacted, as follows:

1. Telephone: 46-40-204352
2. Facsimile: 46-40-301868
3. E-mail: southcoastpilot@sjofartsverket.se
4. Web site: http://www.sjofartsverket.se

The port can be contacted, as follows:

1. VHF: VHF channels 12, 13, and 16.
2. Telephone: 46-44-288600
3. Facsimile: 46-44-241128
4. E-mail: info@ahushamn.se

Additional information regarding pilots, local navigational warnings, and Baltic Sea ice information including ice breakers, when in season, can be found on the following web site:

Anchorage.—Anchorage can be taken, in depths of 11 to 17m, sand, clay, and stone, about 2.5 miles S of Lagerholmen Light. However, this roadstead is exposed to S and E gales.

Caution.—The entrance channel is subject to frequent silting and the port authorities should be contacted for the latest information concerning depths.

Rinkaby Firing Practice Range is situated in the inner approaches to the port.

The port of Ahus has declared all commercial berths of the

harbor lying along the N bank as a restricted area. Commercial shipping may only enter the port after obtaining prior permission. All pleasure craft are prohibited from approaching the commercial berths or vessels berthed alongside and are only allowed a through passage to the guest harbor.

Solvesborg (56°03'N., 14°35'E.)

World Port Index No. 24310

4.38 The port of Solvesborg is situated on the W side of the head of a well-sheltered inlet, which indents the N coast of Hanobukten. The harbor consists of two basins with a shipyard complex situated between them. An extensive pleasure craft harbor is situated 1 mile SW of the port.

Solvesborg Home Page

http://www.sbgport.com

Winds—Weather.—Strong SW winds raise a rough sea off the harbor and in the roadstead.

Ice.—Ice may impede vessels during prolonged cold weather in January and February.

Depths—Limitations.—The approaches are encumbered by numerous islets and shoals, which lie up to about 5 miles offshore and may best be seen on the chart. A main approach channel, with a least depth of 8.2m over a minimum width of 65m, leads NW and NNE through the off-lying dangers to the harbor. A channel, with a least depth of 7.5m and a width of 60m, then leads to the inner part of the harbor.

The outer basin provides 380m of main commercial quayage and an oil berth, with a depth of 8.2m alongside. There is also a ro-ro berth, 85m long, with a depth of 7.5m alongside. Vessels with drafts up to 7.7m can enter this basin.

The inner basin provides about 350m of main commercial quayage with depths of 6 to 7.5m alongside. Vessels with drafts up to 5.8m can enter this basin.

The harbor has facilities for general cargo, bulk, ro-ro, container, oil, and timber vessels. Vessels up to 170m in length and 7.7m draft can be accommodated.

Aspect.—The terrain backing and adjacent to the harbor is generally low, partly wooded, and interspersed with ridges of high hills. Ryssberg, a ridge of high hills, extends N for about 9 miles from close N of the town.

The main fairway is marked by lighted buoys and beacons and is indicated by lighted ranges. Tunoren Light is shown from a framework tower standing on a group of rocks, awash, lying 2.5 miles W of Sillnasudde Light. Several conspicuous silos, chimneys, and sheds stand in the vicinity of the harbor.

Pilotage.—Pilots for the port are provided from Ahus and are controlled by the main station at Karlshamn. However, all requests for pilotage and traffic information is carried out by VTS Malmo (see paragraph 1.19). Vessel must send an ETA and a request for pilotage at least 12 hours, and again 5 hours, prior to arrival. Pilots can be contacted on VHF channel 18 and board in the vicinity of a position 1 mile SE of Spattgrund (55°58'N., 14°35'E.), 5 miles ESE of Ahus, at Pallagrund (55°55'N., 14°28'E.), 5 miles ESE of Ahus, in the vicinity of Taggen Lighted Buoy (55°54'N., 14°35'E.), or in a position about 5 miles SSE of the port.

Solvesborg (outer basin)

Solvesborg (inner basin)

For additional information concerning the initial request for pilotage, see paragraph 1.1 and paragraph 4.1.

The pilot boards in position 55°57'N, 14°41'E (Hano 2).

Regulations.—Inbound vessels of more than 200 gt, or over 40m in length, (including towing vessels with a combined length of over 40m), must report to the pilot station on VHF channel 18 at least 30 minutes prior to arrival at the quay.

Contact Information.—The port of Solvesborg can be contacted, as follows:

1. VHF: VHF channels 13, 14, and 16
2. Telephone: 46-456-42240

Anchorage.—Vessels can anchor, in a depth of 12m, sand, within an area lying about 1.5 miles S of Sillnasudde Light. Local knowledge is required and the roadstead is exposed to strong winds from E to SW.

4.39 Listershuvud (56°02'N., 14°47'E.), marked by a light, is a high, precipitous, and prominent point located 2.5 miles NE of Nogersund.

Laxgrundet, a shoal area with rocks, awash, extends up to about 1 mile NNE of Listershuvud and is marked by buoys.

Blocket, a shoal area with a least depth of 3m, extends up to about 2.5 miles S of Listershuvud and is marked by buoys.

Hano (56°01'N., 14°51'E.), a mostly barren island 60m high, lies 2.5 miles ESE of Listershuvud. Bonsacken, the NW extremity of the island, is fronted by a low spit and is marked by a light. A small and shallow fishing harbor is situated at the W side of the island, 0.5 mile S of this point. Hano Light is shown

from a prominent tower, 16m high, standing on the summit of the island, 0.5 mile SE of the NW extremity.

Hano Light

Malkvarn, an isolated and dark above-water rock, lies on a shoal patch, about 1.2 miles NE of Hano Light.

Anchorage can be taken, in depths of 18 to 25m, sand and clay, to the SW and NE of the island, but storms cause a heavy swell at both of these roadsteads.

Hanosund (56°00'N., 14°48'E.), a navigable passage, leads between Hano and the mainland. It is 2 miles wide and has a least depth of 12m in the fairway. Obstructions extending E into the passage are marked by buoys.

Hanobanken (55°56'N., 14°52'E.), an extensive shoal bank, lies between 2 and 6 miles SE of Hano and may best be seen on the chart. It has numerous ridges with depths of 9 to 20m over a bottom of sand and gravel.

Caution.—Three submarine cables extend across Hanosund and may best be seen on the chart.

Small danger areas, within which unexploded ordnance lies, are located about 3 miles ENE, 7 miles E, 11 miles ESE, 11.5 miles SE, and 13.5 miles SE of Hano Light.

4.40 Pukaviksbukten (56°07'N., 14°47'E.), an extensive bay, is entered between Listershuvud and Starno Udde, the S extremity of a peninsula, 6.5 miles NNE. This bay is encumbered by numerous shoals which may best be seen on the chart. The shores of the bay are irregular, low, and forested. They are fronted by numerous reefs that extend up to about 3 miles seaward.

Several channels lead between the various dangers and obstructions to a few small fishing harbors, but local knowledge is required. There are also a few small anchorages and loading places, with depths of 3 to 9m, within the bay, but local knowledge is required.

Ryssberget, a range of hills, backs the head of the bay. This range stands about 3 miles inland and attains a height of 126m.

Horvik, a small fishing harbor, is situated 0.7 mile NW of Listershuvud. The entrance, which is formed by two breakwaters, is 27m wide and has a controlling depths of 4m.

Krokas, a small and shallow fishing harbor, is situated 0.5 mile NW of Horvik and protected from the E by a breakwater.

Pukavik (56°10'N., 14°41'E.), a small harbor and loading place, lies at the head of the bay. The harbor consists of an open roadstead with depths of 3.2 to 4.2m over a bottom of sand and clay. Two damaged piers are situated within the harbor. Approach channels from E and SE lead between the off-lying dangers to this anchorage, but local knowledge is essential.

4.41 Elleholm (56°10'N., 14°44'E.), a small fishing harbor and loading place, is situated within an inlet, 1.8 miles E of Pukavik. The harbor consists of a roadstead, with a depth of 5.5m and a jetty, 20m long, with a depth of 4.5m alongside. Local coastal vessels up to 65m in length and 4m draft. can enter the harbor. The approach channel leads W, WNW, and N into the inlet. The entrance fairway is indicated by a lighted range and marked by buoys.

Gunnon (56°09'N., 14°47'E.), an islet, lies 1.7 miles E of Elleholm and is connected at its N end by a bridge to the mainland. A sector light is shown from a column, 11m high, standing at the S end of the islet and a prominent beacon is situated on a shoal lying 0.4 mile SE of it. Three conspicuous wind generators stand in the vicinity of the light.

An approach channel, marked by buoys, leads N to a jetty situated at the E side of the islet. This jetty is 45m long and has a depth of 4.8m alongside. Vessels can obtain anchorage, in depths of 6 to 10m, clay, off the jetty head.

Caution.—A submarine pipeline, which may best be seen on the chart, extends about 1 mile S, 1 mile ESE, and then 1 mile S from a point on the shore located 0.4 mile W of Gunnon Light. Its position is marked by lighted buoys.

Extensive salmon takes place within Pukaviksbukten from March to September.

Karlshamn (56°10'N., 14°52'E.)

World Port Index No. 24370

4.42 Karlshamn, a commercial port, lies at the head of an inlet, 1.8 miles NNE of Starno Udde (56°08'N., 14°50'E.), the S extremity of the Starno peninsula. It is sheltered at the W side by the peninsula, at the E side by a group of islets, and to the SE by Tarno Island. The harbors of Stillerydshamnen, situated in an inlet at the W side of the Starno peninsula, and Kolohamnen, situated close E of Stillerydshamnen, are included in the administrative port of Karlshamn.

Karlshamn Home Page
http://www.karlshamnshamn.se

Winds—Weather.—The harbor is exposed to S and SE winds and is subject to sudden SE squalls. Normally, the water level rises or falls about 0.5m above or below the mean level. At times, the difference may be as much as 0.9m. Winds from between N and E usually raise the water level and winds from between NW and S usually lower it.

Ice.—The harbor is usually free of ice, but if required the channels are kept open by icebreakers.

Tides—Currents.—Troublesome currents along this part of the coast are occasionally caused by strong E winds.

Depths—Limitations.—The main approach to the port is from S or SE, passing E of Hanobanken. Vessels may also ap-

proach through Hanosund. The main entrance channel, with a least depth of 12.6, leads NNW toward Karlshamn and divides 1 mile S of the harbor. The principal fairway, authorized for drafts up to 10m, then leads NW toward the oil and bulk berths. A branch fairway, authorized for drafts up to 8.5m continues NNW into the inner part of the harbor.

Sutudden Oil Jetty lies close inside the breakwaters. It has a head, 70m long, with a depth of 11m alongside. Tankers up to 30,000 dwt, 190m in length, and 10m draft can be accommodated.

The main inner harbor of Karlshamn includes Ocean Quay, 150m long, with a depth of 9m alongside; Soya Quay, 250m long, with a depth of 8m alongside; West Quay, 400m long, with depths of 6 to 7.5m alongside; East Quay, 350m long, with a depth of 6m alongside; and East Pier, 160m long, with a depth of 7.5m alongside.

Sterno, a harbor basin, lies close S of Sutudden oil jetty. It has 480m of total quayage with a depth of 6m alongside. This basin is entered through a fairway which is authorized for drafts up to 5.4m.

The channel leading NW and NNE toward Stillerydshamnen and Kolohamnen has a least depth of 14m and is authorized for drafts up to 13m. A branch fairway, authorized for drafts up to 10.5m, leads NW to the cargo berths at Stillerydshamnen.

Stillerydshamnen has 600m of total quayage, with depths of 8 to 11m alongside. There are facilities for general cargo, container, and ro-ro vessels. Vessels of up to 220m in length and 10.5m draft can be accommodated.

Oxhaga Nabb Oil Jetty is situated at the N side of Kolohamnen. It has a head, 80m long, with a depth of 13m alongside. Tankers of up to 220m in length and 12.5m draft can be accommodated.

Kolo Oil Jetty is situated at the S side of Kolohamnen. It has a head, 100m long, with a depth of 14m alongside. Tankers up to 260m in length and 13m draft can be accommodated.

The port has facilities for general cargo, ro-ro, container, bulk, timber, chemical, petroleum, and LPG vessels.

Aspect.—The harbor is fronted by several dangers and obstructions which lie up to about 2 miles seaward. The main approach channel, which is entered about 2 miles SE of Starno Udde, leads NNW into the central part of the port. It is marked by lighted buoys and indicated by lighted ranges.

A channel, which is entered about 1.5 miles SSW of Starno Udde, leads NW and then NNE into the harbors of Kolohamnen and Stillerydshamnen. It is marked by buoys and indicated by a lighted range. Obstructions lying adjacent to these fairways are marked by buoys and beacons.

Several silos and tanks stand in the vicinity of the harbor and are all conspicuous from seaward. A prominent church, with a cupola and a pointed steeple, is situated in the town. Three prominent chimneys stand at a power station located in the vicinity of Kolohamn, on the NW side of the Starno peninsula.

Pilotage.—Pilots are available on a 24 hour basis, and pilotage is compulsory for the following vessels (see paragraph 1.1 for definition of vessel categories):

1. All Category 1 vessels.
2. Category 2 and 3 vessels 70m loa, 14m beam, and 4.5m draft and over.

In certain channels between between the approaches to Karlshamn and the Port of Karlshamn for the following vessels:

1. All Category 1 vessels.
2. Category 2 vessels 80m loa, 15m beam and over.
3. Category 3 vessels of 90m loa, 16m beam and over.

Pilot ordering.—This should normally be carried out via the e-Services section on the Swedish Maritime Administration website (http://www.sjofartsverket.se), in conjunction with the reporting on the Vessel Reporting System (FRS) section.

1. A preliminary pilot request must be made via the FRS at least 24 hours in advance.
2. The definitive pilot request must be made via the FRS at least 5 hours in advance.
3. In exceptional cases, the pilot may be ordered via e-mail, telephone, or VHF.

Pilots will board in the following positions:

a. 56°04.98'N., 14°51.65'E. (Outer boarding position for vessels longer than 180m loa)
b. 56°06.93'N., 14°49.08'E. (Karlshamn W boarding position)
c. 56°07.17'N., 14°53.36'E. (Karlshamn E boarding position)

It should be noted that extensive changes to pilotage procedures within Swedish waters are being carried out. Formerly, all initial ordering of pilots was carried out through the main VTS systems. However, procedures for the initial ordering of pilots via the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration internet web site are being introduced. For additional information, see paragraph 1.1.

Regulations.—Vessels should send an ETA to the port (Karlshamn Harbor Radio) 48 and 24 hours in advance. Any changes within 24 hours should be advised immediately.

Vessels of 300 gt or more and vessels, including tows, 45m loa or more, are advised to make a general call in English on VHF channel 16 as follows:

1. When passing one of the Reporting Points listed below.
2. When departing from a quay or anchorage.

The following information should be included when making a general call on VHF channel 16.

1. "All Ships" call and VHF channel.
2. Vessel name and type..
3. Name and location of Reporting Point or place of departure.
4. Intended route.
5. Destination.

Smaller vessels fitted with VHF should report if circumstances permit.

Reporting Point		Position
8	Northbound	56°07.2'N, 14°53.4'E
9	North and westbound	56°06.9'N, 14°49.0'E

Contact Information.—The Pilot Center for requesting pilots can be contacted, as follows:

1. Telephone: 46-771-630690
2. Facsimile: 46-40-301868
3. E-mail: southcoastpilot@sjofartsverket.se
4. Web site: http://www.sjofartsverket.se

The Karlshamn Pilot Station can be contacted, as follows:

1. Call sign: Karlshamn Pilot
2. VHF: VHF channel 18

The port is controlled from Malmo but can be contacted, as follows:

1. Call sign: Karlshamn Hamnradio
   Karlshamn Harbour Radio
2. VHF: VHF channels 12, 13, and 16
3. Telephone: 46-454-305000
4. Facsimile: 46-454-305030
5. E-mail: info@karlshamnshamn.se

Anchorage.—Anchorage can be taken, in depths of 17 to 24m, sand and gravel, within the outer part of the inlet, but this roadstead is exposed to S winds.

Vessels with local knowledge can anchor, in a depth of 11m, clay, within an area located W of Kastellet (56°09.6'N., 14°52.0'E.), an islet lying in the inner part of the inlet. Vessels anchored in this roadstead are limited to a period of 24 hours unless permission to stay is received from the authorities.

Caution.—A submarine cable, which may best be seen on the chart, extends SE and S from the vicinity of Starno Udde.

It is reported that the dredged area fronting the oil jetties in Kolohamnen does not extend past the berths. Vessels should take care when maneuvering in this vicinity not to overrun the berths.

Degaussing ranges lie close N and E of Kastellet islet. The northernmost range is marked by several dolphins.

Karlshamn lies within a semi-restricted area. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further details.

4.43 The coast between Karlshamn and Ronneby, 14 miles E, is generally low with few significant features. There are a number of wooded areas. The shore is indented by numerous inlets. Small islands, islets, rocks, and shoals, front the coast and lie up to about 3 miles seaward.

A number of small harbors, loading places, and anchorages are situated amongst the off-lying obstructions. Narrow channels lead through the dangers to these facilities but they should not be used without local knowledge.

Tarno Island (56°07'N., 14°58'E.) lies 4 miles SE of Karlshamn at the seaward side of the obstructions fronting this section of the coast. It has a bare summit surrounded by trees. A small fishing harbor is situated at the N side of the island. A light is shown from a prominent structure standing close N of the S extremity of the island.

Vagga (56°10'N., 14°53'E.), a small harbor, is situated on the SE side of the inlet, 1.5 miles SE of Karlshamn, and used by fishing vessels. It is protected from S and W by breakwaters and has a controlling depth of 4m.

Vettekulla (56°10'N., 14°55'E.), a small harbor and loading place, is situated in an inlet 2 miles ESE of Karlshamn. A fairway leads NNE to this harbor and can be used by small vessels with drafts up to 3.5m. There is a small pier with a depth of 3.5m alongside. Small vessels, with local knowledge, can anchor, in a depth of 5m, sand, off the harbor.

Matvik (56°10'N., 14°58'E.), a loading place, lies within Matsviktjarden, a small inlet. A prominent beacon stands on a hill which rises 0.5 mile NNW of the harbor and is partly wooded. An inshore channel leads E from the approaches to Karlshamn to this loading place and can be used by vessels with drafts of up to 8.2m. Another approach channel leads W and can be used by vessels with drafts up to 5m. There is a pier with a depth of 3.5m alongside. Vessels can anchor, in depths of 9 to 14m, clay, within the inlet. Local knowledge is required.

Guovik (56°12'N., 15°01'E.), a loading place with two shallow jetties, is situated in an inlet 5 miles E of Karlshamn and is used by small craft. Vessels, with local knowledge, can anchor, in a depth of 6m about 1.5 miles seaward of the jetties.

Jarnavik (56°11'N., 15°05'E.), a loading place, lies in an inlet 7 miles E of Karlshamn. There is a small jetty with a depth of 3m alongside. Anchorage can be taken, in depths of 6 to 7m, sand and clay, off the jetty. Vessels can also anchor, in depths of 12 to 14m, good holding ground, about 1.2 miles SW of the jetty.

Guovik and Jarnavik are approached from seaward through a common channel. A branch then leads W to Guovik while another leads E to Jamavik. The fairways can be used by small vessels with local knowledge and drafts up to 5m.

Caution.—Local magnetic disturbances have been reported off the coast in this vicinity.

Ronneby (56°11'N., 15°18'E.)

World Port Index No. 24440

4.44 Ronneby, a commercial port, is situated at the mouth of the Ronneby River. The town stands on both banks of the river, 2.5 miles above the entrance.

Winds—Weather.—Fresh to strong W winds may cause the water level in the harbor and approaches to fall by as much as 0.9m.

Ice.—In normal winters, ice seldom impedes vessels, but during severe winters, ice sometimes hinders vessels in February and March.

Tides—Currents.—The current sets in the same direction as that of the river. At times, a considerable outflow from the river can cause difficulties when maneuvering in the harbor.

Depths—Limitations.—The harbor lies at the head of an inlet and is fronted by numerous islets, rocks, and shoals. The main approach channel, which has a least depth of 6.5m, leads NNE through the obstructions and passes close W of Gasfeten Light. It then leads E and NNE to the harbor.

A secondary approach channel leads N, NNW, and NNE from a position located about 2 miles ESE of Gasfeten Light. It is only used by small vessels with local knowledge and drafts up to 3m.

Quays line both sides of the river mouth. There is 300m of principal berthage, with depths of 3.5 to 6.5m alongside, at the W side. There is 100m of principal berthage, with depths of 4.5 to 6.5m, at the E side. There are facilities for general cargo, oil, bulk, timber, and chemical vessels. Vessels of up to 152m in length and 6.1m draft can be accommodated.

Aspect.—Golandet, a large peninsula, forms the SE side of the outer approach to Ronneby. It is fronted by several rocks, shoal banks, and reefs.

Gasfeten, a small islet, lies 4.5 miles SW of the harbor. A light, equipped with a racon, is shown from a prominent tower, 10m high, standing on this islet.

The main approach channels are marked by buoys and bea-

cons and are indicated by lighted ranges.

An aeronautical light is shown from a structure standing 3 miles N of the town. A railroad bridge and a road bridge span the river close N of the harbor. A water tower situated in the town is reported to be prominent from offshore.

Pilotage.—Pilots are provided by and must be obtained from the main station at Karlshamn. However, all ordering of pilots and traffic information is carried out by VTS Malmo (see paragraph 1.19). Vessel must send an ETA and a request for pilotage at least 12 hours and 5 hours before arrival. For details of compulsory pilotage in this area, see Karlshamn (paragraph 4.42). For additional information concerning the initial ordering of pilots, see paragraph 1.1 and paragraph 4.1.

Regulations.—Inbound vessels of over 200 gt or over 40m in length (including towing vessels with a combined length of over 40m) must report 30 minutes prior to arrival at the quay on VHF channel 13 to Karlshamn Pilots.

Anchorage.—Anchorage can be taken, in depths of 7 to 10m, stiff mud and clay, N of Stora Ekon (56°08'N., 15°13'E.), an islet. Foreign vessels must anchor in this roadstead.

Caution.—It has been reported that diving and fishing are prohibited in an area with radius of 100m centered a dangerous wreck off the N coast of Stora Ekon.

The port and approaches lie within a restricted and controlled area. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further details.

Local magnetic disturbances have been reported in the approaches to the port.

4.45 Between the approaches to Ronneby and Torhamnsudde (56°04'N., 15°51'E.), a point located 20 miles ESE, the irregular coast is partly wooded with low rocky hills rising inland. Several large islands and numerous islets, rocks, and reefs front the mainland and extend up to about 8 miles offshore. Several detached shoal patches, generally marked by buoys, lie seaward of the outer islands and islets.

A few small fishing harbors and local anchorage roadsteads are situated along this stretch of coast and can be approached through intricate channels by small vessels with local knowledge.

Torko (56°09'N., 15°25'E.), a small island, lies at the head of an inlet and has a small harbor. There is a jetty, 80m long, with a depth of 3m alongside.

Kuggeboda, a loading place with a shallow pier, is situated on the mainland, 6 miles SW of Torko. Small vessels, with drafts up to 5m, can transit a narrow channel and reach the anchorage off Kuggeboda, which has depths of 4 to 8m, mud.

Several reef-fringed islets and numerous detached shoals lie between Kuggeboda and Hasslo Island, 2.5 miles SE. An approach channel, for vessels with local knowledge, leads E through these obstructions to Karlskrona and is marked by beacons.

Hasslo Island (56°07'N., 15°28'E.) is one of a group of four low islands fronting Karlskrona. This island is fringed by reef flats and several detached shoal patches, which are marked by buoys, extend up to about 2 miles seaward of it.

Carpaviken, a small fishing harbor, is situated at the SE side of Hasslo Island and is formed by two breakwaters. The entrance, 18m wide, is approached through a buoyed channel with a least depth of 4m. Hallarna, another small fishing harbor, is situated at the NW side of Hasslo Island and has a controlling depth of 4m.

4.46 **Aspo** (56°07'N., 15°32'E.), an island, lies on the W side of the main approach channel leading to Karlskrona. Numerous obstructions, some marked by buoys and beacons, lie up to 2 miles S of this island. A conspicuous disused lookout tower stands on this island.

Drottningskar, a small and shallow fishing harbor, is situated at the E side of Aspo. A prominent fort stands at the W side of the harbor entrance.

Tjurko (56°07'N., 15°37'E.), an island, lies 1 mile E of Aspo on the E side of the main approach channel leading to Karlskrona.

Kungsholmen (56°06'N., 15°35'E.), an islet, lies close W of Tjurko and is surmounted by a conspicuous fort.

Sturko (56°06'N., 15°40'E.), an island, lies 3.5 miles SE of Tjurko and may be identified from offshore by a church, with a conspicuous steeple, standing on its SE side.

Ekenabben and Sanda are two small and shallow fishing harbors which are situated at the E side and at the NW side, respectively, of Sturko.

Vastra Forsankningen Light (56°07'N., 15°35'E.), situated between Aspo and Kungsholmen, is a sector light shown from a floodlit dolphin, 6m high. This light is situated on the W side of the main entrance channel leading to Karlskrona and is equipped with a racon.

Numerous islets, rocks, reefs, and shoals, lie in an area extending E from Sturko as far as Torhamnsudde and SE as far as Utlangan (56°01'N., 15°47'E.). This area has only been partially surveyed. Several narrow channels, some marked by buoys, lead through the area and are used by local coastal vessels and fishing boats.

Djupasund (56°06'N., 15°38'E.), a narrow passage, separates the islands of Tjurko and Sturko and is spanned by a fixed bridge with a vertical clearance of 3m. A lighted range indicates a fairway, with a depth of 4m, which leads N through the passage to two small fishing harbors.

Caution.—This section of coast and the offshore islands and islets lie within a restricted area. Foreign vessels must not enter the fairways leading to anchorages or loading places without special permission. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further details.

Local magnetic disturbances have been reported off this section of the coast.

Several gunnery practice areas lie between Ronneby and Karlskrona and extend up to about 5 miles offshore. Anchoring and stopping within these areas is prohibited.

Karlskrona (56°10'N., 15°36'E.)

World Port Index No. 24460

4.47 The port of Karlskrona, which is an extensive naval base, lies within an inlet entered 10 miles E of Ronneby. Several islands and islets front the port and afford good shelter. The town is partly built on islands which are joined to the mainland.

Winds—Weather.—The water level in the port may rise or fall as much as 1m above or below the mean level. Winds from between N and E raise the level and winds from between NW and S lower it.

Karlskrona Home Page
http://www.karlskrona.se

Ice.—The harbor is usually free of ice.

Tides—Currents.—Troublesome currents are sometimes caused along this part of the coast by strong E winds.

Depths—Limitations.—The main entrance channel leads N and passes between the islands of Aspo and Tjurko. It has a least depth of 12m and can be used by vessels with drafts of up to 10m. An alternate entrance channel, lying 0.5 mile W of the main channel and running parallel to it, can be used by vessels with drafts of up to 7m. This alternate channel joins the main channel close W of Kungsholmen.

A secondary inshore approach channel, with a least depth of 4.9m, leads from the W into the harbor. It passes N of Hasslo and Aspo and is narrow. This channel can be used by vessels with drafts of up to 4.2m, but local knowledge is required. A bridge, which swings to form an opening 20m wide, spans the channel.

Another inshore approach channel, with a least depth of 3.6m, leads from the E. It passes between Torhamnsudde and Langoren and can be used by vessels with drafts of up to 3.2m.

The naval base occupies the area S and SW of the town. The main commercial harbor lies NE of the town. There is 1,500m of total quayage with depths of 4 to 10m alongside. In addition, an oil pier has two berths, with depths of 7m and 9m alongside, which can handle tankers up to 160m in length and 8.5m draft.

There are facilities for oil, general cargo, passenger, bulk, and ro-ro vessels. Cargo vessels are limited to a draft of 7m.

There are several repair drydocks within the port, which can handle vessels up to 200m in length, 26.2m beam, and 7.5m draft.

Aspect.—The approach fairways are indicated by lights and several lighted ranges. Numerous obstructions lie in the approaches and those located adjacent to the entrance channels are marked by lights, buoys, and beacons.

Karlskrona Angoring Lighted Buoy, marking the entrance of the main channel, is moored about 3.5 miles SSW of Vastra Forsankningen Light (56°07'N., 15°35'E.).

A church, with two prominent towers, is situated in the town and a conspicuous radio mast stands 1 mile NNE of it. A conspicuous water tower also stands in the vicinity of the town.

Pilotage.—Pilots are available on a 24 hour basis, and pilotage is compulsory for the following vessels (see paragraph 1.1 for definition of vessel categories):

1. All Category 1 vessels.
2. Category 2 and 3 vessels 70m loa, 14m beam, and 4.5m draft and over.

In certain channels between between Aspo and Verko for the following vessels:

1. All Category 1 vessels.
2. Category 2 vessels 80m loa, 14m beam and over.
3. Category 3 vessels of 90m loa, 16m beam and over.

Pilot ordering.—This should normally be carried out via the e-Services section on the Swedish Maritime Administration website (http://www.sjofartsverket.se), in conjunction with the reporting on the Vessel Reporting System (FRS) section.

1. A preliminary pilot request must be made via the FRS at least 24 hours in advance.
2. The definitive pilot request must be made via the FRS at least 5 hours in advance.
3. In exceptional cases, the pilot may be ordered via e-mail, telephone, or VHF.

Pilots will board in 56°03.5'N., 15°34.2'E.

Regulations.—Vessels of 300 gt or more and vessels, including tows, 45m loa or more, are advised to make a general call in English on VHF channel 16 as follows:

1. When passing Reporting Point 7 (56°03.5'N., 15°34.2'E.) northbound.
2. When departing from a quay or anchorage.

The following information should be included when making a general call on VHF channel 16.

1. "All Ships" call and VHF channel.
2. Vessel name and type..
3. Name and location of Reporting Point or place of departure.
4. Intended route.
5. Destination.

Smaller vessels fitted with VHF should report if circumstances permit.

Contact Information.—The Pilot Center for requesting pilots can be contacted, as follows:

1. Telephone: 46-771-630690
2. Facsimile: 46-40-301868
3. E-mail: southcoastpilot@sjofartsverket.se
4. Web site: http://www.sjofartsverket.se

The Karlshamn Pilot Station can be contacted, as follows:

1. Call sign: Karlshamn Pilot
2. VHF: VHF channel 18

The port can be contacted, as follows:

1. Call sign: Karlskrona Hamradio
   Karlskrona Harbour Radio
2. VHF: VHF channels 14 and 16.

The Harbormaster can be contacted, as follows:

1. Telephone: 46-455-21871
   46-709-303151 (mobile)

The Port Authority can be contacted, as follows:

1. Telephone: 46-455-303000
2. Facsimile: 46-455-303133

Additional information regarding pilots, local navigational warnings, and Baltic Sea ice information including ice breakers, when in season, can be found on the internet at the following web site:

http://www.sjofartsverket.se

Regulations.—Inbound vessels of over 200 gt or over 40m in length (including towing vessels with a combined length of over 40m) must report 30 minutes prior to arrival at the quay on VHF channel 18 to Karlshamn Pilots.

Tankers may not be underway in the port when passenger ships over 50m in length or other vessels over 70m in length are also underway in the port.

Swedish Sea Surveillance and Traffic Centers gather and study information pertinent to all activities at sea. The centers monitor VHF channel 16 continuously concerning matters occurring in the vicinity of Karlskrona (56°10'N., 15°35'E.) and covering the area from Vastervik to Ystad (55°26'N., 13°50'E.).

Within Swedish waters, Restructured Military Areas have been established to guard defence installations and significant places of Swedish defense.

Normally, in peacetime, foreign citizens and foreign vessels have freedom of access and the right to remain in these areas without the need for special permission. However, in times of military preparedness, Swedish statute, special regulations, and restrictions apply. Details of which are announced in the Swedish Notices to Mariners.

Karlskrona restricted area covers all the approaches to the port and the islands of Hasslo (56°06'N., 15°27'E.)on the W side, on the E and SE to include Sturko (56°06'N., 15°40'E.) and Utlangan (56°01'N., 15°47'E.).

Anchorage.—Good and sheltered anchorage can be taken, in depths of 7 to 22m, mud and clay, within Yttre Redden, the outer roadstead, which lies between the N part of Aspo and the N part of Tjurko. Local knowledge is required.

Caution.—Several submarine cables, which may best be seen on the chart, lie in the vicinity of the anchorage and across the entrance channels.

The approaches to the port lie within a restricted area. Foreign vessels must not enter the entrance channels without prior permission. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further details.

Within the archipelago fronting the port, several secondary channels, which lead to the inner harbors and loading places, are fitted with submarine barriers. These channels may be closed for military reasons, if required, and anchoring and fishing are prohibited within them.

Local magnetic disturbances have been reported in the approaches to the port.

Several gunnery practice areas lie in the W and S approaches to Karlskrona and extend up to 20 miles seaward. In addition, torpedo firing exercises are conducted on ranges lying in the approaches to the port. These ranges and areas are marked by buoys and floats. Red flags and red lights are displayed from the floats during firing. The local authorities or coastal radio stations should be contacted for information concerning firings.

4.48 Utlangan (56°01'N., 15°47'E.), a low and bare island, lies 3.5 miles SSW of Torhamnsudde. A light is shown from a prominent tower, 13m high, standing on the S extremity of this island. Foul ground and rocks extend up to about 0.5 mile S of the island and are marked by a lighted buoy, moored 1.2 miles SSE of the light.

Klotet, a dangerous rock, lies close SSE of the S extremity of Utlangan and is generally marked by breakers.

Langoren (56°04'N., 15°50'E.), an island, lies 1.5 miles NNE of Utlangan and about 1 mile SW of Torhamsudde. The E and inshore approach channel leading to Karlskrona passes N and NW of this island. A conspicuous beacon, 21m high, stands on this island.

Utklippan (Utklipporna) (55°57'N., 15°42'E.), formed by a group of rocks, lies 8.5 miles SW of Torhamnsudde and is the outermost danger in this vicinity. A small and shallow fishing harbor is situated between the two larger rocks of the group and is protected by two breakwaters. A light is shown from a prominent framework tower, 30m high, standing on an old fort which surmounts a rock at the S end of the group.

Utklippan Light

An area of shoals, with depths of less than 7m, extends up to 2.3 miles N and E of the group.

Torhamnsudde (56°04'N., 15°51'E.) is a bare point located 4 miles NNE of Utlangan Light. A church, with a spire, stands 1.2 miles NNE of this point and is conspicuous from seaward.

Torhamn, a small and shallow fishing harbor, is situated 1.5 miles NW of the point and is formed by two breakwaters. A conspicuous radio mast stands at an elevation of 132m about 3 miles N of the harbor.

Caution.—An explosives dumping area, which may best be seen on the chart, lies centered 1.4 miles ESE of Utklippan Light.

A small unexploded ordnance areas, which may best be seen on the chart, lies about 2.3 miles W of Utklippan Light.

A large unexploded ordnance area, the limits of which may best be seen on the chart, lies centered 4.5 miles NW of Utklippan Light.

Large vessels are advised to stay at least 4 miles S of Utklippan Light when transiting this past of the coast.

Bornholm (Denmark)

4.49 Bornholm (55°00'N., 15°00'E.), a prominent island, lies in the Baltic Sea about 20 miles ESE of Sandhammaren and close to many navigational routes. The coasts of the island have few indentations and generally rise steeply from the shore except at the S extremity which is low and sandy. They are fringed by coastal reefs which are steep-to, except off the SW side.

The terrain rises inland to a wooded summit, 160m high, which stands near the middle of the island. A prominent monument, 12m high, surmounts the summit and rises above an area of trees. A conspicuous radio mast stands 2.5 miles NNW of the monument and a conspicuous television tower is situated 0.5 mile NNE of it.

During the summer months, it is common for winds to be of greater force on the lee side of the island than on the windward

side. At times, it is calm on the windward side while moderate winds blow on the lee side. These conditions are reversed in autumn and winter.

There are no tidal currents along the coasts of the island. Currents generally follow the direction of the wind and their rates are negligible. Predominant W and SW winds sometimes produce a weak surface current. Fresh NW winds, blowing off the N end of the island, sometimes cause strong currents which set to the S. These can be dangerous in foggy weather. Water levels in the vicinity of the island are usually raised by E winds and lowered by W winds.

Pilotage.—Deep Sea (Transit) Pilots for vessels entering and leaving the Baltic Sea are stationed at Bornholm and board vessels off Hammer Odde, the N extremity of the island.

Pilots board in the following positions, depending on weather and wind:

1. Position 55°20.0'N, 14°47.0'E. (Bornholm N).
2. Position 55°16.0'N, 14°55.0'E. (Bornholm E).
3. Position 55°17.0'N, 14°40.0'E. (Bornholm W).

Pilots are arranged through the DanPilot station, For further information, see Pilotage in paragraph 1.1.

Caution.—Bornholmsgat TSS, an extensive traffic scheme, is situated in the passage lying between Bornholm and the Swedish mainland. A Deep Water Route, which may best be seen on the chart, extends NE from the NE end of this TSS. For further information, see paragraph 4.1.

Local magnetic disturbances have been reported in the vicinity of Bornholm. It was reported that a compass needle had been deflected up to 6° in the waters lying off the N coast of the island.

Several small danger areas lie off the N and E coasts of Bornholm and may best be seen on the chart. Anchoring and fishing are prohibited in these areas due to the residual danger from bottom mines, gas canisters, and aircraft wreckage.

Two small prohibited areas, dangerous on account of mines, lie off the SW coast of Bornholm and may best be seen on the chart.

Several wrecks, some dangerous, lie off the coast of Bornholm and may best be seen on the chart.

Several submarine cables extend seaward from the W and S sides of Bornholm and may best be seen on the chart.

The W coast of Bornholm can be least hospitable during W prevailing winds, where reefs and rocks front the shore, especially in the S part.

4.50 Hammer Odde (55°18'N., 14°46'E.), the N extremity of Bornholm, is backed by steep cliffs. It appears as a low island from the E and W and is reported to be difficult to distinguish at night. A light is shown from a prominent tower, 12m high, standing on the point.

Davids Banke (55°22'N., 14°41'E.) lies about 5 miles NW of Hammer Odde. This isolated bank has a least depth of 11m and is formed by stones, sand, and gravel.

Hammaren, the N and rocky part of the island, consists of a hill, 82m high, which rises 1 mile S of Hammer Odde. This hill is steep-to on its SW side, but slopes gradually to the NE and is separated from the land in the vicinity by a valley. A disused round light structure, 21m high, stands near the highest part of the hill. It is prominent, but obscured from the S.

The W coast of the island extends 12 miles S to Ronne and the narrow foreshore is backed, in places, by steep cliffs up to about 90m high. The S part of this stretch of coast is partly wooded, low, and sandy.

Hammerhavnen, a small harbor, lies at the head of a bight situated close SW of hammer Odde. It is formed by two breakwaters and used by fishing vessels. The entrance, which faces W, is 30m wide and has a controlling depth of 3.5m, but is subject to silting. Anchorage can be taken within the bight, in depths up to 12m, sand and gravel, close offshore, about 0.3 mile S of the harbor. Local knowledge is required.

Hammer Odde Light

Vang (55°15'N., 14°44'E.), a small fishing harbor, is situated 3.4 miles SSW of Hammer Odde. It is formed by two breakwaters and has a controlling depth of 3m.

A pier, 150m long, is situated 0.3 mile SW of the harbor and is protected by a breakwater. It is used by vessels loading granite. The berths at the NW corner of the pier have depths of 5.7 to 7.5m alongside. Vessels up to 100m in length and 15m beam can be handled.

Teglkas, a shallow boat harbor, lies 2 miles S of Vang and is protected by breakwaters. A very conspicuous church, with a tower, is situated at Rutskirke, 1.4 miles ESE of this harbor. The church stands on a hill, 130m high, and a small belfry is located close SW of it.

4.51 Hasle (55°11'N., 14°42'E.) (World Port Index No. 29120), a small and sheltered harbor, is situated 5 miles N of Ronne. It is protected by two breakwaters and consists of five basins. Three basins are used by only small craft, fishing vessels, and pleasure boats. An entrance channel leads E to the harbor and is indicated by a lighted range. The entrance is 80m wide and has a depth of 5.5m. Two basins, with depths of 4m and 5m, provide facilities for commercial vessels. Vessels up to 75m in length, 12m beam, and 4.5m draft can be accommodated.

A prominent silo stands in the inner part of the harbor. A prominent church, with a black steeple, is situated in the middle of the town. A windmill and a wind generator, both conspicuous, are situated close S and close N, respectively, of the town.

Hvideodde (55°07'N., 14°42'E.), a sandy point, is located 1.5 miles N of Ronne. Reefs and sunken rocks extend up to

about 1 mile seaward of this point and are marked by a buoy.

Anchorage.—During offshore winds, anchorage may be taken anywhere off the W coast of the island between Hastle and Hammeren, 6 miles N, in depths of 20 to 30m. Vessels must leave if the winds shift to the W. Vessels should not anchor along this coast any farther to the S due to the rocky and uneven bottom.

Caution.—Powerful working lights are shown from quarries situated along this stretch of the coast and should not be mistaken for navigational lights.

Ronne (55°06'N., 14°42'E.)

World Port Index No. 29110

4.52 Ronne, lying at the SW extremity of Bornholm, is the principal town and port of the island. The harbor is protected by two extensive outer breakwaters and two inner ones.

Ronne

Ice.—Ice impedes vessels only in severe winters. Normally, ice appears in the harbor in late January and disappears in late February.

Tides—Currents.—The currents are weak and depend on the direction and force of the winds. The water level rises up to 1.2m with E winds and falls by as much as 0.9m with W winds.

Depths—Limitations.—A marina, used by yachts and small craft, is situated close N of the main harbor.

The entrance channel leading to the main harbor passes through several off-lying dangers and obstructions. It leads ENE and has a dredged depth of 9m.

Aspect.—An outer approach lighted buoy is moored about 2 miles SW of the harbor entrance. The entrance fairway is indicated by a lighted range and obstructions lying adjacent to it are marked by buoys.

The central and inner parts of the harbor have dredged depths of 8.5m and 7m, respectively. Three basins on the N side of the harbor provide 1,400m of quayage and have depths of 5 to 7m alongside. An oil berth, lying on the S side of the inner harbor, is 110m long and has a depth of 7m alongside. A new quay, on the S side of the central part, is 250m long and has a depth of 8.5m alongside. There are facilities for general cargo, container, bulk, ro-ro, cruise, ferry, tanker, and fishing vessels. Vessels of up to 200m in length and 8m draft can be accommodated.

Knudskirke, a granite building with a tower, stands on a hill, 70m high, which rises 2 miles ENE of the town. It is very conspicuous from seaward. A low, whitewashed building and a prominent chimney are situated 2 miles NNE and 1 mile NW, respectively, of Knudskirke. A conspicuous radio mast stands 2.3 miles NW of Knudskirke.

A prominent white church, with a red roof and a black steeple, stands near the NE end of the harbor; another prominent gray church, with a red roof and a steeple, is situated close NE of it. A conspicuous castle, circular with a red roof, is situated 0.4 mile S of the white church and a tall chimney stands close NE of it. Another tall chimney is reported to stand about 1.5 miles NE of the white church.

An aeronautical light is shown from a prominent mast standing 7 miles ENE of the harbor.

Pilotage.—Pilotage is compulsory for tankers over 1,500 dwt and recommended for all vessels without local knowledge. Pilots can be contacted by VHF and board in the vicinity of the outer approach lighted buoy. For further information, see Pilotage in paragraph 1.1.

Generally, vessels should send an ETA and request for pilotage 12 hours and 3 hours in advance. Vessels should then contact the port on VHF at least 1 hour in advance and 15 minutes prior to arrival. Radar assistance for entering is available from the pilot station.

Pilot boards in the vicinity of the approach lighted buoy (55°05.0'N., 14°38.5'E.)

The pilots can be contacted, as follows:

1. Call sign: DanPilot Ronne
2. VHF: VHF channels 16 and 87
3. Telephone: 4563-256666
4. E-mail: danpilot@danpilot.dk
5. Web site: http.//www.danpilot.dk

Contact Information.—The port can be contacted by e-mail (havn@roennehavn.dk).

Anchorage.—The rocky, uneven bottom in the vicinity of the port makes anchoring somewhat untenable. It is reported that vessels can anchor, in depths of 15 to 16m, about 0.6 mile W of the N outer breakwater head. However, this roadstead is not safe during strong W winds.

4.53 **Galgelokkeodde** (55°05'N., 14°48'E.), the SW extremity of Bornholm, consists of steep, high cliffs rising close S of Ronne. The SW coast of the island is mostly formed of cliffs, 12 to 18m high, and wooded in parts. It is fringed by shoals and rocky patches. Arnager, a shallow fishing boat harbor, is situated 3 miles SE of Galgelokkeodde.

A prominent aeronautical light is shown from the control tower, 24m high and yellow, of an airport situated 0.8 mile ESE of Galgelokkeodde.

Bakkegrund (54°59'N., 14°45'E.), a reef, lies 5 miles offshore and has a least depth of 5m. It is located at the outer edge of a shoal area extending S from the coast and is marked by a buoy. Vessels without local knowledge should pass S of this reef and the shoal area.

Ronne Bank (54°55'N., 14°39'E.), with variable depths of 11 to 19m, extends up to about 25 miles SW from the SW side of the island. Several sunken wrecks and patches of foul ground lie on this bank and it should be avoided by deep-draft vessels.

Adlergrund (54°47'N., 14°21'E.), a shoal area lying on Ronne Bank, is centered 22 miles SW of Ronne. It has a bot-

tom of rocks and stones and depths of 6 to 11m.

Raghammer Odde (55°01'N., 14°56'E.), located 9 miles SE of Ronne, is a point marked by a tower, 18m high, from which firing exercise signals are displayed. A prominent windmill stands 1.7 miles ENE of the point.

Bakkerne, a shallow fishing boat harbor, lies 2 miles SE of Raghammer Odde.

Dueodde (54°59'N., 15°05'E.), a low and sandy point, forms the SE extremity of Bornholm. It is fronted by an area of shallow, shifting sands which extends up to 1.5 miles seaward and is steep-to. A light is shown from a prominent tower, 47m high, standing 0.2 mile N of the point. A prominent disused light tower, 39m high, stands 0.8 mile N of the point. A prominent white building, with a detached belfry, stands 2.5 miles NNW of the point.

Anchorage, protected from N and NW winds, can be taken, in depths up to 15m, sand, close E of Dueodde, but winds from the W raise a heavy swell.

Dueodde Light

Caution.—It is reported that Arkona Becken survey platform (54°47.2'N., 14°10.2'E.), equipped with AIS, has been established off the W side of Adlergrund.

Firing exercises are carried out within an area, marked by buoys, which extends up to 2.5 miles offshore in the vicinity of Raghammer Odde. When this area is in use, passage through that part of it lying within Danish territorial waters, is prohibited. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further details.

4.54 The rocky and cliffy E coast of the island extends NNE from Dueodde and is fringed by reefs. Winds from the NE raise the water level along this coast by up to 0.3 to 0.6m and winds from the SW lower it by the same amount.

Nekso (Nexo) (55°04'N., 15°08'E.) (World Port Index No. 29085), a small and sheltered harbor, is situated about 4.5 miles NE of Dueodde and mostly used by fishing vessels. It is protected by two moles and consists of a series of connected basins. The entrance channel, which leads SW, is indicated by a lighted range and has a least depth of 5m. A commercial basin, with quays, is situated at the N side of the harbor and has a depth of 5m. Vessels up to 78m in length, 21m beam, and 4.5m draft can be accommodated.

The harbormaster acts as a pilot. Local knowledge is advised. The harbor can be contacted by VHF and requests for pilotage, with an ETA, must be sent 24 hours, 12 hours, and 4 hours in advance. At times, a current, with a rate of up to 1.5 knots, sets across the entrance and may affect steering.

Good anchorage can be taken, in depths of 13 to 15m, about 0.5 mile off the harbor. The bottom is uneven and rocky in some places, but the holding ground is generally good and the swell is low. This roadstead is reported to be the best along the E coast of the island.

Sandkasodde (55°08'N., 15°09'E.) is the southernmost of three salient points projecting seaward from the promontory which forms the NE extremity of Bornholm. Svaneke Light is shown from a prominent tower, 18m high, standing on the point.

Arsdale, a small and shallow fishing harbor, lies at the head of a bight, about 2 miles S of Sandkasodde. Two conspicuous white windmills stand close N of the town and a white church, with a tower, stands 2.3 miles W of them. Anchorage can be taken, in depths of 8 to 11m, good holding ground, S of this harbor, but onshore winds raise a sea and swell.

4.55 **Svaneke** (55°08'N., 15°09'E.), a small town, stands on the promontory close NW of Sandkasodde. It is fronted by a small harbor, which is protected by two breakwaters and mostly used by fishing vessels. The entrance channel, which leads WNW, has a least depth of 4.4m and is indicated by a lighted range. The harbor consists of two basins. The outer basin has a depth of 4.4m; the inner basin, which is entered through a lock gate, has a depth of 3.5m. There is a commercial quay, 231m long, with a depth of 4.4m alongside. Vessels up to 45m in length, 8.5m beam, and 4m draft can be accommodated.

Local knowledge is advised and local pilots are available during the day. The harbor can be contacted by VHF and vessels requesting pilotage must send an ETA 24 hours, 12 hours, and 4 hours in advance.

Svaneke Light (Sandkasodde)

The NE coast of Bornholm is rocky and steep-to. The shore is fringed by narrow beaches and backed by high, steep cliffs.

Listed (55°09'N., 15°07'E.), a small craft harbor, is situated about 2 miles NW of Sandkasodde and formed by two breakwaters. It consists of four basins which have depths up to 3m.

The harbor is sheltered and fronted by several sunken rocks and reefs. The entrance, which is 10m wide, should by approached from the N, but local knowledge is essential.

Gudhjem (55°13'N., 14°58'E.), situated about 8 miles NW of Sandkasodde, consists of two small harbors. They lie close S and close N of Sorteodde, the E extremity of a small protruding peninsula, which is 80m high. The S harbor is mostly used by fishing vessels and consists of three basins with depths of 2.5 to 4m. It can handle small craft of up to 40m in length and 3.8m draft. The fairway is indicated by a lighted range and leads SSW to the entrance which is only 11m wide. A church and a windmill, without sails, stand near this harbor.

The N harbor, known as Norresand Havn, is also mostly used by fishing vessels. It consists of a single basin, with a depth of 3.6m, and should be approached from the NW.

Melsted, a small boat harbor, lies 0.5 mile SSE of the S harbor. Anchorage, with local knowledge, can be obtained, in depths of 9 to 13m, on the bank lying SE of this harbor.

4.56 Tejn (55°15'N., 14°50'E.) (World Port Index No. 29040), a sheltered harbor, is situated about 4 miles SSE of Hammer Odde. It is formed by a mole and a breakwater. The harbor consists of five basins, with depths of 2.2 to 5m, and is used by fishing vessels and yachts. Local knowledge is advised. The entrance fairway leads SSE and is indicated by a lighted range. Anchorage, with offshore winds, can be taken, in depths of 11 to 13m, about 0.6 mile N of the harbor.

Allinge (55°17'N., 14°48'E.), a small harbor, is situated 1.8 miles SSE of Hammer Odde and protected by breakwaters. It consists of two basins, connected by a lock gate, and has depths of up to 4.5m. Small craft of up to 60m in length, 11.5m beam, and 4.3m draft can be accommodated. A church, with a tower, and a windmill stand in the village, but are reported to be only distinguishable from a short distance. The approach fairway leads SW and is indicated by range beacons. Local knowledge is advised.

Kampelokkehavnen, a small and shallow boat harbor, lies close N of Allinge.

Pilotage.—See paragraph 1.1 for details on which vessels are required to request pilot assistance.

Pilots board in the following places depending on weather and wind conditions.

1. Bornholm N—position 52°20'N, 14°47'E.
2. Bornholm E—position 55°16'N, 14°55'E.
3. Bornholm W—position 55°17'N, 14°40'E.

Contact Information.—Pilots (Dan Pilot) can be contacted as follows:

1. Call sign: DanPilot Bornholm
2. VHF: VHF channels 16 and 87

The port authority can be contacted by telephone (45-56-480075).

Christianso (Denmark)

4.57 Christianso (55°19'N., 15°11'E.), a small group of islets, lies 10 miles NE of Bornholm and consists of Christianso, Frederikso, Graesholm, and Tat. The group is surrounded by several rocks, reefs, and shoals and should only be approached by vessels with local knowledge.

The currents setting within the various narrow passages which lead between the islets attain considerable rates during stormy weather. The direction of these currents is governed by that of the wind and current in the Baltic Sea.

Christianso, the largest islet, is 22m high. A light is shown from a tower, 16m high, surmounting a very conspicuous fort which stands on the W side of this islet.

Christiano Light

Frederikso lies close W of Christianso; a light is shown from a prominent white house, 3m high, standing on its E side. A conspicuous tower, with a pointed roof, stands on the N side of this islet.

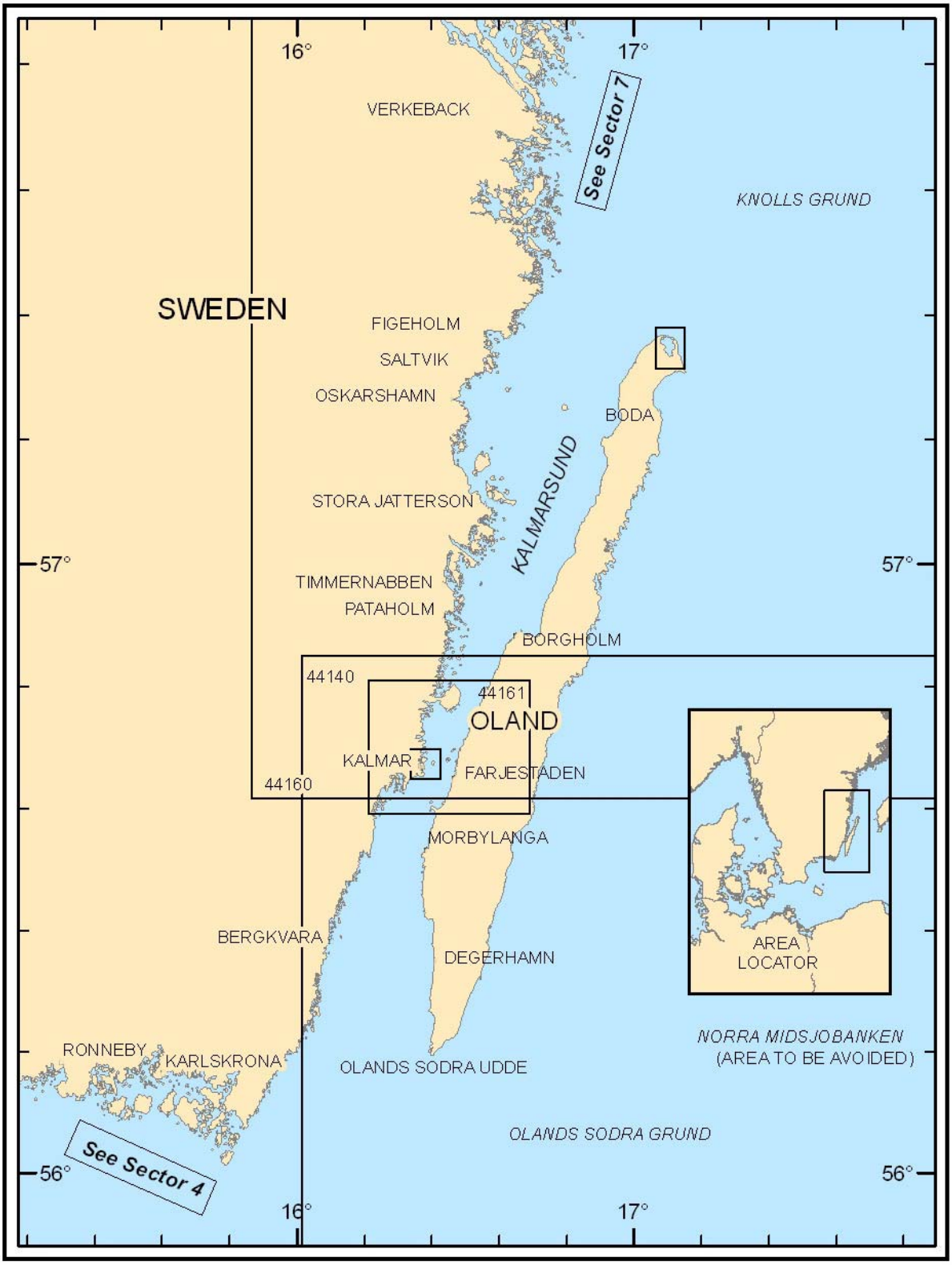
Graesholm lies close N of Frederikso and is 10m high. Tat lies 0.5 mile NNW of Graesholm and is 6m high. A light is shown from a tower, 2m high, standing on this islet.

4.58 Christianso Harbor (55°19'N., 15°11'E.) (World Port Index No. 29130) lies within the narrow sound leading between Christianso and Frederikso. It is divided into two parts by a bridge which connects the two islets. The bridge, when open, allows small vessels with drafts of up to 4m to pass through.

The harbor affords refuge and shelter from stormy weather, except S gales. However, entry into the harbor is usually restricted to small craft because of its constriction. A local pilot is available and, on request by VHF, will embark close seaward of the entrance fairway.

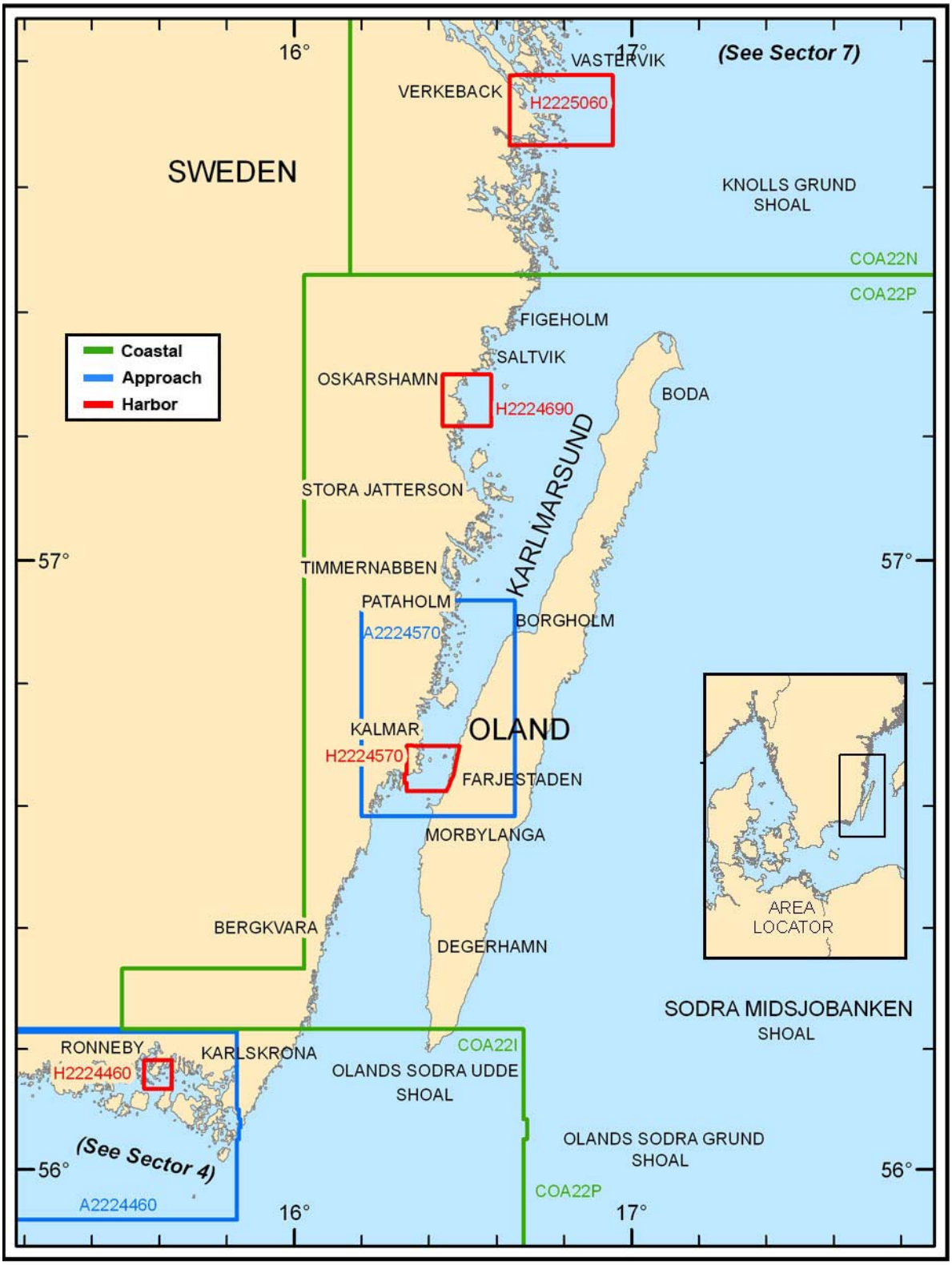
Caution.—It is reported (1991) that the area lying within 1 mile of the group has been designated as a bird protection zone. Within this zone, a speed limit of 12 knots applies and vessels should keep at least 100m from the outer islets.

Several small danger areas lie in the vicinity of Christianso and may best be seen on the chart. Anchoring and fishing are prohibited in these areas due to the residual danger from bottom mines.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **5** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 22 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 5— DNC LIBRARY INFORMATION

SECTOR 5

SWEDEN—EAST COAST—KALMARSUND AND OLAND

Plan.—This sector describes Kalmarsund and its approaches, the contiguous mainland between Torhamnsudde and Krakelund, and the island of Oland. The descriptive sequence is from S to N.

General Remarks

5.1 The coasts of the mainland and Oland are low and often barren, especially the E coast of Oland, where the absence of landmarks on a very low coast makes it easy to overestimate the distance offshore. The variable depths of the shoals and patches lying in the approaches to Kalmarsund are a valuable adjunct to safe navigation during fog.

Anchorage can be taken, in sand and clay, almost anywhere in the S part of Kalmarsund and off the N part of Oland, but the N section of Kalmarsund affords unreliable anchorage.

Pilotage.—Pilotage is compulsory in Swedish coastal waters and along certain fairways connecting ports along the coast. The vessels subject to compulsory pilotage vary in type and size according to location; these vessels are divided into the following categories:

1. Category 1—Vessels carrying or with uncleaned tanks which last carried:
   a. Liquefied gas.
   b. Liquid chemicals defined in MARPOL73 Supplement 2, Annex 2 as category A, B, or (if vessel does not have a double-skin hull under all cargo tanks) C.
   c. Liquid chemicals which, according to the IMO bulk chemical code, should be carried in Type 1 or 2 vessels.
2. Category 2—All other chemical tankers which are laden or have uncleaned tanks and all laden oil tankers.
3. Category 3—All other vessels.

Pilots can be obtained from the main stations at Kalmar, Oskarshamn, and Vastervik for the smaller harbors located along the coast. For further information, see paragraph 5.5.

It should be noted that extensive changes to pilotage procedures within Swedish waters are being carried out. Formerly, all initial ordering of pilots was carried out through the main VTS systems. However, procedures for the initial ordering of pilots via the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration internet website are being introduced. In exceptional cases, pilots may be ordered by e-mail, telephone, facsimile, or VHF. A preliminary request for pilotage should be made at least 24 hours in advance. A definitive request for pilotage must be made via the Pilot Request System at least 5 hours in advance.

It is reported that initial ordering of pilots for The Sound and all ports located S and W of Vastervik (57°46'N., 16°39'E.) will be carried out via the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration internet web site.

Regulations.—An IMO-adopted Area to be Avoided, the limits of which may best be seen on the chart, has been established in the vicinity of Norra Midsjobanken (56°14'N., 17°24'E.), an extensive shoal bank.

For additional information, see the following web site:

Swedish Maritime Administration Home Page
http://www.sjofartsverket.se

Directions—Offshore Routes.—Olands Sodra Grund TSS, which may best be seen on the chart, lies centered 12 miles SE of the S extremity of Oland in the vicinity of Olands Sodra Grund Light. This TSS is IMO-adopted. An Inshore Traffic Zone Area lies between the SE end of Oland and the TSS.

Vessels proceeding to the Gulf of Finland should steer NE for about 72 miles from the Off Oland Island TSS, located about 12 miles SE of Olands Sodra Grund, to the North Hoburgs Bank TSS, which is centered about 12 miles SE of Hoburg Light (S tip of Gotland Island). This route will pass NW of the Norra Midsjobanken Area to be Avoided.

For further route information, see paragraph 4.1 and paragraph 6.1.

Baltic Deep Water Route.—A Deep Water Route, recommended for vessels with drafts over 12m, has been established for shipping proceeding to the NE part of the Baltic Sea. This route extends ENE and NE from the E end of the Bornholmsgat TSS to the S end of the TSS lying centered 20 miles NW of Kopu Light (58°55'N., 22°12'E.). The route passes 13 miles S of Olands Sodra Grund Light and SE of the Norra Midsjobanken Area to be Avoided, continuing NE through the North Hoburgs Bank TSS, which is centered about 40 miles SE of Hoburg Light (56°55'N., 18°09'E.), passing S then E of Hoburgs Bank. See the graphic titled **Baltic Deep Water Route** for a display of this route and the navigational chart for details.

Caution.—Vessels coming from Kalmarsund and eastbound vessels coming from Swedish harbors between longitudes 14°40'E and 16°00'E passing between the lighthouses Olands Sodra Udde and Utklippan, may use the inshore Traffic Zone South off Oland Island.

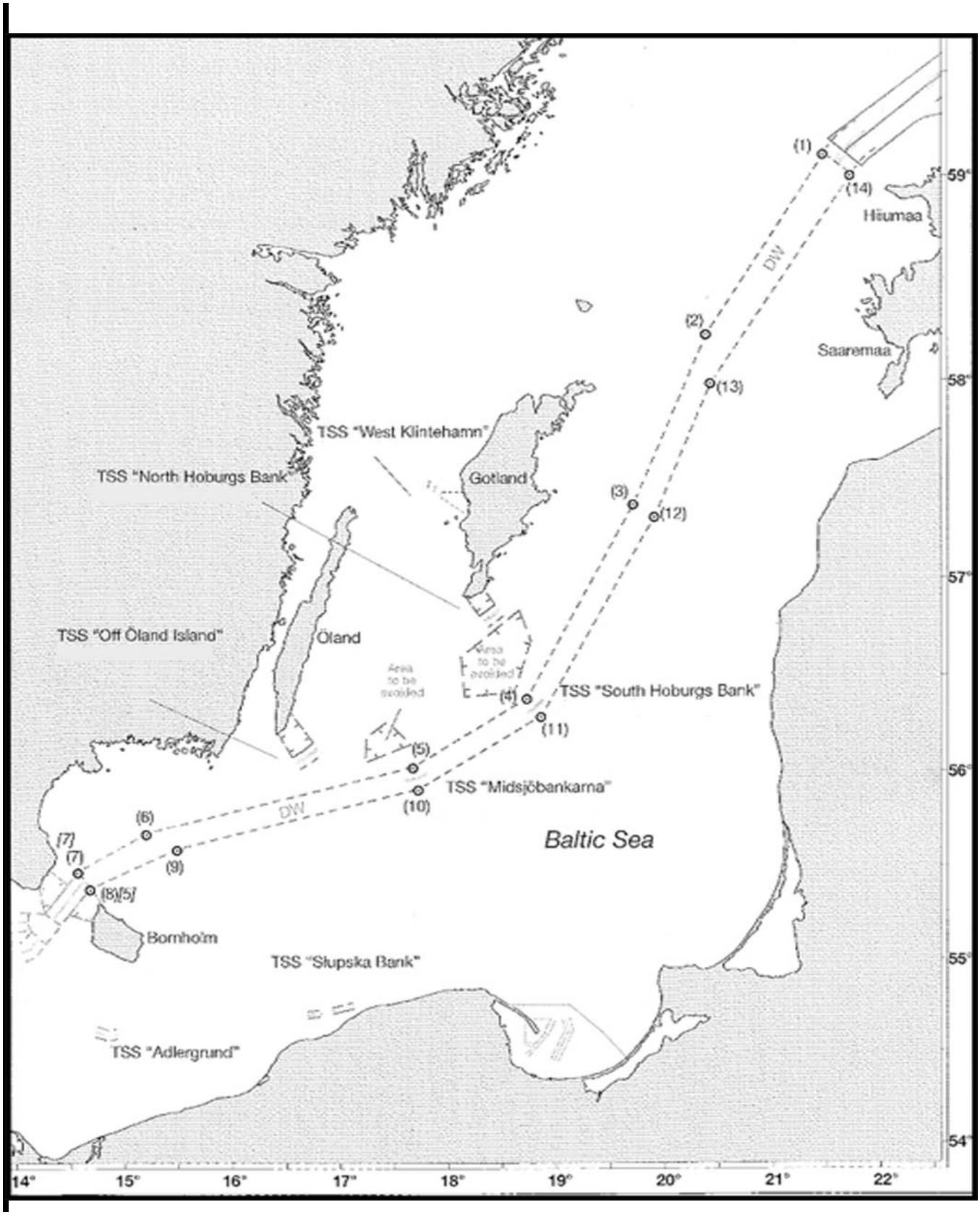
It is reported that this recommended route has a least depth of 25m and is recommended for vessels with drafts up to 15m.

For further information, see paragraph 4.1 and paragraph 6.1.

It has been reported that an offshore production platforms lies in vicinity of position (55°22.9'N., 18°44.8'E.), CALM Stawek production platform (lighted) and platform Lotos Baltic (lighted) moored in position (56°24'N., 18°43'E.), they lie within a safety security zone with a radius 500m, into which entry is prohibited.

Off-lying Shoals and Dangers

5.2 **Olands Sodra Grund** (56°04'N., 16°41'E.), a large shoal, lies 12 miles SE of the S extremity of Oland and has depths of 10 to 16m. A light is shown from a prominent floodlit tower, 35m high, standing near t 4



Baltic Deep Water Route

Olands Sodra Grund Light

Norra Midsjobanken (56°14'N., 17°24'E.), an extensive detached bank, lies centered 33 miles E of the S end of Oland and has a least depth of 9.8m (see Regulations in paragraph 5.1).

Sodra Midsjobanken (55°40'N., 17°25'E.) lies between 30 and 40 miles SE of the S end of Oland. This extensive detached bank has a least depth of 11m and a number of dangerous wrecks lie in its vicinity.

Knolls Grund (57°33'N., 17°28'E.), an extensive rocky shoal patch, lies centered 16 miles NE of the N end of Oland. It has a least depth of 9m and is marked by a lighted buoy.

Caution.—In cloudy and hazy weather, the E coast of Oland should be given a wide berth as there are no landmarks.

Local magnetic disturbances are reported to exist off the N entrance of Kalmarsund.

Areas of unexploded ordnance, which may best be seen on the chart, lie about 14 miles SW and 19 miles SSE of the S extremity of Oland.

The small harbors situated along the coasts of Oland are subject to silting.

Kalmarsund

5.3 Kalmarsund is a navigable passage, 85 miles long, that separates Oland from the mainland. This sound is about 12 miles wide at its S and N entrances. Due to several islets and shoals lying near the middle of the sound, the navigable passage is reduced to a width of 1.7 miles. The main channel fairway and adjacent dangers are marked, except during the ice season, by buoys and beacons.

Kalmarsunds Djupranna (56°40'N., 16°24'E.), a main channel, leads through the narrow central part of the passage and can be used by vessels up to 7m draft. The fairway within this channel has a bottom width of 80m and a least dredged depth of 7.7m over a width of 60m. It is marked by buoys and is the most constricted passage. Branch channels lead from Kalmarsunds Djupranna to harbors lying E and W of the main passage.

5.4 **Utgrunden** (56°22'N., 16°15'E.), a chain of shoal patches, lies close E of the middle of the sound and has a least depth of 3m. It is centered 10 miles NNW of the S extremity of Oland and can be passed on either side. The main fairway lies to the W of the chain. A light is shown from a prominent tower, 28m high, standing at the N end of the chain. A racon is situated at the light.

It is reported that the northernmost wind generator of a group of seven stands on the shoal 1.5 miles SSE of Utgrunden Light. These conspicuous wind generators are 65m high and stand in a line about 1 mile long.

Mittgrunden (56°28'N., 16°15'E.), a patch of shoals, has a least depth of 6.4m and is marked by buoys. Its S end lies about 3 miles N of Utgrunden Light and the patch is a N extension of Utgrunden.

Tradgardsgrund (56°38'N., 16°22'E.), a shoal with a least depth of 3.9m, lies on the E edge of the fairway, about 2.5 miles S of Kalmar, and is marked by a lighted buoy. The fairway, which is marked by buoys, is very constricted in this vicinity. Reefs, which fringe the coast, converge on the sides of the channel and, for about 4 miles NNE of Tradgardsgrund, appear to almost block the fairway.

Skansgrundet Light (56°39'N., 16°23'E.), situated close SE of Kalmar, is shown from a prominent floodlit tower, 19m high, and marks the S end of Kalmarsunde Djupranna. Grimskar, an islet, lies on a shallow shoal close W of the light. A conspicuous beacon surmounts the islet and a lighted buoy is moored close E of it.

Huvudet Light (56°40'N., 16°23'E.), situated 1 mile NNE of Skansgrundet Light, is shown from a prominent floodlit tower, 7m high. The main fairway in Kalmarsunde Djupranna passes close ESE of this light.

5.5 **Osvallsgrundet Light** (56°40'N., 16°23'E.), situated 0.3 mile NNE of Huvudet Light, is shown from a prominent floodlit tower, 7m high. The main fairway in Kalmarsunde Djupranna passes close ESE of this light.

The **Olands Bridge** (Olandsbron) (56°40'N., 16°28'E.), a fixed bridge supported by heavy columns, spans Kalmarsunde Djupranna about 1 mile N of Kalmar harbor and connects the mainland with the island of Oland. The navigable span over the main channel has a vertical clearance of 36m and a horizontal width of 80m. Lights shown from the bridge mark the center and limits of the fairway and a racon is situated on the center span.

Krongrundet (56°41'N., 16°24'E.), a shoal with a least depth of 2m, lies at the NE end of Kalmarsunds Djupranna. A light is shown from a prominent tower, 11m high, standing on the NW part of this shoal.

Masknaggen Light (56°44'N., 16°28'E.) is shown from a prominent floodlit tower, 11m high, standing on a rock at the S end of the shoals extending S from Skaggenas. The main channel passes SE of this light.

Sillasen (56°46'N., 16°30'E.), a shoal with a least depth of 3m, lies close W of the main channel. A light is shown from a prominent floodlit tower, 22m high, standing on the N part of this shoal. The main fairway lying between Sillasen Light and Krongrundet Light has a least depth of 9m.

Slottsbredan (56°56'N., 16°36'E.), a patch of shoals, has a least depth of 6m and is marked by buoys. It lies E of the main fairway, about 10 miles NNE of Sillasen. A light is shown from a prominent floodlit tower, 21m high, standing on the W side of this patch.

Damman (57°03'N., 16°42'E.), a patch of shallow shoals,

Skansgrundet Light

Osvallsgrundet Light

lies about 8.5 miles NNE of Slottsbredan. A light is shown from a prominent floodlit tower, 21m high, standing on this patch. A racon is situated at the light. A conspicuous disused square light structure stands on a rock, 0.5 mile W of the light. The main channel leading between Slottsbredan Light and Damman Light has depths of 9 to 11m, but is closely fringed by shallow shoals.

Bla Jungfrun (57°15'N., 16°48'E.), a precipitous and conical-shaped island, is 86m high. It lies 12 miles NNE of Damman at the N end of the sound and is the best landmark in this vicinity when approaching from the N. A light is shown from a prominent tower, 9m high, standing on the E side of the

The Olands Bridge

Masknaggen Light

The Olands Bridge (Olandsbron)

island. A prominent disused light tower, 6m high, stands on the W side.

Ice.—Ice conditions may occasionally hinder traffic within Kalmarsund. Generally, ice forms during the middle of January and starts to melt in March. During severe winters, ice loosening and melting may not begin until late May.

Depths—Limitations.—The fairway in the narrows has a least depth of 7.7m. During daylight, vessels of up to 185m length, 22m beam, and 7m draft may transit the passage, but tug assistance may be required. Vessels of over 150m in length should not navigate in darkness.

Pilotage.—Pilotage is compulsory within the central part of Kalmarsund. Pilots board in the following positions:

1. North entrance—near Sillasen (56°46.3'N., 16°30.5'E.) or near Krongrundet (56°41.7'N., 16°24.6'E.).
2. South entrance—near Tradgardsgrund (56°37.4'N., 16°21.5'E.) or near Utgrunden (56°21.5'N., 16°14.3'E.).

All pilot engagement and traffic information is carried out by Malmo VTS.

The Vessel Traffic Service (VTS) at Malmo coordinates and administers all pilotage services within the Oresund and Kalmarsund Maritime Area (see paragraph 1.19).

The VTS center at Malmo may be contacted by e-mail, as follows:

vtsmalmo@sjofartsverket.se

Pilotage for Helsingborg, Kalshamn, Kalmar, Oskarshamn, and Vastervik is arranged also through Malmo VTS.

Pilotage requests are made in co-ordination with the Swedish Vessel Reporting System (FRS) and the Swedish Maritime Administration.

A preliminary request for the pilot must be made through the FRS at least 24 hours in advance; a confirmation ETA should be sent at least 5 hours in advance.

Pilotage is compulsory for the following vessels (see paragraph 5.1):

1. All Category 1 vessels.
2. All Category 2 vessels and all Category 3 vessels of 70m length, 14m beam, and 4.5m draft and over.

Pilots for Kalmarsund can be contacted by VHF and board vessels approaching from the S about 1 mile SSW of Utgrunden. They board vessels approaching from the N about 1 mile E of Vastervik Approach Lighted Buoy (57°45'N., 16°55'E.), or 4 miles SSW of Kungsgrundet (57°41'N., 16°55'E.), or S of Furo (57°17'N., 16°38'E.).

Pilots for Kalmar harbor can be contacted on VHF channel 13 and board vessels from the S off Tradgardsgrund (56°38'N., 16°22'E.). They board vessels from the N near Sillasen (56°46'N., 16°30'E.) or Krongrundet (56°41'N., 16°24'E.).

It should be noted that extensive changes to pilotage procedures within Swedish waters are being carried out. Formerly, all initial ordering of pilots was carried out through the main VTS systems. However, procedures for the initial ordering of pilots via the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration internet web site are now introduced. For additional information, see paragraph 5.1.

Vessel Traffic Service.—A Vessel Traffic Service (VTS) operates in the central part of Karmarsund. This VTS system (call: VTS Kalmarsund) is mandatory for the following:

1. All vessels over 300 gt.
2. All vessels over 45m in length.
3. All vessels towing, with a combined length of over 45m.

Vessels entering Kalmar harbor or passing through Kalmarsund should report to Kalmarsund VTS on VHF channel 13

when passing a position located 1 mile N of Sillasen Light (56°46'N., 16°30'E.) and when passing Hagbygrundet (56°32'N., 16°18'E.). The report must state the vessel's name, call sign, position, intended route, and destination.

Vessels must maintain a continuous listening watch on VHF channel 13 when proceeding between the two reporting points. They must also contact Kalmarsund VTS upon arrival at and immediately before departing from a berth, on anchoring or weighing anchor, on changing their route, on being involved in an accident or grounding, or to report any navigational concerns which might affect the safety of navigation.

Anchorage.—Anchorage can be taken in the S part of Kalmarsund, between the entrance and a position about 3 miles S of Kalmar. Vessels can anchor in suitable depths with good holding grounds of sand and clay. In the N part of Kalmarsund, choppy seas and poor holding grounds make anchoring untenable in stormy weather.

Directions.—From a position SE of Torhammsudde (56°04'N,. 15°51'E.), vessels should steer NNE for about 25 miles to the vicinity of Utgrunden Light. The main fairway passes W of this light. It then leads NNE and passes close W of Tradgardsgrund and close W of Skansgrundet Light. The route continues NNE through the Kalmarsunde Djupranna buoyed channel and under the Olandsbron Bridge to Krondgrundet Light.

After passing close WNW of Krondgrundet Light, which marks the N end of Kalmarsunde Djupranna, the main channel leads NE and passes SE of Masknaggen Light. It then continues NNE to a position located E of Dammen Light, passing E of Sillasen Light. From Dammen Light, the route leads NNE toward Bla Jungfrum. Vessels may pass either side of this island, but the channel leading E of it is preferred. The route then leads NNE to a position located E of Krakelund.

A short alternate channel leads NE and NNE from the bridge. It passes E of Krongrundet and then rejoins the main channel. This fairway has no authorized draft and local knowledge is required.

A secondary channel, with a least depth of 5m, leads NNE from close WNW of Krongrundet. It passes NW of Masknaggen Light and close W of Sillasen Light.

Caution.—Ferry traffic may be encountered within Kalmarsund, especially in the vicinity of Kalmar.

In the vicinity of Kalmarsunds Djupranna, the current does not set in the direction of the main channel and, with strong gales, may attain rates of up to 6 knots.

Vessels in transit through Kalmarsund should not close the light structures marking the main channel in depths of less than 10m as their foundations extend into the channel.

Cloud formations around the summit of Bla Jungfrum and mirage phenomena frequently make illusory changes in the appearance of the island. The island is a nature reserve and landing and approaching are subject to numerous restrictions.

Numerous submarine cables lie within Kalmarsund and may best be seen on the chart.

5.6 Swedish mainland.—Torhamnsudde (56°04'N., 15°51'E.) is described in paragraph 4.48. The coast between this point and Kalmar is low, partly wooded, and fronted along its entire length by a shoal bank, with depths of less than 10m, on which lie numerous islets and shallow rocky patches. Several churches, with prominent steeples, stand along this stretch of coast.

Sandhamn (56°06'N., 15°52'E.), a small harbor, lies on the W side of an inlet 1.5 miles NNE of Torhamnsudde. It is protected by breakwaters and used by fishing vessels. A lighted range indicates the entrance channel, which has a controlling depth of 4m. Svanhalla, a small craft and fishing boat harbor, is situated 1.5 miles NNE of Sandhamn.

Orranas, a village, is situated 7.5 miles NNE of Torhamnsudde. Several prominent dwellings stand on a ridge in this vicinity and a conspicuous windmill surmounts a hill, which rises 2 miles NE of them.

A conspicuous group of five wind generators stands about 2 miles offshore, 8.5 mile NNE of Torhamnsudde. These wind generators are 60m high and stand in a line about 0.8 mile long.

Kristianopel (56°15'N., 16°03'E.), a shallow harbor, is situated on the E side of a narrow spit of land, 8 miles SSW of Bergkvara. It is very narrow and used only by small craft. A conspicuous church, with a high tower, stands in the town.

5.7 Bergkvara (56°23'N., 16°06'E.) (World Port Index No. 24530), a fishing center and small commercial harbor, is fronted by several islets, rocks, and reefs.

Depths—Limitations.—The main approach channel leads W through the off-lying dangers and has a least depth of 6.1m. It is narrow and tortuous. A secondary approach channel leads S to the harbor. It has a least depth of 4m and is only used by small craft.

The commercial facilities include Viktoria Quay, which is 110m long and has a depth of 6.1m alongside; Modoquay, which is 110m long and has a depth of 3.4m alongside; and Silokajen, which is 175m long and has a depth of 5.1m alongside.

The harbor has facilities for bulk, general cargo, timber, and fishing vessels. Vessels up to 150m in length and 5.5m draft can be accommodated.

Garpen Light (Bergkvara)

Aspect.—Garpen Light is shown from a prominent tower, 27m high, standing on an islet, which lies 1.2 miles E of the harbor. A prominent beacon stands on an islet lying 1 mile WSW of the light. The main approach fairway is indicated by lighted ranges and marked by buoys.

A silo, 32m high, stands in the N part of the harbor and is prominent from seaward.

Pilotage.— Pilotage is compulsory for vessels of more than 70m in length, 14m in width and a draft of 4.5m or greater. Pilots board in position (56°22.4'N., 16°08.9'E.).

Pilot ordering should normally be carried out via the e-services section on the Swedish Maritime Administration website (www.sjofartsverket.se), in conjunction with reporting on the Vessel Reporting System (FRS) section.

A preliminary Pilot request must be made via the FRS at least 24 hours in advance.

An accurate pilot request must be made via FRS no later than 5 hours before arrival.

In exceptional cases the pilot may be ordered by use of telephone, email, or VHF.

Contact Information.—The pilots can be contacted as follows:

1. Call sign: Bergkvara Pilot
2. VHF: VHF channel 13
3. Telephone: 46-40-204352
4. Facsimile: 46-40-301868
5. E-mail: southcoastpilot@sjofartsverket.se

The port can be contacted as follows:

1. Telephone: 46-486-20592
2. Facsimile: 46-486-20390

Caution.—Due to sharp bends in the main approach channel, vessels may find maneuvering difficult, especially at night.

Stenso, a small and shallow fishing harbor, is situated about 10 miles NNE of Ekenas. It lies at the NW side of a small peninsula which extends S from the S side of Kalmar.

The coast between Ekenas and Stenso is fronted by numerous shallow shoals which lie up to 2.5 miles offshore.

Kalmar (56°40'N., 16°22'E.)

World Port Index No. 24570

5.8 Kalmar, situated about 1 miles SW of the Olands Bridge (see paragraph 5.5), is the principal port within Kalmarsund. A large part of the city stands on Kvarnholmen, an island, which is connected by several bridges to the mainland. The main harbor lies between the S side of Kvarnholmen and an artificial peninsula. It is protected at the NE side by a detached breakwater.

Kalmar Home Page
http://www.kalmar.se

Winds—Weather.—Strong winds may cause difficult conditions in the approaches and in the main entrance channel.

Ice.—Icebreakers keep the harbor and approaches open, even during severe winters.

Tides—Currents.—With fresh to strong winds, powerful cross-channel currents may be encountered off the harbor and S of the S entrance to the main channel.

Depths—Limitations.—The port can be approached from N and S through Kalmarsunds Djupranna, with short entrance channels leading to the harbor. The S entrance channel has a least depth of 8m and can be used by vessels with drafts up to 7.3m. The N entrance channel has a least depth of 7.7m and can be used by vessels with drafts up to 7m.

The main harbor basins provide about 4,000m of total quayage with depths of 4.5 to 7.7m alongside. In addition, an oil terminal berth is situated at the SE side of the artificial peninsula. It is 90m long has a depth of 7.9m alongside.

There are facilities for container, tanker, passenger, cruise, bulk, ferry, and ro-ro vessels. Vessels up to 14,000 dwt, 155m in length, and 7.3m draft can be accommodated in the main harbor with entry from S. Tankers up to 30,000 dwt, 185m in length, 22m beam, and 7.3m draft can be handled at the oil berth with entry from S.

Aspect.—The fairways leading to the harbor are indicated by lighted ranges. Floodlights illuminate the end of the breakwater at night.

Prominent landmarks include a cathedral, with four spires, standing near the center of Kvarnholmen; a tall chimney situated close E of the cathedral; a lighted water tower standing 0.2 mile WSW of the cathedral; and Kalmar Slott, a castle with five towers, standing between the S end of Kvarnholmen and the mainland. A conspicuous silo stands on the N side of the artificial peninsula.

An aeronautical light is shown at Berga, which is situated about 1 mile inland, 2.5 miles NNW of the harbor.

Kalmar Slott (Kalmar Castle)

Pilotage.—Pilotage is compulsory for vessels of more than 70m in length, 14m in width and a draft of 4.5m or greater. Pilots will board in either the N or S entrance to the harbor. Actual positions for boarding are, as follows:

1. For the N entrance:
   a. 56°46.3'N., 16°30.5'E. (near Sillasen)
   b. 56°41.7'N., 16°24.6'E. (near Krongrundet)
2. For the S entrance:
   a. 56°37.5'N., 16°21.5'E. (near Tradgardsgrund)
   b. 56°21.5'N., 16°14.3'E. (near Utgrinden)

Pilot ordering should normally be carried out via the e-services section on the Swedish Maritime Administration web site (http://www.sjofartsverket.se), in conjunction with reporting on the Vessel Reporting System (FRS) section.

A preliminary Pilot request must be made via the FRS at least 24 hours in advance.

An accurate pilot request must be made via FRS no later than 5 hours before arrival.

In exceptional cases the pilot may be ordered by use of telephone, e-mail, or VHF.

Contact Information.—The pilots can be contacted, as follows:

1. Call sign: Kalmar Pilot
2. VHF: VHF channel 13

3. Telephone: 46-771-630690
4. Facsimile: 46-40-301868
5. E-mail: southcoastpilot@sjofartsverket.se

The port can be contacted, as follows:

1. Call sign: Kalmar Hamradio
   Kalmar Harbour Radio
2. VHF: VHF channels 9, 12 and 16.
3. Telephone: 46-480-451450
4. Facsimile: 46-480-451458
5. E-mail: kalmar.hamn@kommun.kalmar.se

Regulations.—A mandatory VTS system operates in the approaches to the port (see paragraph 5.5).

Anchorage.—Vessels with drafts over 6m can obtain anchorage, in depths of 8 to 13m, fine sand, about 1 mile S of Tradgardsgrund Lighted Buoy (56°38'N,. 16°22'E.). A wreck, with a depth of 7.9m, lies 0.5 mile S of the lighted buoy and should be avoided.

Small vessels may anchor, in depths of 5 to 6m, clay, about 0.2 mile SW of Huvudet Light (56°40'N,. 16°23'E.).

Caution.—Limitations of size are in force for entry at night.

Kalmar to Oskarshamn

5.9 Between Kalmar and Krakelund, 50 miles NNE, the coast is low, wooded, and indented by several shallow inlets with minor harbors at their heads. Foul ground fronts the shore in places and extends seaward to fringe the main fairway channel running through the sound.

Skaggenas (56°47'N., 16°28'E.), located 6 miles NNE of Kalmar, is low and densely wooded. This island is very prominent and may easily be identified by its dark color. Several structures, including a disused light tower, stand on Revsudde, its SE extremity. A small and shallow fishing harbor lies 0.3 mile NNW of Revsudde and is protected by a breakwater.

Pataholm (56°55'N., 16°26'E.), a small loading harbor, lies at the head of a foul bight, 7.5 miles N of Skaggenas. It is approached from Kalmarsund through a fairway channel available to vessels of up to 1,400 nrt and 3.5m draft. Local knowledge is essential.

Timmernabben (Tillingenabben) (56°58'N., 16°26'E.) a small loading harbor, lies 3 miles N of Pataholm. It is approached from the SW through a fairway, marked by buoys, which leads between numerous shoals. There is a pier, 90m long, which provides a berth, about 30m long, with depths of 3 to 3.7m alongside. Small vessels with drafts up to 3m can be accommodated. Vessels with local knowledge can anchor, in depths of 8 to 13m, clay, on the NE side of the approach channel.

Monsteras (57°02'N., 16°27'E.), a small loading harbor, lies at the head of an inlet, 23 miles N of Kalmar. Stora Okno is the E extremity of a peninsula that extends 4 miles SE from the town. Svartoren, an islet, lies 0.5 mile NE of Stora Okno. A prominent church and a high chimney stand in the town. Kavershall, a high hill, rises 2.5 miles NE of the town and is conspicuous. An approach channel, marked by buoys, leads from Kalmarsund to the harbor and can be used by small vessels up to 2.8m draft. The inner harbor provides 380m of berthage with a depth of 3m alongside. A jetty, 45m long, has a berth at its head with a depth of 4.5m alongside. Local knowledge is required. Anchorage can be taken, in depths of 9 to 10m, mud and clay, in the outer roadstead.

Vallo (57°07'N., 16°36'E.), a large island, lies 6 miles NE of Monsteras and is encircled by foul ground. Its SE part is densely wooded and prominent from N and S. Sando Orskar, an islet, lies 1.5 miles NW of Vallo and is marked by a prominent beacon. Runno, an island, lies 2.2 miles NW of Vallo and a small fishing boat harbor is situated at its W side.

Kungsholmen, an islet, lies 0.4 mile SW of the SW extremity of Vallo and is covered with tall pine trees. Anchorage can be taken, in depths of 10 to 12m, mud and clay, about 0.2 mile NW of this islet, but the roadstead is open to N winds.

5.10 **Stora Jatterson** (57°06'N., 16°34'E.) (World Port Index No. 24635), an oil and chemical terminal, is situated 10 miles SSE of Oskarshamn. It consists of an open roadstead protected by a number of islands and islets on the NE side and the mainland on the S and SW sides. Three conspicuous chimneys stand at a factory in the town.

Three approach channels lead to the harbor. A secondary channel leads W and NW from the vicinity of Damman Light. It is marked by buoys and can be used by vessels with drafts up to 4.8m. An alternative channel, with a least depth of only 3.9m, leads N to join the secondary channel at a position located about 2.5 miles NW of Damman Light. The principal channel leads SW between Runno and Sando Orskar and then S between Vallo and the mainland. This fairway, which can be use by vessels up to 7.5m draft, is indicated by lighted ranges and marked by buoys. A terminal quay is located close NE of the factory area. It is 140m long and has a depth of 8m alongside. Vessels up to 150m in length and 7.5m draft can be accommodated.

Paskallavik (57°10'N., 16°28'E.), a small harbor, lies 6 miles S of Oskarshamn and W of Runno. It is sheltered from nearly all winds. A prominent church and several factory chimneys stand in the town. The two approach channels are tortuous and lead between numerous rocks and detached shoals. Local knowledge is required. The main fairway channel, which is entered E of Runno, rounds the S part of that island and then leads NW to the harbor. A pier, 100m long, extends SE from the shore and has depths of 4 to 4.6m alongside. A quay, located close N of the pier, is 90m long and has a depth of 5m alongside. Vessels with drafts up to 4.2m can be accommodated.

Anchorage can be taken, in depths of 4 to 13m, mud and clay, within a roadstead lying NNE of the harbor. It is reported that this harbor is seldom used.

Oskarshamn (57°16'N., 16°27'E.)

World Port Index No. 24690

5.11 Oskarshamn is situated at the head of an inlet, 6 miles N of Paskallavik. It is a commercial port and a ferry terminal.

Winds—Weather.—The harbor and approaches are seldom closed by ice. If necessary, icebreakers will keep the channels open.

Depths—Limitations.—Several channels lead through the dangers and obstructions lying in the approaches. The main channel leads WNW and passes S of Furo Light and N of Stotbotten Light. It has a least depth of 11m.

Oskarshamn

A secondary approach channel, which can be used by vessels with drafts up to 4.6m, leads WSW and SW. It passes N of Furo Light and joins the main fairway close NW of Stotbotten Light.

The harbor is protected by two detached breakwaters, which form two entrances. The main entrance is 105m wide.

Klubbdjupshamnen, the outer NE part of the harbor, provides 350m of quayage with a depth of 11m alongside. In addition, there is an oil jetty with a head, 26m wide, and a depth of 11m alongside.

The shipyard area, located in the SE part of the harbor, provides 580m of quayage with depths of 3 to 8m alongside.

Sodra Kajen, located in the SW part of the harbor, provides 440m of quayage with depths of 5 to 7.3m alongside.

The NW part of the harbor provides 1,100m of quayage with depths of 4.5 to 8m alongside. The channel leading to the W and inner part of the harbor can be used by vessels with drafts up to 7.6m.

There are facilities for general cargo, ro-ro, container, bulk, tanker, and ferry vessels. Vessels up to 215m in length and 10.5m draft can be accommodated.

Aspect.—Rocks, reefs, and numerous detached shoals front the coast to the N and S of the harbor. Furo (57°17'N., 16°38'E.), a low and barren island, lies 5 miles E of the harbor and 0.5 mile N of the main approach channel. It is fringed by reefs on which the sea breaks.

Finnrevet Light, shown from a prominent floodlit tower, 16m high, stands on a reef extending from the SE side of Furo.

Stotbotten Light, equipped with a racon, is shown from a prominent floodlit tower, 13m high, standing on the N part of a shoal, with a least depth of 5m, lying 2.5 miles E of the harbor.

The approach channels are marked by buoys and indicated by lighted ranges.

A church, a water tower, and several high chimneys stand in the vicinity of the town and are all very conspicuous. The area surrounding the town is generally low, wooded, and featureless.

Pilotage.—A main pilot station is located at Oskarshamn. Contact can be made when within range on VHF channel 13 and, pilot boards S of Furo (57°17'N., 16°38'.). This station provides pilots for several harbors, anchorages, and loading places situated within Kalmarsund. However, all ordering of pilots and traffic information is carried out by Malmo VTS (see paragraph 1.19). Vessels should send an ETA and a request for pilotage at least 12 hours and 5 hours before arrival.

Stotbotten Light

Pilotage for the port is compulsory for the following vessels (see paragraph 5.1):

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 70m length, 14m beam, and 4.5m draft and over.

In certain channels between Furo and the harbor, pilotage is compulsory for the following:

1. All Category 1 vessels.
2. Category 2 vessels of 80m length or 15m beam and over.
3. Category 3 vessels of 90m length or 16m beam and over.

In certain channels leading to and from Simpevarp, pilotage is compulsory for the following:

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 80m in length, 15m beam, and 5m draft and over.

Pilots can be contacted by VHF and board about 1.5 miles SE of Furo.

For information concerning pilotage and the VTS system operating within the central part of Kalmarsund, see paragraph 1.1 and paragraph 5.5.

Anchorage.—Anchorage can be taken, in depths of 12 to 20m, rock and clay, within a roadstead lying NNE of the harbor.

Caution—Local magnetic disturbances have been reported in the outer approaches to the harbor.

Oskarshamn to Krakelund

5.12 The coast between Oskarshamn and Krakelund, 14 miles NE, is of uniform height and wooded. Numerous islands and islets lie offshore and are low and difficult to distinguish from seaward. Bla Jungfrun, a conspicuous island, is steep-to except on its SE side.

Saltvik (57°18'N., 16°30'E.), a small timber-loading facility, lies in an inlet 2.8 miles NE of Oskarshamn. It is approached via a fairway, authorized for drafts up to 3.6m, which joins the outer part of the channels leading to Oskarshamn. Local knowledge is required. Anchorage can be taken, in depths of 3 to 8m, clay and mud, in the outer part of the inlet.

Figeholm (57°22'N., 16°33'E.) (World Port Index No. 24720), a small harbor, lies at the head of an inlet, 7.5 miles NNE of Oskarshamn. This inlet is encumbered by numerous islets and shoals. The entrance channel, which is narrow and turns, is marked by buoys and beacons. It is authorized for drafts up to 4m. Local knowledge is required. This former loading place is reported to be only used by pleasure craft.

Simpevard (57°25'N., 16°40'E.) is situated 11 miles NNE of Oskarshamn and 3 miles SW of Krakelund. This small harbor serves a nuclear power station which stands close NW of it.

The harbor consists of a basin, with a depth of 6m, which is protected by a breakwater, 200m long. An outer approach lighted buoy is moored about 2.5 miles SE of Krakelund Beacon. A channel, authorized for drafts up to 5.5m, leads W from the vicinity of this buoy to the harbor. It is indicated by a lighted range and marked by buoys. A jetty, with two dolphins, is situated on the inside of the breakwater and forms a berth, 110m long. A quay, 30m long, is situated at the W side of the basin and is equipped with a ro-ro ramp.

A conspicuous chimney stands in the vicinity of the power station and a prominent radio mast is situated 0.3 mile WNW of it.

Krakelund (57°27'N., 16°43'E.), an island, lies close offshore at the E extremity of Upplango. It is marked by a prominent beacon, 12m high, which, from NE, resembles a yacht under sail.

Oland

5.13 The island of **Oland** (56°40'N., 16°37'E.), 77 miles long, is a popular summer resort. It is generally low and partly wooded. Alvaret, a mostly barren ridge, extends almost the entire length of the island and rises to a height of 61m. Numerous reefs and shoals front the shores of this island and extend up to about 3 miles seaward in places.

Olands Sodra Udde (56°12'N., 16°24'E.), the S extremity of Oland, is low and barren, but a wood extends between 1 and 3 miles to the N of it. A light is shown from a conspicuous floodlit tower, 42m high, standing on the point.

A prominent radio mast stands 3 miles NE of the light and a prominent beacon is situated on the W coast of the island, 1.7 miles N of the light.

Olandsrev (56°10'N., 16°24'E.), a shoal bank with depths of less than 10m, extends up to about 5 miles S from Olands Sodra Udde and is marked by buoys. The sea breaks on the N part of this bank.

Olands Sodra Grund lies 12 miles SE of Olands Sodra Udde and is described in paragraph 5.2.

5.14 West side.—Gronhogen (56°16'N., 16°24'E.), a small harbor, is situated 4.3 miles N of Olands Sodra Udde and is protected by two breakwaters. It is used by coasters and fishing vessels. The entrance, which is 50m wide, faces SW and has a controlling depth of 4m. The harbor basin provides 240m of berthage. Small vessels with drafts of up to 3.5m can be accommodated. Local knowledge is advised.

A prominent church, with a red roof, stands 1.2 miles NNE of the harbor entrance and a tall chimney is situated at a factory the N side of the town.

Degerhamn (56°21'N., 16°25'E.) (World Port Index No. 24790), a sheltered harbor, lies 9 miles N of Olands Sodra Udde and is formed by a long curved breakwater and a short mole.

Ice.—During the winter, ice is sometimes set into the harbor by W winds and berthing is hindered.

Depths—Limitations.—The entrance, which is 55m wide, faces SSW and has a controlling depth of 6.5m. The entrance channel, which is 40m wide, leads NE and NNE to the harbor. The main commercial quay is 140m long and has a depth of 6.4m alongside. There are facilities for tanker and bulk vessels. Vessels up to 3,500 dwt, 85m in length, and 5.9m draft can be accommodated.

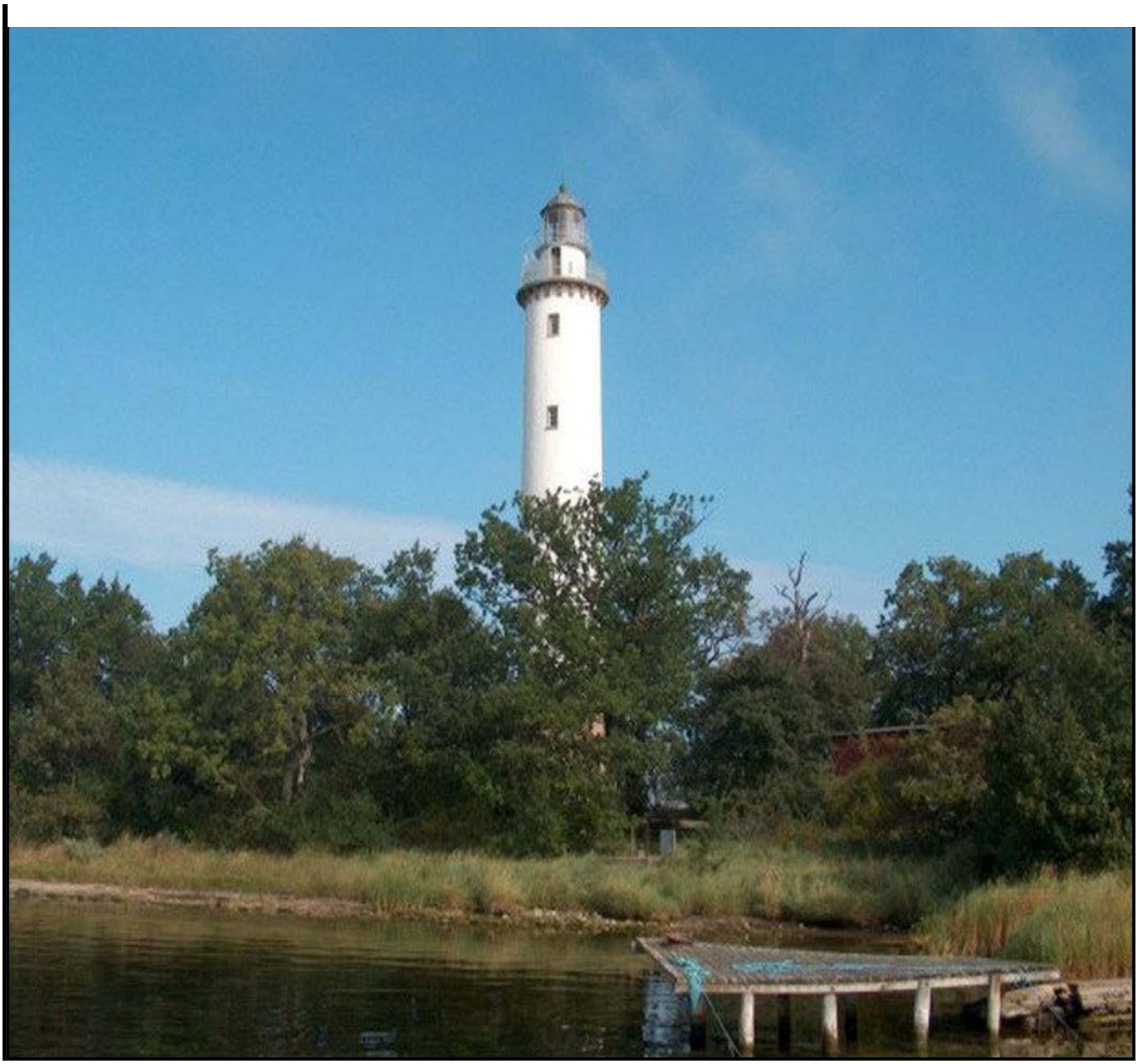
Aspect.—The entrance channel is indicated by lighted ranges and is marked by buoys.

A prominent church stands on a ridge 0.5 mile E of the harbor. Several prominent silos and two chimneys stand in the vicinity of the harbor. It is reported that three wind generators, 40m high, stand in the vicinity of the main quay.

Pilotage.—Local knowledge is required. Pilotage is compulsory for vessels of over 70m in length, 14m beam, or 4.5m draft. Pilots are provided by the station at Kalmar (see paragraph 5.8). However, all ordering of pilots and traffic information is carried out by Malmo VTS (see paragraph 1.19).

Anchorage.—Anchorage can be taken, in a depth of 9m, clay, about 2 miles SW of the harbor, but this roadstead is unsafe in W winds.

5.15 Morbylanga (56°32'N., 16°23'E.) a small harbor, lies 11 miles N of Degerhamn and is sheltered except during W gales. It is used by coasters and pleasure craft. The harbor is protected by two breakwaters which form an entrance, 35m wide. Ice seldom closes this harbor, but S and W gales cause swells to enter. The entrance channel, which is dredged to a



Olands Sodra Udde Light

least depth of 3.8m, leads NW to the entrance. It is marked by buoys and indicated by a lighted range. The main commercial quay is 170m long and has a depth of 3.8m alongside. Small vessels with drafts up to 3.6m can be accommodated. Local knowledge is advised. A prominent church is situated in the town and a conspicuous radio mast stands 1.5 miles E of it. Several prominent buildings and a silo stand on the E side of the harbor.

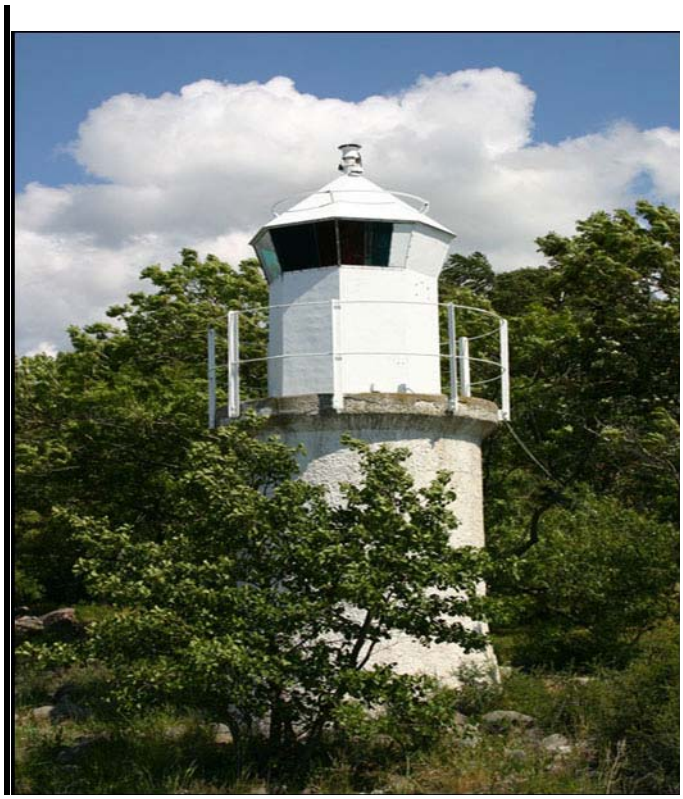
Anchorage can be taken, in depths of 7 to 9m, sand and clay, about 0.7 mile W of the harbor entrance.

Farjestaden (56°39'N., 16°28'E.), a small harbor, lies 8 miles NNE of Morbylanga. It is used by coasters, fishing vessels, and small craft. The harbor is protected by two breakwaters which form an entrance, 55m wide. The main approach channel leads ESE and has a least depth of 4.4m. Local knowledge is advised. The main commercial berth is 80m long and has a depth of 4m alongside. Small vessels with drafts of up to 3.4m can be accommodated.

5.16 Stora Ror (56°45'N., 16°32'E.), a small harbor, lies 6 miles NNE of Farjestaden and is sheltered except during SW gales. It is used by coasters and fishing boats. The harbor is protected by two breakwaters, which form an entrance 30m wide. The entrance channel leads E and has a least depth of 3.6m. Local knowledge is advised. The main commercial quay is 40m long and has a depth of 3.4m alongside. Small vessels with drafts of up to 3m can be accommodated.

Ispeudde Light (56°45'N., 16°31'E.) is shown from a prom-

inent tower, 7m high, standing on a point located 0.8 mile SSW of Stora Ror.



Ispeudde Light

Borgholm (56°53'N., 16°39'E.) (World Port Index No. 24760), a small commercial harbor, lies 8.5 miles NE of Stora Ror and is protected by two breakwaters. Ice may close this harbor during January and February. The main entrance channel, which has a least depth of 5m, leads ESE and E. It is marked by buoys and indicated by lighted ranges. The inner part of the harbor is used only by small craft. The outer part provides 450m of berthage with depths of 4.4 to 5m alongside. There are facilities for oil, bulk, and ferry vessels. Vessels up to 85m in length and 4.5m draft can be accommodated. Local knowledge is advised.

A conspicuous ruined castle stands on a hill, 0.5 mile S of the harbor, and a large white building, the former royal palace, is situated 0.4 mile SW of it. A prominent church, with a pointed spire, is situated in the town. A conspicuous silo, 27m high, stands on the N side of the harbor. A prominent radio mast is situated 3.5 miles SE of the town.

Anchorage can be taken, during good weather, in depths of 7 to 11m, about 1 mile outside the harbor and clear of the shoals. Local knowledge is required.

Sandvik (57°04'N., 16°52'E.), a small and partly-sheltered harbor, is situated 13 miles NNE of Borgholm. It is protected by two curved breakwaters. The entrance, which is 28m wide. has a controlling depth of 4m. This former loading place is only used by fishing vessels and pleasure craft. A conspicuous windmill stands in the vicinity of this harbor.

Hornsudde (57°12'N., 16°54'E.), a blunt cape, is located 7.5 miles NNE of Sandvik and marked by a light. During N and NE gales, heavy swells have been observed on the shoal banks which extend up to 5 and 7 miles N of the cape.

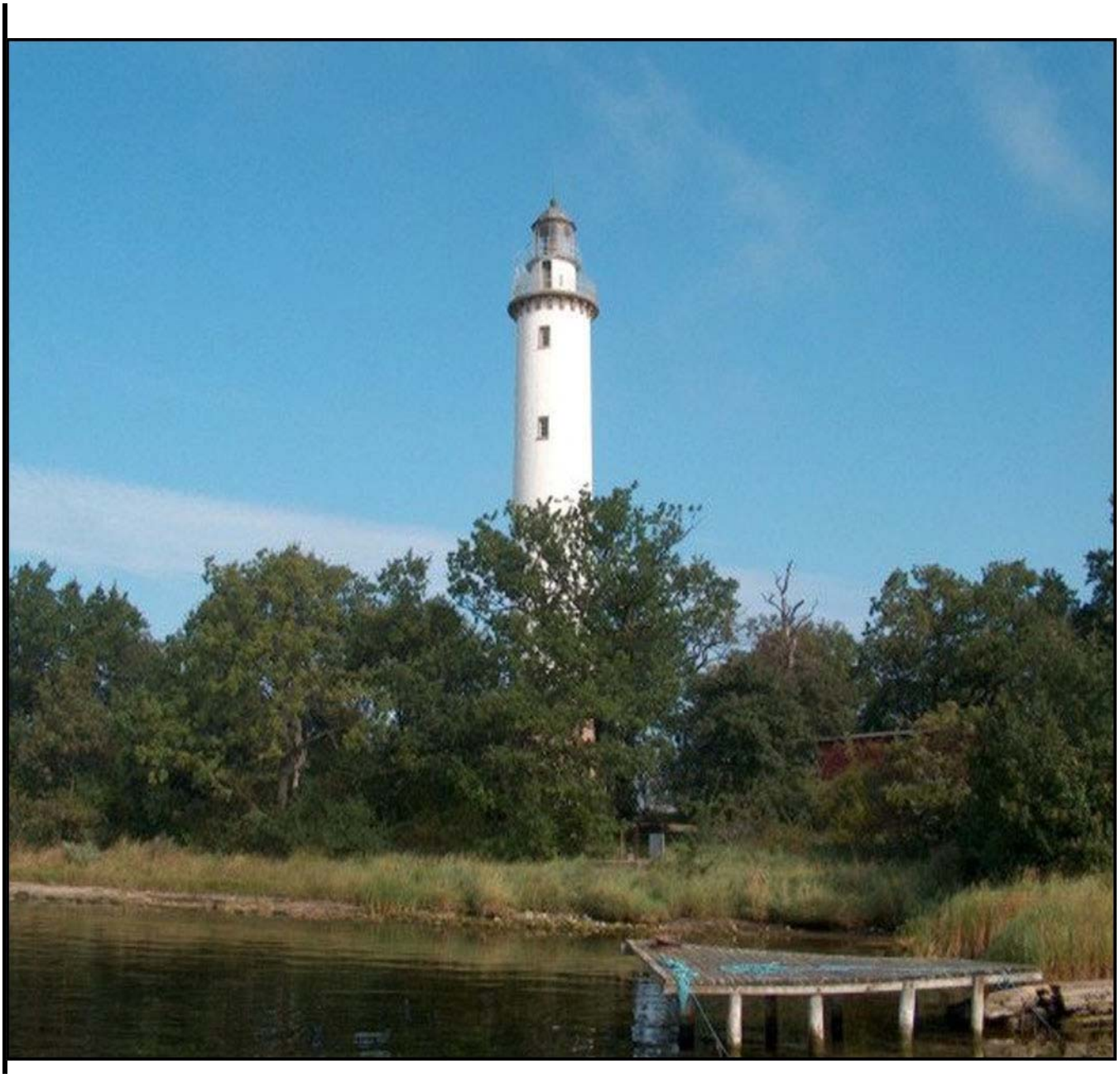
Tokenasudde (57°19'N., 17°00'E.), a point, is located 8 miles NNE of Hornsudde. During N and NE gales, heavy swells have been observed on the shoal banks which front this stretch of coast. A light is shown from a structure standing on this point and two prominent radio masts are situated about 1.3 miles E of it.

Segerstad Light

Tokenasudde Light

Byxelkrok (57°20'N., 17°00'E.), a small harbor, lies 0.5 mile N of Tokenasudde and is protected by a long breakwater. It is used by fishing vessels, ferries, and pleasure craft. A narrow channel leads SE to the harbor entrance and has a controlling depth of 4.5m. It is marked by buoys and indicated by a lighted range. Local knowledge is advised.

The coast between Sandvik and the N end of Oland is steep and light-colored, with the N section being mostly wooded. Several groves of trees stand on Alvaret, the ridge backing the coast.



Olands Norra Udde Light

5.17 Olands Norra Udde (57°22'N., 17°06'E.), a small peninsula, forms the N end of Oland. A light is shown from a prominent tower, 32m high, standing on Storgrundet, an islet, which lies close E of the N extremity of the peninsula. A prominent radio mast is situated 1.3 miles SW of the light.

Olands Norra Grund (57°29'N., 17°09'E.), a rocky shoal, lies about 7 miles N of the N end of Oland. It has a least depth of 4.4m and is marked by a lighted buoy. Several detached shoals, with depths less than 8m, lie between the N end of Oland and Olands Norra Grund.

Anchorage can be taken, in good weather or with S winds, in a depth of 18m, clay, on a bank lying about 1 mile NE of Storgrundet.

Grankullaviken (57°22'N., 17°07'E.), a small bay, lies on the SE side of Olands Norra Udde and is encumbered by rocks and shoals. Several reefs and islets partially block the entrance. A channel, with a least depth of 5m, leads SW into this bay.

Grankullavik, a small harbor, is situated at the W side of the bay and has an entrance, 20m wide. It is used by ferries, small craft, and pleasure boats. The bay is obstructed by ice during February and March and strong N winds make entry difficult.

The harbor is closed to commercial shipping. A ruined pier fronts the site of a sawmill and lumberyard.

Sheltered anchorage can be taken, in depths of 8 to 9m, clay, about 0.5 mile ENE of the harbor breakwater. Local knowledge is advised.

Caution.—Large vessels are advised to pass well to the N of Olands Norra Grund.

5.18 East side.—The E coast of Oland is mostly low and irregular, with only a few prominent landmarks.

Segerstad (56°22'N., 16°34'E.), a blunt point, is located 12 miles NNE of Olands Sodra Udde. A light is shown from a prominent tower, 22m high, standing on this point.

Grasgardhamn, a small and shallow fishing harbor, lies 3 miles SSW of Segerstad Light and has an entrance, 12m wide. Skarlov, a small and shallow fishing harbor, lies 3.5 miles N of Segerstad Light.

Blasinge, a small and shallow fishing harbor, lies 16 miles NNE of Segerstad Light and is protected by a breakwater.

Kapelludden (56°49'N., 16°51'E.) is located 29 miles NNE of Segerstad Light. A light is shown from a prominent framework tower, 32m high, standing on this point.

Kapelludden Light

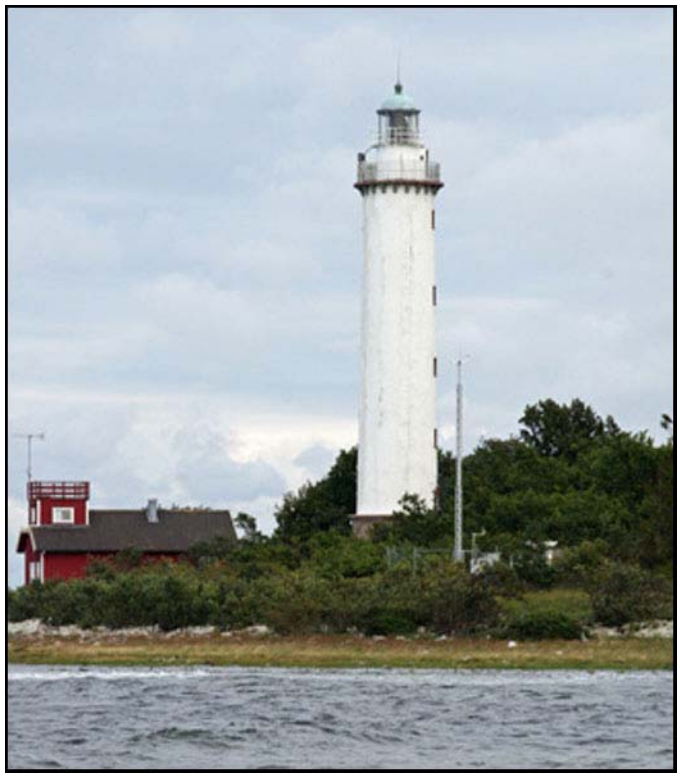
Karehamn Wind Farm

Karehamn (56°57'N., 16°53'E.), a small and sheltered harbor, is situated 8.5 miles NNE of Kapelludden Light. It is used by fishing vessels and pleasure craft. Kareholm, a low and barren islet, lies 0.5 mile ENE of the harbor and is marked by a beacon. A channel, 30m wide, leads WNW and SSW to the harbor and has a controlling depth of 4.4m.

Unsheltered anchorage can be taken, in a depth of 18m, sand and clay, about 2.5 miles E of Varholmsudde a headland located 2 miles SE of the harbor.

A shoal, with depths of less than 8m, extends up to about 2.8 miles seaward from a point on the shore located 3.5 miles NE of Karehamn and is marked by a buoy. It is reported that a

Hogby Light



Olands Norra Udde Light

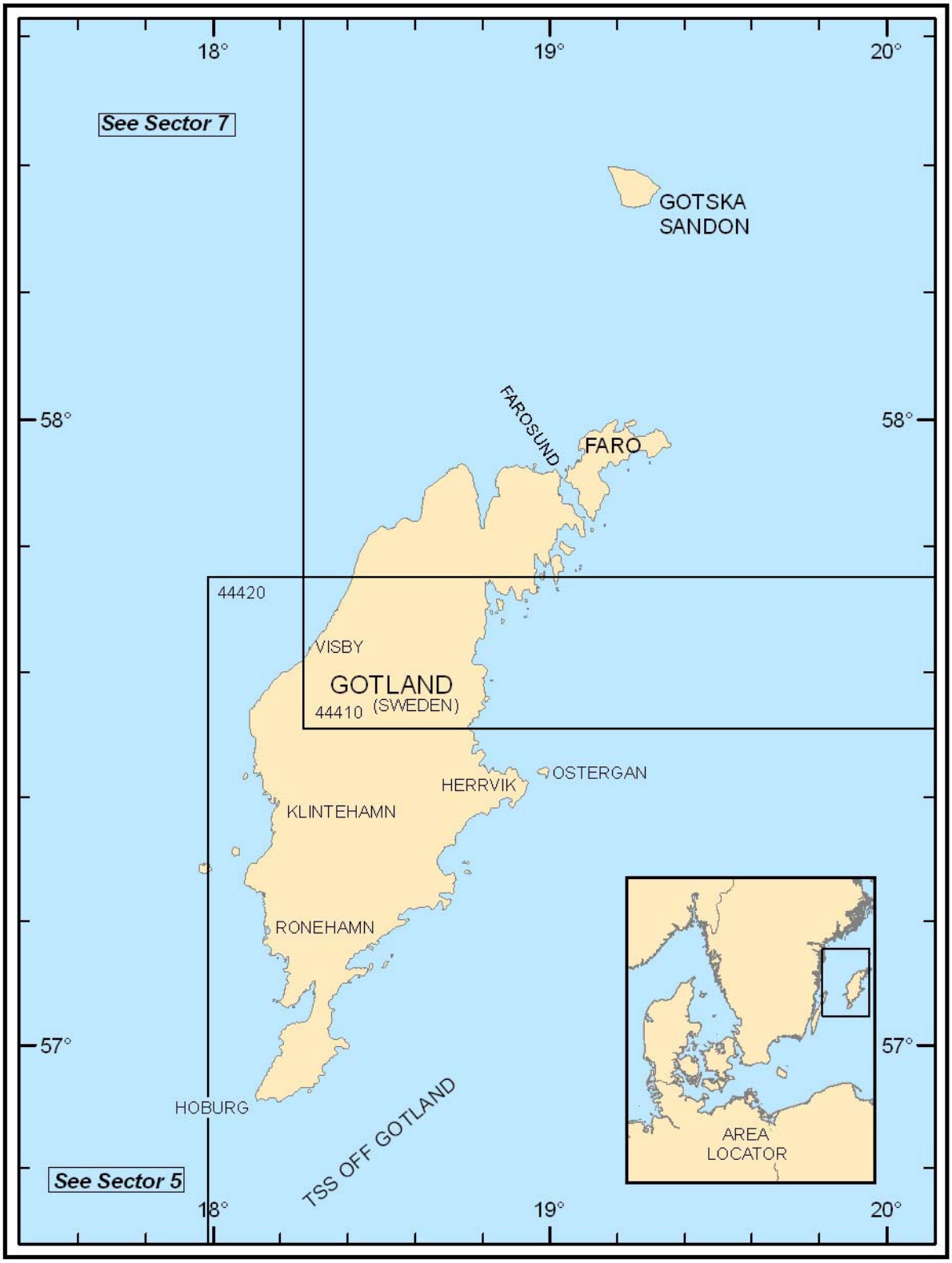
Karehamn Wind Farm (56°59.1'N., 17°00.7'E.) consists of 16 turbines arranged in an arc from N to SE and is located ENE of Karehamn. Anchoring is prohibited in the area around the turbines and associated cables. The wind farm is enclosed by a restricted area, as best seen on the chart. Red warning lights are exhibited from the top of each turbine.

Hogby (57°09'N., 17°03'E.), a small peninsula, is located 12.5 miles NNE of Karehamn. A light is shown from a prominent framework tower, 23m high, standing on the seaward extremity of this peninsula. A prominent dwelling is located near the light tower. A conspicuous church and a radio mast stand close W of the peninsula.

5.19 **Boda** (57°15'N., 17°05'E.), a small fishing harbor, is situated at the SW end of an open bay, about 6 miles NNE of Hogby Light. It is protected by two breakwaters, which form an entrance, 32m wide. A channel, with a least depth of 3.5m over a bottom width of 18m, leads WNW and NW to the harbor. It is marked by buoys and indicated by a lighted range. Local knowledge is advised.

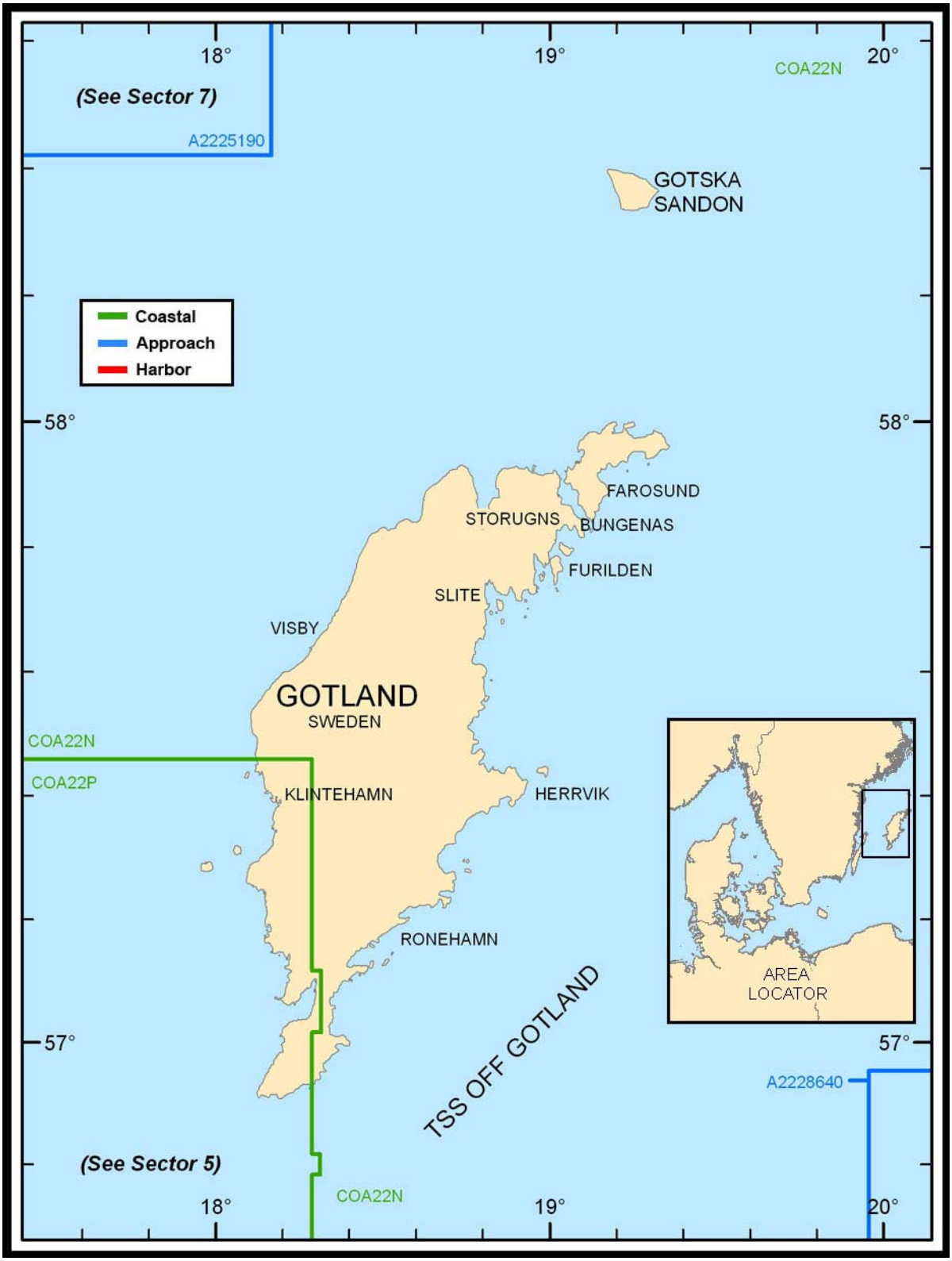
Angjarnsudden (57°18'N., 17°09'E.), the NE extremity of Oland, is located 10.5 miles NNE of Hogby Light and 4.2 miles SE of Olands Norra Udde (see paragraph 5.17). It is fronted by shallow shoals which extend up to about 1.5 miles SE and are marked by a buoy. A prominent beacon stands on the coast about 2 miles NNW of this point.

Caution.—Several detached shoals and dangerous wrecks, which may best be seen on the chart, lie up to 3.5 miles seaward of the E coast of Oland. Large vessels are advised to pass well clear of the E side of Oland.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **6** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 22 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 6— DNC LIBRARY INFORMATION

SECTOR 6

SWEDEN—GOTLAND, FARO, AND GOTSKA SANDON

Plan.—This sector describes the islands of Gotland, Faro, and Gotska Sandon. The descriptive sequence is from S to N along the mainland and the W coast of Gotland, and from N to S along the E coast of Gotland.

General Remarks

6.1 Gotland (57°30'N., 18°30'E.), the largest island in the Baltic, is part of Sweden and lies 45 miles off the coast. It consists of a limestone formation and is a popular tourist destination. The major part of the coast of Gotland is wooded, rising steeply from the sea to form a plateau, 26 to 43m high. A few detached hills rise above this plateau. Torsburgen (57°24'N., 18°44'E.), 68m high, is the highest and stands at the E side. A peninsula, 9 miles long, forms the S end of Gotland and is joined to the island by an isthmus, less than 2 miles wide. The coast of Gotland is indented by numerous shallow bights and rocks, reefs, and shoals front the greater part of the shore. Visby and Slite are the two major ports of Gotland.

Winds—Weather.—Gotland has a very temperate climate. Winds from the N and W prevail along the W coast in the late summer and autumn; winds from the E prevail in spring and late autumn. Winds from the S prevail along the NE coast during the summer.

Generally, the harbors of the island are clear of ice during ordinary winters, but some of them may be obstructed between January and March.

Tides—Currents.—There are only weak surface currents around Gotland. The current between the island and the Swedish coast usually sets SW. Off the E coast of the island, the current usually sets S or SW and is weaker than off the W coast.

Pilotage.—Pilots for harbors and loading places located around Gotland are provided by the main station at Visby.

Pilotage within the coastal area of Gotland is compulsory for the following vessels:

1. All Category 1 vessels.
2. Category 2 vessels of 80m in length or a width of 15m and greater.
3. Category 3 vessels of 90m in length or a width of 16m and greater.

See paragraph 5.1 for definitions of vessel categories.

Pilot ordering should normally be carried out via the e-services section on the Swedish Maritime Administration website (www.sjofartsverket.se), in conjunction with reporting on the Vessel Reporting System (FRS) section.

A preliminary Pilot request must be made via the FRS at least 24 hours in advance.

An accurate pilot request must be made via FRS no later than 5 hours before arrival.

In exceptional cases the pilot may be ordered by use of telephone, email, or VHF.

Contact Information.—The pilot ordering center can be contacted, as follows:

1. Call sign: East Coast Pilot
2. VHF VHF channel 10
3. Telephone: 46-8-554-24500
4. Facsimile: 46-8-554-24530
5. E-mail: eastcoastpilot@sjofartsverket.se

The pilots station at Gotland can be contacted, as follows:

1. Call sign: Visby Pilot
2. VHF VHF channel 10
3. Telephone: 46-498-210138
4. Facsimile: 46-498-210325

The port can be contacted, as follows:

1. VHF VHF channel 16
2. Telephone: 46-498-269916
3. Facsimile: 46-498-269065
4. E-mail: visby.port@gotland.se

Regulations.—An IMO-adopted Area to be Avoided, the limits of which may best be seen on the chart, has been established in the vicinity of Hoburgs Bank (56°40'N,. 18°10'E.), an extensive shoal bank. The area lies centered 24 miles of SSE of Hoburg Light (56°55'N,. 18°09'E.).

Gotland Restricted Area.—This area covers the NE part of Gotland, E of 18°55'E, Farosund (57°50'N., 19°00'E.), and the SW side of Faro, with the exception of the marked channel throughout. For further information, see Swedish Sea Surveillance and Restricted Military Areas in paragraph 4.47.

Directions.—Off Gotland Island TSS, which may best be seen on the chart, lies centered 11 miles SE of Hoburg Light and is IMO-adopted. An Inshore Traffic Zone is situated between the SE coast of Gotland and the TSS traffic lanes.

Less depths than charted have been reported to lie outside of but close to the TSS area and deep-draft vessels are advised to keep strictly within the lanes.

From the Olands Sodra Grund TSS, which is situated in the viciinty of Olands Sodra Grund Light (56°04'N., 16°41'E.), vessels proceeding to the Gulf of Finland should steer NE for about 70 miles to the Off Gotland Island TSS. They should then continue NE for about 180 miles to the TSS lying centered 20 miles NW of Kopu Light (58°55'N., 22°12'E.). Vessels should pass NW of the Norra Midsjobanken Area to be Avoided and the Hoburgs Bank Area to be Avoided.

For further route information, see paragraph 4.1 and paragraph 5.1.

Baltic Deep Water Route.—A Deep Water Route, recommended for vessels with drafts over 12m, has been established for shipping proceeding to the NE part of the Baltic Sea and may best be seen on the chart. It extends ENE and NE from the E end of the Bornholmsgat TSS to the S end of the TSS lying centered 20 miles NW of Kopu Light (58°55'N., 22°12'E.). The route passes 37 miles SSE of Hoburg Light (56°55'N., 18°09'E.), S and E of the Hoburgs Bank Area to be Avoided, and 24 miles SE of Faro Light (57°58'N., 19°21'E.).

It is reported that this recommended route has a least depth of 25m and is recommended for vessels with drafts up to 15m.

For further information, see paragraph 4.1 and paragraph 5.1.

Caution.—Faro and the NE part of Gotland lie within the Farosund Restricted Area and permission to enter must be obtained from the authorities.

Fishing for salmon with drift nets is conducted annually from September 15 to June 14, within 10 miles of Gotland. Each fishing boat may have nets, which are formed by units about 0.6 mile long, up to a combined length of 11 miles. Each unit of these nets is usually provided with radar reflectors and lights. Vessels approaching these fishing boats and nets should pass well clear and keep a VHF listening watch.

Local magnetic anomalies exist off the N and W coasts of Gotland; compass deflections of 2° to 4° have been observed.

In spring, the ice pressure may cause the coastal approach channels to fill with large boulders; charted depths, especially in the fairways leading to the small harbors, should not be relied upon.

Because of the non-tidal nature of these waters, the Swedish authorities have enacted stringent anti-pollution regulations.

It is reported that a submarine gas pipeline is being constructed between Russia and Germany. This pipeline will extend WSW through the Gulf of Finland and then lead in a SW direction to the E side of Rugen (54°20'N., 13°44'E.). It will pass E of Faro (57°57'N., 19°10'E.), E of Hoburgs Bank (56°35'N., 18°25'E.), and W of Sodra Midsjobanken (55°40'N., 17°23'E.).

Gotland—West Coast

6.2 Hoburgs Bank (56°40'N., 18°10'E.) extends up to 50 miles S of the S end of Gotland and has depths of 10 to 37m. Shoal patches, with depths of 12 to 14m, lie on this bank about 28 miles S and SSE of the S end of the island and may best be seen on the chart (see Regulations in paragraph 6.1).

Hoburg Light

Hoburg (56°55'N., 18°08'E.), the SW extremity of Gotland, is formed by a limestone cliff, 35m high, which is divided by a deep cleft. Hoburg Light is shown from a conspicuous tower, 22m high, standing on a hill, with an elevation of 37m, which rises about 1 mile NE of the SW extremity.

Hoburgsrev, a spit with a least depth of 5.5m, extends about 1.2 miles S from Hoburg and is marked by a buoy.

Barshagegrund, an isolated shoal patch, lies about 2 miles SE of Hoburg. It has a least depth of 4.7m and is marked by a buoy.

Burgsviken (57°03'N., 18°12'E.) is entered between Valar, located 8 miles NNE of Hoburg, and Nasudden, 2 miles N. This inlet extends NE and is partly encumbered with rocks and reefs.

The coast extending from Hoburg to Valar consists of steep and barren chalk cliffs. A light is shown from a tower, 6m high, standing on Valar.

A radio mast, 147m high, stands on Nasudden and a conspicuous wind generator, 78m high, is situated close E of it. Storgrund, a small islet, lies close off the W side of this N entrance point.

6.3 Nasrevet (57°03'N., 18°09'E.), a partially above-water reef, extends about 1.8 miles WSW from Nasudden and is marked by a light shown from a tower, 9m high, standing 1 mile SW of Storgrund.

Bockstigen, an isolated shoal patch, lies close SW of the S edge of Nasrevet. It has a least depth of 5.2m and is marked by a lighted mast, 40m high.

It is reported that five conspicuous wind generators, 40m high, stand in the vicinity of Bockstgen.

An entrance channel, which can be used by vessels with drafts of up to 5m, leads ENE into the outer roadstead of Burgsviken. It passes SSE of Bockstigen and is indicated by a lighted range. Vessels with local knowledge can anchor, in a depth of 7m, sand and clay, about 0.6 mile NNE of Valar Light.

Burgsvik (57°02'N., 18°16'E.), a small harbor, lies in the S part of Burgsviken and consists of a curved pier. It is approached from the outer roadstead through a buoyed channel, 60m wide, with a dredged depth of 4.1m. There is a cargo berth, 135m long, with depths of 3 to 3.6m alongside. Vessels up to 60m in length and 3.4m draft can be accommodated.

6.4 Deppo (57°07'N., 18°07'E.), an isolated shoal patch, lies 3 miles offshore, about 3.7 miles NW of Nasrevet Light. It has a least depth of 3.8m and is marked by a buoy. Lillgrund, a shoal patch with a least depth of 5.2m, lies about 6.5 miles NNW of Deppo and several patches, with depths of less than 10m, are located between them.

Hammarudd (57°16'N., 18°06'E.), a salient point, is located 12.5 miles N of Nasrevet Light. The coast between is high, steep, densely wooded, and fronted by a coastal shoal with detached outer patches. From Hammarudd, the coast trends 16 miles in a general N direction to Nyrevsudden and is indented by numerous coves.

A number of churches stand close inland along this stretch of coast and are prominent from seaward. Lighted ranges are occasionally shown from several locations along this stretch of coast to guide local fishing vessels.

Stora Karlso (57°17'N., 17°58'E.), 52m high, lies 4 miles WNW of Hammarudd. It is steep-sided and fronted by reefs. Stora Karlso Light is shown from a prominent tower on a dwelling, 18m high, standing on the W side of this island.

Lilla Karlso (57°19'N., 18°04'E.), 66m high, lies 3 miles NNW of Hammarudd. This island is steep-sided and light-colored.

Caution.—Stora Karlso and Lilla Karlso are nature reserves and permission must be obtained to land or navigate close in-

Stora Karlso Light

shore of these islands.

From 15 April to 31 July annually, a small prohibited area fronting the NE side of Lilla Karlso is in force.

Several submarine power cables, which may best be seen on the chart, extend between Stora Karlso and Lilla Karlso and the W side of Gotland.

6.5 Klintehamn (57°23'N., 18°12'E.) (World Port Index No. 24960), a small commercial harbor, is situated 8 miles NNE of Hammarudd at the head of a bight. Its S side is formed by a narrow tongue of land extending W from the coast. A prominent silo stands on this tongue of land and a wind generator is situated near the outer end.

An approach channel, with a least depth of 5.5m, leads NE to the outer roadstead and is indicated by a lighted range. Its outer entrance is marked by a lighted buoy. A fairway channel, 30m wide, leads from the roadstead to the quay and has a dredged depth of 5m.

A quay, 330m long, is situated along the N side of the tongue of land and has a depth of 5m alongside. It is protected from the N and E by a quayed mole which is used by fishing boats and ferries. The harbor has facilities for ferry, bulk, and ro-ro vessels. Vessels up to 75m in length and 4.7m draft can be accommodated. It is reported that the maximum allowable entry draft has been reduced to 4.5m due to silting.

During good weather or with offshore winds, anchorage can be taken, in depths of 11 to 14m, sand and clay, within the outer roadstead. Local knowledge is advised.

Pilot information can be found in paragraph 6.1.

Caution.—Strong SW winds are reported to raise a heavy sea within the harbor.

The harbor is usually free of ice, but with continuous W and NW winds during February and March, it may occasionally be blocked by drifting ice.

6.6 Utholmen (57°26'N., 18°06'E.), low and barren, lies about 1 mile offshore, 7 miles N of Lilla Karlso. A disused light tower is situated at the NE end of this island, but is reported to be difficult to identify. A house and several trees stand in the middle of the island. Shoal water extends up to 2 miles SSE and 4 miles NNW of Utholmen. Scharlakansgrund, a rocky shoal, lies between 1 mile and 2.3 miles N of the island and is awash in places. Gnisvardsgrund, with a depth of 5.4m, lies 3.2 miles NNW of the island. The seaward edges of these shoals are marked by buoys.

Skansudde (57°27'N., 18°07'E.) is located 4 miles NNW of Klintehamn. A conspicuous disused light tower, 10m high, stands on this point and a prominent dwelling, with a black roof, is situated close S of it. Several churches stand along this part of the coast and are prominent from seaward.

Skansudde disused light tower

Vastergarn, a small craft and fishing boat harbor, lies close SE of Skansudde. It is sheltered from the W by Svaltholm, an islet, which is connected to the main island by a breakwater.

Ginisvard, a small and sheltered fishing boat harbor, lies 3.2 miles N of Skansudde.

Nyrevsudde (57°32'N., 18°07'E.) is located 5.2 miles NNW of Skansudde. This conspicuous light-colored headland forms the W extremity of Gotland.

The NW coast of Gotland extends 31 miles in a general NE direction from this headland to Hallshuk. There are few indentations along this section of the coast which is mostly steep-to.

Stavklint, a steep cliff, stands 2 miles NNE of Nyrevsudde. It is 43m high and prominent from seaward. Hogklint, another steep cliff, is located 3.2 miles NE of Stavklint and is wooded on top.

Caution.—Several submarine cables extend W from the vicinity of Hogklint and may best be seen on the chart. Their landing places are marked by beacons

Landing is prohibited on Utholmen without special permission.

Visby (57°38'N., 18°17'E.)

World Port Index No. 24950

6.7 Visby, the principal town of Gotland, is situated 9 miles NE of Nyrevsudde. The harbor is protected by two breakwaters and consists of two basins. It is used by commercial vessels and passenger ferries.

Winds—Weather.—Stormy weather sometimes raises a considerable sea outside the harbor with a resulting suction within the port. Ground swells are frequent. Prevailing winds are SW in the summer and between NW and NE during the

Visby

Visby Harbor

winter. The harbor is usually free from ice.

Tides—Currents.—The current usually sets in the direction of the wind at rates of 2 to 3 knots. Protracted gales from the W raise the water level in the harbor and gales from the E and SE lower it. The water level may differ by as much as 0.9m.

Depths—Limitations.—Vessels should approach the port from WSW. An entrance channel, dredged to a depth of 9m, then leads in a NE direction into the outer part of the harbor.

The inner basin provides 750m of quayage with depths of 5.8 to 7m alongside. It can be used by vessels with drafts up to 6.3m.

Three ro-ro berths, with depths of 7 to 8m alongside, are situated at the E side of the outer basin. An oil berth, 60m long, is situated at the E side of the S breakwater and has a depth of 8m alongside. There are facilities for cruise, passenger ferry, ro-ro, tanker, general cargo, and fishing vessels. Tankers up to 130m in length and other vessels up to 200m in length can be accommodated with drafts up to 7.5m.

Aspect.—A sector light is shown from a prominent floodlit structure, 8m high, standing on the W end of the S breakwater. A light is shown from a prominent structure, 9m high, standing on the head of the N breakwater. The entrance fairway is indicated by a lighted range which may best be seen on the chart.

An aeronautical light is shown from a mast, 149m high, standing at an elevation of 243m about 4 miles SE of the town.

The coast to the N and S of the town is fronted by cliffs. A prominent cathedral, with a high tower and several spires, stands in the town and a tall chimney is situated close E of it. A prominent water tower, with a pointed roof, also stands in the town. A conspicuous windmill is situated close NE of the town and a radio mast stands 0.4 mile NNW of it.

Pilotage.—Pilots are provided by the main station situated in the port. However, all ordering of pilots must be made through Oxelosund VTS. For more details, see paragraph 6.1.

The pilots can be contacted, as follows:

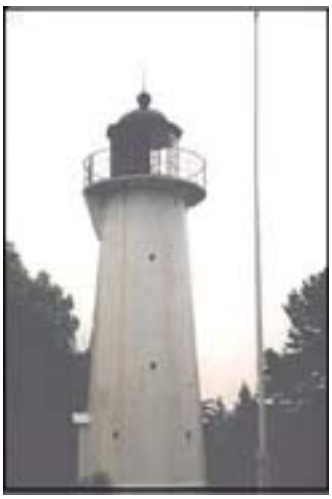
1. Call sign: East Coast Pilot
2. VHF: VHF channel 10
3. Telephone: 46-771-630645
4. Facsimile: 46-10-4785049
5. E-mail: eastcoastpilot@sjofartsverket.se
6. Web site: http://www.sjofartsverket.se

Anchorage.—In good weather or during offshore winds, vessels may anchor within two outer anchorages. These anchorages are located, in a depth of 42m, about 0.3 mile NW of the head of the N breakwater and, in depths of 18 to 22m, about 0.3 mile NNE of the head of the N breakwater. It has been reported a cable is lying along an ESE/WNW bearing passes about 0.1 mile N of Anchorage No. 3.

Caution.—With onshore gales, vessels should not attempt to enter the harbor without local knowledge as experience has shown that there is a great danger of stranding in such conditions.

6.8 Stenkyrkehuk (57°49'N., 18°29'E.), the NW extremity of Gotland, is located 12 miles NNE of Visby. The coast be-

tween is steep-to. A light is shown from a prominent tower, 15m high, standing on this point.



Stenkyrkehuk Light

Flundreviken, a small fishing boat harbor, is situated 2 miles NE of Visby and its entrance channel is indicated by a lighted range. Skalso, another small fishing boat harbor, is situated 2 miles NE of Flundreviken. Its entrance channel, which has a least depth of 3m, is indicted by two lighted ranges.

The coast in the vicinity of Skalso and extending to Hallshuk, 18 miles NE, is steep and wooded.

A conspicuous church, with a slender spire, stands at Lumelunda, 3 miles SSW of Stenkykehuk Light.

Lickershamn, a small and shallow fishing harbor, lies 2 miles ENE of Stenkyrkehuk Light and is protected by a breakwater. Its entrance is indicated by a lighted range. Several houses standing along the shore in the vicinity of this harbor and a white house situated in the village of Snipan, 2 miles NE, are all prominent from seaward.

An aeronautical light is shown from a conspicuous tower standing at an elevation of 155m about 3 miles ESE of Lickershamn.

It is reported that two conspicuous wind generators are situated close SE of Lickershamn.

Hallshuk (57°56'N., 18°44'E.), a high and steep point, is located 11.5 miles NE of Stenkyrkehuk Light and forms the N extremity of Gotland. A light is shown from a structure standing on the NE side of the point.

A prominent church is situated at Hall, 2.3 miles S of Hallshuk Light. Norsklint, 44m high, is a conspicuous wooded hill, which rises about 1.5 miles WSW of Hallshuk Light.

6.9 Kappelshamnsviken (57°54'N., 18°48'E.) is entered between Hallshuk Light and Svarvnaset, a light-colored cliffy point, 3 miles E. The shores of this inlet are fronted by reefs, but access is easy and free of off-lying dangers.

Gales from the NE and NW sometimes raise dangerous seas in this vicinity.

Hallshuk is a promontory forming the W side of the inlet; the land decreases in height towards the head. The village of Gusstade stands near the shore, 3.5 miles S of Hallshuk Light.

Hallshuk Light

Kappelshamn Light is shown from a prominent framework tower standing near the head of the inlet. Vessels may proceed S into the inlet using the white sector of this light.

Blase, a former harbor, is situated at the E side of the inlet, about 1.5 miles S of Svarvnaset and is no longer in use. A prominent church stands at the village of Fleringe, about 1 mile SSE of Blase.

Kappelshamn (57°51'N., 18°47'E.), a small harbor, lies at the W side of inlet, near the head. A pier, extended by three dolphins joined by bridges, projects a total length of 150m from the shore. The E side of this pier provides a berth with a ro-ro ramp. It is 150m long and has a depth of 6.5m alongside. The W side of the pier provides a berth, 125m long, with depths of 2.5 to 4.5m alongside. Vessels up to 5.5m draft can be accommodated.

Storugns (57°50'N., 18°48'E.) (World Port Index No. 24940), a small harbor, lies at the E side of the inlet, near the head, and serves the local limestone quarries. It is formed by a pier extending S from the head of a short breakwater. The harbor is approached through a channel, 80 to 90m wide, with a dredged depth of 9.3m. The fairway is marked by buoys and indicated by a lighted range. A yellow steering light is shown from the tower of Kappelshamn Light to guide vessels in the inner part of this channel.

The inner berth at the pier is 120m long and has a depth of 7m alongside. The outer berth at the pier is 140m long and has depths of 9.2 to 10m alongside. Vessels up to 25,000 dwt, 160m in length, and 8.8m draft can be accommodated.

Vessels must send an ETA to the harbor 96 hours and 24 hours in advance, with subsequent amendments of more than 1 hour.

Vessels may anchor, in a depth of 13m, clay and sand with good holding ground, about 1 mile N of the harbor.

The pilots can be contacted, as follows:

1. Call sign: East Coast Pilot
2. VHF: VHF channel 10
3. Telephone: 46-771-630645
4. Facsimile: 46-10-4785049
5. E-mail: eastcoastpilot@sjofartsverket.se
6. Web site: http://www.sjofartsverket.se

Caution.—A permanent defensive minefield, in which anchoring and fishing are prohibited, is laid within Kappelshamnsviken. Anchoring and fishing are prohibited within this field and vessels passing through it during thunderstorms do so at their own risk.

The N part of the E side of the bay lies within the Farosund Restricted Area which encompasses the entire NE part of Gotland.

Farosund

6.10 Farosund (57°55'N., 19°03'E.), a navigable passage, separates Gotland from the adjacent island of Faro and extends 6.5 miles SSE from the vicinity of Vialmsudd.

Vialmsudd (57°55'N., 19°01'E.) is located at the W side of the entrance to Farosund, 8.5 miles E of Hallshuk Light. This point is fronted by Svingrund, a reef with rocks awash, which extends up to about 1 mile N. Svingrund Light is shown from a prominent tower, 9m high, standing at the outer edge of this reef.

Ar, a former harbor, is situated 2 miles W of Vialmsudd and is no longer used. It is protected by Falholmen, an islet, which lies close off the coast.

The passage is approached from the N between Vialmsudd and Aurgrund, an islet, lying 1 mile E. A light is shown from a tower, 10m high, standing on the N part of this islet. The fairway at the N end of the passage narrows to a width of 40m and can be used by vessels up to 80m in length and 4.6m draft.

The channel leading through Farosund has depths of 5.6 to 12m, but detached shoals, marked by buoys, lie close to the fairway.

Bungeor (57°49'N., 19°07'E.) is a low island, encircled by foul ground, lying in the middle of the S entrance. A light is shown from a prominent tower, 14m high, standing at the S side of this island. A beacon, 7m high, is situated close NNE of the light

Faro Sodra Light (57°51'N., 19°06'E.), a sector light, is shown from a tower, 7m high, standing 1.5 mile NNW of Bungeor Light.

Faro Sodra Light

The main S approach to Farosund lies between Bungeor and the promontory of Bungenas, 0.8 mile W. The fairway channel can be used by vessels up to 80m in length and 5.2m draft. Smaller vessels with drafts up to 4m can use a channel which leads NE of Bungeor, but local knowledge is required.

Pilotage.—Local knowledge is advised. Pilots for the passage are provided by the main station at Visby. All ordering of pilots must be made through Oxelosund VTS. For more details, see paragraph 6.1.

Pilots board 1 mile SSE of Bungeor.

Caution.—Farosund lies within the Farosund Restricted Area and permission to enter must be obtained from the authorities. The marked channels leading through the passage are excepted from the restricted area and anchoring is permitted only in accordance with the regulations.

Permanent defensive mine fields, in which anchoring and fishing are prohibited, are laid in the vicinity of the approaches to Farosund. Their landing places are marked by beacons.

Several submarine cables extend across the passage in the vicinity of the town of Farosund and may best be seen on the chart.

The water level within the passage rises in the autumn during N and W storms. It falls in the spring during prolonged S and E winds. Between January and the middle of April, ice may block the passage in severe winters.

Special regulations apply to foreign vessels visiting the town of Farosund.

6.11 West side.—Haurevlar (57°54'N., 19°02'E.), a point, is located 1 mile inside the N entrance and marked by a beacon. A light is shown from framework tower, 8m high, standing 0.2 mile SW of the point.

Stra, a village situated 1 mile S of Haurevlar, is fronted by a pier, 90m long. This pier, which has a depth of 5.4m alongside its S face, is reported to be disused but in good condition. Small vessels with drafts of up to 5m can berth alongside the S side.

Farosund (57°52'N., 19°04'E.) (World Port Index No. 24900), a small harbor, lies 2 miles SE of Stra and is mostly used by fishing vessels. This main harbor is protected by a curved breakwater, 300m long. A pier, 60m long, extends from the shore toward the head of the breakwater and has depths of 2.5 to 6.5m alongside. A jetty, 125m long, extends NW from the root of the pier and has depths of 3.7 to 4.5m alongside. A ro-ro ferry berth lies close S of the root of the pier. Small vessels up to 5.2m draft can be accommodated.

A marina, protected by two breakwaters, lies close SSE of the main harbor and a small craft basin, protected by an L-shaped breakwater, is situated about 0.5 mile SSE of it.

6.12 East side.—From a point located 1.2 miles NE of Vialmsudd, the E side of Farosund is high and wooded.

Aurgrund, an islet, lies on the costal bank, 1.3 miles NNE of Haurevlar Light. A light is shown from a tower, 10m high, standing on this islet. Broa, a village, is situated 3 miles SE of the E entrance point and is the terminal for the ferry from the town of Farosund.

Klintbroviken, situated 1.5 miles NNW of Broa, is fronted by a pier, 70m long. Vessels up to 4m draft can use this pier, but it is reported to be seldom used.

Ryssudden, the SE entrance point of the sound, is situated 0.9 mile SE of Faro Sodra Light. It is low, rocky, and light-colored. Several rocks and shoals lie between this point and Bungeor.

Sodergrund (57°48'N., 19°11'E.) lies about 3 miles SE of Ryssudden, in the outer approaches to Farosund. This shoal has a least depth of 9m and is marked by a buoy.

Gotland—East Coast

6.13 The E coast of Gotland is uniform in height and wooded. Several islands and islets lie close offshore. The NE side of the island consists of a broad bay which is indented by a number of inlets and encumbered by numerous shoals. This bay terminates to the S in a bold headland off which the island of Ostergarnsholm lies. Several steep-to detached shoal patches lie seaward of the coastal bank along this stretch of coast and are marked by buoys.

Bungenas (57°49'N., 19°05'E.) (World Port Index No. 24890), a small harbor, is situated on the W side of the promontory which forms the W side of the S entrance of Farosund. This harbor is reported to be no longer used by commercial vessels.

Grauten Light

Furillen (57°46'N., 19°01'E.), a wooded island, is connected to the shore by a bridge and has a ridge which is prominent from the S. Skenholmen, a low island, lies 0.7 mile NNE of Fuillen and is not easily seen from offshore. Several rocks, awash, and reefs front the E and SE sides of these islands and are marked by a buoy.

Rute Missloper, a low rock, lies 1.5 miles SE of Skenholmen and is marked by a prominent beacon, 6m high. Foul ground extends up to about 0.7 mile SSW of this rock.

Furillen (57°46'N., 19°00'E.) (World Port Index No. 24870), a small loading place formed by two piers, is situated on the W side of the island of Furillen. This facility is reported to be no longer used by commercial vessels.

6.14 **Grauten** (57°44'N., 19°02'E.), formed by two white rocks, lies at the outer edge of a reef which extends 1 mile SSE from Furillen. A light is shown from a prominent tower, 11m high, standing on the easternmost rock.

Rutegrund, a detached shoal patch, lies about 2.7 miles E of Grauten Light and is the outermost danger in this vicinity. It has a least depth of 6.4m and is marked by a buoy.

Britgrund, with a least depth of 4.8m, lies about 1.4 miles WSW of Grauten Light. It is situated at the seaward extremity of a chain of shoals which extends SW from the S end of Furillen.

Mago Light

Smojen, a former loading place with piers, lies on the E side of a peninsula, 2.5 miles W of Grauten Light. A group of eight prominent wind generators, 55 to 67m high, stands in the vicinity of this village.

Kyllej, a former loading place with a pier, lies 1.5 miles N of Smojen and a conspicuous chimney stands about 1.8 miles N of it.

Mago (57°41'N., 18°52'E.), a small island, lies in the outer approaches to Slite, about 6.2 miles WSW of Grauten Light. It is 10m high and barren. A prominent beacon surmounts the summit of the island; a light is shown from a prominent tower, 6m high, standing on the S side.

Slite (57°42'N., 18°49'E.)

World Port Index No. 24840

6.15 Slite, a commercial port, serves a large industrial town. It lies on the SW side of an inlet which is fronted by several islands.

Winds—Weather.—Winds from the S sometimes raise a rough sea within the harbor. During severe winters, ice may hinder vessels in February and March. The water level in the harbor may be affected by the prevailing winds.

Depths—Limitations.—Two channels lead from seaward to the harbor. The principal channel passes W of Mago and then leads N and NW between Grundet and Enholmen. It has a least depth of 8.4m and can be used by vessels with drafts up to 7.8m. A secondary channel, with a least depth of 3.8m, passes NE of Mago and then leads NW between Grundet and Asundsen.

Slite Lanthamn, the commercial harbor, is protected by two breakwaters. The entrance, which is 50m wide, has a controlling depth of 5.8m. The harbor basin provides 290m of quayage with depths of 3.5 to 6m alongside. A berth, with a ro-ro ramp, is situated at the N side of the N breakwater. It is 160m long and has depths of 6.6 to 7m alongside.

Slite Industrihamn, located 0.3 mile N of the commercial harbor, serves a cement factory complex. It consists of a quay and two

jetties. Oceankajen, 225m long, fronts the shore and has a depth of 6.8m alongside. Cementpiren projects 130m from the shore and has a depth of 8.4m alongside both sides. Silopiren projects 100m from the shore and has a depth of 7.2m alongside its S side and a depth of 5.5m alongside its N side.

There are facilities for general cargo, ro-ro, tanker, fishing, and bulk vessels. Vessels of up to 10,000 dwt, 125m in length, 15m beam, and 7.8m draft can be accommodated.

Aspect.—A shoal patch, with a least depth of 5.3m, lies 0.5 mile W of Mago, near the fairway channels, and is marked by a buoy. Asunden, lying 1 mile E of the harbor, is the largest island in the approach. It is connected at the N side to the shore by a reef which is mostly awash. Grundet, a low islet, lies 0.3 mile SW of the S end of Asunden and is marked on its W side by a light.

Enholmen lies 0.3 mile W of Grundet. Several conspicuous fortifications and a prominent house are situated on this islet. The inner part of the main entrance channel is marked by buoys and indicated by a lighted range.

Several prominent silos and a water tower stand in the harbor. A number of conspicuous chimneys are situated near a cement factory, close N of the town.

Pilotage.—Pilots are provided by the main station at Visby. However, all ordering of pilots must be made through Oxelosund VTS. Pilotage within the port is compulsory for vessels over 1,600 gt. For more details, see paragraph 1.1 and paragraph 6.1.

The pilots can be contacted, as follows:

1. Call sign: East Coast Pilot
2. VHF: VHF channel 10
3. Telephone: 46-771-630645
4. Facsimile: 46-10-4785049
5. E-mail: eastcoastpilot@sjofartsverket.se
6. Web site: http://www.sjofartsverket.se

Anchorage.—Anchorage is available within the roadstead, in depths of 6 to 7m, clay and sand, NNW of Grundet.

Caution.—Several submarine cables lie in the vicinity of the harbor and may best be seen on the chart.

The approaches to the port lie partly within the Farosund Restricted Area. Entry and anchoring are permitted only in accordance with regulations.

A permanent defensive minefield, in which anchoring and fishing are prohibited, is laid in the vicinity of the approaches to Slite.

6.16 From Slite, the coast trends in a SSE direction for 17 miles to Herrvik and then SSW for 2.8 miles to Sysneudd. The intervening coast, which is mostly wooded, is indented by numerous coves.

A prominent church stands at Gothem, 7 miles SSW of Mago. Churches standing at Norrlanda, Anga, and Kraklingbo which are situated 5 miles SSW, 6 miles SSW, and 7.8 miles S, respectively, of Gothem are also visible from seaward.

Botvaldvik (57°35'N., 18°48'E.), a fishing harbor, lies 7.2 miles S of Slite and is protected by two moles. The entrance has a least depth of 3.5m and the fairway is indicated by a lighted range.

Sildungen, a small islet, lies on the coastal shoal, 0.7 mile E of Botvaldvik.

Anesbadar (57°30'N., 18°53'E.), with a least depth of 2.3m, lies about 6 miles SSE of Botvaldvik. This shoal, which is marked by a buoy, is located at the seaward end of a spit which extends 3 miles NE from the coast. The central part of this spit is awash.

Katthammarsvik (57°26'N., 18°51'E.), a fishing boat harbor, lies in the SE part of a bay, 3.5 miles SSW of Anesbadar. It consists of a pier and a basin, which is protected by breakwaters. The pier is 160m long and has depth of 3m alongside its outer end. Local knowledge is required.

Grogarnshuvud (57°27'N., 18°53'E.), located 1.5 miles NE of Katthammarsvik, is a conspicuous and barren promontory which is steep-to on its N side. The coast between this promontory and Sysneudd, 4 miles S, forms a bold and broad headland which is conspicuous from seaward. Reefs, awash, extend up to about 1.8 miles E of this headland.

Torsburgen, a conspicuous hill, rises 5.5 miles SW of Grogarnshuvud. It is 68m high, wooded, and circular with steep sides and a flat top.

6.17 Ostergarnsholm (57°27'N., 18°59'E.), a low island, lies 2.5 miles E of Grogarnshuvud. It rises somewhat at the W end and is fronted by shoals. Foul ground, marked by a buoy, extends up to 1.8 miles NE and E of the island.

Ostergarn Light is shown from a prominent tower, 29m high, standing at the E side of the island. Ostergarn Vastra Light is shown from a structure standing on the W extremity of the island and a prominent tower is situated close to it.

A channel, with a least depth of 11m, leads between the W side of the island and the mainland. It should only be used by vessels with local knowledge.

Ostergarn Vastra Light

Klints Bank (57°26'N., 19°36'E.), with a least depth of 26m, lies centered 18 miles E of Ostergarnsholm and may best be seen on the chart.

Herrvik (57°25'N., 18°56'E.) a small harbor, lies 2.8 mile NNE of Sysneudd and is protected by two moles. The entrance is 54m wide and faces NE. The entrance fairway has a depth of 6m over a bottom width of 30m. The harbor has depths of 1 to 4m and is used by fishing vessels and pleasure craft. It is seldom closed due to ice. Vessels with drafts up to 6m can obtain anchorage, in a depth of 9m, sand, about 1.8 miles NE of the head of the W mole. However, the roadstead is open to N and E winds and little protection is offered by Ostergarnsholm. Local fishermen are available to serve as pilots.

Caution.—Between 15 March and 15 June annually, salmon

nets may be laid between the W side of Ostergarnsholm and the mainland.

A submarine cable, which may best be seen on the chart, extends SW from the W side of Ostergarnsholm to the mainland.

Ostergarn Light

Nar Light

6.18 Sysneudd (57°23'N., 18°53'E.) is the S extremity of a broad and bold headland. From this point, the coast trends 28 miles SW to Faludden and is indented by numerous coves, bays, and inlets. The shore along this stretch is fronted by several islets, reefs, and shoals, which extend up to 4 miles seaward in places.

A prominent church stands at Gammelgarn, about 3 miles WNW of Sysneudd.

Sandviken, a small bay, is entered on the W side of Sysneudd and is open to S winds. Local knowledge is required because shoals, with a least depth of 5.5m, lie in the middle of the entrance. A ruined lime kiln stands at Skags, at the head of the bay; a large and prominent white house, with a black roof, is situated close NW of it.

Ljugarn, a shallow fishing harbor, lies within a point, 6.7 miles SW of Sysneudd. A detached shoal, with a least depth of 8.9m, lies about 3.2 miles E of this harbor.

Prominent churches stand at Garde and Alskog, which are situated 4.2 miles and 3 miles W, respectively, of Ljugarn. A light is shown from a prominent water tank, 12m high, standing near the root of a pier at Ljugarn.

Laus Holmar (57°17'N., 18°46'E.), a group of three low and grass-covered islets, lies centered 2.5 miles SSE of Ljugarn. These islets lie on foul ground which extends 2.5 miles NE from Nabban, a point located 3.5 miles S of Ljugarn. A light is shown from a tower, 6m high, standing on the E end of Storholm, the southernmost and largest islet of the group. Good anchorage can be obtained by small craft, in depths of 5 to 9m, sand and clay, W of the northwestern-most islet of the group.

Narsholmen (57°13'N., 18°41'E.), a barren peninsula, is located 6.5 miles S of Ljugarn. It is the S extremity of a coastal outcropping which commences at Nabban, 2.5 miles NNE. Nar Light is shown from a prominent tower, 16m high, standing on the S end of this peninsula.

6.19 Narshamn (57°14'N., 18°40'E.), a small fishing harbor, lies close W of Narsholmen and is protected by two breakwaters. The entrance, which is 25m wide, has a controlling depth of 4m. A light is shown from a prominent floodlit tower, 6m high, standing on the head of the S breakwater.

The shoreline between Narsholmen and Grotlingboudd, 9.5 miles SW, recedes W and forms a large bight with depths up to 7m in its N part. The S part is foul and encumbered by shoals which extend up to about 2.5 miles seaward. Several prominent churches stand along the shore of this bight. A detached shoal patch, with a depth of 5.4m, lies about 2 miles offshore, 3.5 miles SW of Narsholmen.

Grotlingboudd (57°07'N., 18°27'E.), a peninsula, forms the S end of the bight and several wind generators stand in its vicinity.

Innerholmen, an islet, lies close off the NE extremity of the peninsula and a beacon, 6m high, stands on its N end. Yetterholmen, another islet, lies 1.3 miles E of Innerholmen and is fronted by foul ground. Shallow reefs extend up to about 1.5 miles NE and 0.5 mile SW of this islet. Soderbriten, a shoal with a least depth of 3.8m, lies 1.5 miles E of this islet and is marked by a buoy.

6.20 Ronehamn (57°10'N., 18°30'E.) (World Port Index No. 24810), a small fishing and commercial harbor, is situated 7 miles WSW of Narsholmen. It is sheltered by several islets, rocks, and shoals which encumber the approaches.

Ice.—The harbor is usually blocked by ice during January and February.

Depths—Limitations.—Two buoyed channels lead through the obstructions in the approaches to the harbor. The principal channel, which can be used by vessels with drafts up to 4m, leads WSW and passes close N of Ronehamn Light. It then continues SW to join the entrance fairway about 1 mile SE of the harbor.

The secondary channel, which can be used by vessels with drafts up to 3m, leads NNW and NE and passes between the islets of Innerholmen and Yetterholmen. It then continues NNW and NNE to join the entrance fairway about 1 mile SE of the harbor. The entrance fairway, which can be used by vessels with drafts up to 4m, leads NW from the outer roadstead.

The harbor is formed by a main pier extending SE from the shore and a short breakwater. The principal quay, at the W side of the pier, is 225m long and has a depth of 4.7m alongside. A

quay, at the E side of the pier, is 105m long and has depths of 3 to 3.5m alongside. Vessels up to 70m in length and 4m draft can be accommodated.

Aspect.—Ronehamn Light is shown from a prominent tower, 11m high, standing at the N end of a shallow shoal lying 1.7 miles E of the harbor. The approach channels are marked by buoys. The entrance fairway is marked by buoys and is indicated by a lighted range.

A prominent silo, surmounted by a radio mast, stands near the main quay. A lighted range, for the use of fishing vessels, is occasionally shown from Tomtbod, 2 miles NE of the harbor.

Pilotage.—Local knowledge is advised. All ordering of pilots must be made through Oxelosund VTS. For more details, see paragraph 1.1 and paragraph 6.1.

Caution.—The inner parts of the approach channels are subject to silting.

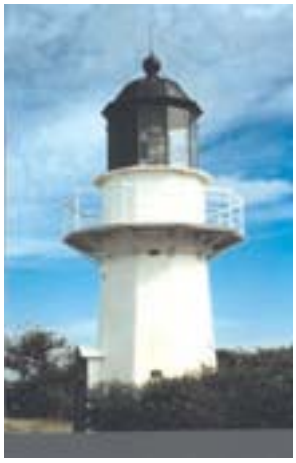
6.21 Faludden (57°00'N., 18°24'E.), a peninsula, is located 7.5 miles SSW of Grotlingboudd and a bay is formed between them. Faludden Tower, a prominent metal tower, 17m high, (formerly a lighthouse) stands at the E end of this peninsula. A conspicuous radio mast, 203m high, is situated close to it.

Briten, a reef, extends up to about 1 mile ESE from the E side of Faludden. It has depths of less than 5m and is marked by a buoy.

Vandburg (56°57'N., 18°19'E.), consisting of two small fishing harbors, is situated 4.1 miles SW of Faludden. The entrance channel has a depth of 4.6m.

Heligholmen (56°55'N., 18°17'E.), a low and cliffy islet, lies close offshore, 5.5 miles SW of Faludden. A light is shown from a tower, 9m high, standing on its SE side.

Lillgrund lies about 1 mile offshore, 2 miles NE of the light. This shoal area is awash at its W side and is marked by a buoy. Espebanan, another shoal area, is awash and lies about 1.5 miles farther NE.



Faludden Tower

Barshageudd (56°55'N., 18°12'E.), a point, is located 3.2 miles WSW of Heligholmen and 2 miles E of Hoburg. Numerous reefs and rocks, some awash, extend up to about 1 mile seaward of this point and are marked by a buoy. A stranded wreck lies 0.7 mile SE of the point.

Caution.—Due to numerous dangers, the coast between Barshaudden and Faludden should not be approached closer than 3 miles without local knowledge. All vessels are advised to stay in depths of 20m and over.

Faro

6.22 Faro (57°55'N., 19°11'E.) is uniformly high and wooded. This island lies close NE of Gotland and is separated from the main island by Farosund. The N side of Faro is steep-to and light-colored.

Faro Light

Lauterhorn (57°57'N., 19°05'E.), a low point, is located 2.5 miles NE of the N entrance to Farosund. It is white-colored and steep-to on the W side. Digerhuvud, the most noticeable point on the NW coast, is located 2 miles NE of this point.

Norsholmen (58°00'N., 19°15'E.) is located 6 miles ENE of Lauterhorn and separates two bights. A light is shown from a framework tower standing on this point; a beacon is situated close ESE of it.

Norsholmen Light

Holmudden (57°58'N., 19°21'E.), located 4 miles ESE of Norshomen Light, is the E extremity of Avanas, a broad peninsula forming the E end of the island.

Faro Light (57°58'N., 19°21'E.) is shown from a prominent tower, 30m high, standing on Holmudden. A conspicuous radio mast stands, at an elevation of 201m, close to the light.

Ulahau, a group of white sand dunes, is located 4.8 miles ESE of the light and is visible from both the N and S. A prominent church stands at Faro, 4.2 miles SW of Ulahau, and is visible from seaward.

Salvorev (58°03'N., 19°22'E.), an extensive area of reefs and shallow shoals, extends up to about 9 miles N and 2 miles E of Faro Light. The shoals in the central part of this area are formed by shifting ridges of sand, gravel, and rocks. The N end of the area is marked by a lighted buoy and the sides are marked by buoys.

Ava, a village, is situated on a point, 2 miles SW of Faro Light. Avagrund, a rock awash, lies on an area of foul ground which extends up to about 1 mile S from a point located 0.5 mile SW of the village.

Kyrkviken, a bay, indents the SE side of Faro and Hammarsudden, located 5 miles SW of Ava, forms its S entrance point. This bay is divided into two parts by a reef which extends about 2 miles SSE from shore. Askugrund, an above-water rock, lies on this reef, 0.9 mile from the shore.

Hammarsgrund, a rock awash, lies 1.2 miles ESE of Hammarsudden, in the approach to the W part of the bay.

Lavergrund, with a least depth of 2m, and Digergrund, with a least depth of 5.8m, lie 1.8 miles SE and 3.2 miles ENE, respectively, of Hammarsgrund. These shoals form the outer dangers in this vicinity and are marked by buoys.

Ryssudden, the S extremity of Faro, is located 3 miles SSW of Hammarsudden. This point, along with Sodergrund, has previously been described in paragraph 6.12.

Gotska Sandon

6.23 Gotska Sandon (58°22'N., 19°15'E.), a wooded island, lies 20 miles N of Faro and is 42m high. The shoreline consists of sand dunes and is fronted by shoals. Detached shoals lie up to 3 miles NW of the NW end of the island and up to 1 mile E of the E extremity.

A light is shown from a prominent tower, 24m high, standing on the NW extremity of the island. A light is shown from a tower, 10m high, standing on Hamnudden, the SW extremity of the island. A light is shown from a tower, 12m high, standing on Kyrkudden, the E extremity of the island.

Gotska Sandon Light

Gotska Sandon does not afford secure anchorage as the bottom drops off steeply and stormy weather raises a heavy sea, even on the leeward side of the island.

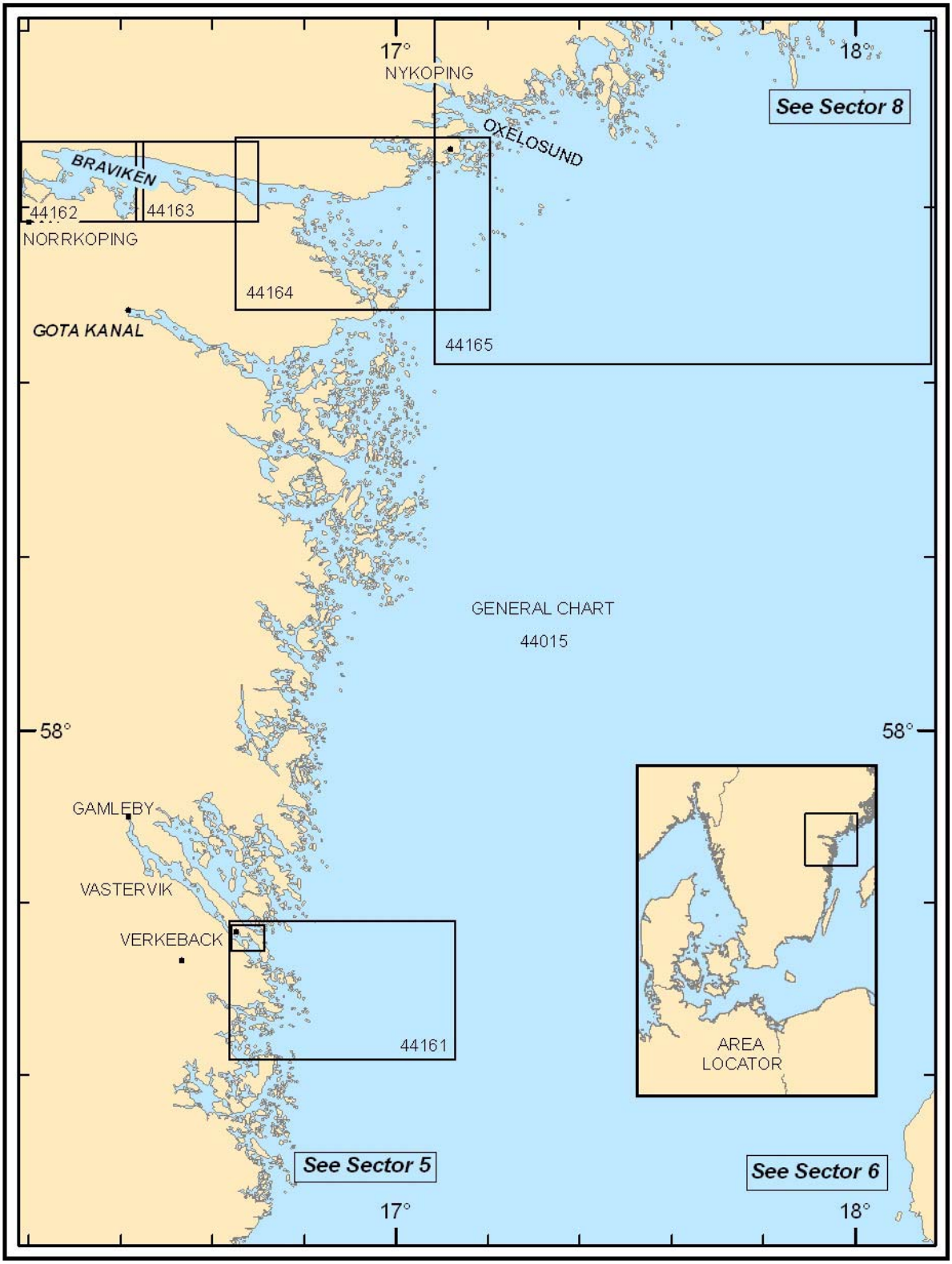
Sando Bank (58°14'N., 19°16'E.), with a least depth of 9.5m, extends up to about 13 miles S of Gotska Sandon.

Kopparsternarna (58°35'N., 19°10'E.), formed by three sandy shoals, lies centered 9 miles N of Gotska Sandon. It has a least depth of 1m and is marked by buoys.

Caution.—Several submarine cables, indicated on the chart, extend between Gotska Sandon and Faro.

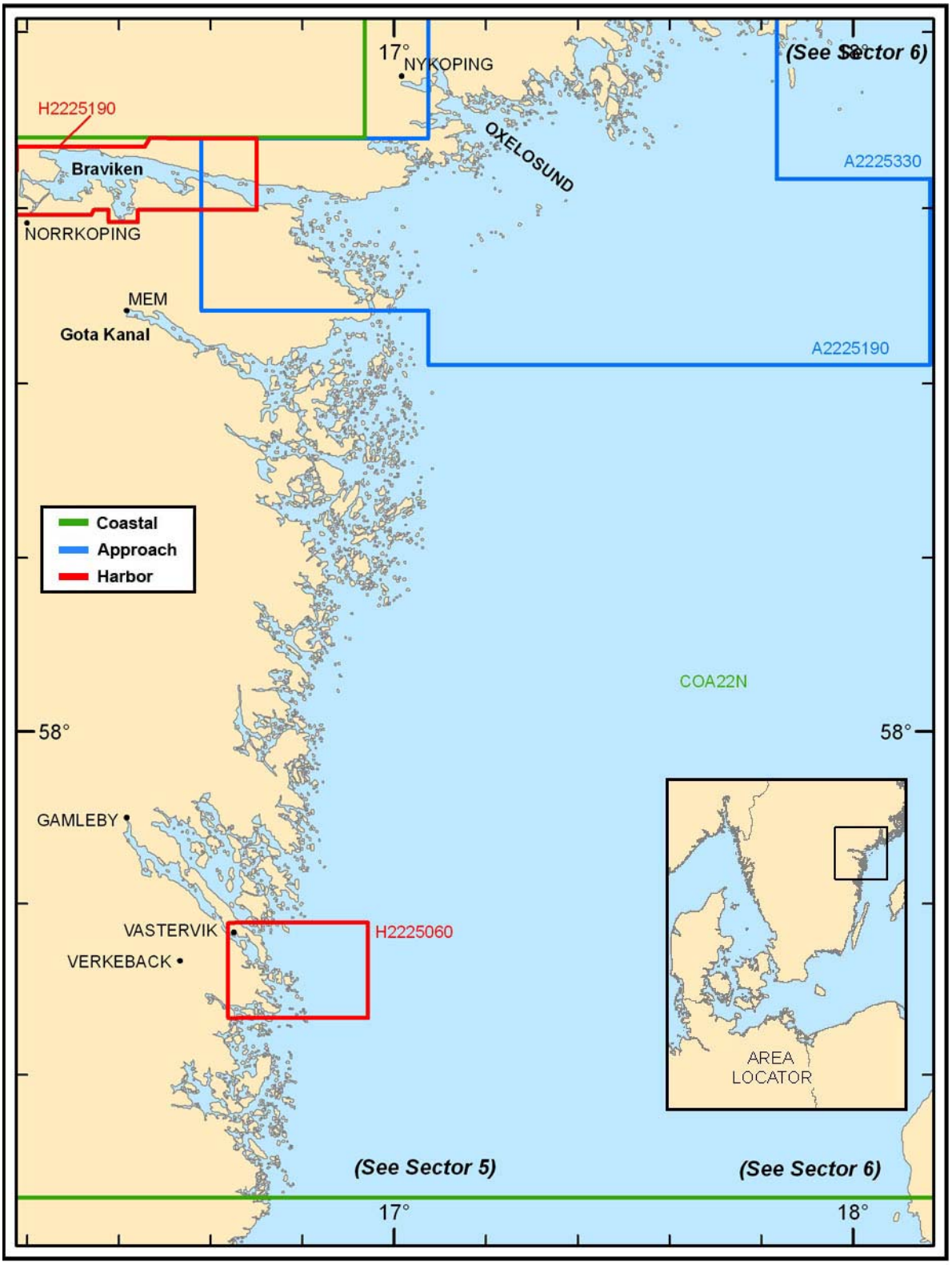
Gotska Sandon, which is a nature reserve, is included within the Farosund Restricted Area and permission to enter must be obtained from the authorities.

Vessels should give Gotska Sandon a wide berth as surveys in the vicinity are relatively old and undiscovered dangers may exist.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **7** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 22 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 7— DNC LIBRARY INFORMATION

SECTOR 7

SWEDEN—EAST COAST—KALMARSUND TO LANDSORT

Plan.—This sector describes the Swedish coast between Krakelund, at the NW end of Kalmarsund, and Landsort. The descriptive sequence is from S to N.

General Remarks

7.1 The coast between the island of Krakelund and Landsort, 86 miles NNE, presents very few natural landmarks that are identifiable from the offing. Numerous islets and rocks front this stretch of coast. They are joined by shoals and fronted by detached shallow patches. Variable depths, with possible uncharted shoals and rocks, lie in the coastal approaches and soundings give no indication of the distance offshore. To facilitate navigation in this area, numerous beacons and daymarks are situated on the points located adjacent to the intricate channels leading to the harbors. Local knowledge is essential for gaining access to the harbors lying along this part of the coast.

Rocky shoals lie up to 10 miles offshore in places. These offlying dangers are marked by buoys or beacons. Landsortsdjupet (58°38'N., 18°15'E.), the deepest part of the Baltic Sea, lies ESE of Landsort.

Winds—Weather.—The water level range in this area may be as much as 1.5m. The level usually rises with N and NE winds and falls with W and SW winds.

Ice.—During January, February, and March, ice often blocks the coastal approach channels lying along this coast. However, icebreakers keep the main channels and harbors open. For information pertaining to icebreaking vessels, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Pilotage.—Pilotage is mandatory within Swedish coastal waters which include channels, canals, and inland waterway passages leading between the harbors. All pilot requests and traffic information is carried out by VTS Oxelosund for Braviken, and Gotland. Vessels should send a request for pilotage and an ETA to Oxelosund VTS at least 12 hours in advance, with a confirmation 5 hours prior to arrival.

The VTS traffic center at Oxelosund can be contacted, as follows:

1. Call sign: VTS Oxelosund
2. VHF: VHF channels 9 and 16.
3. Telephone: 46-8-55424500
4. Facsimile: 46-8-55424505
5. E-mail: vtsec@sjofartsverket.se

The Oxelosund Pilotage Area lies between a line bearing 154° through Ragon (58°48'N., 17°26'E.) and latitude 58°00'N. Pilotage in this area is compulsory for the following vessels (see paragraph 5.1):

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 70m in length, 14m beam, and 4.5m draft and over.

In certain channels between Gustav Dalen and Vinterklasen, pilotage is compulsory for the following vessels:

1. All Category 1 vessels.
2. Category 2 vessels of 90m in length or 16m beam and over.
3. Category 3 vessels of 100m in length or 17m beam and over.

In certain channels between Vinterklasen and Oxelosund, pilotage is compulsory for the following vessels:

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 90m in length or 16m beam and over.

In certain channels between Vinterklasen and Norrkoping, pilotage is compulsory for the following vessels:

1. All Category 1 vessels.
2. Category 2 vessels of 80m in length or 15m beam and over.
3. Category 3 vessels of 90m in length or 16m beam and over.

In certain channels between Gustav Dalen (through Lillhammarsgrun) and Oxelosund Jarnverk, pilotage is compulsory for the following vessels:

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 90m in length or 16m beam and over.

See paragraph 5.1 for definitions of vessel categories.

Pilots can be contacted by VHF and usually board 1.5 miles NNW of Gustav Dalen Light (58°36'N., 17°28'E.) or, by special arrangement, S of Vinterklasen (58°39'N., 17°08'E.).

The Malaren/Landsort Pilotage Area extends E and N from the vicinity of Stora Rotholmen (59°04'N., 18°19'E.) and is fully described under Sodertalje in paragraph 7.17.

It should be noted that extensive changes to pilotage procedures within Swedish waters are being carried out. Formerly, all initial ordering of pilots was carried out through the main VTS systems. However, procedures for the initial ordering of pilots via the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration internet website are being introduced. In exceptional cases, pilots may be ordered by e-mail, telephone, facsimile, or VHF. A preliminary request for pilotage should be made at least 24 hours in advance. A definitive request for pilotage must be made via the Pilot Request System at least 5 hours in advance.

It is reported that initial ordering of pilots for The Sound and all ports located S and W of Vastervik (57°46'N., 16°39'E.) will be carried out via the Swedish Vessel Reporting System (FRS).

For additional information, see the following internet web site:

Swedish Maritime Administration Home Page
http://www.sjofartsverket.se

Regulations.—Speed restrictions are in effect within each pilotage area and within the coastal approach channels.

Because of the non-tidal nature of these waters, the Swedish authorities have enacted stringent anti-pollution regulations.

Sweden—Pilot E-mail Addresses	
Port served	**E-mail**
North Coast Pilots	
Gavle	northcoastpilot@sjofartsverket.se
Haraholmen	northcoastpilot@sjofartsverket.se
Harnosand	
Hudiksvall	
Iggesund	
Kopmanholmen	
Lulea	
Ornskoldsvik	
Pitea	
Skelleftehamn	
Soderhamn	
Sundsvall	
Umea	
East Coast Pilots	
Farosund	eastcoastpilot@sjofartsverket.se
Hargshamn	
Kapellskar	
Klinthamn	
Koping	
Landsort	
Malaren	
Norrkoping	
Norrtalje	
Nykoping	
Nynashamn	
Oxelosund	
Ronehamn	
Slite	
Sodertalje Kanal	
Stockholm	
Strorugns	
Vasteras	
Visby	
Lake Vanern Pilots	
Trollhatte Kanal	kctrollhattan@sjofartsverket.se
Lake Vanem	

Directions—Offshore Route.—For information concerning the offshore route along this stretch of coast, see paragraph 4.1.

Caution.—Anchoring or fishing off this stretch of coast are considered dangerous because of the possibility of mines being adrift on the bottom, and are prohibited within an area, which may best be seen on the chart, centered 5 miles SE of Kungsgrundet (57°41'N., 16°54'E.).

Ice and spring thaws, combined with resultant changes in the tortuous channels, may cause the charted position of buoys to become unreliable.

Local magnetic disturbances are reported to exist along this stretch of coast.

Ice channels, with special regulations, lead through the offshore archipelago to several small harbors.

Krakelund to Arko

7.2 Krakelund (57°27'N., 16°43'E.) was described in paragraph 5.12. The rocky and wooded coast extending between this island and Arko (58°30'N., 16°58'E.) is very irregular and indented by several inlets with variable depths. Between Krakelund and Ido Stangskar, located 14 miles N in the S approach to Vastervik, the mainland shore is fronted by several islands, islets, and rocks which extend up to 6 miles seaward.

Prominent landmarks along this stretch of coast include the wooded islands of Vino (57°31'N., 16°42'E.) and Hasselo (57°50'N., 16°45'E.); Huno Bote (57°34'N., 16°37'E.), a wooded and round-topped hill, 51m high; Gindriksnasberget (57°36'N., 16°35'E.), a flat-topped hill, which is 60m high and steep on its S side; and Vindasen (57°55'N., 16°47'E.), an extensive wooded hill.

Ljungskar (57°31'N., 16°47'E.), a bare islet, lies 2 miles E of Vino and is surmounted by a prominent beacon, 10m high. A light is shown from a tower, 9m high, standing on this islet.

Depths—Limitations.—A sheltered inshore channel leads through the archipelago which fronts the coast between Krakelund and the seaward approaches to Stockholm. Vessels with drafts of up to 5m can transit this channel, but local knowledge is required. Several approach fairways lead from seaward, between dangers marked by lights and buoys, to this inshore channel and then to numerous minor, local harbors. The channel may be entered at its S end via Krakelund, Ljungskar SE, or Ljungskar E entrances. The Krakelund entrance can be used by vessels with drafts of up to 3.6m. Ljungskar SE and Ljungskar E entrances can be used by vessels with drafts of up to 5 and 6.8m, respectively.

Keeping in the deep-water sections of the channel, vessels of up to 5m draft can transit through the archipelago channel from Krakelund to Landsort.

Caution.—A local magnetic anomaly is reported to exist within an area centered about 3 miles E of Ljungskar. Deflections of up to 5° and 6° of the compass have been observed.

Depths along the tracks in the deep-water sections of the inshore channels may vary and the local authorities should be contacted for the latest information concerning maximum allowed drafts.

7.3 Blackan (57°29'N., 16°49'E.), a group of shallow and

rocky patches, lies in the outer approaches to the inshore channel and is marked by a lighted buoy.

Gasfjarden (57°34'N., 16°35'E.), a bay, lies NW of Vino. It is approached NE of Blackan via a fairway which can be used by vessels with drafts of up to 6.8m. Anchorage can be taken within this bay and to the W of Huno Bote in several places with good holding ground, but local knowledge is required.

Flivik (57°33'N., 16°35'E.), a small loading place, lies on the S side of Gasfjarden. There is a pier, in poor condition, with depths of 2 to 4m alongside. A jetty, used for loading stone, is situated 1 mile N of the pier. It can accommodate small vessels with drafts of up to 5.8m.

Blankaholm, a former timber loading place, lies on the NW side of Gasfiarden, 3 miles NNW of Flivik. It has 300m of berthage and can accommodate vessels up to 4.8m draft. This facility is now only used by pleasure boats and small craft.

Verkebacksviken (57°40'N., 16°39'E.), a deep and narrow inlet, is entered 9 miles N of Vino. It is fronted by shoal patches which extends up to about 7 miles offshore. Handelop Island (57°41'N., 16°44'E.) and several islets lie in the entrance to this inlet.

A fairway leads between the islets in the entrance and allows vessels with draft of up to 7m to proceed to the head of the inlet. Vessels up to 105m in length, 16m beam, 34m air draft, and 7m draft can reach Gunnebo and Verkeback, two loading places lying 6 miles NW of inlet entrance.

A small quay at Gunnebo serves an iron works. It is 53m long and has depths of 4.3 to 4.8m alongside. Vessels can anchor, in a depth of 25m, clay, off the quay, but local knowledge is required. An outfall pipeline extends seaward in the vicinity of the quay and its landing place is indicated by a notice board.

Verkeback (57°44'N., 16°32'E.) (World Port Index No. 25050) is a small loading place for timber. The quay provides a berth, 90m long, with depths of 2.4 to 6.7m alongside. Vessels can anchor, in a depth of 40m, clay, off the quay, but local knowledge is required. Anchorage can also be taken, in a depth of 24m, clay, at the head of the inlet, but local knowledge is required as an outfall pipeline lies in the vicinity.

7.4 **Skaftet** (57°39'N., 16°35'E.), a loading place, lies on the SW side of a narrow channel which joins the main fairway leading into Verkebacksviken. There is 305m of total quayage, with depths of 3.5 to 5m alongside. Anchorage can be taken in a depth of 20m, clay, off the quay.

Ido Stangskar (57°40'N., 16°47'E.), an islet, lies 1.5 miles E of Handelop Island. A light is shown from a tower, with a beacon situated close S of it, standing on the N side of the islet.

Hamnklabbshallan (57°40'N., 16°48'E.), a rock, lies 0.4 mile ESE of Ido Stangskar Light. A light is shown from a tower, 9m high, standing on this rock.

Sparo (57°43'N., 16°44'E.), a barren island, lies close off the coast, 3.2 miles NW of Ido Stangskar. A light is shown from a tower, 8m high, standing on the S extremity of this island and a prominent beacon, 24m high, stands on the W side. A prominent chimney is reported to stand 2.3 miles WNW of the beacon.

Kungsgrund (57°41'N., 16°54'E.), a shoal, lies 4 miles ENE of Ido Stangskar and is awash in places. Kungsgrundet Light is shown from prominent tower, 29m high, standing on this shoal. A racon is situated at the light.

Sparo Light

The coast in the vicinity of Sparo and Kungsgrund is fronted by numerous islets, rocks, and reefs. Ido (57°43'N., 16°46'E.) is the easternmost of four islands which lie in the entrance to Gamlebyviken and is marked by a light. Kroko and Grono are two islands lying W of Ido. The area around these islands is encumbered with numerous rocky shoals. Channels, marked by buoys, lead between the dangers and into Gamlebyviken. The inshore channel leads between Ido and Stickskar (57°43'N., 16°45'E.), an islet, which lies close NNW and is marked by a light. Stangskar (57°44'N., 16°45'E.), an islet, lies 0.8 mile NW of Stickskar and is marked by a beacon.

Gamlebyviken (57°44'N., 16°42'E.), a narrow inlet, indents the coast to the NW of Sparo and is bound to the E by Norrlandet, a peninsula. This inlet, which is entered from the inner part of Vastervik harbor, has depths of 7.5 to 25m. A fairway leads through the middle of the inlet and can be used by vessels up to 75m in length, 15m beam, and 5.5m draft.

Vasterbaden Light

7.5 **Gamleby** (57°54'N., 16°25'E.), a small commercial harbor situated at the mouth of Gamblebyan. The main quay lies in the N side of the river has 150m long with depths of 4 to 5.5m alongside. Small vessels with drafts up to 4.5m can be accommodated alongside. It is reported that cargo is no longer worked here for the commercial use.

During severe winters, Gamleby and the other harbors along this part of the coast are usually closed by ice from January to

March.

Anchorage may be taken by vessels with local knowledge, in depths of 10 to 25m, mud and clay, within an inlet lying on the SW side of Gamlebyviken, 7 miles NW of Vastervik.

Vasterbaden (57°45'N., 16°45'E.), a rock, lies 2.5 miles E of Vastervik. A light is shown from a prominent tower, 15m high, standing on this rock. A racon is situated at the light.

Caution.—Due to the possible existence of bottom mines, an area, within which anchoring and fishing are prohibited, lies centered 8 miles ENE of Vasterbaden Light and may best be seen on the chart.

Vastervik (57°46'N., 16°39'E.)

World Port Index No. 25060

7.6 Vastervik, a sheltered harbor, lies within the entrance of Gamlebyviken and is formed by several islands, connected by bridges. It is protected on the NE side by Granso, peninsula, which extends SE from the S end of Norrlandet.

Depths—Limitations.—Two main approach routes lead from seaward to Vastervik. The SE approach route, authorized for drafts up to 6.5m, leads 8 miles NW from a position located about 5 miles S of Kungsgrundet Light to Idofjarden (57°42'N., 16°45'E.). It passes SW of Hamnklabbshallan Light and close E of Ido Stangskar. This route then divides into two tracks. The easternmost track, which is authorized for drafts up to 5m, leads N through Idosund, a passage lying between Ido and Kroko, and then W to the entrance of the inlet. The westernmost track, which is authorized for drafts up to 4.5m, leads NW and N through Sparosund, a passage lying between Sparo and Grono.

The E approach route, which is authorized for drafts up to 8.5m, leads W from the vicinity of Vasterviksangoring Lighted Buoy toward Vasterbadan Light. It then leads SSW and passes close SE of the latter light. The track continues though Tallskarshalet, a narrow channel, to the entrance of the inlet.

Secondary tracks lead N and S to the entrance of the inlet from the inshore coastal route.

Lusarna, an island, lies in the inlet and divides the harbor into outer and inner parts. Blockholm Sound, a narrow channel, passes N of Lusarna and leads into the inner part of the harbor. It is marked by buoys and has a least depth of 5.8m. Vessels with drafts up to 5.5m can enter the inner harbor through this passage.

Gamlebyviken extends 12 miles NW from the inner part of the harbor. This inlet can be entered via two canals, one spanned by a bascule bridge and the other by a low fixed bridge. The fairway leading through the inlet passes through the northernmost canal and is authorized for drafts up to 5.5m. The bascule bridge spanning this canal has a navigable width of 18m.

The main commercial facilities in the outer harbor are situated at the E side of Lusarna. The northernmost berth is 150m long and has a depth of 9.5m alongside; it has a ro-ro ramp at the S end with a depth of 8.3m alongside. The central berth is 200m long and has a depth of 8.3m The southernmost berth is 100m long and has a depth of 6m alongside. It has been reported that lesser depths outside the S berth of Lusarna have reduced the maximum authorized draft to 5.2m.

Nya Skeppsbrokajen, the main quay in the inner harbor, is located on the W side. It provides a commercial berth, 240m long, with a depth of 5.5m alongside and a fishing berth, 290m long, with a depth of 5.5m alongside.

There are facilities for tanker, general cargo, ro-ro, container, bulk, and passenger vessels. Vessels up to 25,000 dwt, 165m in length, 25m beam, and 8.5m draft can be accommodated.

Aspect.—Vasterviksangoring Lighted Buoy (57°45'N., 16°55'E.), an outer approach lighted buoy, is moored about 3.8 miles N of Kungsgrundet Light.

Buoys and beacons mark the numerous rocks, islets, and shoals which lie adjacent to the approach tracks and channels. The main fairways are indicated by lighted ranges which may best be seen on the chart.

Granso Kanal, a shallow canal, leads N between the NW end of the Granso peninsula and the SE end of the Norrlandet peninsula. It is spanned by a fixed bridge.

A prominent church and a conspicuous water tower stand in the town.

Pilotage.—Pilotage is compulsory. Pilots are provided by the station at Oskarshamn and may be contacted (call: Vastervik Pilot) on VHF channel 13. They board about 1 mile E of Vasterviksangoing Lighted Buoy or about 4 miles SSW of Kungsgrundet Light.

All ordering of pilots and traffic information is carried out by Malmo VTS (see paragraph 1.19).

For additional information concerning the initial ordering of pilots, see paragraph 7.1.

Regulations.—Speed limits are in force within the harbor areas.

Anchorage.—Good anchorage can be obtained, in depths of 12 to 23m, clay bottom, within Lindodjupet, about 0.2 mile SW of the S extremity of Sparo. Anchorage can be obtained, in depths of 10 to 25m, loose mud bottom, within the outer harbor, SE of Lusanara. Anchorage can be obtained, in depths of 10 to 15m, loose mud bottom, within the inner harbor, W of Lucerna. Local knowledge is required for these roadsteads.

Caution.—A power cable, with a vertical clearance of 30m, spans Sparosund.

Currents with a velocities of 3 to 4 knots may be encountered within Sparosund.

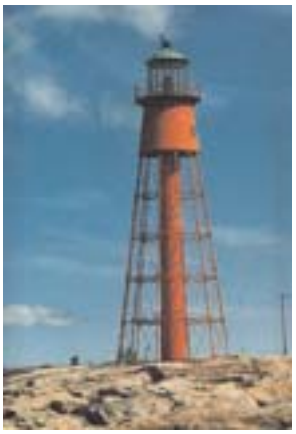
Several submarine cables lie in the approaches and may best be seen on the chart.

Local knowledge is necessary when using any of the entrance fairways.

7.7 **Haradskar** (58°09'N., 16°59'E.), a small and prominent island, lies 25 miles NNE of Vasterbaden. The coast between is fronted by numerous islets, rocks, and shoals. A light is shown from a prominent tower, 29m high, standing on the S end of this island.

Numerous small loading places and fishing harbors lie within the inlets which indent this section of the shore. Several channels lead through the offshore obstructions and may be used by vessels with local knowledge.

Between Haradskar and Arko, 20 miles N, the inlets, which indent the coast, cannot be entered from the open sea. Numerous islets and rocks front the shore and extend up to 12 miles seaward in places. A passage, entered 3.5 miles NW of Haradskar, joins the inshore channel and leads to the small harbors



Haradskar Light

of Arko, Soderkoping, and Mem. The mainland is generally too low in this vicinity to be seen from offshore. Gubbo Kupa, a hill, stands on the S side of an island, 3 miles NNW of Haradskar. It is 30m high, surmounted by a beacon, and visible from seaward.

Sandsankan (58°19'N., 17°10'E.), a rock, lies 11.2 miles NNE of Haradskar. A light is shown from a tower, 15m high, standing on this rock.

Nielsengrund (58°17'N., 18°00'E.), an off-lying isolated shoal, lies about 26 miles E of Sandankan Light and has a least depth of 15m.

Caution.—Due to the possible existence of bottom mines, an area, within which anchoring and fishing are prohibited, lies centered 5 miles SE of Haradskar and may best be seen on the chart.

An unsurveyed area, which may best be seen on the chart, lies between the inshore channel and the open sea and extends between Haradskar and Arko.

7.8 **Mem** (58°29'N., 16°25'E.), a small harbor, lies at the head of Slatbakenand, 17 miles W of Arko. It has a depth of 3m and is used by pleasure craft. Small vessels may anchor, in depths of 6 to 12m, clay, close off Killingholm, an islet lying 0.4 mile E of the harbor.

Gota Kanal (58°29'N., 16°25'E.), 103 miles long, is the longest canal in Sweden. It connects the Baltic Sea, in the vicinity of Mem, to the E side of Lake Vanern, via Lake Vattern. There are 58 locks, each 35m long and 7.2m wide, along the canal and it is spanned by 48 bridges. The canal has a minimum depth of 2.9m. Vessels up to 30m in length, 7m beam, 22m air draft, and 2.8m draft can transit. The canal is reported to be closed to commercial vessels and is used only by small craft and pleasure boats.

Trollhatte Kanal, in conjunction with the Gota Alv River, extends from the small port of Vanersborg, at the S end of Lake Vanern to Goteborg (57°42'N., 11°57'E.).

Arko (58°30'N., 16°58'E.), an island, lies close E of the Vikbolandet Peninsula and is separated from it by Arkosund, a passage, which leads NW into Gransosund. The island is fronted by rocks, reefs, and shoals, except on its SW side. A beacon, 20m high, stands on the SE side of the island and a prominent disused light tower, 11m high, is situated on the N side of Viskar, 0.2 mile SSE of it. Maro Kupa, a bare and prominent hill, stands on the S end of Lanjo, a wooded island lying 3.5 miles S of the beacon.

Arkosund (58°29'N., 16°57'E.), the passage leading W of Arko, can be used by vessels with drafts up to 5.5m. The inshore channel leads through Barosund and into Arkosund. Local knowledge is required.

Gransosund (58°31'N., 16°54'E.), a NW continuation of Arkosund, leads W of Granso, an island lying 2 miles NW of Arko. This marked channel can be used by vessels with drafts up to 5.5m. Two fairways, marked by lights and buoys, lead NNE and NNW from Gransosund. The former fairway passes close W of Maro (58°34'N., 16°53'E.), an island marked by a light, and continues ENE along the coast to Oxelosund. Both fairways can be used by vessels with drafts up to 5m.

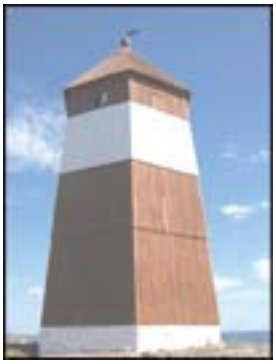
Arko to Enskar

7.9 The irregular and wooded coast lying between the islands of Arko and Enskar (58°41'N., 17°29'E.), 20 miles NE, forms a bight which is fronted by numerous obstructions. The coast is indented by several inlets and numerous small harbors and loading places lie within them. Several passages lead between the obstructions into these inlets. The fairways are indicated by lighted ranges, lights, and buoys, but local knowledge is required.

Variable depths and detached rocky shoals, with depths of less than 4m, lie up to 9 miles E of Arko and 5 miles SE of Enskar.

Norra Fallbadan (58°27'N., 17°06'E.), a group of rocks, awash, lies centered 5 miles SE of Arko. A light is shown from a prominent tower, 17m high, standing on these rocks.

Havringe (58°36'N., 17°19'E.), an islet, lies at the center of an extensive group of rocks and shoals, 11.6 miles NE of Norra Fallbadan Light. A large and prominent beacon, 19m high, stands on the W side of this islet and a small floodlit beacon stands at the NW extremity. Another small beacon is situated on a rock lying close W of the NW extremity of the islet. Foul ground and obstructions extend up to 4 miles E and S of the islet.



Havringe Beacon

Vastra Korpen Light (58°36'N., 17°19'E.) is shown from a prominent floodlit tower, 7m high, standing on a small islet

close NE of Havringe.

Gustaf Dalen Light (58°36'N., 17°28'E.) is shown from a prominent floodlit tower, 26m high, standing on a shoal, about 5 miles E of Havringe. A racon is situated at the light.

Gustaf Dalen Light

Norra Krankan (58°37'N., 17°23'E.), a rock, lies 2.3 miles ENE of Havringe. A light is shown from a prominent floodlit tower, 11m high, standing on this rock. A racon is situated at the light.

Gullangsberg (58°37'N., 16°56'E.), a steep-to and conspicuous promontory, is located 8 miles N of Arko. Kummelberg, a wooded hill, rises 2.3 miles NNW of this promontory. It is 802m high and prominent.

Caution.—Unsurveyed areas, within which uncharted shoals may lie, front the coast between Arko and Enskar and may best be seen on the chart.

7.10 Braviken (58°38'N., 16°35'E.), an extensive inlet, extends 23 miles W of Gullangsberg and is encumbered by rocks, reefs, and shoals which constrict the navigable passages. The main fairways are indicated by sector lights and lighted ranges, and the obstructions lying adjacent to the channels are marked by buoys. Several small loading places are situated within this inlet and may be used by vessels with local knowledge. The port of Norrkoping lies near the head of the inlet. For VTS and pilotage, see paragraph 7.1.

Ice.—The port approaches are kept open during the winter by icebreakers. Ice bridges may be established during the winter in the inner part of the inlet when the ice is strong enough to support road traffic.

Depths—Limitations.—Two principal entrance channels lead into Braviken and may best be seen on the chart. The main S channel, which is less than 200m wide in places, leads about 7.5 mile NW from a position located 5 miles S of Gustaf Dalen Light (58°36'N., 17°28'E.). It then leads about 2 miles WNW and passes close NE of Havringe (58°36'N., 17°19'E.) and close SW of Vastra Korpen Light. This track continues in a WNW direction and joins the main deep-water channel, 1.5 miles WNW of Havringe. This route can be used by vessels with drafts up to 6m. Local knowledge is required.

An alternate route leads 6.5 miles WNW from a position located 2.5 miles SSE of Gustaf Dalen Light and joins the main S channel close ESE of Havringe.

The main N channel, the principal deep-water route, leads in a NNW direction and passes close E of Gustaf Dalen Light (58°36'N., 17°28'E.). It then leads NW and W, passing N of Norra Krankan Light (58°37'N., 17°23'E.). This track continues W for about 10 miles to Vinterklasen (58°38.5'N., 17°08.0'E.), S of Oxelosund. Vessels with drafts up to 15.3m can proceed in this channel as far as Syd Vinterklasen, a lightening anchorage area lying 6 miles WNW of Havringe. Vessels with drafts up to 12.6m can proceed farther W for about 26 miles to the anchorage at Norrkoping.

Vessels with suitable drafts can also approach from the E. They may proceed in a W direction and pass N of Gustaf Dalen Light. This track then joins the main N channel about 1.7 miles NNW of Gustaf Dalen Light.

An alternative channel, authorized for drafts up to 6m, runs almost parallel to and S of the main deep-water route between Vinterklasen, S of Oxelosun, and Gullangsberget (58°37'N., 16°56'E.).

From the vicinity of Havringe, other passages lead NW to Oxelosund and Nykoping, and N via Tvaren to harbors in the approaches to Stockholm.

Caution.—Local magnetic anomalies exist in the offshore approaches to Braviken.

Large unsurveyed areas, which may best be seen on the chart, lie in the approaches to Braviken.

Norrkoping (58°35'N., 16°12'E.)

World Port Index No. 25190

7.11 Norrkoping, a large commercial port, lies 3 miles above the mouth of the Motala River, which discharges into the head of Braviken. The Swedish Hydrographic Office is situated here.

Winds—Weather.—The mean water level may be raised by up to 0.9m by prevailing E winds and lowered by as much as 0.6m by prevailing W winds.

Depths—Limitations.—The two principal entrance channels leading into Braviken have been previously described in paragraph 7.10. The main channel leading from the vicinity of Havringe to the port is about 35 miles long and follows the N shore of the inlet to the anchorage roadstead off Stora Juten. Vessels with drafts up to 12.6m can proceed through the inlet, under normal conditions, to this anchorage.

From the vicinity of Stora Juten, a channel, dredged to a depth of 12.3m, leads SW to Pampus Oil Terminal and the entrance to the Lindo Canal. This canal leads to the inner harbor and is dredged to a depth of 9.5m.

The inner harbor has about 4,500m of total quayage with depths of 5 to 9m alongside. There are facilities for ro-ro, ferry, and passenger vessels. Vessels up to 190m in length and 8.4m draft can be accommodated.

Pampushamnen is located on the E side of Handelo, 2 miles NE of the town. The bulk quay is 460m long and has a depth of 12m alongside. A ro-ro berth, 80m long, is situated at the SE end of the quay and has a depth of 9m alongside. The oil terminal has three berths, 180 to 230m long, with depths of 7.5 to 12m alongside.

Bravikenshamn is located on the SE side of the Malmolandet peninsula, 3.5 miles NE of the town. It is fronted by several

Norrkoping—Inner Harbor

Norrkoping—Pampushamnen

Norrkoping—Bravikenshamn

small islets. The paper quay is 126m long and has a depth of 8.8mm alongside. A ro-ro berth is situated at the SW end of the quay and has a depth of 6.8m alongside. It consists of dolphins and is 135m long.

Djuronshamn is located on the NW part of the Djuron peninsula, 5 miles NE of the town. Lilla Juten, a small islet, lies close W of this harbor. The main grain berth is 160m long and has a depth of 12.2m alongside.

Norrkoping—Djuronshamn

The port has facilities for general cargo, passenger, ferry, bulk, tanker, container, and ro-ro vessels. Dry cargo vessels up to 43,700 dwt, 183m in length, and 11.4m draft can be accommodated. Tankers up to 66,800 dwt, 236m in length, 33.3m beam, and 11.4m draft can be accommodated.

Aspect.—A conspicuous aeronautical light is shown from a structure standing 1.5 miles SE of the town. A prominent tank farm is situated in the vicinity of the harbor.

Pilotage.—All ordering of pilots for Norrkoping must be made through Oxelosund VTS. For additional information concerning the initial ordering of pilots, see paragraph 7.1.

Vessel Traffic Service.—A Vessel Traffic Service (VTS) has been established within the approaches to Braviken and is managed by the pilot station at Oxelosund. The system is mandatory for vessels over 300 gt, vessels over 50m in length, and towing vessels if the length including the tow is over 50m.

The Oxelosund VTS area includes the waters enclosed between Norrkoping, Kallvik (58°47'N., 17°29'E.), Hartso Stangskar (58°42'N., 17°28'E.), Gustaf Dalen Light, and Arkosund.

This VTS system is designed to prevent large vessels, constrained by their draft, from being impeded while in the sections of the channel extending from Falkensgrund (58°37'N., 17°02'E.) to Munken (58°37'N., 16°58'E.) and from Stora Juten (58°30'N., 16°20'E.) to Norrkoping. All vessels should obtain traffic information prior to transiting these sections

Vessels must report to the VTS traffic center on VHF channel 9, as follows:

1. On entry to or exit from the VTS area.
2. On passing Gustaf Dalen Light (58°37'N., 17°28'E.), Vinterklasen (58°38'N., 17°07'E.), Hargo (58°36'N., 16°54'E.), Algersgrund (58°39'N., 16°27'E.), and Arkosund (58°29'N., 16°57'E.).
3. Upon arrival and immediately before departure from a berth or anchorage; when changing from an intended route; and on being involved in a grounding, or collision, or any other occurrence causing any defect in navigation or maneuvering equipment.

All reports should include name, call sign, position, intended

route, and destination.

See paragraph 7.1 for more information regarding the Oxelosund VTS.

Anchorage.—Designated anchorage areas are centered about 2 miles SSE and 2.5 miles ENE of Gustaf Dalen Light (58°37'N., 17°28'E.) and may best be seen on the chart.

During good weather, vessels with local knowledge can anchor, in a depth of 9m, clay, close inside of Havringe. Anchorage, where suitable, can also be taken throughout Braviken. Sheltered anchorage can be taken, in depths of 12 to 16m, clay, within the roadstead at Pampus, 0.4 mile SW of Stora Juten Light (58°38'N., 16°20'E.).

Caution.—Several lie across the fairway channel and may best be seen on the chart.

Islets, rocks, reefs, and shoal patches, too numerous to describe, lie adjacent to the entrance fairway and are best seen on the chart. Strict adherence to the marked fairways is advisable as uncharted shoal patches may also lie in the vicinity of the channels.

7.12 Falkens Grund Light (58°37'N., 17°02'E.) is shown from a prominent floodlit tower, 7m high, standing on a rock at the N side of the entrance to Braviken.

The coast between this light and Enskar (58°41'N., 17°28'E.), about 14 mile ENE, is rocky, wooded, and fronted by innumerable obstructions and detached shoals. Several inlets indent the shore and are accessible by passages which lead between the dangers. These passages should only be used by vessels with local knowledge.

Hargberg, a conspicuous wooded hill, rises on the NW side of Hartso Island (58°43'N., 17°28'E.) and has a prominent bare patch on its S side.

Lillhammarsgrund (58°40'N., 17°20'E.), an islet, is located 3.2 miles NNW of Norra Krankan. A light is shown from a prominent tower, 12m high, standing on this islet. A racon is situated at the light.

Marsviken (58°40'N., 17°04'E.), an inlet, is entered between Falkens Grund Light and Oxelosund. It is fringed by shoals and fronted by several islets. A branch passage, authorized for drafts up to 4.3m, leads NW into the inlet from the N side of the entrance to Braviken. A dredged entrance channel, marked by buoys, leads from the anchorage roadstead at the head of the inlet into a small harbor. It has a depth of 4.4m and can be used by vessels up to 3.5m draft. The harbor has a pier, 70m long, with a depths of 3.9m alongside. Anchorage can be taken, in depths of 7 to 12m, clay, near the head of the inlet. Local knowledge is required as several submarine cables and pipelines lie across the inlet.

Oxelosund (58°40'N., 17°07'E.)

World Port Index No. 25280

7.13 Oxelosund, an industrial port, is situated on a peninsula, 7.5 miles WNW of Havringe. The port includes the facilities at Jarnverk, a steelworks basin, located at the E side of the peninsula, 1 mile NE of the main harbor.

Winds—Weather.—The harbor, which is open to the S, is sheltered from strong S winds by the outer islands and rocks, but some ground swell may be encountered.

Oxelosund

Ice.—During severe winters, ice may hinder vessels between January and April, but the main entrance channel is kept open by icebreakers.

Depths—Limitations.—The wooded peninsula, on which the port lies, is fronted at the E and SE sides by an extensive bank containing numerous islands, islets, rocks, and shoals. Most of the larger islands are situated SE of the harbor and provide good protection.

For information concerning the main approach channels leading into the entrance of Bravikean from seaward, see paragraph 7.10. The main entrance channel branches NW from the principal N route within Bravikean at a position located about 1.2 miles SE of Vinterklasen (58°38.5'N., 17°08.0'E.); it is authorized for drafts up to 15.3m.

A secondary channel, authorized for drafts up to 6m, leads ENE and NE from the N side of Braviken. This narrow channel leads through the obstructions fronting the port and passes about 0.3 mile NNW of Vinterklasen before joining the main entrance fairway.

Another secondary channel, authorized for drafts up to 3.9m, leads SW from the alternate Nykoping entrance channel and joins the main fairway 0.4 mile NNE of Vinterklasen.

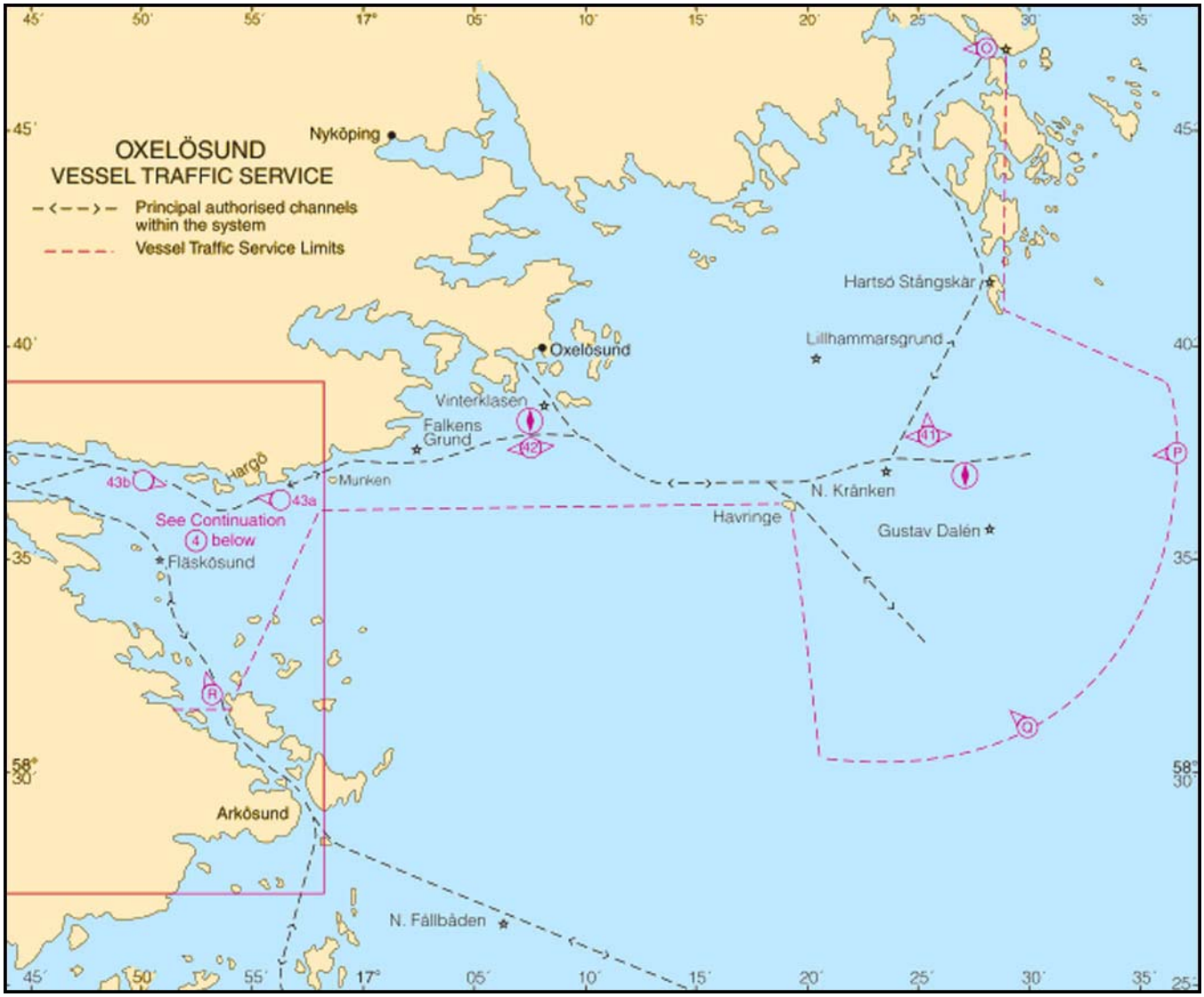
The entrance channel leading to Jarnverk branches off from the main approach route to Nykoping. It leads WNW and WSW for about 3.5 miles to the basin.

The main harbor provides about 1,050m of quayage with depths of 2.3 to 16.5m alongside. The main berth is 250m long. There are two ro-ro berths with depths of 6.9m and 8m alongside. There are facilities for bulk, general cargo, container, ro-ro, tanker, and ferry vessels. Generally, cargo vessels up to 265m in length, 41m beam, and 14.3m draft can be accommodated. Tankers up to 265m in length and 12.8m draft can be accommodated. It was reported that a vessel of 110,000 dwt with a draft of 14.5m had been handled within the port.

There is a quay at Jarnverk, 300m long, with a depth of 9.5m alongside. Vessels up to 25,000 dwt and 9.2 draft can be accommodated.

Aspect.—A conspicuous water tower stands in the E part of the town. A prominent church is situated in the NW part of the town. Several prominent chimneys stand in the vicinity of the steelworks at Jarnverk.

Several islands lie in the entrance to the harbor and may best be seen on the chart. The entrance fairway leads NW and is in-



Oxelosund VTS

dicated by lighted ranges. Several rocks and detached shoal patches lie close to the edge of the fairway and are marked by lights, buoys, and beacons.

Pilotage.—Pilotage is compulsory and is available at any time. See paragraph 7.1 for details on the different categories of vessels that service is provided for.

Pilot ordering should normally be carried out via the e-services section on the Swedish Maritime Administration website (www.sjofartsverket.se), in conjunction with reporting on the Vessel Reporting System (FRS) section.

A preliminary Pilot request must be made via the FRS at least 24 hours in advance.

An accurate pilot request must be made via FRS no later than 5 hours before arrival.

In exceptional cases the pilot may be ordered by use of telephone, email, or VHF.

Pilots will board in either of the following two positions:

a. 58°37.00'N., 17°27.14'E.—NNW of Gustav Dalen Light.

b. 58°37.60'N., 17°10.00'E.—by special arrangement.

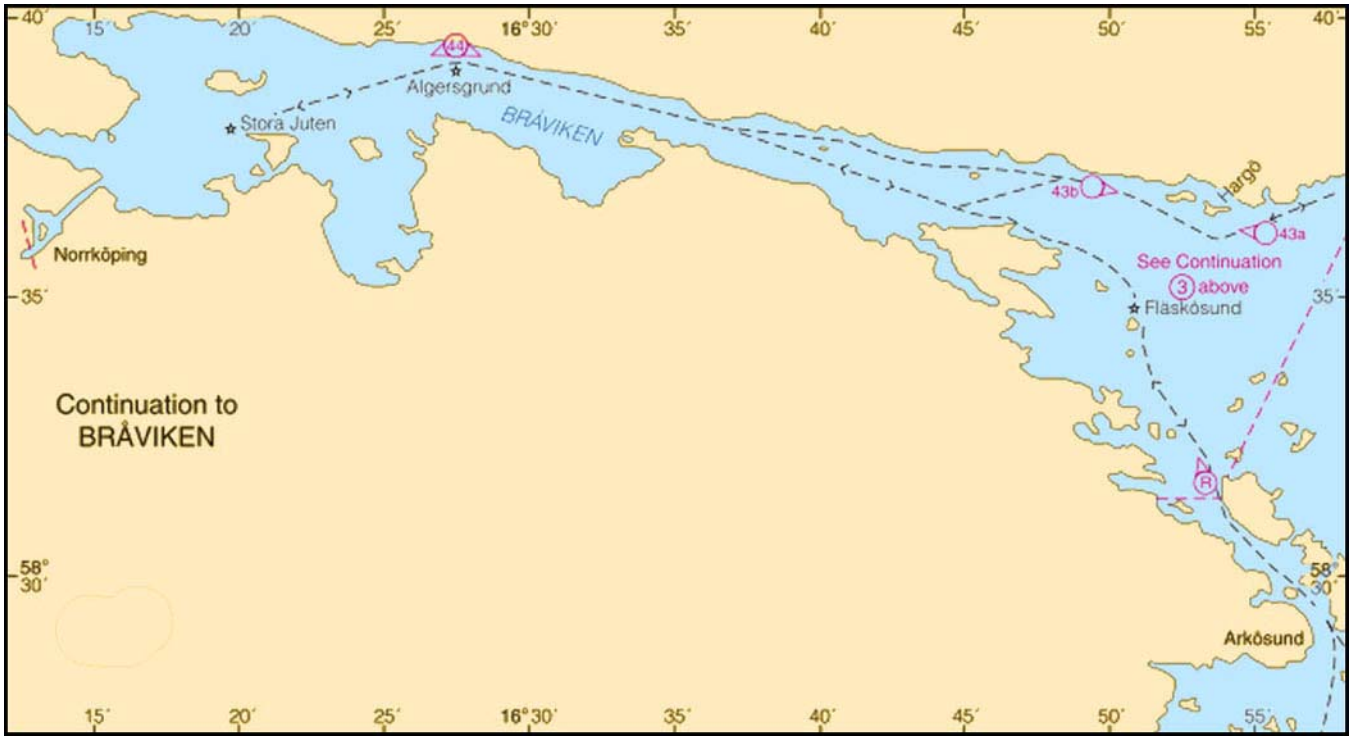
Contact Information.—The pilot ordering center can be contacted, as follows:

1. Call sign: East Coast Pilot
2. VHF VHF channel 10
3. Telephone: 46-771-630645
4. Facsimile: 46-10-4785049
5. E-mail: eastcoastpilot@sjofartsverket.se

The pilots station at Oxelosund can be contacted, as follows:

1. Call sign: Oxelosund Pilot
2. VHF VHF channel 10
3. Telephone: 46-155-37700
4. Facsimile: 46-155-30934

Regulations.—The port lies within the Oxelosund VTS area. For more information, see paragraph 7.1.



VTS continuation from Oxelosund into Braviken Bay

Oxelosund Steel Berth

Anchorage.—Anchorage can be taken, in depths of 30 to 39m, clay, about 0.5 mile W of Vinterklasen (58°38.5'N., 17°08.0'E.). Anchorage can be taken in the approach to Jarnverk, in a depth of 22m, clay, about 0.7 mile ENE of Kolhalsen Light (58°41.5'N., 17°10.7'E.).

For the outer designated anchorage areas, see paragraph 7.11 (Norrkoping).

Caution.—Islets, rocks, reefs, and shoal patches, too numerous to describe, lie adjacent to the entrance fairway and are best seen on a large scale chart of the area. Strict adherence to the marked fairways is advisable as uncharted shoal patches may also lie adjacent to the channels.

A permanent defensive minefield lies in the approach to the harbor and may best be seen on the chart. Anchoring and fishing are prohibited within the field and vessels passing through it during a thunderstorm do so at their own risk.

Nykoping (58°45'N., 17°01'E.)

World Port Index No. 25290

7.14 The port of Nykoping is situated 5.5 miles NNW of Oxelosund in the NW part of Stadsfarden. It is formed by the outer part of the Nykoping River.

Winds—Weather.—The harbor and approaches are sheltered from bad weather.

Ice.—Between January and the middle of March, ice may obstruct the entrance channel and harbor basin, but icebreakers generally keep the port open.

Tides—Current.—The river creates a weak current which, during the spring flood, sometimes causes maneuvering problems within the inner part of the harbor.

Depths—Limitations.—Two approach channels lead to the anchorage roadstead in Orsbaken (58°42'N., 17°10'E). The principal channel, which can be used by vessels with drafts up to 10.8m, is entered between Norra Krankan and Enskar, 4.5 miles NNE. From a position located 2 miles N of

Gustaf Dalen Light (58°36'N., 17°28'E.), this route leads NW for about 12 miles to the roadstead. It passes NE of Lillhammarsgrund Light (58°40'N., 17°20'E.) and NE of Norra Masklubbshallan Light (58°40.2'N., 17°17.1'E.).

A secondary channel, which can be used by vessels with drafts up to 5m, branches off from the main N channel leading into Braviken. From a position located 0.8 mile NNW of Havringe, this route leads NW through the archipelago for about 7 miles to the roadstead.

The entrance channel leads NW and WNW for about 4 miles from the N side of the roadstead in Orsbaken to the harbor. It is dredged to a depth of 5.4m, over a bottom width of 30m, and can be used by vessels with drafts up to 4.9m.

The main quay, with a ro-ro ramp at the N end, is 140m long and has a depth of 6m alongside. The remaining part of the harbor basin provides 560m of berthage with depths of 3.2 to 5.4m alongside. There are facilities for general cargo, bulk, and ro-ro vessels. There are also extensive facilities for pleasure craft. Generally, Vessels up to 100m in length, 15m beam, and 4.9m draft can be accommodated.

Aspect.—The approach channels are indicated by sector lights and lighted ranges. Several rocks and detached shoal patches lie close to the edge of the fairway and are marked by lights, buoys, and beacons.

A prominent fixed bridge spans the head of the harbor basin and a conspicuous water tower is situated in the town.

Pilotage.—All ordering of pilots must be made through Oxelosund VTS (see paragraph 7.1).

For additional information concerning the initial ordering of pilots, see paragraph 7.1.

Regulations.—The port lies within the Oxelosund VTS area. For more information, see paragraph 7.11 (Norrkoping).

Anchorage.—Anchorage can be taken, in a depth of 22m, clay, in the S and central parts of the roadstead in Orsbaken (58°42'N., 17°10'E.). This roadstead is sheltered, except during SE winds.

For the outer designated anchorage areas, see paragraph 7.11 (Norrkoping).

Caution.—Entry to the harbor at night is restricted to vessels up to 1,000 dwt.

7.15 The coast between Nykoping and Enskar (58°41'N., 17°29'E.) is fronted by innumerable islets, rocks, and shoals which may best be seen on the chart. The inshore coastal channel leads NE from Ledskar Light (58°42'N., 17°13'E.) through the offshore archipelago to a position E of Bergo Islet (58°45'N., 17°25'E.). It then joins the approach fairway which leads N and passes W of Enskar. This latter fairway can be used by vessels with drafts up to 6.7m. The inshore coastal channel from Bergo divides W of Savo Island. One branch rounds the N end of the island and leads SE; the other branch leads E through Savosund (58°46'N., 17°29'E.), where it rejoins the first branch. Vessels with drafts up to 6m and 4.2m can use the N branch and E branch, respectively.

Enskar (58°41'N., 17°28'E.), a sparsely-wooded island, lies about 7 miles NE of Havringe and has a prominent white patch on its S extremity.

Enskar to Landsort

7.16 The wooded, rocky, and irregular coast extending between Enskar and Landsort is fronted by numerous islets, rocks, and shoals. Several inshore and coastal channels lead through these obstructions. The principal channel leads N to Sodertalje Harbor and the entrance of the inland waterway system. There are few natural landmarks in this vicinity, except Landsort.

Sector lights, buoys, and beacons mark many of the obstructions lying near the approach and entrance fairways. Detached shoals extend up to 5 miles seaward of Enskar and Landsort. There are areas of deep water between many of these obstructions, but without local knowledge only the prescribed and charted fairways should be used.

Between Enskar and Landsort, the coastline turns abruptly N and is indented by several inlets. These inlets are fronted by dangers through which narrow fairways lead to several minor loading places. The inshore coastal channel, after leaving Savosund, leads E between the dangers and joins the Sodertalje approach fairway, about 4 miles NW of Landsort.

Prominent landmarks in this vicinity include Storro (58°41'N., 17°33'E.), a high and barren island, which lies 2.5 miles ENE of Enskar; and a high lookout tower standing on the island of Lacka (58°45'N., 17°34'E.).

Hallsviken (58°53'N., 17°28'E.), a small loading place, lies at the head of an inlet, 15 miles NW of Landsort. It is approached through an inlet, 5 miles long, which has depths of 7 to 27m and is fringed by reefs. The inshore coastal channel, with a least depth of 6.7m, leads to the entrance of this loading place. Anchorage can be taken, in depths of 8 to 15m, clay, throughout the inlet, but local knowledge is required.

Morko (58°59'N., 17°40'E.), an island 10 miles long, lies in the middle of the inlet leading to Sodertalje. Palsundet, a constricted passage, extends N between Morko and the mainland. It has a least depth of 3m and is spanned by a bridge. A ferry and a submarine cable cross the passage, 4.2 miles N of the bridge.

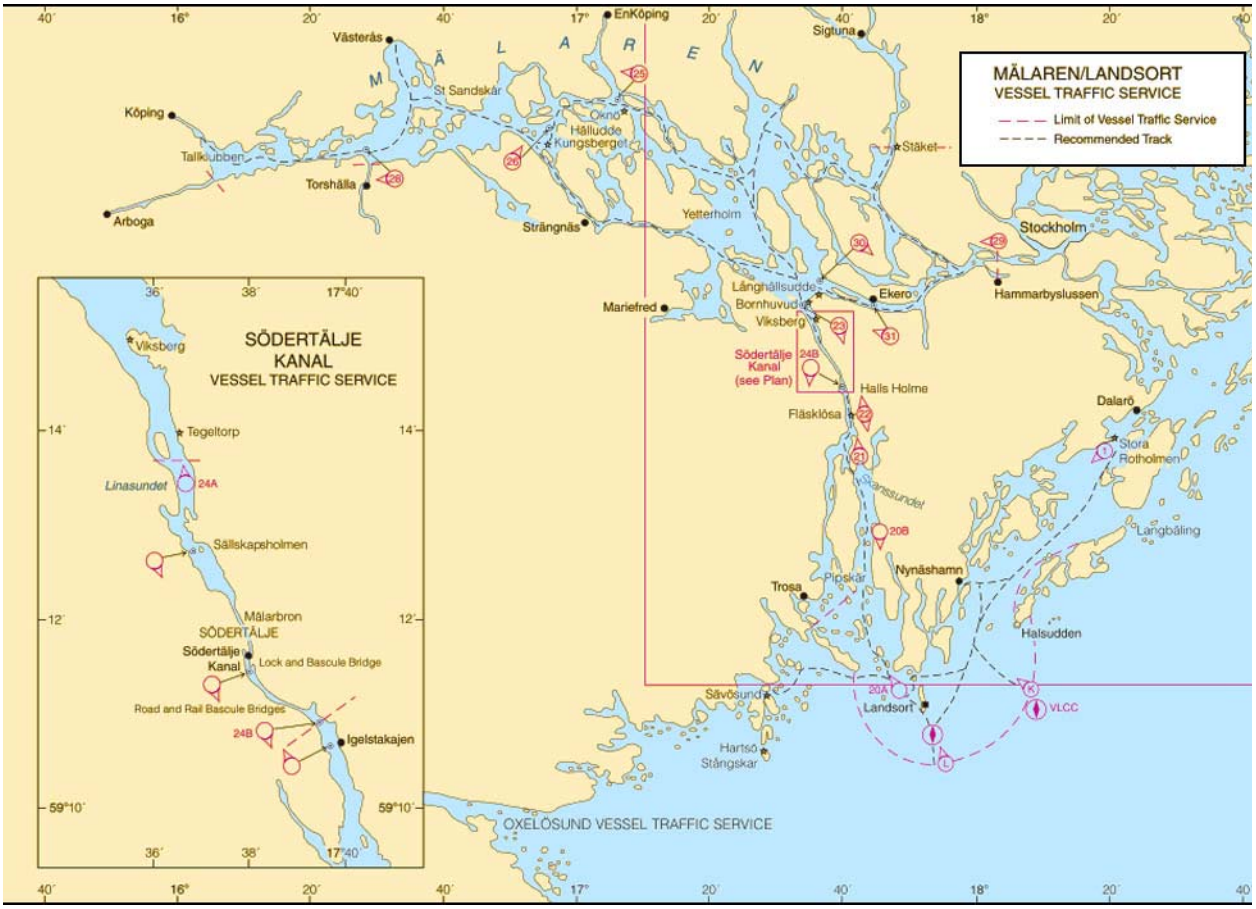
Oaxen (58°58'N., 17°43'E.), an island, lies close E of Morko and adjacent to the approach fairway leading to Sodertalje. Anchorage can be taken, in depths of 13 to 27m, clay, E of the island or, in depths of 10 to 22m, clay, S or W of the island.

Stora Vika (58°56'N., 17°47'E.) a small harbor, lies at the E side of an inlet located 3 miles SE of Oaxen. A branch fairway leads NNE from the main Sodertalje approach channel to this harbor. A quay, 200m long, fronts a cement works and has depths of 6 to 7m alongside. Vessels with drafts up to 6.3m can be accommodated.

Sodertalje (59°11'N., 17°39'E.)

World Port Index No. 25320

7.17 The port of Sodertalje stands on both sides of the head of an inlet in the vicinity of the entrance to the Sodertalje Canal. It lies 28 miles NNW of Landsort and 22 miles SW of Stockholm. The port serves as an important link between the Baltic Sea and the Swedish inland waterway system. The canal leads N into Lake Malaren, an extensive inland sea encumbered by numerous islands.



Sodertalje and Landsort VTS

Ice.—Between January and the end of March, ice may hinder vessels entering the port or the Sodertalje Canal.

Depths—Limitations.—An intricate approach fairway leads to Sodertalje from W of Landsort and local knowledge is necessary for transit. Vessels should approach the pilot boarding position from the S and pass about 0.3 mile E of Landsorts Angoring Lighted Buoy (58°40'N., 17°52.0'E.). This main approach fairway can be used by vessels with drafts up to 9m as far as the outer part of the harbor, S of the canal entrance.

The port consists of several berthing areas. The main commercial facilities lie on each side of the harbor fairway and S of the canal entrance.

Sydhamnen, at the W side, has four ro-ro berths. The berths are 100 to 160m long and have depths of 6.4 to 9.8m alongside.

Sodertalje—Sydhamnen

Oljehamnen, the oil harbor, lies close above Sydhamnen. It has two berths, 70 and 120m long, with depths of 10.1m and 6.9m alongside, respectively.

Igelstahamnen, a bulk harbor, lies close above Oljehamnen at the E side. It has a quay, 145m long, with a depth of 10.5m alongside.

Uthamnen, the outer harbor, lies adjacent to the canal entrance. The N part has a cargo quay, 90m long, with a depth of 8m alongside. The S part has a bulk jetty berth, 130m long, with a depth of 8.4m alongside. Another quay, located in the N part, provides 280m of berthage but is no longer used.

Maren, a basin, lies close S of the canal lock. It has depths of 3 to 4m and is used by yachts and small craft.

The port has facilities for general cargo, container, bulk, and ro-ro vessels. Vessels up to 35,000 dwt, 200m in length, 32m beam, and 9m draft can be accommodated.

Vessels with air drafts up to 50m can enter Sydhamnen, but are limited beyond this S harbor to air drafts of 40.5m.

The Sodertalje Canal connects Uthamnen, the outer harbor, with Lake Malaren and is about 3 miles long. It is 61m wide and has depths of 7.6 to 8.4m. Generally, vessels are limited to a maximum draft of 6.8m, but vessels with drafts up to 7m can transit with prior special permission. A lock is located in the central part of the canal and limits the size of vessels transiting. It is 135m long and 19.6m wide, with a depth of 8m over the

sill. Vessels are limited to a maximum length of 124m. A vessel with a beam of 17m can transit with a draft up to 6.8m and a vessel with a beam of 18m can transit with a draft up to 6.5m.

The canal is spanned by five bridges and vessels are limited N of Sodertalje to an air draft of 34m.

Malarhamnen, a small harbor, lies at the N end of the canal. It provides 280m of berthage, with depths of 3 to 6m alongside. This harbor is mainly used by vessels waiting to transit the canal. Snackvikshamnen is located close NW of Malarhamnen. This quay is 80m long and has a depth of 5.5m alongside.

Vessels up to 8,000 dwt and 6.8m draft can reach Stockholm and Malaren via the lake.

Aspect.—The approach channel is marked by lighted ranges, sector lights, and buoys. The numerous dangers lying adjacent to the fairway may best be seen on local Swedish charts of the area. A number of conspicuous silos stand in the harbor area.

Pilotage.—Pilotage is compulsory in the Malaren/Landsort Traffic Area for the following vessels (see paragraph 5.1):

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 70m in length, 14m beam, and 4.5m draft and over.

In certain channels between Landsort and Nynashamn, pilotage is compulsory for the following vessels:

1. All Category 1 vessels.
2. Category 2 vessels of 90m in length or 16m beam and over.
3. Category 3 vessels of 100m in length or 17m beam and over.

Pilot ordering should normally be carried out via the e-services section on the Swedish Maritime Administration web site (www.sjofartsverket.se), in conjunction with reporting on the Vessel Reporting System (FRS) section.

A preliminary Pilot request must be made via the FRS at least 24 hours in advance.

An accurate pilot request must be made via FRS no later than 5 hours before arrival.

In exceptional cases the pilot may be ordered by use of telephone, email, or VHF.

Pilots will board in either of the following 2 positions:

1. 58°42'.2N., 17°52.1'E.
2. Slussbron Lock (59°11.4'N., 17°37.9'E.)—on the Sodertalje Canal for pilot exchange for ports in Lake Malaren.

Contact Information.—The pilot ordering center can be contacted as follows:

1. Call sign: East Coast Pilot
2. VHF: VHF channel 11
3. Telephone: 46-771-630635—Sodertalje
   46-771-630655—Sodertalje Canal
4. Facsimile: 46-10-4785049
5. E-mail: eastcoastpilot@sjofartsverket.se

The pilots station at Sodertalje can be contacted as follows:

1. Call sign: Sodertalje Pilot
2. VHF: VHF channel 11
3. Telephone: 46-8-554-24500
4. Facsimile: 46-8-554-24530

For additional information concerning the initial ordering of pilots, see paragraph 7.1.

Vessel Traffic Service.—A Vessel Traffic Service (VTS) operates within the Malaren/Landsort Traffic Area. It is mandatory for all vessels over 300 gt, all vessels over 45m in length, and towing vessels with tow lengths exceeding 45m.

The Malaren/Landsort Traffic Area has a seaward limit bounded by a line joining Stora Rotholmen (59°04'N., 18°19'E.), Langbaling (59°00'N., 18°23'E.), Stuphall (58°°41'N., 18°°00'E.), Landsorts Angoring Buoy (58°°41'N., 17°°52'E.), Hartso Stangskar (58°41'N., 17°28'E.), and Savosund (58°46'N., 17°29'E.).

Vessels within the VTS area must maintain a continuous listening watch on VHF channel 68. Vessels unable to maintain channel 68 watch may, on request, use VHF channel 16.

The VTS traffic center covers the area for vessels entering Sodertalje Canal (divided by a lock into Norra Kanalen and Sodra Kanalen) and can be contacted, as follows:

1. Call sign: Sodertalje Kanal
2. VHF: VHF channels 16 and 68
3. Telephone: 46-771-630675
4. Facsimile: 46-8-554-24505
5. E-mail: vtsec@sjofartsverket.se

The VTS center for all the Sodertalje bridges; which include the Malarbron Bridge, Slussbron Lock and Bridge, Sodra Kanalbroarna bridges, and the rail and road bascule bridges can be contacted as follows:

1. Call sign: Malarbron or Slussbron
2. VHF: VHF channels 14, 16, and 68
3. Telephone: 46-771-630675
4. Facsimile: 46-10-4785049

Vessels must report to the Traffic Information Center at Sodertalje on VHF channel 68, as follows:

1. Upon entering or leaving the Malaren/Landsort traffic area. Reports by vessels proceeding into the area should include name, call sign, position, intended route, and destination.
2. Upon arrival at or before departing a berth or an anchorage; when changing from the intended route; and on being involved in a grounding, or collision, or any other occurrence causing any defect in navigation or maneuvering equipment.
3. Upon passing the designated reporting points at Tiljandersknalt (58°45'N., 17°49'E.), Skanssundet (59°04'N., 17°41'E.), and Flasklosa (59°07'N., 17°41'E.).

Upon request, the Malaren/Landsort Traffic Information Center will provide details of other vessels navigating in the near vicinity, passage information, ice conditions, and other pertinent facts.

A similar VTS system serves the Sodertalje Canal and the inland waters to the N. Vessels should report to Sodertalje Kanal on VHF channel 68, as follows:

1. Southbound vessels:
   a. Abeam Sallskapsholmen (59°12.6'N., 17°37.1'E.).
   b. When passing Reporting Point No. 24B, (59°10.9'N., 17°39.4'E.).
2. Northbound vessels:
   a. When passing the Sodra Kanalbroama Bridges, (59°11.9'N., 17°38.6'E.).
   b. When passing Reporting Point No. 24A, (59°13.5'N., 17°336.5'E.).

Vessels intending to enter Lake Malaren with a draft of 7m must request special permission at least 48 hours in advance.

Speed restrictions are in force throughout parts of the ap-

proach fairway, the harbor, and the canal.

Anchorage.—Anchorage areas, designated for large vessels, lie centered 9 miles SSW and 10 miles ESE of Landsort Light and may best be seen on the chart. Anchorage can be taken, in depths of 8 to 12m, mud and clay, within the outer part of the harbor. Anchorage can also be obtained, in depths of 8 to 16m, gravel over clay, within Lina Inlet, 2 miles N of Sodertalje.

Caution.—A power cable, with a vertical clearance of 42m, spans the main approach fairway near the entrance of the canal.

A survey revealed a depth of 7.5m in position (59°30.9'N., 16°44.0'E.).

A railroad bridge, with a vertical clearance of 40.5m, spans the port between Sydhamnen and Igelstahamnen.

A restricted area is situated in the approaches to the port and vessels must stay in the fairway channel routes.

Ferries cross the main approach fairway in the vicinity of the narrows at Skanssund.

7.18 Vasteras (59°37'N., 16°33'E.) (World Port Index No. 25395), the largest inland port of Sweden, lies on the NW side of Lake Malaren, about 50 miles from Sodertalje and 60 miles from Stockholm.

Ice.—Between January and March, ice in the approach canals may hinder vessels, but the port is kept open by icebreakers.

Depths—Limitations.—Vessels with drafts up to 6.8m can reach the port. From the N entrance of the Sodertalje Canal, the fairway leads 4.5 miles NNW to the SE corner of Lake Malaren. A main deep-water channel then leads across the lake in a predominantly WNW direction to Vasteras.

Locks in the Sodertalje Canal limit the size of vessels to 124m in length, 18m beam, and 6.8m draft. Hammarbyleden, the channel leading to the port from Stockholm, has a least depth of 6.1m. A canal lock in this channel is 115m long, 17.4m wide, and has a depth of 7m over the sill. It limits the size of vessels transiting to 110m in length, 15m beam, and 5.6m draft.

The W (Vastra) harbor basin has 930m of commercial quayage with depths of 7.4 to 7.6m alongside. The E (Ostra) harbor basin has 790m of commercial quayage with depths of 5 to 7.6m alongside. It also provides 130m of berthage for ferries, with depths of 4 to 4.5m alongside.

The Lillauddsbron Bridge, located in the entrance to Ostra Hamnen (E harbor basin), has a vertical clearance of 2.6m when closed. When open, the passage beneath the bridge is 30m in width. This bridge will be opened only for qualified traffic. When passing Agneudde Light, the vessel should contact the Company Sjoevent via telephone (46-70-588-3238). When passing Stora Sandskar Light contact should be made with the bridge operator on VHF channel 68, then reconfirmed about 10 minutes before arrival at the bridge on VHF channel 68. The bridge operator will contact the vessel when the opening is started.

The oil terminal berth is 125m long and has depths of 6 to 7.6m alongside. There are facilities for container, ro-ro, tanker, and bulk vessels. Vessels of up to 10,400 dwt and 6.8m draft can be accommodated.

Aspect.—Lights, pilings, beacons, and buoys mark the sides, turns, and directions of the fairway leading to the port. Numerous dangers lie adjacent to the channel and are marked by beacons and buoys. A number of conspicuous silos and tanks stand in the vicinity of the harbor.

Caution.—Numerous lie across the channel and may best be seen on the chart.

7.19 Koping (59°31'N., 16°00'E.) lies at the extreme W end of Lake Malaren, 60 miles WNW of Stockholm. The port is accessible via the canals and channels leading from Sodertalje and Stockholm. It is open year round; icebreakers are used when necessary.

Depths—Limitations.—The entrance fairway has a dredged depth of 7.6m and a width of 60m. The oil terminal jetty, with mooring dolphins, is located at the NE side of the outer basin It has an outer berth, 65m long, with a depth of 7.6m alongside and an inner berth, 65m long, with a depth of 5.8m alongside.

The dredged area SE of the jetty is marked by buoys.

The central basin has a grain storage quay at the NE side. It is 80m long and has a depth of 7.6m alongside. A cement quay is located at the SE side. It is 110m long and has a depth of 7.6m alongside. There is also 605m of commercial quayage, with depths of 6.2 to 7.6m alongside, located close NW of the cement quay. The old inner basin has 194m of quayage with a depth of 4.5m alongside.

There are facilities for container, tanker, general cargo, and bulk vessels. Vessels of up to 8,800 dwt, 124m in length, and 6.8m draft can be accommodated.

Aspect.—A number of conspicuous silos and a prominent chimney stand in the vicinity of the harbor.

Caution.—A power cable, with a vertical clearance of 35m, spans the fairway in the vicinity of the harbor.

Landsort Light

7.20 Landsort (58°44'N., 17°52'E.) is located at the S end of Oja, 12.5 miles ENE of Enskar. Landsort Light is shown from a prominent tower, 25m high, standing at Landsort. Landsorts Angoring Lighted Buoy is moored about 4 miles S of this light.

Pilotage.—Pilotage is compulsory within the Malaren Landsort area for certain vessels. See paragraph 7.17 for details.

Contact Information.—The Landsort Pilot Station can be contacted, as follows:

1. Call sign: East Coast Pilot
2. VHF: VHF channel 11
3. Telephone: 46-77-1630635
4. Facsimile: 46-10-4785049

5. E-mail: eastcoastpilot@sjofartsverket.se
6. Web site: http://www.sjofartsverket.se

Pilots will board, as follows:

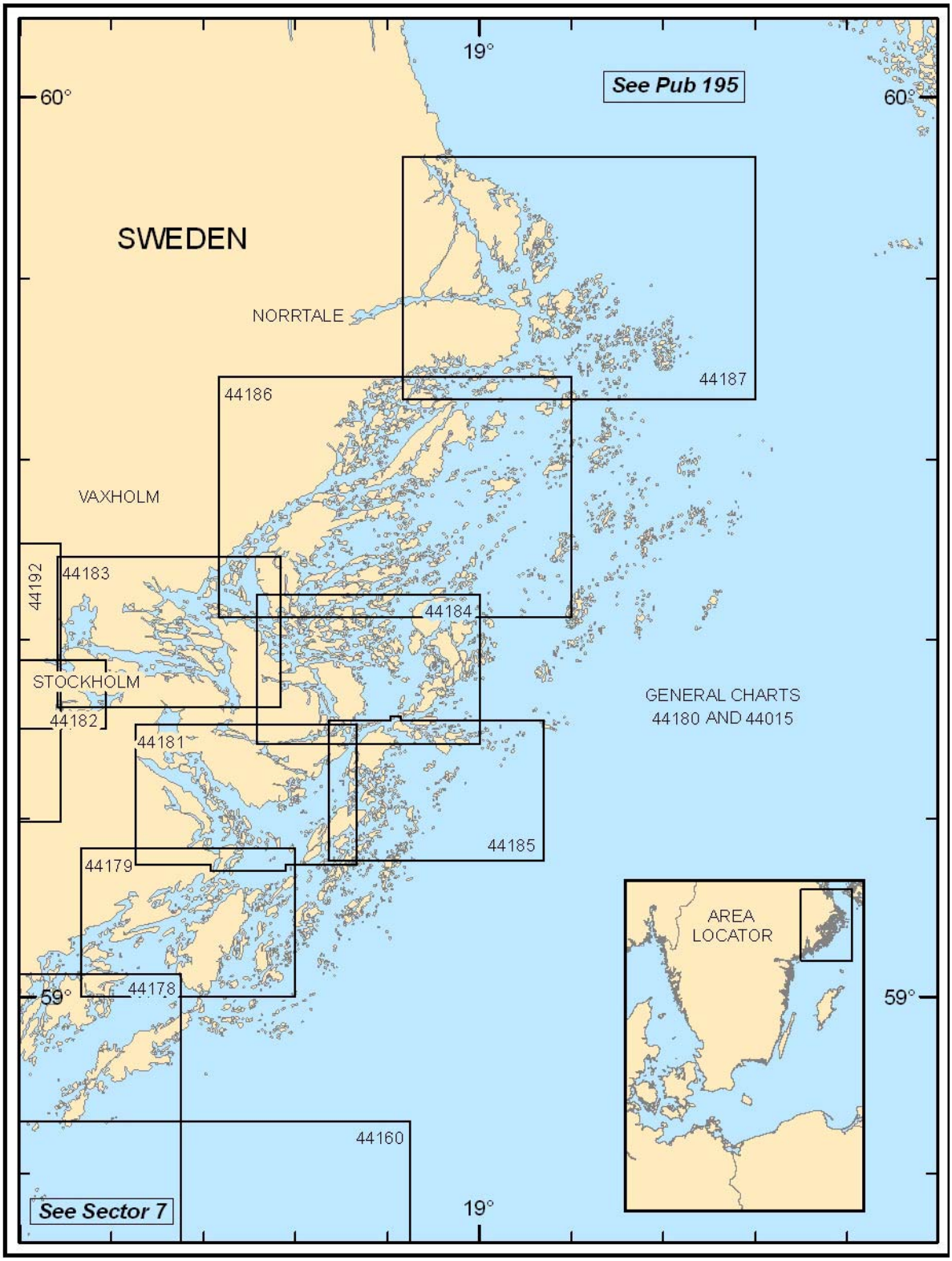
1. Position 58°42.2'N. 17°52.1'E.
2. Position 58°44.4'N. 18°09.5'E.—for VLCCs.
3. Slussbron Lock (59°11.4'N., 17°37.9'E.)—on the Sodertalje Canal for pilot exchange for ports in Lake Malaren.

Bredgrund (58°43'N., 17°52'E.), a detached shoal, lies 0.5 mile SSE of Landsort. A light is shown from a prominent floodlit tower, 19m high, standing on this shoal. A racon is situated at the light.

Detached shoals, awash, and drying rocks lie up to about 5 miles E and 3.5 miles ESE of Bredgrund.

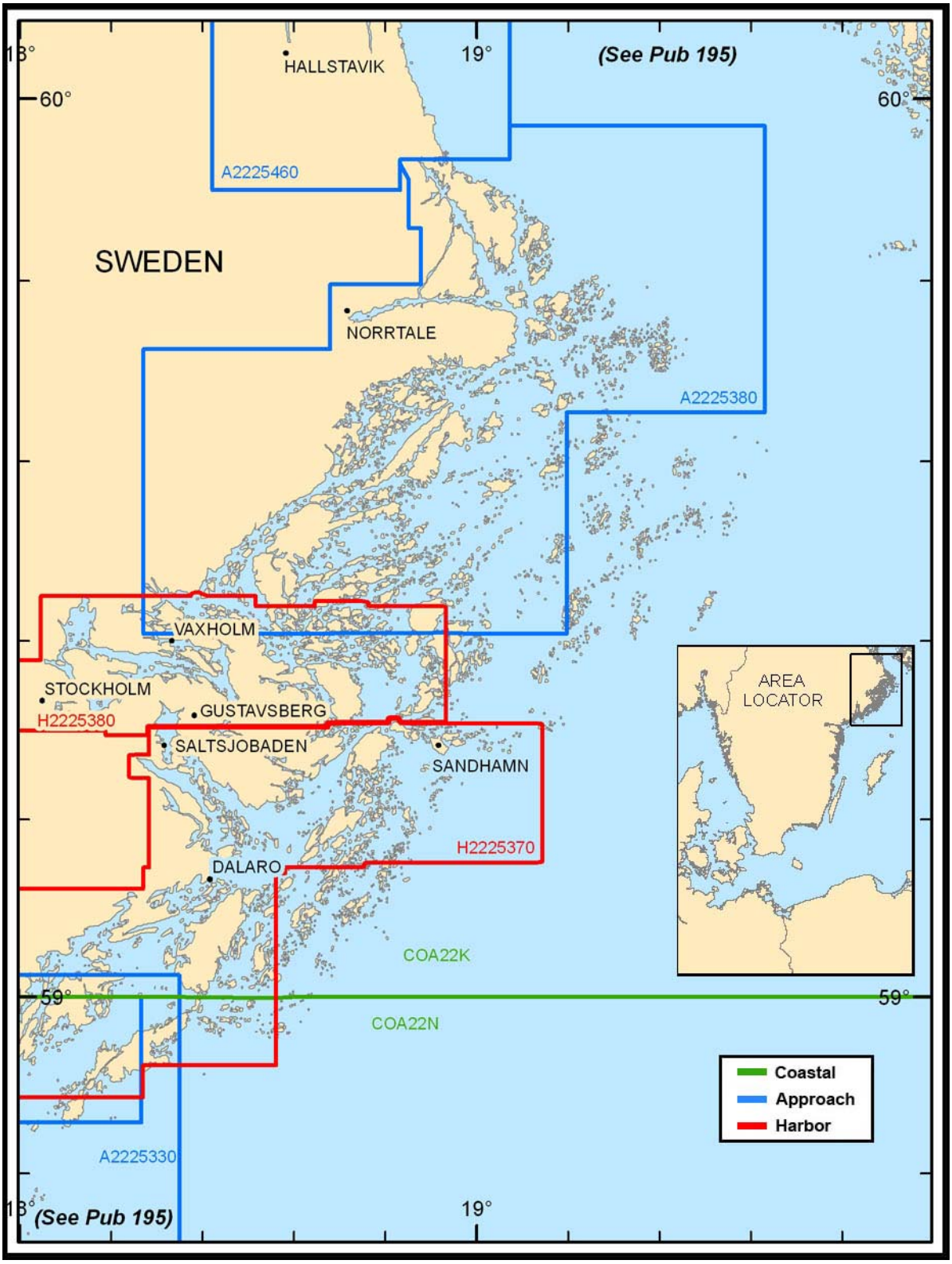
Caution.—A restricted area, the limits of which are shown on the chart, lies in the vicinity of Landsort.

Local magnetic disturbances are reported to exist in the vicinity of Landsort.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **8** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 22 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 8 — DNC LIBRARY INFORMATION

SECTOR 8

SWEDEN—EAST COAST—LANDSORT TO ARHOLMA

Plan.—This sector describes the Swedish coast, the approaches, and the off-lying dangers between Landsort and Arholma, 79 miles NNE. The descriptive sequence is S to N.

General Remarks

8.1 The irregular, rocky, and wooded coast between Landsort and Bjorko, 80 miles NNE, is fronted by Stockholm Skargard, an archipelago interspersed by innumerable dangers, which extends up to about 30 miles offshore in places. There are few prominent landmarks, although several islands in the S part of the archipelago are high enough to be identified. Conspicuous light structures mark the seaward side of the Skargard. Depths in the approaches to the archipelago are very irregular. Soundings are of little help in approach fairways, as depths near the outer shoals are often greater than those lying a few miles seaward. Numerous branch fairways and inner passages lead between the various dangers.

Much of the archipelago consists of uncharted dangers and strict adherence to the prescribed fairways is advocated. The 40m curve closely contains the majority of dangers lying off this coast. The major port of Stockholm and the lesser ports of Nynashamn and Norrtalje lie along this stretch of coast. A number of small harbors are situated within the archipelago but are used only by small craft, local ferries, and pleasure boats.

Pilotage.—Pilotage is compulsory in Swedish coastal waters and along certain fairways connecting ports along the coast. The vessels subject to compulsory pilotage vary in type and size according to location; these vessels are divided into the following categories:

1. Category 1—Vessels carrying or with uncleaned tanks which last carried:
   a. Liquefied gas.
   b. Liquid chemicals defined in MARPOL73 Supplement 2, Annex 2 as category A, B, or (if vessel does not have a double-skin hull under all cargo tanks) C.
   c. Liquid chemicals which, according to the IMO bulk chemical code, should be carried in Type 1 or 2 vessels.
2. Category 2—All other chemical tankers which are laden or have uncleaned tanks and all laden oil tankers.
3. Category 3—All other vessels.

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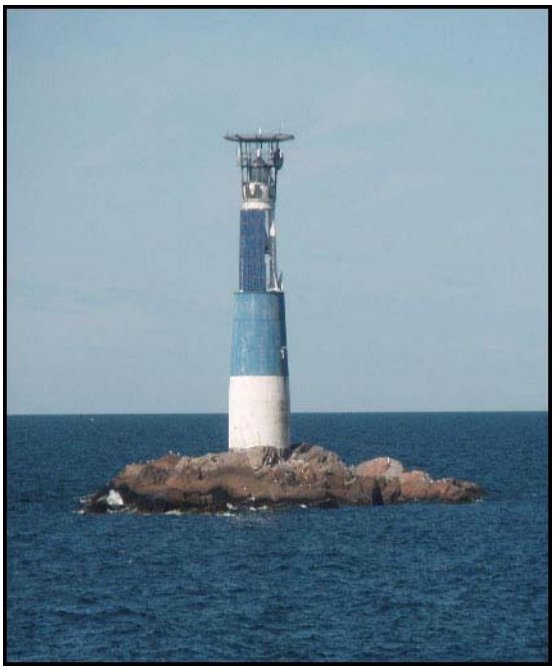
Directions—Offshore Route.—The offshore route leading from the S to the Gulf of Bothnia (see paragraph 4.1) passes though the Ahvenanmeren Deep-Draft Channel and the Aland Sea.

The Ahvenanmeren Deep-Draft Channel is swept to a least depth of 18m and is authorized for drafts up to 15.3m. It can be used by all vessels.

The channel can be entered W of Bogskar Light (59°30'N., 20°21'E.) and W of Svenska Bjorn Light (59°33'N., 20°01'E.). It leads 4 miles N and turns NW, passing, with a minimum width of 1 mile, N of the remnants of Armbagen Light (59°38'N., 19°58'E.), N of Troskeln Vastra Light (59°40'N., 19°52'E.), and S of Troskeln Ostra Light (59°40'N., 19°55'E.). The route then continues in a NW direction, passing SW of Flotjan Light (59°49'N., 19°47'E.).

For a description of the routes and dangers lying N of Flotjan Light, see Pub. 195, Sailing Directions (Enroute) Gulf of Finland and Gulf of Bothnia.

Armbagen Light



Bogskar

Stockholm Skargard—Entrances

8.2 There are four principal entrances leading into Stockholm Skargard. The designated routes through them are shown on the chart.

The entrances and the distances to Stockholm with authorized drafts are as follows:

1. Landsort Entrance (58°42'N., 17°52'E.) with an authorized draft to Stockholm of 10m—has a distance of about 80 miles.
2. Sandhamn Entrance (59°15'N., 19°02'E.) with an authorized draft to Stockholm of 11m—has a distance of about 42 miles. This entrance provides the shortest and most direct route.
3. Soderarm Entrance (59°46'N., 19°25'E.) with an authorized draft to Stockholm of 8m—has a distance of about 55 miles.
4. Arholma Entrance (59°54'N., 19°05'E.) with an authorized draft to Stockholm of 7m—has a distance of about 55 miles.

Channels that may be used by foreign merchant vessels when navigating in Stockholm Skargard are, as follows:

1. Landsort to Sodertalje (see paragraph 7.17).
2. Landsort to Dalaro (59°08'N., 18°25'E.).
3. Dalaro to Stockholm, through Kanholmsfjarden (59°20'N., 18°48'E.) or Vindostrom (59°18'N., 18°40'E.).
4. Jungfrufjarden (59°09'N., 18°23'E.) to Baggensfjarden (59°18'N., 18°20'E.), reported to have a vertical clearance of 18.8m.
5. Sandhamn to Stockholm, known as Sandhamnsleden.
6. Furusund (59°40'N., 18°55'E.) to Kanholmsfjarden, through Ostra Saxarfjarden (59°27'N., 18°30'E.).
7. Kanholmsfjarden to Granhamnsfjarden (59°43'N., 19°08'E.), known as Rodlogaleden.
8. The Alands Sea to Furusund, through Soderarm Entrance or through Arholma Entrance, known as Arholmasleden.
9. Furusund to Stockholm, known as Furusundsleden.

Ice.—Stockholm Skargard is usually frozen over from December to March. Seaward of the archipelago, the sea is generally ice-free, but with onshore winds, drift ice may be troublesome. Icebreakers keep the principal entrances and channels through the archipelago open to shipping. Compressed air tubes to prevent ice formations are laid across the fairways and approach channels. Notice boards and lights mark the landing places of tubes, submarine cables, and pipelines. Ice Reporting and Advice Services and Instructions for Mariners in Fairways with Ice are contained in Special Regulations promulgated for shipping in the Stockholm Skargard during the ice season. Vessels should consult the Stockholm Harbor Administration and Pilot Authority for the latest ice information.

Tides—Currents.—The current from Simpnasklubb Light (59°54'N., 19°05'E.) usually sets SW throughout Stockholm Skargard. It passes Landsort and may attain a rate of 2 knots at times. Currents close offshore and in the approach channels through the archipelago may run in different directions and are opposed to the current farther offshore. In the outer approaches to the archipelago there is usually a current setting W.

Pilotage.—Pilotage within the area described in this sector is controlled by two pilot stations. Pilots for the Landsort Entrance area are controlled by the Malaren/Landsort Traffic Area station situated at Sodertalje. All ordering of pilots within the traffic area must be made through the Traffic Information Center of Sodertalje VTS. Pilots generally board about 2 miles S of Landsort Light or (for large vessels) near Nynashamn Approach Lighted Buoy (58°45'N., 18°11'E.).

For further information concerning pilotage within the Malaren/Landsort Traffic Area, see paragraph 7.17 (Sodertalje).

For additional information concerning pilotage and the initial ordering of pilots, see paragraph 7.1.

Pilots for the Sandhamn, Soderarm, and Arholma Entrances are controlled by the station at Stockholm. All ordering of pilots in the area between 59°00'N and 60°00'N, except the Malaren area, must be carried out through the Traffic Information Center of Stockholm VTS. This VTS center can be contacted on VHF channel 73.

Vessels should send an ETA and request for pilotage at least 12 hours in advance of arrival at the boarding place with a confirmation at least 5 hours in advance.

Pilotage is compulsory (see paragraph 8.1) in this area for the following vessels:

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 70m in length, 14m beam, and 4.5m draft and over.

In certain channels to and from Gustavsberg, pilotage is compulsory for the following vessels:

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 60m in length, 9m beam, and 4m draft and over.

Pilots can be contacted by VHF and board, as follows:

1. At the Sandhamn Entrance—About 2 miles SE of Revengegrundet Light (59°15'N., 19°01'E.).
2. At the Soderarm Entrance—NW or SE of Tjarven Light (59°48'N., 19°22'E.).
3. At the Arhoma Entrance—NNW of Simpnasklubb Light (59°54'N., 19°05'E.).

For additional information concerning the initial ordering of pilots, see paragraph 8.1.

Vessel Traffic Service.—Two Vessel Traffic Service (VTS) systems operate within the area described in this sector. Sodertalje VTS covers the S part, which includes the Malaren/Landsort Traffic Area and the Landsort Entrance. The Traffic Information Center of this VTS may be contacted on VHF channel 68.

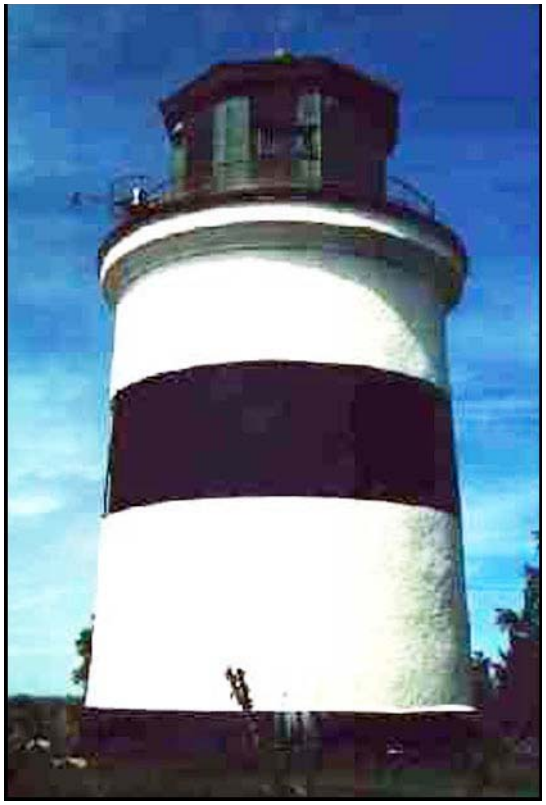
For further information concerning Sodertalje VTS and the Malaren/Landsort Traffic Area, see paragraph 7.17 (Sodertalje).

Stockholm VTS operates in the N part of the area described in this sector. It is mandatory for vessels over 300 gt, vessels over 50m in length, and towing vessels where the length including tow is over 50m.

The Stockholm VTS Traffic Area is bounded by the following points:

1. Stora Rotholmen (59°04'N., 18°19'E.).
2. .Revengegrundet Light (59°15'N., 19°01'E.)
3. Soderarm Light (59°45'N., 19°24'E.).
4. Simpnasklubb Light (59°54'N., 19°05'E.).
5. Svartklubben (60°10'N., 18°50'E.).
6. Djursten (60°22'N., 18°24'E.).

7. Hammarbylussen (59°18'N., 18°05'E.).



Djursten Light

The VTS Traffic Information Center will pass navigational and traffic details to vessels as required. Within the VTS area, all vessels must keep a continuous listening watch on VHF, channel 73, and report, as follows:

1. 30 minutes prior to arrival at the pilot boarding position.
2. When passing the designated calling-in-points which are shown on the charts.
3. On arriving at or departing from a berth, when anchoring or weighing anchor, when changing the intended route, and on the occurrence of any incident.
4. On leaving the VTS area.

The initial report must include vessel's name, call sign, position, intended route, destination, draft if over 6m, length if over 150m, and if vessel is a tanker.

Caution.—The numerous dangers, lying in the approaches and adjacent to Stockholm Skargard, are described with the off-lying dangers and the entrance channels leading through the archipelago. Several extensive danger areas, within which navigation is prohibited, lie between the approach channels leading to Stockholm and the coast. All of the principal channels leading through the archipelago to Stockholm, and much of the contiguous coast, lie within either Protected or Restricted Areas.

Several areas within which anchorage, navigating, and landing are prohibited exist in the archipelago. They are described if in proximity to the main channels. All areas are marked by aids or by notice boards.

In addition, there are several areas within which gun firing practices are conducted or which are used as torpedo launching ranges.

Defensive minefields are laid in the seaward entrances of the principal approach channels. Anchoring and fishing are prohibited within these fields and vessels passing through them during thunderstorms are also cautioned that they do so at their own risk. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for regulations concerning vessels entering or departing Swedish waters.

Swedish Surveillance and Traffic Centero gather and study information pertinent to all activities at sea. The centers monitor VHF channel 16 continuously in the area at:

Within Swedish waters, Military Procted Areas have been established to guard defence installations and significant places of Swedish defense.

Normally, in peacetime, foreign citizens and foreign vessels have freedom of access and the right to remain in these areas without the need for special permission. However, in times of military preparedness, Swedish statute, special regulations, and restrictions apply. Details of which are announced in the Swedish Notices to Mariners.

The government of Sweden proclaims that no foreigner may enter a fortified area, government reserve, establishment, installation, aircraft, vessels, or property that belong to the defense authorities of Sweden.

Frequent gunnery (artillery) exercises are performed by the Swedish Navy within areas in the vicinity of Landsort, Uto and Huvudskar. Warnings of special gunnery exercises are issued by Sveriges Radio, requesting mariners to avoid the areas.

There are four restricted areas and one semi-restricted area lying in the vicinity of Landsort; their approximate boundaries are, as follows:

1. **Landsort Restricted Area.—**From the vicinity of (58°47'N., 18°00'E.) extending NE to the N of Nattaro (58°53'N., 18°08'E.).
2. **Huvudskar Restricted Area.—**From the vicinity of (58°59'N., 18°29'E.) extending WNW to the N point of Uto (58°57'N., 18°15'E.) and then leading to the S part of Orno (59°05'N., 18°26'E.).
3. **Musko Restricted Area.—**From the vicinity of (59°02'N., 18°07'E.) enclosing the island and the waters W to the mainland.
4. **Morto-Bunsons Restricted Area.—**From the vicinity of (59°08'N., 18°29'E.) extending 2 miles SSW to toward Kvarnon.
5. **Uto Semi-restricted Area.—**The area between the Landsort, Musko, and Huvudskar restricted areas is known as the Uto Semi-restricted Area.

Uto Artillery Range.—During firing exercises at this range, navigation is periodically prohibited within an area, with a radius of 13 miles, centered on position 58°56.95'N, 18°15.70'E. This area is patrolled during exercises and the following signals are shown, as follows:

1. A yellow rotating light is displayed from Uto Kvarn windmill.
2. A yellow rotating light and a fixed red light (visible between 278° and 015°) are displayed from the Uto Firing Range Light (58°57'N., 18°16'E.).
3. A red flag by day and a red light at night are displayed

from Uto Sakerhetspost No. 1 (safety post) (58°55'N., 18°13'E.), at the SW extremity of the area, and from Uto Sakerhetspost No. 2 (58°57'N., 18°17'E.) at the NE extremity of the area.

Stockholm Skargard—Approaches

8.3 Landsort (58°44'N., 17°52'E.) and Bredgrund (58°43'N. 17°52'E.), located near the S of Oja Island, are described in paragraph 7.20. The S approach channel leading through the archipelago to Stockholm passes E of Landsort.

As there are few natural landmarks on approaching this coast, the light structures and buoys marking the outer dangers are especially valuable aids in establishing positions. Several conspicuous and wooded islands lie long the S part of this rugged coast and include Mallsten (58°51'N., 18°02'E.), Nattaro (58°53'N., 18°07'E.), Alo (58°55'N., 18°13'E.), and Uto (58°57'N., 18°15'E.).

A windmill, standing on top of a high hill on the NW side of Uto, is very conspicuous from offshore. A prominent monument stands on an islet lying about 4 miles W of the windmill. The island of Nattaro has dark shores, while the island of Uto has several light red high cliffs which slope seaward. The high and wooded S summit of Mallsten, lying in the narrows W of Uto, is prominent.

Gunnarstenarna (58°46'N., 18°03'E.), a group of moderately-high islets, lies about 6 miles E of Landsort Light. A light (Hallorna) is shown from the northeastern-most islet.

Nynashamn Approach Lighted Buoy is moored about 4.5 miles ESE of the light.

Huvudskar (58°58'N., 18°34'E.), a group of islands, lies at the outer end of a chain of islands and shoals which extend up to 7 miles E from the NE end of Uto. Shoals and rocks extend up to 1.5 miles E of this group and vessels should not approach them without local knowledge. Lokskar, the northernmost and highest of the islands is surmounted by a prominent cairn.

8.4 Huvudskar Light (58°58'N., 18°34'E.), shown from a prominent tower, 16m high, stands on the southernmost island of the group.

The numerous islands lying between Huvudskar and Bullero, 17 miles NNE, are difficult to identify. Vindaban, a group of rocks, lies about 3 miles NE of Huvudskar; a light is shown from the highest rock when required by local fishing vessels.

Norsten, lying about 5 miles NNE of Huvudskar, is bare with a rocky hill of moderate height on it. Demban, with a least depth of 2.2m, lies about 3.8 miles E of Norsten. An area of shoal water extends up to about 1.5 miles E of Demban and is marked at its seaward extremity by a buoy.

Sjalberget (59°04'N., 18°48'E.), lying about 5 miles NE of Norsten, consists of two rocks; the N and higher rock is 4m high and gray in color.

Bullero (59°12'N., 18°51'E.) is high and bare with a prominent hummock rising at its N end. A tower stands 0.3 mile N of the S end of the island.

Almagrundet Light (59°09'N., 19°08'E.), equipped with a racon, is shown from a prominent floodlit tower, 30m high, standing 21 miles NE of Huvudskar. It marks the easternmost danger lying near the main approach channel of the Sandhamn Entrance. Almasgrund, a large shoal area, has a least depth of 5.8m and extends up to 3 miles WNW of the light.

Huvudskar Light

Svenska Hogarna (59°27'N., 19°30'E.) is a group of bare islets lying 20 miles NE of Almagrundet Light. A light is shown from a prominent tower, 18m high, standing on Storon, the largest islet of the group. Rocky shoals extend up to about 4 miles seaward of this group.

Kopmansgrund (59°29'N., 19°40'E.) is a pinnacle rock lying 5 miles NE of Svenska Hogarna. A shoal, marked by a buoy, lies about 1.8 miles NE of Kopmansgrund and has a least depth of 9.5m.

Svenska Bjorn Light (59°33'N., 20°01'E.), equipped with a racon, is shown from a prominent tower, 32m high with a helicopter platform, standing on Sodra Klatten, a shoal.

Sodra Klatten, along with Norra Klatten, another shoal lying 1 mile NW, has a least depth of 10m. These shoals lie at the E edge of the dangers extending up to over 30 miles from the Swedish mainland.

Bogskar (59°30'N., 20°21'E.), a group of rocks fronted by shoals, is the southernmost danger in the Aland archipelago. A light is shown from a prominent tower with a building and wind generator, 46m high, standing on the westernmost rock. A racon is situated at the light. On the easternmost and highest rock, lying about 2.5 miles ENE of the light, there is a beacon.

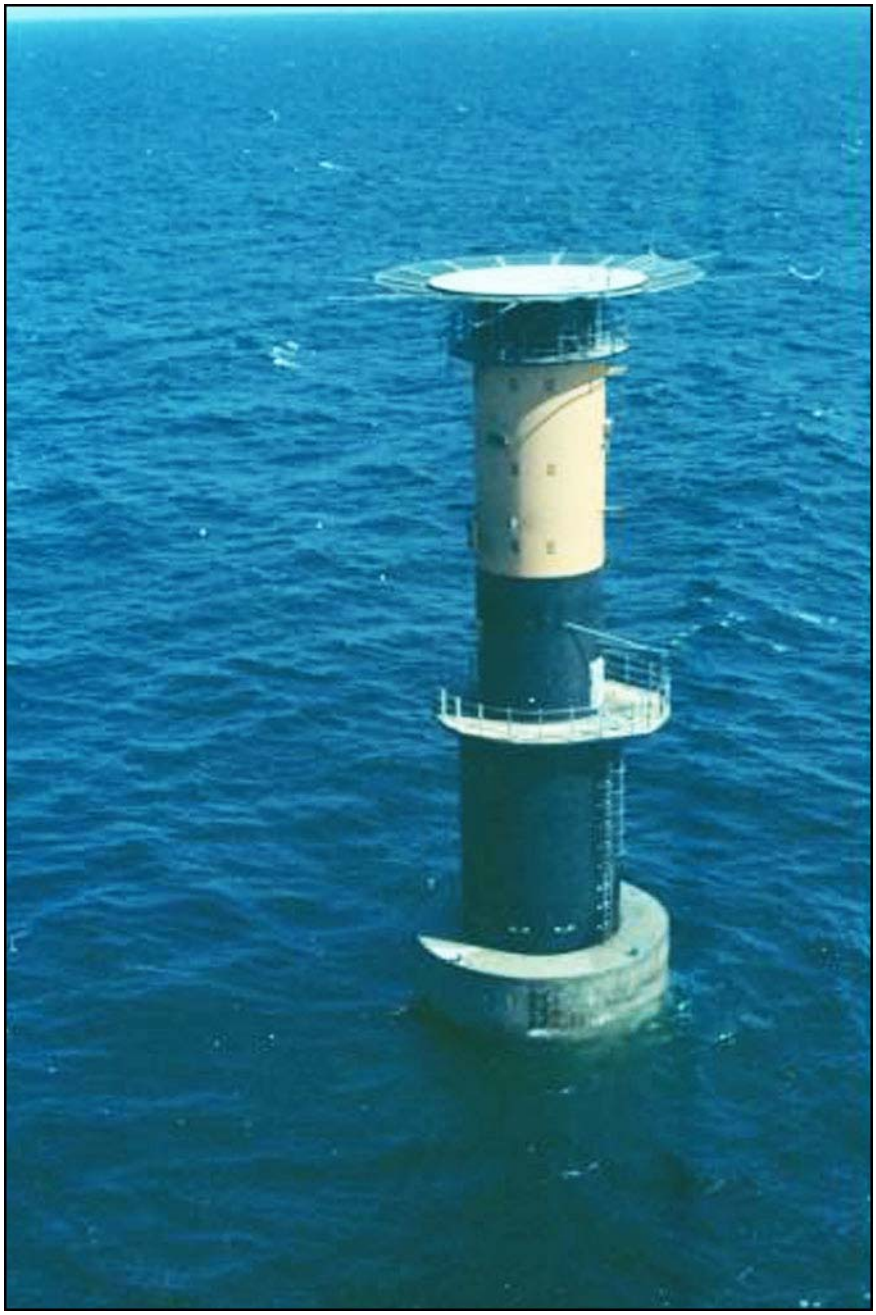
Armbagen (59°38'N., 19°58'E.), a shoal, has a least depth of 6.7m and lies about 5 miles NNW of Svenska Bjorn Light. A light is shown from a mast with a helicopter platform, 20m high, standing on this shoal. A racon is situated at the light.

Troskeln (59°39'N., 19°50'E.), an extensive shoal, lies about 9 miles NNW of Svenska Bjorn Light and has a least depth of 7.6m.

8.5 Troskeln Vastra Light (59°40'N., 19°52'E.) is shown from a mast with a helicopter platform, 20m high, standing about 1.2 miles E of the shallowest part of the shoal, 4.6 miles NW of Armbagen. A racon is situated at the light.

Troskeln Ostra Light (59°40'N., 19°55'E.) is shown from a mast with a helicopter platform, 20m high, standing 3 miles N of Armbagen.

Svenska Stenarna (59°35'N., 19°35'E.), a group of high and



Almagrundet Light

light-colored islets, lies 13.5 miles W of Svenska Bjorn Light. The largest islet is marked by a beacon, 12m high.

Ice.—Icebreakers keep the main channels open all year, but branch passages are often closed during severe icing.

Depths—Limitations.—The entrances providing access routes to Stockholm are, as follows:

1. Landsort Entrance (58°42'N., 17°52'E.), authorized for a draft of 10m.
2. Sandhamn Entrance (59°15'N., 19°02'E.), authorized for a draft of 11m.
3. Soderarm Entrance (59°46'N., 19°22'E.), authorized for a draft of 8m.
4. Arholma Entrance (59°54'N., 19°05'E.), authorized for a draft of 7m.

Caution.—Anchoring is prohibited within the following areas:

1. A minefield lying SE of Nynashamn.
2. A torpedo firing range within Mysingen and covering an area between Musko and Uto.
3. A minefield lying between Uto and Orno.
4. A minefield lying in Horsfjorden, between Galon and Musko.

5. A submarine cable area lying along the N and NW sides of Nattaro (58°53'N., 18°07'E.).

Svenska Hogarna Light

Svenska Bjorn Light

Bogskar Light

Stockholm—South Approach (Landsort Entrance)

8.6 **Landsort** (58°44'N., 17°52'E.), previously described in paragraph 7.20, lies on the W side of the entrance to the S approach channel. Between Landsort and Dalaro (59°08'N., 18°25'E.), 29 miles NNE, the coast is fronted by numerous dangers which extend to the E. The principal channel from Landsort leads between these dangers and the off-lying islands.

The S approach channel leading to Stockholm, from E of Landsort, passes through several deep-water bays and joins the E and principal approach channel in Kanholmsfjarden (59°20'N., 18°47'E.), 45 miles NE of Landsort. These bays contain numerous dangers which are marked by lights and buoys. The light sectors indicating the fairways should be strictly followed.

Skrapan Light

Skrapan (58°47'N., 17°59'E.), an islet, lies NE of Landsort. A light is shown from a prominent tower, 11m high, standing on this islet.

Viksten (58°47'N., 17°57'E.), a group of islets, lies centered 0.8 mile E of Skrapan. A light (Viksten Nordvastra) is shown from a tower standing on the NW side of the northernmost islet. A prominent beacon is situated on the southernmost islet.

Mallsten (58°51'N., 18°02'E.), an island, lies 4.2 miles NE of Viksten.

Masknuv Light (58°51'N., 18°01'E.) is shown from a prominent tower, 10m high, standing on an islet located in the S entrance to Dalaro Channel. A conspicuous disused tower is situated close E of the light. This islet lies at the seaward end of a shallow reef which extends about 0.6 mile W from the NW side of Mallsten.

Vastergrund Lighted Buoy (58°50'N., 18°00'E.) is moored about 1.4 miles SW of the S end of Mallsten.

Ostra Roko (58°54'N., 18°05'E.), an islet, lies 3.2 miles NNE of the N end of Mallsten and is marked by a light.

8.7 **Mysingeholm** (59°00'N., 18°16'E.) and Soderhall, two islets lying 0.7 mile apart, lie about 8 miles NE of Ostra Roko and are marked by lights.

Lilla Rotholmen (59°04'N., 18°20'E.), an islet marked by a light, lies in the constricted fairway, W of Orno (59°04'N., 18°26'E.). Numerous patches, with depths of less than 5m, lie close to the fairway to the N and S of this islet and are marked by buoys. The navigable fairways leading N of Lilla Rotholmen extend as far as Dalaro, but are constricted and encumbered with islands.

Aspo (59°07'N., 18°25'E.), Stenholm (59°08'N., 18°25'E.), and Genbote (59°08'N., 18°27'E.) are islands lying adjacent to the fairways in the narrows to the S of Dalaro.

Piltholm (59°08'N., 18°27'E.), an islet, and Piltholmsknall (59°09'N., 18°28'E.), a rock marked by a light, lie on foul ground adjacent to the fairway.

Fjardhallan (59°09'N., 18°33'E.) and Kofotsgrund (59°13'N., 18°37'E.) are detached patches lying close to the fairway.

Langholmen (59°18'N., 18°46'E.), an island, lies in the S approach to Stockholm and is marked by a light.

8.8 **Herrhamra** (58°48'N., 17°50'E.), a harbor of refuge, lies 3 miles N of Landsort and is approached through Herrhamraleden, a channel, which separates the islands from the shoals N of Oja and S of Toro. Narrow and buoyed fairways, available for drafts up to 4.5m, lead E and W of Landsort to the harbor and roadstead anchorage. The inshore coastal fairway leads through this roadstead area and joins the main fairway to the N of Viksten. Anchorage can be taken, in depths up to 12m, clay, close NE of Krokskar Beacon (58°47.2'N., 17°50.7'E.).

Depths—Limitations.—The main channel leading to Stockholm from the Landsort Entrance is authorized for drafts up to 10m during daylight.

Vessels should approach Landsort from the S using the white sector of Bredgrund Light. They should pass between the buoys marking Storpallan shoal (58°41.8'N. 17°53.0'E.) and Bonden shoal (58°42.1'N. 17°51.0'E.).

From the pilot boarding position located S of Landsort, the track leads N and NNE to pass about 0.3 mile ESE of Bredgrund Light (58°43'N. 17°52'E.). It continues NE and NNE to pass between Skrapan and the S end of Viksten. The track then leads in a NNE direction and passes close WNW of Vastergrund Lighted Buoy (58°50'N., 18°00'E.) and W of Masnuv Light.

Between the vicinity of Vastergrund Lighted Buoy and Masnuv Light, this main channel merges with the route, authorized for drafts up to 15.3m, leading to Nynashamn (see paragraph 8.9).

An alternate route, authorized for drafts up to 6.6m, leads NNE from the vicinity of Landsort. It passes close WNW of the N end of Viksten and rejoins the main track W of Masnuv Light. Vessels may also proceed through Danziger Gatt (58°51'N. 18°04'E.), which has a least depth of 9.8m, to join the main channel N of Mallsten.

From Masknuv Light, the track leads 15 miles NE to the anchorage roadstead lying S of Langgarn Light (59°04'N. 18°18'E.). It passes close NW of Ostra Roko Light and between the islets of Mysingeholm and Soderhall.

From S of Langgarn Light, the main channel continues for 26 miles NE into Kanholmsfjarden (59°22'N., 18°45'E.). In Kanholmsfjarden, the main channel intersects with the Sandhamn Entrance channel, about 1.2 miles NNW of Yxhammarskobben Light (59°19'N., 18°49'E.), and leads 32 miles NW to Stockholm.

The channels are marked by aids for day and night transits, but the draft limitations at night vary. Information concerning the size and draft requirements for night transits may be requested by contacting the Stockholm VTS Traffic Information Center.

Pilotage.—Pilots for the Landsort Entrance area are provided by the Malaren/Landsort Traffic Area station situated at Sodertalje. All ordering of pilots must be made through Sodertalje VTS (see paragraph 8.2).

For additional information concerning pilotage and the initial ordering of pilots, see paragraph 7.1.

Regulations.—Speed limits are in force within some sections of the fairway channels.

The Landsort Entrance is located within the Malaren/Landsort Traffic Area and is covered by Sodertalje VTS (see paragraph 8.2).

Anchorage.—There is an anchorage area for large vessels, with depths of 20 to 70m, lying centered 8 miles SSW of Bredgrund Light. Another anchorage area, with depths of 15 to 40m and good holding ground, lies W of Oja and 0.7 mile from Landsort Light. A protected anchorage area, with depths of 15 to 40m, good holding ground, lies 1 mile NE of Ostra Roco Light. An anchorage area, with depths of 12 to 30m, over a thick and loose clay bottom, lies NE of Myseingeholm.

Several anchorage areas, with depths up to 40m, clay bottom, lie 5 miles SW of Dalaro, between Stora Rotholmen and Galon.

Caution.—Most of the anchorage roadsteads lie within protected or controlled areas and special rules apply to foreign vessels.

Nynashamn (58°54'N., 17°58'E.)

World Port Index No. 25330

8.9 Nynashamn, an industrial port, has one of the largest oil refineries in Sweden. The harbor, which also serves as a ferry terminal, is situated 10.5 miles NNE of Landsort. It lies between the island of Bedaron and the town. The oil terminal is situated at the N end of the port, between the mainland and the island of Brunsviksholmen.

Winds—Weather.—Continuous winds from the W and NW raise the water level and winds from the E and SE winds lower it. The harbor is usually ice-free.

Nynashamn

Depths—Limitations.—The main approach route leading from seaward is authorized for drafts up to 15.3m. It leads NW from the vicinity of Nynashamn Approach Lighted Buoy (58°45'N., 18°11'E.) and passes about 0.8 mile NE of Gunnarstenarna (Hallorna) Light. The route then rounds Vastergr-

und Lighted Buoy (58°50'N., 18°00'E.) to the W and leads NNE to a position close W of Masknuv Light (58°51'N., 18°01'E.). From this light, the route continues in a N direction and passes about 0.3 mile W of Orngrund Light (58°53.9'N., 18°01.4'E.). It then leads NNW, NW, and SW to the harbor entrance.

An alternate approach channel leads WSW and NW from a position located 0.4 mile W of Ostra Roko Light (58°54'N., 18°05'E.). It passes N of Orngrund Light (58°53.9'N., 18°01.4'E.) and merges with the main channel.

A secondary approach channel, authorized for drafts up to 4m, leads into the S part of the harbor. It leads in a N direction from a position located about 0.5 mile NNE of Viksten Nordvasta Light (58°47'N., 17°57'E.).

The harbor has general depths of 9 to 28m. A detached shoal, with a least depth of 5.4m, lies in the middle of the harbor and is marked by lighted and unlighted buoys.

The ferry terminal provides three berths with ro-ro facilities. The largest is 210m long and has a depth of 8m alongside. Ro-ro ferries with drafts up to 7.5m can be handled.

The oil terminal has six berths. East Quay consists of No. 1 Berth, which is 100m long and has a depths of 17.5m alongside. West Quay consists of No. Berth 2, No. Berth 3, and No. Berth 4, which have a combined length of 155m and depths of 10 to 12.9m alongside. No. 5 Berth, a detached berth, is 75m long and has a depth of 5.2m alongside

Vessels up to 200,000 dwt, 300m in length, and 15.3m draft ca be accommodated.

Aspect.—Several conspicuous tanks and chimneys stand in the vicinity of the oil terminal.

Pilotage.—Pilots for the port are provided by the Malaren/Landsort Traffic Area station situated at Sodertalje. All ordering of pilots must be made through Sodertalje VTS (see paragraph 8.2).

For additional information concerning the initial ordering of pilots, see paragraph 8.1.

Regulations.—The approaches to the port are situated within the Malaren/Landsort Traffic Area and are covered by Sodertalje VTS (see paragraph 8.2).

Vessels should send an ETA to the oil terminal at least 24 hours in advance.

Contact Information.—The pilot station can be contacted, as follows:

1. Call sign: East Coast Pilot
2. VHF: VHF channel 11
3. Telephone: 46-77-1630645
4. Facsimile: 46-10-4785049
5. E-mail: eastcoastpilot@sjofartsverket.se
6. Web site: http://www.sjofartsverket.se

Anchorage.—Anchorage can be taken, in depths of 8 to 10m, clay and stones, abreast the wharves in the SW part of the harbor. Anchorage can also be taken farther N, in depths of 13 to 31m, clear of Ankargrundet.

A designated anchorage area for large vessels (VLCCs) lies centered 6 miles SE of Gunnarstenarna (Hallorna) Light.

Caution.—The fairway leading to the oil berths is closed to shipping when tankers are berthed alongside.

The port approaches lie within a restricted area and the waters surrounding the LNG terminal on Brunnsviksholmen and the mainland are closed to all unauthorized traffic.

Mooring lines are laid in an E direction across the channel to Brunsviksholmen and to several floodlit mooring buoys which are situated S and SW of the S end of the island. The landing places are marked by warning notices, illuminated at night, and flashing red lights.

Several submarine cables lie across the fairways and may best be seen on the chart.

8.10 The irregular coast extending between Nynashamn and Dalaro, 19 miles NE, is fronted by Musko Island (59°00'N., 18°07'E.) and Galon Island (59°05'N., 18°16'E.). Both of these islands are fringed by rocks, reefs, and shoals which extend up to 0.5 mile from the edge of the S approach fairway leading to Stockholm.

Most of the coastal waters and offshore islands lie within restricted or semi-restricted areas and vessels must navigate within the designated fairways. The limits of these restricted areas are shown on local coastal charts. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for details.

8.11 **Dalaro** (59°08'N., 18°25'E.), lying at the E extremity of the coast extending from Nynashamn, is situated across the narrows from and NW of Orno (59°04'N., 18°25'E.). This harbor is reported to be used primarily by small craft and pleasure boats.

A shallow canal, spanned by bridges, separates Dalaro from the mainland. It provides access, via Granofjarden (59°11'N., 18°26'E.) to Stockholm for small craft. The main S approach channel, which leads between several islands and numerous shoals, is marked by lights and buoys. Anchorage can be taken, in depths of 13 to 27m, sand, in a bay lying off the SW end of Dalaro. Local knowledge is required.

The coast extending NW from Dalaro to Stockholm is fronted by numerous islands and islets which are encircled by rocky shoals. Several branch fairways, marked by buoys, lead between these obstructions to Stockholm.

Saltsjobaden (59°17'N., 18°19'E.), a resort fronted by a small harbor, is situated 9 miles NNW of Dalaro. It can be approached via a channel which is authorized for drafts of up to 4.2m. This harbor is reported to be used primarily by small craft and pleasure boats.

Anchorage can be taken, in depths of 9 to 12m, clay, off a small bay fronting the SE part of the town.

Gustavsberg (59°19'N., 18°23'E.) (World Port Index No. 25360), a small harbor, lies at the head of a constricted inlet, 4 miles NE of Saltsjobaden. It is approached through a narrow channel, which is marked by buoys and spanned by a road bridge with a vertical clearance of 22m over a width of 30m.

There are extensive facilities for pleasure craft. The commercial quay is 74m long and has a depth of 4.8m alongside. Small vessels with drafts up to 4.2m can be accommodated. Anchorage can be taken, in depths of 10 to 25m, clay, off the entrance to the approach channel.

Stockholm—East Approach (Sandhamn Entrance)

8.12 The Sandhamn Entrance is fronted by several islands, a number of groups of islets, and numerous shoal patches,

which may best be seen on the chart. The intricate part of the approach channel leading to Stockholm extends generally NW and SW through several bays and sounds. Several islands and islets, lying within these bays, are prominent.

When approaching this entrance from seaward, a group of radio towers standing at Stavsnas (59°17'N., 18°43'E.) are reported to be conspicuous. A tall radio mast, situated about 1 mile NW of the group of towers, is also reported to be conspicuous.

Sandon (59°17'N., 18°56'E.) is the largest and southwestern-most of a group of islands lying in the E approaches to Stockholm. Its S part is fringed by a shallow bank.

Sandhamn (59°17'N., 18°55'E.) (World Port Index No. 25370), a resort village, is situated on the NE side of Sandon. It is fronted by a small harbor which is protected by two breakwaters. This harbor is used only by small craft, local ferries, and pleasure boats.

Utkiken Tower (59°17.2'N., 18°54.7'E.), equipped with a racon, stands close SW of Sandhamn.

Conspicuous towers stand on the islands of Gronskar (59°17'N., 19°02'E.), Korso (59°17'N., 18°57'E.), and Lokholm (59°18'N., 18°56'E.).

Svangen Light (59°16'N., 18°59'E.) is shown from a prominent floodlit tower, 15m high, standing on a detached rock lying 1.4 miles ESE of the S end of Sandon.

Sodraskargarden, an extensive group of islets, lies centered on an area of foul ground 1.5 miles SW of Svangen Light. Brandskargarden, a group of barren islets, lies centered 1.3 miles SW of Sodraskargarden. The islets appear as brown hills and are conspicuous from seaward.

Revengegrundte Light

Revengegrundet Light (59°15'N., 19°01'E.), equipped with a racon, is shown from a prominent floodlit tower, 21m high, standing on a detached shoal, 1.6 miles SE of Svangen Light.

8.13 Sodergrundan (59°15'N., 19°03'E.), a shoal area with parts awash, lies 1.2 miles E of Revengegrundet Light and is marked by a lighted buoy moored on its S side.

Prejaren (59°13'N., 19°07'E.), a detached shoal patch, lies 4.1 miles SE of Revengegrundet Light. It has a least depth of 9.3m and is marked by a lighted buoy moored close E.

Almagrundet Light (59°09'N., 19°08'E.), previously described in paragraph 8.4, is situated 6.7 miles SSE of Revengegrundet Light in the outer approaches.

Depths—Limitations.—The main channel leading to Stockholm from the Sandhamn Entrance is authorized for drafts up to 11m.

The main route (Sandhamn Passage) is 36 miles long. It joins the main channel leading from the Landsort Entrance, in Kanholmsfjarden (59°20'N., 18°47'E.).

From a position located about 5 miles E of Almagrundet Light (59°09'N., 19°08'E.), the route leads NW for 10 miles. It passes 0.3 mile NE of Prejaren Lighted Buoy (59°13'N., 19°07'E.), 0.3 mile SW of Sodergrunden Lighted Buoy (59°15'N., 19°03'E.), and 0.3 mile NE of Revengegrundet Light (59°15'N., 19°01'E.). The track then leads NW, WNW, and WSW to round Svangen Light (59°16'N., 18°59'E.). It continues NW and N along the W side of Sandon.

An alternate route, with a least depth of 21m, leads in a N direction for about 6 miles from a position located 4 miles W of Almagrundet Light and joins the main channel close SE of Revengegrundet Light.

Sandhamnssundet, a narrow passage, leads along the NE side of Sandon and joins the main channel close NNW of the N end of the island. This passage is only 30m wide and is limited to small vessels up to 300 gt and 5m draft.

From close N of the N end of Sandon, the main route leads NW into the S part of Kanholmsfjarden (59°20'N., 18°47'E.). It passes close SW of Getholmen Light (59°18.1'N., 18°52.5'E.), close NE of Yxhammarskobben Light (59°18.8'N., 18°48.6'E.), and close SW of Gastholmsgrundet Light (59°19.1'N., 18°48'6E.). The channel leading NE from the Landsort Entrance merges into this main route at a position located about 1.2 miles NNW of Yxhammarskobben Light.

A secondary channel, with a least depth of 9m, leads NW and W from a position located 0.6 mile NE of Svangen Light. It passes NE of Korso and N of Bjorko and joins the main route close ESE of Getholmen Light.

The main route continues NW through Kanholmsfjarden and then leads W along the N side of Vindo (59°21'N., 18°42'E.) to a position located close S of Kalvon (59°22.5'N., 18°36.5'E.). From the island of Kalvon, the route trends NW, passing close NE of Sando Sugga Light (59°23'N., 18°34'E.) and Nyvarp Light (59°24'N., 18°31'E.), to a position located 1.3 miles SE of Valoarna Light (59°26'N., 18°30'E.). From this position, the main route continues NW and passes 0.2 mile W of Valoarna Light. It then trends WNW to a position located close S of Ostra Algogrundet Light (59°26.7'N., 18°24.8'E.).

From close S of Ostra Algogrundet Light, the route leads WSW and SSW, passing through the southbound lane of the TSS, to a position located 0.2 mile W of Tisterogrundet Light (59°25.9'N., 18°23.5'E.). It then leads SE and S, through the Oxdjupet narrows, to a position located close W of Sodernas Light (59°21.7'N., 18°27.1'E.), in the N part of Torsbyfjarden.

From close W of Sodernas Light, the main route leads SW

for about 0.5 mile, in the southbound lane of the TSS, and then trends WNW to pass close N of Lagnogrundet Light (59°21.5'N., 18°24.9'E.). It continues WNW through Langholmfjarden, passing between Tynningo Light (59°22.3'N., 18°23.3'E.) and the N side of Bergholmen island, to a position located close SW of Bogesund Light (59°22.9'N., 18°18.2'E.).

The route then leads SW, passing close NW of Granholmen Light (59°22.7'N., 18°17.7'E.) and SE of Alvviksgrundet Light (59°21.8'N., 18°15.5'E.), to a position located close NW of Kungshamn Light (59°20.1'N., 18°12.6'E.). It then continues W and NW, passing N of Libertus Light (59°19.9'N., 18°10.6'E.), into the port of Stockholm.

The fairway channels are marked by aids for day and night transits, but the draft limitations at night vary. Information concerning the size and draft requirements for night transits may be requested by contacting the Stockholm VTS Traffic Information Center.

Several secondary routes lead through the archipelago and may best be seen on the chart. Two inner channels lead N from Kanholmsfjarden (59°20'N., 18°47'E.) to join the main Soderarm Entrance route. Rodlogaleden, also known as Majaleden, is authorized for drafts up to 7m. This channel leads NNE for 28 miles to join the main route in Granhamnsfjarden (59°43'N., 19°08'E.). Husaroleden, a secondary channel, is authorized for drafts up to 4.2m. It leads N for 22 miles to join the main route at a position located 2 miles NE of Furusund (59°40'N., 18°55'E.).

Pilotage.—Pilots for the Sandhamn Entrance area are controlled by the station at Stockholm. All ordering of pilots in the area must be carried out through the Traffic Information Center of Stockholm VTS (see paragraph 8.2).

For additional information concerning pilotage and the initial ordering of pilots, see paragraph 7.1.

Regulations.—The Sandhamn Entrance is situated within the Stockholm VTS Traffic Area (see paragraph 8.2).

The channels leading through this entrance lie within a restricted area and all vessels must keep strictly to the designated fairways when enroute to Stockholm.

Speed limits are in force within some sections of the fairway channels.

Vessels over 800 gt are not allowed to meet in the sections of the main route situated within Oxdjupet Narrows and N of Bergholmen Island.

A ferry crosses the channel in the vicinity of Oxdjupet narrows.

In the Stockholm VTS Traffic Area, vessels are allowed to anchor only by special permission.

Anchorage.—A designated outer anchorage area lies centered 1.5 miles SE of Revengegrundet Light and has depths of 28 to 51m.

Caution.—Anchoring is prohibited within an explosives dumping ground area lying centered 0.5 mile E of Stora Fjardholmen (59°21'N., 18°50'E.).

A defensive minefield lies within Oxdjupet Narrows and fairways leading through it are marked by beacons and buoys. Vessels are cautioned not to anchor or fish in the field and they should also avoid passing through it during a thunderstorm.

Two extensive areas, within which surveys are incomplete, lie on each side of the Sandhamn Entrance and may best be seen on the chart.

Two restricted areas lie in the vicinity of the E approach and are listed below.

Sandhamn Channel West Restricted Area.—This area is bounded by a line joining the following positions:

1. The NW extremity of Sandon (59°17'N., 18°54'E.).
2. Ljusharan (Gjusharan) (59°18'N., 18°55'E.).
3. Ingboskar (Ingboskaret) (59°19'N., 18°54'E.).
4. Sommaro (59°19'N., 18°52'E.).
5. Yxhammarskubben Light (59°19'N., 18°49'E.).
6. Torskkobben (59°19'N., 18°48'E.).
7. The N extremity of Rumaro (59°18'N., 18°47'E.).
8. The NE extremity of Rumaro.
9. Lilla Hastskar (59°15'N., 18°53'E.).
10. The E extremity of Stora Hastskar (59°15'N., 18°54'E.).
11. The NW extremity of Sandon (59°17'N., 18°53'E.).

Sandhamn Channel East Restricted Area.—This area is bounded by a line joining the following positions:

1. The W extremity of Krokso (59°18'N., 18°56'E.).
2. An islet (59°17'N., 18°57'E.).
3. Ronnskar (59°18'N., 19°00'E.).
4. The W extremity of Krokso.

Stockholm—North Approach (Soderarm and Arholma Entrances)

8.14 Soderarm Entrance is fronted by several groups of islets and a number of detached shoal patches, which may best be seen on the chart.

Soderarm (59°45'N., 19°24'E.) is the northernmost and largest of a group of islets and rocks lying centered 19 miles N of Svenska Hogarna Light (59°27'N., 19°30'E.). The tower of a disused lighthouse, 21m high, stands on this islet and is prominent.

Soderarm Tower (former lighthouse)

Hummelgrund, a shoal patch, lies 1.6 miles ENE of Soderarm Light. It has a least depth of 7.2m and is marked by a buoy.

Tjarven Light (59°48'N., 19°22'E.) is shown from a prominent building standing on an islet lying on a foul area, 2.6 miles NW of Soderarm.

Tjarven Light

Remmargrund Light

Remmargrund Light (59°46'N., 19°19'E.), equipped with a racon, is shown from a prominent floodlit tower, 20m high, standing on a rock, 2.5 miles SW of Tjarven Light.

A detached shoal patch, with a depth of 7.7m, lies 0.2 mile N of the light and is marked by a buoy.

Caution.—An area in which anchoring, diving, and fishing are prohibited lies centered about 6 miles NE of Tjarven Light and may best be seen on the chart. A wreck, with unexploded ammunition, lies in this area.

8.15 Arholma Entrance, situated between the islands of Arholma and Bjorko, is encumbered with a number of islets and shoals, which may best be seen on the chart.

Arholma (59°51'N., 19°08'E.), an island, lies in the N part of the archipelago and is fronted on its E side by numerous islets and shoals. A conspicuous beacon, 16m high, is situated on the W and tallest part of this island.

Note.—For a description of the waters lying N and E of Arholma, see Pub. 195, Sailing Directions (Enroute) Gulf of Finland and Gulf of Bothnia.

Simpnasklubb Light (59°54'N., 19°05'E.), equipped with a racon, is shown from a prominent floodlit tower, 16m high, standing on a rock, 2.3 miles NW of the N extremity of Arholma. Norrbadan, a shoal with rocks awash, lies centered 0.4

Simpnasklubb Light

Vaddo Kasberg, an isolated hill, stands 8.5 miles NW of Simpnasklubb Light and is conspicuous from seaward.

Bjorko (59°51'N., 19°02'E.), an island, lies contiguous to the mainland coast close W of Arholma. Several lights are shown from salient points along the E side of this island. Two conspicuous radio masts stand in the S part of the island, 3.4 miles SSW of Simpnasklubb Light.

Hogskar (59°52'N., 19°06'E.), an off-lying islet, lies 1.6 miles SSE of Simpnasklubb Light and a conspicuous beacon, 6m high, stands on its W side. Skrivaren, an islet, lies close NE of Hogskar and a prominent beacon, consisting of a former light tower, 9m high, is situated on its NW side.

Granhamnsljarden (59°43'N., 19°07'E.) is a bay lying 10 miles S of Simpnasklubb Light. From a broad peninsula located close W of this bay, the coast extends SW to Stockholm and is fronted by numerous dangers.

A few major inlets lie within the archipelago fronting Stockholm and separate the northernmost islands of Arholma, Bjorko, and Vato (59°20.1'N., 18°12.6'E.).

Norrtaljeviken (59°47'N., 18°53'E.), an inlet leading to the port of Norrtalje, extends W and indents the coast S of Vato (59°48'N., 18°58'E.).

Depths—Limitations.—The main channel leading to Stockholm from the Soderarm Entrance is authorized for drafts up to 8m.

The main channel leading to Stockholm from the Arholma Entrance is authorized for drafts up to 7m.

From a position located 3 miles E of Tjaven Light (59°48'N., 19°22'E.), the Soderarm Entrance main route leads WSW and passes about midway between this light and Soderarm Light (59°45'N., 19°24'E.). It continues WSW and passes close SSE of Remmargrund Light (59°46'N., 19°19'E.). A secondary channel, which is very narrow, detours from the main route and passes on the N side of this light.

An alternate entrance channel, authorized for drafts up to 8m, leads SSW from a position located 2 miles NNW of Tjaven Light and joins the main route close W of Remmargrund Light.

A secondary entrance route (winter channel), with no authorized draft, is entered about 3 miles ESE of Soderarm Light. It initially leads SW and W to round the S end of the Soderarm shoal area. The route then leads in a NW direction through Id-

skarsfjarden (59°43'N., 19°20'E.) to join the main route WSW of Remmargrund Light. This channel, which is marked by unlighted beacons, may only be used by day.

After passing Remmargrund Light, the main Soderarm Entrance route continues WSW through Granhamnsfjarden (59°43'N., 19°08'E.) to a position located 0.3 mile SE of Kapellskar Light (59°43.1'N., 19°04.7'E.). This route passes either close NNW or SSE of Lerskarsgrund Light (59°44.3'N., 19°13.4'E.).

From a position located 1.5 miles NNW of Simpnasklubb Light (59°54'N., 19°05'E.), the Arholma Entrance main route leads SSE and S between Bjorko and Arholma. This route initially passes close WSW of Simpnasklubb Light and leads between the E side of Bjorko and the off-lying dangers. It is extremely narrow in places.

An alternate entrance channel, authorized for drafts up to 7m, leads in a SW direction through the off-lying dangers from a position located 2.5 miles E of Simpnasklubb Light. This channel passes close NW of the beacons standing on Skrivaren and Hogskar and then merges into the main route.

From W of the S end of Arholma, this main route leads SSE and SSW to join the main Soderarm Entrance route at a position located 0.3 mile SE of Kapellskar Light. It passes close W of Tyvo Light (59°46.5'N., 19°07.4'E.) and Tjocko Light (59°45.3'N., 19°06.2'E.).

From Kapellskar Light, the main Soderarm Entrance route, which is known as Furusundleden in this vicinity, leads SW to a position located 0.2 mile S of Vaxlet Sodra Light (59°35.1'N., 18°43.9'E.). This route passes close NW of Furusund Light (59°39.8'N., 18°56.0'E.) and SE of Hakholmarna, a group of islets and rocks, lying in the middle of the channel, 1.8 miles NE of Vaxlet Sodra Light.

A secondary branch track, with no authorized draft, leads SW and passes NW of Hakholmarna. It then rejoins the main route in the vicinity of Vaxlet Sodra Light.

From Vaxlet Sodra Light, the main route leads SW and SSW for 13 miles to join the main route, authorized for drafts up to 11m, leading to Stockholm from the Sandhamn Entrance (see paragraph 8.12). This route passes 0.2 mile NW of Lunsen Light (59°34.5'N., 18°41.0'E.), close NW of Ryssmasterna Light (59°31.9'N., 18°32.8'E.), and close SE of Gullholmen Light (59°31.4'N., 18°31.2'E.).

From Gullholmen Light, the route leads in a SW direction to join the Sandhamn Entrance route at a position located close S of Ostra Algogrundet Light (59°26.7'N., 18°24.8'E.). It passes 0.2 mile SE of Vallersvik Light (59°29.9'N., 18°27.5'E.) and then leads between the islet of Stora Blothholmen (59°29.2'N., 18°27.5'E.) and the mainland to the W. The route continues SSW, passing close E of Mjolko Light (59°27.4'N., 18°25.7'E.), and rounds Ostra Algogrundet Light to the SE to merge with the main Sandhamn Entrance channel.

An alternative channel, authorized for drafts up to 8m, leads in a S direction from close SE of Gullholmen Light to join the main Sandhamn Entrance channel. It rounds the islet of Ostra Strangarma (59°26.5'N., 18°29.8'E.) to the SE and merges into the main route at a position located of 0.3 mile WNW of Valoarna Light (59°26.0'N., 18°29.9'E.) (see paragraph 8.13).

An alternative branch channel, authorized for drafts up to 6m, leads in a SW direction from close W of the islet of Stora Blothholmen. It trends SW and then SSE to join the main route at a position located about 0.3 mile W of Tisterogrundet Light (59°25.9'N., 18°23.7'E.) (see paragraph 8.13).

The fairway channels are marked by aids for day and night transits, but the draft limitations at night vary. Information concerning the size and draft requirements for night transits may be requested by contacting the Stockholm VTS Traffic Information Center.

Pilotage.—Pilots for the Soderarm and Arholma Entrances are controlled by the station at Stockholm. All ordering of pilots in the area must be carried out through the Traffic Information Center of Stockholm VTS (see paragraph 8.2).

For additional information concerning the initial ordering of pilots, see paragraph 8.1.

Regulations.—The Soderarm and Arholma Entrances are situated within the Stockholm VTS Traffic Area (see paragraph 8.2).

Most of the coastal waters and off-lying islands and islets lie within restricted or semi-restricted areas and vessels must navigate only within the designated fairways.

Caution.—Numerous submarine cables are laid across the main approach channels and may best be seen on the chart.

Extensive areas, within which surveys are incomplete, border the inner channels and may best be seen on the chart.

8.16 Fejan (59°44'N., 19°10'E.), an island, has a small sheltered harbor located at its NE side. There are two small piers with a depth of 3.7m alongside. An anchorage roadstead, with depths of 16 to 22m, clay and stones, lies SE of the island.

Norrtalje (59°46'N., 18°43'E.) (World Port Index No. 25420), a small commercial harbor, lies at the head of Norrtaljeviken (59°47'N., 18°53'E.) and is approached from Tjockofiarden (59°46'N., 19°06'E.). The fairway channel, which is marked by buoys and lights, leads through the inlet to the harbor and is authorized for drafts up to 6m. A dredged entrance channel, indicated by a lighted range, leads into the harbor. Several prominent silos stand in the vicinity of the harbor.

The main commercial quay is 320m long and has depths of 3.1 to 5.6m alongside. A ferry terminal, in the NE part of the harbor has two berths with depths of 5.6 to 6.6m alongside. There are facilities for general cargo, bulk, ro-ro, and ferry vessels. Vessels with drafts up to 6m can be handled.

Anchorage is available, in a depth of 6m, clay, off the harbor. It has been reported that submarine pipelines are laid across the fairway into Kvisthamraviken from the N shore. Anchoring is prohibited in this area.

Contact Information.—The Landsort Pilot Station can be contacted, as follows:

1. Call sign: East Coast Pilot
2. VHF: VHF channel 11
3. Telephone: 46-77-1630645
4. Facsimile: 46-10-4785049
5. E-mail: eastcoastpilot@sjofartsverket.se
6. Web site: http://www.sjofartsverket.se

8.17 Vaxholm (59°24'N., 18°20'E.) (World Port Index No. 25390), an island, has a small commercial harbor at its E end. The harbor, which is mostly used by pleasure craft and yachts, can be approached through a channel, marked by buoys, which leads S of Rindo (59°24'N., 18°25'E.). It can accommodate small vessels with drafts up to 6m. There are several quays

with depths of 4.5 to 7.8m alongside. Anchorage can be taken, in depths of 20 to 25m, clay, in bays lying S and N of Vaxholm.

Telegrafberget (59°21'N., 18°14'E.), an oil terminal, is situated on the SE shore of Halvkakssundet, about 4 miles E of Stockholm. A quay with mooring dolphins provides a berth, 95m long, with a depth of 12m alongside. Tankers up to 125m in length and 11m draft can be accommodated.

Stora Hoggarn (59°22'N., 18°18'E.), a small island, lies E of Lidingon, 6 miles NE of Stockholm. An oil terminal is situated at the NE side of the island. It consists of an offshore jetty, 120m long, with depths of 11.7 to 12.2m alongside. It is reported (1998) that this terminal is not operational.

Bergs (59°19'N., 18°10'E.), an oil terminal, lies E of Stockholm at the SE end of Lilla Vartan. It can be reached directly from the main approach route. The main quay is 90m long and has a depth of 13m alongside. Tankers up to 200m in length and 11m draft can be accommodated.

Lidingo (59°22'N., 18°12'E.), an island, fronts Stockholm and is encircled by navigable channels. An oil terminal pier (Rasta) is situated at the E side of this island and can be used by tankers up to 180m in length and 11m draft.

Stockholm (59°20'N., 18°05'E.)

World Port Index No. 25380

8.18 Stockholm, a major port of Sweden, lies in the lee of the archipelago and 30 miles from the sea. Several channels lead from the Baltic Sea to the port. The commercial harbor area extends for 6 miles and consists of at least twenty separate installations situated on the mainland and adjacent islands, connected by a series of about 35 bridges. The harbor is connected to the inland waterway system via Lake Malaren. There are also several small craft basins and marinas.

Stockholm—Old City

Ice.—Ice is prevalent in the archipelago fronting Stockholm during the ice season, December through March. The harbor and approaches, including the seaward entrances, are kept open by icebreakers.

During the winter, ice bridges are periodically established within some sections of the approach channels.

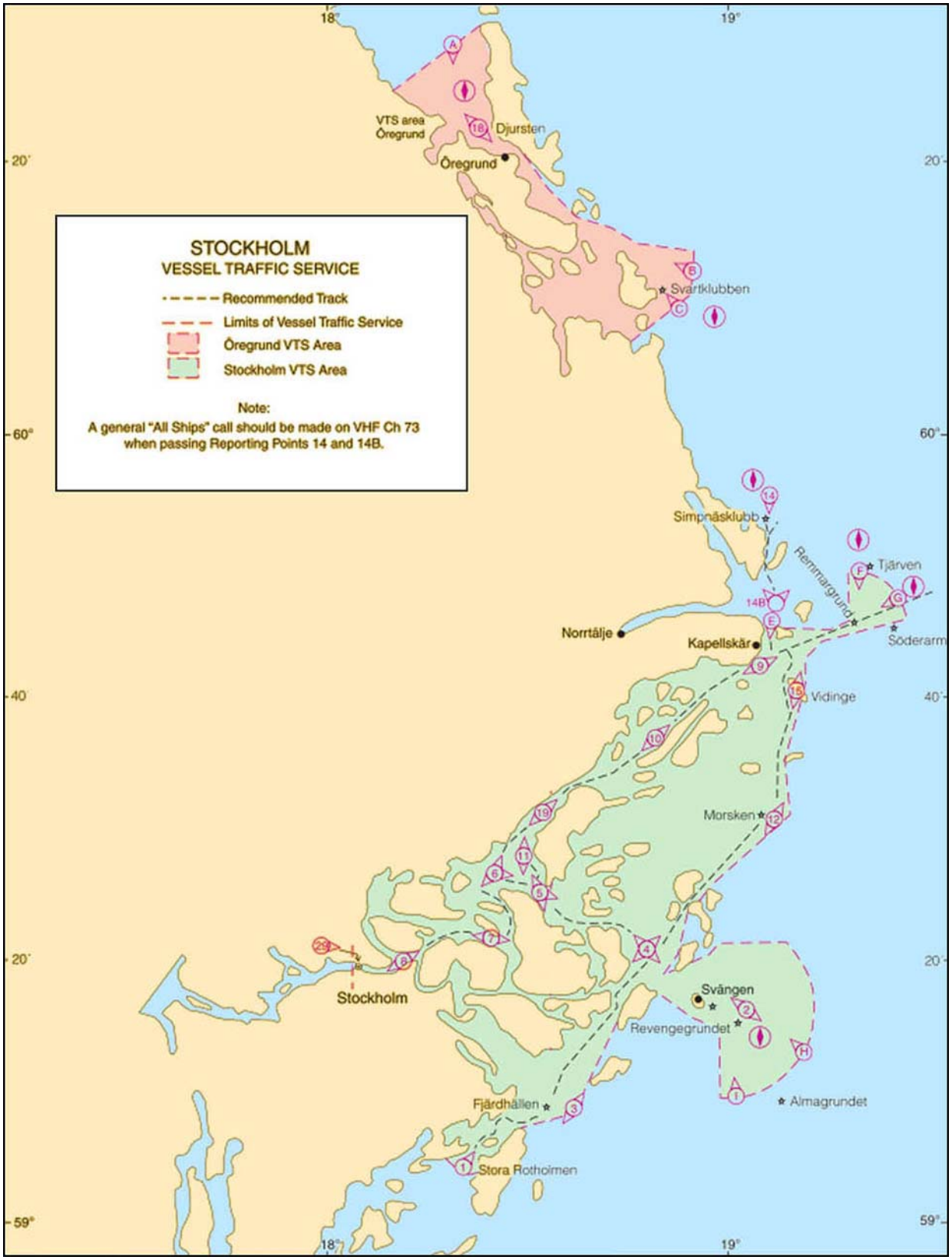
Winter Navigation.—The Swedish Maritime Administration, Icebreaking Division, in Gothenburg, operates 10 ice breakers around the Swedish coast during the winter and maintains a 24-hour operation. further information can be found in Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Depths—Limitations.—The main approach route (Sandhamn Entrance) is authorized for drafts up to 11m.

Stockholm (spires)

Stockholm—Varthamnen

Stockholm (ferry terminal)



Stockholm VTS System and Pilot Stations

Stockholm—Skargard

Tides—Currents.—There are no tidal changes of the water level in the harbor. However, the normal range of the water level in the port is from 0.6m above to 0.4m below the mean level. The only current occurs in the inner part of the harbor when Lake Malaren discharges through the open lock gates. An upstream current prevails occasionally in the channel.

Lilla Vartan, a passage, extends NW from the vicinity of Libertus Light (59°19.9'N., 18°10.6'E.) and contains the principal commercial basins of Loudden, Frihamnen, Vartahamnen, and Gasverkshamnen. Strommen, another passage, extends W along the SE side of the city and contains general cargo basins and passenger facilities.

Two bridges, located close together, span the N part of Lilla Vartan and connect Lidingo Island with Stockholm. Gamla Lidingobron, the old bridge, has a fixed main arched span, 135m long, with a vertical clearance of 5.3m. A bascule section, located at its SW end, has a navigable width of 18.7m. This bascule section has a vertical clearance of 4.3m when closed.

Nya Lidingobron, the new bridge, is situated close SE of the old bridge. This bridge is a fixed bridge with nine pillars. It has a vertical clearance of 11.5m over a navigable width of 22m in line with the bascule section of the old bridge.

Loudden, the oil terminal, is situated at the SW end of Lilla Vartan. A pier extends ENE from the shore and has depths of 11.9m alongside. Jetties extend N and S from the root of the pier and have depths of 8.9 to 10.4m alongside.

Frihamnen, which includes a container terminal, is situated close NW of the oil terminal. It consists of a pier and an enclosed basin. The basin provides 1.160m of quayage with depths of 8.5 to 10.1m alongside. A quay, situated on the outer side of the pier, is 530m long and has depths of 7.1 to 8.1m alongside.

Vartahamnen, situated close NW of Frihamnen, consists of three sections. The S section has an oil jetty and a bulk terminal. The oil jetty is 32m long and has a depth of 10.9m alongside. The bulk terminal provides 430m of quayage with a depth of 7.5m alongside. The N section provides 800m of quayage, including a combined bulk coal and oil jetty, with depths of 3.5 to 11.9m alongside. In addition, there is a train ferry berth, 160m long, with a depth of 9m alongside.

The central section, a basin, provides 680m of quayage, including two ro-ro ferry berths, with depths of 8.1 to 9.1m alongside.

Gasverkshamnen, in the vicinity of the W end of the bridges, has a main quay, 160m long, with a depth of 9.2m alongside and another quay, 75m long, with a depth of 5.7m alongside.

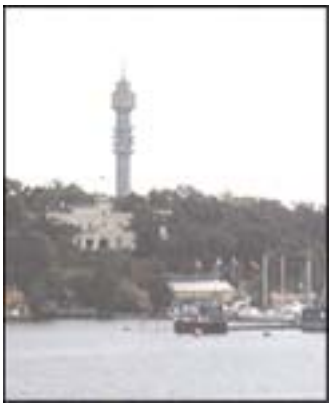
Stadsgardshamnen, situated on the S side of Strommen, provides 1,920m of quayage, including a ferry terminal, with depths of 4.7 to 9.5m alongside.

The port, which provides about 17,700m of total berthage, also includes many private terminals and a number of repair yards. There are facilities for ro-ro, passenger, bulk, ferry, tanker, container, chemical, and general cargo vessels.

Cargo vessels up to 245m in length and 35m beam, and tankers up to 250m in length and 32m beam, can be accommodated with drafts up to 11m.

Aspect.—Kaknas Tower (59°20.1'N., 18°07.6'E.), 150m high and prominent, stands about 1.6 miles SSE of the Gamla Lidingobron Bridge and may be seen from the entire harbor area.

Radio masts, marked with red lights (including one with an elevation of 72m), are located in the vicinity of Stavsnas, (59°17.3'N., 18°41.3'E.).



Kaknas Tower

Pilotage.—Pilots for the harbor facilities are controlled by the main station at the port. All ordering of pilots in the area must be carried out through the Traffic Information Center of Stockholm VTS (see paragraph 8.2).

For additional information concerning pilotage and the initial ordering of pilots, see paragraph 7.1.

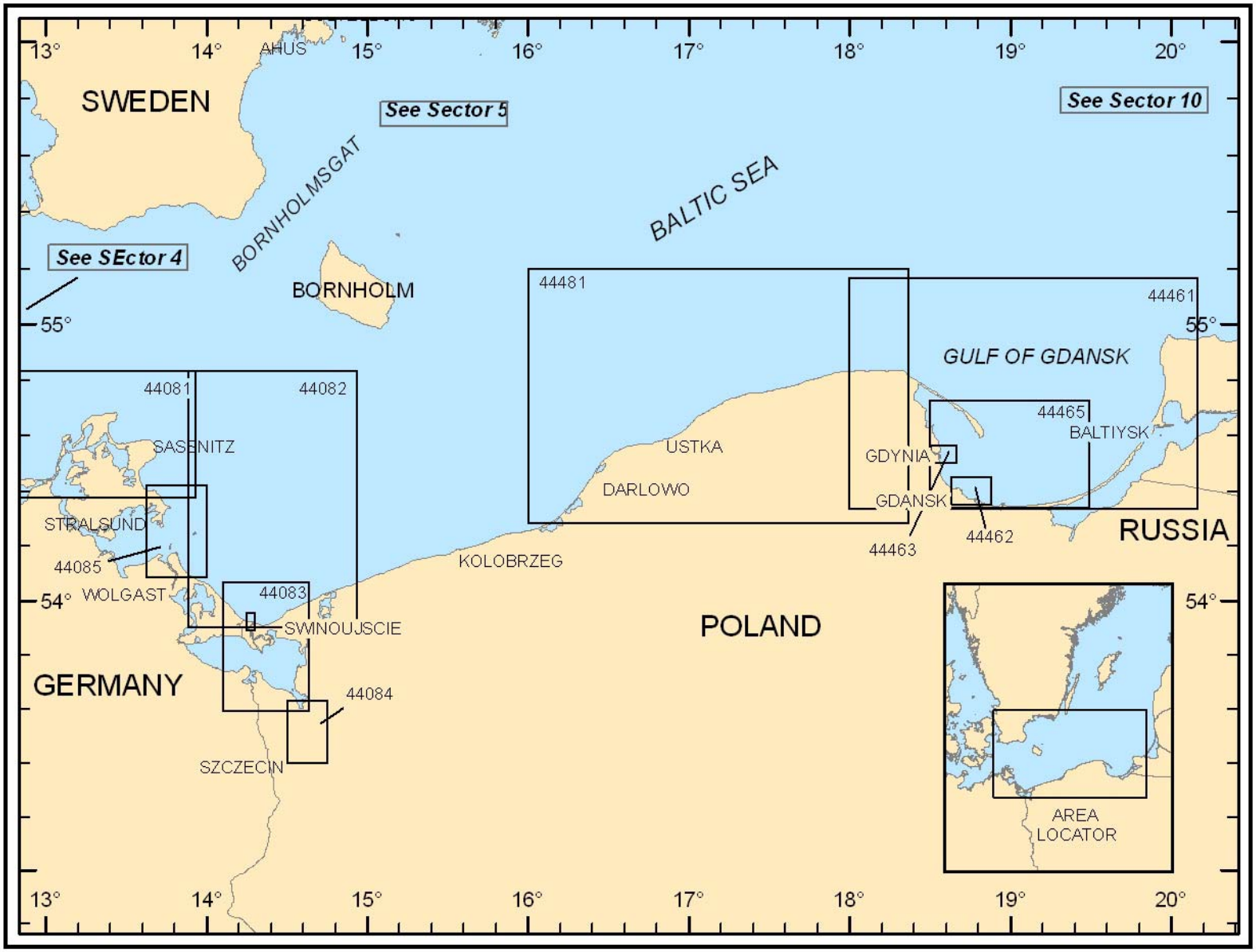
Regulations.—The port and approach channels are situated within the Stockholm VTS Traffic Area (see paragraph 8.2).

Vessels bound for the port must send an ETA 3 hours in advance of arrival.

Speed regulations are in effect within the approach channels.

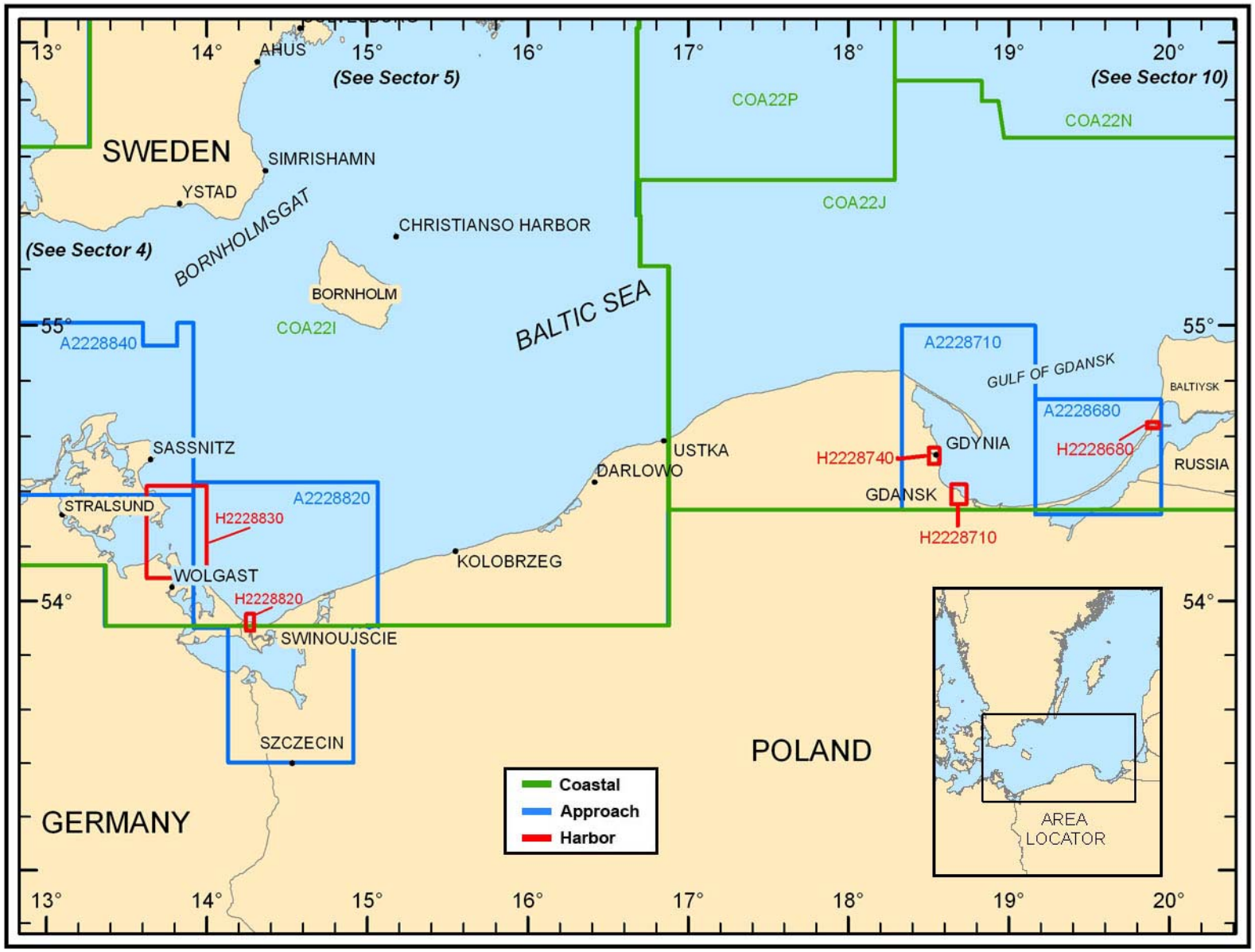
Anchorage.—An anchorage area, designated for tankers, lies at the SE end of Lilla Vartan. It has depths of 16 to 23m and is located 0.4 mile W of Libertus Light (59°19.9'N., 18°10.6'E.).

Anchorage is prohibited throughout the harbor area except within the authorized and designated areas. Vessels can anchor only by special permission and in places directed by the harbor authorities.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **9** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 22 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 9— DNC LIBRARY INFORMATION

SECTOR 9

GERMANY AND POLAND—KAP ARKONA TO MYS TARAN

Plan.—This sector describes the S shore of the Baltic Sea from Kap Arkona to Rozewie. It then describes the broad bight of the Gulf of Gdansk and the coast to the E as far as Mys Taran. The descriptive sequence is from W to E.

General Remarks

9.1 From Kap Arkona to Rozewie, a distance of 172 miles, the coast is predominately high and wooded. On the approach from seaward, Kap Arkona and the steep headland of Rozewie are salient points. Between these two positions, Swinoujscie and Szczecin lie at the head of a bight, and Sassnitz is situated on the E side of Rugen Island.

The coast between Rozewie and Mys Taran includes the major ports of Gdynia and Gdansk, both situated near the head of the Gulf of Gdansk (Gulf of Danzig). Swept channels lead through the approaches to these ports. The W side of the bight is interrupted by the Hel Peninsula which is flat, mostly wooded, and projects 18 miles SE. The coast to the S of Rozewie is steep and barren. A wooded range of hills stands near the coast and terminates abruptly close to the head of the bight.

Between Baltiysk and Mys Taran, dunes give way to rugged cliffs, above which the land increases in elevation toward the cape. Between Kap Arkona and Rozewie, the S shore of the Baltic Sea is fronted by shoals that extend up to about 1 mile seaward, except in areas where bays and river outlets indent the coast. Shoal banks in these areas extend as far as 10 miles offshore. Depths between 92 and 110m lie in the outer part of the Gulf of Gdansk and decrease gradually toward the head of the bight. Nearing the coast, the bottom is formed of soft clay mixed with sand. Between Baltiysk and Mys Taran, the bottom, in depths of less than 10m, is rocky in numerous places.

Pilotage.—Deep sea pilots are available for the Baltic Sea. Requests for deep sea pilotage for the Polish coastal area of the Baltic Sea should be forwarded 24 hours in advance through the local agents at Swinoujscie, Szczecin, Gdynia, or Gdansk.

Regulations.—Vessels approaching the ports of Sassnitz, Mukran, Wolgast, and Stralsund are required to participate in mandatory Vessel Traffic Service (VTS) systems. For further details, see Regulations under each port description.

Due to the non-tidal nature of these waters, the German and Polish authorities have enacted stringent anti-pollution regulations.

Directions.—Vessels transiting the German waters to the N of Rugen must follow the routes established which lead from position 54°47'N,12°58'E to Arkona Lighted Buoy (54°46'N., 13°34'E.).

The offshore route then leads generally E for 160 miles to a position N of Rozewie (54°50'N., 18°20'E.). It passes S of Ronne Bank (54°49'N., 14°35'E.) and N of Stolpe Bank (54°55'N., 16°39'E.).

The coastal route leads SSE for about 30 miles from Arkona Lighted Buoy to Swin-N Lighted Buoy (54°20'N., 13°38'E.).

Caution.—In the waters described within this sector, vessels should navigate along the recommended routes and in the buoyed fairway channels. Not all of the areas described have been swept for mines. However, the danger from mines to surface vessels is not considered greater than other hazards to navigation. Anchoring, fishing, and working on the sea bed should still be considered dangerous.

Several restricted areas, which are periodically closed to navigation and fishing, lie off the Polish coast. For further details, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Oil and gas exploration structures and facilities, with their associated pipelines and obstructions, may be encountered within the waters described in this sector.

A submarine gas pipeline is being constructed between Russia and Germany. This pipeline will extend WSW through the Gulf of Finland and then lead in a SW direction to the E side of Rugen (54°20'N., 13°44'E.). It will pass E of Faro (57°57'N., 19°10'E.), E of Hoburgs Bank (56°35'N., 18°25'E.), and W of Sodra Midsjobanken (55°40'N., 17°23'E.).

Kap Arkona to Sassnitz

9.2 **Kap Arkona** (54°41'N., 13°26'E.), marked by a light, forms the N extremity of Rugen and has been previously described in paragraph 4.22.

Adlergrund (54°47'N., 14°24'E.), an area of foul ground and rocks, has a least depth of 4.5m and lies centered 31 miles ENE of Kap Arkona.

Tides—Currents.—The water level at Kap Arkona usually rises with winds from NW through N to ESE. It may rise as much as 2m above the mean level during strong gales from between NNE and NE. The water level usually falls with winds from SE through S to WNW. It may fall as much as 1.5m during gales from SW.

The current offshore is negligible, but in the immediate vicinity of the coast, it can be quite considerable and caution is necessary, particularly when approaching from the E.

Pilotage.—Pilots for Sassnitz, Mukran, Wolgast, Greifswalder Bodden, and Peenestrom are provided by the station at Stralsund. For details, see paragraph 4.23.

Regulations.—A speed limit is enforced in the Palmer-Ort-Rinne Channel. Vessels must navigate in the center of the channel and at a minimum speed, consistent with maintaining steerage way. Passing and overtaking are prohibited in the channel.

Caution.—In poor visibility, caution must be exercised to avoid mistaking the high land in the vicinity of Baken Berg with Kap Arkona, 4.5 miles ENE.

A dangerous wreck, the position of which is doubtful, lies 9 miles NNW of Kap Arkona.

9.3 **Tromper Wiek** (54°37'N., 13°30'E.), a bay lying S of Kap Arkona, is formed by the peninsulas of Wittow and Jasmund which are joined together by a low, narrow, wooded, and sandy isthmus known as Schaabe (54°35'N., 13°23'E.). Jas-

mund (54°34'N., 13°40'E.) extends E for about 6 miles to Ranzow (54°35'N., 13°38'E.), its N extremity. The bay has general depths of 9 to 20m, but its N and S shores are fringed by rocky shoals.

A conspicuous radio mast, 73m high, stands 3.5 miles SW of Kap Arkona Light and a prominent tower is situated 3.4 miles SSE of it.

Kollicker Ort Light (54°34'N., 13°41'E.) is shown from a structure, 6m high, standing on the E side of Jasmund, about halfway up the steep foreshore. This light structure is reported to be difficult to identify by day.

Kollicker Ort Light

Three conspicuous radio masts, 121m high, stand near the N coast of Jasmund, 2.6 miles WNW of Kollicker Ort Light.

Stubnitz, at the E end of Jasmund, consists of wooded, chalk cliffs. These cliffs are about 135m high at the shoreline and rise to 160m about 0.5 mile inland. They fall steeply to the sea and the rocky shoalbank fronting the coast is steep-to.

Caution.—A firing practice area, the limits of which may best be seen on the chart, lies about 9 miles ENE of Kollicker Light.

Several dangerous wrecks lie in the approach to Proper Wiek and may best be seen on the chart.

Sassnitz (54°31'N., 13°39'E.)

World Port Index No. 28840

9.4 Sassnitz, lying on the SE side of Jasmund, is an important fishing center with a highly developed processing industry. It also serves as the terminal for railroad and passenger ferry vessels from Trelleborg, Sweden.

Depths—Limitations.—The harbor is protected by a breakwater, about 0.7 mile long, which extends SW from the shore. There are eight berths within the harbor, 110 to 230m long, with facilities for ro-ro vessels. Vessels up to 7.2m draft can be accommodated.

Vessels over 135m in length must employ the services of a tug.

Aspect.—Sassnitz Approach Lighted Buoy is moored about 3.2 miles ENE of the harbor. The fairway channel leading into the harbor is marked by lighted buoys and indicated by a lighted range. A conspicuous radio mast, 226m high, stands about 1 mile NNW of the harbor entrance.

Sassnitz

Pilotage.—Pilotage is compulsory. Pilots are provided by Stralsund pilotage service and generally board in the vicinity of Landtief B Lighted Buoy (54°17.3'N., 13°45.9'E.), Sassnitz Lighted Buoy (54°33'N., 13°46'E.), Osttief 2 Lighted Buoy (54°12.1'N., 13°52.2'E.). For further information, see paragraph 4.23.

Regulations.—A Vessel Traffic Service (VTS) system has been established in the approaches to the port. It is controlled by the Sassnitz/Mukran Traffic Control Office and is mandatory for the following:

1. Vessels over 50m in length, including composite units.
2. Vessels carrying dangerous goods in bulk (gas, chemicals, petroleum, or petroleum products).
3. Unloaded tankers if not cleaned, degassed, or completely inerted after carrying petroleum or petroleum products with a flashpoint below 35°C.
4. Nuclear-powered vessels.

The format for the Sailing Plan (SP) and Position Reports (PR) is stated under Kieler Forde in paragraph 3.67.

Vessels entering the VTS Area of Sassnitz/Mukran must maintain a continuous listening watch on VHF channel 13 or 16. It is mandatory to send the following reports:

1. Sailing Plan (SP)—An SP must be sent to Sassnitz/Mukran Traffic Center on VHF channel 13, as follows:
   a. When entering the VTS Area from seaward 30 minutes before passing the harbor entrance.
   b. Before leaving a harbor or berth within the VTS Area of Sassnitz/Mukran.
2. Position Report (PR)—A PR must be sent to Sassnitz/Mukran VTS Traffic Center on VHF channel 13, as follows:
   a. When entering or leaving an anchorage within the VTS Area of Sassnitz/Mukran.
   b. After the pilot has boarded.
   c. When entering or leaving the fairway.
   d. When passing (inbound only) Sassnitz Lighted Buoy (54°33'N., 13°46'E.) and position 54°26.0'N, 13°42.5'E (Mukran).

Deviation Reports (DR) and Incident Reports (IR) must also be sent to Sassnitz/Mukran VTS Traffic Center on VHF chan-

nel 13.

Information broadcasts are made by VTS Sassnitz Traffic on VHF channel 13 in German (and on request, in English) on request and at 0115, 0515, and every 2 hours thereafter until 2115. The broadcast includes information relevant to the safe passage through the VTS area; general fairway and traffic situation details; local storm warnings, weather messages, visibility, and ice reports; casualties; and dredging operations.

Anchorage.—Sassnitz Reede, a roadstead marked by buoys, provides good anchorage, in depths of 10 to 18m, about 1.5 miles SE of the harbor entrance. Vessels using this roadstead should not proceed into depths less than 10m.

Caution.—Anchoring and fishing are prohibited in and close to the approach channel.

Sassnitz to Sudperd

9.5 The coast between Sassnitz and Sudperd forms Prorer Wiek (54°27'N., 13°40'E.). This bay terminates at Granitzer Ort (54°24'N., 13°40'E.), a high and wooded point, located 6.5 miles S of Sassnitz. There are depths of 12 to 17m in the outer part of Prorer Wiek and depths of 9m lie up to about 1 mile offshore. The bottom is formed of fine sand and shells, and several rocks lie off the N shore. A sandy isthmus forms the inner side of the bay.

Mukran Harbor (54°29'N., 13°35'E.), a ferry terminal, lies on the W side of Prorer Wiek, 2.5 miles SW of Sassnitz. It is protected on the E side by a mole, which is 1,320m long and marked by a light.

Mukran

Sudkai Light is shown from a structure standing on the foreshore, 0.7 mile WNW of the head of the mole. A finger pier, 216m long, extends from the shore and has a depth of 9.5m alongside. Another pier, 230m long, has a depth of 8.5m alongside. These piers provide berthing facilities on either side for ro-ro ferries. Vessels up to 8m draft can be accommodated.

The Sassnitz VTS traffic control office is reported to direct all vessels in the harbor and approaches, and provide navigational information. The harbor authorities can be contacted on VHF channel 19 or 21. Situation broadcasts are transmitted on VHF channel 13,in English and German, every hour at 15 minutes after the hour.

In the approach to Prorer Wiek, Lietzow Castle, standing about 2.5 miles W of Mukran, is conspicuous from seaward. Several large blocks of houses stand on the foreshore at Prora, about 2 miles S of Mukran, and are also prominent from seaward.

Lietzow Castle

Prora Disused Light Tower, 31m high, stands 3 miles S of Mukran, on the central shore of the bay, and is conspicuous.

Prora Disused Light Tower

A conspicuous monument stands at a high elevation, 8 miles W of Granitzer Ort, the S entrance point of the bay. Several prominent resort buildings are situated at Binz, 1.7 miles W of Granitzer Ort. A chimney, 126m high, stands 1 mile NW of Binz and is prominent from seaward.

Caution.—A fishery protection area, which may best be seen on the chart, lies 1 mile ENE of the disused light tower at Prora. Several marine farms may be found within this area between March and November.

9.6 **Nordperd** (54°21'N., 13°46'E.), a point situated 5 miles SE of Granitzer Ort, lies at the E extremity of Rugen and may be easily recognized from seaward. It is high, wooded, and has steep, clay sides. A conspicuous radio mast, 118m high, stands 0.5 mile W of the point. Two prominent water towers, 74m and 72m high, are situated close W of this mast.

Several prominent buildings stand at Sellin, a resort, which is situated 3.5 miles NW of the point.

Landtief A Lighted Buoy (54°21'N., 13°51'E.) is moored about 3 miles ENE of Nordperd.

The low coast in the vicinity of Nordperd is backed by four separate and high hills which appear as islands from offshore.

Sudperd (54°16'N., 13°43'E.) is located 4.5 miles SSW of Nordperd and surmounted by a prominent radio mast, 63m high. This point, 38m high, is steep on its S side, but slopes

gradually to a low and sandy beach on the N side. Thiessow, a prominent village standing on the shore of a small bay, is situated close W of the point.

Thiessower Steintrendel, a rocky patch, lies about 1.5 miles E of Sudperd. It has a least depth of 2.8m and is marked by a buoy.

Landtief B Lighted Buoy (54°17'N., 13°46'E.) is moored about 1.6 miles NE of Sudperd.

Anchorage.—Anchorage can be taken within Prorer Wiek, in depths of 3 to 4.5m, inside Seehunds Riff (54°25'N., 13°40'E.). Anchorage can also be taken, in depths of 4 to 6m, close NE of Binz. Anchorage, with offshore winds, can be obtained, in depths of 8 to 9m, sand, between Sudperd and Nordperd.

Caution.—Between Nordperd and Sudperd, a fishing area, which may best be seen on the chart, extends up to about 2 miles from the shore. Shipping is prohibited within this area from 1 February to 31 October, annually.

Greifswalder Bodden

9.7 Greifswalder Bodden (54°14'N., 13°32'E.), a large bay, is entered from the E between Sudperd and the N end of Usedom (54°11'N., 13°48'E.). Several channels lead from seaward through the bay to small ports on Rugen Island (54°20'N., 13°20'E.) and the mainland. There are also several small harbors which are used only by small craft, fishing vessels, pleasure boats, and local ferries. Wolgast is the principal port in this area; however, the bay also forms the main access route to Stralsund (see paragraph 4.23). The N side of the bay is formed by the S coast of Rugen. The shores are heavily indented and irregular, with broad outcroppings of terrain, high cliffs, valleys, and peninsulas. These outcroppings are backed, in many places, by inland lakes. Numerous shoals and reefs, with deep water between them, front the coast.

Rugischer Bodden (54°18'N., 13°33'E.) is the N part of the bay. The coast forming the S side of the bay is low-lying and mostly wooded. Danische Wiek (54°08'N., 13°28'E.), lying at the SW corner of the bay, is an inlet into which the Ryk River (54°06'N., 13°27'E.) flows. The mouth of the Peene River lies close W of Usedom, at the SE side of the bay.

Ice.—During severe winters, heavy ice formation may prevent shipping in the bay from about December 15 to March 31. In average winters, shipping can be hindered by ice for up to about 6 weeks and suspended for up to 2 weeks. The bay is usually frozen over during January and February. Storms from the SW and S clear the bay of ice within 24 hours. Ice barriers may form on the flats on both sides of the dredged fairways in Landtief, Osttief, and Palmer Ort Channel.

Tides—Currents.—The surface currents follow the wind direction in Greifswalder Bodden. With strong winds from between N and NE, the current sets S and SW at rates of 4 to 6 knots. With S winds, the current divides at Sudperd with one branch setting along the S side of Rugen Island and turning SW to unite with the E current. With winds from E through S to W, the current sets N and NE at rates of 2 to 5 knots. In calm weather, a strong current usually sets SW with LW in the Baltic Sea and the reverse with HW. Strong SW and NE winds lower or raise the water level as much as 0.9m, respectively.

Depths—Limitations.—An extensive sand flat, rising gradually from the sea and dropping abruptly towards the bay, lies in the E entrance of Greifswalder Bodden and may best be seen on the chart. This flat has shallow depths of less than 2m in many places. It is enclosed by the 5m curve and is widest between the islands of Greifswalder Oie and Ruden (see paragraph 9.8). Several dredged channels lead across the flat into Greifswalder Bodden. The bay has general depths of 6 to 11m with a bottom formed of sand and mud, but several detached and shallow patches lie up to 2.5 miles off the islands and peninsulas. Passages with depths of 7 to 9m lead to the minor ports, but should be used only by vessels with local knowledge. The coastal shoal bank, with depths of less than 4m, extends up to about 1.5 miles offshore along the S and W sides of the bay.

Landtief Channel (54°16'N., 13°44'E.), leading into the N part of Greifswalder Bodden, lies outside the Wolgast VTS area and within the Stralsund East VTS area (see paragraph 4.23).

Pilotage.—Pilotage is provided by the station at Stralsund. Pilots may be contacted by VHF and board in the vicinity of Landtief B Lighted Buoy (54°17'N., 13°46'E.) or Osttief 2 (02) Lighted Buoy (54°12'N., 13°52'E.). For further information, see paragraph 4.23.

Vessel Traffic Service.—A Vessel Traffic Service (Wolgast VTS) has been established in the approaches to Greifswalder Bodden. It is mandatory for the following vessels:

1. Vessels over 20m in length, including composite units.
2. Vessels carrying dangerous cargo in bulk (gas, chemicals, petroleum, or petroleum products).
3. Unloaded tankers if not cleaned, degassed, or completely inerted after carrying petroleum or petroleum products with a flashpoint below 35°C.
4. Nuclear-powered vessels.

Vessels entering the Wolgast VTS Area must maintain a continuous listening watch on VHF channel 9 or 16.

It is mandatory to send the following reports:

1. Sailing Plan (SP)—An SP must be sent to VTS Center Wolgast Traffic on VHF channel 9, as follows:
   a. On entering the VTS area of Wolgast from seaward; 30 minutes before passing Osttief Lighted Buoy, Landtief B Lighted Buoy or PN Sud/H1 Lighted Buoy.
   b. On entering the Wolgast VTS Area from Strelasund; when changing the area at Lighted Buoy Nos, 3/4
   c. Before leaving a harbor or berth within the VTS area of Wolgast VTS Area.

The format for the Sailing Plan (SP) and Position Reports (RP) as seen below.

ID	Information Required
A	Vessel name and call sign.
D	Position.
U	Length (in meters), beam (in decimeters), and type.
O	Draft (in decimeters).
G	Port of departure.
I	Port of destination.

ID	Information Required
P	Indication if liquefied gases, chemicals, petroleum, or petroleum products are or were carried in bulk. If yes, type, quantity, and UN number and whether tanks are uncleaned or completely inerted.
Q	Deficiencies or restrictions on maneuverability.
T	Name of vessel's owner or agents.

1. Position Report (PR)—A PR must be made to VTS Center Wolgast Traffic on VHF channel 9, as follows:
   a. After embarking the pilot.
   b. When leaving the fairway.
   c. When passing the reporting points listed in the table titled Wolgast VTS Reporting Points.

The format for the RP is, as follows:

ID	Information Required
A	Vessel name and call sign.
B	Passing time.
D	Position.
F	Speed.

1. Deviation Report (DR)—A DR must be sent by vessels changing their Sailing Plan (SP) (e.g. when entering or leaving an anchorage). The DR must be sent to VTS Center Wolgast Traffic on VHF channel 9.
2. Incident Report (IR) (DG/HS/MP)—An IR must be sent by all vessels when an accident impairs safety or the environment. The IR must contain details of the incident and in the case of a DG (Dangerous Goods Report), HS (Harmful Substances Report) or MP (Marine Pollutants Report) all data of the written pre-entry report. The IR must be sent to VTS Centre Wolgast Traffic on VHF channel 9.

Vessels should report to Wolgast Traffic on VHF channel 9 (inbound and outbound) when passing the following Reporting Points:

Wolgast VTS Reporting Points	
Reporting Point	**Position**
Landtief Channel	
Landtief B Lighted Buoy	54°17.2'N, 13°45.8'E
Lighted Buoys L11/L12	54°14.2'N, 13°41.2"E
Osttief Channel	
Osttief Lighted Buoy	54°13.5'N, 13°59.7'E
Wolgast, Peenestrom, and Kleines Haff	
Lighted Buoys PN5/KR13	54°09.9'N, 13°44.8'E
Zecherin Road Bridge	53°51.9'N, 13°49.7'E
Lighted Buoy Peenestrom Sud/H1	53°49.9"N, 13°57.6'E

Wolgast VTS Reporting Points	
Reporting Point	**Position**
Haff Light Buoy	53°47.2'N, 14°16.2'E

The VTS provides regulatory measures to prevent accidents and/or threat to the environment, and to control traffic flow. Such information will be promulgated by instructions to vessels.

The VTS provides a Maritime Assistance Service, as follows:

1. In the event of an incident involving a vessel, the VTS will receive the reports, consultations and notifications.
2. If a report discloses an incident that may give rise to a situation where the vessel is in need of assistance, the VTS will monitor the vessel's situation.

The VTS will serve as the point of contact:

1. Between the Master and the coastal state if the vessel's situation requires exchanges of information between the vessel and the coastal state other than a distress situation that could lead to a search and rescue operation.
2. Between those involved in a marine salvage operation undertaken by private facilities at the request of the company and the coastal state if the coastal state considers that it should monitor the conduct of the operation.

Situation broadcasts are transmitted on VHF channel 9, in English and German, every hour at 15 minutes after the hour The broadcasts include information relevant to safe passage through the VTS area and general fairway. Reported conditions include traffic situation details, local storm warnings, weather messages, visibility, ice reports, casualties, and dredging operations.

Anchorage.—A designated anchorage area, marked by buoys, lies centered about 0.8 mile SE of the N end of Ruden. It provides good anchorage, in depths of 7 to 8m, mud.

Caution.—Several patches of foul ground and several dumping ground areas, which may best be seen on the chart, lie in the approaches to Greifswalder Bodden.

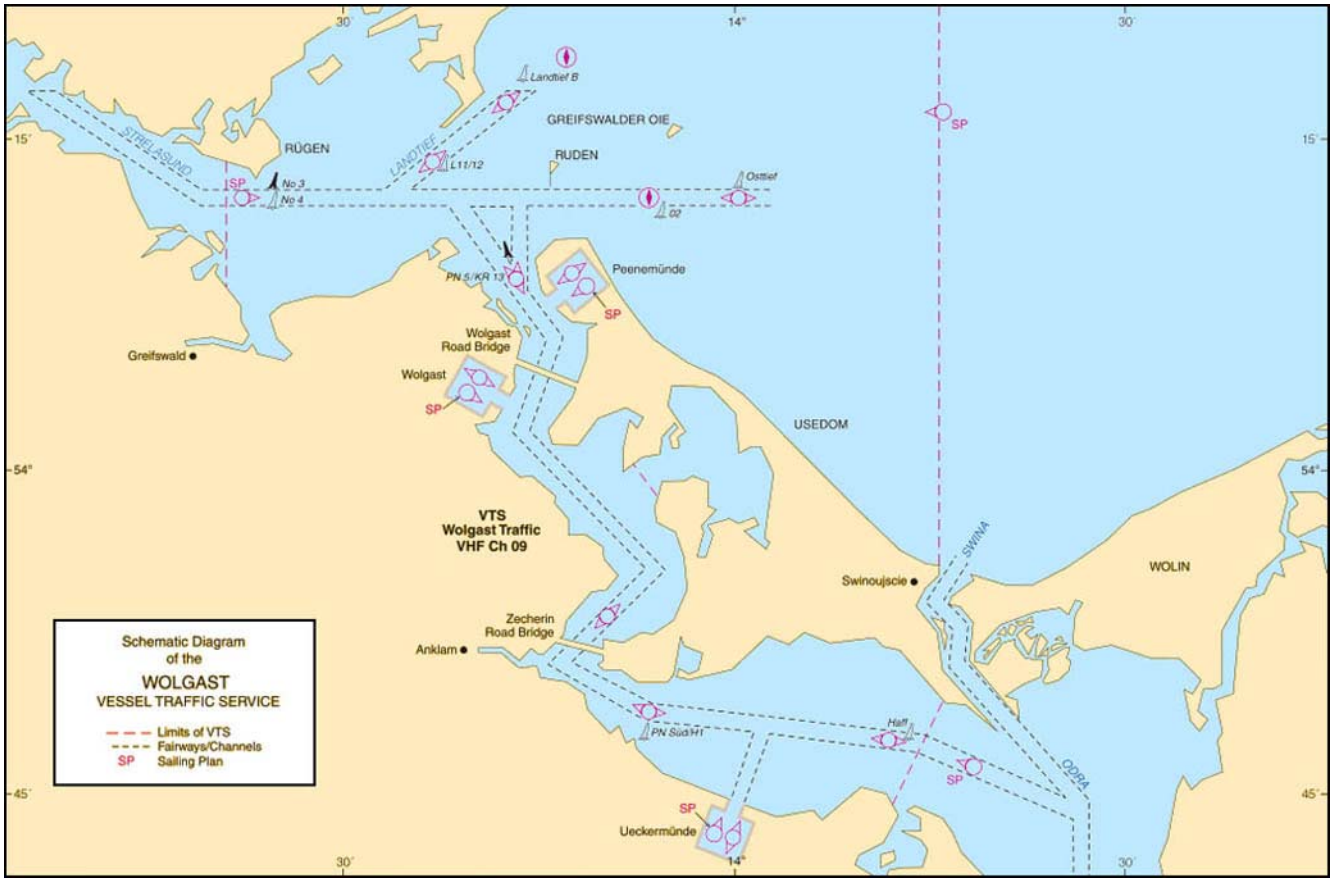
Several submarine cables lie in the approaches to Greifswalder Bodden and may best be seen on the chart.

Extensive fishing takes place within the S half of Greifswalder Bodden throughout the whole year. Between February and June, fishing takes place in the N half of the bay. Fixed-net herring fishing also takes place from May to March. Several fishing buoys are moored in the bay, but generally clear of the fairways.

Special regulations apply within Greifswalder Bodden and commercial vessels should not deviate from marked fairways due to the existence of numerous dangers.

Numerous small craft and pleasure boats may be encountered within Greifswalder Bodden.

9.8 Off-lying islands and banks.—Greifswalder Oie (54°15'N., 13°55'E.), an island, is located about 7 miles ESE of Sudperd at the E end of the shallow flat. Greifswalder Oie Light is shown from a prominent tower with a dwelling, 39m high, standing on the NE end of this island. A small fishing harbor is located at the SW end of the island. Numerous sunken rocks and wrecks lie in an area centered about 2.5 miles E of



VTS Wolgast

the island and may best be seen on the chart.

Greifswalder Oie Light

Ruden (54°12'N., 13°46'E.) is a low island lying about 5 miles SW of Greifswalder Oie. A conspicuous stone tower, 20m high, stands at the S end of the N section of the island. The S end of the island is formed by a long and sandy tongue of land which is very flat and can only be seen from about 2 miles seaward. A directional sector light is shown from this island. A small craft harbor is located at the E side of the N part of the island.

Directions.—Two principal approach channels, marked by buoys, lead into Greifswalder Bodden (see paragraph 9.7). The recommended routes and fairways leading across the bay may best be seen on the chart. They are marked by lighted buoys.

Caution.—During August to October, fishing nets extend up to 5 miles offshore from the N, E, and SE sides of Greifswalder Oie.

Landing on Ruden is prohibited.

9.9 Landtief (54°16'N., 13°44'E.), the N channel, has a least depth of 6.9m and is dredged through the sand flat for a distance of about 2.5 miles. It is entered about 0.8 mile E of Sudperd and extends SW for 5.5 miles to join Osttief Channel, 4 miles W of Ruden. Generally, vessels with drafts up to 5.2m can use this channel. However, with special permission, vessels with drafts up to 6m, have transited to Stralsund.

Landtief A Lighted Buoy (54°21'N., 13°51'E.), moored about 3 miles E of Nordperd, and Landtief B Lighted Buoy (54°17'N., 13°46'E.), moored about 1.6 miles NE of Sudperd, mark the outer approaches to this channel.

Osttief (54°12'N., 13°52'E.), the S channel, is entered about 3 miles SW of Greifswalder Oie Light. It extends WNW for

about 2 miles, SW for about 1 mile, and rounds the S end of Ruden. The channel then continues W for 1.5 miles and NNW for 1 mile to Lighted Buoy 030 (54°12.4'N., 13°42.8'E.). It then extends W for about 11 miles to the entrance of the Palmer-Ort (Stralsund) channel.

Osttief Lighted Buoy (54°13.4'N., 13°59.7'E.) is moored about 3 miles SE of Greifswalder Oie Light and marks the outer approach to the channel. This channel has a least depth of 6m and is available to vessels with drafts up to 5.2m. However, due to the narrowing of the channel and silting, a one-way traffic system is in operation with vessels proceeding E taking preference over vessels proceeding W.

That part of Greifswalder Bodden lying N of a line extending between Sudperd and Palmer Ort (54°13'N., 13°24'E.), 12 miles WSW, is known as Rugischer Bodden. It is indented by a broad bight and several small bays.

Zickerer See (54°17'N., 13°42'E.), a small bay, is entered about 1.7 miles NW of Sudperd and is fronted by an extensive shoal, Thiessower Haken, which extends up to about 2 miles SSE. Zickersches Hoft, a bold promontory, rises 2.3 miles WNW of Sudperd and forms the extreme W side of this bay. Klein Zicker, 38m high, extends about 1 mile NW from Sudperd. The outer end of this small peninsula forms the E entrance point of the bay.

Gross Zicker, rising 2.6 miles NW of Sudperd, is 66m high and conspicuous from seaward. Reddevitzer Hoft (54°19'N., 13°37'E.), a steep point, is located 4.3 miles NW of Sudperd. It is 15m high and lies at the outer end of a long, narrow peninsula, which extends WSW.

Lauterbach (54°20'N., 13°30'E.), a resort, is located on the N shore of Rugischer Bodden and fronted by a small harbor. The harbor is formed by two moles, which are protected by detached breakwaters. Lauterbach South Mole Light is on a white metal tower; a white sector leads through a buoyed channel. It is used by coasters, pleasure craft, and fishing boats. The main commercial quay is 230m long and has a depth of 5m alongside. Anchorage is available, in a depth of 6m, in the roadstead.

Palmer Ort (54°13'N., 13°24'E.), a prominent point, is located at the S extremity of the Zuder Peninsula, which forms the S part of Rugen.

Palmer Ort Channel (54°13'N., 13°24'E.) is entered close S of Palmer Ort and leads NW for about 2 miles across the flats to the E end of Die Strelasund. It is 40m wide and dredged to a depth of 7.5m. Fairways lead 14 miles through Die Strelasund, which separates Rugen from the mainland, to Stralsund (see paragraph 4.23).

Koos (54°10'N., 13°25'E.), an island, is located close off the mainland, about 2.5 miles S of Palmer Ort. Extensive shoals front the mainland in this vicinity and lie in approach to Die Strelasund.

The S side of Rugen, forming the N of the Die Strelasund, is indented by several shallow inlets. Drigge (54°17'N., 13°09'E.), a salient peninsula, projects into Die Strelasund about 9.5 miles from Palmer Ort. Winding reaches lead SW and W of Drigge. Danholm (54°19'N., 13°06'E.), an island fronting Stralsund, lies on the W side of the channel, 1.5 miles from the S end of Drigge. Rugendamm, a dam, connects Rugen with the mainland at Stralsund. It runs in a NE direction across the NW part of Danholm (see paragraph 4.23).

Caution.—The ranges indicating the channels leading through Die Strelasund do not necessarily mark the center of the fairways, especially in the inner approaches to Stralsund.

Several stranded wrecks lie between Koos and Riems.

9.10 Between Koos and Usedom (54°11'N., 13°48'E.), 13 miles E, the coast is partly wooded, steep in places, and indented by two shallow inlets.

Wieck (54°06'N., 13°27'E.), a village and suburb of Greifswald, is situated at the SW side of Danische Wiek, near the mouth of the Ryk River. The village, within which a prominent church stands, is fronted by a small harbor. The harbor, which is used by small coasters and fishing boats, is formed by two moles. A dredged channel, 40m wide, leads S to the harbor entrance and has a least depth of 4m. Small vessels, with drafts up to 3.5m, can be accommodated.

Greifswald (54°05'N., 13°23'E.), a university town, stands on the S side of the Ryk River, 2.5 miles above its mouth. A harbor, about 0.7 mile long, fronts the town and extends along the sides of the river. It is only used by pleasure boats and small craft with drafts up to 2.5m.

Ladebow (54°06'N., 13°27'E.), a small harbor, is located 0.5 mile NW of Wieck and has depths of 4.4 to 5.9m. The approach channel has a dredged depth of 6m. Vessels up to 90m in length and 13m beam can be accommodated at a commercial wharf.

Usedom, the island lying close E of the mainland at the S entrance of Greifswalder Bodden, forms the E side of the Peene River.

9.11 The **Peene River** (54°10'N., 13°45'E.) is the W branch of the Oder River (Odra River). It extends for 29 miles between the mouth and Kleines Haff (53°45'N., 14°04'E.), an inland sea which forms the W part of Stettiner Haff (54°48'N., 14°15'E.). Stettiner Haff is also known to the Polish as Zalew Szczecinski. Wielki Zalew (Groszez Haff) (53°46'N., 14°24'E.) forms the E part of Stettiner Haff. The river, which is shallow, together with Kleines Haff and Wielki Zalew forms the W approach to the ports of Swinoujscie (53°55'N., 14°16'E.) and Szczecin (53°25'N., 14°35'E.). From a point located close W of Usedom, the river follows a tortuous course through several large bays, of which Achterwasser (54°00'N., 14°00'E.) is the largest. Achterwasser lies on the E side of Peenestrom and is separated from the sea by a narrow ridge of land protected by dikes.

Ice.—Ice forms in the river and channels earlier than in the approaches through Greifswalder Bodden, but the strong current frees the river of ice sooner than the bay. Strong NW winds sometimes carry ice from the bay into the river.

Tides—Currents.—The currents rarely exceed a rate of 2.5 knots. With SE to W winds, the current sets into the bay; with E to NW winds, it sets into Wielki Zalew.

Depths—Limitations.—Tonnenbank Rinne, the main entrance channel, leads SSW from near the S end of Rugen to the N end of the Peenestrom waterway. The fairway is 70m wide and has a dredged depth of 6.5m as far as Peenemunde. The channel leading from Peenemunde to Wolgast is 40m wide and has a dredged depth of 6.5m. Knaakrucken, a secondary entrance channel, leads SSE and joins the main channel about 1.7 miles SSW of the S end of Rugen. It is 40m wide and has a dredged depth of 5m.

Pilotage.—Pilotage is compulsory for commercial vessels between the entrance of the Peene River and Westklune (53°51'N., 13°55'E.). Pilotage is provided and arranged by the station at Stralsund (see paragraph 4.23).

Caution.—An area, in which fishing and anchoring are prohibited, extends N and E from the NE side of Usedom. This area, which is marked by buoys, contains numerous shallow wrecks and may best be seen on the chart.

The authorities should be contacted to ascertain the latest information concerning depths and currents in the fairways because the river is subject to frequent silting.

9.12 Peenemunde (54°08'N., 13°46'E.), lying on the E side of the river, has a large basin, which is used by vessels to discharge coal at the power station, and a small basin close SE. The basins have depths of 3 to 5m.

An airfield is situated close N of Peenemunde at the NW end of Usedom. Freest and Kroslin, two small fishing harbors, are situated on the W side of the river 1.2 miles W and 0.8 mile SSW, respectively, of Peenemunde. Karlshagen, another fishing harbor, lies about 2 miles SE of Peenemunde, at the E side of the river.

Regulations.—Speed in the Peenestrom waterway is restricted to 10 knots.

Caution.—An overhead power line, with a vertical clearance of 50m, spans the Peenemunde waterway channel, about 1 mile S of Peenemunde.

9.13 Wolgast (54°03'N., 13°47'E.) (World Port Index No. 28828), a sheltered port, lies on the W side of the river, about 6 miles above Peenemunde. Schloss Insel, an island, lies at the W side of the river and fronts the town.

Ice.—Ice closes the harbor each year from 1 to 5 weeks, depending on the severity of the winter.

Depths—Limitations.—The Zecherin Road Bridge (53°51.9'N., 13°49.6'E.) spans the river at Wolgast and has a main navigable passage, 30m wide. When closed, the bascule section has a vertical clearance of 5.2m. A fixed section, located E of the bascule lifting section, also provides a navigable passage, 40m wide, with a vertical clearance of 4.2m.

The bridge opens daily at 0545, 0940, 1145, 1645, and 2045. The opening at 1645 is only possible by contacting the bridge operator by telephone not later than 1500.

The harbor, which includes a large shipyard, provides about 1,500m of riverside berthage and extends N and S of the road bridge. The main commercial berths have a depth of 6m alongside. The harbor is used mostly by local coasters and inland waterway craft. Vessels up to 150m in length and 5.7m draft can be accommodated.

Pilotage.—Pilotage is compulsory. Pilots are provided and arranged through the station at Stralsund (see paragraph 4.23).

Regulations.—Speed in the harbor is restricted to 4.3 knots.

Tankers carrying gas, chemicals, petroleum or petroleum products and intending to enter the VTS area must ensure the following conditions are in effect:

1. All tankers:
   a. Visibility is more than 1000m.
   b. The vessel's radar and VHF radio are in an operational state.
2. Tankers up to 2000 dwt—Visibility is more 500m.

Vessel Traffic Service.—For information concerning Wolgast VTS, see paragraph 9.7.

Contact Information.—The Wolgast Port Office can be contacted, as follows:

1. VHF: VHF channel 15
2. Telephone: 49-3836-251137
   49-175-5628442 (24 hour mobile)
3. Facsimile: 49-3836-2514137

The Port Operators can be contacted, as follows:

1. VHF: VHF channel 15
2. Telephone: 49-3836-201703
3. Facsimile: 49-3836-201705
4. E-mail: wolgast-hafen@t-online.de
5. Web site: http://www.wolgast-port.de

The Zecherin Road Bridge can be contacted by telephone, as follows:

a. 49-383 7270838
b. 47-1755 773609 (mobile)

Anchorage.—The limited width of the channel prevents safe anchoring.

Zatoka Pomorska, Swinoujscie, and Szczecin

9.14 Zatoka Pomorska (Pomeranian Bay) (54°08'N., 14°15'E.), known by the Germans as Oder Bucht, lies at the head of a broad inlet which forms the southernmost part of the Baltic Sea. The coast is generally low and wooded, but is higher to the SW and SE than to the S.

Ordzana Lawica (Oder Bank) (54°20'N., 14°25'E.), an extensive shoal area, has a least depth of 4.8m and lies in the N part of the bay. The approach routes to Swinoujscie pass W or S of this bank.

Ice.—During severe winters when NE winds predominate, the bay is filled with floating ice which forms ice fields. These fields may extend for several miles offshore in prolonged freezing weather. Much of the ice comes from the rivers and Greifswalder Bodden.

Tides—Currents.—The current in the bay sets with the prevailing winds. A current setting E predominates and attains a rate of about 2 knots along the coast. It is reported to be strongest at about 4 miles from the shore.

Aspect.—At the W side of the bay, the church, with two towers, standing at Zinnowitz (54°05'N., 13°55'E.) is very conspicuous. A prominent radio mast, 42m high, stands near the coast, 4 miles ESE of Zinnowitz. Strekelsberg, 59m high, rises close S of this tower and is the most elevated part of this section of the coast.

Prominent churches, with tall spires, stand at the resorts of Heringsdorf and Ahlbeck, which are situated close to the coast 7.8 miles and 9 miles, respectively, SE of Strekelsberg.

The border between Germany and Poland is situated about 1.5 miles SE of Ahlbeck (53°57'N., 14°12'E.) and is indicated by a beacon.

At the E side of the bay, a conspicuous church, with a tall tower rising above some trees, stands near the coast at Miedzyzdroje (53°56'N., 14°27'E.). A conspicuous church also stands at Lubin, 3.5 miles S of Miedzyzdroje. It is situated on the W shoulder of the hills in that area.

Kikut Light (53°59'N., 14°35'E.) is shown from a prominent stone tower, 18m high, standing 6 miles NE of Miedzyzdroje.

A prominent church is situated 1.8 miles SE of the light.

A dangerous wreck lies about 6.5 miles N of the light and is marked by a lighted buoy.

Caution.—Vessels navigating in the bay should stay close to the designated recommended routes, tracks, and fairways, as there may be uncharted hazards present.

Approach to Swinoujscie

9.15 Ice.—Ice-breaking assistance will be provided, on the recommendation of the Port Captain's office, only to vessels of an ice-going class and with engines of the appropriate power and adequate for the prevailing ice situation. Ice restrictions for the area of VTS Swinoujscie and VTS Szczecin will be introduced and published depending upon the ice conditions.

Vessels not of the appropriate ice-going class which navigate in ice conditions will do so at their own risk and any action involved in freeing them from ice will be carried out at their cost.

Ice reports concerning the situation in ports and on the water routes are available on request from VTS Swinoujscie and VTS Szczecin. Ice restrictions with regard to the required ice-going class and power of engines will be published in the meteorological bulletins of the Polish Institute of Meteorology and Water Management (http://www.imgw.pl) as well as through VTS Swinoujscie and VTS Szczecin.

Ice reports and restrictions can be found at http://www.ums.gov.pl.

St Mlyny Light

Depths—Limitations.—The approach channel from the E leads WSW for 13 miles from a position about 7.5 miles N of Kikut Light (53°59'N., 14°35'E.). It joins the inner approach channel in the vicinity of Lighted Buoy No. 3 and Lighted Buoy No. 4, about 4.5 miles N of the port entrance.

The main approach channel from the N leads SE for 9 miles from Lighted Buoy Swin-N (54°20'N., 13°58'E.) to Lighted Buoy N2 (54°15'N., 14°11'E.). It then leads in a 170° direction for about 19.6 miles to a lighted range, then to the inner approach channel. On the above track from the lighted LNG buoy to Lighted Buoy KO-5 on the E side of this channel lies several anchorage areas with depths to 14m.

The inner approach channel, a continuation of the N approach channel, is marked by lighted buoys and leads from the road-stead to the harbor entrance. It is dredged to a depth of 14m over a width of about 150m, but is subject to siltation.

Swinoujscie Light

Areas, within which less water than charted exists, lie close to this route.

An overhead cable, with a vertical clearance of 69m, spans the river channel, 1.5 miles SW of the light. It is supported by two prominent lattice towers, each 120m high.

Swinoujscie Signal Station

Aspect.—Lighted Buoy N2 (54°15'N., 14°11'E.) is equipped with a racon. The inner approach channel is marked by lighted buoys and indicated by a lighted range.

Swinoujscie Light is shown from a prominent round brick tower on a square building, 65m high, standing at the E side of the entrance.

The large buildings of the baths and several church spires stand about 1 mile W of the light. A conspicuous signal station tower stands close SE of the root of the E breakwater.

The E breakwater, 1,400m long, is illuminated at night by orange floodlights.

Pilotage.— Pilotage, which is available 24 hours, is compulsory for the following vessels:

1. All vessels over 50m loa (Szczecin) or 60m loa (Swinoujscie).
2. All vessels carrying dangerous cargo.

3. All passenger vessels.
4. Vessels shifting berth within the port area.

Vessels should request pilots from the dispatch office 4 hours in advance of arrival. The departure pilot should be requested 2 hours in advance. For vessels shifting berth, a pilot should be requested 2 hours in advance.

Inbound vessels should send the following information:

Designator	Information Required
A	Vessel name, call sign, and flag.
U	Length (meters) and gt.
O	Maximum draft.
J	ETA at pilot boarding position.
I	Port of destination.

When the vessel leaves the Port of Swinoujscie, the pilot should be requested from the Swinoujscie Pilot Station Dispatch Office. When leaving Szczecin or other ports along the fairway, the pilot should be requested from the Szczecin Pilot Station Dispatch Office.

Pilots board, as follows:

1. Position 54°14.7'N, 14°10.9'E (PILOT-3), at Lighted Buoy N2 for vessels with draft of 11.0m to 13.2m, fresh water.
2. Position 54°01.7'N, 14°15.2'E (PILOT-2), in the vicinity of Lighted Buoy No. 11 and Lighted Buoy No. 12 for vessels with draft of 7m to 11m, fresh water
3. Position 3°58.8'N, 14°16.6'E (PILOT-1), in the vicinity of Lighted Buoy 13 and Lighted Buoy 14 for vessels with a draft less than 7m, fresh water.
4. At the anchorage area when the vessel is at anchor.
5. Position 53°45.6'N, 14°23.1'E, in the vicinity of Brama Torowa 2 when the vessel sails from the Polish-German border line located at Zalew Szczecinski.

Regulations.—The Bay of Pomerania Registration System, a mandatory system of registration, has being introduced for vessels sailing to the ports of Swinoujscie, Szczecin, Stepnica and Trzebiez. The aim of increasing the safety of shipping and protecting the shores and waters of the Bay of Pomerania and the Szczecin Lagoon.

Reports should be made to the Swinoujscie Port Captain when passing latitude 54°30.0'N or longitude 14°45.0'E. The report should contain the following information:

1. The code word Repline Swin.
2. Vessel's name, call sign, flag, and IMO number.
3. Vessel's position (latitude and longitude).
4. Port of destination.
5. Nature and quantity of dangerous cargoes.
6. Circumstances capable of affecting the safety of shipping and the cleanness of the marine environment.

This system is mandatory for all vessels with a LOA of 20m and above, and all vessels which, through exceptional circumstances, pose a threat to shipping or the natural environment. It is essential to obtain the agreement of the Duty Officer of the Port of Swinoujscie before entering the Port of Swinoujscie.

The registration system can be contacted, as follows:

1. Call sign: Swinoujscie Traffic
2. VHF: VHF channel 12
3. Telephone: 48-91-3216203
4. Facsimile: 48-91-3216770

Szcecin/Swinoujscie Pilot Contact Information		
	Szcecin Pilots Head Office	Swinoujscie Pilot Station Dispatch Office
Call sign	—	Swinoujscie Pilot
VHF	—	VHF channel 68
Telephone	48-91-4325600	48-91-3213431
	48-91-4325656	
Facsimile	48-91-4325606	48-91-3213431
E-mail	pilot@szczecinpilot.pl	stacja-swin@szczecinpilot.pl
Web site	http://www.szczecinpilot.pl	—

Swinoujscie VTS Area		
Number	Area	Position
1	Border between Poland and Germany drawn along the coastline	53°55.7'N 14°13.6'E
2	Position which determines the limit of the roads	53°59.3'N 14°14.5'E
3	Position	54°07.6'N 14°12.1'E
4	Position which determines the limit of the roads	54°07.6'N 14°16.8'E
5	Position on the coastline	53°54.6'N 14°20.2'E

Swinoujscie VTS Area		
Number	**Area**	**Position**
6	Section of the Swinoujscie-Szczecin channel from the E head of the breakwater to the Brama Torowa 1	—
7	Swina River from Lighted Buoy SW-2 to the road bridge over the Stara Swina River at Karsibór	—

Szczecin VTS Area		
Number	**Area**	**Position**
1	West beachhead of the Odolany gas pipeline	53°36.3'N 14°34.3'E
2	Along the coastline up to the position near the village of Podgrodzie	53°44.4'N 14°18.5'E
3	Lighted Buoy MO-S	53°48.5'N 14°20.4'E
4	West beacon of Brama Torowa 1	53°48.6'N 14°20.5'E
5	East beacon of Brama Torowa 1	53°54.6'N 14°20.2'E
6	Buoy KW-S	53°47.6'N 14°24.7'E
7	Buoy MC	53°44.8'N 14°28.6'E
8	Along the coastline near the village of Kopice	53°42.1'N 14°32.4'E
9	East beachhead of the Odolany gas pipeline (coastline)	53°36.3'N 14°35.8'E
10	Odra River (surrounding the areas of Szeroki Nurt, Waski Nurt, Domiaza, Ciasny Nurt and Inski Nurt) from beachheads of the Odolany gas pipeline to the E limit of the anchorage	—
11	Section of the Swinoujscie-Szczecin channel along Debina and Radolin Islets up to the Beacon No. 80 (Dock No 5)	—

Vessel Traffic Service.—Vessel Traffic Services operate in the approaches to Swinoujscie and Szczecin, as follows:

1. The area of the Swinoujscie VTS is delimited by straight lines and coastlines joining positions in Zatoka Pomorska and areas included in the table titled Swinoujscie VTS Area.
2. The area of the Szczecin VTS is delimited by straight lines and coastlines joining positions in Zalew Szczecinski and Roztoka Ordzanska from the Brama Torowa 1 to the beachheads of the Odolany gas pipeline in the Roztoka Ordzanska area and areas included in the table titled Szczecin VTS Area.

The system is mandatory for the following vessels:

1. All vessels 20m or more in length (including composite units).
2. All vessels carrying dangerous cargo.
3. Unloaded tankers if not degassed after carrying dangerous cargo.
4. Passenger vessels.

VTS offers two services Information, and Traffic Organization service.

Vessels navigating in the area from Zatoka Pommorska (Bay of Pomerania) to Gate No. 1 (53°48.5'N., 14°20.6'E.) should report to Swinoujscie Traffic (VHF channels 12, 16, and 70).

Szcecin/Swinoujscie VTS Contact Information		
	Szcecin VTS	**Swinoujscie VTS**
Call sign	Szczecin Traffic	Swinoujscie Traffic
VHF	VHF channels 16, 18, 20, 69, 70, and 71	VHF channels 12, 16, and 70
Telephone	48-91-4330697	48-91-3216203
	48-91-4308557	
	48-91-4403510	
Facsimile	48-91-4403510	48-91-3216770
E-mail	szczecintraffic@ums.gov.pl	stacja-swin@szczecinpilot.pl

Szcecin/Swinoujscie VTS Contact Information		
	Szcecin VTS	Swinoujscie VTS
MMSI	002610700	002610800

Vessels navigating in the area from Gate No. 1 (53°48.5'N., 14°20.6'E.) to the Port of Szczecin should report to Szczecin Traffic (VHF channels 16 and 69).

Vessels required to report must maintain a continuous listening watch, as appropriate, on either VHF channel 12 (Swinoujscie VTS) or (Szczecin VTS) on VHF channel 69.

Inbound vessels requesting a pilot must send a Sailing Plan (SP) to the Swinoujscie VTS Center 2 hours prior to their ETA at the pilot boarding position. Other inbound vessels must send an SP 15 minutes before entering the VTS area.

The arrival SP should be formatted, as follows:

Designator	Information Required
A	Vessel name, call sign, IMO number, and flag.
C or D	Position.
H	Point of entry into VTS system.
J	ETA at pilot boarding position (PILOT-1, PILOT-2, or PILOT-3).
G	Last port of call.
I	Port of destination.
P	Details of any dangerous cargo.
Q	Details of defects, damage, or deficiencies.
L	Intended track.
T	Name of agent.
U	Length, beam, gt, and type of vessel.
W	Total number of passengers (only for passenger vessels).

Outbound vessels (except inland-waters vessels) must send an SP 2 hours before leaving a harbor or berth (including shifting berth) for vessels which request a pilot and1 hour before leaving a harbor or berth (including shifting berth) for other vessels.

The departure SP should be formatted, as follows:

Designator	Information Required
A	Vessel name, call sign
C or D	Position.
O	Maximum draft
J	pilot requested or not
G	Last port of call.
I	Destination.
K	Port of exit from the VTS
P	Details of any dangerous cargo onboard
W	Total number of passengers (only for passenger vessels).

The Reporting Points for Swinoujscie VTS are, as follows:

1. At the head of the Swinoujscie E breakwater (53°56.2'N., 14°16.5'E.).
2. Abeam Brama Torowa 2 northbound (53°45.7'N., 14°24.3'E,).

The Reporting Points for Szczecin VTS are, as follows:

1. Abeam Brama Torowa 2 southbound (53°45.6'N., 14°24.3'E.).
2. Abeam Brama Torowa 4 (53°39.9'N., 14°32.0'E.).
3. Abeam Dock No. 5 (53°27.3'N., 14°35.9'E.).
4. Position 53°47.1'N 14°16.2'E.
5. Position 53°47.1'N 14°16.2'E.
6. Position 53°45.4'N 14°16.6'E.
7. Position 53°44.7'N 14°28.8'E.
8. Position 53°38.3'N 14°34.8'E.
9. Position 53°31.4'N 14°38.1'E.

A Position Report (PR) must also be sent to the VTS Center, as follows:

1. 15 minutes before entering the VTS area (for vessels requesting a pilot).
2. When leaving the VTS area.
3. When passing the Reporting Points.
4. When anchor dropped at anchorage within the VTS area.
5. 15 minutes prior to leaving an anchorage within the VTS area.
6. Pilot embarkation or disembarkation.
7. When leaving or entering the fairway.
8. When berthing or leaving a berth.
9. After raising anchor.

The PR should be formatted, as follows:

Designator	Information Required
A	Vessel name, call sign
C or D	Position.
L	Intended track.

A Deviation Report (DR) must be sent to the relevant VTS Traffic Center by vessels changing their SP. The DR consists of name and call sign (A), position (D), and the changed designators.

An Incident Report (IR) must be sent to the relevant VTS Traffic Center by vessels observing or taking part in an accident that impairs safety or the environment. The IR consists of A (name and call sign), position (C or D), and, if necessary, a Dangerous Goods Report (DG), a Harmful Substances Report

(HS), or a Marine Pollution Report (MP).

For additional information concerning ETA messages for vessels carrying dangerous cargo, see paragraph 9.16.

Szczecin VTS broadcasts bulletins on VHF channel 13 in Polish (and in English on request) at 0533, 1133, 1733, and 2333. The bulletins include information relevant to the safe passage of ships through the entire VTS area. Both Swinoujscie VTS and Szczecin VTS will provide traffic information for the fairway on VHF channel 13, on request.

Compulsory tug requirements are in force for vessels entering Swinoujscie and Szczecin. Vessels should contact the pilot for further information.

Caution.—During bad weather, the topmarks of the buoys in the vicinity of Oder Bank may be missing and the lights extinguished.

Vessels should keep close to the range alignment of the inner approach channel in order to remain within the dredged section.

Fishing nets may extend up to 3 miles from the shore to the W of the harbor entrance.

Several wrecks and foul patches lie in the approaches to the port and may best be seen on the chart.

Vessels should not approach within 20m of the E breakwater at a point about 120m S of the head as the old breakwater foundation projects into the channel.

Swinoujscie (53°55'N., 14°16'E.)

World Port Index No. 28820

9.16 Swinoujscie, located at the mouth of the Rzeka Swina, is the outport and transhipment base for Szczecin. It is also a naval base, a deep-sea fishing center, and a resort. The entrance to the river, which is protected by breakwaters, is the central of three mouths of the Rzecka Odra.

Swinoujscie Channel

Winds—Weather.—Strong NE winds cause heavy seas in the roadstead off the port.

Ice.—The mouth of the river is generally free of ice and icebreakers keep the port open. Icebreaking assistance will be provided on the recommendation of the Port Captain only to vessels of an ice class with engines of adequate power. Vessels not of an appropriate ice class, which sail in ice conditions, do so at their own risk and any action involved in freeing them from ice will be carried out at their cost. Details concerning ice conditions and routes will be provided by VTS Swinoujscie and VTS Szczecin. For further information, see paragraph 9.15 and Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Swinoujscie Entrance

Swinoujscie Ferry Terminal from SW

Tides—Currents.—The strength of the current depends on the wind force. Off the entrance to the port, E and W winds cause a set across the entrance. Light winds, from any direction, usually cause an outgoing current between the breakwaters. Strong N and NW winds cause an inward current which may attain rates of up to 4 knots during heavy rainfall or after a calm. The water level may rise or fall about 0.6m from the mean level. Storms from the NE raise the level about 2m and storms from the S lower it about 1m, but these maximum fluctuations are uncommon.

Depths—Limitations.—The port facilities, which include major bulk terminals, consist of several harbor basins and river berths. Generally, vessels up to 70,000 dwt, 270m in length, and 12.8m draft can be accommodated. It is reported that a vessel of 87,000 dwt, with a draft of 12.8m, has been handled.

The following principal berths are located in Swinoujscie:

1. Portowcow Quay, 245m long, can handle vessels up to 11.9m draft and is mainly used for bulk and general cargo.
2. Gornikow Quay, 290m long, can handle vessels up to 12.8m draft and is used for bulk coal cargo.
3. Wladyslawa IV Quay, 407m long, can handle vessels up to 10m draft and is mainly used by passenger and cruise vessels.
4. Chemikow Quay, 282m long, can handle vessels up to 12.8m draft and is used for bulk cargo.
5. Hutnikow Quay, 330m long, can handle vessels up to 12.8m draft and is used by bulk and container vessels.
6. Porta Petrol Quay, 272m long, can handle vessels up to 11m draft and is used by tankers.
7. Rozladunkowe Quay, 600m long, can handle vessels up to 9.5m draft and is used by bulk and container vessels.

There is also a ferry terminal consisting of five quays, 154 to 206m long. It is used by ro-ro, cruise, and passenger ferry vessels, with drafts up to 7m.

Pilotage.—See Pilotage under Approach to Swinoujscie in paragraph 9.15.

Swinoujscie LNG Terminal

Regulations.—Vessels navigating in the approaches over 160m in length or over 7.32m draft are deemed to be constrained in their ability to maneuver and should display the appropriate shapes and lights.

All loaded and empty tankers, not degassed after carrying dangerous cargo, should send an ETA message 24 hours in advance of arrival to the Swinoujscie VTS. The message should include the date of validity of the Civil Liability Certificate and the Master's declaration of full maneuverability of the vessel. An ETA confirmation message should also be sent 6 hours in advance.

All vessels carrying dangerous cargo, other than tankers, should send an ETA message 24 hours in advance of arrival to the Swinoujscie VTS. Vessels should also provide the Harbormaster or Swinoujscie VTS Center with a document of compliance with special requirements for ships carrying dangerous cargo and a stowage plan or dangerous goods manifest.

A speed limit of 8 knots is enforced in the roadstead for large vessels and a limit of 12 knots is enforced for vessels with drafts less than 3m.

See Regulations under Approach to Swinoujscie in paragraph 9.15.

Anchorage.—Anchorage can be taken in six designated areas which may best be seen on the chart.

Anchorage Area No. 1A lies E of the entrance channel and can be used by vessels with a maximum draft of 7m.

Anchorage Area No. 1B lies W of the entrance channel and can be used by vessels with a maximum draft of 6m.

Anchorage Area No. 2A lies E of the Lighted Buoy N5 and can be used by vessels with a maximum draft of 9.5m.

Anchorage Area No. 2B lies S of and adjacent to area No. 2A and can be used by vessels with a maximum draft of 11m.

The quarantine anchorage lies close N of area No. 2B and can be used by vessels with a maximum draft of 10m.

Anchorage Area No. 3 lies 3 miles NNW of the Lighted Buoy N2 and can be used by vessels with a maximum draft of 12.8m.

Caution.—Anchorage is prohibited within 0.2 mile on either side of the entrance range line and in the vicinity of the remains of a wreck, with a depth of 10.5m, lying about 4.5 miles NNE of Swinoujscie E breakwater head.

A power cable, with an overhead clearance of 64m, spans the channel in the vicinity of the port.

Ferries cross the river at a point about 0.7 mile SW of the light.

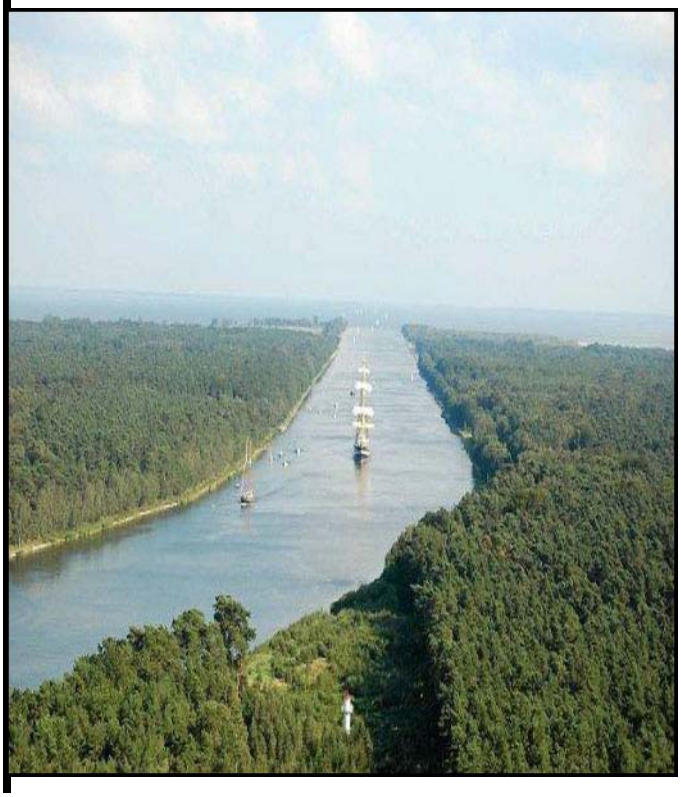
Approach to Szczecin

9.17 Szczecin is approached from Swinoujscie through a dredged channel, 37 miles long and 90m wide. The channel is marked by lighted beacons and lighted buoys, and indicated by lighted ranges. The fairway has depths of 9.5 to 10.5m, but requires periodic dredging.

Mielinski Kanal (53°54'N., 14°15'E.) and Piastowski Kanal (53°50'N., 14°19'E.) form the channel between Swinoujscie and Wielki Zalew, the inland sea.

Mielino Island (53°53'N., 14°17'E.) forms the E side of Mielinski Kanal. The Stara Swina (53°52'N., 14°17'E.) flows E of this island and forms the S side of Wolin (53°54'N., 14°21'E.).

A road bridge crosses Stara Swina about 0.5 miles SSE of Wyspa Mielino S Light. The navigable passage underneath the bridge, marked with boards. is located between supports 3 and 4 numbering from the south. The width of the passage is 55m and the vertical clearance under the bridge through the navigable passage is 6.3m.



Piastoswski Canal

Zalew Szczecinski, an inland sea, has depths of 2.7 to 9.6m. The dredged channel which leads from Piastowski Kanal to Roztoka Odrzanska (53°39'N., 14°35'E.), 11 miles SE, is 119m wide, but is subject to silting. Wielki Zalew is the E part of Zalew Szczecinski and is known to the Germans as Stettiner Haff. Kleines Haff is the W part of Zalew Szczecinski.

Zalew Szczecinski lies within the delta of the Rzeka Odra and flows into the Baltic Sea through three branches; Peenestrom flows from Kleines Haff, Rzeka Swina discharges at Swinoujscie, and Rzeka Dziwna discharges E of the island of Wolin. The water within Zalew Szczecinski is salty, especially in the NW part, but it becomes fresh in the vicinity of Roztoka Odrzanska.

Wolin Island (53°55'N., 14°30'E.) extends ENE between Swinoujscie and the Dziwna River (54°02'N., 14°44'E.). It is sandy and wooded.

Lubin (53°52'N., 14°26'E.), in the NE part of Wielki Zatew, and Wolin (53°51'N., 14°36'E.), in the W part, are both small and shallow ports. The narrow fairways leading to these harbors are marked by buoys and indicated by lighted ranges.

Chelminek (53°41'N., 14°32'E.), an artificial island, lies in the entrance to Roztoka Odrzanska and regulates the current. The main approach channel leading to Szczecin passes W of

this island. Secondary channels lead to Stepnica (53°39'N., 14°38'E.) and Trzebiez (53°40'N., 14°31'E.), both local harbors lying at the E and NW sides of Roztoka Odrzanska, which are used by fishing vessels, pleasure craft, and small ferries. A church stands 0.3 mile NNE of the harbor at Stepnica and is prominent when viewed from the channel in the bay. Trzebiez can be contacted via VHF channels 16 or 71.

Police (53°34'N., 14°34'E.), a local harbor, has a large chemical plant for fertilizers. Mijanka Quay, with a depth of 10m alongside, can handle vessels of up to 140m in length and 8.4m draft. Barkowe Quay, with a depth of 4.5m alongside, can handle vessels of up to 75m in length, 12m beam, and 4m draft. Sea Port Quay is 415m long and can accommodate vessels with a maximum draft of 9.15m.

Kanal Inski Nurt, entered 2 miles SE of Police at the E side of the river, connects with Jezioro Dabie, an extensive lake with depths up to 3.5m.

Winds—Weather.—The water level in Zalew Szczecinski rises and falls about 0.4m, respectively, with N and S winds.

Ice.—Ice forms earlier in the inland sea than in the various reaches of the channel. During the ice period, which averages about 60 days, vessels are accompanied by icebreakers and tugs as wind-driven ice can set then onto the shoals.

Depths—Limitations.—For details of permitted entry length, beam, and draft, see the information and associated table in paragraph 9.18.

Anchorage.—Anchorage can be taken within an area, marked by buoys, lying in Wielki Zalew, on the NE side of the fairway. This area extends NE and NW of Brama Tower No. 2 and may best be seen on the chart. It is limited to vessels of up to 200m length and 4.9m draft.

Anchorage can also be taken by vessels of up to 100m in length and 4.6m draft in an area lying NE of the fairway channel, close NW of Chelminek Island.

Anchorage can be taken by vessels of up to 180m in length and 5.2m draft in an area lying E of the fairway and centered 0.5 mile S of Mankow Front Range Light (53°37'N., 14°36'E.).

Anchorage can be taken by vessels of up to 100m in length and 6.1m draft in an area lying close W of the fairway, l.5 miles N of Police.

Anchorage can be taken by vessels of up to 8.5m draft in an area lying close SW of the fairway at Police. Anchorage can also be taken by vessels of up to 100m in length and 4.9m draft in an area lying close E of the fairway, in the entrance to Kanal Inski Nurt.

Caution.—An overhead cable, with a vertical clearance of 55m, spans the channel close N of Kanal Inski Nurt.

Numerous fishing nets are laid in Zalew Szczecinski and vessels should stay within the marked fairway channels.

A submarine gas pipeline extends across the fairway about 3 miles N of Police.

Szczecin (Stettin) (53°24'N., 14°32'E.)

World Port Index No. 28823

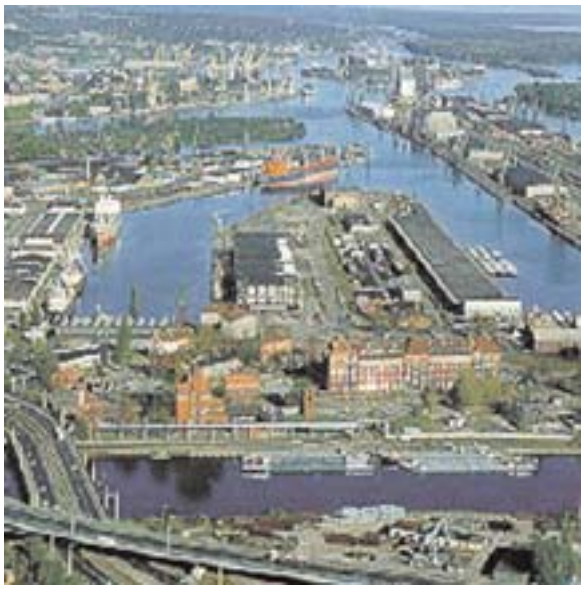
9.18 Szczecin lies 35 miles from the Baltic Sea and stands on both sides of the Odra River. It is a major maritime outlet for the Silesian industrial region of SW Poland and is connected to an extensive inland waterway system. The port also serves as an important shipbuilding and ship repair center.

Winds—Weather.—Winds from between NW and NE raise the water level and winds from between the SW and SE lower it. The level may vary by as much as 1.5m from the mean.

Depths—Limitations.—The port facilities extend up to 6 miles S along the banks of the river. Generally, vessels up to a maximum length of 210m, a maximum draft of 9.15m (fresh water), or a maximum beam of 31m can be accommodated. However, it is reported that a vessel of 223m in length and 32m beam has been handled, with special permission.

The maximum length of vessels permitted to enter varies in accordance with the maximum beam and maximum draft. The relationship between permissible lengths, beams, and drafts for vessels over 160m in length is shown in the following table:

	Maximum Beam		
	25m	28m	31m
Length	**Maximum Draft**		
160m	9.15m	9.15m	9.15m
180m	8.93m	8.78m	8.63m
190m	8.73m	8.58m	8.43m
210m	8.48m	8.33m	8.17m



Szczecin—Grodzki Channel from S

The port has over 18 miles of quayage. The main commercial cargo facilities include 6,900m of total berthage, with depths of 6 to 9.2m alongside. There are terminals for the handling of general cargo, bulk, oil, container, and ro-ro vessels.

The following principal cargo berthing areas are located within Szczecin:

1. The Rzeka Odra Area provides 20 berths along the W bank of the river. The main quay is Huta (Kra 1), 420m long, with depths of 8.1 to 8.3m alongside. This quay can handle

Szczecin from N

vessels up to 8.2m draft and is used mainly for bulk ore cargo.

2. The Ewa Peninsula Area provides nine berths. The main berths include Polskie, 260m long, with depths of 8.1 to 9.2m alongside; Zbozowe, 220m long, with depths of 8.2 to 9.2m alongside; Slowackie, 560m long, with a depth of 9.1m alongside; and Czeskie, 400m long, with a depth of 9.1m alongside. Polskie can handle vessels up to 9.15m draft and is mainly used for general cargo. Zbozowe can handle vessels up to 9.15m draft and is used for bulk grain cargo. Slowacki and Czeskie can handle vessels up to 8.9m draft and are used mainly by container and ro-ro vessels.

3. The Lasztownia (Central Port) Area, formed by Basin Zachodni and Basin Wshodni, provides ten berths. The main berth is Wegierskie, 590m long, with depths of 8.2 to 9m alongside. This berth can handle vessels up to 8.9m draft and is used mainly for general cargo.

4. The Industrial Port Area, which provides 21 berths, is formed by Basin Gorniczy, Basin Gornoslaski, Basin Notecki, and Basin Warty. The main berths include Katowickie, 525m long, with depths of 8.2 to 9.2m alongside; and Gornoslaski, 285m long, with a depth of 9.2m alongside. Both of these berths can handle vessels up to 9.15m draft and are used mainly for bulk ore cargo.

5. The Parnica Area, which provides 16 berths, includes Kanal Pryemyslowy, Kanal Dunczyca, and Basin Cichy. The main berth is Parnica, 295m long, with a depth of 7.2m alongside. This berth can handle vessels up to 7m draft and is used for liquid bulk cement and tar.

Pilotage.—See Pilotage under Approach to Swinoujscie in paragraph 9.15.

Regulations.—Vessels over 200m in length or over 9m maximum draft may enter or leave the port during daylight only and in a visibility of at least 2 miles. Vessels between 180m and 200m in length may enter or leave the port at night and in a visibility of at least 2 miles, only with special permission.

All loaded and empty tankers, not degassed after carrying dangerous cargo, should send an ETA message 24 hours in advance of arrival to Swinoujscie VTS and Szczecin VTS. The message should include the date of validity of the Civil Liability Certificate and the Master's declaration of full maneuverability of the vessel. An ETA confirmation message should also be sent 12 hours in advance.

All vessels carrying dangerous cargo, other than tankers, should send an ETA message 24 hours in advance of arrival to the Swinoujscie VTS Center and the Szczecin VTS Center. Vessels should also provide the Harbormaster at Swinoujscie and the Harbormaster at Szczecin with a document of compliance with special requirements for ships carrying dangerous cargo and a stowage plan or dangerous goods manifest.

See Regulations under Approach to Swinoujscie in paragraph 9.15.

Caution.—Several submarine cables cross the channel and may best be seen on the chart.

Navigation is prohibited within Oder Zachodnia, the W branch of the river, and in the vicinity of the shipyards, except for authorized vessels.

Zatoka Pomorska to Rozewie

9.19 Rzeka Dziwna (54°01'N., 14°44'E.) is entered 17 miles ENE of Swinoujscie. Dziwnow Dolny, a small fishing harbor, lies on the N bank of the river mouth. An outer approach lighted buoy is moored about 2.3 miles NW of the river entrance and the channel is indicated by a lighted range.

A conspicuous church stands in the resort of Dziwnow Gorny, 2.3 miles E of the river entrance. A narrow and shallow channel leads from the river entrance to Wolin, 12 miles SSW.

The coast between Rzeka Dziwna and Rosewie, 136 miles distant, is uniform and consists of sand dunes. Numerous coastal lakes lie beyond these dunes and are connected to the Baltic Sea by shallow rivers. The coast between Rzeka Dziwna and Kolobrzeg, 31 miles ENE, is wooded in many places and several resorts are situated along the shore.

Tides—Currents.—Onshore winds can cause a considerable current along this section of the coast. Vessels navigating up to 6 miles offshore and steering courses parallel to the coast have reported encountering a S set.

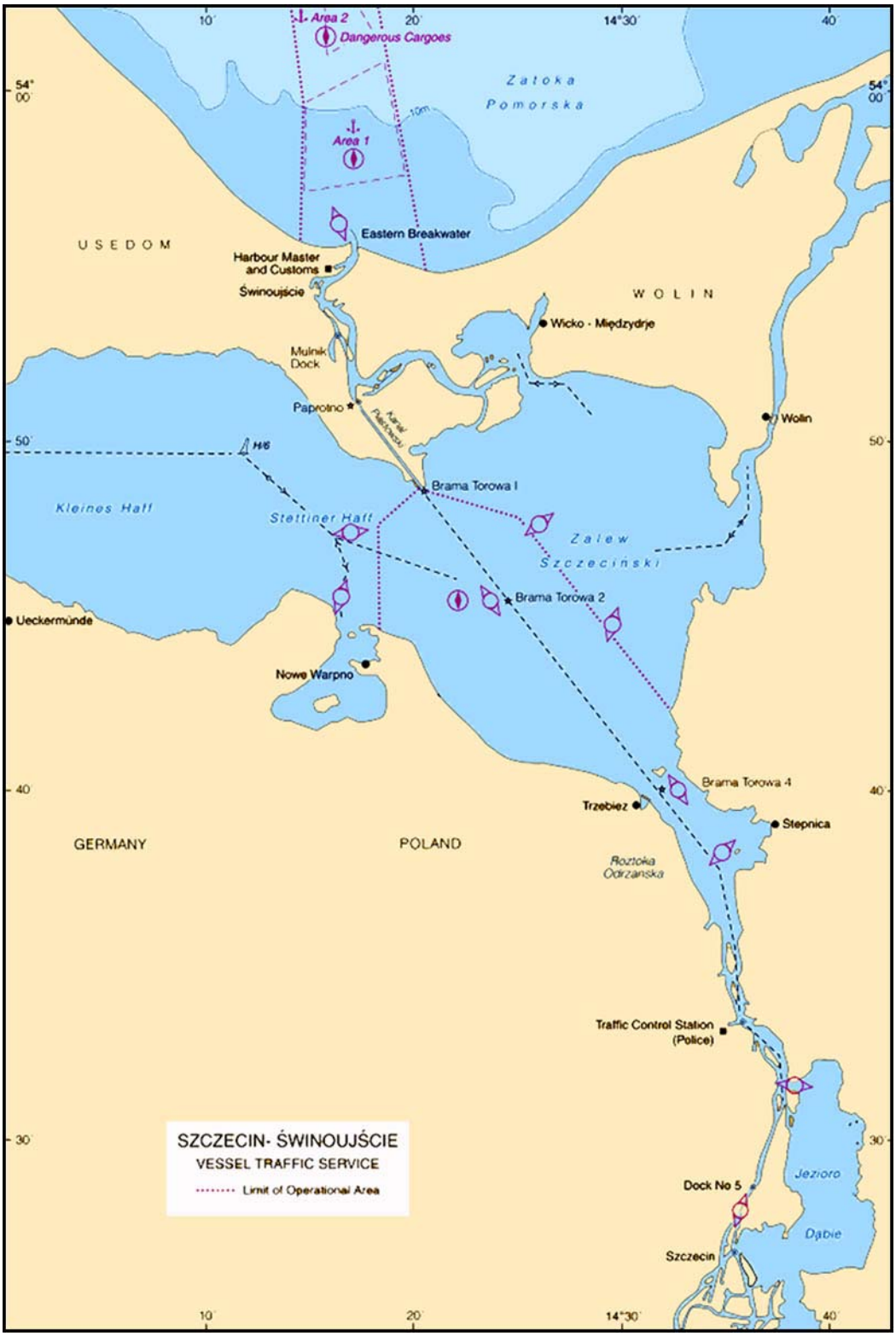
Caution.—During the period 15 March to 15 June annually, numerous fishing vessels, with drift nets, may be encountered within 15 miles of the coast between longitudes 15°E and 18°E.

Several dangerous wrecks lie off this stretch of the coast and may best be seen in the chart.

A submarine pipeline, marked by a buoy, extends about 0.7 mile NNW from a point on the shore located about 1 mile ENE of the mouth of the Rzeka Dziwna.

9.20 Niechorze (54°06'N., 15°04'E.), a summer resort, is situated 13 miles ENE of Rzeka Dziwna. A light is shown from a conspicuous tower with a dwelling, 45m high, standing on the foreshore.

Several local churches in the area are prominent from seaward. A conspicuous church stands near the shore at Trzesacz, a resort, situated 3 miles WSW of Niechorze. Churches, each with a prominent tower, stand at Trzebiatow and Sadlno which are situated inland 7.5 miles ESE and 4.2 miles SE, respectively, of Niechorze.



Szczecin—Swinoujscie VTS

Szczecin—EWA Grain Terminal

Szczecin—Bulk Terminal

Niechorze Light

Rzeka Rega (54°09'N., 15°17'E.) enters the sea 8.5 miles ENE of Niechorze. Mrzezyno and Glebokie, both summer resorts, are fronted by small fishing harbors and lie on the E and W banks, respectively, of the river mouth. The church in Mrzezyno has a pointed tower and is conspicuous from offshore.

Prominent churches also stand at Sieradowo and Korzyslno which are situated 4.5 miles ESE and 8 miles E, respectively, of the river mouth.

Dzwirzyno, a resort, is fronted by a small fishing harbor. It lies at the mouth of Kanal Resko, 4 miles ENE of Rzeka Rega. A beacon stands near the shore about 0.5 mile E of the entrance.

9.21 Kolobrzeg (Kolberg) (54°11'N., 15°33'E.) (World Port Index No. 28800), a loading place and fishing center, lies at the mouth of the Parseta River. This river discharges into the Baltic Sea, 10 miles ENE of the Rzeka Rega.

Kolobrzeg Entrance

Ice.—Ice usually does not constitute an obstacle to shipping in the vicinity of the port. Freezing may occur during January, but for only about one week. During severe winters with onshore winds, the harbor is sometimes closed by drift ice, but it clears out quickly with offshore winds.

Tides—Currents.—The coastal currents set E or W across the harbor entrance, depending on the wind direction. They attain rates of 3 knots during prolonged periods of stormy weather. The river current sets outward at a rate of about 1 knot and reaches a rate of 3 knots after continuous rainfalls. The water level generally varies up to about 0.3m above and below the mean level. Gales from the N raise the level as much as 1m and gales from the S lower it an equal amount.

Depths—Limitations.—There is a total of 2,500m of berthage, with depths of 2 to 6m alongside. Generally, vessels are restricted to a maximum length of 75m, a maximum beam of 13m, and a maximum draft of 4.7m. Vessels up to 2,000 dwt have been accommodated in the harbor.

Aspect.—A light is shown from a prominent tower, 30m high, standing near the root of the E breakwater.

Conspicuous landmarks include Kolobrzeg Cathedral, with its truncated tower, standing 1 mile SSE of the head of the E breakwater; a grain elevator standing on the E side of the harbor; and a six-story building situated in the vicinity of the harbor. Prominent landmarks include an old fort which is formed

Kolobrzeg Light

by a circular structure and surmounted by a lighthouse; a barracks-like hotel situated close SE of the fort; and two pointed towers standing 0.2 mile E of the hotel.

Kol Outer Approach Lighted Buoy (54°12.1'N., 15°31.6'E.) is moored about 1 mile NW of the harbor entrance.

Pilotage.—Pilotage is compulsory for vessels over 150 gt. Requests for pilotage should be sent at least 1 hour before arrival. Pilots may be contacted by VHF and board about 0.5 mile N of the harbor entrance.

Anchorage.—The best anchorage berth, in depths of 12 to 14m, lies with the church at Trzebiatow (54°04'N., 15°16'E.) bearing 228°. At night, anchorage may be obtained, in a depth of 12m, with the light bearing 133°.

Caution.—Vessels should not attempt to enter the harbor when heavy gales raise a sea in the entrance.

Attention should be paid to the current which sets across the harbor entrance; vessels should exercise care in order to avoid a sheer.

Several wrecks lie in the approaches to the port and may best be seen on the chart.

It is reported that prolonged stormy weather may cause silting within the port.

Anchoring and fishing are prohibited in an area, the limits of which are shown on the chart, lying centered 9 miles N of the harbor entrance.

A submarine cable extends seaward in a NW direction from the vicinity of the harbor.

9.22 The coast between Kolobrzeg and Darlowo, 34 miles ENE, is mostly low and sandy. It is backed by wooded spurs in places and by two large lakes in the vicinity of Darlowo. Several shallow streams lead from these lakes into the sea.

Gaski Light (54°15'N., 15°52'E.) is shown from a prominent tower with a dwelling, 15m high, standing on the coast amidst trees, 12 miles ENE of Kolobrzeg. A conspicuous church, with

Gaski Light

a spire, is situated near the foreshore, 3 miles E of the light.

A densely-wooded and prominent hill stands 5.5 miles inland, 12.5 miles ESE of Gaski Light. It rises to a height of about 140m and is surmounted by a lookout tower, 10m high, and a conspicuous monument.

Mielno (54°15'N., 16°03'E.), a coastal summer resort, lies 7.5 miles E of Gaski Tower. A dangerous wreck, marked by buoy, lies about 1.7 miles offshore, 9.5 miles NE of this resort.

Caution.—Several submarine cables extend seaward in a NW direction from the vicinity of Mielno and may be seen on the chart.

9.23 Darlowo (Rugenwalde) (54°26'N., 16°25'E.) (World Port Index No. 28790), a small harbor, lies at the mouth of the Wieprza River. It consists of several basins and is protected by two breakwaters.

Ice.—During normal winters, the river current keeps the harbor clear of ice. In severe freezing, ice usually forms in the roadstead or following N winds, blocks the harbor entrance. This can occur between the middle of February and the middle of March.

Tides—Currents.—The coastal currents set NE and SW across the harbor entrance, depending on the wind direction. With storms blowing parallel to the coast, these currents attain rates of 2 to 3 knots. Winds from between S and SE usually produce only a weak current. The river current depends on the wind and the water level, and usually flows outward. In the spring and during a thaw, the river current attains a rate of 4 knots. The water level usually varies up to 0.2m below and above the mean level. Gales from the N raise the water level as much as 1.5m and gales from the S lower it as much as 0.6m.

Depths—Limitations.—The harbor entrance is 38m wide and has a depth of 7m. A drawbridge spans the channel close inside the river mouth and has an opening, 14.9m wide.

There is 1,100m of total quayage with a depth of 4.5m alongside. Vessels are restricted to a maximum length of 75m and a maximum draft of 4m. The harbor is mostly used by coasters and fishing vessels. Vessels of up to 1,500 dwt have

been accommodated in the harbor.

Aspect.—A light is shown from a prominent tower, 21m high, standing near the root of the NE breakwater. A conspicuous church, with a pointed turret, stands 1.7 miles ENE of the light. Several prominent buildings and a grain elevator are situated near the harbor and may be identified from seaward. A prominent observation tower stands 0.5 mile W of the harbor.

Darlowo Light

Pilotage.—Pilotage is compulsory for all vessels over 150 gt. Pilots are available between 0600 and 2200; vessels must send an ETA at least 2 hours in advance. Pilots may be contacted by VHF and board in the roadstead off the harbor entrance.

Anchorage.—Anchorage can be taken, in a depth of 16m within the roadstead, about 1.5 miles NW of Darolo Light.

Caution.—Vessels should not attempt to enter the harbor when strong onshore winds raise a sea in the narrow entrance.

9.24 Jaroslawiec (54°32'N., 16°33'E.) lies 8.5 miles NE of Darlowo. The coast between is composed of sand dunes which are backed by hilly ranges rising 3 to 5 miles inland. At Jaroslawiec, the coast is formed by steep, white, and partly wooded cliffs. Jaroslaweic Light is shown from a prominent tower, 31m high, standing near a dwelling on the top of the cliffs.

A church, with a prominent steeple, stands 1 mile inland, about 2 miles SW of the light.

Jaroslawiec Light

From Jaroslawiec, the coast extends 11.5 miles ENE to Ustka and is mostly composed of high sand dunes. It is partly wooded and backed, in places, by lakes. Several high hills and church steeples are situated inland and are visible from seaward.

Stolpe Bank (54°55'N., 16°39'E.), an extensive bank, is known as Lawica Slupska to the Poles. It has a least depth of 7.8m and lies centered 24 miles NNE of Jaroslawiec Light.

9.25 Ustka (Stolpmunde) (54°35'N., 16°51'E.) (World Port Index No. 28770), a small commercial harbor, lies at the mouth of the Slupia River. It consists of several basins and is protected by two breakwaters, about 320m long, which extend almost parallel to each other.

Ice.—During normal winters, the port usually remains open, but drift ice may be carried into the harbor by offshore winds. In severe winters, ice may form for 2 to 3 weeks, but swells break it up and the outgoing river current quickly clears the harbor.

Tides—Currents.—The coastal currents set E or W across the entrance, depending on the wind direction. They attain rates of up to 2 knots with stormy weather. The outgoing river current is noticeable with offshore winds, and during spring thaws may attain a rate of 3 to 4 knots. Gales from between NW and NE raise the water level by about 1m; gales from between SW and SE lower it by about 1m.

Depths—Limitations.—There are depths of 5.5m in the entrance channel, which is 40m wide, and 4 to 5.2m in the river. Concrete quays line the river banks and provide 2.500m of berthage. The harbor is mostly used by coasters and fishing vessels. During normal weather conditions, vessels up to 58m in length, 11.5m beam, and 4.5m draft can be accommodated.

Aspect.—A light is shown from a conspicuous stone building with an octagonal tower, 22m high, standing near the root of the E breakwater. A beacon stands 2.5 miles WSW of the light. A conspicuous church, with a slender spire, stands 0.4 mile SSE of the light. Several chimneys and buildings stand on the E side of the harbor and are visible from seaward.

Ustka Light

Pilotage.—Pilotage is compulsory for vessels over 150 gt, vessels 40m in length and over, and all vessels carrying danger-

ous cargo. Pilots are available from 0600 to 2200; vessels should send a request for pilotage and an ETA at least 2 hours in advance. Pilots may be contacted by VHF and board about 1 mile NW of the harbor entrance.

Anchorage.—Anchorage can be taken, in depths of 12 to 14m, between 0.5 mile and l.3 miles NW of the breakwaters.

Caution.—It is inadvisable to attempt to enter the harbor with fresh to strong onshore winds as the heavy seas and coastal current tend to set vessels onto the breakwaters.

9.26 Rowek (Rowy) (54°40'N., 17°03'E.), a summer resort and fishing center, lies at the mouth of the Lubawa River, 8.5 miles NE of Ustka. The coast between Ustka and this resort consists of high dunes. The harbor is used by small craft and local knowledge is required. The harbor entrance is 12m wide and is indicated by a lighted range. A rocky patch, with a least depth of 4m, lies off the harbor entrance and is marked by a buoy. Several fishing craft, with nets and lines, may generally be encountered in the vicinity of this rocky patch. A power cable spans the entrance fairway and restricts vessels to an air draft of 6.8m.

Czolpino (54°43'N., 17°15'E.) is located 6.7 miles NE of Rowek. A light is shown from a prominent tower, 25m high, standing on a high sand dune, about 0.5 mile from the shore.

A conspicuous hill, 115m high, stands 3.7 miles SSW of the light and is surmounted by a beacon.

Czolpino Light

Leba (54°46'N., 17°33'E.), a shallow harbor, lies at the mouth of the Leba River, 11 miles ENE of Czolpino. This river forms the outlet for a lake which lies about 1 mile to the W. The harbor, formed by two moles, has an entrance 30m wide and is subject to silting. It is used by small craft and fishing boats with local knowledge. An outer approach lighted buoy is moored about 1 mile NNE of the entrance.

A church, standing in the town, and a castle, standing on a dune close E of the harbor, are prominent from seaward.

Stilo Light (54°47'N., 17°44'E.) is shown from a conspicuous tower, 33m high, standing on the summit of a sand dune ridge, 0.5 mile inland and 6.5 miles ENE of Leba. A tower, 13m high, stands near the coast to the N of this light.

A stranded wreck lies about 2 miles W of Stilo Light.

It was reported that several lighted dolphins are situated about 4 miles ENE of Stilo Light and extend up to 0.4 mile offshore.

Stilo Light

The coast extending 21 miles E from Stilo Light to Rozewie is wooded with beacons marking several of the higher sand dunes. A prominent church, with two towers, stands at Zarnowiec, situated 2.3 miles inland and 11 miles E of Stilo Light.

9.27 Rozewie (54°50'N., 18°21'E.), 54m high, is a precipitous headland. Rozewie Light is shown from a prominent tower, 29m high, standing on this headland. A disused light tower, 20m high, is situated close WNW of the light. Two prominent mills stand about 1 mile SW of Rozewie Light.

Rozewie Cap Oil Field (Oil Field B3) (55°29'N., 18°11'E.) lies centered about 40 miles N of Rozewie Light. Baltic Beta Oil Production Platform, equipped with racon, is located in this field and an SBM is moored 0.8 mile SSW of it. Several other platforms, some equipped with racons, are situated within this field. A submarine pipeline extending from this field to Wladyslawowo, 42 miles SSE, is best be seen on the chart.

A restricted area, with a radius of 2.5 miles, lies centered on the Baltic Beta Platform. Vessels are prohibited from entering this area without prior permission.

Caution—It has been reported a wreck with a depth of 16.9m lies in the center of a prohibited area. The prohibited area has a radius of 500m and lies about 9.6 miles NE off Rozewie Light.

An exploration area, the limits of which may best be seen on the chart, extends about 19 miles ESE from the oil field.

Gulf of Gdansk

9.28 The Gulf of Gdansk (Zatoka Gdanska), formerly known as the Gulf of Danzig, lies between Rozewie and Mys Taran, 57 miles E.

Ice.—Ice in the gulf appears in the latter half of December or in January, and usually clears about the middle of March. The harbors lying in the gulf are only rendered difficult to enter because of ice in very severe winters.

Tides—Currents.—The currents in the gulf depend largely on the strength and direction of the winds. In calm conditions, a weak current usually flows NW along the coast.

Rozewie Light

Rozewie Disused Light Tower

The water level in the gulf may vary by as much as 1m. Strong S winds cause the level to fall and strong N winds cause it to rise.

Regulations.—GDANREP, a mandatory ship reporting system, is in operation in the approaches to Gdynia/Gdansk. The following vessels are required to report to the Gulf of Gdansk Vessel Traffic Service (VTS):

1. All passenger vessels.
2. All vessels of 150 gross tons and over.
3. All vessels engaged in towing.

The VTS Center (call sign: VTS Zatoka Gdanska) can be contacted on VHF channels 16, 18, 20, 69, 70, and 71. The working languages are English and Polish.

The VTS area is bounded by the following positions:

a. 54°45.0'N, 18°32.6'E.
b. 54°45.0'N, 19°06.4'E.
c. 54°44.0'N, 19°08.1'E.
d. 54°43.1'N, 19°09.9'E.
e. 54°40.7'N, 19°15.0'E.
f. 54°36.2'N, 19°24.2'E.
g. 54°32.0'N, 19°31.0'E.
h. 54°27.5'N, 19°38.3'E.

All vessels navigating within the VTS area shall maintain a continuous listening watch on VHF channel 71. Vessels which have taken positions within a roadstead or the anchorage area of a port shall maintain a continuous listening watch on the appropriate channel for the Harbormaster of the port. Gdansk Harbormaster may be contacted on VHF channel 14; Gdynia Harbormaster may be contacted on VHF channel 12.

Zatoka VTS Center may be contacted by e-mail, as follows:

vts@umgdy.gov.pl
vtscentrum@umgdy.gov.pl

All vessels entering the VTS area, including those on passage through the area and not calling at a port, must send a Sailing Plan Report to the VTS Center when crossing the outer boundary.

The Sailing Plan Report must be formatted, as follows:

Designator	Information Required
A	Vessel name, call sign, and flag.
C or D	Position (C—latitude and longitude in a 4-digit group suffixed N and a 5-digit group suffixed E).
	Position (D—true bearing and distance from a prominent landmark).
E	True course (3 digits).
F	Speed (in knots and tenths—3 digits).
I	Destination and ETA (6-digit group of day of month, hours, and minutes in GMT/UTC time).
O	Maximum draft (4-digit group of meters and centimeters).
P	Cargo and brief details of any dangerous cargo.
Q or R	Q—Brief details of defects, damage, or deficiencies.
	R—Brief details of type of pollution or dangerous cargo lost overboard.
T	Agent or owner.
W	Total number of persons on board.
X	Any other appropriate information.

All vessels leaving the VTS area must report to the VTS Center when crossing the outer boundary. The report must include items designated A, C or D, I, and W from the above table.

All vessels must send a Position Report, which includes items designated A and C or D from the above table, when passing the following Reporting Points (see Directions):

1. Hel Lighted Buoy (Inbound and outbound—VHF channel 71).
2. ZN Lighted Buoy (Inbound and outbound—VHF channel 71).

3. GD Lighted Buoy (Inbound—VHF channel 12; outbound— VHF channel 71).
4. NP Lighted Buoy (Inbound—VHF channel 14; outbound—VHF channel 71).
5. PP Lighted Buoy (Inbound—VHF channel 14; outbound—VHF channel 71).

The following vessels bound for a port within the VTS area (or their agents) are required to send an ETA Report to the VTS Center in addition to the Sailing Plan Report:

1. All passenger vessels.
2. All cargo vessels of 150 gt and over.
3. All vessels, regardless of tonnage, carrying dangerous cargo or which, as a result of exceptional circumstances, present a risk of collision or of environmental pollution.

The ETA Report must be sent at least 24 hours prior to arrival (72 hours for tankers with dangerous cargo or non gas-free and 48 hours for gas-free tankers); at the time of leaving a previous port if the voyage is less than 24 hours; or as soon as the information becomes available if the port of call is unknown or changes during the voyage.

The ETA Report must be formatted, as follows:

Designator	Information Required
A	Vessel name, call sign, and flag.
G	Name of last port of call.
I	Destination and ETA (6-digit group of day of month, hours, and minutes in GMT/UTC time).
P	Cargo and brief details of any dangerous cargo.
T	Agent or owner.
U	Length, beam, tonnage, and type of ship.
W	Total number of persons on board.

All vessels must send a report to the VTS Center on discharge or possible discharge overboard of dangerous cargo, harmful materials, oil, or polluting substances.

All vessels transporting dangerous or polluting cargo must have the following information available:

1. The proper technical names, IMO classes, and quantities of the cargo.
2. Confirmation that there exists a list or manifest and a cargo plan giving details of the cargo and the distribution on the vessel.
3. The date of validity of the certificate of financial insurance (for tankers transporting more than 2,000 tons of oil cargo).

All vessels must send a report (ER) to the VTS Center regarding any incident or accident affecting the safety of navigation, the safety of the environment, or the safety of traffic.

The VTS Center broadcasts navigation and weather information in Polish at 0005, 0705, 1305, and 1905; in English at 0020, 0720, 1320, and 1920; and on request.

Two IMO-adopted Traffic Separation Schemes, for vessels proceeding to and from ports on the SW side of the Gulf of Gdansk, can best be seen on the chart. Note that Rule 10 of the 72 COLREGS applies in both schemes.

Directions.—If bound for Nowy Port, Gdansk, or Gdynia, vessels should steer for the seaward end of the TSS, which is situated about 6.5 miles NE of Hel Light (54°36'N., 18°49'E.). Vessels should proceed SSW for 5 miles, in the inward bound traffic lane, to Hel Lighted Buoy (54°35'N., 18°53'E.), which is moored about 2.7 miles ESE of Hel Light. They should then continue SW for 5 miles to the vicinity of GN Lighted Buoy (54°32'N., 18°48'E.). The inward bound traffic lane passes W of Hel Lighted Buoy.

If bound for Gdynia, vessels should steer a course of 271.7°from GN Lighted Buoy toward GD Lighted Buoy, moored 4.5 miles W, where the pilot embarks.

If bound for Nowy Port or Gdansk, vessels should steer a course of 221° from GN Lighted Buoy for 5.2 miles to NP Lighted Buoy (54°28'N., 18°42'E.). Vessels should then steer into the approach channel for the port or, if directed, proceed to the anchorage area.

Vessels bound for Port Polnocny should steer for the seaward end of the TSS, which is situated about 10 miles ENE of Hel Light (54°36'N., 18°49'E). They should proceed SSE for about 4 miles, in the inward bound traffic lane, to ZN Lighted Buoy (54°37'N., 19°06'E.), which is moored about 10 miles E of Hel Light. Vessels should then continue SSW for 12 miles to the vicinity of ZS Lighted Buoy (54°27'N., 18°58'E.) and WSW for about 2 miles to PP Lighted Buoy (54°26'N., 18°54'E.). The inward bound traffic lane passes W of ZN Lighted Buoy and ZS Lighted Buoy.

Unless proceeding to the anchorage, vessels should steer WSW for about 2.7 miles from the vicinity of PP Lighted Buoy to PP1 Lighted Buoy, which marks the seaward approach to the dredged entrance channel.

Two-way traffic lanes join the route described above between Hel Lighted Buoy and ZN Lighted Buoy, between GN Lighted Buoy and ZS Lighted Buoy, and between GD Lighted Buoy and NP Lighted Buoy. Vessels transiting between the approaches to Gdynia and the approaches to Gdansk should use these lanes or navigate in the main traffic lanes of the TSS.

Caution.—Former mine danger areas, in which vessels are cautioned against anchoring or fishing, lie within the Gulf of Gdansk and may best be seen on the chart. For additional information concerning mine danger areas, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Oil platforms and associated installations may be encountered in the approaches and off the shores of the gulf.

Numerous fishing craft may be encountered in the gulf during the spring and autumn. Seine nets, over 1 mile long, may be in use and are marked floats, flags, and lights.

Vessels are cautioned not to rely on floating aids in the approaches to the gulf during ice periods as they may be changed or removed.

Firing exercise areas, within which fishing and navigation are temporarily prohibited, lie in the Gulf of Gdansk. For further information concerning these areas, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

It has been reported that two mooring buoys have been established in the NE approaches to the gulf, in a position lying about 23 miles NW of Mys Taran (54°58'N., 19°59'E.).

9.29 Gulf of Gdansk—Northwest side.—The coast extends SE for 4 miles from Rozewie to the root of the Hel Peninsula (54°40'N., 18°45'E.). It then extends S to Gdynia and is irregular and steep. The shore is formed of bare cliffs fronted by a narrow beach.

A conspicuous hill, 68m high, stands 1 mile SE of Rozewie and is surmounted by a tower.

Wladyslawowo (54°48'N., 18°25'E.), a small harbor, lies at the root of the Hel Peninsula and is mostly used by fishing vessels. It is protected by two breakwaters, 400m and 700m long, which form an entrance, 70m wide.

The navigable depth in the entrance to the harbor is 3.5m; however, it is recommended that the Harbor Master be consulted before entering or leaving this harbor because depths are variable between 2.5 and 6m with the shallowest depths along the N mole.

Vessels of up to 75m in length and 4m draft can be accommodated. There are five wharves, 140 to 300m long, with depths of 4.5 to 5.5m alongside.

An outer approach lighted buoy is moored about 0.7 mile ENE of the harbor entrance. A prominent church, with a spire, stands in the town and a conspicuous fishery building, with a slender tower, is situated 0.4 mile ESE of it.

9.30 The **Hel Peninsula** (Mierzeja Helska) (54°40'N., 18°45'E.) extends for 18 miles and its seaward side is fringed by shoals of hard sand and fronted by a narrow beach.

A conspicuous church, with a spire, stands at Kuznicka, 7.2 miles SE of Wladyslawowo. Another conspicuous church, with a tower and a cupola, stands at Jastarnia, 11 miles SE of Wladyslawowo.

Jastarnia Light (54°42'N., 18°41'E.) is shown from a prominent tower, 13m high, standing 0.5 mile SE of the church. It is reported that another prominent tower stands close NW of the light.

Jastarnia Light

On the seaward side of the peninsula, a line of wooded dunes extends along the whole length. From the vicinity of Jastarnia, a dense forest extends to the SE end.

Hel Light (54°36'N., 18°49'E.) is shown from a prominent tower, 38m high, standing close to the S extremity of the peninsula. Several deviation beacons, for the adjustment of compasses, are situated in the vicinity of the light.

Hel Light

Gora Szwedow Beacon, a framework tower, 17m high, stands about 1.5 miles N of Hel Light and is prominent.

9.31 Hel (54°36'N., 18°48'E.), a fishing harbor and summer resort, lies on the W side of the S extremity of the peninsula. The outer part of the harbor is formed by two breakwaters and is sheltered from N and W winds. The inner part is enclosed by two moles which form an entrance, 50m wide. A small naval harbor lies 1 mile NW of the fishing harbor and is formed by two jetties. Vessels with drafts up to 3.7m can enter Hel. The main quay is 146m long and has a depth of 5m alongside the N end.

Lighted Buoy HL-S is moored close off the S end of the peninsula and marks the edge of the coastal shoal.

Zatoka Pucka forms the NW part of the Gulf of Gdansk. This bay is entered between the S end of the Hel Peninsula and Cypel Oksywski, a bluff, located 9 miles WSW. Several small rivers discharge into the W side of the bay. The outer part of the bay has depths of 12 to 55m which decrease gradually toward the mainland and the head. During onshore storms, excellent anchorage may be obtained, in depths of 11 to 40m, within the bay, but clear of the submarine cables.

Caution.—A restricted area, within which foreign vessels are prohibited, lies E and N of Hel Light. It extends up to 2.7 miles offshore and may best be seen on the chart.

Several submarine cables extend across the entrance to Zatoka Pucka and may be best seen on the chart.

Numerous wrecks, obstructions, and foul patches lie in Zatoka Pucka and may be best seen on the chart.

Several protected fish spawning areas lie in Zatoka Pucka and may best be seen on the chart.

Several buoys are periodically moored across the entrance to Zatoka Pucka; they are for fishery purposes and have no navigational significance.

A measured distance, marked by beacons and buoys, lies off the S side of the peninsula, about 2 miles NW of Hel.

It is reported that most of the lighted buoys moored in Zatoka Pucka are removed during the winter.

9.32 **Jastarnia** (54°42'N., 18°41'E.), a small fishing harbor, lies 7.5 miles NW of Hel Light. It is approached through a channel, marked by a lighted range, and entered through an entrance, 60m wide. An outer approach lighted buoy is moored about 1 mile S of the harbor entrance and a lighted beacon stands on the W side of the fairway. It has been reported there is a depth of 3.9m on the range line close S of the harbor entrance. The harbor has general depths of 4.5 to 5m and there are depths of 2.5 to 4.4m alongside the quays.

Kuznica (54°44'N., 18°35'E.), a small and shallow fishing harbor, lies 4 miles NW of Jastarnia. It is approached through a channel indicated by a lighted range. An outer approach lighted buoy is moored about 1 mile SE of the harbor entrance. A buoy is moored about 3 miles SE of the harbor entrance and marks the W edge of the coastal shoal in this vicinity.

Caution.—Vessels should stay well clear of the dangerous wreck lying 1 mile SSE of the safe water KUZ Lighted buoy (54°44.0'N., 18°35.5'E.).

Puck (54°44'N., 18°25'E.), a small and shallow harbor, lies on the NW side of Zatoka Pucka, opposite Kuznica. It is used by fishing boats and pleasure craft. A buoyed channel, with a depth of 3m, leads across the shoals lying in the approaches. A church standing in Puck has a prominent tower which is visible from all parts of the bay. Another church situated at Swarzewo, 2.3 miles N of Puck, has a prominent spire that can be easily identified.

A beacon stands on Cypel Rzucewski, a wooded point, located 2.7 miles SE of Puck. A castle, with a conspicuous tower rising above the woods, and the conspicuous chimney of a brickworks stand close S of the beacon.

Cypel Rewski, a narrow tongue of land, extends 0.8 mile NNE from a point located 4 miles SSE of Cypel Rzucewski. Rybitwia Mielizna, a drying shoal, extends 4.5 miles SW from a point located close S of Kuznica. A channel leads between this narrow tongue of land and the S end of the shoal.

Cypel Oksywski, a bluff, forms the W entrance point of the bay. It is located 6 miles SSE of Cypel Rewski and also forms the N entrance point of Gdynia.

Gdynia (54°32'N., 18°33'E.)

World Port Index No. 28740

9.33 Gdynia, a large port, lies in the SW part of the Gulf of Gdansk and has extensive shipbuilding facilities. It also serves as a transshipment center for inland cargo. The harbor extends 2 miles S of Cypel Oksywski and is fronted by detached breakwaters. It is sheltered from NW seas and winds by the Hel Peninsula.

Ice.—During most winters, the roadstead and the port are usually free of ice. Only during prolonged freezing weather does ice form in the harbor basins. Winds of gale force may sometimes move drift ice from other parts of the bay into the vicinity of the harbor and render navigation difficult. If necessary, icebreakers keep the approach channel and the harbor open. The water level may vary by as much as 0.9m. It is raised by N winds and lowered by S winds.

Tides—Currents.—The tides are not significant. The surface currents depend on the wind direction and a N flow predominates. With N and NE winds, the current flows S and attains rates of up to 2 knots.

Depths—Limitations.—The approach channel is 150m wide and dredged to a depth of 14m. Generally, vessels up to 245m in length and 13m draft can enter the harbor.

Commercial vessels must enter the harbor through the main (center) entrance, which is 150m wide. They are prohibited from using the N entrance.

The port has 5.8 miles of total commercial quayage with depths of 7.5 to 16m alongside. There are facilities for general cargo, petroleum, LPG, bulk, ore, container, passenger, and ro-ro vessels.

In addition, there are extensive repair and building facilities. Generally, vessels of up to 200,000 dwt can be constructed in the port, but vessels of up to 400,000 dwt can be constructed by using sectional building methods.

Details for the principal berths are listed in the table titled **Gdynia—Berth Information**.

Gdynia—Berth Information		
Wharf	**Len18gth**	**Draft (Max)**
Outer Harbor		
French Wharf	513m	13.0m
Fuel Base Wharf	250m	10.1m
Port Channel	2,963m	10.3m
Finnish Wharf	208m	9.5m
Slovakian Wharf	182m	8.9m
Norwegian Wharf	264m	7.8m
Northern Breakwater	368m	9.5m
South Channel	1,296m	8.1m
Engineer Wharf	252m	7.2m
Iceland Wharf	196m	7.4m
Basin No. I		
Pomerania Wharf	626m	6.9m
President Wharf	263m	7.8m
Cutter Wharf	630m	7.1m
Basin No. II		
English Wharf	662m	8.5m
Silesian Wharf	467m	8.5m
Basin No. III		
Swedish Wharf	713m	10.5m
Danish Wharf	387m	6.5m
South Pier	112m	7.4m
North Pier	116m	5.7m
Belgian Wharf	118m	6.8m
French Wharf	112m	8.8m

Gdynia—Berth Information		
Wharf	**Len18gth**	**Draft (Max)**
Dutch Wharf	500m	10.8m
Basin No. IV		
Polish Wharf	1,118m	11.2m
Rotterdam Wharf	301m	7.7m
Indian Wharf	1,009m	11.3m
Basin No. V		
U.S. Wharf	819m	8.7m
Czech Wharf	216m	9.3m
Romanian Wharf	879m	9.7m
Basin No. VI		
Hungarian Wharf	252m	9.4m
Basin No. VII		
Helskie I Wharf	798m	10.4m
Helskie II Wharf	178m	10.4m

Aspect.—The breakwaters protecting the port extend S for about 1.5 miles and provide three entrances. Numerous concrete boulders lie close to the seaward side of the main breakwater. The main harbor entrance fairway is marked by lighted buoys and indicated by a lighted range, which may best be seen on the chart.

The low sandy coast in the vicinity of the port is backed by wooded hills. Prominent landmarks include several radar masts standing close N of the port; the port authority building with a control (signal) tower, 28m high, standing on the S side of the entrance to the inner harbor; a grain elevator standing 0.5 mile W of the signal tower; and a lattice tower standing at the meteorological office, 0.8 mile S of the signal tower. An illuminated cross surmounts a hill, 48m high, which rises about 0.3 mile S of meteorological office. This cross is reported to be visible at night from the entire gulf.

Gdynia—Outer Harbor

Gdynia—Inner Harbor

Gdynia—Bulk Terminal

Gdynia—Passenger Terminal

Pilotage.—Compulsory for the following vessels:

1. Vessels of 60m and over in length.
2. All vessels carrying hazardous cargo.
3. All vessels not gas free.
4. Vessels overloaded or exceeding trim.
5. Vessels with a dangerous list.
6. Damaged vessels which may cause environmental pollution.

Pilots can be contacted by VHF and board vessels with a draft exceeding 9m or carrying hazardous cargo in the vicinity of GD Lighted Buoy (54°32'N., 18°40'E.), which is moored about 3.5 miles E of the harbor entrance, or at the appropriate

Courtesy of Mary Sadeki.

Gdynia—Port Entrance

Gdynia—General Cargo Basin

anchorage. Pilots board vessels with a draft of 9m and less before G1 Lighted Buoy/G2 Lighted Buoy (54°32'N., 18°35'E.).

Vessels should send a request for pilotage and an ETA as soon as possible but not later than 2 hours prior to arrival at the boarding place. The message, which may be sent via Gdynia Radio, who will coordinate with the pilot station, should include the vessel's name, length, beam, summer draft, maximum draft, and ETA.

A confirmation message should be sent to the pilot station 1 hour before arrival. Inbound vessels must establish contact by

Gdynia—Port Authority Control Tower

VHF with the pilot station prior to entering the pilotage district.

Contact Information.—Pilots can be contacted, as follows:

1. VHF: VHF channels 12 or 16
2. Telephone: 48-58-772-6300
   48-58-772-6301
   48-88-8110634 (mobile)

3. Facsimile: 48-58-772-6304
4. E-mail: dvsp@unipil.pl

The Harbormaster (Duty Officer) can be contacted, as follows:

1. Telephone: 48-58-621-0705
   48-58-355-3646
2. Facsimile: 48-58-620-0591
3. E-mail: kapitanat.gdynia@ungdy.gov.pl

Regulations.—For details of the Vessel Traffic Service (VTS) system operating in the approaches, see Regulations for the Gulf of Gdansk in paragraph 9.28.

A speed limit of 7 knots is enforced in the roadstead.

In the South Channel, with E winds greater than Force 3, the harbormaster may place restrictions on vessels with lengths greater than 150m.

The N harbor entrance is only for the use of naval vessels.

Compulsory tug requirements are in force for vessels entering the port, as follows:

1. Vessels over 90m in length must employ one tug.
2. Vessels over 131m in length or 8m draft must employ two tugs.
3. Vessels over 166m in length or 9m draft must employ three tugs.
4. Vessels over 200m in length must employ four tugs.
5. An additional tug may be added by the harbor authorities for vessels carrying dangerous and/or inflammable cargo.

Anchorage.—There are three designated anchorage areas which may best be seen on the chart. Anchorage Area No. 1 is centered about 1 mile E of the main breakwater on the S side of the approach fairway. It has depths of 10 to 15m, sand and shells, and can be used by vessels with drafts of less than 9m. Anchorage Area No. 2 lies close E of Anchorage Area No. 1 and can be used by vessels with drafts of 9m and over. Anchorage Area No. 3 is centered about 5 miles E of the main breakwater and can be used by tankers.

Caution.—Several submarine cables lie in vicinity of the harbor and may best be seen on the chart.

Several restricted areas lie N of the main entrance fairway and may best be seen on the chart.

A spoil ground area, the limits of which are shown on the chart, lies about 5 miles ENE of the harbor entrance and is marked by a lighted buoy.

The lighted offshore production platform **CALM Slawe** (55°22.9'N., 18°44.7'E.), located about 48 miles N of Gdynia, lies within a security zone, with a radius is 2.2 miles centered on position 55°23'N,18°42'E.), in which anchoring and fishing are prohibited.

9.34 Sopot (54°27'N., 18°34'E.), a resort, is located 4.5 miles S of Gdynia. A pier fronts the town and extends about 500m seaward. A light is shown from a tower surmounting a building situated close to the root of the pier. A prominent church, with a pointed tower, stands 0.3 mile SW of the light. A prominent hotel, with a green-roofed cupola, and a prominent tower stand close NW and 0.5 mile SE, respectively, of the root of the pier. Two conspicuous radio masts stand on a hill which rises close N of the town.

Cypel Redlowski, a prominent bluff, is located 2.3 miles N of Sopot. Orlowo, situated 0.7 mile S of the bluff, is fronted by a pier which extends 240m seaward. A conspicuous long building stands on the beach in the vicinity of the pier. It is reported that a submarine concrete retaining wall is being constructed close offshore between Orlowo and Cypel Redlowski.

Sopot Light

Gora Donas Beacon (54°28'N., 18°26'E.) stands on a hill, at an elevation of 206m, about 5 miles WSW of Cypel Redlowski and is prominent from seaward.

Caution.—A restricted area, which may best be seen on the chart, extends up to 1.5 miles from the shore between Gdynia and the vicinity of Gdansk. This area is a fish sanctuary and is closed to normal coastal navigation.

Gdansk (54°21'N., 18°40'E.)

World Port Index No. 28710

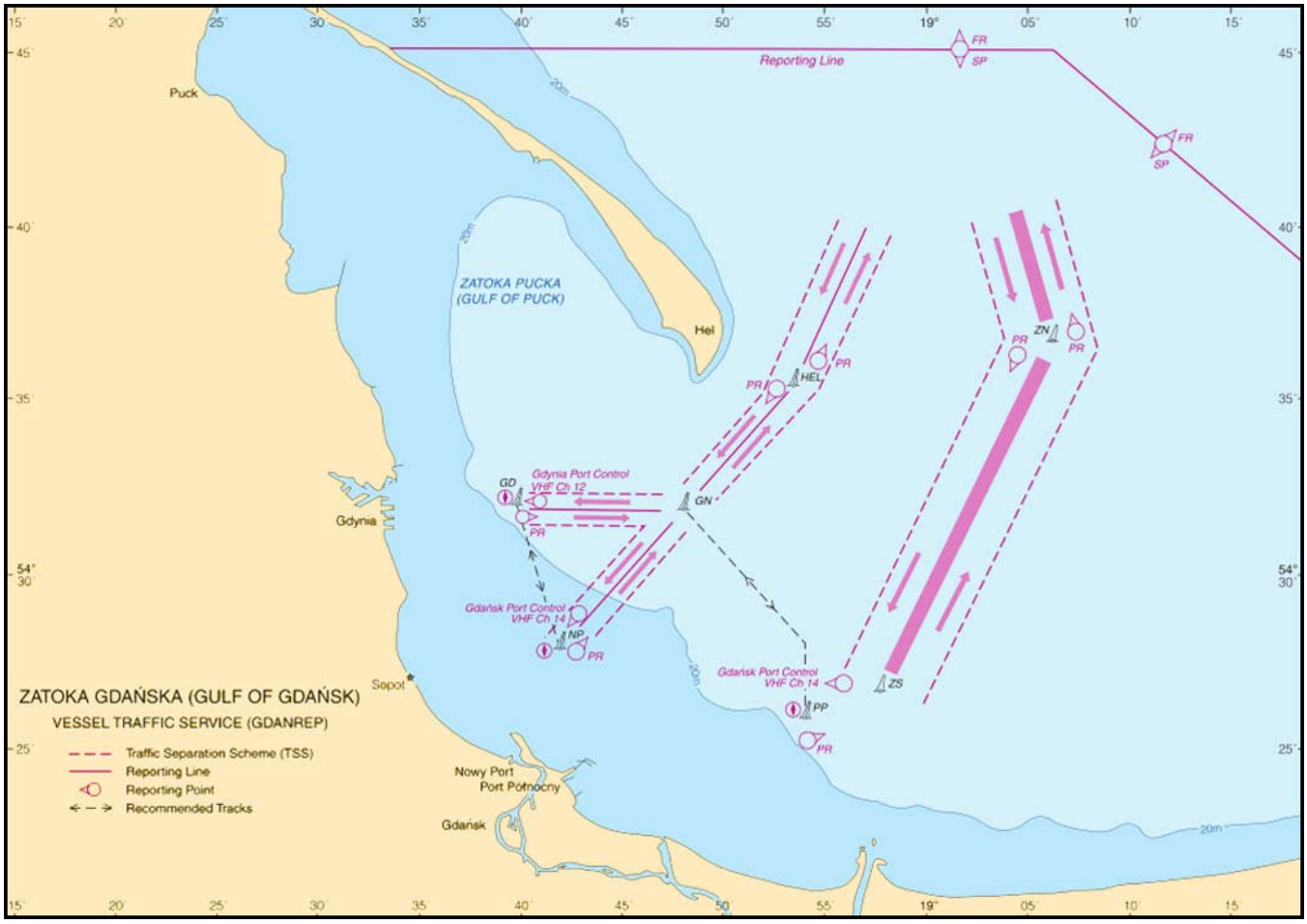
9.35 Gdansk, an extensive port, includes Nowy Port, the inner harbor area; and Port Polnocny (Northern Port), a bulk and oil terminal. The port lies at the W end of the W branch of the Rzeka Wisla, formerly known as the River Vistula. The W branch is called the Martwa Wisla.

The main port is entered between the W breakwater, which is very short, and the E breakwater which is comparatively long. The town of Nowy Port stands on the SW side of Kanal Portowy, an artificial extension of the river, which now forms the main harbor. The city of Gdansk, known to the Germans as Danzig, is situated on both banks of the river to the S of Nowy Port. Port Gdansk consists of quayed river banks and several basins. It is an extensive shipbuilding and repair center. The port also serves as a transshipment terminal and is connected to the inland waterway system.

Port Polnocny (Northern Port) is protected by a main breakwater, which extends about 1 mile ENE from a section of reclaimed land fronting the coast, and a detached breakwater.

Winds—Weather.—The port is sheltered by the shores of the bay and from the prevailing NW and W winds by the Hel Peninsula. A breakwater, situated at the harbor entrance, provides partial protection from rough seas and prevents the movement of silt into the river mouth. Gales from the N can raise a high sea in the entrance, making entry hazardous at times.

Ice.—Prolonged freezing weather accompanied by onshore winds sometimes causes ice to form in the roadstead and off the harbor entrance. Offshore winds quickly move the ice out to sea. Shipping is only hindered during severe winters, but icebreakers keep the channels open unless unusual conditions prevail.



Gulf of Gdansk Vessel Traffic Service

Gdansk—Port Polnocny (Northern Port)

Tides—Currents.—The tidal current is negligible. The surface currents depend on the wind direction. At the entrance, a current flowing W occurs with E winds and a current flowing E occurs with W winds. These currents attain average rates of 1 knot, but have been reported to attain a rate of 2 knots at times. During calm weather, a slight current flowing NW is caused by the Rzeka Wisla entering the gulf. This current always flows seaward, even with a strong NW wind, and attains a rate of less than 1 knot.

The water level may vary as much as 1.6m above and 1.1m below the mean level. A sluice separates the port from the main channel of the river and silting is not a major problem.

Depths—Limitations.—There is 6,600m of total commercial quayage with depths of 6.8 to 15.2m alongside. There are facilities for general cargo, bulk, timber, tanker, passenger, container, and ro-ro vessels. The port is equipped with a new ro-ro floating berth which can operate at every general cargo quay. In addition, there are extensive repair facilities with a floating dry dock. Oil drilling rigs are also serviced here.

The river entrance is limited to vessels up to 225m in length, 30m beam, and 10.2m draft.

Limitations for vessels carrying particular cargo are, as follows:

1. Vessels with bagged goods are limited to a maximum draft of 9.75m and a maximum length of 190m.
2. Tankers carrying liquid fuel are limited to a maximum draft of 9.45m and a maximum length of 180m; tankers carrying edible oils, etc., are limited to a maximum draft of 7.9m and a maximum length of 150m.

3. Vessels carrying timber are limited to a maximum draft of 7.6m and a maximum length of 140m.

At Port Polnocny (Northern Port), the bulk coal and ore terminal can handle vessels up to 300m in length and 15m draft.

The Liquid Fuel Terminal consists of an L-shaped jetty, a main platform, and four dolphins. The jetty can be used by vessels up to 305m in length and 15m draft.

An approach channel leading to Port Polnocny is entered 2.5 miles WSW of the W end of the TSS. It is 250m wide and has a dredged depth of 17m.

The principal berths at Nowy Port (54°25'N., 18°40'E.) (World Port Index No. 28720), with the maximum allowable alongside draft, are listed in the table titled Nowy Port—Berth Information.

Nowy Port—Berth Information		
Wharf	**Length**	**Draft (Max)**
Wladyslawa IV Basin		
Western Wharf	70m	3.9m
WOC-I Wharf	640m	9.4m
WOC-II Wharf	570m	9.4m
Port Channel		
Capt. Ziolkowskiego Wharf	125m	6.2m
Oliwskie Wharf	600m	10.2m
Five Pipes Wharf	370m	7.3m
Grain Wharf	660m	7.4m
Wislane Wharf	1,160m	10.2m
Przemyslowe Wharf	500m	7.9m
Szczecin Wharf	275m	9.9m
Westerplatte Wharf	1,170m	8.5m
Polish Mail Wharf	315m	10.1m
Port Free Zone	1,070m	8.4m
Ferry Terminal	130m	6.5m
Gorniczy Basin		
Coal Wharf	870m	8.6m
Administration Wharf	125m	4.9m
Ore Wharf	744m	10.2m
Kaszubski Canal		
Chemical Wharf	270m	8.4m
Industrial Wharf	665m	6.4m
Sulphur Wharf	665m	10.2m

The principal berths at Port Polnocny (Northern Port) 54°24'N., 18°43'E.) (World Port Index No. 28715), with the maximum allowable alongside draft, are listed in the table titled **Port Polnocny—Berth Information**.

A Laser Docking System is located at the Ore Terminal. It displays the lateral distance (in meters) of the vessel from the dolphin docking line and the vessel's closing speed (in centimeters/second). In addition, speed is indicated, as follows:

1. Green light—safe speed.
2. Yellow light—excessive speed.
3. Red light—exceeding the safe speed limit.

The specifications of this system can be obtained from the pilot.

Aspect.—A dredged channel, entered 2.5 miles NNE of the breakwater, leads to the main harbor entrance. It is marked by lighted buoys and indicated by lighted ranges. A conspicuous tower stands at Oliwa, 2.7 miles W of the harbor entrance. A church, with a conspicuous tower, and a conspicuous long white building stand close to the shore, 1 mile W of the harbor entrance.

Port Polnocny—Berth Information		
Wharf	**Length**	**Maximum Draft**
Liquid Fuel Terminal (four berths)	1,900m	9.6 to 15.0m
Coal Terminal	765m	15.0m
Ore Terminal	600m	15.0m
LPG Terminal	220m	9.5m

Gdansk—Passenger Terminal (Oliwskie Quay)

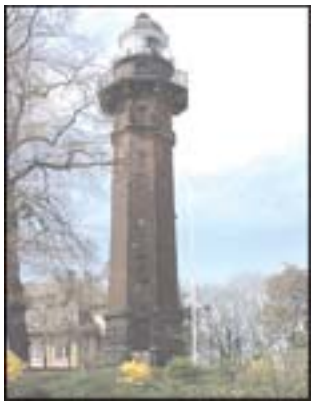
Gdansk—Container Terminal (Szczecinskie Quay)

A prominent disused light tower, 37m high, stands on the W side of the harbor, 0.2 mile S of the W breakwater.

A prominent war memorial, 24m high, stands on a mound at the E side of the harbor, 0.2 mile E of the disused light tower. It

Gdansk—Bulk Terminal (Rudowe Quay)

Gdansk—Port Polnocny Coal Terminal



Gdansk Disused Lighthouse

is in the form of a sword hilt thrust into the ground and is floodlit at night.

A prominent church, with twin spires, stands on the W side of the river, 0.5 mile SE of the memorial.

Wisloujscie Fort, with a prominent tower, stands on the E side of the river, 0.3 mile S of the church.

The approach fairway leading to Port Polnocny (Northern Port) is marked by lighted buoys, lighted beacons, and a lighted range.

Pilotage.—Pilotage is compulsory for the following vessels:

1. Vessels 50m and over in length.
2. All vessels carrying dangerous cargo.

Gdansk War Memorial

Gdansk—Port Polnocny Harbor Control Tower

3. Vessels overloaded.
4. Damaged vessels that may cause pollution to the environment.

A request for pilotage and an ETA should be sent at least 2 hours in advance. Pilots can be contacted by VHF. Pilots for Nowy Port board near Lighted Buoy NP (54°27.7'N., 18°41.4'E.); pilots for Port Polnocny board near Lighted Buoy PP (54°25.9'N., 18°53.3'E.).

The port may be contacted by e-mail (kpgdan@umgdy.gov.pl).

Regulations.—For details of the Vessel Traffic Service and reporting system operating in the approaches, see Regulations for the Gulf of Gdansk in paragraph 9.28.

Entry and departure are controlled by the port authorities and permission must be obtained before proceeding into the port or anchoring in the roadstead.

All vessels over 2,000 gt entering the port are required to use the service of tugs.

Vessels carrying explosives or dangerous cargo are not allowed to enter the port at night.

It is customary for vessels entering the port to salute, by dipping their flag, when passing the war memorial.

Anchorage.—There are five designated anchorage areas in the roadstead which may best be seen on the chart.

Anchorage Area No. 1 is designated for small vessels with drafts of up to 9m. Anchorage Area No. 2 is designated for vessels with drafts of up to 10.5m draft; and Anchorage Area No. 3 is designated for vessels with drafts of up to 12m. Anchorage Areas No. 1, No. 2, and No. 3 may be used by vessels of up to 225m in length.

Anchorage Area No. 4 is for the use of bulk carriers with drafts of up to 16m. Anchorage Area No. 5 is for the use of large tankers with drafts of up to 19.5m.

Gdansk—Wisloujscie Fort

Caution.—Vessels should not approach close to the E breakwater head as depths in the vicinity are reported to be less than shown on the chart.

Several lie across the harbor area and may best be seen on the chart.

Several overhead power cables, which may best he seen on the chart, span the river and have a minimum vertical clearance of 61m.

Ferries cross the river at several points and the landing places are marked by beacons.

A spoil ground area, the limits of which are shown on the chart, lies about 8 miles NE of the harbor entrance and is marked by a lighted buoy.

An isolated shoal patch, with a least depth of 8.4m, lies about 0.5 mile ENE of the entrance to the main fairway channel and is marked by a lighted buoy.

An isolated shoal patch, with a least depth of 11m, lies close S of GP Lighted Buoy. It is located about 1 mile E of the entrance to the Port Polnocny approach channel and is marked by a lighted buoy.

Due to the narrowness of the river, vessels proceeding upriver must turn around in the basin lying off the entrance to Basen Ostrowica I (54°23'N., 18°39'E.), before berthing.

Vessels should stay clear of a wreck with a depth of 16.9m which is in the center of a prohibited area with a radius of 500m at position 54°56.0'N, 18°31.7'E.

9.36 Wisla Smiala (54°23'N., 18°47'E.), lying 2.5 miles SE of Port Polnocny, is the E outlet of the Martwa Wisla. The river entrance is protected, on the E side, by a breakwater and has a depth of 3.4m.

Local knowledge is advised and it is dangerous to enter with strong N winds. A lighted buoy is moored about 1.2 miles N of the entrance and marks the NE edge of the coastal bank. The river is entered by local small craft and fishing vessels with drafts of up to 2.5m.

Przekop Wisla (54°22'N., 18°57'E.) is the principal outlet of the Wisla River. Due to the outflow, there is considerable silting in the mouth of the river. The banks at the entrance and the channel leading from seaward are also subject to frequent changes. Shallow depths extend about 1 mile seaward from the mouth. A lighted buoy is moored about 0.7 mile N of the river mouth and marks the entrance to the approach channel. The entrance has a depth of 2m and is used by small craft and fishing vessels, but up-to-date local knowledge is required.

A stranded wreck is reported to lie at the E side of the river mouth. A dune, which is 33m high and rises about 2 miles WSW of the river mouth, is surmounted by a prominent beacon.

Mikoszewo, a fishing village, stands 1.5 miles S of the river mouth, on the E side of the river. Swibno, another fishing village, stands on the W side of the river. The Wisla River, to the S of Swibno, is connected with the inland waterway system which extends W to Gdansk and E to Frisches Haff.

Krynica Morska Light

9.37 Gulf of Gdansk—East side.—Mierzeja Wislana (Baltiyskaya Kosa) (54°25'N., 19°35'E.) forms the low section of coast, less than 1 mile wide, which curves gradually NE for about 30 miles to Baltiysk. This narrow section of land rises to heights of between 15 and 30m in places and forms the NW side of Zalew Wislany.

Krynica Morska Light (54°23'N., 19°27'E.) is shown from a prominent tower, 27m high, standing on a dune.

The border between Poland and Russia lies about 8 miles NE of this light and is marked by lighted beacons.

Shchukinskiy (Scukinskiy) Light (54°31.6'N., 19°44.5'E.) is shown from a framework tower, 29m high, standing 5.5 miles NE of the border.

Caution.—A restricted area, within which anchoring and fishing are prohibited, lies between the border and Mys Taran

(54°58'N., 19°59'E.). It extends up to 12 miles offshore and may best be seen on the chart.

A mine training area, the limits of which are shown on the chart, lies 9 miles NW of Shchukinskiy Light. Anchoring and fishing are prohibited within this area and vessels are recommended not to navigate within it.

Baltiysk (Kaliningrad) (54°38'N., 19°54'E.)

World Port Index No. 28680

9.38 Baltiysk, the site of a naval base, lies on the E side of the Gulf of Gdansk, at the N end of Baltiskaya Kosa (Mierzeja Wislana). It is situated at the S end of the peninsula which forms the W side of Primorskiy Zaliv (54°40'N., 20°00'E.), a shallow bay lying adjacent to the port.

Baltiysk is the outport for Kaliningrad (Konigsberg) and has little commercial importance. Vessels transit to Kaliningrad through a canal which extends across the N part of Kaliningradskiy Zaliv.

Kaliningrad (54°42'N., 20°29'E.) (World Port Index No. 28690), situated 20 miles E of Baltiysk, stands on both banks of the Reka Pregolya, about 5 miles from the river mouth. It is a river port, with several basins, and is connected to the inland waterway system.

Winds—Weather.—Gales from NE through E to SW may lower the water level by as much as 1.2m. Opposing winds may raise the level by as much as 1.8m, but such large fluctuations are unusual. Winds in the Baltic Sea and a heavy outflow from inland rivers influence the water level in this vicinity.

Ice.—The port is generally ice free, but under extreme conditions some ice may appear in the canal between December and March. The Port Authority may employ tugs for clearing the fairway. Due to the strong outgoing currents, the port entrance seldom freezes over. During the spring thaw, ice conditions, lasting 3 to 4 days, sometimes make the entrance hazardous for normal port operations.

Tides—Currents.—The tides are negligible. Gales from between SW and NW cause a current to set to the N at a rate of up to 4 knots along the seaward side of Mierzeja Wislana. This current meets the outbound current flowing into the Baltic Sea near Baltiysk and raises a rough sea off the harbor entrance. Gales from between NW and NE cause a current to flow to the S across the harbor entrance. Currents flowing in and out of the harbor fairways depend on the wind force and direction and are very variable during each day. When N winds are blowing in the upper part of the Baltic Sea and S winds are blowing in the vicinity of Baltiysk, a strong inward current is reported to flow into the port.

Depths—Limitations.—The approach channel, up to about 0.5 mile seaward of the breakwaters, has a least depth of 10.3m. The entrance channel, leading between the breakwaters, has a controlling depth of 9.5m. The harbor fairway leading to the principal basins has a controlling depth of 9.1m.

The Kaliningradskiy Morskoy Kanal, 17.5 miles long, leads from Baltiysk to the harbor at Kaliningrad and has a controlling depth of 9m. The canal is separated from Kaliningradskiy Zaliv for most of its length by dams, which consist of timber walls with stone fillings. Trees, bushes, and reeds surmount the dams. The least bottom width in the enclosed sections is 40m and the least bottom width in the open sections is 65m.

Generally, vessels can transit the canal with drafts up to 7.7m from February to May, up to 8m from June to October, and up to 7.9m from November to January.

The Commercial Seaport basin at Kaliningrad has 20 berths, with a total of 3,017m of quayage, and depths of 7.2 to 9.6m alongside. The Fishery Port basin has depths of 5 to 7m alongside. The port has facilities for general cargo, container, ro-ro, tanker, and bulk vessels. In addition, it is the base for a large fishing fleet. Cargo vessels up to 170m in length and 25m beam can transit the canal. Tankers up to 140m in length and 25m beam can transit the canal.

Aspect.—The shore in the vicinity of the port is very low and the wooded groves standing on the coastal spit appear as islands from seaward. Baltiysk Light is shown from a tower, 32m high, standing at the S end of the town, on the N side of the entrance. A prominent watch tower stands close W of the light.

Baltiysk Light

An outer approach lighted buoy is moored about 6 miles WNW of Baltiysk Light. The approach channel is indicated by a lighted range which may best be seen on the chart.

Prominent water towers stand in the town and 1 mile NE of it. The conspicuous chimney of a locomotive shed stands in the town. A hill, with a conspicuous steep and yellow side, rises about 1 mile ENE of Baltiysk Light.

The canal leading from Baltiysk to the Kaliningrad is marked by lighted beacons.

Pilotage.—Pilotage is compulsory for all vessels except leisure craft. Vessels should send a request for pilotage and an ETA at least 24 hours in advance through the agent with a confirmation 4 hours prior to arrival. Pilots can be contacted by VHF and generally board about 1.5 miles WNW of the entrance to Baltiysk.

Vessels requiring deep-sea pilotage through the Baltic Sea from Baltiysk should send a request to the pilot control station at Saint Petersburg (59°56'N., 30°18'E.).

Regulations.—A Vessel Traffic Service (VTS) system operates in the approaches to the port. This system, which is mandatory, regulates the movements and anchoring of all vessels. It also broadcasts marine safety information.

The VTS area of control includes the following:

1. The water area of the outer roadstead of Baltiysk bound by a 7-mile radius centered on the North Entrance Point (54°38.97'N., 19°52.28'E.).
2. The Kaliningrad sea channel.

Inbound vessels should make an initial call to the Baltiysk Traffic Center 12 hours prior to arrival in the roadstead on VHF channel 16 or 74,. After establishing communication, vessels should provide the following information:

1. Name.
2. IMO number.
3. Call sign.
4. Name of owners.
5. Name of master.
6. ETA at roadstead.
7. Dimensions.
8. Draft (fore and aft).
9. Destination.
10. Last port of call.
11. Number of crew.
12. Number of passengers.

Kaliningrad Traffic Center (call sign: Kaliningrad 9) can be contacted on VHF channel 67.

It is reported that the traffic in the canal is one-way. Inbound traffic proceeds from 0300 to 0400 and from 1500 to 1600. Outbound traffic proceeds from 0800 to 1100 and from 2000 to 2300. Vessels over 135m in length must transit the canal by daylight only and the traffic schedules will be adjusted accordingly.

Anchorage.—Four designated anchorage areas, the limits of which are shown on the chart, lie in the approaches. Area No. 66 lies centered 4.5 miles NW of the light on the N side of the fairway. Area No. 68B lies centered 3.5 miles WNW of the light close to the S side of the fairway. Area No. 68 lies centered 3.8 miles WNW of the light and close SW of Area No. 68B. Area No. 68A lies centered 2.3 miles W of the light and adjacent to the SE limits of Area No. 68 and Area No. 68B. Attention is drawn to a number of obstructions which lie within or near to these anchorage areas.

Caution.—Several dangerous wrecks and obstructions in the vicinity of the port entrance may best be seen on the chart.

9.39 Frisches Haff (54°27'N., 19°45'E.) is the common name for the large lagoon, about 50 miles long and 5 miles wide, which is separated from the Gulf of Gdansk by Mierzeja Wislana and Baltiyskaya Kosa. It is called Zalew Wislany in Polish and Vislinskiy Zaliv in Russian. Zalew Elblaski, into which several rivers discharge, is the SW part of the gulf. Kaliningradskiy Zaliv, the NE part of the gulf, extends as far as the mouth of the Pregolya River. Primorskiy Zaliv indents the N side of the gulf, near Baltiysk.

The lagoon has average depths of 2.5m in the SW part and 4.7m in the NW part. The water level is also dependent on the wind and varies considerably. Prolonged NE winds can raise the level in the SW part and the adjacent rivers by as much as 0.9m. Strong W winds usually lower the water level.

The entire lagoon is frozen over during the winter season. All navigation ceases, except in the main channel leading to Kaliningrad, and all floating aids are removed. Vehicles often cross the lagoon over the ice. In the W part of the gulf, the river currents cause the ice to break up and move seaward before it occurs in the E part.

The bottom mostly consists of soft clay and mud, mixed with sand. Numerous large boulders lie on the hard sand which fringes the lagoon. Many of the bights indenting the shores are filled with marshes and reeds. Numerous wrecks and derelicts, mostly unmarked, lie scattered throughout the lagoon.

A channel, with a depth of about 4m, leads SE from Baltiysk to Nasypnoy Light (54°36'N., 19°56'E.). Shallow channels lead ESE to the vicinity of Kaliningrad and through the center of the lagoon. These channels are used by small craft to reach several local harbors loading places.

Baltiysk to Mys Taran

9.40 Between Baltiysk and Mys Taran, 20 miles N, the terrain backing the coast rises gradually and becomes steep and cliffy in the N part. The shore extending as far as Zaltniken (54°47'N., 19°59'E.) consists of low, wooded sand dunes and is fronted by a sandy, fringing shoal which extends up to less than 1 mile seaward. To the N of Zaltniken, the coast is formed of cliffs and appears yellow in color.

Obzornyy Light (54°50'N., 19°57'E.) is shown from a prominent tower, 22m high, standing near the shore, 8 miles S of Mys Taran. Gora Bol'shaya, a conspicuous wooded hill, is 89m high and rises 2 miles NE of the light.

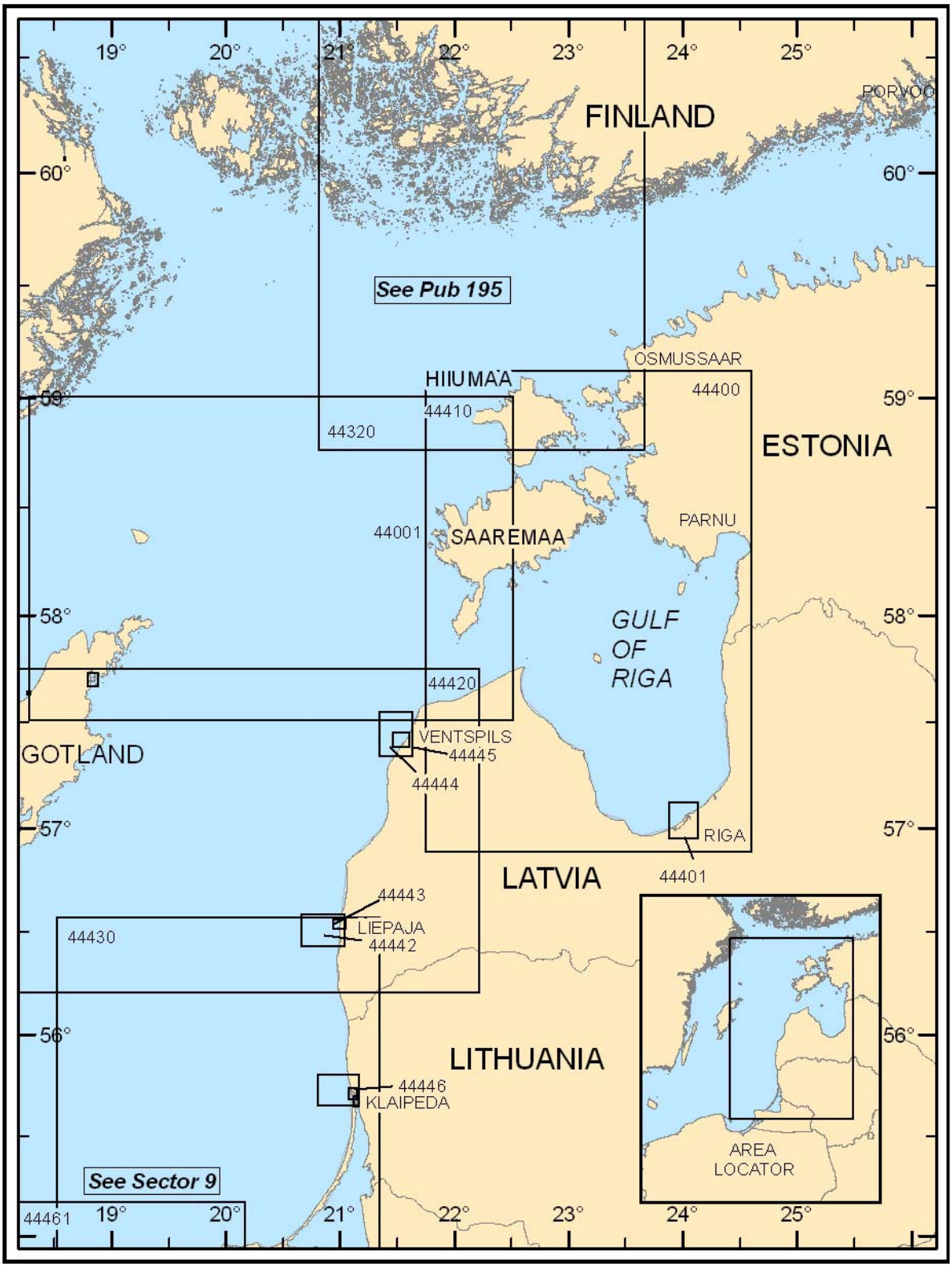
Obzornyy Light

A church, a water tower, and several factory chimneys stand at Yantarnyy, 5.5 miles SSW of Mys Taran, and are all prominent from seaward. Several conspicuous lights, situated at the amber mines, are occasionally exhibited in the vicinity of Yantarnyy.

Mys Taran (54°58'N., 19°59'E.) is described in paragraph 10.2.

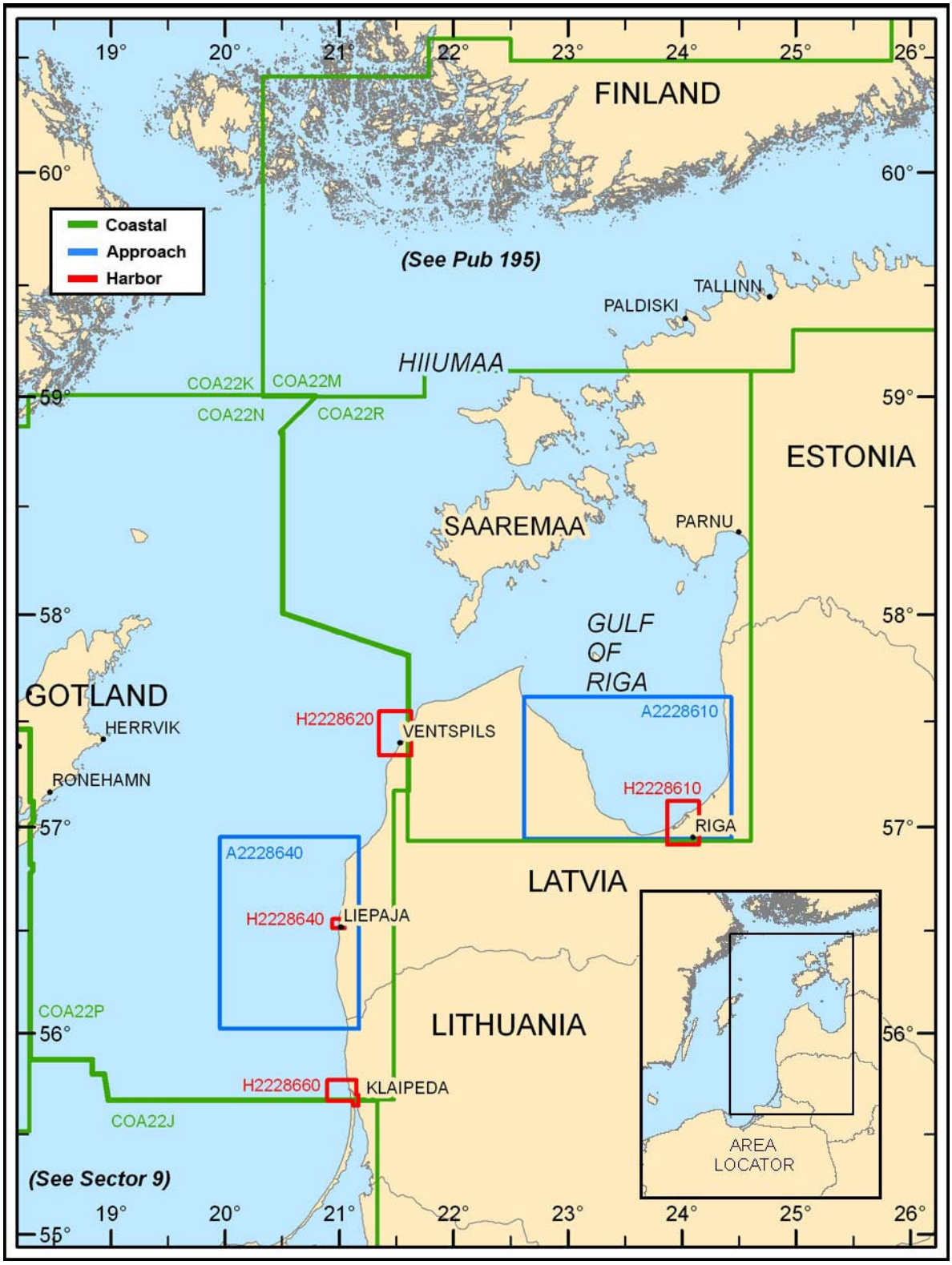
Caution.—Fishing nets may be encountered up to 5 miles offshore along this stretch of the coast.

Several isolated shoal patches and numerous wrecks, some marked by buoys, lie off this stretch of the coast and may best be seen on the chart.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **10** — CHART INFORMATION



Additional DNC library coverage may be found in NGA DNC 22 (Limited Distribution) disc within the README\GRAPHICS folder.

SECTOR 10— DNC LIBRARY INFORMATION

SECTOR 10

LITHUANIA AND LATVIA—MYS TARAN TO OVISI AND THE GULF OF RIGA AND APPROACHES

Plan.—This sector first describes the coast, the approaches, and the off-lying dangers between Mys Taran and Ovisi, 170 miles NNE. It then describes the coast between Ovisi, on the S side of the entrance to Irbeni Vain (Irbe Strait), and Osmussaar Island (59°18'N., 23°22'E.), lying on the S side of the entrance to the Gulf of Finland. A description of the Gulf of Riga then follows.

General Remarks

10.1 The section of the coast extending from Mys Taran to Ovisi has few indentations. To the NE of Ovisi, Irbeni Vain leads to the Gulf of Riga. The 20m curve lies up to 12 miles offshore in the S part of this section of coast and to the N of Ovisi it extends across the entrance to Irbeni Vain. Numerous off-lying dangers and foul ground areas lie off the coast and may best be seen the chart.

Regulations.—GOFREP, a mandatory ship reporting system under SOLAS, has been established in the Gulf of Finland and its approaches. This system is operated by the VTS centers at Tallinn (VHF channel 61), Helsinki (VHF channel 60), and Saint Petersburg (VHF channel 74).

Vessels not equipped with an Automatic Identification System (AIS) and entering the area from the W are recommended to send a report to the relevant VTS traffic center at least 1 hour in advance.

The W limit of the reporting area is formed by a line joining the following points:

1. Bengtskar Light (59°43'N., 22°30'E.).
2. 59°33.3'N, 22°30.0'E.
3. 59°10.0'N, 21°30.0'E.
4. Ristna (Kopu Poolsar) (58°56'N., 22°03'E.).

For further information concerning GOFREP, see Finland in Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Directions.—For vessels proceeding along the offshore route, Traffic Separation Schemes (TSS) lie centered about 20 miles NW and 40 miles NNE of Kopu Light (58°55'N., 22°12'E.) and may best be seen on the chart.

A Deep Water Route, which is recommended for vessels with drafts over 12m, leads ENE and NE from the E end of Bornholmsgat TSS into the S end of the TSS lying 20 miles NW of Kopu Light. It passes S and E of Gotland and may best be seen on the chart.

For further information, see paragraph 4.1, paragraph 5.1 and paragraph 6.1.

Caution.—It has been reported that all navigational aids in the SE part of the Baltic Sea, including the Gulf of Riga, may be unreliable. Vessels should exercise extreme caution when identifying these aids.

For information concerning mine danger areas and regulated areas lying off this part of the coast, see Pub. 140 Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

It is reported that a large ODAS buoy is moored about 36 miles NW of Ristna Light (58°56'N., 22°03'E.).

It is reported that a submarine gas pipeline is being constructed between Russia and Germany. This pipeline will extend WSW through the Gulf of Finland and then lead in a SW direction to the E side of Rugen (54°20'N., 13°44'E.). It will pass E of Faro (57°57'N., 19°10'E.), E of Hoburgs Bank 56°35'N., 18°25'E.), and W of Sodra Midsjobanken (55°40'N., 17°23'E.).

Mys Taran to Ovisi

10.2 From Mys Taran to Klaipeda, 60 miles NNE, the coast is indented by a large arc which extends to the SE.

Mys Taran (54°58'N., 19°59'E.), the E extremity of the Gulf of Gdansk (Gulf of Danzig), is a bold and cliffy point, 33m high. A light is shown from a prominent tower, 30m high, standing on this point. A radiobeacon is situated at the light.

Mys Taran Light

A reef, with depths of less than 5m and steep-to on its seaward side, extends up to 0.3 mile offshore, about 1.3 miles SW of Mys Taran. Another reef extends up to about 1 mile N of the point and is marked by a lighted buoy.

Vessels proceeding toward Mys Taran in low visibility are advised to keep to seaward of the 30m curve and to not approach within 2.5 miles of the light.

The partly-wooded coast extending between Mys Taran and Zelenogradsk, 17 miles E, decreases gradually in steepness and height. The most conspicuous landmarks along this stretch include the church standing at Primor'ye (Gross Kuren) 2.3 miles ESE of Mys Taran; the high water towers standing 2.5 miles and 4 miles E of the church, and the fishing harbor of Pionerskiy lying 8 miles E of Mys Taran.

Pionerskiy, protected by two breakwaters, has an entrance,

70m wide, and depths of 5 to 10m. The approach channel has a least depth of 8.5m, but is subject to silting.

Mys Gvardejskiy (54°58'N., 20°16'E.) is located 2 miles E of Pionerskiy. A light is shown from a prominent framework tower, 40m high, standing on this headland.

Anchorage Area No. 65, which may best be seen on the chart, lies centered about 4 miles NNE of the light.

Caution.—Several submarine cables, which may best be seen on the chart, extend seaward from the vicinity of Mys Gvardejskiy.

10.3 Zelenogradsk (54°58'N., 20°29'E.), a resort, is situated 7 miles E of Mys Gvardejskiy. The town is conspicuous from seaward with its houses, church, and water tower. A prominent tower stands about 1.7 miles ENE of this resort.

Between Zelenogradsk and Klaipeda, a narrow and sandy peninsula extends NE and then N for 52 miles. This peninsula is known as Kurskaya Kosa to the S of latitude 56°16'N and Kursiu Nerija to the N. The peninsula separates Kurskiy Zaliv from the sea (see paragraph 10.5). It consists of a series of white sand dunes and, for the greater part, is covered by trees. The dunes attain heights of up to 61m and are visible from a considerable distance.

Lesnoy Light (55°01'N., 20°37'E.) is shown from a prominent framework tower, 40m high, standing near the shore 5 mile NE of Zelenogradsk.

Lesnoy Light

Rybachiy Light (55°10'N., 20°51'E.) is shown from a prominent framework tower, 24m high, standing on a dune 12.7 miles NE of Lesnoy Light.

Nidden Light (Nida Light) (55°18'N., 21°00'E.) is shown from a prominent tower, 29m high, standing in a fishing village on Kurskiy Zaliv, 10 miles NE of Rybachiy Light. A conspicuous steeple is situated in the village, but is partially hidden by dunes and trees.

The border between Russia and Lithuania is situated about 1.7 miles S of Nidden Light.

Yuodkrante Light (55°33'N., 21°07'E.) is shown from a prominent framework structure, 20m high, standing 15.5 miles NNE of Nidden Light (Nida Light).

Caution.—An oil production platform, equipped with a light and a racon, is situated about 14.5 miles W of Nidden Light. A submarine pipeline, which may best be seen on the chart, extends in a SSW direction from this platform to the shore.

A measured distance (2,041m), which may best be seen on the chart, is situated about 3 miles S of the Klaipeda harbor entrance and is marked by buoys and beacons.

Klaipeda (55°43'N., 21°07'E.)

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10.4 Klaipeda, formerly known as Memel, is situated in Lithuania and lies on the inner side of Kursiu Marios (Morskoy Kanal), a narrow strait connecting Kurskiy Zaliv (Kurisches Haff) with the Baltic Sea (see paragraph 10.5). Juru Kanalas, the harbor fairway, extends from the port entrance to the S end of the suburb of Smelte, 4.5 miles SSE. The city stands on the N and S sides of the Dange River, which flows into the E side of Juru Kanalas, 2 miles SE of the port entrance.

Winds—Weather.—From October through March, the prevailing winds are from the SE; from May to September, W and NW winds prevail. It is seldom calm at this port. Storms from the W often cause confused swells near the port entrance (see Caution). Fog occurs more frequently between November and May and is usually dense and prolonged.

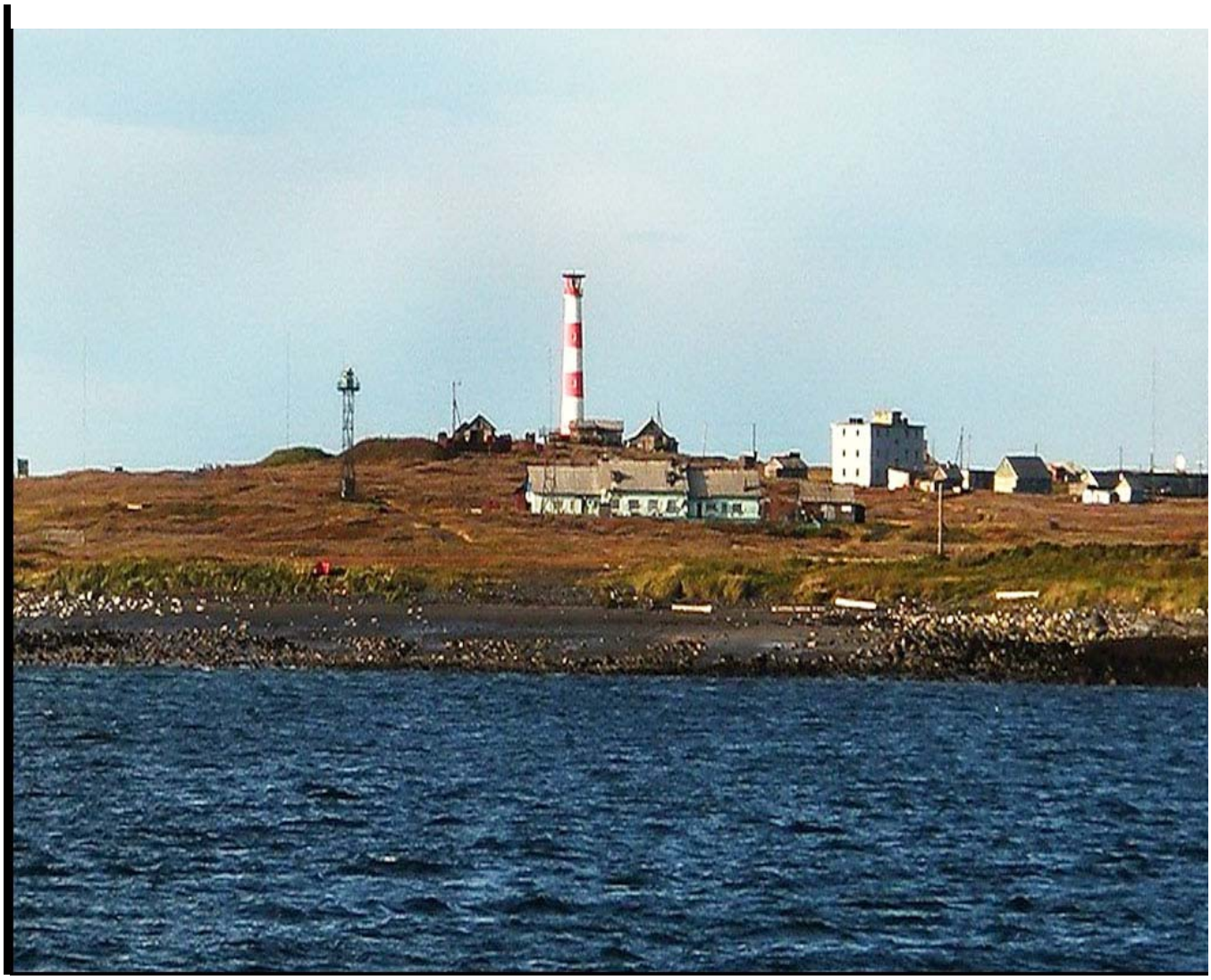
Ice.—Ice begins to appear in the first half of December and is usually gone by the end of March. Drift ice from the N usually stays near the coast, leaving the open sea clear. However, sometimes the reverse may occur. The S part of the port area, the section of the Dange River close above its mouth, and Kurskiy Zaliv are usually covered by ice every winter for an extended period of time. That part of the harbor area lying N of the Dange River mouth rarely freezes, although the entrance to the port may be jammed with ice floes for several days. If this ice remains for a long period, tugs are sent to clear the fairway.

Tides—Currents.—Changes in the water level have a seiche-like character. The vacillation is usually sudden, of short duration, and intensive. The greatest changes in the water level are caused by surging and receding and occur in autumn and winter. Variations in the water level are reported to reach, at times, as much as 0.9m above and below the mean sea level. However, variations of 0.6m or more are a rare occurrence and small variations, of about 0.3m, are reported to be more frequent. An increase of the water level occurs during strong W, through N, to NE winds and sometimes SW winds. A decrease of the water level occurs during S to E winds.

During W to WNW storm winds, strong swells often enter the port and run along the quays. At such times, vessels moored alongside the outer quays should, in advance, leave their berths and anchor in the inner or outer anchorages (see Caution).

The coastal current usually sets N across the port entrance and attains a maximum rate of 2 knots. However, the current may set S with strong N winds. The current within the harbor is usually outgoing, but an incoming flow has been observed when the coastal current is setting S. The outgoing current may attain rates up to 3 knots in the spring (see Caution).

Depths—Limitations.—The approach channel, indicated by a lighted range, is about 150m wide and is maintained at a dredged depth of 14.5m. The harbor fairway (Juru Kanalas), which varies in width between 180m and 300m, is maintained at dredged depths of 10 to 14m.



Rybachiy Light

Nidden Light

Klaipeda—Oil Terminal

Vessels with drafts up to 12.5m are authorized to navigate as far as Winter Harbor; with drafts up to 10.5m as far as Bega Pier; and with drafts up to 8.5m as far as Timber Harbor.

The port facilities are located along the E side of the harbor fairway.

The Oil Terminal is situated 0.7 mile inside the port entrance. It provides three berths, 250 to 274m long, and can handle tankers up to 12.5m draft.

Klaipeda Entrance

Klasco Commercial Quay extends for about 1 mile from the S end of the Oil Terminal to Winter Harbor (Ziemos Uostas), a basin. This quay and the N part of the basin provide 15 berths, 95 to 264m long, with depths of 6.5 to 13.5m alongside. These berths, which can handle vessels up to 12.5m draft, are used mostly for general cargo.

A ship repair yard and a shipbuilding yard are situated 0.5 mile S of the Winter Harbor and close S of the mouth of the Dange River. It has been reported that a quay fronting the repair yard is used as a passenger ship terminal.

Klaipeda—Passenger Terminal

Bega Pier, located 1.3 miles above Winter Harbor, projects WNW from the shore and Bega Quay extends NNW for about 0.5 mile from its root. This quay and pier provide seven berths, 224 to 360m long, with depths of 5 to 12m alongside. These berths, which can handle vessels up to 10.5m draft, are used for bulk cargo.

Timber Harbor (Malku Ilanka), a large basin, lies in the SE part of the port, about 5 miles above the entrance. A peninsula forms the W side of this basin. Kaiules Nugara, an islet, lies close W of the N end of this peninsula and on the N end of an extensive shallow sand bank. The main channel of the strait passes W of this islet and bank.

A ro-ro ferry terminal, with a finger pier, is situated at the N end of the peninsula which forms the W side of Timber Harbor. The terminal provides six berths, 20 to 210m long, with depths of 5 to 10m alongside. Vessels up to 7.5m draft can be handled.

Klaipeda—Ro-Ro Ferry Terminal

A container terminal quay, 450m long, is situated on the SW side of Timber Harbor. It has a depth of 10m alongside and can handle vessels up to 8.5m draft.

An extensive ship repair facility, with five finger piers, is situated in the SE part of Timber Harbor.

A finger pier, located in the NE part of Timber Harbor, is used as a container terminal. It provides two berths, 127m and 128m long. The berths have a depth of 10m alongside and can handle vessels up to 8.5m draft.

In addition to the facilities described above, the port also has numerous riverside berths. There is a total of 19,200m of main quayage within the harbor.

The port provides facilities for tanker, ro-ro, container, general cargo, passenger, bulk, and fishing vessels. Generally, vessels up to 270m in length and 12.5m draft can be accommodated.

It has been reported (2015) an LNG terminal, consisting of a Floating Storage and Regasification Unit (FSRU) moored to a 450m long jetty, is located in Curonian Lagoon in the S part of the port of Klaipeda. The facility lies within a restricted area into which unauthorized traffic is prohibited. It is connected to the grid via a pipeline.

It is reported that vessels with drafts up to 13.5m have been handled within the port, with special permission.

There are also extensive repair facilities, including six floating dry docks. The largest is 216m long and 41.5m wide.

An extensive inland waterway system, including Kurskiy Zaliv and several rivers, connects the port to Kallingrad.

Aspect.—When approaching the port, the forest located in the vicinity of the city is very conspicuous and visible at a considerable distance to seaward. A prominent radio mast stands 2.7 miles N of the harbor entrance. Lights are shown from both breakwater heads. The breakwaters are reported to be radar conspicuous.

An outer approach lighted buoy is moored about 3 miles W of the port entrance. The entrance fairway is indicated by a lighted range. Klaipeda Light (rear range) is shown from a prominent tower, 40m high, standing on the N side of the entrance, 0.6 mile E of the breakwater heads.

Several prominent oil tanks stand on the N side of the harbor fairway close inside the port entrance. The E side of Juru Kanalas, the harbor fairway, is fronted by industrial plants, quays, and cranes. The W side is mostly tree-covered and des-

Klaipeda Light (rear range)

ignated as a wildlife reserve.

Pilotage.—Pilotage is compulsory. Deep sea and local pilots are available from the port, except in dense fog or with NW winds of over Force 7. Pilots can be contacted by VHF on channels 9 and 16, and board in the Outer Approach Lighted Buoy No. 1 (55°44'N., 21°00'E.). During bad weather, pilots board at the inner roadstead.

Regulations.—A Vessel Traffic Service (VTS) system operates in the approaches to the port. It is a mandatory system which applies to all vessels navigating within the port and up to Outer Approach Lighted Buoy No. 1 (55°44'N., 21°00'E.).

While underway within the area, all vessels should maintain a continuous listening watch on VHF channel 9. When at anchor, they should maintain a continuous listening watch on VHF channel 16.

All vessels should send an ETA message to the Port Despatcher (call sign: Klaipeda Radio 2) 72 hours, 48 hours, and 24 hours prior to arrival. If the voyage is shorter than the previous times, the message should be sent immediately on departure from the last port of call. The initial message should include the following information:

1. Vessel's name, call sign, IMO number, and MMSI.
2. Flag.
3. Port of registry.
4. Speed.
5. Vessel's main particulars.
6. Maximum fresh water draft.
7. Cargo details.
8. Number of persons on board.

All vessels should contact the VTS Center (call sign: Klaipeda Radio 5 Traffic) 2 hours prior to arrival on VHF channel 9 and report their name, flag, and fresh water draft.

All vessel movements within the area are subject to permission being granted by the VTS Center. Such permission expires after 20 minutes and must be reinstated. Vessels should repeat all instructions received from the VTS Center.

In the case of radio failure, vessels should leave the traffic lane (approach channel) and anchor or drift while attempting to reestablish contact.

Radar assistance is compulsory for ferries, tankers, vessels carrying dangerous cargo, vessels constrained by their draft, and for all vessels when the visibility is reduced to less than 2 miles. However, radar assistance may be provided at any time on request.

The Klaipeda VTS Center can be contacted by e-mail (info@port.lt).

The Klaipeda Harbormaster can be contacted by e-mail (ukt@port.lt-kapitanat).

Vessels with drafts of over 7m are considered to be constrained by their draft and should display the appropriate lights or shapes.

Tankers must berth with their bow toward the port entrance, unless special permission is granted by the authorities.

All movement of vessels within the port is prohibited during wind speeds of over 40 knots.

Vessels within the port should not exceed a speed of 6 knots.

Anchorage.—All foreign vessels should anchor within the designated areas, which may best be seen on the chart, lying centered about 6 miles WNW and 6 miles WSW of the harbor entrance. These areas have depths of 33 to 39m.

Caution.—Vessels anchored within the designated foreign vessel anchorage areas should be prepared to put to sea if strong W winds commence. Similarly, during strong SW to NW winds, dangerous surges occur within the port and vessels should put to sea.

During very strong S winds, steep seas form in the vicinity of the port entrance and vessels have reported experiencing maneuvering difficulties. Entry at such times is not recommended (see Tides—Currents).

When entering the port, vessels should exercise caution due to the strong current, which sets across the line of approach (see Tides—Currents).

It is reported (2005) that several of the navigation aids located on the E side of the harbor fairway (Juru Kanalas) are obscured at times by cranes.

Vessels must anchor only within the designated areas as former mined areas, which may best be seen on the chart, front the coast to the N and S of the approach channel.

The approach channel and harbor fairway (Juru Kanalas) vary in depth, particularly during the floods in spring and also after prolonged N or NW gales. Dredging is frequently carried out to maintain the authorized minimum depths. Vessels should contact the authorities for the latest information.

Discolored water flowing out of Kursiu Marios is reported to extend up to 5 miles offshore in the vicinity of the port.

A spoil ground area, marked by a buoy, lies centered 11.5 miles SW of the port entrance and may best be seen on the chart.

Several self-propelled ferries cross the harbor fairway within the port.

10.5 Kurskiy Zaliv (55°20'N., 21°10'E.), also known as Kurisches Haff, is a lagoon or inland sea which, along with Kursiu Marios (Morskoy Kanal), extends about 50 miles S of the entrance to Klaipeda. It is separated from the Baltic Sea by Kurskaya Kosa, a narrow peninsula.

Kursiu Marios, a strait, is that part of the lagoon lying N of latitude 55°16'N and is situated in Lithuania. Kurskiy Zaliv, the S part of the lagoon, is situated in Russia.

The lagoon is closed by ice during the winter season. Local knowledge is necessary for transiting the lagoon, but pilots are not available. The lagoon has general depths of 1 to 2.5m in its

N part and 3 to 5.5m in its S part. A channel, marked by buoys, leads through the N part and passes close to the E side of Kurskaya Kosa. Vessels with drafts of up to 4m and local knowledge can proceed in this channel from Klaipeda to Lesson (55°01'N., 20°37'E.), lying 46 miles SSW.

The water level within the lagoon usually rises about 0.3m with N winds and falls about 0.2m with S winds. An increase of water level of 1.1m and a decrease of 0.7m have been observed when the lagoon was free of ice, but these variations are rare.

Yuodkrante, a resort, is situated 10 miles S of Klaipeda, on the E side of Kurskaya Kosa. Nida, another resort, and Rybachiy, a fishing harbor, lie 14 miles and 24 miles, respectively, SSW of Yuodkrante. Several rivers enter the E side of Kurskiy Zaliv and connect the lagoon to an inland waterway system. Several small fishing harbors lie near the mouths of these rivers. The E side of the lagoon is low and mostly wooded.

10.6 Palanga (55°56'N., 21°04'E.), a village, is situated 12 miles N of Klaipeda and is fronted by a small boat harbor. A prominent red church, with a tall spire, stands in the village. The intervening coast is hilly and wooded. Gora Biruta, a conspicuous hill, 17m high, rises 1 mile S of Palanga. A prominent radio mast stands 2.7 miles N of Klaipeda harbor entrance.

From Palanga to Liepaja, 34 miles N, the coast is low, uniform, and backed by sand dunes. Some of these dunes are bare and some of them are wooded. Several villages stand among these dunes and, in places, are fronted by white sandy beaches. The coastal bank lying between Klaipeda and Liepaja extends up to 3 miles offshore in places.

Gora Tyupa (56°17'N., 21°00'E.), 34m high, is a chain of low hills rising slightly above the flat, wooded surroundings. Several of these hills are surmounted by a few trees.

Sventoji Light (56°01'N., 21°05'E.) is shown from a prominent framework tower, 39m high, standing in the village of Sventoji, 6.5 miles N of Palanga. The village is fronted by a small and shallow fishing boat harbor.

Sventoji Light

The boundary between Lithuania and Latvia is situated about 2.3 miles N of Sventoji.

Butinge Oil Terminal (56°03'N., 20°58'E.), consisting an SPM, lies 3.7 miles WNW of Sventoji Light, in a depth of 20m. A prohibited area, 0.5 mile wide, extends ENE from the terminal to the shore. A lighted fairway buoy is moored about 6.5 miles WSW of the terminal.

Vessels up to 150,000 dwt and 16m draft can be accommodated (2004).

Pilotage.—Pilotage is compulsory for vessels approaching Butinge Marine Terminal and will board within 11 miles off the terminal or in the anchorage area.

Pilot boards in position 56°01.5'N 20°53.0'E.

Regulations.—Vessel ETA should be sent 72 hours, 48 hours, and 12 hours prior to arrival.

Vessels are to confirm their ETA 4 hours prior to arrival at the pilot boarding area by VHF.

Klaipeda VTS shall be advised prior to movement to and from the SPM by the Loading Master via the tanker's Master.

The Loading Master on board the tanker shall advise Klaipeda VTS prior to vessel movement to and from the SPM.

Contact Information.—The terminal can be contacted, as follows:

1. VHF: VHF channels 16 and 71
2. Telephone: 370-44 393420 (office hours)
3. Facsimile: 370-44 393429
4. E-mail: marine@orlenlietuva.lt

The control room can be contacted, as follows:

1. Telephone: 370-44 393459 (24 hours)
2. Facsimile 370-44 393486

Anchorage.—An anchorage area, which may best be seen on the chart, lies centered 8 miles SW of the terminal. A channel, within which anchoring and fishing are prohibited, leads from the N side of the anchorage area to the terminal.

Caution.—A wreck lies in the N part of the anchorage area in position 55°58.9'N, 20°46.0'E; a foul patch lies close W of the anchorage area.

A lighted buoy marks a 15m patch lying 0.5 mile E of the SPM.

Only authorized vessels may enter the area associated with Butinge Oil Terminal.

Pape Light (56°09'N., 21°01'E.) is shown from a prominent metal framework tower, 22m high, standing 7.8 miles N of Sventoli. boat harbor.

Pape Light

Bernati Light (56°23'N., 20°59'E.) is shown from a prominent framework tower, 21m high, standing 13.8 miles N of Pape Light.

Caution.—Several wrecks and obstructions lie off this section of coast and may best be seen on the chart.

A prohibited area, the limits of which are shown on the chart, lies centered 5 miles N of Pape Light and extends up to 3.5

miles seaward from the coast.

Liepaja (56°31'N., 21°01'E.)

World Port Index No. 28640

10.7 Liepaja, formerly known as Libau, is situated within Latvia and lies at the N end of a comparatively low and narrow tongue of land. This tongue separates Liepajas Ezers, a shallow lake, from the sea. The port is a major naval base. It consists of Outer Harbor which is enclosed by breakwaters; Commercial Harbor, with a wide quay on its S side; Town Canal Harbor which separates the old and new sections of Liepaja; Winter Harbor which is used for the handling of oil and timber shipments; and Naval Harbor which lies on the E side of Outer Harbor.

Liepaja Home Page

http://www.liepaja-sez.lv

Winds—Weather.—Strong W and N winds sometimes cause cargo handling within Commercial Harbor to be difficult or impossible.

Ice.—Ice does not impede navigation during normal winter seasons. If necessary, icebreakers keep the harbor open to shipping. The average period of ice lasts from the first week of January to the beginning of March.

Tides—Currents.—The current in the vicinity of the port runs parallel with the coast and sets in a predominantly N direction. With fresh winds, it may attain a rate of up to 2 knots. The water level may fall as much as 0.6m with E winds and rise as much as 0.9m with W winds.

Depths—Limitations.—A coastal bank, with depths of 6 to 10m, extends up to about 3.5 miles W from the vicinity of the port. An approach channel leads ENE through the dangers in the approaches; it is 100m wide and has a dredged depth of 10.4m. This channel is subject to silting.

The harbor has three entrances. Ziemelu varti, the N entrance, is 265m wide and has a depth of 8.1m. Permission to use this entrance must be received from the naval base. Vidus varti, the middle entrance, is 213m wide and has a depth of 9m. Dienvidu varti, the S entrance, is 235m wide and has a depth of 11m.

The oil terminal has a quay, 100m long, with a depth of 7.5m alongside. Tankers up to 150m in length and 7m draft can be accommodated.

The Commercial Harbor provides about 3,000m of total berthage, with depths of 4.5 to 9.5m alongside. There are facilities for ro-ro, bulk, general cargo, timber, container, and passenger vessels. Vessels up to 50,000 dwt, 200m in length, 30m beam, and 8.5m draft can be accommodated.

It is reported (2000) that new berths are being built and extensive construction is being carried out within the port.

Aspect.—Several high buildings stand along this low coastal area and are visible from a considerable distance to seaward. Conspicuous landmarks in the vicinity of the port include the cathedral; a pilot watch tower; a white building, 18m high; and several chimneys.

The main approach channel is marked by buoys and indicated by a lighted range. A light is shown from a prominent tower, 30m high, standing in the S part of the harbor. Outer Approach Lighted Buoy A is reported to be moored about 6 miles WSW of the light.

Liepaja Harbor Light

Pilotage.—Pilotage is compulsory for all vessels carrying dangerous goods and all other vessels over 700 gt, unless a valid exemption certificate is held.

If a pilot cannot board because of bad weather or other circumstances, shore based pilotage may be given to certain categories of vessels.

Vessels should send a request for pilotage through the Vessel Traffic Service (see Regulations). Pilots can be contacted by VHF and generally board at (56°30'N., 20°49.9'E.) about 6 miles WSW of the light in the vicinity of Outer Approach Lighted Buoy A.

Vessel Traffic Service.—A mandatory Vessel Traffic Service (VTS) operates within the port and the outer approaches. All vessels must contact the VTS center through their agent (in writing) at least 48 hours prior to arrival and report their ETA. All vessels must then repeat their initial ETA message through the agent 24 hours in advance.

These messages must include the following information:

1. Vessel's name, flag, and call sign.
2. Date and time.
3. Last port of call.
4. ETA.
5. Draft.
6. Size and nature of cargo.
7. Length, beam, tonnage, and type of ship.
8. Vessel's agent.
9. Information about infectious diseases onboard.
10. Miscellaneous information as appropriate.

All vessels must report 2 hours before arrival, but not less than 1 hour from Outer Approach Lighted Buoy A, to the VTS center on VHF channel 11. Vessels must state their name, call sign, flag, position (bearing and distance from a landmark), and any changes to their previous entry reports.

The following procedures are required by the VTS.

1. All vessels shall contact Liepaja VTS on VHF Channel 11 before entering VTS limits.
2. No vessel may enter VTS limits or anchor inside the VTS area unless permission from Liepaja VTS.
3. All inbound vessels of less than 700 gt (including fishing vessels) must obtain permission from Liepaja VTS at least 3 miles before entering Liepaja Port.

Bernati Light

4. At least 48 hours before arrival, vessels must contact Liepaja VTS through the agent (in writing) stating the IMO Standard Ship System (SRS) items Alpha, Bravo, Golf, India, Oscar (tankers use IMGDG Code), Uniform and X-ray. (See table below).

5. Vessels must repeat the ETA, using the same format as the original message including any modifications not less than 24 hours prior to arrival.

6. At least 4 hours before departure, vessels must contact Liepaja VTS through the agent (telephone or fax) stating SRS items Alpha, Oscar, Quebec, and Xray.

7. At least 2 hours before arrival, but not less than 1 hour from Lighted bouy A (56°30'N., 20°49.9'E.),Vessels must contact Liepaja VTS on VHF Channel 11 stating SRS items Alpha, Delta, and any alterations to pre-entry reports.

8. All reports and other relevant information will be transferred to the pilots by VTS.

9. Vessels passing through the VTS area but not entering Liepaja Port must contact Liepaja VTS on VHF Channel 11 stating SRS items Alpha, Delta, Lima, and Papa (only details of any dangerous cargoes - IMDG code).

In addition to the entire harbor, the VTS area covers the Outer Roads along a line joining the following points:

a. 56°31.1'N, 20°59.1'E.
b. 56°31.1'N, 20°58.3'E.
c. 56°27.0'N, 20°58.3'E.
d. 56°27.0'N, 20°41.5'E.
e. 56°35.0'N, 20°45.4'E.
f. 56°35.0'N, 20°59.3'E.
g. 56°33.5'N, 20°59.3'E.
h. 56°33.3'N, 20°59.6'E.

The Inner Roads are comprised of, Brivosta (Freeport), Ziemas Ostra (Winter Harbor), the Tirdzniecibas Channel up to the tram bridge, and the Tosmares Basin.

Contact Information.—The Liepaja VTS center can be contacted, as follows:

1. VHF VHF channels 11 and 16.
2. Telephone: 371-634-25180
3. Facsimile: 371-634-01700
   371-634-81451
4. E-mail: vts@lsez.lv

Port State Control can be contacted, as follows:

1. Call sign: Liepaja 5
2. VHF VHF channel 11

The Harbormaster can be contacted, as follows:

1. Telephone: 371-634-24721
2. Facsimile: 371-634-81451
3. E-mail: lok@lsez.lv

The Port Authority can be contacted, as follows:

1. Telephone: 371-634-25887
2. Facsimile: 371-634-80252
3. E-mail: authority@lsez.lv

Liepaja—Required VTS Entry/Departure Report Information

SRS Item	Type	Description	Entry Report	Departure Report
A	Ship	Vessel name, call sign, or ship station identity and flag.	X	X
B	Date and time of event	A 6-digit group giving day of month (first two digits), hours and minutes (last four digits) if other than UTC state time zone used.	X	
D	Position	True bearing (first 3 digits) and distance (state distance) in nautical miles from a clearly identified landmark (state landmark).	X	X
G	Port of departure	Name of last port.	X	
F	Vessel speed in knots and tenths of knots	A 3-digit group.	X	
I	Destination and ETA	Specify destination port name and give ETA using a 6-digit group giving day of month (first 2 digits), hours and minutes (last 4 digits). If time zone used is not UTC, then specify time zone used.	X	
O	Maximum present static draft in meters	A 4-digit group giving meters and centimeters.	X	X
P	Cargo on board	Cargo and brief details of any dangerous cargoes as well as harmful substances and gases that could endanger persons or the environment.		X
Q	Defects, damage	Brief details of any defects, damage, deficiencies or other dangerous.		X
U	Vessel size and type	Details of length, breadth, tonnage and type etc. as required.	X	
X	Miscellaneous	Any other information.	X	X

Anchorage.—Anchorage off the port is tenuous during winds from between SW and NW. Three designated anchorage areas are situated in the roadstead and may best be seen on the chart. Anchorage Area L1 lies centered 3 miles WSW of the light. It has depths of 8 to 10m and is used by small vessels. Anchorage Area L2 lies centered 5 miles WNW of the light. It has a depth of 15m and is used by general vessels. Anchorage Area L3 lies centered 8 miles W of the light. It has a depth of 28m and is used by deep-draft vessels.

Caution.—In reduced visibility, vessels are advised not to approach the port in depths of less than 18m unless their position has been accurately determined.

Several shoals and obstructions lie in the approaches to the port and may best be seen on the chart.

A local magnetic anomaly exists in the vicinity of the port.

Submarine cables, which may best be seen on the chart, extend seaward from a point on the shore located close S of the port.

Due to the influence of the current, which sets at right angles to the approach fairway, deep-draft vessels should maintain sufficient speed in order to remain accurately on the range line.

The harbor entrances are subject to frequent silting and the authorities should be contacted for information concerning the latest depths in the channels.

It is reported (2001) that the N entrance to the harbor is temporarily closed.

10.8 **Akmenrags** (56°50'N., 21°03'E.) lies 17.5 miles N of Liepaja and the intervening coast is sandy and bordered by sand dunes. The land located between these dunes and the woods, which stand about 0.5 mile inland, is extensively cultivated. A light is shown from a prominent stone tower, 37m high, standing at Akmenrags.

Akmenrags Light

Prominent landmarks along this stretch include the village and church of Saraiki, situated 9.5 miles NNE of Liepaja, and the village and church of Ziemupe, situated 4.5 miles N of Saraiki.

Pavilosta (56°53'N., 21°11'E.), a small harbor, lies 5 miles NE of Akmenrags. It is formed by two breakwaters which extend seaward from the mouth of the Saka River. The harbor entrance, which is 40m wide, has a depth 3.2m, but is subject to silting. A conspicuous chimney stands at a distillery, 1.7 miles SE of the harbor. The harbor is used by fishing vessels and coasters. Vessels up to 80m in length and 3m draft can enter.

To the N of Pavilosta, the woods standing along the coast approach and border the shoreline. A conspicuous mill stands at Sarnate, 16 miles NE of Pavilosta.

Uzava Light

Uzava Light (57°13'N., 21°25'E.) is shown from a prominent tower with a dwelling, 19m high, standing on a partly wooded and sandy hill which rises 5 miles N of Sarnate.

Somnitelania Bank (57°18'N., 21°22'E.) lies 1.7 miles offshore, 5.5 miles NNW of Uzava Light. This bank has a least depth of 4.4m and is marked by a lighted buoy.

Caution.—Several dangerous wrecks lie off this stretch of coast and may best be seen on the chart. Vessels are advised to stay at least 4 miles seaward of the shore.

A mine exercise area lies centered about 20 miles W of Akmenrags Light, but its limits are subject to change without notification.

Ventspils (57°24'N., 21°32'E.)

World Port Index No. 28620

10.9 Ventspils is situated in Latvia and lies at the mouth of the Venta River. It is protected by two breakwaters and extends in an E direction for about 2 miles between the entrance of the river and a railroad bridge. An oil terminal is located close inside the breakwaters at the N side of the mouth of the river.

Ventspils—Outer Harbor

Ventspils—Entrance

Winds—Weather.—The prevailing winds are from the SW. Calms seldom occur in the vicinity of the harbor. Fog, which occurs during weak SE and SW winds, is most frequent between March and June.

Ice.—Ice may be present from the middle of December to the middle of April, but the harbor is never closed. Ice may hinder shipping during January and February and when NW winds carry it into the outer harbor. At such times, icebreakers will assist vessels entering. Winds from the E and an outgoing current clear ice from the river and inner part of the harbor.

Tides—Currents.—The tides are negligible, but the water level fluctuates with wind and ice conditions. The water level rises with strong winds from between NW and SW. It falls with winds from between N and SE. In spring, when the ice is in motion, the water level is generally 1.2 to 1.5m higher than usual; in places, the level may be as much as 2m higher. At other times, a difference of 0.3m above or below the mean level is more frequent.

The current sets N or S along the coast in the approaches to the port depending on the wind. It may attain rates of 3 to 4 knots. Currents in the river set at an average rate of 1 knot, increasing to 2 knots near the entrance. In early spring and during the ice breakup, the current in the river may attain a rate of 4 knots.

Depths—Limitations.—The NW approach channel leads SE from Lighted Buoy B and is swept to a depth of 14.8m (2006). The W approach channel leads ESE from Lighted Buoy A and is swept to a depth of 16.8m. It joins the NW channel about 1 mile NW of the harbor entrance.

The channel leading through the outer harbor is reported to be 100m wide and dredged to a depth of 15m. The river channel is reported to be dredged to a depth of 14m for 1 mile.

There are three liquefied gas berths with depths of 8.4 to 15.3m alongside. There are six tanker berths with depths of 11.3 to 15.3m alongside. There are 23 riverside cargo berths with facilities for ro-ro, bulk, general cargo, container, and chemical vessels. Tankers up to 270m in length and 15m draft, and cargo vessels up to 230m in length and 14.2m draft, can be accommodated.

Aspect.—To the N of the port, the coast is low and sandy. To the S, the coast is higher and consists of a chain of sand dunes covered with sparse woods. From a distance of between 6 and 10 miles offshore, this chain appears as a dark line. At a distance of about 3 miles, the slopes of the sand dunes become visible and are conspicuous due to their light color.

A light-colored sand dune, backed by woods, rises at Busnieku, 4.5 miles NE of the port entrance and is very conspicuous; it is surmounted by a beacon (former light tower). A prominent railroad runs N and parallel to the coast from the port.

Lighted Buoy B (57°28.5'N., 21°25.9'E.) is moored about 5 miles NW of the harbor entrance and marks the seaward entrance of the NW approach channel.

Lighted Buoy A (57°26.3'N., 21°24.7'E.) is moored about 4 miles WNW of the harbor entrance and marks the seaward entrance of the W approach channel.

Both approach channels are marked by lighted buoys and are indicated by lighted ranges. The rear range light of the NW channel is shown from a prominent framework tower, 35m high, standing 1.5 miles SE of the harbor entrance.

The port of Ventspils can be identified from a considerable distance by a conspicuous church, with a tall spire, standing in the center of the town on the S side of the river. A conspicuous pilot watch tower, 20m high, stands close E of the root of the S breakwater. A prominent group of storage tanks is situated near the root of the N breakwater.

Pilotage.—Pilotage is compulsory for all vessels over 70m in length and all vessels carrying dangerous cargo (oil, chemicals, or gas) regardless of length. Pilots must be ordered through the VTS center (see Regulations).

Pilots can be contacted by VHF on channels 9, 14, and 16 and usually board in the vicinity of Lighted Buoy B or Lighted Buoy A.

Regulations.—A Vessel Traffic Service (VTS) operates in the approaches to the port. The system is mandatory and applies to all vessels navigating within the VTS area. The area includes all the waters of the port, including the outer roadstead, and is bounded by a line joining the following positions:

a. 57°20.9'N, 21°29.3'E.
b. 57°25.4'N, 21°22.6'E.
c. 57°32.3'N, 21°30.3'E.
d. 57°26.3'N, 21°35.9'E.

Vessels must send their ETA and a request for pilotage through the agent to the harbormaster 72 hours in advance. Vessels must then send an ETA 24 hours and 4 hours prior to arrival.

Vessels must contact the VTS Control Center, on VHF channel 16 or 9, 2 hours prior to arrival (not later than 1 hour prior to arrival) at either Lighted Buoy A (Ventspils West) or Lighted Buoy B (Ventspils Main).

A continuous listening watch must be maintained in the outer roadstead on VHF channel 16, when proceeding to the port on VHF channel 9, and when alongside the berth (if telephone is not available) on VHF channel 16.

Shore-based radar assistance, ordered by the VTS, is compulsory for the following vessels arriving and departing the port:

1. All vessels over 150m in length.
2. All vessels over 12,000 gt.
3. All vessels with drafts over 11.5m.
4. All vessels carrying dangerous cargo (oil, chemicals, or gas).

The Ventspils Harbormaster and VTS center can be contacted by e-mail (regina@vok.lv).

Tugs are compulsory for vessels over 90m in length.

Speed limits are in force within the port.

Anchorage.—Designated anchorage areas, which may best be seen on the chart, lie centered from the port entrance as follows:

1. Area V-1, lying 6 miles N, is for liquid chemical, LNG tankers, and quarantine.
2. Area V-2, lying 8 miles NW, is for large vessels with drafts over 10m.
3. Area V-3, lying 4 miles NW, is for oil tankers and dangerous goods. An obstruction, with a depth of 18m, lies in the W part of this area.
4. Area V-4, lying 2.5 miles N, is for small vessels with drafts less than 5m.
5. Area V-5, lying 3.5 miles NW, is for general cargo (non-dangerous) vessels with drafts of 5 to 10m.

Caution.—Several dangerous wrecks and obstructions, which may best be seen on the chart, lie in the approaches to the harbor entrance.

Several submarine cables, which may best be seen on the chart, extend seaward from a point located on the shore about 1 mile SSW of the port.

The approach channels and harbor are subject to frequent silting, particularly after storms. The authorities should be contacted for information concerning the latest depths.

Anchoring in the outer roadstead areas is dangerous during strong W winds.

The approaches to the port lie within a former mine area and vessels are advised to anchor only within the designated areas.

Spoil ground areas and disused spoil areas, the limits of which may best be seen on the chart, lie close off the coast and extend up to about 6 miles N of the harbor entrance.

A prohibited area, within which measuring instruments are located, lies centered 2.7 miles NW of the harbor entrance. It has a radius of 0.5 mile and is marked by a lighted buoy.

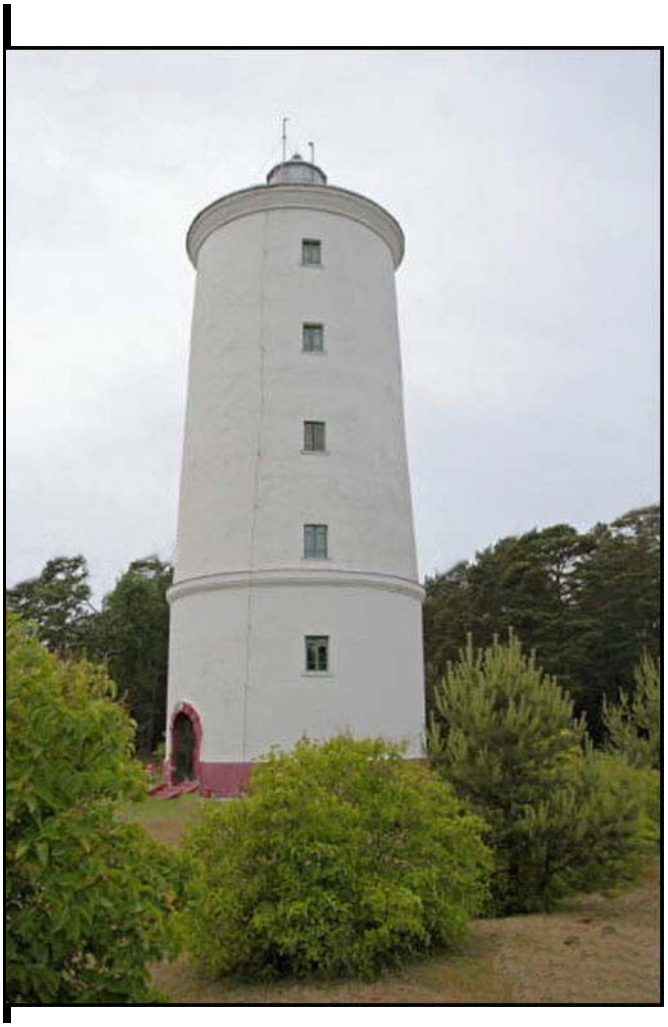
Banks of sand frequently form off the breakwater heads and vessels should not pass close to them.

10.10 Ovisi (57°34'N., 21°43'E.), a low and sandy point, is located 12 miles NNE of Ventspils and can be readily identified by its light color. The shore located inland of the point is wooded. A light is shown from a prominent tower, 37m high, standing on this point.

Ovisi Seklis (57°36'N., 21°40'E.), a shoal area which is part of the coastal bank, extends up to about 5 miles NW of Ovisi. This shoal area, which is generally sandy with a few rocks, has a least depth of 2.8m and is marked on the W and N sides by buoys. A number of dangerous wrecks, which can best be seen on the chart, lie within the 20m curve in the vicinity of this shoal bank.

The Gulf of Riga and Approaches

10.11 Saaremma (58°16'N., 22°36'E.) an Estonian island, is composed chiefly of limestone and is thickly wooded. Its SE coast forms the NW shore of the Gulf of Riga. The coast of Saaremma is very indented with numerous peninsulas projecting seaward between the bays. Two of these peninsulas, Sorve Poolsaar at the S side and Tagamoisa at the NW side, are most worthy of note. Generally, the island is flat and low, but it rises slightly in the middle and at the N end. The summit of the island stands in the NW part where a wooded hill rises above the surrounding plain.



Ovisi Lighthouse

Hiiumaa (Hiumaa) (58°53'N., 22°36'E.) is separated from the N side of Saaremma by Soela Vain, a shallow channel. This island is flat and marshy in the interior, but the land rises gradually toward the N end. Several wooded hills, 25m high, rise along the NE coast. The NW side of the island is low and less wooded than the NE. Kopu Poolsar, a densely wooded peninsula, forms the W extremity of Hiiumaa and rises to a height of 68m.

Soela Vain leads E into Vainameri and can be used only by vessels, with local knowledge, up to 40m in length and 3m draft.

Bezymyannaya (57°43'N., 20°59'E.), a shoal bank, lies centered 25 miles WNW of Ovisi. It has a least depth of 9.8m and the E and W sides are marked by lighted buoys.

Banka Vinkova (57°40'N., 21°20'E.), a shoal bank with a least depth of 7.6m, lies about 11.5 miles NW of Ovisi and is marked on its W side by a lighted buoy. Depths of less than

20m extend up to about 4.5 miles W, 3 miles N, 1.5 miles S, and 2 miles W of the shallowest part of this bank.

Chidova Nova (57°54'N., 21°13'E.), a shoal bank with a least depth of 22m, lies about 25.5 miles NW of Ovisi. An isolated shoal patch, with a depth of 11m, lies about 3.7 miles E of this bank.

10.12 Saaremma—West side.—Sorve Poolsar (58°03'N., 22°10'E.), a peninsula, projects 16 miles SSW from the S extremity of Saaremma. Sorve Saar (Sorve Ots), a sandy spit, extends about 0.9 mile S from the S end of this peninsula. It is narrow and mostly above-water. Vesitukimaa, a narrow islet, lies 0.5 mile SW of the S extremity of the spit.

Sorve Saar Light (Sorve Ots) (57°55'N., 22°03'E.) is shown from a prominent round tower, 52m high, standing 0.4 mile NNE of the S extremity of the spit.

A shoal flat, with depths of less than 5m, extends about 7 miles S and SW from the light into the N side of Irbeni Vain (Irbe Strait) and is marked by a buoy (see paragraph 10.19).

A ridge of hills extends from Montu, located 3.5 miles NE of Sorve Saar, to Ansekula, located 9.5 miles farther NNE. The W side of this ridge, which attains an elevation of 28m, slopes gradually and consists of several conical hills covered with pine trees. The E side of the ridge is moderately steep.

Sorve Saar Light

Loode Neem (57°59'N., 22°00'E.) is located on Sorve Poolsar, 4.7 miles NNW of Sorve Saar Light. The coast between is low and wooded. A light is shown from a tower, 15m high, standing on this point.

Jamaja, a village, is situated 3 miles NE of Loode Neem. It is the site of a church, with a tall tower and a pointed roof, which is a prominent landmark when the sun is bearing W. Kaunispe is situated 1.7 miles NNE of Jamaja. Small vessels, with local knowledge, can obtain good anchorage, sheltered from W and N winds, in depths of 4 to 6m, good holding ground, off this village.

The coast between Jamaja village and the W entrance point of Lou Laht, about 5 miles NNE, is flat and rocky, with a few small hills covered by fir trees.

10.13 Lou Laht (58°05'N., 22°10'E.) indents the coast about 10 miles N of Sorve Saar Light. The W entrance point of this bay is conspicuous. The bay affords anchorage to small vessels with local knowledge, in depths of 5 to 7m, mud and sand. The anchorage is sheltered, except from strong NW winds. A low and grassy islet lies close off the W entrance point of Lou Laht and a shallow reef extends up to about 1 mile N of it.

Loode Neem Light

Ariste Laht (58°09'N., 22°11'E.) affords good anchorage to small vessels and is entered NNE of Lou Laht. The coasts of this bay are low and sparsely wooded. However, the bay is encumbered with numerous rocks, reefs, and shoals and should not be entered without local knowledge. The entrance channel has a least depth of 4.4m.

Meelaiuneen (Elda poolsaar) (58°19'N., 21°50'E.), located 20 miles NNW of Loode Neem Light, is a point where the nearby land rises to a ridge, 13m high. Laimadal, a shoal with a least depth of 2.3m, lies about 5 miles SW of this point. The sea is reported to break on this shoal in fresh winds. Several isolated and shallow shoals lie between Meelaivneen and Laimadal and may best be seen on the chart.

Loonalaid (58°20'N., 21°48'E.), a low and inhabited islet, lies near the outer end of the foul ground which extends up to about 3.5 miles NW of Meelaivneen. This islet is covered with grass and bushes and is fringed by gravel, sand, and rocks. Salava, lying 0.5 mile S of Loonalaid, and Noota Maa, lying 0.5 mile NW Loonalaid, are both low islets, also covered with grass and bushes. Foul and rocky ground extends up to about 1.7 miles SSW and 1 mile W of Salava.

Atla Laht (58°19'N., 21°53'E.) is entered between Loonalaid and the SW side of Vilsandi Saar, 2.3 miles NE. This bay has depths of 3 to 5m in the middle and its shores, on either side, are low and consist of gravel and numerous large rocks. The village of Atla stands at the head of the bay and is backed by a ridge, 12m high. A prominent windmill is situated at the village. Anchorage, sheltered from all winds, can be obtained by small vessels with local knowledge, in a depth of 4m, sand, near the head of Atla Laht.

The central part of Eeriksaar, a low peninsula, is located on the NE side of Atla Laht and is wooded. A few prominent villages and windmills are situated along this part of the peninsula.

10.14 Vilsandi Saar (58°23'N., 21°52'E.), an island, lies 2.5 miles NE of Loonalaid. It consists of two parts joined by an isthmus. The E part is formed by low meadow land and the W

part is wooded. A village stands on the S side of the W part.

Vilsandi Light (58°19'N., 21°50'E.) is shown from a prominent round tower, 37m high, standing on the W extremity of Vilsandi Saar. Vesiloo, an islet 4m high, lies close off the N side of the island, 1 mile NE of the light.

Vilsandi Light

Suurkuiv (58°23'N., 21°40'E.), a dangerous rocky patch, lies on the outer edge of a shoal bank which extends up to 5 miles W from the W extremity of Vilsandi Saar. It is marked by a buoy moored off its W side.

Mustpank (58°22'N., 21°33'E.), a shoal with a least depth of 7.2m, lies about 9.2 miles W of Vilsandi Saar Light.

Uuskuiv (58°19'N., 21°33'E.), a rocky shoal patch, lies about 9.5 miles WSW of Vilsandi Saar and has a least depth of 4.9m.

A shoal, with a depth of 8.8m, lies about 15 miles WSW of Vilsandi Light and an isolated patch, with a depth of 9.4m, lies about 1 mile SW of it.

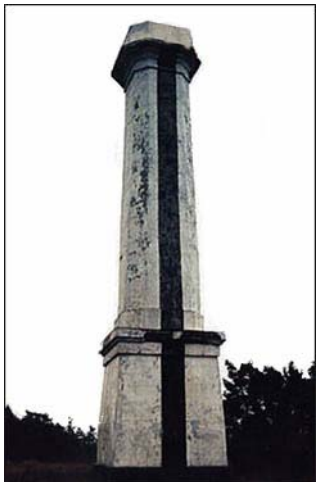
Pletseva Banks (58°11'N., 21°02'E.), with a least depth of 18m, lie about 27 miles WSW of Vilsandi Light and form the outermost known dangers in this area. Numerous other dangers lie on these banks and may best be seen on the chart.

Kihelkonna Laht (58°23'N., 21°58'E.), a bay, is approached between Vilsandi Saar and the S extremity of Harilaid, a low peninsula located 4.5 miles N. From a distance, Harilaid, which forms the W extremity of the large peninsula of Tagamoisa, appears as an island. The bay, which affords anchorage, in depths of 11 to 13m, sand, is open to the NW, but heavy seas do not reach the roadstead as it is protected by shoals. A track leads into the bay on a bearing of 129° from a concrete tower (58°22.5'N., 21°59.9'E.), 18m in height, and a church (58°21.6'N., 22°02.1'E.), with a red steeple, which stands in the village of Kihelkonna near the head of the bay.

Caution.—It has been reported that a dangerous wreck lies on this trackline in position 58°23.3'N, 21°58.2'E.

Jaagurahu (58°24'N., 21°58'E.), a loading place, lies 2 miles E of the NE extremity of Vilsandi Saar. There is a pier, 230m long, with a depth of 4.9m alongside the head. A channel, with a least depth of 4.3m, leads from seaward to the pier, but local knowledge is necessary. Small vessels with local knowledge can obtain anchorage, in a depth of 5m, mud and sand, about 0.5 mile S of the head of the pier.

Church in Kihelkonna



Concrete Tower in Kihelkonna

Kiipsaare Nukk (58°30'N., 21°52'E.), the NW extremity of Harilaid, is fronted by dangers which extend up to about 2.5 miles NW of it.

Caution.—Anchoring and fishing are prohibited within an area lying between Panganeem, the NE extremity of Vilsandi Saar, and the mainland coast, 1.5 miles ENE.

10.15 Taga Laht (58°29'N., 22°06'E.), a bay, is entered between Undva Nina (Undva Neem), located 2.5 miles ENE of Kiipsaare Nukk, and Ninase Pank, located 9 miles ENE. The coast rises to the E of Undva Nina, which is low and sandy, and forms limestone cliffs. These cliffs become precipitous at Suurkuiv Pank, about 2.7 miles E. Several white sand cliffs, known as Veery Magi, stand at the middle of the W side of Taga

Laht.

During the navigation season, a light is shown from a beacon, 10m high, standing on Meres Neem (58°30'N., 22°09'E.), 3.5 miles SW of Ninase Pank.

Large vessels can obtain anchorage, in depths of 15 to 18m, sand and mud, with good holding ground, about 2.5 miles SW of Merise Neem. However, they must remain clear of a dangerous wreck lying near the W side of the bay and a marine farm situated 3 miles SW of Merise Neem. Although the bay is open to the N, vessels can remain here during strong N winds. Small vessels can anchor, in a depth of 5m, sand and mud, about 0.7 mile offshore, at the E side of the head of the bay.

Ristna Light

Kudemaa Laht (Kudema Laht) (58°31'N., 22°16'E.) is entered between Ninase Pank and Pa'anga Nukk (Pa'anga Pank), 3 miles NE. Both entrance points of this bay are faced with cliffs. A light is shown from a framework structure, 30m high, standing on Pa'anga Nukk, which rises to a height of 24m. A church, white with a dark roof, stands at Mustjala, 1.5 miles S of the SW corner of the bay, and can be seen over the trees. The village of Ninase, situated 1.5 miles SSE of Ninase Pank, can be readily identified by several windmills and a prominent white house. The shores of the bay are mostly low, wooded, and bordered by rocks and sand.

Laidu, a flat islet, is situated 3 miles S of Panga Nukk Light. It is fringed by rocks and lies on the edge of the shore bank which extends from the E side of the bay.

Vessels of considerable size can obtain anchorage, during offshore winds, in depths of 12 to 20m, sand, between Laidu and the village of Ninase. However, they should not remain at anchor with N or NW winds which send heavy seas into the bay.

The coast extends 9.5 miles ENE between Panga Nukk and Pammanina, the N extremity of Saaremaa, and is low and wooded. The shore is bordered by a sandy and rocky beach with several large above-water rocks on it.

Saaremaa Harbor (58°32'N., 21°14'E.) is located within Kudemaa Laht close to the village of Ninase. It is administered by the Port of Tallinn and is mostly used by cruise ships. There are also facilities for pleasure craft.

Depths—Limitations.—The harbor provides an L-shaped quay, with 460m of berthage and depths of 3 to 10m alongside. Vessels up to 200m in length, 30m beam, and 9.6m draft can be accommodated alongside.

Pilotage.—Pilots are available. They may be contacted by VHF and will board vessels about 2 miles N of Ninase Pank.

Caution.—Entry during strong NW winds may be difficult.

10.16 Hiiumaa—West side.—The S extremity of Hiiumaa is located 3 miles N of Pammanina, the N extremity of Saaremaa. The water area lying between these two points is foul, encumbered with numerous rocks, and does not appear to be navigable. The S part of the W coast of Hiiumaa is so low that, at first sight, it appears to be a chain of small islets.

Ristna (58°56'N., 22°03'E.) is a point forming the W termination of Kopu Poolsar, a peninsula, which projects from the W side of Hiiumaa. A light is shown from a prominent round tower, 30m high, standing on this point.

A range of hills extends for the length of the peninsula and rises to a height of 68m at Tornimagi. Andresemagi, a prominent peak, rises 1.2 miles ENE of Tornimagi and is 54m high. A sandy ridge extends up to about 2 miles W from Tornimagi.

Kopu Light (58°55'N., 22°12'E.) is shown from a prominent square tower, 36m high, standing on Tornimagi, 4.7 miles ESE of Ristna Light.

Kopu Light

The coast extending between the S extremity of Hiiumaa and Ristna Light is fronted by an extensive shore bank, with depths of less than 5m, which extends up to about 5 miles seaward in places. Several dangers lie on this bank and local knowledge is required to approach the coast.

Neupokojevimadalik (58°55'N., 21°51'E.), a large detached shoal area, has a least depths of 9m and lies about 7 miles WSW of Ristna Light. It forms the outermost danger in this vicinity. This shoal area should not be confused with an isolated shoal patch of the same name which lies 7.5 miles SE of Ristna Light. This patch has a least depth of 2.9m and is marked by a buoy.

Kaleste (58°55'N., 22°08'E.), a village, is situated 3 miles SE of Ristna. Small vessels, with local knowledge, can obtain anchorage, in a depth of 5m, sand, 0.5 mile off the village, but the roadstead is exposed to winds from between W and SW. A range, consisting of a beacon in line with Kopu Light, indicates the approach channel leading to the roadstead which has a least depth of 5m.

10.17 Hiiumaa—Northwest side.—Fog often occurs off the NW coast of Hiiumaa and is most frequent during April when visibility is usually reduced to less than 1 mile.

From Ristna, the NW coast of the island trends in a NE direction for about 18 miles. It consists of two deep indentations and numerous small coves of no particular significance. Shoals, with depths of less than 3m, lie close within the 20m curve and up to about 8 miles offshore. The sea breaks on many of these shoals with onshore gales and the white stony bottom can be seen from a considerable distance in calm weather.

A detached shoal patch, with a least depth of 11.4m, lies about 10 miles N of Ristna Light.

Vinkovimadalik (59°11'N., 22°19'E.), a shoal area with a least depth of 8m, lies about 17 miles NE of Ristna Light and is marked by a lighted buoy at its NW side. This shoal area forms the outermost known danger in this vicinity.

Tahkuna Nina (59°05'N., 22°36'E.) is the NW extremity of the broad peninsula which forms the N end of Hiiumaa. It is low and covered with dense pine woods. The shore in this vicinity is sandy with numerous large above-water rocks. Tahkuna Light is shown from a prominent tower, 43m high, standing on this point.

Tahkuna Light

Serbinimadalik (59°14'N., 22°42'E.), a shoal patch with a least depth of 13.2m, lies about 9.7 miles NNE of Tahkuna Nina Light.

Appalomadalik (Apollo) (59°13'N., 22°51'E.), a shoal area with a least depth of 6m, lies about 9.8 miles NE of Tahkuna Nina Light and is marked by a buoy.

Directions.—The coastal route along this section leads NNW for about 30 miles from the vicinity of Lighted Buoy No. 1 (57°51'N., 21°37'E.), which is moored in the approach to the Irbenskiy Strait, about 15 miles WSW of Sorve Saar Light. After clearing the dangers lying W of the island of Vissandi Saar, the route then leads NNE for about 45 miles to a position W of Kopu Light (58°55'N., 22°12'E.).

Traffic Separation Schemes (TSS) are centered 20 miles NW and 40 miles NNE of Kopu Light and may best be seen on the chart.

The Gulf of Riga

10.18 The Gulf of Riga (Rizhskiy Zaliv) is also known as Rigas Juras Licis (Livi Laht) is bounded by the coast of Latvia, on the S side, by Saaremaa and Muhu, on the N side, and by the coasts of Latvia and Estonia, on the E side. The Latvian side of the gulf is generally low and sandy with occasional cliffs. Low ridges, formed by sandy and wooded hills, back the coast and several large boulders fringe the shore. The Estonian side of the gulf is very irregular and low. It consists of numerous rocky peninsulas and bights which are backed by woods. Many small villages and summer resorts are situated along the coasts of the gulf. Ruhnu, an isolated island, lies in the central part of the gulf. The gulf has very few conspicuous landmarks, but is marked by numerous navigational aids.

Winds—Weather.—In the Gulf of Riga, the prevailing winds are from between S and SW. Fog is prevalent from October until April.

Ice.—In normal winters, pack ice appears in December and fast ice forms along the shores in the latter part of this month. During severe winters, almost the whole gulf may be frozen over. In February, the gulf may be frozen over to almost the middle where heavy pack ice accumulates. The ice generally forms very quickly, especially in the S part of the gulf. Ice pressure may set in without warning and sometimes forms against the direction of the wind.

The ice begins to melt in March and fast ice may have disappeared from the shores by the end of the month. However, pack ice may still be encountered. By the middle of April, ice is usually found only in the N part of the gulf.

As long as the ice within the gulf is not in motion, it is scarcely dangerous to shipping. However, vessels should be prepared at all times to stop the engines quickly in the event that their condensers become clogged with brash ice.

At times, the ice floes begin to push upward so that they become stacked vertically over one another. This action, often lasting only a few minutes, results in the forming of a large structure of ice known as a "Torosse." These structures of ice, according to reports, may stand up to 12m above the water level. When the ice is in motion, the danger becomes very great. If the wind and the current are in the same direction, the ice often moves quickly and can easily attain speeds of up to 8 knots. To resist the great pressure formed by this movement of ice, vessels must be specially constructed.

Tides—Currents.—In the Gulf of Riga, the currents are irregular and set inward from Muhu Vain and through Irbeni Vain. During continued calm weather, the current sets S through Muhu Vain and attains rates of 0.5 to 0.8 knot. With

strong W or SW winds, the inward flow from the Baltic Sea may become quite strong and the current, which sets E, may be diverted on striking the E shore of the gulf. This current then sets N and flows into Muhu Vain at rates of 1 to 1.5 knots. In calm weather, the current usually sets N or S along the E shore of the gulf according to the direction of the wind preceding the calm, but its rate does not exceed 0.5 knot.

Variations of the water level in the gulf occur according to the wind direction. Winds from the S and SW cause the highest levels and winds from the NE cause the lowest. These variations seldom exceed 0.5m, but they may reach 1 to 1.2m during autumn and winter.

Regulations.—In Latvian waters, during the ice navigation season, the responsibility for the control and operation of the ice services and icebreaker is divided between the harbormasters of the ports of Liepaja, Ventspils, and Riga. The dates and implementation of any rules imposed are approved by the relevant port authorities. In addition, the harbormaster at Riga has responsibility for winter navigation in the Irbe Strait, the main entrance to the gulf. Certain restrictions on size, engine capacity, and ice class construction apply to vessels intending to pass through the strait and call at ports in the gulf, dependent on prevailing conditions.Vessels with less than Lloyds Ice Class 3, or equivalent, are prohibited from entering the waters in question. Vessels bound for, or leaving the port of Riga, must forward a report, with full details of vessel and cargo, to the harbormaster at Riga at least 24 hours in advance.

It is reported that all vessels bound for Riga or other ports on the coast of Latvia within the gulf are prohibited to enter the Irbe Strait and the gulf or to leave these ports independently without a special permit issued each time by the Captain of the icebreaker. The permit takes into account the actual ice condition in the area after being approved by the harbormaster at Riga.

In Estonian waters, vessels that have requested icebreaker assistance should await the icebreaker at a position near the E end of the TSS situated off Kopu Poolsaar at Hiiumaa Island (58°55'N., 22°30'E.). The icebreaking service is controlled by Tallinn VTS. For details of the icebreaking service, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Caution.—Local magnetic anomalies are reported to exist in the SE part of the Gulf of Riga.

Former mine areas lie within the gulf and vessels are advised to anchor only within the designated areas and follow the designated routes.

10.19 Irbeni Vain (Irbenskiy Strait) (Irbe Strait) (57°40'N., 22°08'E.), a strait, is the W and main entrance to the Gulf of Riga. It is formed, on the S side, by the section of the mainland extending between Ovisi and Kolkasrags, 31 miles ENE. Sorve Poolsaar, located 23 miles NNE of Ovisi, forms the N side of the strait. The shores of the strait are low with no natural landmarks.

Several shoals, with depths in places of less than 11m, lie between 7 and 11 miles N of Ovisi. For the purpose of buoyage, these dangers are considered to form one extensive shoal area.

Michailova Seklis (57°44'N., 21°42'E.), the northernmost and largest shoal in the above area, has a least depth of 5m.

The coast between Ovisi and Kolkasrags, 31 miles ENE, is low and sandy. Several sand hills, of moderate height and covered with trees, rise close inland of the shoreline.

Mikeltornis Light (57°36'N., 21°58'E.) is shown from a conspicuous concrete tower, 56m high, standing at Mikelbaka, 8.5 miles ENE of Ovisi Light. It is reported (2007) that a racon is situated at this light tower.

Sorve Saar Light is shown from a prominent tower standing on the N side of the strait, about 19 miles N of Mikeltornis Light (see paragraph 10.12).

Irbenskiy Light (57°45'N., 21°44'E.), equipped with a racon, is shown from a prominent structure, 35m high, standing on the SW side of the main channel, 12.5 miles NW of Mikeltornis Light.

Lighted Buoy No. 1 (57°51'N., 21°37'E.) is moored about 7 miles NNW of Irbenskiy Light and marks the seaward entrance of the channel leading through Irbeni Vain.

Zieliekalni, a range of hills, rises about 19 miles E of Ovisi and is 50 to 77m high. A conspicuous church, with a spire, stands 1.5 miles inland at Mazirbe, 20.5 miles ENE of Ovisi. It can be seen from seaward rising above a group of trees.

Sikragciema Light (57°39'N., 22°13'E.) is shown from a prominent framework tower, 27m high, standing 8.7 miles ENE of Mikeltornis Light.

Kolkasrags (57°46'N., 22°36'E.), located about 14 miles NE of Sikragciema Light, terminates in a sandy point with woods standing close inland. Two prominent churches are situated 0.7 mile SW of this cape. A reef, with depths of less than 5m, extends up to about 3.2 miles NNE of Kolkasrags and is steep-to on its N and E sides.

Kolka Light (57°48'N., 22°38'E.), equipped with a racon, is shown from a prominent tower with dwellings, 21m high, standing on an artificial islet lying near the extremity of the reef.

Kolka Light

Vessels can obtain anchorage, sheltered from W and SW winds, in a depth of 14m, sand, about 2 miles offshore, under the lee of Kolkasrags. However, vessels must be ready to leave this anchorage quickly should the wind shift to the E.

A conspicuous framework beacon (former light tower) stands at Saunagciema, about 5 miles SW of Kolkasrags, and is 21m high.

Winds—Weather.—In the strait, the prevailing winds are from the S, SW, and W and sometimes cause high waves. Fog within the strait occurs most frequently during spring.

Tides—Currents.—Between Ovisi and Kolkasrags, the current varies according to the strength and direction of the wind, attaining, at times, rates of 1 to 1.5 knots. With continued W winds, a current often sets NW around Kolkasrags. It then sets

across the direction of the wind and often causes a confused sea in the vicinity of the reef extending from the cape.

Directions.—Navigation through Irbeni Vain (Irbe Strait) is via a channel, which is marked by lighted buoys, and presents few difficulties. However, in low visibility, caution is advised due to the current.

Vessels with drafts of 10m and over should steer for Lighted Buoy No. 1 (57°51'N., 21°37'E.). Such vessels approaching from the S, should pass W and clear of Bezymyannaya (57°43'N., 20°59'E.) before steering ENE towards Lighted Buoy No. 1.

An alternate route leads 18 miles NNE to the vicinity of Lighted Buoy No. 1 from W of Ovisi Light (57°34'N., 21°43'E.). It passes between a dangerous wreck lying 2 miles WSW of Lighted Buoy No. 5 (57°40'N., 21°33'E.) and the E side of Banka Vinkova (57°40'N., 21°20'E.).

The main channel leads 13.5 miles SE from Lighted Buoy No. 1 to Lighted Buoy No. 4 (57°40'N., 21°52'E.), passing NE of Irbenskiy Light. It then leads ENE for about 26 miles to Lighted Buoy No. 8 (57°51'N., 22°37'E.), which is moored 3 miles N of Kolka Light. The fairway is about 1 mile wide and has a least depth of 15m on the centerline.

A secondary route for small vessels leads about 9.5 miles E from the vicinity of Lighted Buoy No. 5 (57°40'N., 21°33'E.) and joins the main channel at Lighted Buoy No. 4 (57°40'N., 21°52'E.).

Recommended routes, which may best be seen on the chart, lead, respectively, SE and ENE from Lighted Buoy No. 8 (57°51'N., 22°37'E.) to Riga and Parnu.

Caution.—Several wrecks, with depths of less than 15m, lie at the sides of the main channel and may best be seen on the chart.

10.20 Ruhnu Saar (57°48'N., 23°14'E.), an off-lying island, belongs to Estonia and lies in the Gulf of Riga, about 20 miles E of Kolkasrags. The W side of the island is low, but the E side is hilly, wooded, and rises to a height of 30m. The NE and E coasts of the island are low, steep, and formed by reddish cliffs of sand and rock. A village is situated in the middle of the island. Ruhnu Saar Light is shown from a prominent tower, 40m high, standing, above the tree tops, on the SE side of the summit of the island.

Ruhnu Saar Light

Gretagrund, a shoal bank, lies centered about 2.5 miles off the SE end of the island and has a least depth of 2.2m. A deep passage leads between this shoal bank and the coastal bank fringing the island. The coastal bank, with depths of les than 5m, extends about 2.5 miles NNW from the N end of the island and is marked by a buoy.

Vessels with local knowledge can obtain anchorage, sheltered from W and SW winds, off the SE side of the island. The roadstead has depths of 9 to 18m, sand, and lies between 0.5 mile and 1.2 miles off the S extremity of the island.

Caution.—Several military practice areas lie within the gulf to the S of Ruhnu Saar. For further information, see Pub. 140 Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

The Gulf of Riga—West Side

10.21 The coast extending between Kolkasrags and the mouth of the river Daugava, 62 miles SE, is mostly low and sandy. It is backed, in some places, by low and wooded hills. Several villages are situated along this stretch of coast.

Gipka Light (57°34'N., 22°39'E.) is shown from a prominent framework tower, 30m high, standing 11.5 miles SSE of Kolkasrags.

Roja (57°30'N., 22°49'E.), a small harbor, is located 6.5 miles SE of Gipka Light. It is protected by two breakwaters which extend about 400m seaward from a river mouth. A detached breakwater, in ruins, lies close offshore, to the S of the harbor. A main directional light is shown from a prominent framework tower, 20m high, standing in the vicinity of the harbor. An outer approach lighted buoy is moored about 1 mile NNE of the breakwater heads. The harbor has depths of 3 to 5m and is used by coasters, fishing vessels, and pleasure craft. Vessels up to 90m in length, 15m beam, and 4.2m draft can be accommodated. Local knowledge is required.

Mersrags (57°22'N., 23°08'E.), a low and sandy point, is located 28 miles SE of Kolkasrags and covered with pine woods. An isolated rocky shoal patch, with a depth of 3.6m, lies 0.5 mile NNE of the point and is marked by a buoy. A light is shown from a prominent tower, 19m high, standing on the point.

Mersraga Osta, a small harbor, lies 2 miles SSE of Mersrags Light at the mouth of a river which forms the outlet of an inland lake. The village stands on the N side of the river entrance. An outer approach lighted buoy is moored about 2 mile E of the harbor. The harbor is used by coasters, fishing vessels, and pleasure craft. Vessels up to 80m in length, 12m beam, and 4m can be accommodated.

Engure (57°10'N., 23°14'E.), a small and shallow harbor, lies 12.8 miles SSE of Mersrags Light and is used by fishing boats and pleasure craft. A light is shown from a prominent framework tower, 19m high, standing close N of the harbor.

Ragaciems (57°02'N., 23°30'E.) is a low sandy point lying 23 miles SSE of Mersrags Light. Conspicuous churches stand at Sloka and Dubulti which are situated 7 miles SE and 10 miles ESE, respectively, of this point. Ragaciems Light is shown from a prominent framework tower, 30m high, standing on the point.

Daugavgrivas Sala (Ostrov Daugavgriva) (57°02'N., 24°00'E.), an island, lies between the mouth of the river

Approach to Riga

Lielupe and the mouth of the river Daugava.

Bulluciems Light (57°00'N., 23°53'E.) is shown from a prominent pyramid structure, 28m high, standing close to the shore, 1.7 miles W of the W end of Daugavgrivas Sala.

Tides—Currents.—On the W side of the gulf between Kolkasrags and the mouth of the Daugava, the currents set according to the direction and force of the wind. They usually attain rates of 0.5 to 1 knot.

Anchorage.—Vessels can obtain anchorage, with offshore winds, in depths up to 27m, off any part of the coast extending between Kolkasrags and the mouth of the river Daugava. However, the most used roadstead lies about 2 miles S of Kolkasrags.

Riga (56°57'N., 24°06'E.)

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10.22 Riga is situated on the S coast of the Gulf of Riga and about 7 miles above the mouth of the river Daugava. The city stands on both banks of the river and is the capital of Latvia. The port consists of facilities extending along the banks of the river between the entrance and the city.

Winds—Weather.—Fog is prevalent from September to April.

Ice.—Entry to the port depends almost entirely on when Irbeni Vain becomes icebound, which in turn depends on the direction of the wind. Winds from the N drive the ice into the strait and winds from the S drive it away. Ice conditions usually last from the end of January to the beginning of April. However, in most years, powerful icebreakers keep the port open throughout the winter.

Vessels bound for Riga and requiring icebreaker assistance should inform the harbor authorities at least 48 hours before arrival at the ice limit. Such vessels should state in the message their loading level, draft, ice class, details of any rescue equipment, details of any ice damage, and amounts of fresh water and fuel remaining on reaching the ice limit.

Tides—Currents.—The tides are negligible. The water level varies with the wind direction. Winds from the W may cause a rise in the water level of up to 2m. Winds from the E may cause a fall of up to 1.1m. Spring thaws are reported to sometimes raise the water level by as much as 3m.

The currents in the river Daugava attain rates of 1 to 2 knots. In the spring, a current sets across the bar, in a NW direction, at rates of up to 3 knots. However, this same current is weak in the summer. In the channel leading over the bar, a current, caused by W or NW winds, usually sets SE at a rate of 0.3 knot. Winds from the E may cause this current to set W at a rate of 1 knot.

Depths—Limitations.—The river bar, with depths of less than 10, extends up to about 1.5 miles from the port entrance. A safety fairway and an entrance channel, 100m wide, lead SE over the bar and into the harbor. They were reported (2000) to have a least depth of 13.3m as far as a point lying 2.5 miles inside the harbor entrance.

The main facilities include a container terminal, with 450m of berthage, which can handle vessels up to 10m draft; a pas-

Riga Harbor1

senger terminal, with 217m of berthage, which can handle vessels up to 8m draft; a gas terminal, with 145m of berthage, which can accommodate vessels up to 6.6m draft; and the Eksportosa riverside terminal, with 240m of berthage, which can accommodate vessels up to 10m draft. The shipyard provides 500m of berthage and can accommodate vessels up to 8m draft.

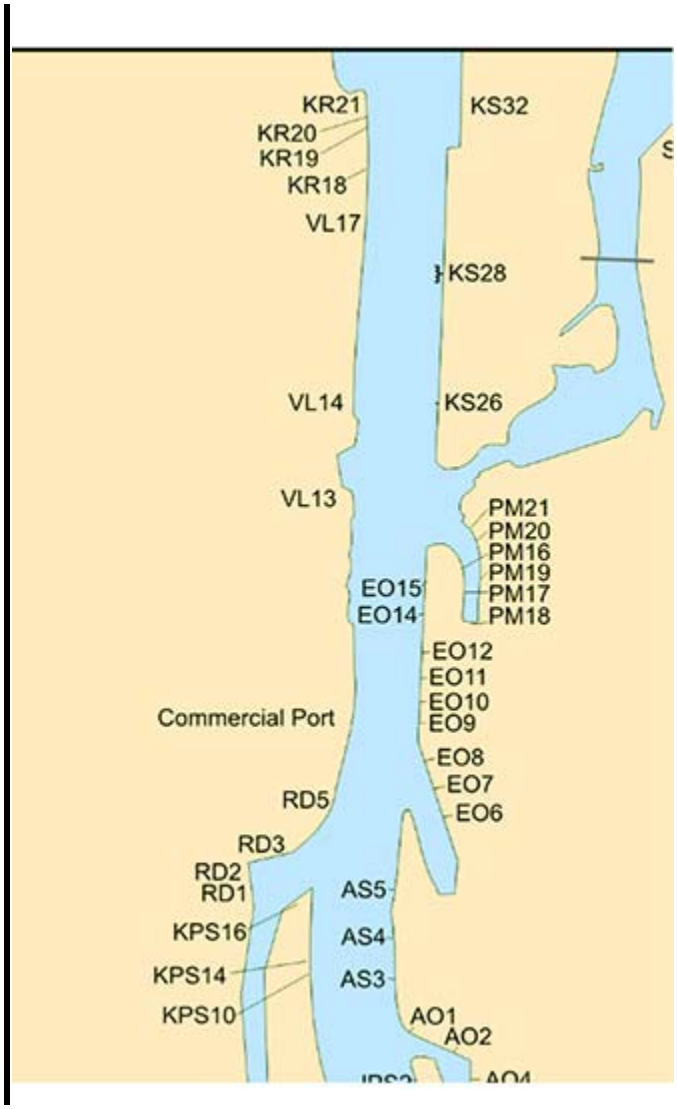
The port provides over 7,000m of commercial quayage along the river with facilities for general cargo, bulk, tanker, chemical, gas, ro-ro, passenger, and container vessels. In addition, there are extensive facilities for repairs, with six floating docks and two slipways. The largest floating dry dock is 225m long and 45m wide. It can accommodate vessels up to 8m draft.

Vessels up to 195m in length can enter the harbor with drafts up to 10.2m. Those vessels not exceeding 185m in length can enter with drafts up to 10.6m. An underkeel clearance of 0.45m is recommended for entry. Vessels up to 86,860 dwt, 240m in length, 35m beam, and 9m draft have been accommodated in the port.

An overhead cable, with a vertical clearance of 52m, spans the harbor channel, 4 miles above the river mouth. This overhead cable has been reported (2012) to have been removed, however, the towers from which the cable was hung remain standing.

Riga Harbor

Aspect.—The entrance of the river Daugava lies between



Riga Harbor2

two breakwaters. One extends in a NW direction from the NE extremity of the island of Daugavgrivas Sala and the other extends in a NW direction from the W extremity of the island of Mangalsala. The town of Daugavgriva is situated 1.5 miles S of the river mouth. A prominent fort stands close NE of Daugavgriva and the town of Bolderaya is situated close SE of it. The river Daugava flows through a valley which consists of meadows and swamps, interspersed with sand hills. Numerous low islands and sand banks lie in the river and are partly covered with grass. These islands and banks, along with the low sides of the river, are usually inundated when the ice melts in the spring.

Several towers, chimneys, and masts are situated in the vicinity of Riga and are conspicuous.

Daugavgrivas Rear Range Light is shown from a conspicuous tower, 35m high, standing at the root of the S breakwater. A racon is situated at this light.

Outer Approach Lighted Buoy B is moored about 4 miles NW of the light. The safety fairway and entrance channel are marked by lighted buoys and indicated by lighted ranges. Lights are shown from the breakwater heads.

Pilotage.—Pilotage is compulsory for vessels over 24m los unless a PEC is held.

Pilot boards at the Approach Lighted Buoy B (57°06.5'N 23°56.9'E).

In adverse weather conditions, pilotage may be conducted by radar.

Requests for Deep Sea Pilots for the Baltic should be submitted through the harbor master 48 hours in advance prior to arrival at the roads off Ventspils. Vessels requesting Deep Sea Pilots for passage from Riga should request pilots 24 hours prior to departure.

Vessel Traffic Service.—A mandatory Vessel Traffic Service (VTS) system, which applies to all vessels navigating within the area controlled by the VTS, operates in the approaches to the port. It covers all waters of the port and all waters lying within a radius of 10 miles (sector 270°-020°) of the main harbor light.

All vessels must send an ETA at Outer Approach Lighted Buoy B 24 hours and 4 hours in advance. The message should include the following information:

1. Name and type of vessel.
2. Nationality.
3. Length.
4. Beam.
5. Draft and air draft.
6. Tonnage.
7. Agent.
8. ETA.
9. Berth.
10. Purpose of visit.

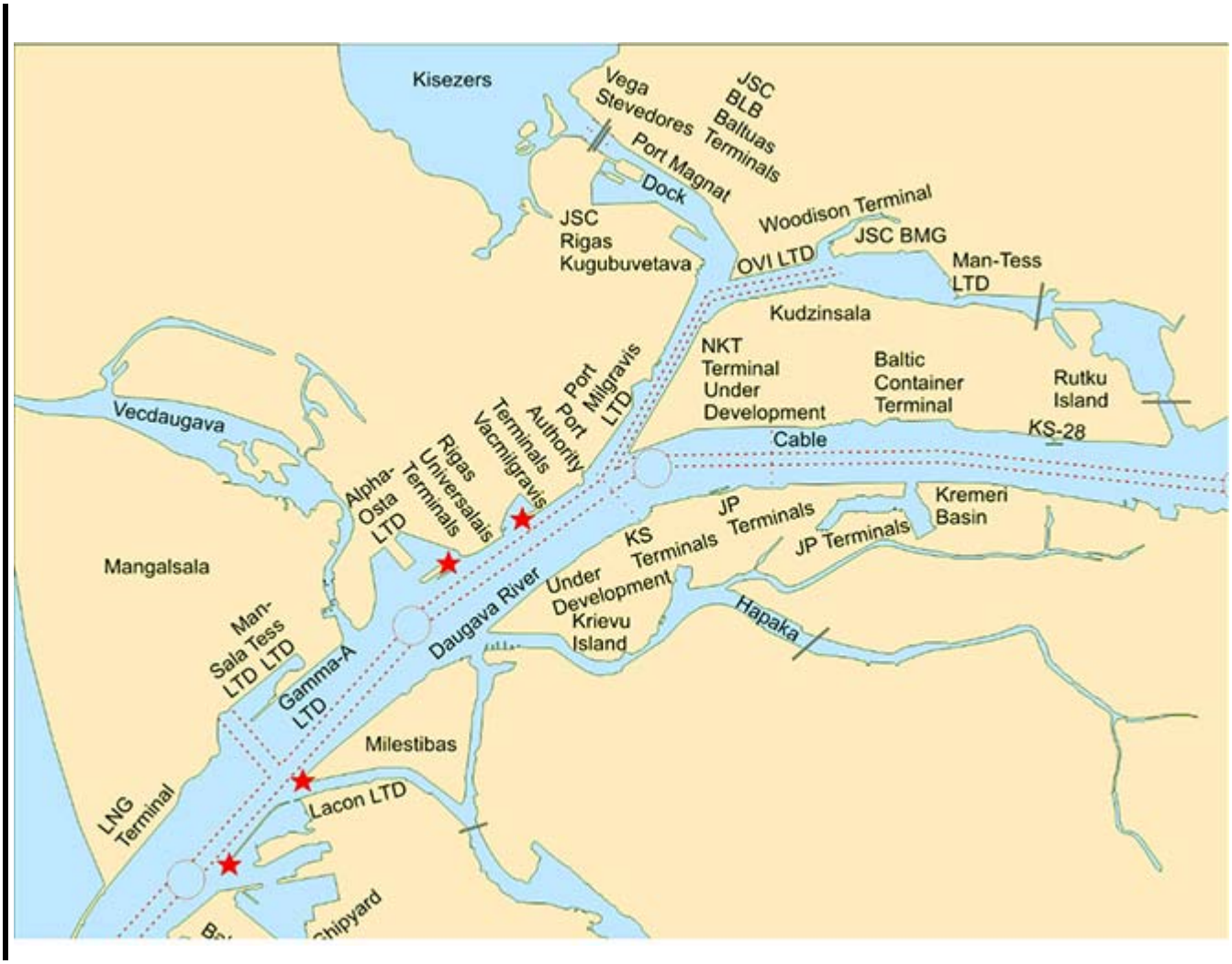
Tankers must also declare their previous cargo.

Vessels must establish contact with the VTS (Riga Traffic Control) on VHF channel 16 or 9, 4 hours prior to and upon arrival at Reporting Point R (57°11.2'N., 23°48.8'E.). Vessels should then maintain a continuous listening watch on VHF channel 9.

The movements of all vessels within the harbor area are controlled by the VTS system. Vessels must receive permission from the Traffic Control Center via VHF before moving within the harbor. This permission must be renewed after 30 minutes if the movement has not taken place.

During the period of December to March when Irbeni Vain and the Gulf of Riga are frozen over, vessels should send a report to arrange ice-breaking service at least 24 hours before passing the meridian of Irbe Strait Light. The report should be sent to the Harbormaster and to the Captain of the icebreaker "Varma" directly or through the agent. The report should include the following:

1. Name of vessel.
2. Nationality/Flag.
3. Call sign.
4. Ice classification.
5. Length and beam.
6. Draft.
7. Tonnage.
8. Main engine capacity.
9. Type and quantity of cargo.
10. ETA at the meridian of Irbe Strait Light.



Riga Harbor3

Riga Container Terminal

Daugavgrivas Rear Range Light

Signals.—A signal station tower is situated close to the light at the root of the S breakwater. A visual time signal is made once daily at this station.

When the entrance of the river is dangerous because of ice, an additional red flashing light is exhibited from the light structure. If entry becomes impossible, the entrance fairway range lights are extinguished.

Contact Information.—The pilots can be contacted as follows:

1. Call sign: Riga Pilot

2. VHF: VHF channels 9, 16 and 67
3. Telephone: 371-67082032
4. Facsimile: 371-67323117
5. E-mail: riga_vts@freeportofriga.lv

The VTS can be contacted as follows:

1. Call sign: Riga Traffic
2. VHF: VHF channels 9, 14 and 16
3. Telephone: 371-67082000
4. Facsimile: 371-67322750
5. E-mail: captain@rop.lv

The harbormaster can be contacted as follows:.

1. Telephone: 371-67082000
   371-67082035
2. Facsimile: 371-67322750
3. E-mail: riga_vts@freeportofriga.lv
4. Web site: http://www.rop.lv

The port authority contacts are the same as the harbormaster along with one additional telephone number of 371-67030835.

The Baltic Container Terminal can be contacted as follows:

1. Telphone: 371-67076200
2. Facsimile: 371-67076222
3. E-mail: info@bct.lv
4. Web site: http://www.bct.lv

The Baltic Container Terminal can be contacted as follows:

1. Telphone: 371-67076200
2. Facsimile: 371-67076222
3. E-mail: info@bct.lv
4. Web site: http://www.bct.lv

Anchorage.—An outer designated anchorage area, which may best be seen on the chart, lies centered 6 miles NW of the light. It lies SW of the approach route and has a least depth of 27m over a bottom of sand and mud. The roadstead is open to winds from SW through N to NE and, despite its moderate depth and good holding ground, is dangerous during such conditions, especially in the autumn when these winds prevail. During N gales, a heavy sea is usually formed in the roadstead and vessels should leave in good time if a gale is expected from that quarter. The most frequent strong winds are reported to blow from the SW and raise little sea.

Caution.—It is reported that the outer approach lighted buoy is likely to drag from its charted position during or after stormy weather.

A spoil ground area, which may best be seen on the chart, lies about 4 miles NNW of the port entrance.

The approach safety fairway and entrance channel are subject to frequent silting, particularly after storms. The authorities should be contacted for information concerning the latest depths and draft limitations. When crossing the bar, vessels are also advised to stay strictly on the alignment of the lighted range.

The Gulf of Riga—East Side

10.23 From the mouth of the river Daugava, the coast extends 16 miles NE and then 56 miles N to Pikla Nina. The shore is low, mainly sandy, and backed by sand dunes which are wooded in places. A few low cliffs stand to the S of the town of Salacgriva (57°45'N., 24°21'E.). Several churches stand in the villages, which are situated along this section of the coast, and form good landmarks.

Directions.—From the vicinity of the outer approach lighted buoy, moored about 4 miles NW of Riga, the recommended route, which may best be seen on the chart, leads N for 37 miles to a position located W of Salacgriva (57°45'N., 24°21'E.). From this position, one route leads NNE to Parnu and another route leads NNW to the passage of Vainameri.

Caution.—Several dangerous wrecks lie within 5 miles of the coast between Riga and Ladin'i Beacon and may best be seen on the chart.

A triangular-shaped area, within which navigation is temporary prohibited, extends up to about 10 miles NE from the vicinity of Ladin'i Beacon and may best be seen on the chart.

Fishing nets are laid within 3 miles of the coast between the entrance to the river Daugava and Parnu, 80 miles N. Caution should be exercised when navigating in this area.

Buoys moored in the vicinity of any of the offshore dangers lying along this stretch of coast are liable to drag and no reliance should be placed on them.

10.24 Ladin'i Beacon (57°12'N., 24°21'E.), a former light tower, stands near the shore, 13 miles NE of Riga. It consists of a conspicuous framework tower, 23m high.

Skultes Osta, a small harbor, is located 7.5 miles NNE of Ladin'i Beacon and is used by fishing vessels. The entrance is 70m wide and has a depth of 4m.

Laci Light (57°27'N., 24°23'E.) is shown from a prominent framework tower, 23m high, standing 15 miles N of Ladin'i Beacon. A conspicuous tall chimney is reported to stand at a brickworks 2.3 miles N of this light.

Grintals Light (57°38'N., 24°23'E.) is shown from a prominent framework tower, 21m high, standing 11.7 miles N of Laci Light.

10.25 Salacgriva (57°45'N., 24°21'E.), a small town, is situated at the mouth of a river, 7.5 miles N of Grintals Light. It is fronted by a small harbor which is protected by two breakwaters.

Depths—Limitations.—The approach channel is 60m wide and has a least depth of 5.5m. The harbor provides about 500m of quayage with depths of 4 to 5.5m alongside. Vessels up to 115m in length, 20m beam, and 4.5m draft can be accommodated.

Aspect.—An outer approach lighted buoy is moored about 2 miles WSW of the harbor. The fairway is indicated by a lighted range which may best be seen on the chart.

A prominent chimney, a water tower, and a church with a brown roof stand on the S side of the harbor. A church, with a red roof, and another church, with a green roof, stand in the town on the N side of the harbor and are very conspicuous when the trees are bare. A bridge spans the river at the E end of the harbor. A conspicuous white beacon stands on the N side of the river mouth. This structure, 9m high, is a disused light tower.

Pilotage.—Pilotage is compulsory for vessels over 50m in length. Pilots can be contacted on VHF channel 12 and board in the vicinity of the outer approach lighted buoy. Vessels, except local fishing boats, should send an ETA through the agent 72 hours, 48 hours, and 24 hours in advance.

Anchorage.—Vessels may obtain anchorage, in depths of 6 to 7m, rock, about 2 miles W or 3 miles SW of the harbor.

10.26 Talais Seklis (57°49'N., 24°13'E.) is a shoal with a least depth of 6.8m, lies about 4.2 miles offshore, 5.7 miles NW of Salacgriva. This shoal is the outermost danger in this vicinity.

Ainazi Light (57°52'N., 24°22'E.) is shown from a prominent tower, 18m high, standing near the small coastal town of the same name, 7 miles N of Salacgriva. A prominent church, without a spire, stands in this town and a distinctive white church, with a black roof, is situated in the village of Treimani, 3 miles NNE. A small and shallow harbor fronts the town.

Pikola Seklis, an isolated shoal patch, lies about 4.2 miles NW of Ainazi Light and has a least depth of 6m. It lies outside the 10m curve.

The boundary between Latvia and Estonia lies about 0.6 mile N of this light.

Haademeetse Light

10.27 Haademeeste (58°05'N., 24°30'E.), a small town, is situated 13 miles NNE of Ainazi Light. Two conspicuous churches stand in this vicinity. One is situated near the coast and is a white building with a black roof and a black cupola. The other is situated 0.5 mile farther NE and is a red building with a green spire. A light is shown from a prominent framework tower, 28m high, standing close SW of the town.

Pihinurme Maed, a group of prominent sand hills, rises to a height of 46m and stands about 3.5 miles N of this town.

Bostri Madalik (Kiire Madal) (58°01'N., 24°20'E.), a rocky shoal, lies about 6.5 miles SW of Haademeeste Light and has a least depth of 5m. An isolated shoal patch, with a depth of 9.8m, lies 4 miles N of this rocky shoal.

Pihinurme Madalik, a reef with a least depth of 3.6m, lies about 2 miles offshore, 4.5 miles NNW of Haademeeste Light.

10.28 Parnu Laht (58°15'N., 24°23'E.) lies at the NE end of the Gulf of Riga and is entered between Pikla Nina (58°15'N., 24°28'E.), located 10.5 miles N of Haademeeste, and Sorgu Saar, a small island lying 8 miles W. The shores at the entrance to the bay are indented and rocky, but become regular and sandy to the N. The entire coastal terrain is low and wooded. There are depths of 9 to 12m in the entrance to the bay and a depth of 7m in the middle; the bottom is mainly sandy. The bay is sheltered from all winds, except those from between S and SW, and provides good anchorage.

The E shore of the bay to the N of Pikla Nina is fronted by shoals and reefs which extend up to 2 miles seaward. Several conspicuous churches stand along the stretch of shore extending between Pikla Nina and Parnu.

Irmgardi Madalik, a detached shoal patch, lies about 4 miles NW of Pikla Nina and has a least depth of 4.6m.

The SSW part of the W shore of the bay is fronted by the islands of Kihnu Saar, Sorgu Saar, and Manilaid.

Kihnu Saar (58°08'N., 24°00'E.), the southwesternmost of the islands, lies about 6 miles S of the mainland and 16 miles W of Haademeeste. It is low and wooded. A church, with a dark spire, stands in the middle of the island and is conspicuous from the SW and W. A large house, with a red roof, is situated close S of this church. Kihnu Saar Light is shown from a prominent tower, 32m high, standing on Mys Pikkana, the S extremity of the island.

Kihnu Saar Light

A foul area, with several above and below-water rocks, extends up to about 2 miles ESE from the SE side of the island and is marked close E by a buoy. A dangerous wreck lies about 3.2 miles SE of Kilnu Saar Light. Foul ground areas, marked by buoys, extend about 2.5 miles N and 7.5 miles NW from Pilli Ots, the N extremity of the island.

Kihnu Krunt (Kihnu Madal), an extensive shoal, extends SSW for 3 miles and its N end lies about 2.5 miles SSW of Kihnu Saar Light. This shoal has a least depth of 1.8m and is marked by a lighted buoy, at the S end, and a buoy, at the N end.

Caution.—A dangerous shallow wreck lies on a shoal area, with a least depth of 8.6m, centered about 9 miles W of Kilnu Saar Light.

10.29 Sorgu Saar (58°11'N., 24°12'E.), lying 6 miles ENE of the NE end of Kihnu Saar, is a small and low island. It is covered with bushes and fringed by rocks. A foul ground area extends up to about 3 miles S of the island. A light is shown from a prominent tower, 16m high, standing on this island.

A dangerous wreck, marked by a lighted buoy, lies about 3.5 miles SSE of the light.

Manilaid (Manilaiu) (58°13'N., 24°08'E.) is an island, 5m high, lying 3 miles NW of Sorgu Saar. It is covered with grass and bushes. The island is surrounded by foul ground and separated from the mainland to the N by a shallow channel, about 0.5 mile

Sorgu Saar Light

Manilaid Light

Kiriku Nina Light

wide. A light is shown from a prominent tower, 8m high, standing on the S extremity.

Kiriku Nina (Cape Kirikunina) (58°17'N., 24°17'E.), a salient point, is located on the mainland, 4.5 miles ENE of the N end of Manilaid. A light is shown from a prominent framework tower, 28m high, standing on this point.

A shallow reef extends up to about 0.6 mile S and 0.3 mile E of Kirku Nina Light. The shore extending N from this light to the head of the bay is low and marshy. Several rivers flow into Parnu Laht and form flats, with depths of less than 5m, which extend up to 3 miles offshore. Several above and below-water rocks lie on these flats between Manilaid and Kiriku Nina.

Caution.—Fishing areas, which may best be seen on the chart, lie within Parnu Laht and the approaches. Vessels not engaged in fishing are prohibited from navigating in these areas.

10.30 Parnu (54°23'N., 24°30'E.) (World Port Index No. 28550) lies at the head of Parnu Laht and at the mouth of the Parnu Jogi river. The town, a resort, stands on the S bank of the river. The harbor is used by commercial vessels and is a coastal fishing center.

Winds—Weather.—The harbor is well sheltered, except from winds from between S and SW which send in a heavy sea.

Ice.—The harbor is usually closed by ice from November to April. The bay usually becomes closed by ice 7 days and free from ice 11 days later than the river. The later thawing in the bay and roadstead causes blockages in the entrance of the harbor when the ice in the river begins to move. At such times, the water level in the river may be raised by up to 3.7m. In addition, the low-lying areas in the vicinity of the river are flooded and ice floes may be carried out to sea over the breakwaters. In the autumn, the river often freezes over so quickly that vessels are compelled to depart prematurely.

Tides—Currents.—The numerous bends in the river cause varying currents to set between the low embankments. Winds from the SW usually raise the water level 0.6 to 0.9m above the mean level. Winds from the NE usually lower the level at least 0.3m. During spring thaws, the river may flood part of the port area.

Depths—Limitations.—The recommended approach route leads NNE to the vicinity of the outer fairway buoy. A dredged entrance channel then leads NE over the bar and between two long breakwaters. It has a least depth of 5.9m and a least bottom width of 53m.

The harbor has depths of 3.7 to 6.2m and the bottom consists of clay, with gravel in places, covered by sand. The quays extending along the SE bank of the river have depths of 4.1 to 6.2m alongside. There are facilities for general cargo and bulk vessels, fishing boats, and pleasure craft. Vessels up to 140m in length, 45m beam, and 5.5m draft can be accommodated.

Aspect.—The approach track and entrance channel are indicated by lighted ranges. An outer fairway lighted buoy is moored about 0.8 mile SW of the breakwater heads.

A large stone mill, conspicuous from seaward, is situated at Pootsi on the W side of the bay, 4.7 miles W of Kiriku Nina Light. A prominent church stands at Saare, 3.2 miles WNW of Kiriku Nina Light. A conspicuous chimney and a large light-colored building stand near Kiriku Nina Light. Another prominent church stands at Audru, 8 miles NNE of Kiriku Nina Light.

Several conspicuous buildings and churches are situated in Parnu; in particular a white church, with a red roof and a red spire, and a church, with a white spire, situated 0.3 mile E of it.

Pilotage.—Pilotage is compulsory for all foreign vessels. Pilots can be contacted by VHF and usually board in the roadstead about 2.5 miles SW of the breakwater heads.

Pilotage must be requested through the agent in the port. Vessels must send an ETA message and request for pilotage 24

hours and 12 hours in advance. The message should state the vessel's name, flag, length, and draft. Vessels should then contact the port 1 hour before arrival.

Regulations.—All vessel movements, both in the harbor and in the approaches, are controlled by the harbor authorities. Navigation in the entrance channel is allowed by day and at night, but only in one direction at a time; priority is given to departing vessels. Navigation is prohibited in the entrance channel when the visibility is less than 1.2 miles.

Anchorage.—A designated anchorage area, which may best be seen on the chart, lies centered 4.5 miles SSW of the breakwater heads, on the E side of the fairway. Large vessels can obtain anchorage, in depths of 5 to 9m, sand and mud, good holding ground, in the middle of the bay, but they should remain clear of the prohibited fishing areas.

Caution.—Erosion of the river banks often leads to a build up of sand in the entrance and outer fairway, especially during the spring. The entrance channel is subject to frequent silting and the authorities should be contacted for information concern ing the latest depths.

Nets are set out in the fishing areas within the approaches to Parnu. Vessels are advised to use care when transiting this area.

The Gulf of Riga—Northeast Side

10.31 The NE coast of the gulf between Torila Ots (Munalaid), located 5.3 miles SW of Kiriku Nina, and Someri Poolsar, 13 miles WNW, is low, marshy, and covered by shrubs in a few places. Wooded hills rise parallel to the coast, between 1 and 3 miles inland. An area of elevated ground, 28m high, stands 8.5 miles NW of Torila Ots and is prominent from seaward. At Vaiste, 3.5 miles E of Someri poolsar, the land attains a height of 35m.

Numerous villages stand along this stretch of coast and a church situated at Tostamaa, 7 miles NNW of Torila Ots, is a good landmark.

Someri Light

Someri Poolsar (58°20'N., 23°46'E.) is low and covered with grass and several bushes. Someri Light is shown from a prominent tower, 20m high, standing on the NW extremity of this headland. A prominent hill, 40m high, rises 8.7 miles NE of the light.

Several shoals, with depths of 2 to 3m, extend up to about 7 miles SSE of Someri Light and are marked by buoys.

The coast extending between Someri Poolsar and Puvarootsi (58°33'N., 23°37'E.), 13.5 miles NNW, is rocky with steep bluffs. A ridge, which rises to a height of 35m, runs parallel to the coast in this vicinity, between 1 and 3 miles inland. Woods are located some distance inland and clumps of trees extend to the coast, in places. Numerous villages are situated along this stretch of coast and the shore is fronted by foul ground and several islets.

Larinimadalik (58°24'N., 23°38'E.), a reef with a least depth of 3.4m, is one of the outermost dangers lying on the edge of the coastal shoal-bank. It lies 2.5 miles offshore, 4.5 miles NW of Someri Poolsar. Afanasjevimadalik, an isolated shoal, lies about 2 miles W of Larinimadalik and has a least depth of 7.6m.

A hill, 31m high, rises 1.5 miles inland, 5 miles N of Someri Poolsar. It is surmounted by the prominent buildings of the estate of Vana-Vargla and a clump of trees. A prominent windmill stands on a hill which rises near Paatsalu, a village, situated 11 miles N of Someri Poolsar.

Selglaid, marked by a light at its W end, lies 7.4 miles NW of Someri Poolsar. It is the largest of a group of islets lying on the coastal bank. The ruins of an old stone mill stand on the mainland about 2 miles E of this islet and are conspicuous from seaward.

Virtsu Light (58°34'N., 23°30'E.) is shown from a prominent square tower, 18m high, standing on the SW side of a peninsula, 15 miles NW of Someri Light. This light marks the SE entrance point of Vainameri.

Virtsu Light

The Gulf of Riga—Northwest Side

10.32 The NW side of the Gulf of Riga is formed by the E side of Sorve Poolsar and the SE side of Saaremma.

Kaavi Nina Light (57°59'N., 22°12'E.) is shown from a prominent square tower, 15m high, standing on a low point, 6.3 miles NE of Sorve Saar Light (see paragraph 10.12). A rocky shoal patch, with a least depth of 2.8m, lies about 1.5 miles SSE of the light and is marked by a buoy.

Montu, a small harbor, is located 3 miles SW of Kaavi Nina Light. It is formed by a mole, about 250m long, which extends E and NE from the coast. Small vessels can berth alongside the seaward side of the mole, which has a depth of 4.6m at the outer end. The approach channel leading to the harbor has a

depth of 3.8m. Several conspicuous white buildings stand near the village.

Kaavi Nina Light

Ansekula Light

10.33 Ansekula (58°06'N., 22°14'E.), located 6 miles NE of Kaavi Nina Light, is the N end of a prominent row of densely wooded hills which extend from the vicinity of Montu. Ansekula Light is shown from a prominent tower, 22m high, standing 1 mile NNW of Ansekula. A detached shoal, with rocks awash, lies about 4 miles SE of the light and is marked by a buoy.

Suur Katel (58°10'N., 22°23'E.), a bay, is entered between Ansekula and Vahase Saar, 7 miles ENE. It is used as a loading place by vessels whose drafts do not permit them to enter the harbors at Kuressaare or Roomassaar. The approaches to the bay are fronted by several islets and dangers which may best be seen on the chart. Local knowledge is required. Anchorage is available in the center of the bay, in depths of 7 to 13m, sand and mud.

It is reported that Suur Katel is usually closed by ice from the end of December to the beginning of March.

Kuressaare (58°15'N., 22°29'E.), a shallow harbor, lies at the NE head of the bay and is used by small fishing boats.

Kingissepp, the principal town of the area, is situated at the head of the bay. The conspicuous ruins of a medieval castle are situated in the middle of this town and five prominent radio masts stand in the nearby vicinity.

10.34 Roomassaar (58°13'N., 22°31'E.), a small harbor, lies at the S end of a peninsula in the NE corner of the bay. The approach channel, 85m wide, leads NE and has a depth of 5.8m. It is marked by a lighted range. The harbor has three main quays, 103 to 126m long, with depths of 4.3 to 6.3m alongside. There are facilities for oil, general cargo, and ro-ro ferry vessels, pleasure craft, and fishing boats. Vessels up to 120m in length, 15m beam, and 5.5m draft can be accommodated.

Roomassaar Harbor

Nasva, a small harbor with a pier, is situated 3.5 miles W of Roomassaar. The buoyed entrance channel leads NNE for 1.5 miles. It is 45m wide and has a least depth of 3.4m.

Abruka Saar (58°10'N., 22°31'E.) is low, sandy, and surrounded by rocks. Its highest and central part is covered with tall trees. This island is surrounded by foul ground and shallow shoals, islets, and rocks extend up to about 4.5 miles SE and E of it. Abruka Rear Range Light is shown from a prominent tower, 36m high, standing in the NE part of the island.

Veiserahu, an extensive rocky ridge, has a least depth of 1.8m and lies about 7.5 miles SSW of the S extremity of Abruka Saaar. This shoal is marked on its S side by a lighted buoy and on its N side by a buoy.

10.35 Vetela Nina (58°13'N., 22°43'E.) is the S extremity of Vatta Poolsaar, a mainland peninsula located 8 miles NE of Abruka Saar. The coast extending between this point and Kubassaar, 23 miles NE, is mostly low and only attains a height of 12m. A few villages and several woods lie along the shore. Prominent churches are situated at Kahtla, 14 miles NE of Vetela Nina, and Poide, 9.5 miles NW of Kubassaar. A conspicuous church, with two domes, stands at Uuemoisa, 2.3 miles E of Poide.

Allirahu (Vetala) (58°10'N., 22°48'E.) is a low and barren islet lying 4 miles SE miles of Vetela Nina. A light is shown from a column, 8m high, standing on the NW part of this islet.

Sutu Laht (Vetella Laht) (58°16'N., 22°45'E.) is entered between Vetela Nina and Saaretukk, a low and rocky point, 4.5 miles NE. The shores of the bay are fairly steep and sandy. Sheltered anchorage, except with winds from between E and SE, may be obtained, in depths of 5 to 11m, sand, between 1 and 2.5 miles from the head of this bay.

Saaretukk Light (58°16'N., 22°48'E.) is shown from a

Abruka Light

Allirahu Light

prominent square tower, 15m high, standing on Saaretukk. A shoal patch, with a least depth of 5m, lies about l.5 miles S of the light.

10.36 Koiguste Allirahu (58°18'N., 22°59'E.), a small islet, lies 1.5 miles offshore, 5.2 miles NE of Saaretukk Light. This islet should not be confused with the islet of the same name located 10 miles SW. It is rocky and covered with grass. A light is shown from a prominent framework tower, 16m high, standing on this islet.

Koiguste Allirahu Light

Saaretukk Light

Kubassaar Light

Viirelaid Light

Kubassaar (58°27'N., 23°19'E.) is a wooded peninsula. Its shoreline is rugged and covered by reeds in places. The E side is steep, in places, and only 2 to 3m high. Kubassaar Light is shown from a prominent tower, 17m high, standing on the S part of this peninsula.

From a distance of about 10 miles, the S extremity of this peninsula, which is surmounted by tall trees, appears as an island. An above-water reef lies about 1 mile SSE of

Kubassaar. This reef is located on a rocky shoal ridge which extends up to about 3 miles S and 2 miles SE of the light.

Udriku Laid (Udriklaid) (58°26'N., 23°17'E.), a low and grassy island, lies close W of the S end of Kubassaar and is surmounted by a few buildings.

Muhu (58°36'N., 23°16'E.) lies centered 10 miles N of Kubassaar. This large island is 24m high and partly wooded. Its N side is cliffy. A causeway connects the SW side of the island to the mainland.

Viirelaid Light (58°33'N., 23°27'E.) is shown from a prominent tower, 11m high, standing on the E side of an islet of the same name lying close off the SE end of Muhu.

10.37 Vainameri (58°50'N., 23°15'E.) is the Estonian Archipelago and the sound which connects the Gulf of Riga to the Gulf of Finland via Viirekulk and Harikurk.

Poosaspea Light

10.38 Viirekulk (Suur Vain) is the strait located in the S part of the sound lying between Viirelaid and Virtsu Light. Harikurk is the strait located in the N part of the sound lying between the E side of Hiiumaa and the W side of the island of Vormsi (59°00'N., 23°14'E.).

This sound is bounded, on the N side, by a line extending between Tahkuna Nina Light (59°05'N., 22°36'E.) and Osmussaar Island (59°18'N., 23°22'E.) and, on the S side, by a line extending E from Kubassaar Light (58°26'N., 23°19'E.). The N end of the sound is encumbered with numerous dangers which may best be seen on the chart.

Voosikurk, a narrow channel, leads to Haapsulu. It passes between the E side of Vormsi and the W side of Noarootsi, a peninsula located on the mainland. This channel should not be used without local knowledge. An overhead cable, with an unknown vertical clearance, is reported to span this channel.

10.39 Poosaspea Light (59°14'N., 23°31'E.) is shown from a prominent framework tower, 16m high, standing on a densely wooded promontory, 15 miles NNE of Vormsi Island. Several conspicuous windmills are situated on a ridge at the E side of this promontory.

Osmussaar Island (59°18'N., 23°22'E.), marked by a light, lies 6 miles NW of Poosaspea Light.

Depths—Limitations.—Although there are depths of 9 to 14m in Harikurk and 11 to 20m in Viirekulk, the passage from the Gulf of Finland to the Gulf of Riga, and vice versa, is controlled by the depths in the channel leading through the central part of the sound. This latter part of the channel is narrow and has a least depth of only 4.7m.

Pilotage.—Pilotage is compulsory within the sound.

Vessels, approaching from the N can contact pilots on VHF channel 12 and the pilot will board in position 59°01'N, 23°05'E.

Vessels approaching from the W can contact pilots on VHF channel 12 at Virtsu in position 58°41.4'N, 23°24.3'E.

Vessels, approaching from the S can contact pilots on VHF channel 12 and the pilot will board in position 58°31'N, 23°30'E.

Pilotage must be requested 24 hours in advance and confirmed 6 hours and 2 hours prior to arrival at the pilot station. Departing vessels must request pilotage 4 hours and 1 hour in advance of departure.

It is reported that pilots will also board vessels about 1.2 miles NW of Poosaspea Light, within the inshore passage lying SE of Osmussaar Island.

Note.—For a description of Osmussaar Island and the waters lying N and E of it, see Pub. 195, Sailing Directions (Enroute) Gulf of Finland and Gulf of Bothnia.

Danish

DANISH	English
A	
aa	rivulet
anlaegsbro	pier
B	
baek	brook
baelte	band
bake	beacon
bakke	hill
banke	bank
bjerg	mountain
borg	castle, fortified place
bredning	wide place in channel
bro	pier
brygge	quay, wharf
bugt	bay, bight
bundgarn	seine net
by	town
D	
dal, dale	valley, gorge
drag	isthmus
dyb	deep
dybde	depth
F	
farvand, farvandet	fairway
fjord	fjord
flak	flat
flogetonde	whistle buoy
fyr	light
G	
gab	mouth
gammel	old
gittermast	framework beacon
grat	gray
gron	green
grund	shoal area
H	
hage	shoal, spit
hale	spit, peninsula
havn	harbor
hoj	hill, point
holm	island
hoved	point, headland
huk	point
hus	house
hvidt	white
I	
inder	inner

DANISH	English
K	
kalv	detached islet
kanal	canal
klev	cliff
klint	cliff, bluff
klit	sand dunes
knold	knoll, shoal
knude	point
kysten	coast
L	
lang	long
lille	little
lob	channel
lods	pilot
lyd	sound
lys	light
M	
middlegrund	middle ground
minde	mouth
molle	mill
munding	outlet
N	
naeb	point
naes	point, cape, peninsula
nakke	point, cape, bluff
nor	shallow inlet, basin
nord	north
ny	new
O	
o	island
odde	point, peninsula, cape
ore	shoal, point, peninsula
ostersoen	the baltic
ostre	east
P	
plade	shoal
pulle	shoal
pynt	point, peninsula
R	
red	roadstead
redningstatien	lifesaving station
rende	channel
rev	reef, sand flat
revle	reef, shoal
rod	red
ron	rocky ledge

DANISH	English
S	
sand	shoal, sand flat, beach
sandhage	shoal
skance	fort
skov, skoven	forest
slot	castle
sluse	lock
snaevrinjen	the narrows
so, soen	lake, lagoon
sojord	sand flat
spids	point
steil	steep
store	big, great
strom	current
sund	sound
syd	south
T	
tage	fog
tange	tongue of land
tarn	tower
V	
vest	west
vig	bay, inlet, bight, cove
vrag	wreck
yder	outer

German

GERMAN	English
A	
abgersuchtes gebiet	swept area
alt-; e, er, es	old
ankerplats	anchorage
anlege stelle	landing place
ansicht	view
ansteuerungstonne	landfall buoy
au	brook, stream
auffllig	conspicuous
aussen	outer, outside
B	
baggerrinne	dredged channel
bai	bay, cove
bake, baken	beacon, beacons
balje	channel between sands
bank, untiefe	bank (shallow area)
berg	mountain
betonnung	buoyage
binnen	inner
blau	blue
bodden	bay
boot	boat
brecher, brandung	breakers
brucke	bridge
bucht	bay
busch	bush
D	
dalben	dolphin
damn	dam, embankment
deich	dike
deviationsbake	deviation beacon
dock, hafenbecken	dock (alongside berth)
dorf	village
drahtschleppgerat	wire drag
drehbrucke	drawbridge
dune	dune
durchfart	passage, channel
E	
ebbe	ebb tide
eck, ecke	angle, corner
ehe	channel for small craft
einfahrt	entrance
eiland	island
eisenbahn	railway
eisfeld	icefield
eissignale	ice signals
F	
faden	fathom
fahre	ferry
fahrwasser	navigable channel
felsgrund	rock (bottom)
festmachetonne	mooring buoy
feuerschiff	lightship
fischerei	fishery
fischstaken	fish weirs
fluss	river
forde	inlet, gulf
flut	flood tide
flutbecken	tidal basin
funkfeuer	radiobeacon
funkmast	radiomast
G	
gat	channel between banks
gebiet	area
gefahrsignale	danger signals
gegenstrom	countercurrent
gelb	yellow
geloscht	extinguished
gezeiten	tide
gezeitenstromwirbel	tide race
glockentonne	bell buoy
golf	gulf
grenze	boundary, limit
gross- ;e, er, es	great, large
grun	green
grund	shoal
H	
hafen	harbor
hafengrenze	harbor limit
hafensignale	port signals
hafenzeit	vulgar establishment (of port)
haff	lagoon, fresh water lake
haken	point
halbinsel	peninsula
hauptfahrwasser	main ship channel
heultonne	whistle buoy
hochwasser	high water
hoft	foreland, point
hohe	height, hill, ridge
holz	woods, forest
hoved	headland
hugel	hill
huk	cape, point, head
I	
insel	island
K	
kai	pier, quay
kanal	canal
kap	cape
kapelle	chapel
kartennull	chart datum

GERMAN	English
kirche	church
klein	small
klippe	cliff, rock
knoten	knot
kreisfunkfeuer	radiobeacon
kuppel	cupola
kurs	course
kustenwache	coast guard

L

ladeplatz	wharf
landenge	isthmus
landungsbrucke	pier, jetty
leitfeuer	range light
leitmarken, leitbaken	range marks
leuchttonne	light buoy
leuchtturm	lighthouse
lot	sounding lead
lotse	pilot
lotsenstelle	pilot station

M

marsch	marsh
meer	sea
meerenge	narrows
meeresarm	estuary, inlet
mittel	middle
mittelwasser	mean tide level
muhle	mill
munde, Mndung	mouth of river, etc

N

nachrichten fur seefahrer	notice to mariners
nebel	fog
neue, neu, neues	new
nieder	lower
niedrigwasser	low water
niss	cape, point
nord	north

O

ober	upper
ort	place
ortschaft	town, village
ost	east
ostsee	the baltic

P

pegel	tide gage
peilung	bearing
pier	pier
platz	place
poller	bollard
punkt	position, point

R

radarstelle	coastal radar station
rathaus	town hall
reede	roadstead
rettungsstelle	lifesaving station
richtfeuer	range light
riff	reef
riffgrund	rocky ground
rinne	narrow channel
rot	red

S

sand	sand
sehiffahrtshindernis	obstruction to navigation
schiffahrtswege	shipping lanes
schleuse	loek, sluice
schleusensignale	lock signal
schlick	mud
schloss	castle
schornstein	chimney, smokestack
schwimmdock	floating drydock
schwingbrcke	swing bridge
schwartz	black
see	sea, lake
seedeich	seawall
seegat	entrance channel
seegras	kelp
seekarte	chart
seemeile	nautical mile
seetang	kelp, seaweed
spiegel	reflector
spitze	summit, peak, point
stadt	city, town
stem	stone
strand	shore, beach
strom	current, stream
stromkabbelung	overfalls, tide rips
stromriehtung	set (of tidal current)
strudel	eddy, whirlpool
sturmsignale	storm signals
sud	south
sumpf	swamp, bog
sund	sound, strait

T

tidehafen	tidal basin
tidenhub	range (of tide)
tief	deep, channel
tiefgang	draft (of vessel)
tonne	buoy
toppzeichen	topmark
trockendock	drydock
turm	tower

U

ufer	river bank, beach, coast, shore
unreiner grund	foul ground
unter	under, lower
unterstromung	undercurrent
untersuchungsankerplatz	examination anchorage
unterwasserkabel	submarine cable
untiefe	bank, shoal

GERMAN	English
V	
verboten	prohibited
vermuren	mooring
versandet	silted up, shoaled
W	
wald	wood, forest
wasserstande	water level
wasserstelle	watering place
weiss	white
wellenbrecher	breakwater
west	west
wiek	bay, inlet, cove
windmotor	windwheel
windmuhle	windmill
wrack	wreck
Z	
zeitweilig	temporary
zerstort	destroyed
zollgrenze	customs boundary
zugbrucke	lift bridge

Polish

POLISH — English

A

akwen zamkniety ..... prohibited area

B

basen ..... basin
bial bialy ..... white
bloto, szlam, mut ..... mud
brazowy ..... brown
brzeg ..... bank
brzeg morski ..... seashore
buczek ..... whistle

C

cypel ..... point
czarny ..... black
czerwony, czerwone ..... red

D

dalby ..... dolphin
dolny ..... lower
duzy ..... large
dworzec ..... terminus

G

glebia ..... deep
glebokosci ..... depths
glina ..... clay
gora ..... mountain
gorny ..... upper
gruby ..... coarse
grupowe ..... group

I

il ..... mud
izobaty ..... depth contours

J

jasny ..... light
jezioro ..... lake

K

kabel podwodny ..... submarine cable
kamien ..... stone, rock
kanal ..... channel
komin ..... chimney, stack
kotwiczenie I rybolowstwoqzbronione ..... anchorage and fishing prohibited

L

las mieszany ..... woodland
latarniowce ..... light vessels
latarina morska ..... lighthouse
lawica ..... bank, shoal

POLISH — English

M

maly ..... small
ma szt sygnalowy ..... signal mast
miejsce zatopienia amunicji ..... dumping ground (explosives)
miejscowsci ..... locality
miekki ..... soft
mielizna ..... shallow
mila morska ..... nautical mile
molo ..... mole, pier
most ..... bridge

N

nabrzeze ..... quay, wharf
niebieski ..... blue
nord ..... north
nowa, nowe, nowy ..... new

O

ost ..... east
ostrow ..... river island

P

piasek, mul ..... sand, ooze
piaski ..... sands
plawy buczace ..... whistle buoys
plawy dzwonowe ..... bell buoys
plawy swietne ..... light buoys
plaza ..... beach
polnoc ..... north
poludnie ..... south
polwysep ..... peninsula
port ..... harbor
przyboj ..... breakers
przyladek ..... cape
pstry ..... spotted
punkt triangulacyjny ..... triangulation point

R

radiolatarnia kierunkowa ..... radiobeacon, directional
rafa ..... reef
rafy I dna o nieznanej rozciaglosci ..... reefs and botoms of unknown extent
reda ..... anchorage, road
reflektor radarowy ..... radar reflector
rurociag podwodny ..... submarine pipes
rybachi ..... fishing

S

skala ..... rock
stacja ratunkowa ..... lifesaving station
stacja sygnalowa ..... signal station
stawa ..... beacon
sud ..... south
swiatlo ostrzegawcze ..... warning light

POLISH	English
sygnal burzowy	storm signal
sygnal mglowy	fog signal
szary	gray
T	
topograficzny punkt	fixed point
tyki	poles
U	
ujscie	estuary
W	
wielk	large, great
wies	village
wieza	tower
wieza koscielna	spire, church steeple
wodorosty	kelp, seaweed
wrak	wreck
wschod	east
wysepka	islet
wyspa	island
wysypisko	dumping ground
wyzny	upper
Z	
zachod	west
zalew	gulf
zatoka	gulf, bay
zielony	green
znaki nawigacyjne	navigational markers
zolty	yellow
zwir	gravel, shingle

R—Russian. E—Estonian. La—Latvian. Li—Lithuanian

R—Russian. E—Estonian.
La—Latvian. Li—Lithuanian — English

A

aar ..... E coast
abajas ..... E bay
akmens ..... La stone
alev,-id ..... E market town, borough
allvett ..... E above water
alumine ..... E lower, front
ankruplats, ankrupagaid ..... E anchorage
asula, asundus ..... E settlement
austrumi ..... La east

B

baak ..... E beacon
bakan ..... R large buoy
baklysh ..... R rock above water
balts ..... La white
banka ..... R shoal, bank
bar ..... R bar
bashnya ..... R tower
basseyn ..... R basin, wet dock
bel-yy-aya, -oye ..... R white
bereg ..... R shore, river bank, coast
beregov-oy, -aya, -oye ..... R coastal
berezhn-y, -aya, -oye ..... R inner, close offshore
bochka ..... R mooring buoy, barrel buoy
bol'sh-ov, -aya, -oye ..... R great, large
bryuage ..... R pier, landing stage
buek ..... R small boat or float
bugor ..... R hill, mound
bukhta ..... R bight, inlet, bay, roadstead
bukhtochka ..... R cove, bay
burun ..... R breaker
buy ..... R buoy

C

chern-yy, -aya, -oye ..... R black
ciems ..... La village, hamlet

D

damba ..... R seawall, dike
del'ta ..... R delta
derevnya ..... R village
derevo ..... R tree
dienvidi ..... La south
dlinn-yy, -aya, -oye ..... R long
dok ..... R dock
dolgota ..... R longitude
dolina ..... R valley
dom ..... R house
doroga ..... R road
dyun-y,a ..... R dunes, dune

E

edela ..... E southwest

R—Russian. E—Estonian.
La—Latvian. Li—Lithuanian — English

elling ..... R slipway
ezers ..... La lake

F

faarvater ..... E channel, strait
farvater ..... R channel, fairway

G

gavan ..... R harbor, basin, bay
glubok-iy, -aya, -oye ..... R deep
golets, Gol'tsy ..... R mountain, peak
golomyann-yy, -aya, -oye ..... R open sea
golova ..... R head (of pier)
gora ..... R mountain, hill
gorlo ..... R strait
gorod ..... R city, town
gorodok ..... R small town
granitsa ..... R boundary
greben' ..... R ridge
grund ..... E shoal
gryada, gryady ..... R mountains, hill, bank, ridge

H

haabjas ..... E boat
hall ..... E gray
hoone ..... E house

I

ida ..... E east
il ..... R mud
ilist-yy, -aya, -oye ..... R muddy

J

jaa ..... E ice
jaam ..... E railroad station
jame ..... E thick, heavy
jarsk ..... E steep
jarv,-ed ..... E lake
joesuu ..... E river mouth
joed ..... E rivers
jogl ..... E river
joom ..... E reef, sand bank

K

kaevand ..... E channel
kagu ..... E southeast
kai ..... E quay
kalasadam ..... E fishing harbor
kalda ..... E coast
kalju ..... E rock
kallas ..... E shore
kallutus ..... E tide
kalnas ..... Li hill
kamen' ..... R rock, stone

R—Russian. E—Estonian.
La—Latvian. Li—Lithuanian

	English
kamennyy	R masonry, stony, rocky
kamni	R rocks, stones
kamyennaya banka	R rocky shoal
kamyennaya gryada	R spit
kanal	E canal
kanal	R channel, canal
kants	E fort
kapp	E cape
kari	E reef, shallow, shoal
karestik	R rapids, cataract
karestiku	E waterfalls
kare	E grassy islet
kari	E reef, shallow
kekur	R pillar, rock
kesk	E middle, central
keskmine	E middle, central
kevad	E spring
kholm	R hillock
khram	R temple
khrebet	R ridge, mountain range, mountains
kindlus	E fort
kink	E hill
kirde	E northeast
kirik, kirikud	E church
kitsus	E narrows
kivi	E stone, rock
koleno	R reach (of a channel, etc), bend
kollane	E yellow
korga	R rocky shoal
korge	E high
korotk -iy, -aya, -oye	R short
korsten	E chimney
kosa	R spit
koshka	R drying shoal
kosk	E waterfall, rapids
kovsh	R cove
kran	R crane
krasn-yy, -aya, -oye	R red
kray	R major admin region
krest	R cross
krutoy, aya-oye, -ye	R steep
kruus	E gravel
kryazh	R ridge, hill, mountains
kuiv	E dry
kungas	R flat-bottomed craft
kurk	E channel, strait, sound
kula, -d	E village
kulm	E cold
kultuk	R bay
kungas	E hill

L

laas, laane	E west
laev	E vessel
laevasild	E pier
laguna	R lagoon
laht	E bay, inlet, sound, harbor
laid	E island
lainetemurd	E breakers
lakhti	R bay, cove, bight, gulf
led	R ice
lednik	R glacier
lesnoy	R wooded, forest
liiva kunkad	E sand dunes
liivakivi	E sandstone
liman	R estuary, lake, lagoon, bay
linn	E town, city
lodu	E bog, marsh
loode, loe	E northwest
loots	E pilot
loss	E castle
lotsman	R pilot
lotsmanskaya stantsiya	R pilot station
louna	E south
lounaida	E southeast
lounalaane	E southwest
luda, Ludka	R small rocky islet
lumi	E snow
Iyuna	E south

M

maa	E shoal, islet, land
maabumis sild	E landing stage
maamark	E landmark
machta	R mast
madal	E low, shallow, shoal
madal vesi	E low water
madalik, ud	E shoal, shoals
malen'k -iy, -aya, -oye	R little, small
mal -yye, -aya, -oye	R little, small
marios	Li lagoon
materik	R mainland, continent
maed	E mountains, hills
magi	E mountain, hill
markpuu	E conspicuous tree
mayak	R lighthouse
mel'	R shoal
melk -iy, -aya, -oye	R shallow, shoal
melkovodn -y, -aya, -oye	R shallow
merekael	E sound, strait
merelaht	E gulf, bay
meremark	E seamark
mererand	E seashore
mererohi	E seaweed
merevool	E stream
meresopp	E creek
meri	E sea, bight, ocean
mets	E wood, forest
milya	R mile
mol	R mole, jetty
more	R sea, sound
morskaya kapusta	R kelp
most	R bridge
muda	E mud

R—Russian. E—Estonian.
La—Latvian. Li—Lithuanian

	English
munakivid	E boulders, shingle
must	E black
muul	E mole
myel'	R shoal
myelk -y, -aya, -oye	R shallow
mys	R cape, headland, point

N

nadvodn -y, -aya, -oye	R above water
navolok	R cape, headland
neem	E cape, point
nina	E cape, point
nizhn -iy, -yaya, -eye	R lower
nizk-iy, -aya, -oye	R low
nord	E north
nos	R cape, headland, spit, point
nov -yy, -aya, -oye	R new
nukk	E cape, point

O

oblast'	R administrative division
obryv	R bluff, precipice
ogon'	R light (or fire)
oja	E stream
okean	R ocean
okrug	R admin. division of region
opasnot'	R danger
org	E valley
ost	E east
osta	La port, harbor
ostrov	R island
ostrovok	R islet
osyp'	R landslide
otmel'	R shoal, bank or reef extending from shore
ots	E point, cape
ozero	R lake

P

paak	E beacon
paare	E bar
pakhta	R bluff, stoney bank
paastejaam	E lifesaving station
paat	E boat
pank	E banks, spit
parre	E bar
pealvett	E underwater
peastepaat	E lifeboat
peen	E fine
pehme	E soft
perebor, perekat	R bar, ledge, shoals
peredn -iy, -yaya, -eyc	R front
peresheyek	R isthmus
perv-yy, -aya, -oye	R first
peschan -yy, -aya, -oye	R sandy
pesok	R sandbank
pik	R peak, mountain
pikhya	E north
pilseta	La town, city
pirs	R jetty, pier
plavnya	R mud flat
poberezh'ye, pomor'ye	R coast, seashore
podvodn -yy, -aya, -oye	R submerged
pohi	E north
pohja	E north, northern
pohjaida	E northeast
pohjalaane	E northwest
poj	E buoy
poluostrov	R peninsula
pomor'ye	R coast
poolsaar	E peninsula
port	R port, harbor
poselok	R village
priberezh'ye	R coast shore
prikladnoy chas	R mean high water interval
priliv	R flood (tide)
primorskiy	R maritime
pristan'	R pier, jetty, landing
pritok	R tributary
prokhod	R passage, pass
proliv	R strait, channel
protok	R canal, channel, watercourse
protoka	R channel in river delta
pruum	E brown
put'	R route, way
punane	E red
puu	E woods, trees
pyatno	R shoal patch

R

raba	E swamp, marsh
radiomayak	R radiobeacon
ragas	Li point
rags	La point, cape, headland
rahu	E bank, reef, rocky islet, rock above water
rand	E shore, coast
ranna	E coast, shore
rani	E pebbles
ravnina	R plain
razvaliny	R ruins
reid	E roadstead
reka, rechka	R river, stream
reyd	R roadstead
rif	R reef
riff	E reef
roheline	E green
rossyp'	R sandbank
rozhok	R cape
rukav	R channel, stream, branch
rungas	E cliff

S

saar, saar	E island
sadam, ad	E harbor, port
sala	Li,La island

R—Russian. E—Estonian.
La—Latvian. Li—Lithuanian

	English
salm	E strait
savi	E clay
seleniye, selo	R settlement, village
seljandiku	E ridge of land
seredina	R middle
seriy	R gray
sever	R north
severn -yy, -aya, -oye	R northern
shar	R strait
shchel'	R gap, gorge
shest	R pole, staff
shirota	R latitude
shkhery	R skerries
sihtpagid	E range beacons
silm	E narrow channel
siniy	R blue
sinnine	E blue
sissesoit	E entrance
skala	R rock, cliff
sneg	R snow
somnitel'no	R is doubtful
soo, -d	E marsh, bog
sopka	R hill, volcano, mountain
spornyy	R conflicting
sredn -yy, -yaya, -eye	R middle
stamik	R shoal, rock
stanovishche	R camp, fishing village
star -yy, -aya, -oye	R old
stolb	R post, column, upright rock
strelka	R narrow spit
stvornyy znak	R range beacon
sukh -oy, -aya, -oye	R dry
suu	E mouth
suud	E south
suur	E large, big
sugavus	E depth
suzem, Susha	R dry land

T

techeniye	R current
temn -y, -aya, -oye	R dark color
tine	R ooze, mud
tolcheya	R confused sea
toll	E customs
tolst -yy, -aya, -oye	R thick
tonk -iy, -aya, -oye	R thin
tonn	E buoy
torn	E tower
tousu	E flood
tret iy, 'ya, 'ye	R third
tserkov'	R church
tuleboi	E light buoy
tulelaev	E light vessel
tuli	E light
tullepaak	E lighted beacon

U

udu	E fog
urbkivi	E boulder
ust'ye	R river mouth, channel
utes	R cliff, crag
uus	E new
ulemine	E upper, rear

V

valge	E white
vana	E old
varemed	E ruins
vaike	E small, little
vain	E strait
varav	E entrance
veeneelus	E tide-rip
vekha	R spar buoy
verkhn -iy, -yaya, -eye	R upper
vershina	R summit, peak
vileboi	E whistle-buoy
vkhod	R entrance, inlet
vneshn -iy, -yaya, -eye	R outer
vnutrenn -iy, -yaya, -eye	R inner
vodopad	R waterfall
vodorsl'morskaya	R seaweed
vodovorot	R whirlpool, eddy
volnolom	R breakwater
voolu	E current
vorota	R entrance, strait, channel pass,
vostochn -yy, -aya, -oye	R eastern
vostok	R east
vozyshenie	R high land
vrakk	E wreck
vtor -oy, -aya, -oye	R second
vulkan	R volcano
vyerkhun -u, yaya, eye	R upper
vyssh -iy, -aya, -eye	R higher

Y

yakornoye mesto	R anchorage
yar(y)	R cliff(s), steep bank(s)
yug	R south
yuzhn -yy, -aya, -oye	R southern

Z

zadn -iy, -yaya, -eye	R rear
zaimka	R settlement, farm
zaliv	R gulf, bay, inlet
zamok	R castle
zapad	R west
zapadn -yy, -yaya, -oye	R western
zastruga	R sandbar, sandspit, sandbank
zavod	R factory, mill, plant
zavod'	R cove, inlet
zelen -yy, -aya, -oye	R green
zemlya	R land, island
zhelt -y, -aya, -oye	R yellow
zank	R beacon, mark
zona	R zone
zvelav'ye	R cape, point

Swedish

SWEDISH	English
A	
a, alv, alven	stream, river
ankarplats	anchorage
ankarsattning	roadstead, anchorage
arna, arne	group of islands or rocks
as	ridge
B	
back	brook
backe	hill
badan, bade, baden	reef, rock
bak	beacon
bank	bank
barrskog	coniferous woods
bassang	basin
bat	boat
berg, berget	mountain, hill
bergspets	peak, summit
block	boulders
boj	buoy
borg	castle, fort
branning	rock awash
branningar	breakers
brant	steep, precipitous
bredning	wide place in river or channel
bro	bridge
brottsjo	breakers
brygga	jetty, wharf
bukt, bukten	bight, bay
D	
dal	valley
dammar	weirs
djup, djupet	channel, sound
djupranna	deep channel
domkyrk	cathedral
dy	mud
dykdalb	dolphin
E	
ebb	ebb
elv	river
ensamt	isolated rock
enslingje	range line
F	
fabrik	factory
fabriksskorten	chimney
famn	fathom
farja	ferry
fartprovsbana	measured distance
farvatten, farled	fairway
fastning	fortress
fiskegarn	fish trap
fiskehamn	fishing harbor
fiskelage	fishing village
fiskevatten	fisheries
fjall	mountain, hill
fjard, fiarden	fiord, bay, inlet, lake, sound, channel, strait
fiord, fiorden	fiord
flack, flak	flat, shoal
flat	flat
flod	flood, river
flyg	aeronautical
flytdocka	floating dock
forbjuden	prohibited
forbjudet omrade	prohibited area
forhalningsboj	mooring buoy
forstord	destroyed
fortojningsring	mooring ring
fot	foot
framtradante	conspicuous, prominent
fyr	light
fyrhus	lighthouse
fyrskepp	lightship
fyrtorn	light tower
G	
gammal, gamla	old
gap	opening, inlet, passage
gard	farm, country place
gatt	opening, entrance
grans	boundary, limit
gron	green
grund, grundet	shoal
grundklack	shoal head
grus	gravel
gul	yellow
H	
hak, hake	hook (of land), pointed shoal
hal	hole, mouth
hals	neck (of land)
halvo, halvon	peninsula
hammar	conspicuous point
hamn	anchorage, bay, harbor
handelshamn	commercial harbor
hav	bay, sea, ocean
havsbukt	gulf
hog	height, hill
hogslat	tableland
hogvatten	high water
hojd	hill
holm, holme, holmen	island
hus	house
hufvud, huvud	cape, head
I	
inlopp	entrance
innerst	innermost
inre	inner
insegling	entrance
insjo	lake

SWEDISH	English
issignaler	ice signals
J	
jarnvag	railroad
K	
kabellangd	cable length
kaidam	pier
kaj	quay, wharf
kalv	small islet near a larger one, calf
kanal	canal
kap	cape
karantan	quarantine
kase	beacon
klabbe	bare rocky islet close inshore
klack	underwater head
klapper	pebbles
klint	summit of a steep hill or cliff
klippa	cliff, rock above water
klippgrund	rock, rocky
klockboj	bell buoy
kobb	islet, rock
koping	market town, district
krigshamn	war harbor
kulle	hill
kummel	landmark, cairn
kust	coast
kustvakt	coast guard
kvarn	mill
kyrka	church
L	
landningstrappa	landing stage
landtunga	spit of land, neck of land
lasarett	hospital
lastageplats	loading place
lastbrygga	cargo jetty, pier
lag	low
lage	station, berth
lagvatten	low water
led	channel
lera	clay
lill, lilla	little
livraddningsstation	lifesaving station
ljudboj	whistle buoy
ljudpipa	whistle
lod	lead
lopp	channel
lots	pilots
lotsstation	pilot station
lund	grove
lusthus	summerhouse
lysboj	light buoy
M	
mad	marsh, stretch of water with flat bottom
magasin	storehouse, warehouse
marke	mark
medlerst, mellerst	central
mellan	between, middle
minerada omradet	mined area
missvisning	variation
mol	mill
molo	mole
mudder	mud
muddrad	dredged
mun	mouth
mynning	river mouth, estuary
N	
nabb	nose, point
nas	cape, point
nedre	lower
nodhamn	refuge harbor
nord, norr	north
nordost	northeast
nordvast, nordvest	northwest
norra, nordlig	northern
ny	new
O	
oar, oarna	islands
o, on	island
ogrupp	island group
oklar	foul
oljecistern	oil tank
oljeledning	oil pipeline
oljehamn	oil harbor
omrade	district, ground
oresund	the sound
orlogsvarv	naval shipyard
ost, oster	east
ostersjon	the baltic
ostra, ostlig	eastern
overskoljte	submerged
ovre	upper
P	
pir	pier
platt	flat
plattboj	can buoy
prick	spar buoy
R	
raddningsstation	lifesaving station
radiofyr	radiobeacon
ranna	channel
redd	roadstead
rev	reef, spit, bank
rod	red
ros, rose	cairn, heap of stones
rott	red
S	
samhalle	settlement
sand	sand
sjo	sea
sjogras	seagrass
sjomarke	seamark
sjukhus	hospital
skal	shells

SWEDISH	English
skans	fort, redoubt
skar	above-water rock, rocky islet
skargard	fringing rocks, islets, and shoals
skog	woods
skogvevaxt	wooded
skorsten	chimney
skrent	slope, bluff
skyddsomrade	protection area
slatprick	plain spar buoy
slick	ooze
slip	marine railway
slott	castle
sluss	lock
sma	small
soder, sodre, syd	south
sodra, sydlig	southern
spets	point
spetsboj	conical buoy
spir	spire
spirboj	spar buoy
stad	town
stang	pole, spar
stangda farvatter	closed waters
stangmark	pole beacon
sten	stone
stor, stora	great or large
strand	beach
strom	current
sund, sundet	sound
svart	black
syd, sodre	south
sydost	southeast
sydvast, sydvest	southwest

T

SWEDISH	English
tavla	board, daymark
tidssignal	time signal
tidvatten	tide
tidvattensdocka	wet dock
tippningsplats	spoil ground
topp	summit
torn	tower
torrdocka	drydock
triangelpunkt	triangulation point
tullkammare	custom office
tunga	tongue

U

SWEDISH	English
udde	cape, point, headland
undervattenskabel	submarine cable
undre	lower
utkikstorn	lookout tower

V

SWEDISH	English
vagbrytare	breakwater
vaderkvarn	windmill
vall	steep coast
varv	shipyard
vast, vest	west
vastra, vastlig	western
vatten	water
vattenstandssignalstation	tide signal station
vattentorn	water tower
vik	bay, creek
vit	white
vrak	wreck
vrakboj	wreck or obstruction bouy

Y

SWEDISH	English
ytstrom	surface current
ytterst	outermost
yttre, ytter	outer

How to use the Index—Gazetteer

Geographic names of navigational features are generally those used by the nation having sovereignty and are listed alphabetically. Diacritical marks, such as accents, cedillas, and circumflexes, which are related to specific letters in certain foreign languages, are not used in the interest of typographical simplicity.

Geographic names or their spellings do not necessarily reflect recognition of the political status of an area by the United States Government. Positions are approximate and are intended merely as locators to facilitate reference to the charts.

To use as a Gazetteer note the position and Sector number of the feature and refer to the Chart Information diagram for the Sector. Plot the approximate position of the feature on this diagram and note the approximate chart number.

To use as an Index of features described in the text note the paragraph number at the right. To locate this feature on the best scale chart use the Gazetteer procedure above.

Index—Gazetteer

A

	Position °	'	°	'	Sec. Para
AABENRAA	55	03 N	9	26 E	3.31
ABBEKAS	55	23 N	13	36 E	4.30
ABENRA FJORD	55	02 N	9	30 E	3.30
ABRENRA	55	03 N	9	26 E	3.31
ABRUKA SAAR	58	10 N	22	31 E	10.34
ACHTERWASSER	54	00 N	14	00 E	9.11
ADLERGRUND	54	47 N	14	21 E	4.53
ADLERGRUND	54	47 N	14	24 E	9.2
AEBELO	55	39 N	10	11 E	3.5
AERO	54	55 N	10	20 E	3.36
AEROSKOBING	54	53 N	10	25 E	3.47
AGERNAES	55	37 N	10	18 E	3.5
AGERSO	55	13 N	11	11 E	2.16
AGERSO SUND	55	13 N	11	14 E	2.34
AHUS	55	56 N	14	19 E	4.37
AHVENAN-MEREN CHANNEL	59	32 N	20	18 E	8.1
AINAZI LIGHT	57	52 N	24	22 E	10.26
AKMENRAGS	56	50 N	21	03 E	10.8
ALABODARNA	55	56 N	12	47 E	1.10
ALBUE FLAK	54	49 N	10	55 E	2.30
ALBUEN LIGHT	54	50 N	10	57 E	2.30
ALLINGE	55	17 N	14	48 E	4.56
ALMAGRUNDET LIGHT	59	09 N	19	08 E	8.4
ALO	58	55 N	18	13 E	8.3
ALS FJORD	55	03 N	9	38 E	3.33
ALS SUND	54	48 N	9	45 E	3.34
ALSGARDE	56	05 N	12	32 E	1.8
AMAGER	55	35 N	12	35 E	1.26
ANESBADAR	57	30 N	18	53 E	6.16
ANGJARNSUDDEN	57	18 N	17	09 E	5.19
ANSEKULA	58	06 N	22	14 E	10.33
ANSLET HAGE	55	21 N	9	39 E	3.20
APOLLO	59	13 N	22	51 E	10.17
APPALOMADALIK	59	13 N	22	51 E	10.17
ARHOLMA	59	51 N	19	08 E	8.15
ARISTE LAHT	58	09 N	22	11 E	10.13
ARKO	58	30 N	16	58 E	7.8
ARKOSUND	58	29 N	16	57 E	7.8
ARMBAGEN	59	38 N	19	58 E	8.4
ARO	55	16 N	9	45 E	3.21
ARO SUND	55	15 N	9	43 E	3.27
AROSUND	55	16 N	9	43 E	3.26
ASKO	54	53 N	11	29 E	2.43
ASNAES	55	40 N	10	56 E	2.7
ASNAES LIGHT	55	40 N	10	56 E	2.7
ASNAES REV	55	39 N	10	53 E	2.7
ASPO	56	07 N	15	32 E	4.46
ASPO	59	07 N	18	25 E	8.7
ASSENS	55	16 N	9	53 E	3.23
ATLA LAHT	58	19 N	21	53 E	10.13
AUGUSTENBORG	54	57 N	9	52 E	3.33
AUGUSTENBORG FJORD	54	59 N	9	46 E	3.33
AVEDORE RASTOFHAVN	55	37 N	12	30 E	1.32
AVEDOREVAEKETS HAVN	55	36 N	12	29 E	1.31
AVERNAKO	55	01 N	10	17 E	3.40
AVNE VIG	55	19 N	9	38 E	3.24
AVNO FJORD	55	05 N	11	45 E	2.39

B

	Position °	'	°	'	Sec. Para
BACKVIKEN	55	54 N	12	43 E	1.11
BAEKKEHAVE LIGHT	55	00 N	10	33 E	3.43
BAGENKOP	54	45 N	10	40 E	3.38
BAGO	55	19 N	9	49 E	3.21
BAGO SUND	55	18 N	9	52 E	3.27
BAKEN BERG	54	41 N	13	21 E	4.22
BAKKEGRUND	54	59 N	14	45 E	4.53
BALLEBRO LIGHT	55	00 N	9	40 E	3.33
BALTIYSK	54	38 N	19	54 E	9.38
BALTIYSKAYA KOSA	54	25 N	19	35 E	9.37
BANDHOLM	54	50 N	11	30 E	2.45
BANDHOLM RENDE	54	51 N	11	32 E	2.44
BARDENFLETHS GRUND	55	18 N	9	44 E	3.21
BARING VIG	55	32 N	9	55 E	3.6
BARSEBACKSHAMN	55	45 N	12	54 E	1.13
BARSHAGAUDDEN	56	55 N	18	12 E	6.21
BARSHAUDDEN	56	55 N	18	12 E	6.21
BARSO	55	07 N	9	33 E	3.30
BASKEMOLLA	55	36 N	14	19 E	4.35
BASTHOLM	55	17 N	9	46 E	3.21
BERGKVARA	56	23 N	16	06 E	5.7
BERGO ISLET	58	45 N	17	25 E	7.15
BERGS	59	19 N	18	10 E	8.17
BERNATI LIGHT	56	23 N	20	59 E	10.6
BEZYMYANNAYA	57	43 N	20	59 E	10.11
BILLES GRUNDE	54	59 N	10	18 E	3.45
BIRKNACK	54	48 N	9	55 E	3.50
BJORKO	59	51 N	19	02 E	8.15
BJORNO	55	04 N	10	15 E	3.40
BJORNSKNUDE	55	42 N	10	02 E	3.5
BLA JUNGFRUN	57	15 N	16	48 E	5.5
BLACKAN	57	29 N	16	49 E	7.3
BLENHEIM LIGHTED BUOY	55	16 N	12	53 E	4.26
BODA	57	14 N	17	05 E	5.19
BOGENSE	55	34 N	10	05 E	3.6
BOGESTROM	55	04 N	12	10 E	2.58
BOGO	54	56 N	12	03 E	2.55
BOGSKAR	59	30 N	20	21 E	8.4
BOKNIS ECK	54	33 N	10	01 E	3.61
BOKNISECK	54	33 N	10	01 E	3.61
BORGHOLM	56	53 N	16	39 E	5.16
BORGSTED LIGHT	54	53 N	12	08 E	2.60
BORNHOLM	55	00 N	15	00 E	4.49
BORNHOLMSGAT	55	17 N	14	30 E	4.1
BORRESHOVED	54	50 N	9	45 E	3.51
BORSTAHUSEN	55	54 N	12	49 E	1.10
BORUP N LIGHT	55	32 N	9	41 E	3.14
BORUP SAND	55	31 N	9	38 E	3.17
BORUP W LIGHT	55	32 N	9	42 E	3.14
BOSTRI MADALIK	58	01 N	24	20 E	10.27
BOTVALDAVIK	57	35 N	18	48 E	6.16
BOTVALDVIK	57	35 N	18	48 E	6.16
BRANDSO	55	22 N	9	43 E	3.20
BRATTEN BRIDGE	55	03 N	10	36 E	3.44
BRAVIKEN	58	38 N	16	35 E	7.10
BREDGRUND	54	49 N	10	02 E	3.50
BREDGRUND	55	31 N	12	51 E	1.23

	Position °	'	°	'	Sec. Para
BREDGRUND	59	43 N	17	52 E	7.20
BREDNINGEN	55	25 N	9	43 E	3.20
BREGNOR	55	29 N	10	36 E	3.3
BRUNSNAES FLAK	54	52 N	9	38 E	3.54
BUK LIGHT	54	08 N	11	42 E	4.17
BULK LIGHT	54	27 N	10	12 E	3.64
BULLERO	59	12 N	18	51 E	8.4
BULLUCIEMS LIGHT	57	00 N	23	53 E	10.21
BUNGEOR	57	49 N	19	07 E	6.10
BURGSTAKEN	54	25 N	11	12 E	4.7
BURGSVIK	57	02 N	18	16 E	6.3
BURGSVIKEN	57	03 N	18	12 E	6.2
BUTINGE OIL TERMINAL	56	03 N	20	58 E	10.6
BYXELKROK	57	20 N	17	00 E	5.16

C

CHELMINEK	53	41 N	14	32 E	9.17
CHIDOVA NOVA	57	54 N	21	13 E	10.11
CHRISTIANSO	55	19 N	15	11 E	4.57
CHRISTIANSO HARBOR	55	19 N	15	11 E	4.58
COPENHAGEN	55	42 N	12	37 E	1.17
CZOLPINO	54	43 N	17	15 E	9.26

D

DAGELOKKE HAVN	55	04 N	10	52 E	2.24
DAHMESHOVED LIGHT	54	24 N	11	05 E	4.7
DALARO	59	08 N	18	25 E	8.11
DAMGARD LIGHT	55	32 N	9	40 E	3.14
DAMMAN	57	03 N	16	42 E	5.5
DANISCHE WIEK	54	08 N	13	28 E	9.7
DARLOWO	54	26 N	16	25 E	9.23
DARSSER ORT	54	29 N	12	32 E	4.19
DAUGAVGRIVAS SALA	57	02 N	24	00 E	10.21
DAVIDS BANKE	55	22 N	14	41 E	4.50
DEGERHAMN	56	21 N	16	25 E	5.14
DEPPO	57	07 N	18	07 E	6.4
DER BOCK	54	27 N	13	00 E	4.21
DIE TRAVE	53	57 N	10	52 E	4.11
DIERNAES BUGT	55	09 N	9	31 E	3.30
DJUPASUND	56	06 N	15	38 E	4.46
DORNBUSCH LIGHT	54	36 N	13	07 E	4.22
DOVNSKLINT	54	44 N	10	43 E	3.38
DRAGOR FERRY HARBOR	55	35 N	12	41 E	1.27
DRAGOR HAVN	55	36 N	12	41 E	1.27
DREJENSODDE LIGHT	55	30 N	9	35 E	3.17
DREJO	54	58 N	10	25 E	3.45
DRIGGE	54	17 N	13	09 E	9.9
DROGDEN	55	36 N	12	42 E	1.29
DROGDEN LIGHT	55	32 N	12	43 E	1.28
DRONNING ALEXANDRINES BRG	54	59 N	12	10 E	2.56
DUEODDE	54	59 N	15	05 E	4.53

E

EAST LILLE BAELT BRIDGE	55	31 N	9	45 E	3.12
ECKERNFORDE	54	29 N	9	50 E	3.63
ECKERNFORDE LIGHT	54	28 N	9	51 E	3.62
ECKERNFORDER BUCHT	54	30 N	10	00 E	3.62
EGERNSUND	54	54 N	9	36 E	3.56
EGERNSUND HAVN	54	55 N	9	36 E	3.56
EGHOLM	55	15 N	11	11 E	2.16
EGHOLM NO. 30 LIGHT	55	15 N	11	06 E	2.16
ELEFANTGRUND	55	32 N	10	55 E	2.8
ELLEHOLM	56	10 N	14	44 E	4.41
ELSEHOVED LIGHT	55	06 N	10	47 E	2.22
ENEBAERODDE LIGHT	55	31 N	10	34 E	3.2
ENEHOJE	54	50 N	11	01 E	2.30
ENGURE LIGHT	57	10 N	23	14 E	10.21
ENSKAR	58	41 N	17	28 E	7.12
ENSKAR	58	41 N	17	29 E	7.15
ENSTEDVAERKET	55	01 N	9	26 E	3.32
ESPERGAERDE	56	00 N	12	34 E	1.14

F

FABORG	55	06 N	10	15 E	3.42
FABORG FJORD	55	05 N	10	15 E	3.41
FAENO	55	29 N	9	42 E	3.15
FAENO KALV	55	30 N	9	40 E	3.15
FAENO LIGHT	55	29 N	9	42 E	3.16
FAENO SUND	55	29 N	9	43 E	3.15
FAERGESTROM	54	59 N	11	57 E	2.58
FAKSE BUGT	55	08 N	12	19 E	1.34
FAKSE LADEPLADS	55	13 N	12	10 E	1.35
FAKSE LADEPLADS HAVN	55	13 N	12	10 E	1.35
FALKENS GRUND LIGHT	58	37 N	17	02 E	7.12
FALKSE BOLSAKS	55	43 N	10	43 E	2.4
FALSHOFT TOWER	54	56 N	9	58 E	3.50
FALSTER	54	57 N	11	48 E	2.47
FALSTERBO	55	24 N	12	50 E	1.1
FALSTERBO KANAL	55	24 N	12	57 E	1.25
FALSTERBO UDDE LIGHT	55	23 N	12	49 E	1.24
FALSTERBOKANALEN	55	24 N	12	57 E	4.28
FALSTERBOREV	55	20 N	12	50 E	4.26
FALSTERBOREV LIGHT	55	19 N	12	38 E	4.26
FALSTERBOUDDE	55	23 N	12	49 E	4.26
FALUDDEN	57	00 N	18	24 E	6.21
FARENSODDE	54	49 N	9	28 E	3.55
FARJESTADEN	56	39 N	16	28 E	5.15
FARO	54	57 N	12	00 E	2.55
FARO FALSTER BRIDGE	54	57 N	11	59 E	2.55
FARO LIGHT	57	58 N	19	21 E	6.22
FARO SODRA LIGHT	57	51 N	19	06 E	6.10
FAROSUND	57	55 N	19	03 E	6.10
FAROSUND HARBOR	57	52 N	19	04 E	6.11
FEHMARN	54	28 N	11	08 E	3.75
FEHMARN BELT	54	35 N	11	12 E	4.2
FEHMARNSUND	54	24 N	11	06 E	3.76
FEJAN	59	44 N	19	10 E	8.16
FEJO	54	57 N	11	25 E	2.42
FEMO	54	59 N	11	32 E	2.43
FERNE KLINT	55	11 N	11	18 E	2.38
FIGEHOLM	57	22 N	16	33 E	5.12
FJALKINGE BACKE	56	03 N	14	17 E	4.36
FJARDHALLAN	59	09 N	18	33 E	8.7
FLAEKOJET	55	26 N	9	43 E	3.20
FLAKFORT	55	42 N	12	44 E	1.15
FLENSBORG FJORD	54	50 N	9	50 E	3.49
FLENSBURG	54	48 N	9	26 E	3.57
FLENSBURGER FORDE LT BUOY	54	49 N	9	44 E	3.51
FLESSINGEN	55	30 N	9	40 E	3.15
FLINTRANNAN	55	37 N	12	53 E	1.22
FLIVIK	57	33 N	16	35 E	7.3
FLUGGE LIGHT	54	27 N	11	01 E	3.75
FLUGGESAND	54	27 N	10	57 E	3.75
FREDERICIA	55	34 N	9	46 E	3.10
FRIEDRICHSORT	54	23 N	10	11 E	3.68
FRIEDRICHSORT LIGHT	54	23 N	10	12 E	3.66
FRISCHES HAFF	54	27 N	19	45 E	9.39
FURILLEN	57	46 N	19	01 E	6.13
FYNS HOVED	55	37 N	10	35 E	2.4
FYNSHAV FERRY HARBOR	55	00 N	9	59 E	3.35
FYR RENDEN	55	18 N	9	46 E	3.27

G

GABELSFLACH	54	32 N	10	21 E	3.65
GALGELOKKEODDE	55	05 N	14	48 E	4.53
GALON ISLAND	59	05 N	18	16 E	8.10
GALS KLINT	55	31 N	9	41 E	3.14
GAMBORG FJORD	55	29 N	9	44 E	3.16
GAMLEBY	57	54 N	16	25 E	7.5
GAMLEBYVIKEN	57	44 N	16	42 E	7.4
GAMMEL POL LIGHT	54	53 N	10	04 E	3.35
GASFJARDEN	57	34 N	16	35 E	7.3
GASKI LIGHT	54	15 N	15	52 E	9.22
GDANSK	54	21 N	18	40 E	9.35
GDYNIA	54	32 N	18	33 E	9.33
GEDSER	54	34 N	11	56 E	4.6
GEDSER ODDE	54	34 N	11	58 E	4.6
GEDSER REV	54	30 N	12	10 E	4.6
GELLEN LIGHT	54	31 N	13	05 E	4.22
GELLENSTROM	54	27 N	13	04 E	4.22
GELLENSTROM	54	28 N	13	04 E	4.23
GELTINGER BUCHT	54	48 N	9	51 E	3.53
GENBOTE	59	08 N	18	27 E	8.7
GENNER FJORD	55	07 N	9	30 E	3.30

	Position °	'	°	'	Sec. Para
GILBJERG HOVED	56	08 N	12	18 E	1.1
GILLELEJE	56	08 N	12	19 E	1.7
GINDRIKSNASBERGET	57	36 N	16	35 E	7.2
GIPKA LIGHT	57	34 N	22	39 E	10.21
GLAENO	55	12 N	11	26 E	2.38
GOLLWITZ N LIGHT	54	01 N	11	28 E	4.14
GOLLWITZ W LIGHT	54	01 N	11	28 E	4.14
GORA DONAS BEACON	54	28 N	18	26 E	9.34
GORA TYUPA	56	17 N	21	00 E	10.6
GOTA KANAL	58	29 N	16	25 E	7.8
GOTLAND	57	30 N	18	30 E	6.1
GOTSKA SANDON	58	22 N	19	15 E	6.23
GRANHAMNSLJARDEN	59	43 N	19	07 E	8.15
GRANITZER ORT	54	24 N	13	40 E	9.5
GRANKULLAVIKEN	57	22 N	17	07 E	5.17
GRANSOSUND	58	31 N	16	54 E	7.8
GRASRANNAN LIGHT	55	52 N	12	48 E	1.13
GRASTEN	54	55 N	9	36 E	3.56
GRAUTEN	57	44 N	19	02 E	6.14
GREIFSWALD	54	05 N	13	23 E	9.10
GREIFSWALDER BODDEN	54	14 N	13	32 E	9.7
GREIFSWALDER OIE	54	15 N	13	55 E	9.8
GRINTALS LIGHT	57	38 N	24	23 E	10.24
GROGARNSHUVUD	57	27 N	18	53 E	6.16
GROMITZ	54	09 N	10	57 E	4.8
GRONHOGEN	56	16 N	16	24 E	5.14
GRONNEODDE	55	02 N	10	40 E	2.23
GRONSUND	54	50 N	12	10 E	4.24
GRONSUND	54	54 N	12	05 E	2.61
GROSS KLUTZHOVED	54	01 N	11	11 E	4.13
GROSSES TIEF	54	05 N	11	27 E	4.14
GROTLINGBOUDD	57	07 N	18	27 E	6.19
GUDHJEM	55	13 N	14	58 E	4.55
GULDBORG BRIDGE	54	52 N	11	45 E	2.48
GULDBORG SUND	54	39 N	11	52 E	4.6
GULDBORG SUND	54	52 N	11	45 E	2.48
GULF'S OIL PIER	55	12 N	11	15 E	2.37
GULFHAVN	55	12 N	11	15 E	2.37
GULLANGSBERG	58	37 N	16	56 E	7.9
GULSTAV FLAK	54	41 N	10	43 E	3.38
GUNNARSTENARNA	58	46 N	18	03 E	8.3
GUNNON	56	09 N	14	47 E	4.41
GUOVIK	56	12 N	15	01 E	4.43
GUSTAF DALEN LIGHT	58	36 N	17	28 E	7.9
GUSTAVSBERG	59	19 N	18	23 E	8.11
H					
HAADEMEESTE	58	05 N	24	30 E	10.27
HABERNIS HUK	54	48 N	9	47 E	3.53
HADERSLEV	55	15 N	9	30 E	3.25
HADERSLEV FJORD	55	19 N	9	38 E	3.24
HAKEN LIGHT	55	55 N	12	44 E	1.11
HALK HOVED	55	12 N	9	42 E	3.26
HALLSHUK	57	56 N	18	44 E	6.8
HALLSVIKEN	58	53 N	17	28 E	7.16
HALSSKOV	55	21 N	11	06 E	2.14
HALSSKOV HARBOR	55	21 N	11	06 E	2.14
HAMMARUDD	57	16 N	18	06 E	6.4
HAMMER ODDE	55	18 N	14	46 E	4.50
HAMNKLABBSHALLAN	57	40 N	16	48 E	7.4
HANDELOP ISLAND	57	41 N	16	44 E	7.3
HANNIBAL	54	02 N	11	22 E	4.13
HANO	56	01 N	14	51 E	4.39
HANOBANKEN	55	56 N	14	52 E	4.39
HANOBUKTEN	55	58 N	14	35 E	4.35
HANOSUND	56	00 N	14	48 E	4.39
HARADSKAR	58	09 N	16	59 E	7.7
HARBOLLE PYNT	54	53 N	12	08 E	2.60
HARBOLLE PYNT LIGHT	54	53 N	12	08 E	2.60
HARTSO ISLAND	58	43 N	17	28 E	7.12
HASLE	55	11 N	14	42 E	4.51
HASSELO	57	50 N	16	45 E	7.2
HASSLO ISLAND	56	07 N	15	28 E	4.45
HAUREVLAR	57	54 N	19	02 E	6.11
HAVRINGE	58	36 N	17	19 E	7.9
HEIKENDORF REEDE	54	22 N	10	11 E	3.68
HEILIGENHAFEN	54	22 N	10	59 E	3.74
HEILIGENHAFEN LIGHT	54	22 N	11	01 E	3.74
HEJLSMINDE BUGT	55	22 N	9	37 E	3.20
HEL	54	36 N	18	48 E	9.31
HEL LIGHT	54	36 N	18	49 E	9.30
HEL PENINSULA	54	40 N	18	45 E	9.30
HELIGHOLMEN	56	55 N	18	17 E	6.21
HELLEHAVN NAKKE LIGHT	55	00 N	12	31 E	1.36
HELNAES BUGT	55	07 N	10	04 E	3.36
HELNAES LIGHT	55	08 N	9	59 E	3.22
HELSINGBORG	56	03 N	12	42 E	1.6
HELSINGOR	56	02 N	12	37 E	1.9
HELSINGOR NORDHAVEN	56	02 N	12	37 E	1.8
HELTSBANKE	54	51 N	9	47 E	3.51
HERRENWYK	53	54 N	10	48 E	4.11
HERRHAMRA	58	48 N	17	50 E	8.8
HERRVIK	57	25 N	18	56 E	6.17
HERRVIKEN	57	25 N	18	56 E	6.17
HESTEHOVED	54	50 N	12	10 E	4.24
HESTEHOVED LIGHT	54	50 N	12	10 E	2.60
HESTESKOEN	55	05 N	9	54 E	3.29
HIDDENSEE	54	33 N	13	07 E	4.22
HIIUMAA	58	53 N	22	36 E	10.11
HIUMAA	58	53 N	22	36 E	10.11
HOBURG	56	55 N	18	08 E	6.2
HOBURGS BANK	56	40 N	18	10 E	6.2
HOGANAS	56	12 N	12	33 E	1.4
HOGBY	57	09 N	17	03 E	5.18
HOGSKAR	59	52 N	9	07 E	8.15
HOHWACHTER BUCHT	54	20 N	10	45 E	3.73
HOLCKENHAVN FJORD	55	18 N	10	46 E	2.16
HOLLAENDERDYBET	55	42 N	12	41 E	1.15
HOLLVIKEN	55	26 N	12	55 E	1.24
HOLLVIKEN LIGHT	55	31 N	12	51 E	1.23
HOLMUDDEN	57	58 N	19	21 E	6.22
HOLNIS	54	52 N	9	36 E	3.55
HOLNIS LIGHT	54	52 N	9	34 E	3.55
HOLST BANKE	55	08 N	9	40 E	3.29
HOLTENAU	54	22 N	10	09 E	3.68
HOLTENAU REEDE	54	23 N	10	11 E	3.68
HOLTENAU SCHLEUSEN LIGHT	54	22 N	10	09 E	3.68
HOLTENAU-WIK	54	22 N	10	07 E	3.70
HORNBAEK	56	06 N	12	28 E	1.8
HORNENAES	55	05 N	10	05 E	3.36
HORNSUDDE	57	12 N	16	54 E	5.16
HORUP HAV	55	54 N	9	55 E	3.51
HOV	55	10 N	10	56 E	2.20
HOV LIGHT	55	15 N	10	54 E	2.20
HUMLEBAEK	55	58 N	12	33 E	1.14
HUNO BOTE	57	34 N	16	37 E	7.2
HUVUDET LIGHT	56	40 N	16	23 E	5.4
HUVUDSKAR	58	58 N	18	34 E	8.3
HVIDEODDE	55	07 N	14	42 E	4.51
HYLLEKROG	54	36 N	11	30 E	4.4
I					
IDO	57	43 N	16	46 E	7.4
IDO STANGSKAR	57	40 N	16	47 E	7.4
IRBENI VAIN	57	40 N	22	08 E	10.19
IRBENSKIY LIGHT	57	45 N	21	44 E	10.19
IRBENSKIY STRAIT	57	40 N	22	08 E	10.19
ISPEUDDE LIGHT	56	45 N	16	31 E	5.16
J					
JAAGURAHU	58	24 N	21	58 E	10.14
JAGERSBERG	54	23 N	10	13 E	3.67
JAMMERLAND BUGT	55	36 N	11	04 E	2.7
JARNAVIK	56	11 N	15	05 E	4.43
JAROSLAWIEC	54	32 N	16	33 E	9.24
JASMUND	54	34 N	13	40 E	9.3
JASTARNIA	54	42 N	18	41 E	9.32
JASTARNIA LIGHT	54	42 N	18	41 E	9.30
JULEBAEK LIGHT	56	04 N	12	34 E	1.8
JYDERUP	55	41 N	11	28 E	2.5
K					
KAAVI NINA	57	59 N	22	12 E	10.32
KADET BANK	54	34 N	12	22 E	4.20
KADET RINNE	54	27 N	12	15 E	4.20
KALESTE	58	55 N	22	08 E	10.16

	Position °	'	°	'	Sec. Para
KALININGRAD	54	38 N	19	54 E	9.38
KALININGRAD	54	42 N	20	29 E	9.38
KALKGRUND	54	48 N	9	54 E	3.50
KALKGRUND LIGHT	54	49 N	9	53 E	3.50
KALMAR	56	40 N	16	22 E	5.8
KALMARSUND	56	30 N	16	17 E	5.3
KALMARSUNDS DJUPRANNA	56	40 N	16	24 E	5.3
KALUNDBORG	55	41 N	11	06 E	2.6
KALUNDBORG FYORD	55	41 N	11	00 E	2.5
KALVEHAVE HAVN	55	00 N	12	10 E	2.57
KALVESTROM	55	04 N	12	10 E	2.58
KALVO	55	07 N	9	28 E	3.30
KANHOLMSFJARDEN	59	20 N	18	47 E	8.6
KAP ARKONA	54	41 N	13	26 E	4.22
KAPELLUDDEN	56	49 N	16	51 E	5.18
KAPPEL CHURCH	54	45 N	11	02 E	2.30
KAPPELN	54	40 N	9	56 E	3.60
KAPPELSHAMN	57	51 N	18	47 E	6.9
KAPPELSHAMNSVIKEN	57	54 N	18	48 E	6.9
KAREHAMN	56	57 N	16	53 E	5.18
KARLEBY	54	52 N	11	12 E	2.30
KARLSHAMN	56	10 N	14	52 E	4.42
KARLSKRONA	56	10 N	15	36 E	4.47
KARREBAEKSMINDE	55	11 N	11	39 E	2.39
KARREBAEKSMINDE BUGT	55	07 N	11	33 E	2.38
KASEHUVUD	55	23 N	14	03 E	4.32
KASTRUP SCANPORT HAVN	55	38 N	12	39 E	1.26
KATTHAMMARSVIK	57	26 N	18	51 E	6.16
KEGNAES	54	52 N	9	55 E	3.50
KELDSNOR LIGHT	54	44 N	10	43 E	2.28
KERTEMINDE	55	27 N	10	40 E	2.10
KERTEMINDE BUGHT	55	27 N	10	43 E	2.9
KIEL	54	20 N	10	08 E	3.71
KIEL CANAL	54	22 N	10	09 E	3.69
KIEL LIGHT	54	30 N	10	16 E	3.64
KIELER BUCHT	54	35 N	10	30 E	3.72
KIELER FORDE	54	28 N	10	16 E	3.64
KIELER HAFEN	54	22 N	10	10 E	3.68
KIHELKONNA LAHT	58	23 N	21	58 E	10.14
KIHNU SAAR	58	08 N	24	00 E	10.28
KIIPSAARE NUKK	58	30 N	21	52 E	10.14
KIKUT LIGHT	53	59 N	14	35 E	9.14
KIRIKU NINA	58	17 N	24	17 E	10.29
KIRKEGRUND	55	06 N	11	22 E	2.38
KLAGSHAMN	55	31 N	12	54 E	1.23
KLAIPEDA	55	43 N	21	07 E	10.4
KLEINES HAFF	53	45 N	14	04 E	9.11
KLINTEHAMN	57	23 N	18	12 E	6.5
KLINTS BANK	57	26 N	19	36 E	6.17
KLOVERHAGE PYNT	55	14 N	10	49 E	2.19
KNASTEGRUND	55	03 N	10	14 E	3.40
KNIVESBJERG	55	08 N	9	27 E	3.30
KNOLDEN	55	04 N	10	13 E	3.40
KNOLEN	55	51 N	12	44 E	1.13
KNOLLS GRUND	57	33 N	17	28 E	5.2
KNOSEN	55	26 N	12	52 E	1.24
KNUDSHOVED	55	05 N	11	37 E	2.38
KNUDSHOVED	55	05 N	9	33 E	3.30
KNUDSHOVED	55	17 N	10	51 E	2.11
KNUDSHOVED FAERGEHAVN	55	17 N	10	51 E	2.11
KNUDSHOVED REV	55	05 N	11	35 E	2.38
KOBBERDYB	55	12 N	10	54 E	2.20
KOBENHAVN	55	42 N	12	37 E	1.17
KOFOTSGRUND	59	13 N	18	37 E	8.7
KOGE	55	27 N	12	12 E	1.32
KOGE BUGT	55	30 N	12	26 E	1.30
KOIGUSTE ALLIRAHU	58	18 N	22	59 E	10.36
KOLBERG	54	11 N	15	33 E	9.21
KOLDING	55	29 N	9	30 E	3.18
KOLGDING FJORD	55	30 N	9	32 E	3.17
KOLKA LIGHT	57	48 N	22	38 E	10.19
KOLKASRAGS	57	46 N	22	36 E	10.19
KOLLICKER ORT LIGHT	54	34 N	13	41 E	9.3
KOLOBRZEG	54	11 N	15	33 E	9.21
KONGEBRO LYSTBADEHAVN	55	31 N	9	43 E	3.14
KONGEDYBET	55	41 N	12	39 E	1.15
KOPING	59	31 N	16	00 E	7.19
KOPMANSGRUND	59	29 N	19	40 E	8.4
KOPPARSTERNARNA	58	35 N	19	10 E	6.23
KOPU LIGHT	58	55 N	22	12 E	10.16
KORSHAVN LIGHT	55	36 N	10	37 E	3.2
KORSOR	55	20 N	11	08 E	2.15
KRAGENAES HAVN	54	55 N	11	22 E	2.42
KRAKELUND	57	27 N	16	43 E	5.12
KRIEGERS FLAK	55	02 N	13	02 E	4.26
KRISTIANOPEL	56	15 N	16	03 E	5.6
KROGHAGE DYB	54	33 N	11	58 E	4.5
KROKSKAR BEACON	58	47 N	17	51 E	8.8
KRONBORG PYNT	56	02 N	12	37 E	1.8
KRONGRUNDET	56	41 N	16	24 E	5.5
KRYNICA MORSKA LIGHT	54	23 N	19	27 E	9.37
KUBASSAAR	58	27 N	23	19 E	10.36
KUDEMA LAHT	58	31 N	22	15 E	10.15
KUDEMAA LAHT	58	31 N	22	15 E	10.15
KULLAGRUND LIGHT	55	18 N	13	20 E	4.30
KULLEN	56	18 N	12	27 E	1.1
KULLEN LIGHT	56	18 N	12	27 E	1.3
KUNGSGRUND	57	41 N	16	54 E	7.4
KUNGSHOLMEN	56	06 N	15	35 E	4.46
KURSKIY ZALIV	55	20 N	21	10 E	10.5
KUZNICA	54	44 N	18	35 E	9.32
KYRKBACKEN	55	55 N	12	40 E	1.11

L

	Position °	'	°	'	Sec. Para
LABOE HAVN	54	24 N	10	13 E	3.66
LACI LIGHT	57	27 N	24	23 E	10.24
LACKA	58	45 N	17	34 E	7.16
LADIN'I BEACON	57	12 N	24	21 E	10.24
LAGEMADE REACH	54	54 N	9	37 E	3.55
LAGERHOLMEN LIGHT	55	58 N	14	28 E	4.36
LANDSKRONA	55	52 N	12	50 E	1.12
LANDSORT	58	44 N	17	52 E	8.3
LANDSORT	59	44 N	17	52 E	7.20
LANDSORTSDJUPET	58	38 N	18	15 E	7.1
LANDTIEF	54	16 N	13	44 E	9.9
LANDTIEF A LT BUOY	54	21 N	13	51 E	9.6
LANGAGRUND	55	32 N	14	29 E	4.33
LANGBALLIG BANK	54	50 N	9	40 E	3.54
LANGBALLIGAU	54	49 N	9	40 E	3.54
LANGELANDS BAELT	55	09 N	11	04 E	2.28
LANGELANDSORE LIGHT	55	10 N	11	08 E	2.16
LANGGRUND	55	07 N	9	55 E	3.29
LANGHOLMEN	59	18 N	18	46 E	8.7
LANGO	54	59 N	12	07 E	2.56
LANGO HAVN	54	49 N	11	01 E	2.30
LANGOREN	56	04 N	15	50 E	4.48
LARINIMADALIK	58	24 N	23	38 E	10.31
LAUS HOLMAR	57	17 N	18	46 E	6.18
LAUTERHORN	57	57 N	19	05 E	6.22
LAUTERHORNSUDDE	57	57 N	19	05 E	6.22
LAWICA SLUPSKA	54	55 N	16	39 E	9.24
LEBA	54	46 N	17	33 E	9.26
LEDSKAR LIGHT	58	42 N	17	13 E	7.15
LEHNSKOV PYNT	55	02 N	10	31 E	3.43
LERBERGET	56	11 N	12	34 E	1.5
LERHAMN	56	15 N	12	31 E	1.3
LESNOY LIGHT	55	01 N	20	37 E	10.3
LIDINGO	59	22 N	18	12 E	8.17
LIEPAJA	56	31 N	21	01 E	10.7
LIEPS	54	00 N	11	17 E	4.13
LILLA KARLSO	57	19 N	18	04 E	6.4
LILLA ROTHOLMEN	59	04 N	18	20 E	8.7
LILLE BAELT	54	15 N	9	48 E	3.1
LILLE BAELT	55	20 N	9	45 E	3.2
LILLEGRUND	55	03 N	10	14 E	3.40
LILLEGRUND	55	07 N	9	55 E	3.29
LILLEGRUND	55	39 N	10	38 E	2.4
LILLEO	54	54 N	11	29 E	2.43
LILLHAMMARSGRUND	58	40 N	17	20 E	7.12
LIMHAMN	55	35 N	12	56 E	1.20
LINDEHOVED	55	08 N	9	59 E	3.22
LINDERUM	55	18 N	9	43 E	3.21
LINDHOLM	54	53 N	11	27 E	2.43
LINDHOLM	55	00 N	12	13 E	2.57
LINDHOLM DYB	54	54 N	11	25 E	2.44
LINDO SKIBSVAERFT	55	28 N	10	32 E	3.3
LISTED	55	09 N	15	07 E	4.55
LISTERSHUVUD	56	02 N	14	47 E	4.39
LJUNGSKAR	57	31 N	16	47 E	7.2
LOHALS	55	08 N	10	54 E	2.24
LOMMA	55	41 N	13	04 E	1.18
LOMMABUKTEN	55	41 N	13	00 E	1.18

	Position °	'	°	'	Sec. Para
LOODE NEEM	57	59 N	22	00 E	10.12
LOONALAID	58	20 N	21	48 E	10.13
LOU LAHT	58	05 N	22	10 E	10.13
LOUS FLAK	55	50 N	12	38 E	1.14
LUBECK	53	53 N	10	42 E	4.12
LUBECKER BUCHT	54	05 N	11	02 E	4.8
LUBIN	53	52 N	14	26 E	9.17
LUNDAKRABUKTEN	55	48 N	12	53 E	1.13
LUNDBORG	55	08 N	10	47 E	2.22
LUNSKAR	57	31 N	16	47 E	7.2
LUSHAGE LIGHT	55	46 N	10	37 E	2.3
LYNGS ODDE AMMONIAKHAVN	55	31 N	9	45 E	3.12
LYO	55	02 N	10	09 E	3.36
LYO KROG	55	04 N	10	08 E	3.40
LYSEGRUND	55	35 N	10	55 E	2.7

M

MADDSES KLINT	54	53 N	12	12 E	2.60
MADSES KLINT	54	53 N	12	12 E	4.25
MAGO	57	41 N	18	52 E	6.14
MALLSTEN	58	51 N	18	02 E	8.6
MALMO	55	37 N	13	00 E	1.19
MANILAID	58	13 N	24	08 E	10.29
MARKELSDORFER HUK	54	32 N	11	04 E	4.3
MARO	58	34 N	16	53 E	7.8
MARSTAL	54	51 N	10	31 E	3.48
MARSTAL BUGT	54	47 N	10	35 E	3.38
MARSVIKEN	58	39 N	17	04 E	7.12
MASKNAGGEN LIGHT	56	44 N	16	28 E	5.5
MASKNUV LIGHT	58	51 N	18	01 E	8.6
MASNEDO	54	59 N	11	55 E	2.50
MASNEDO GODNINGSHAVN	54	59 N	11	54 E	2.52
MASNEDOVAERKETS HAVN	55	00 N	11	53 E	2.52
MASNEDSUND	55	00 N	11	54 E	2.50
MASNEDSUND BRIDGE	55	00 N	11	53 E	2.51
MATVIK	56	10 N	14	58 E	4.43
MEELAIUNEEM	58	19 N	21	50 E	10.13
MEM	58	29 N	16	25 E	7.8
MERISE NEEM	58	30 N	22	09 E	10.15
MERSRAGS	57	22 N	23	08 E	10.21
MICHAILOVA SEKLIS	57	44 N	21	42 E	10.19
MIDDELFART	55	30 N	9	44 E	3.13
MIDDELGRUND	54	51 N	9	52 E	3.51
MIDDELGRUNDS FORT	55	43 N	12	40 E	1.15
MIEDZYZDROJE	53	56 N	14	27 E	9.14
MIELINO ISLAND	53	53 N	14	17 E	9.17
MIELINSKI KANAL	53	54 N	14	15 E	9.17
MIELNO	54	15 N	16	03 E	9.22
MIERZEJA HELSKA	54	40 N	18	45 E	9.30
MIERZEJA WISLANA	54	25 N	19	35 E	9.37
MIKELRTORNIS LIGHT	57	36 N	21	58 E	10.19
MITTELGRUND	54	31 N	10	03 E	3.62
MITTELGRUND	54	49 N	9	27 E	3.55
MITTGRUNDEN	56	28 N	16	15 E	5.4
MOLLE	56	17 N	12	30 E	1.3
MOLTENORT	54	23 N	10	12 E	3.68
MOMMARK HAVN	54	56 N	10	03 E	3.35
MON LIGHT	54	57 N	12	33 E	1.36
MONSTERAS	57	02 N	16	27 E	5.9
MORBYLANGA	56	32 N	16	23 E	5.15
MORKO	58	59 N	17	40 E	7.16
MUHU	58	36 N	23	16 E	10.36
MUKRAN HARBOR	54	29 N	13	35 E	9.5
MURWIK	54	49 N	9	27 E	3.55
MUSHOLM BUGT	55	28 N	11	08 E	2.8
MUSKO ISLAND	59	00 N	18	07 E	8.10
MUSTPANK	58	22 N	21	33 E	10.14
MYS GVARDEJSKIY	54	58 N	20	16 E	10.2
MYSINGEHOLM	59	00 N	18	16 E	8.7

N

NAESTVED	55	14 N	11	45 E	2.40
NAKKEBOLLE FJORD	55	03 N	10	23 E	3.43
NAKKEHOVED LIGHT	56	07 N	12	21 E	1.7
NAKSKOV	54	50 N	11	08 E	2.31
NAKSKOV FJORD	54	50 N	11	00 E	2.30
NARSHAMN	57	14 N	18	40 E	6.19
NARSHOLMEN	57	13 N	18	41 E	6.18
NASET	55	27 N	12	57 E	1.24
NASREVET	57	03 N	18	09 E	6.3
NATTARO	58	53 N	18	07 E	8.3
NEKSO	55	04 N	15	08 E	4.54
NEUKIRCHEN GRUND	54	49 N	9	46 E	3.53
NEULAND LIGHT	54	22 N	10	36 E	3.72
NEUPOKOJEVIMADALIK	58	55 N	21	51 E	10.16
NEUSTADT HAFEN	54	06 N	10	49 E	4.9
NEUSTADTER BUCHT	54	03 N	10	49 E	4.9
NEXO	55	04 N	15	08 E	4.54
NIDDEN LIGHT	55	18 N	21	00 E	10.3
NIECHORZE	54	06 N	15	04 E	9.20
NIELSENGRUND	58	17 N	18	00 E	7.7
NIENDORF	54	00 N	10	48 E	4.9
NIVA HAVN	55	56 N	12	32 E	1.14
NOGERSUND	56	00 N	14	44 E	4.36
NORDBORG LIGHT	55	05 N	9	43 E	3.35
NORDHAFEN	54	22 N	10	07 E	3.70
NORDLIGE LILLEGRUND	55	12 N	9	49 E	3.21
NORD-OSTSEE KANAL	54	22 N	10	09 E	3.69
NORDPERD	54	21 N	13	46 E	9.6
NORDRE ROSE LIGHT	55	38 N	12	41 E	1.26
NORRA FALLBADAN	58	27 N	17	06 E	7.9
NORRA KRANKAN	58	37 N	17	23 E	7.9
NORRA MIDSJOBANKEN	56	14 N	17	24 E	5.2
NORRKOPING	58	35 N	16	12 E	7.11
NORRTALJE	59	46 N	18	43 E	8.16
NORRTALJEVIKEN	59	47 N	18	53 E	8.15
NORSHOLMEN	58	00 N	19	15 E	6.22
NOWY PORT	54	25 N	18	40 E	9.35
NY FARVAND	54	58 N	11	58 E	2.58
NYBOL NOR	54	55 N	9	38 E	3.56
NYBORG	55	19 N	10	48 E	2.18
NYBORG FJORD	55	17 N	10	50 E	2.17
NYHAMNSLAGE	56	15 N	12	32 E	1.3
NYKOBING	54	46 N	11	52 E	2.49
NYKOPING	58	45 N	17	01 E	7.14
NYNASHAMN	58	54 N	17	58 E	8.9
NYORD	55	03 N	12	13 E	2.57
NYREVSUDDE	57	32 N	18	07 E	6.6
NYSTED	54	40 N	11	44 E	4.5

O

OAXEN	58	58 N	17	43 E	7.16
OBZORNYY LIGHT	54	50 N	19	57 E	9.40
ODDEN	54	53 N	10	28 E	3.45
ODENSE	55	25 N	10	23 E	3.4
ODENSE FJORD	55	31 N	10	34 E	3.3
ODER BANK	54	20 N	14	25 E	9.14
ODIN'S BRIDGE	55	25 N	10	23 E	3.4
OFFEN TIEF	54	02 N	11	18 E	4.15
OFFEN TIEF LIGHTED BUOY	54	02 N	11	17 E	4.14
OHLENBURGS HUK	54	30 N	11	15 E	4.3
OJET BANK	54	37 N	11	00 E	3.75
OKSEOER	54	51 N	9	31 E	3.55
OLAND	56	40 N	16	37 E	5.13
OLANDS NORRA GRUND	57	29 N	17	09 E	5.17
OLANDS NORRA UDDE	57	22 N	17	06 E	5.17
OLANDS SODRA GRUND	56	04 N	16	41 E	5.2
OLANDS SODRA UDDE	56	12 N	16	24 E	5.13
OLANDSBRON BRIDGE	56	40 N	16	28 E	5.5
OLANDSREV	56	10 N	16	24 E	5.13
OLPENITZ HAFEN	54	40 N	10	02 E	3.61
OMMELSHOVED	54	53 N	10	28 E	3.45
OMO	55	10 N	11	10 E	2.16
OMO SUND	55	11 N	11	11 E	2.33
ONSEVIG	54	57 N	11	07 E	2.29
ORBY HAGE	55	18 N	9	40 E	3.24
ORDZANA LAWICA	54	20 N	14	25 E	9.14
ORE FLAK	55	08 N	10	48 E	2.22
ORE LIGHT	55	00 N	11	52 E	2.50
OREBY RENDE	54	51 N	11	32 E	2.44
OREHOVED	54	58 N	11	50 E	2.47
OREHOVED HAVN	54	58 N	11	51 E	2.47
ORESUND	56	07 N	12	33 E	1.1
ORESUND LINK	55	35 N	12	46 E	1.21
ORINGE	55	00 N	11	55 E	2.50
ORNHOKAKNOSEN	55	26 N	14	16 E	4.33
ORNO	59	04 N	18	26 E	8.7
OSKARSHAMN	57	16 N	16	27 E	5.11

	Position °	'	°	'	Sec. Para
OSMUSSAAR ISLAND	59	18 N	23	22 E	10.39
OSTERGARNSHOLM	57	27 N	18	59 E	6.17
OST-LIGE PULLER	55	17 N	10	56 E	2.19
OSTRA ROKO	58	54 N	18	05 E	8.6
OSTROV DAUGAVGRIVA	57	02 N	24	00 E	10.21
OSTTIEF	54	12 N	13	52 E	9.9
OSVALLSGRUNDET LIGHT	56	40 N	16	23 E	5.5
OVISI	57	34 N	21	43 E	10.10
OVISI SEKLIS	57	36 N	21	40 E	10.10
OXELOSUND	58	40 N	17	07 E	7.13
P					
PALANGA	55	56 N	21	04 E	10.6
PALMER ORT	54	13 N	13	24 E	9.9
PALUDANS FLAK	55	44 N	10	35 E	2.4
PAPE LIGHT	56	09 N	21	01 E	10.6
PARNU	54	23 N	24	30 E	10.30
PARNU LAHT	58	15 N	24	23 E	10.28
PASKALLAVIK	57	10 N	16	28 E	5.10
PATAHOLM	56	55 N	16	26 E	5.9
PAVILOSTA	56	53 N	21	11 E	10.8
PEBERHOLM	55	36 N	12	45 E	1.28
PEENE RIVER	54	10 N	13	45 E	9.11
PEENEMUNDE	54	08 N	13	46 E	9.12
PELZERHAKEN LIGHT	54	12 N	11	05 E	4.8
PIASTOWSKI KANAL	53	50 N	14	19 E	9.17
PIKLA NINA	58	15 N	24	28 E	10.28
PILTHOLM	59	08 N	18	27 E	8.7
PILTHOLMSKNALL	59	09 N	18	28 E	8.7
PINHATTEN LIGHT	55	45 N	12	52 E	1.13
PLANTAGENET GRUND	54	38 N	12	48 E	4.21
PLETSEVA BANKS	58	11 N	121	02 E	10.14
PLUSCHOWHAFEN	54	23 N	10	10 E	3.68
POEL	54	00 N	11	27 E	4.13
POLICE	53	34 N	14	34 E	9.17
POLS HUK	54	53 N	10	04 E	3.35
POMERANIAN BAY	54	08 N	14	15 E	9.14
POOSASPEA LIGHT	59	14 N	23	31 E	10.39
PREJAREN	59	13 N	19	07 E	8.13
PRIMORSKIY ZALIV	54	40 N	20	00 E	9.38
PRORER WIEK	54	27 N	13	40 E	9.5
PRZEKOP WISLA	54	22 N	18	57 E	9.36
PUCK	54	44 N	18	25 E	9.32
PUKAVIK	56	10 N	14	41 E	4.40
PUKAVIKSBUKTEN	56	07 N	14	47 E	4.40
PUTTGARDEN	54	30 N	11	14 E	4.3
PUVAROOTSI	58	33 N	23	37 E	10.31
R					
RAA	56	00 N	12	44 E	1.10
RADE HOVED	55	14 N	9	43 E	3.26
RAGACIEMS	57	02 N	23	30 E	10.21
RAGHAMMER ODDE	55	01 N	14	56 E	4.53
RAGO	54	58 N	11	19 E	2.42
RANZOW	54	35 N	13	38 E	9.3
REDDEVITZER HOFT	54	19 N	13	37 E	9.9
REERSO	55	32 N	11	06 E	2.7
REMMARGRUND	59	46 N	19	19 E	8.14
REVENGEGRUNDTE LIGHT	59	15 N	19	01 E	8.12
RIGA	56	57 N	24	06 E	10.22
RINDO	59	24 N	18	25 E	8.17
RINKENAES BUGT	54	54 N	9	37 E	3.56
RINKENAES REACH	54	53 N	9	35 E	3.55
RISINGE HOVED	55	25 N	10	50 E	2.11
RISTNA	58	56 N	22	03 E	10.16
RODBY HAVN	54	39 N	11	21 E	4.4
RODEGRUND	55	18 N	9	43 E	3.21
RODSAND RENDE	54	33 N	11	58 E	4.5
RODVIG	55	15 N	12	23 E	1.34
ROJA	57	30 N	22	49 E	10.21
ROMSO	55	31 N	10	48 E	2.9
ROMSO PULLER	55	30 N	10	49 E	2.9
ROMSO SUND	55	31 N	10	45 E	2.9
ROMSO TUE NO. 24 LIGHT	55	33 N	10	49 E	2.9
RONEHAMN	57	10 N	18	30 E	6.20
RONNE	55	06 N	14	42 E	4.52
RONNE BANK	54	55 N	14	39 E	4.53
RONNEBY	56	11 N	15	18 E	4.44
ROOMASSAAR	58	13 N	22	31 E	10.34
ROSNAES	55	45 N	10	52 E	2.3
ROSNAES LIGHT	55	45 N	10	52 E	2.3
ROSNAES PULLER	55	45 N	10	51 E	2.3
ROSNAES PULLER LIGHT	55	45 N	10	51 E	2.3
ROSTOCK	54	06 N	12	08 E	4.18
ROWEK	54	40 N	17	03 E	9.26
ROWY	54	40 N	17	03 E	9.26
ROZEWIE	54	50 N	18	21 E	9.27
ROZEWIE CAP OIL FLD	55	29 N	18	11 E	9.27
ROZTOKA ODRZANSKA	53	39 N	14	35 E	9.17
RUDEN	54	12 N	13	46 E	9.8
RUDKOBING	54	56 N	10	43 E	2.26
RUGEN	54	41 N	13	26 E	4.22
RUGENWALDE	54	26 N	16	25 E	9.23
RUGISCHER BODDEN	54	18 N	13	33 E	9.7
RUHNU SAAR	57	48 N	23	14 E	10.20
RUNGSTED	55	53 N	12	33 E	1.14
RYBACHIY LIGHT	55	10 N	20	51 E	10.3
RYGGEN	55	37 N	10	45 E	2.4
RZEKA DZIWNA	54	01 N	14	44 E	9.19
RZEKA REGA	54	09 N	15	17 E	9.20
S					
SAAREMAA HARBOR	58	32 N	21	14 E	10.15
SAAREMMA	58	16 N	22	36 E	10.11
SAARETUKK LIGHT	58	16 N	22	48 E	10.35
SAGAS BANK	54	17 N	11	12 E	4.7
SAINT JORGENS LIGHT	55	03 N	10	36 E	3.44
SAKSKOBING	54	48 N	11	38 E	2.46
SALACGRIVA	57	45 N	24	21 E	10.25
SALTHOLM FLAK	55	42 N	12	45 E	1.28
SALTSJOBADEN	59	17 N	18	19 E	8.11
SALTVIK	57	18 N	16	30 E	5.12
SALTVIKEN	55	45 N	12	57 E	1.18
SALVOREV	58	03 N	19	22 E	6.22
SANDHAMMAREN	55	23 N	14	12 E	4.32
SANDHAMN	56	06 N	15	52 E	5.6
SANDHAMN	59	17 N	18	55 E	8.12
SANDKASODDE	55	08 N	15	09 E	4.54
SANDO BANK	58	14 N	19	16 E	6.23
SANDON	59	17 N	18	56 E	8.12
SANDSANKAN	58	19 N	17	10 E	7.7
SANDVIG	55	11 N	9	36 E	3.30
SANDVIK	57	04 N	16	52 E	5.16
SASSNITZ	54	31 N	13	39 E	9.4
SAVOSUND	58	46 N	17	29 E	7.15
SCHAABE	54	35 N	13	23 E	9.3
SCHEERHAFEN	54	22 N	10	09 E	3.70
SCHEERHAFEN LIGHT	54	22 N	10	09 E	3.68
SCHLEIMUNDE	54	40 N	10	02 E	3.59
SCHLUTUP	53	54 N	10	48 E	4.11
SCHONHAGENER GRUND	54	37 N	10	04 E	3.61
SCHONHEYDER BANKE	55	09 N	9	43 E	3.29
SEGERSTAD	56	22 N	16	34 E	5.18
SERBINI	59	14 N	22	42 E	10.17
SERBINIMADALIK	59	14 N	22	42 E	10.17
SHCHUKINSKIY LIGHT	54	32 N	19	44 E	9.37
SIKRAGCIEMA LIGHT	57	39 N	22	13 E	10.19
SILLASEN	56	46 N	16	30 E	5.5
SILLNASUDDE LIGHT	56	00 N	14	37 E	4.36
SIMPEVARD	57	25 N	16	40 E	5.12
SIMPNASKLUBB LIGHT	59	54 N	19	05 E	8.15
SIMRISHAMN	55	33 N	14	22 E	4.34
SIO	54	57 N	10	41 E	2.24
SJAELLAND FARO BRIDGE	54	58 N	12	00 E	2.55
SJALBERGET	59	04 N	18	48 E	8.4
SKAELSKOR	55	15 N	11	18 E	2.35
SKAERBAEK FISKERHAVN	55	31 N	9	38 E	3.17
SKAERBAEK LIGHT	55	31 N	9	37 E	3.16
SKAERBAEKVAERKET HAVN	55	31 N	9	37 E	3.17
SKAFTET	57	39 N	16	35 E	7.4
SKAGGENAS	56	47 N	16	28 E	5.9
SKALENBJERG	55	22 N	10	44 E	2.11
SKAMLINGSBANKEN	55	25 N	9	34 E	3.20
SKANOR	55	25 N	12	50 E	1.24
SKANOR PENINSULA	55	23 N	12	49 E	4.26
SKANOR PENINSULA	55	24 N	12	53 E	1.24
SKANSEODDE E LIGHT	55	33 N	9	46 E	3.9
SKANSEPYNT	54	53 N	12	07 E	2.60

	Position °	'	°	'	Sec. Para
SKANSGRUNDET	56	39 N	16	23 E	5.4
SKANSUDDE	57	27 N	18	07 E	6.6
SKARE	55	22 N	13	03 E	4.26
SKARO	55	00 N	10	28 E	3.43
SKARUPORE SUND	55	04 N	10	42 E	2.23
SKAURUP SUND	55	04 N	10	42 E	2.23
SKELDE VIG	54	51 N	9	42 E	3.54
SKILLINGE	55	28 N	14	17 E	4.33
SKJOLDNAES	54	58 N	10	12 E	3.37
SKODSBOL REACH	54	54 N	9	39 E	3.55
SKOVEN	55	32 N	10	34 E	3.2
SKOVSHOVED	55	46 N	12	36 E	1.14
SKRAPAN	58	47 N	17	59 E	8.6
SLETTEN	55	57 N	12	32 E	1.14
SLIPSHAVN	55	17 N	10	50 E	2.17
SLITE	57	42 N	18	49 E	6.15
SLOTTSBREDAN	56	56 N	16	36 E	5.5
SMALANDSFARVANDET	55	07 N	11	45 E	2.32
SMYGEHUK	55	20 N	13	21 E	4.30
SNAEVRINGEN	55	32 N	9	45 E	3.11
SNEKKERSTEN	56	01 N	12	36 E	1.14
SNOGBAEK HUK	54	56 N	10	03 E	3.34
SNOGHOJ LIGHT	55	32 N	9	42 E	3.14
SOBY	54	57 N	10	16 E	3.46
SODERARM	59	45 N	19	24 E	8.14
SODERGRUND	57	48 N	19	11 E	6.12
SODERGRUNDAN	59	15 N	19	03 E	8.13
SODERTALJE	59	11 N	17	39 E	7.17
SODERTALJE CANAL	59	12 N	17	38 E	7.17
SODRA MIDSJOBANKEN	55	40 N	17	25 E	5.2
SODRA UDDE LIGHT	55	53 N	12	43 E	1.11
SOLVESBORG	56	03 N	14	35 E	4.38
SOMERI POOLSAR	58	20 N	23	46 E	10.31
SOMNITELANIA BANK	57	18 N	21	22 E	10.8
SONDERBALLE HOVED	55	08 N	9	31 E	3.30
SONDERBORG	54	55 N	9	47 E	3.52
SONDERBORG BUGT	54	52 N	9	50 E	3.51
SONDERBY KLINT	55	13 N	9	56 E	3.22
SONDRE STENRON	55	04 N	9	57 E	3.29
SOPOT	54	27 N	18	34 E	9.34
SORGU SAAR	58	11 N	24	12 E	10.29
SORTSO GAB	54	56 N	12	00 E	2.59
SORVE POOLSAR	58	03 N	22	10 E	10.12
SORVE SAAR LIGHT	57	55 N	22	03 E	10.12
SPARO	57	43 N	16	44 E	7.4
SPARON	57	43 N	16	44 E	7.4
SPODSBJERG HAVN	54	56 N	10	50 E	2.28
SPROGO	55	20 N	10	58 E	2.12
STABERHUK	54	24 N	11	19 E	4.3
STAFFANS BANK	55	53 N	12	45 E	1.11
STALDYB	55	00 N	11	18 E	2.44
STANGSKAR	57	44 N	16	45 E	7.4
STARA SWINA RIVER	53	52 N	14	17 E	9.17
STAVRBY SKOV LIGHT	55	31 N	9	46 E	3.12
STEGE BUGT	55	00 N	12	14 E	2.57
STEGE HAVN	54	59 N	12	17 E	2.57
STEIN	54	25 N	10	16 E	3.65
STEIN RIFF	54	00 N	10	54 E	4.9
STENDERUP HAVN	55	31 N	9	38 E	3.16
STENHOLM	59	08 N	18	25 E	8.7
STENKYRKEHUK	57	49 N	18	29 E	6.8
STENSHUVUD	55	40 N	14	17 E	4.35
STEPNICA	53	39 N	14	38 E	9.17
STETTIN	53	25 N	14	35 E	9.18
STEVNS KLINT LIGHT	55	17 N	12	27 E	1.1
STEVNS LIGHT	55	17 N	12	27 E	1.33
STEVNS PIER	55	19 N	12	28 E	1.33
STICKENHORN	54	23 N	10	10 E	3.68
STICKSKAR	57	43 N	16	45 E	7.4
STIGSNAESVAERKET HAVN	55	12 N	11	15 E	2.36
STILO LIGHT	54	47 N	17	44 E	9.26
STOCKHOLM	59	20 N	18	05 E	8.18
STOKKEBAEK FLAK	55	10 N	10	50 E	2.20
STOLLERGRUND	54	31 N	10	12 E	3.64
STOLLERGRUND RINNE	54	30 N	10	11 E	3.64
STOLPE BANK	54	55 N	16	39 E	9.24
STOLPMUNDE	54	35 N	16	51 E	9.25
STORA EKON	56	08 N	15	13 E	4.44
STORA HOGGARN	59	22 N	18	18 E	8.17
STORA JATTERSON	57	06 N	16	34 E	5.10
STORA KARLSO	57	17 N	17	58 E	6.4
STORA ROR	56	45 N	16	32 E	5.16
STORA VIKA	58	56 N	17	47 E	7.16
STORE BAELT	55	30 N	10	55 E	2.1
STORE BAELT LINK	55	19 N	11	00 E	2.13
STORE SVELMO	55	02 N	10	20 E	3.40
STORRO	58	41 N	17	33 E	7.16
STORSTROM	54	58 N	11	53 E	2.53
STORSTROM BRIDGE	54	58 N	11	53 E	2.54
STORUGNS	57	50 N	18	48 E	6.9
STRALSUND	54	19 N	13	06 E	4.23
STRANDER BUCHT	54	26 N	10	12 E	3.66
STRASSENBRUCKE ZECHERIN BRIDGE	53	52 N	13	50 E	9.13
STRIB HAVN	55	32 N	9	45 E	3.12
STRIB LIGHT	55	33 N	9	45 E	3.9
STRUKKAMPHUK LIGHT	54	25 N	11	06 E	3.75
STRYNO	54	54 N	10	37 E	3.45
STUBBEKOBING	54	53 N	12	03 E	2.59
STUBBERUP KNOLD	55	35 N	10	45 E	2.9
STURKO	56	06 N	15	40 E	4.46
SUDPERD	54	16 N	13	43 E	9.6
SUNDET	56	07 N	12	33 E	1.1
SUTU LAHT	58	16 N	22	45 E	10.35
SUUR KATEL	58	10 N	22	23 E	10.33
SUURKUIV	58	23 N	21	40 E	10.14
SVANEKE	55	08 N	15	09 E	4.55
SVANGEN LIGHT	59	16 N	18	59 E	8.12
SVARTGRUND	55	14 N	14	15 E	4.32
SVENDBORG	55	04 N	10	37 E	2.25
SVENDBORG SUND	55	04 N	10	37 E	3.44
SVENDBORG SUND BRIDGE	55	03 N	10	36 E	3.44
SVENSKA BJORN LIGHT	59	33 N	20	01 E	8.4
SVENSKA HOGARNA	59	27 N	19	30 E	8.4
SVENSKA STENARNA	59	35 N	19	35 E	8.5
SVENTOJI LIGHT	56	01 N	21	05 E	10.6
SWINOUJSCIE	53	55 N	14	16 E	9.16
SYSNEUDD	57	23 N	18	53 E	6.18
SZCZECIN	53	24 N	14	32 E	9.18

T

	Position °	'	°	'	Sec. Para
TAERO	54	57 N	12	05 E	2.56
TAGA LAHT	58	29 N	22	06 E	10.15
TAHKUNA NINA	59	05 N	22	36 E	10.17
TAKSENSAND LIGHT	55	00 N	9	58 E	3.35
TALAIS SEKLIS	57	49 N	24	13 E	10.26
TARAN, MYS	54	58 N	19	59 E	10.2
TARBAEK	55	47 N	12	36 E	1.14
TARBAEK REV	55	47 N	12	38 E	1.14
TARNEWITZER HUK	54	00 N	11	14 E	4.13
TARNO ISLAND	56	07 N	14	58 E	4.43
TARS	54	53 N	11	02 E	2.30
TASINGE	55	00 N	10	33 E	2.23
TEJN	55	15 N	14	50 E	4.56
TELEGRAFBERGET	59	21 N	18	14 E	8.17
THE SOUND	56	07 N	12	33 E	1.1
THIESSOW	54	16 N	13	43 E	9.6
THURO	55	03 N	10	42 E	2.22
TILLINGENABBEN	56	58 N	16	26 E	5.9
TIMMENDORF LIGHT	53	59 N	11	23 E	4.14
TIMMERNABBEN	56	58 N	16	26 E	5.9
TIRPITZHAFEN	54	21 N	10	09 E	3.70
TJARVEN LIGHT	59	48 N	19	22 E	8.14
TJOCKOFIARDEN	59	46 N	19	06 E	8.16
TJURKO	56	07 N	15	37 E	4.46
TOKENASUDDE	57	19 N	17	00 E	5.16
TONNES ODDE	55	26 N	9	45 E	3.20
TONTOFT NAKKE	55	05 N	9	45 E	3.35
TORHAMNSUDDE	56	04 N	15	51 E	4.48
TORKO	56	09 N	15	25 E	4.45
TORO	55	15 N	9	55 E	3.21
TORO BANKE	55	12 N	9	54 E	3.21
TRADGARDSGRUND	56	38 N	16	22 E	5.4
TRAGTEN	55	35 N	9	52 E	3.9
TRANEKAER CASTLE	55	00 N	10	52 E	2.28
TRANERODDE LIGHT	55	03 N	9	51 E	3.35
TRAVEMUNDE	53	58 N	10	53 E	4.10
TRELDE NAES	55	38 N	9	52 E	3.7
TRELLEBORG	55	22 N	13	09 E	4.29
TRELLEBORG LIGHT	55	21 N	13	09 E	4.27
TROMPER WIEK	54	37 N	13	30 E	9.3
TROSKELN	59	39 N	19	50 E	8.4
TROSKELN OSTRA LIFGT	59	40 N	19	55 E	8.5

	Position °	'	°	'	Sec. Para
TROSKELN VASTRA LIGHT	59	40 N	19	52 E	8.5
TRZEBIATOW	54	04 N	15	16 E	9.21
TRZEBIEZ	53	40 N	14	31 E	9.17
TUBORG	55	43 N	12	35 E	1.16
TURO	55	03 N	10	42 E	2.22
TVINGSBERG N LIGHT	55	19 N	9	54 E	3.22
U					
UDRIKLAID	58	26 N	23	17 E	10.36
UDRIKU LAID	58	26 N	23	17 E	10.36
ULVSUND	54	58 N	12	09 E	2.58
URNE	54	57 N	11	17 E	2.41
USEDOM	54	11 N	13	48 E	9.10
USTKA	54	35 N	16	51 E	9.25
UTGRUNDEN	56	22 N	16	15 E	5.4
UTHOLMEN	57	26 N	18	06 E	6.6
UTKLIPPAN	55	57 N	15	42 E	4.48
UTKLIPPORNA	55	57 N	15	42 E	4.48
UTLANGAN	56	01 N	15	47 E	4.48
UTO	58	57 N	18	15 E	8.3
UUSKUIV	58	19 N	21	33 E	10.14
UZAVA LIGHT	57	13 N	21	25 E	10.8
V					
VAGGA	56	10 N	14	53 E	4.43
VAINAMERI	58	50 N	23	15 E	10.37
VALLO	57	07 N	16	36 E	5.9
VANDBURG	56	57 N	18	19 E	6.21
VANG	55	15 N	14	44 E	4.50
VARGARD HOVED	55	23 N	9	37 E	3.20
VARNAES HOVED	55	03 N	9	35 E	3.33
VASTERAS	59	37 N	16	33 E	7.18
VASTERBADEN	57	45 N	16	45 E	7.5
VASTERVIK	57	46 N	16	39 E	7.6
VASTRA FORSANKNINGEN LIGHT	56	07 N	15	35 E	4.46
VASTRA KORPEN LIGHT	58	36 N	17	19 E	7.9
VATO	59	48 N	18	58 E	8.15
VAXHOLM	59	24 N	18	20 E	8.17
VEDBAEK	55	51 N	12	35 E	1.14
VEJLE	55	43 N	9	33 E	3.8
VEJLE FJORD	55	39 N	9	50 E	3.7
VEJRO	55	02 N	11	22 E	2.41
VEJSNAES FLAK	54	45 N	10	26 E	3.37
VEJSNAES NAKKE	54	49 N	10	25 E	3.37
VEMMINGBUND	54	54 N	9	44 E	3.51
VEN	55	54 N	12	42 E	1.11
VEN LIGHT	55	55 N	12	40 E	1.11
VENEGRUNDE	55	06 N	11	28 E	2.38
VENGEANCEGRUND NO. 31 LIGHT	55	18 N	10	46 E	2.16
VENSHOLM	54	56 N	11	03 E	2.29
VENTSPILS	57	24 N	21	32 E	10.9
VERKEBACKSVIKEN	57	40 N	16	39 E	7.3
VEST-LIGE PULLER	55	17 N	10	54 E	2.19
VETELA NINA	58	13 N	22	43 E	10.35
VETELLA LAHT	58	16 N	22	45 E	10.35
VETTEKULLA	56	10 N	14	55 E	4.43
VIALMSUDD	57	55 N	19	01 E	6.10
VIGSNAES	54	54 N	11	39 E	2.43
VIIELAID LIGHT	58	33 N	23	27 E	10.36
VIKEN	56	08 N	12	35 E	1.5
VIKSTEN	58	47 N	17	57 E	8.6
VILSANDI LIGHT	58	19 N	21	50 E	10.14
VILSANDI SAAR	58	23 N	21	52 E	10.14
VINDASEN	57	55 N	16	47 E	7.2
VINKOVA, BANKA	57	40 N	21	20 E	10.11
VINKOVI	59	11 N	22	19 E	10.17
VINKOVIMADALIK	59	11 N	22	19 E	10.17
VINO	57	31 N	16	42 E	7.2
VIRTSU LIGHT	58	34 N	23	30 E	10.31
VISBY	57	38 N	18	17 E	6.7
VISLINSKIY ZALIV	54	27 N	19	45 E	9.39
VODRUP FLAK	54	51 N	10	16 E	3.37
VOOSIKURK	59	00 N	23	24 E	10.38
VORDINGBORG SYDHAVN	55	00 N	11	54 E	2.52
VORNAES PYNT	55	01 N	10	31 E	3.43
VRESEN	55	13 N	10	53 E	2.19
VRESEN PULLER	55	15 N	10	54 E	2.19
W					
WALKYRIENGRUND	54	07 N	11	02 E	4.8
WARNEMUNDE LIGHT	54	11 N	12	05 E	4.17
WEDELLSBORG HOVED	55	22 N	9	47 E	3.20
WEST LILLE BAELT BRIDGE	55	31 N	9	43 E	3.14
WESTERMARKELSDORF LIGHT	54	32 N	11	04 E	3.75
WESTKLUNE	53	51 N	13	55 E	9.11
WIECK	54	06 N	13	27 E	9.10
WISLA SMIALA	54	23 N	18	47 E	9.36
WISMAR	53	54 N	11	28 E	4.16
WISMAR BUCHT	53	59 N	11	20 E	4.13
WISMAR LIGHTED BUOY	54	06 N	11	26 E	4.14
WLADYSLAWOWO	54	48 N	18	25 E	9.29
WOLGAST	54	03 N	13	47 E	9.13
WOLIN	53	51 N	14	36 E	9.17
WOLIN	53	54 N	14	21 E	9.17
WOLIN ISLAND	53	55 N	14	30 E	9.17
WUSTROW LIGHT	54	20 N	12	23 E	4.19
Y					
YSTAD	55	26 N	13	50 E	4.31
YUODKRANTE LIGHT	55	33 N	21	07 E	10.3
Z					
ZALEW WISLANY	54	27 N	19	45 E	9.39
ZALTNIKEN	54	47 N	19	59 E	9.40
ZATOKA POMORSKA	54	08 N	14	15 E	9.14
ZELENOGRADSK	54	58 N	20	29 E	10.3
ZICKERER SEE	54	17 N	13	42 E	9.9
ZINGST PENINSULA	54	26 N	12	41 E	4.21
ZINNOWITZ	54	05 N	13	55 E	9.14