PUB. 195

SAILING DIRECTIONS (ENROUTE)

★

GULF OF FINLAND AND GULF OF BOTHNIA

★

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

2021

SIXTEENTH EDITION

Preface

Pub. 195, Sailing Directions (Enroute) Gulf of Finland and Gulf of Bothnia, Sixteenth Edition, 2021, is issued for use in conjunction with Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean, Baltic Sea, North Sea, and the Mediterranean Sea. The companion volumes are Pubs. 191, 192, 193, and 194.

Digital Nautical Chart 9 provides electronic chart coverage for the area covered by this publication.

This publication has been corrected to 14 August 2021, including Notice to Mariners No. 33 of 2021. Subsequent updates have corrected this publication to 17 February 2024, including Notice to Mariners No. 7 of 2024.

Explanatory Remarks

Sailing Directions are published by the National Geospatial-Intelligence Agency (NGA) under the authority of Department of Defense Directive 5105.60, dated 29 July 2009, and pursuant to the authority contained in U. S. Code Title 10, Chapter 22, Section 451 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 the initial letters of the 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 refers to hard copy paper charts and electronic charts.

As the maritime community moves towards electronic navigation, the Maritime Safety Office will begin reducing NGA's Standard Nautical Chart portfolio. Further information can be found in the "What's New" section of the NGA Maritime Safety Information web site (https://msi.nga.mil).

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

NGA Maritime—Contact Information	
Maritime Operations Desk	
Toll free	1-800-362-6289
Commercial	571-557-5455
DSN	547-5455

NGA Maritime—Contact Information	
E-mail	navsafety@nga.mil
Maritime Safety Office	
DNC web site	https://dnc.nga.mil
Maritime Domain web site	https://msi.nga.mil
E-mail	MarHelp@nga.mil
Maritime Quality Feedback System (MQFS)	https://marhelp.nga.mil
Mailing address	Maritime Safety Office National Geospatial-Intelligence Agency Mail Stop N64-SFH 7500 Geoint Drive Springfield VA 22150-7500

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Maritime Quality Feedback System (MQFS)	https://marhelp.nga.mil
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 publication shown above. Important information to amend material in the publication is available is updated as

needed and available as a downloadable corrected publication from the NGA Maritime Domain web site.

NGA Maritime Safety Office Web Site
https://msi.nga.mil

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 meridional 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.

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.

Wherever possible, names used on NGA charts and in NGA publications are in the form approved by the United States Board on Geographic Names (BGN). Generally, local official spellings are used for those features entirely within a single sovereignty, names of countries and those features which are common to two or more countries or which lie beyond a single sovereignty may carry Board-approved conventional spellings (i.e., names in common English language usage). When alternate names would be of value to the user, they may be shown for information purposes within parentheses. Important individual name changes are made to all revised charts as the opportunity permits.

Geographic names or their spellings do not necessarily reflect recognition of the political status of an area by the United States Government.

BGN approved names may be found at https://geonames.nga.mil/geonames/GNSHome/welcome.html.

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

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 these web sites and expressly disclaims any liability for errors and omissions in the contents 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

Lights 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.

National Ocean Claims.—Information on national ocean claims and maritime boundary disputes, which have been compiled from the best available sources, is provided solely in the interest of the navigational safety of shipping and in no way constitutes legal recognition by the United States. These non-recognized claims and requirements may include, but are not limited to:

1. A requirement by a state for advance permission or notification for innocent passage of warships in the territorial sea.
2. Straight baseline, internal waters, or historic waters claims.
3. The establishment of a security zone, where a state claims to control activity beyond its territorial sea for security reasons unrelated to that state's police powers in its territory, including its territorial sea.

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

Telephone and Facsimile Numbers.—Within this publication, the international telephone and facsimile numbers provided as contact information contain the minimum digits necessary to dial. Please note that these contact numbers do not include additional digits or special characters, such as (0) or (+), which may be required when dialing. The necessity of such digits and characters depends upon numerous factors and conditions, such as the user's geolocation and service provider. Mariners are advised to consult their communications equipment and service provider user manuals for guidance.

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

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

Time Zone.—The Time Zone description(s), as well as information concerning the use of Daylight Savings Time, are included. The World Time Zone Chart is available on the Internet at the web site given below.

Standard Time Zone of the World Chart
https://www.cia.gov/maps/the-world-factbook/world-regional

U.S. Maritime Advisory System.—The U.S. Maritime Advisory System is a streamlined inter-agency approach to identifying and promulgating maritime security threats. The system replaces Special Warnings to Mariners (State

Department), MARAD Advisories (Maritime Administration), and Marine Safety Information Bulletins (U.S. Coast Guard) and consists of the following items:

1. U.S. Maritime Alert—Provides basic information (location, incident, type, date/time) on reported maritime security threats to U.S. maritime industry interests. U.S. Maritime alerts do not contain policy or recommendations for specific courses of information.
2. U.S. Maritime Advisory—Provides more detailed information, when appropriate, through a "whole-of-government" response to an identified maritime threat.

Maritime Administration (MARAD)—U.S. Maritime Advisory System
https://www.maritime.dot.gov/msci-advisories

Winds.—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.
Estonia Sailing Directions.
Netherlands Coast Pilot.
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. Sailing Directions for Estonian Waters
   https://veeteedeamet.ee/en/sailing-directions
2. The State Port Registry (Estonia)
   https://veeteedeamet.ee/en/mariners-ports-and-ships/state-port-register

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Notice to Mariners: 7/2024	
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Sector 9	Paragraph 9.19

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Sector 2	Paragraphs 2.3, 2.11, 2.13, 2.18, 2.19, 2.25, 2.26, and 2.29
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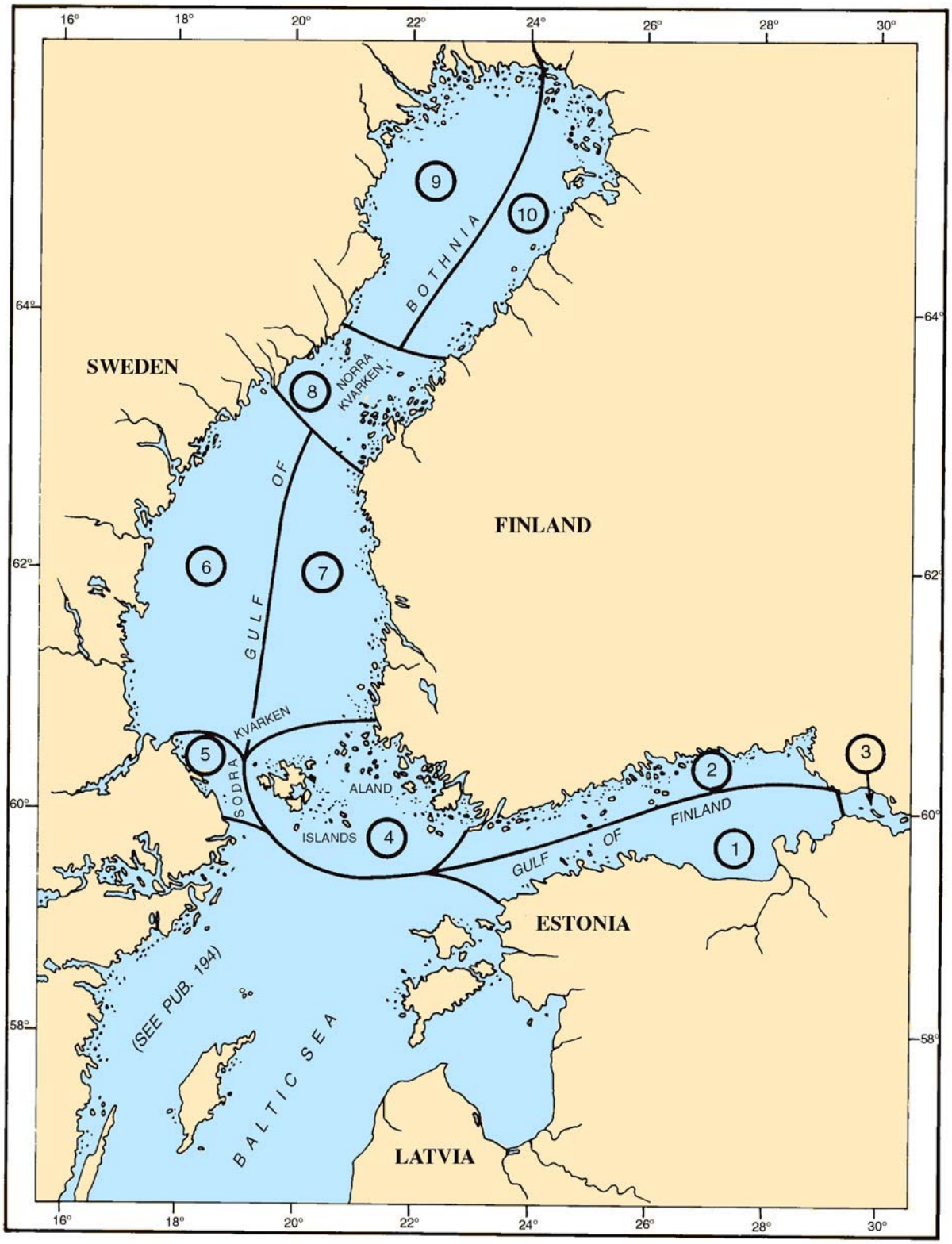
Sector 8	Paragraphs 8.9 and 8.18
Sector 9	Paragraphs 9.10, 9.17, and 9.19
Sector 10	Paragraphs 10.1 and 10.3



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Conversion Tables

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

Meters to Fathoms

Meters	0	1	2	3	4	5	6	7	8	9
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
		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	HAT	highest astronomical tide
HWS	high water springs	LAT	lowest astronomical tide
LWN	low water neaps		

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	International Maritime Dangerous Goods Code		
LOA	length overall	St./Ste.	Saint/Sainte
UKC	Under keel clearance	ISPS	International Ship and Port facility Security

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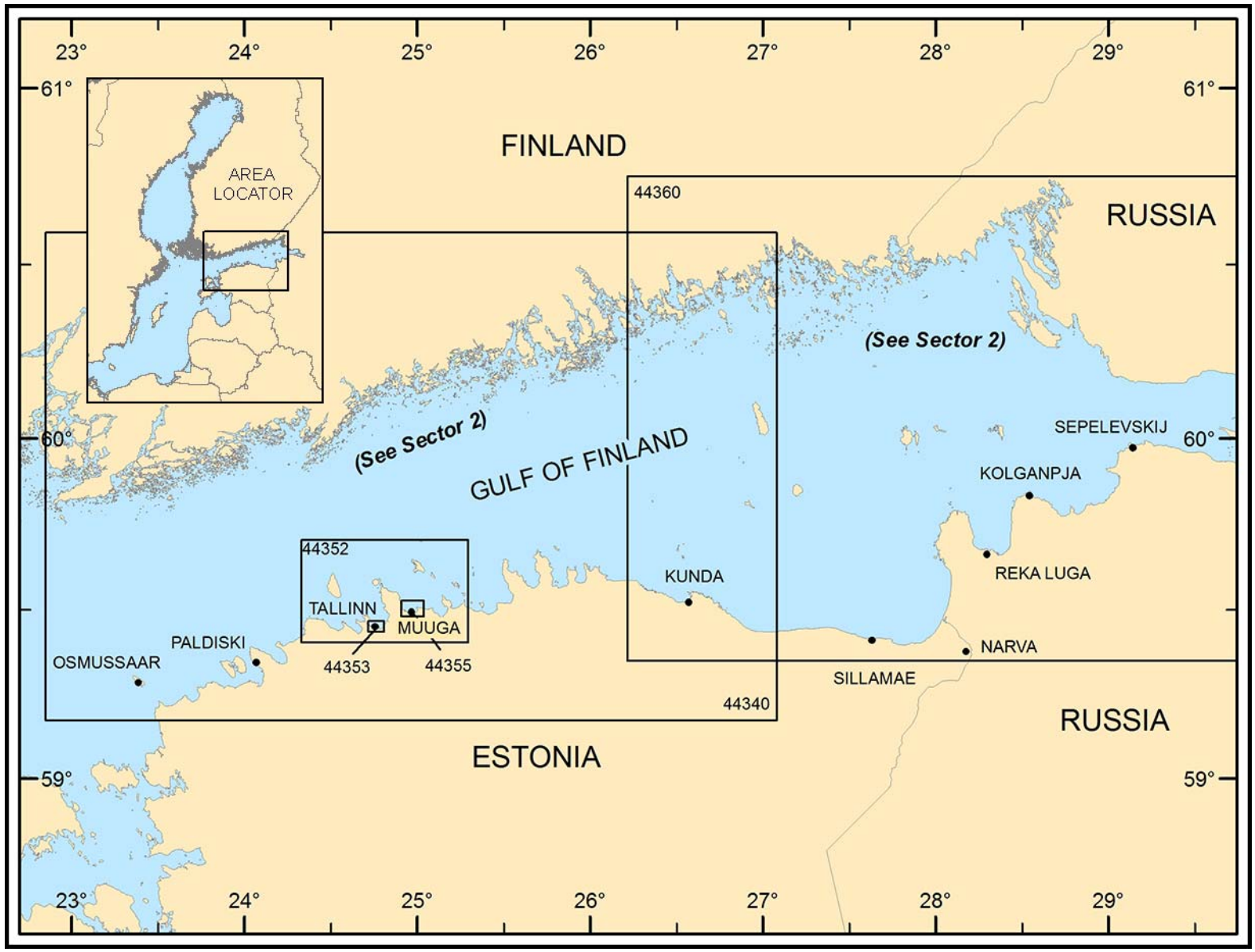


Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR 1 — CHART INFORMATION

SECTOR 1

THE GULF OF FINLAND—OSMUSSAAR, ESTONIA TO ST. PETERSBURG GUBA

Plan.—This sector describes the S shore of the Gulf of Finland including the N shore of Estonia and the adjacent territory of Russia concluding at St. Petersburg Guba. The descriptive sequence is E from Osmussaar Island to Mys Shepelevskiy (59°59'N., 29°08'E.).

General Remarks

1.1 Ice.—Ice first appears in the Neva Estuary, between St. Petersburg and Kronshtadt, and in Vyborgskiy Zaliv (60°30'N., 28°22'E.) about the middle of November. The spread of ice is much more rapid along the N shore than along the S. Toward the end of December, it extends along most of the N shore, filling the inlets; on the S shore, it does not reach much W of Narva.

In the middle of January, ice fills the E end of the gulf to a position between Ostrov Moshchny (60°00'N., 27°50'E.) and Ostrov Gogland (60°05'N., 26°53'E.), while ice along the N shore has extended to form a wider coastal belt. On the S shore, the ice may have spread only slightly W of Narva, but in some years reaches longitude 26°E. By the middle of February, a rapid W extension has taken place, with ice covering the whole gulf E of Tallinn and reaching along the whole of the S shore, and farther W to enclose the island of Hilumaa. The only open part of the gulf at this time is therefore at the W end, away from the shores.

The ice attains its greatest extent about the first week of March, when the whole gulf is encumbered. Before the end of March, it is in retreat E. In the middle of April, the S shore is clear to about longitude 27°30'E; a little W of Narva, though ice still remains between Hiiumaa and the Estonian shore. Most of the gulf to the E of longitude 26°E is still ice encumbered, and ice persists in a wide belt along the N shore. The subsequent dispersal of the ice is rapid and at the beginning of May, ice is only found E of longitude 26°E, particularly between Ostrov Moshchnyy and Zaliv Primorsk (60°22'N., 28°38'E.). By the middle of May, all ice has disappeared.

The amount of ice in any particular part of the coast at a given time may depend very much on the direction of the wind. For example, in Tallinn Harbor, drift ice is mostly formed by N and NE winds; frequently this ice is driven out again by S winds and the roadstead becomes quite safe for shipping without the aid of an icebreaker. For ice-breaking services contact the Baltic Sea Ice-breaking Web (BIMWeb) (http://www.baltice.org).

St. Petersburg—Contact Information	
Ice Reports via Port Captain	
Telephone	7-812-2451675
	7-812-7149264
Facsimile	7-812-3274021

St. Petersburg—Contact Information	
E-mail	public@mail.pasp.ru
Web site	https://www.pasp.ru/sluzhba_kapitana_morskogo_porta_bo
Ice Operations HQ (24 hours)—Report for all Russian Ports	
Telephone	7-812-6801930 (emergency only)
	7-812-6801977
	7-921-4440747
E-mail	shlo@pasp.ru
Web site	https://www.pasp.ru/informaciya_shtaba_ledokolnyh_ope

For more information pertaining to ice-breaking services, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Ice reports for St. Petersburg and all of Russia are available from the table titled **St. Petersburg—Contact Information**.

Tides—Currents.—The fundamental circulation of the currents in the Gulf of Finland is an inward flow of water E along the S shore, past Tallinn, and an outward flow W along the N shore, past Helsinki. This outward flow, turning NW at the mouth of the gulf, passes into the N current along the E coast of the Gulf of Bothnia.

The current in the gulf at any time depends largely on the wind. During W and SW winds, the current sets into the gulf along both the N and S shores. With light winds, the excess of water driven into the gulf emerges in a W direction. With W gales, a strong current runs into St. Petersburg Guba, S of Kronstadt; this current runs out on the N side, continuing along the shore of the gulf towards Mys Seyveste, with considerable force.

If there is any N direction to the wind, a set into the bights on the S shore of the gulf will generally be experienced.

After the break-up of the ice in the early spring, the outflow of water from the gulf is temporarily increased.

In the passage between Lavansaari and Kurgatski Rif, in calm weather, there is usually a weak SW current; at other times the direction and velocity depend on the wind.

While the tidal range in this area is negligible, considerable change in the water level may be caused by strong winds, variation in atmospheric pressure, and the seasonal amount of water released by the rivers.

Depths—Limitations.—All dangers along the immediate coast from the island of Osmussaar ENE to Tallinn, a distance of about 44 miles, are contained within the 40m curve, which has a greatest distance from the shore of about 8 miles.

From Tallinn to Letipea Neem, there are a number of rivers that discharge into the gulf. The coast in this area is marked with numerous off-lying islands, shoal banks, and shoal patch-

es that extend up about 16 miles seaward.

Aspect.—The S coast of the Gulf of Finland consists of long stretches of limestone cliffs rising abruptly from the sea. This profile is prevalent in many of the coastal areas. The coastline is well-wooded and rises to heights of 80 to 92m in some localities.

The Estonian coast from Osmussaar Island to Tallinn (59°27'N., 24°46'E.) ranges from a low and sandy aspect with a border of woods to wooded hills.

The coast between Tallinn and Letipea (59°33'N., 26°35'E.) can be described as low, sandy, and bordered by woods, to steep cliffs and ridges with wooded hills inland.

Between Letipea and Mys Shepelevskiy, where this sector concludes, the coast is low, rocky, and wooded. It is also interspersed with meadows and marshy ground. The meadows contrast with the steep stone cliffs and partially-wooded hills, which rise to heights of 150m.

Pilotage.—The IMO recommends that vessels constrained by their draft or vessels not registered in one of the Baltic states, and infrequently sailing the area, embark a deep-sea pilot.

Finnpilot pilot order service is divided into three Pilotage Zones, as follows.

1. **Southern Pilotage Zone**.—comprised of the following:
   a. Helsinki Pilotage Area (Emasalo, Helsinki, and Porkkala).
   b. Hanko Pilotage Area.
2. **Eastern Pilotage Zone**.—comprised of the following:
   a. Kotka Pilotage Area (Haapasaari, Orrengrund, and Santio).
   b. Saimaa Canal and Lake Saimaa.
3. **Western Pilotage Zone**.—comprised of the following:
   a. Archipelago Pilotage Area: (Isokari, Mariehamn and Uto).
   b. Rauma Sea Pilotage Area: (Pori and Rauma).
   c. Vaasa Pilotage Area: (Kaskinen, Kristiinankaupunki and Vaasa).
   d. Kokkola Pilotage Area: (Kokkola, Pietarsaari and vessels coming and going S from Kalajoki).
   e. Bay of Bothnia Pilotage Area: (Kemi, Oulu, Raahe, Tornio and vessels coming and going N from Kalajoki).

The general procedures for all Pilotage Zones are, as follows:

1. Pilotage is generally compulsory.
2. Vessels requiring a licensed Deep Sea Pilot in the Baltic Sea area should send a request at least 12 hours in advance.
3. Pilots should be ordered by one of the following methods:
   a. Using the pilot order form found on the web site.
   b. Telephone.
   c. Facsimile.
   d. E-mail.
4. All pilot stations and pilot vessels are equipped with the commonly used maritime VHF channels.
5. The Finnpilot Order Center will confirm receipt of the preliminary information or Pilot order using the same method as used to make the order. An order placed using a form on the internet can also be confirmed via e-mail if requested by the customer, providing an e-mail address is included in the order information or is otherwise known by Finnpilot. (An order placed by telephone is not confirmed separately after the telephone call).
6. There is no pilot ordering service via VHF radio.
7. Inbound vessel requirements:
   a. Vessels must provide advance notice to the Pilot Order Center 12 hours and 3 hours prior to expected arrival at the pilot boarding position.
   b. Vessels must place a binding pilotage order to the Pilot Order Center 3 hours prior to arrival at the pilot boarding position.
8. Outbound vessels requirements:
   a. The Pilot Order Center requires a 12 hour and 2 hour advance notice of vessel departure from either the agent or the vessel.
   b. The vessel or the agent must provide a binding pilotage order to the Pilot Order Center 2 hours before departure.
9. Vessels shifting berth must provide 2 hour advance notice to the Pilot Order Center.
10. During the winter months, Pilot boarding positions may be subject to alteration according to the prevailing weather conditions.

Pilot service is provided by three separate pilot stations within the Gulf of Bothnia Maritime District, as follows:

1. Perameri Pilot Station—provides pilotage for shipping lanes leading to the ports of Kemi, Oulu, Raahe, and Tornio.
2. Tankar Pilot Station—provides pilotage for shipping lanes leading to the ports of Kokkola (Ykspihlaja), Pietarsaari, and Kalajoki.
3. Vaasa Pilot Station—provides pilotage for shipping lanes leading to the ports of Kaskinen (Kasko), Kristiinankaupunki (Kristinestad), and Vaasa.

Pilot Boarding Locations	
Kemi and Tornio	
Kemi (North)	65°33.0'N, 24°26.9'E
Kemi (South)	65°29.3'N, 24°19.0'E
Oulu (North)	65°10.9'N, 24°18.0'E
Oulu	
Oulu (North)	65°10.9'N, 24°18.0'E
Oulu (South)	65°07.0'N, 24°16.9'E
Raahe	
Raahe	64°38.8'N, 24°12.3'E
Pietarsaari	
Pietarsaari	63°44.5'N, 22°28.5'E
Kokkola	
Kokkola	64°00.5'N, 22°49.1'E

Pilot Boarding Locations	
Kalajoki	
Kalajoki	64°15.5'N, 23°30.0'E
Kaskinen, Kristiinankaupunki, and Vaasa	
Vaasa (North)	63°15.8'N, 20°51.2'E (for NW approach)
Vaasa (South)	63°12.1'N, 20°45.4'E (for Vaskiluoto)
Kaskinen	62°15·5'N, 21°05.1'E
Kristiianankaupunki	62°11.5'N, 21°06.1'E

Finnpilot Order Center—Contact Information	
Southern Pilot Zone	
Telephone	358-400-907-977
Facsimile	358-29-52-53010
E-mail	pilotorder.south@finnpilot.fi
Web site	https://pilotorder.fi
Eastern Pilot Zone	
Telephone	358-400-907-978
Facsimile	358-29-52-53011
E-mail	pilotorder.east@finnpilot.fi
Web site	https://pilotorder.fi
Western Pilot Zone	
Telephone	358-400-907-979
Facsimile	358-29-52-53012
E-mail	pilotorder.west@finnpilot.fi
Web site	https://pilotorder.fi
Head Office	
Telephone	358-29-52-53000
Facsimile	358-29-52-53001
E-mail	info@finnpilot.fi
Web site	https://finnpilot.fi

Regulations.—Certain areas (restricted and semi-restricted) in Finnish waters have been declared restricted for reasons of navigational safety, inadequate charting, or for defense reasons. Foreign vessels, including small craft, may not enter these areas without permission, except to follow an officially recognized fairway for which permission is not required.

Anchoring within these areas is prohibited except in an emergency or when authorized to do so by the appropriate authority. However, a foreign vessel may anchor for not more than 48 hours within a restricted area in a recognized anchorage or mooring area indicated on the charts.

Permission to stay within a restricted area or to navigate outside the general fairways is granted on application to the Military Area Headquarters. Applications should be made on an official form not later than 14 days before planned entry into the area. Applications can be made after this time to the local Frontier Guard Authorities for a visit not exceeding 72 hours.

Vessels should consult the pilot for information on local rules, including regulations on the operation of navigation equipment and radios.

The sea areas in the Gulf of Finland are monitored jointly by Finland, Estonia, and the Russian Federation. **GOFREP**, a mandatory ship reporting system under SOLAS, has been established in the Gulf of Finland and its approaches. This system is operated by VTS centers, as follows:

1. Tallinn (main: VHF channel 61—alternate: VHF channel 81)
2. Helsinki (main: VHF channel 60—alternate: VHF channel 80)
3. Saint Petersburg (main: VHF channel 74—alternate: VHF channel10).

The Traffic Centers monitor shipping by radar and AIS and provide 24-hour information service in the Gulf of Finland. .

Vessels of 300 gross tons and over are required to participate in the mandatory ship reporting system. Certain vessels under 300 gross tons may also be required to participate.

The W limit of the reporting area is formed by a line joining the following points:

1. Bengtskar Light (59°43.4'N., 22°30.1'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 or see the VTS Finland GOFREP Master's Guide document found via the link below.

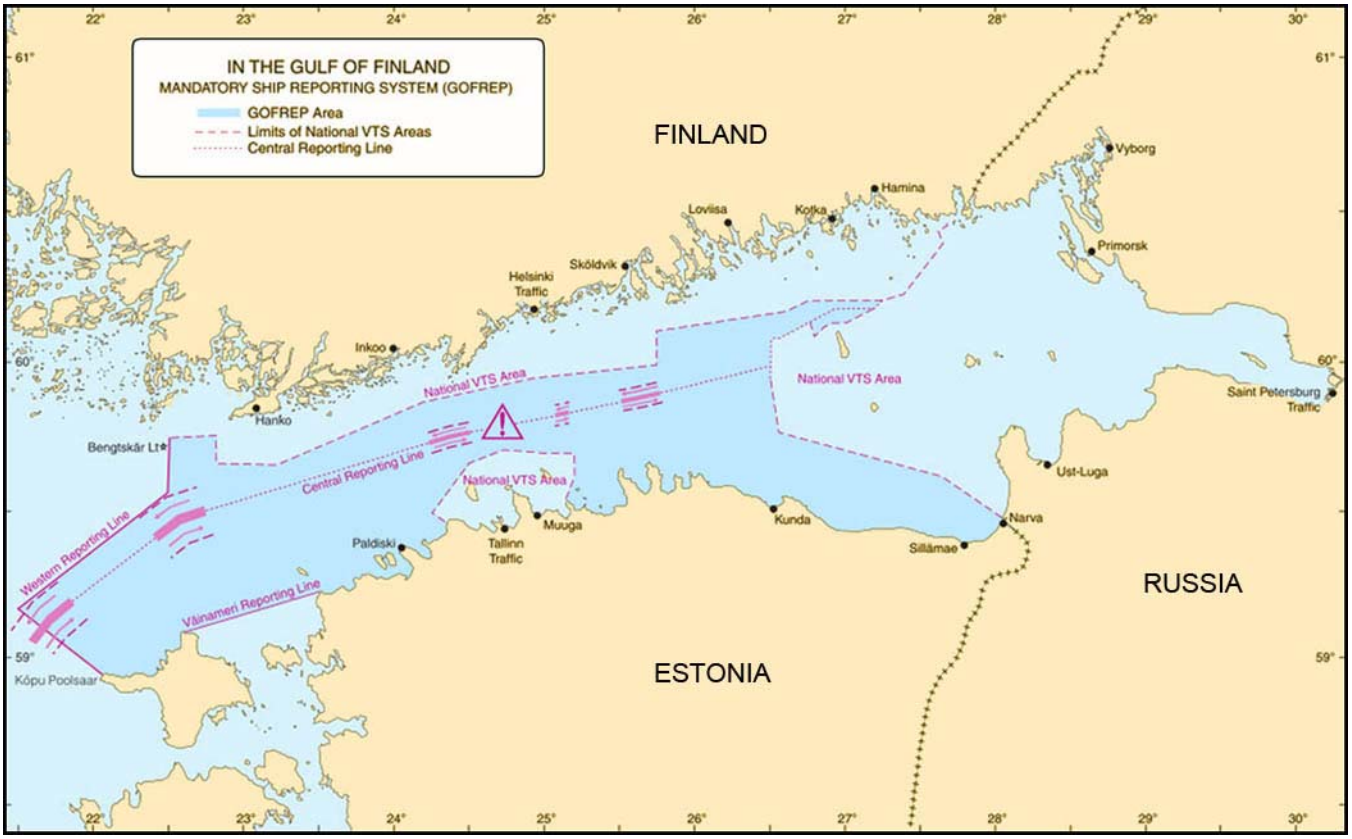
FinTraffic VTS Master's Guide
https://www.fintraffic.fi/en/vts/masters-guide

Vessel Traffic Services for Estonian and Russian waters are in effect for Tallinn (paragraph 1.9), Muuga (paragraph 1.12), and Reka Luga (Ust Luga) (paragraph 1.22).

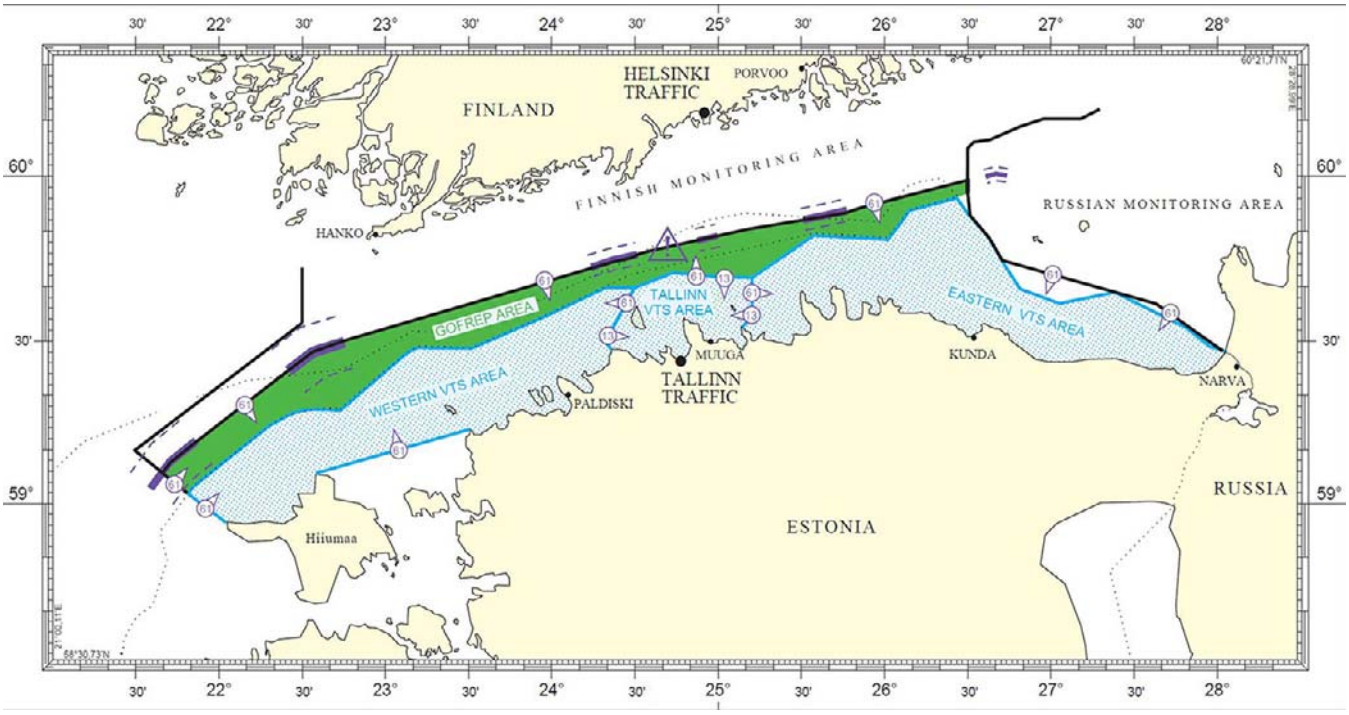
Vessels bound for Reka Luga (Ust Luga) also transit the coverage area of St. Petersburg Coastal VTS (paragraph 3.1).

The Navigational Assistance Service operates, as follows

1. Navigational assistance is given to identified vessels on request or when deemed necessary by the VTS Authority in difficult navigational circumstances or weather or ice conditions.
2. Navigational assistance can be given in the VTS area following the procedure under subsection 2 of section 6 in the Finnish Vessel Traffic Service Act. Navigational assistance can be given in fairways and in areas where traffic is controlled by radar. Navigational assistance is given in the VTS area when an inbound vessel approaches the Pilot boarding position. The vessel can also be given navigational assistance in another VTS area on request.
3. Navigational assistance given by the VTS Authority may include the following:
4. Information on the vessel's course and speed.
5. Information on the vessel's position relative to the fairway axis or waypoints in accordance with the VTS sail-



Gulf of Finland—Mandatory Ship Reporting System (GOFREP)



Gulf of Finland—Estonian VTS Areas and Limits

ing plan.

6. Information on the positions, identities and intentions of surrounding traffic.

7. Warnings to individual vessels.

The Traffic Organization Service operates, as follows:

1. Vessel traffic can be managed with permanent traffic arrangements in order to prevent dangerous situations and congestion as specified in the decision to establish a VTS

2. For the purpose of organizing vessel traffic:

3. Vessels must ask the VTS Authority for permission to depart from a port or anchorage and to enter into a VTS area. Permission can be denied if deemed necessary by the VTS Authority due to dangerous situations or congestion in the fairway area.

4. Vessel traffic in the VTS area is organized in terms of distance. Traffic separation can be initiated when there is a special transport traveling along the fairway, several vessels are traveling in the same direction, or there are vessels whose routes intersect or meet. The separation distance required is 0.5 mile.

5. Vessels must request the VTS Authority to designate an anchorage area and it will usually be granted. However, the VTS Authority can prohibit assignment of an anchorage if it is deemed necessary.

6. The following permanent traffic arrangements are used regionally in VTS areas:

a. Prohibiting passing and overtaking.

b. Clearance for departure from port or anchorage and for entry into a VTS area.

c. Separation of traffic in terms of time or distance.

7. The procedures regarding clearance for departure are used in all ports and anchorage areas. Clearance for entry into a VTS area is given to inbound vessels approaching the VTS area.

8. Clearance for departure from a port or anchorage or for entry into a VTS area can be denied for the time it takes until the fairway is free, if an outbound or inbound vessel intends to enter a fairway where passing and overtaking is prohibited, and where there are already other vessels.

9. The clearance for departure and for entry into a VTS area must be adjusted to the traffic separation, when traffic separation is applied.

Directions.—Several IMO-adopted Traffic Separation Schemes (TSS) form the main route through the Gulf of Finland (see paragraph 2.1).

A Traffic Separation Scheme (TSS), established by the local authorities, exists in the approaches to the Port of Tallinn. The authorities advise that the principles of Rule 10 of the COLREGS applies to this TSS.

All of the above schemes may best be seen on the appropriate charts.

Caution.—It is reported that all navigational aids in the S part of the Gulf of Finland may be unreliable.

During the winter, many buoys are removed, while others may be damaged or break adrift.

In the coastal waters within this sector, numerous logs may be found adrift at all times of the year. Numerous charted wrecks lie throughout the Gulf of Finland.

Several unexploded ordnance areas lie off the shores of the Gulf of Finland and may best be seen on the chart.

Areas dangerous due to mines laid during World War II exist within the Gulf of Finland. There is still a risk of danger in these areas when anchoring or carrying out any seabed activities.

It is reported that a submarine gas pipeline is being constructed between Russia and Germany. This pipeline will extend in a WSW direction through the Gulf of Finland from the vicinity of Bukhta Portovaya (60°31'N., 28°05'E.) and then lead in a SSW direction to pass E of Faro (57°57'N., 19°10'E.).

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Osmussaar

Off-lying Islands, Islets, and Dangers

1.2 Osmussaar Island (59°18'N., 23°22'E.) (World Port Index No. 28510) lies 4 miles NW of Poosaspea Neem (see paragraph 1.6). The center of the island, when viewed from a considerable distance, gives the impression that there are two islands. Overhanging limestone cliffs on the N side of the island rise to a height of 10m, the lower parts of which have been undermined by the action of the sea. The W and S sides have hills and ridges composed of gravel and sand.

A village is situated on a hill near the middle of the island; two windmills stand in this vicinity. A prominent white church, with a black spire, is situated 0.5 mile SE of the village.

Osmussaar Light is shown from a conspicuous tower, 35m high, standing on the NW extremity of the island. A beacon stands on the SE extremity of the island. A prominent tower is reported to stand about 0.8 mile SE of the light.

Anchorage may be obtained off the S side of Osmussaar, about 1.5 miles S of the light, in a depth of 27m, mud and sand. Anchorage can also be obtained, in a depth of 13m, rock and sand, about 3.5 miles SE of the light.

Neugrund, an extensive shoal area, lies 5 miles ENE of Osmussaar and is marked by a lighted buoy on its N side.

Suur Pakri (59°20'N., 23°54'E.) is mostly bare and flat, with steep cliffs at the N end where it is joined by a causeway to Vaike Pakri. A light is shown from a structure, 10m high, standing at the N end of the island. Several villages are located

on the S part of the island.

Krassigaar, an extensive shoal which dries in places, lies about 2.5 miles W of Suur Pakri. It is marked by buoys at the E and S sides, and by a lighted buoy at the N side.

Vaike Pakri lies close E of Suur Pakri and is connected to it by a causeway. The N end of this island is high and steep, but the S end is low and flat. The E side of the island is hilly and the center is wooded. There are two villages, one on the E side and the other on the W side. A light is shown from a framework structure, 16m high, standing on the NE end of the island.

Pakri Madal, a shoal, has a depth of 6.2m. It lies about 1.5 miles N of Pakri Neem (59°23'N., 24°02'E.) and is marked by a lighted buoy.

Caution.—A firing practice area lies centered 8 miles NE of Osmussaar Light.

A submarine cable, which may best be seen on the chart, extends between the SE end of Osmussaar and the mainland. Vessels are prohibited to anchor within 0.4 mile of this cable.

Rohukula (58°54'N., 23°25'E.), Rohukula is located on the W coast of Estonia opposite the off-lying Island of Hiiumaa.

The port is situated in Ridala rural district, 5.6 miles from Haapsalu. Its principal purpose is to service passenger ships handling cargo and passengers.

During the summer months vessels over 100m can be handled but during the winter months vessels of 100m or less are the only vessels that can be handled. Maximum draft for this port is 5.2m. For more berthing information see the table titled **Rohukula—Berth Information**.

Rohukula—Berth Information

Berth	Length	Depth	Remarks
Outer Harbor			
No. 1	166m	4.2m	Granular products (sand, splinters, fertilizers, and coal) and timber.
No. 2	101m	4.8m	
No. 3	68m	4.6m	
No. 4	162m	4.8m	Passenger and ro-ro.
No. 5	175m	3.8m	Passenger and ro-ro.
No. 6	60m	5.2m	Passenger and ro-ro.
No. 7	70m	4.5m	Passenger and ro-ro.
No. 8	188m	3.8m	Passenger and ro-ro.

1.3 Tallinna Madal (59°42'N., 24°44'E.), with a least depth of 2.6m, lies in the N approaches to Tallinn and is the outermost danger in this vicinity. Tallinn Light is shown from a tower, 31m high, standing on this shoal. A racon is situated at the light.

The islands and dangers lying S and W of this shoal are described later in the text.

Prangli Saar (59°38'N., 25°00'E.), a low and wooded island, lies on the E side of the approaches to Tallinn. This island is surrounded by foul ground and marked by lights on its NW, E, and S sides.

Keri Saar (59°42'N., 25°01'E.), a low and rocky islet, is located 3.5 miles N of Prangli Saar and surrounded by foul ground. A light is shown from a prominent tower, 31m high, standing at its

Source: Flickr/Karl Agre

Tallinn Light on Tallinna Madal

Kuradimuna, a shallow shoal, lies 3.5 miles W of Keri Saar. It is located on an area of foul ground and is marked by a lighted buoy.

Nygrund, with a least depth of 4.6m, lies about 2.5 miles SSW of Kuradimuna and is marked by a lighted buoy.

Aksi Saar, a fairly high island, lies close E of Prangli Saar and is fronted by foul ground. A beacon (disused light tower), 15m high, stands on the SE part of this island.

Rammu Saar (59°35'N., 25°14'E.), a flat island, is located about 4 miles SE of Aksi Saar. Foul ground fronts the N end of this island and is marked by a lighted buoy.

Anchorage may be obtained, in a depth of 10m, S of Rammu Saar, about 0.5 mile offshore.

Mohni Saar (59°41'N., 25°48'E.), an island lying off Eru Laht, has a steep bank of shingle along its SW side. Its NW end is formed by a rocky hill and its NE side is fronted by foul ground and shoal water.

Mohni Light is shown from a tower, 27m high, standing on the NW extremity of the island. A signal station is situated in the vicinity of the light.

Caution.—A submarine cable, which may best be seen on the chart, extends between Mohni Saar and the mainland.

1.4 Vaindlo (59°49'N., 26°22'E.) is a conspicuous rocky islet, 8m high, lying in the central portion of the Gulf of Finland. Foul ground and foul patches extend N, NE and S from the shores of this islet. Kakumadal, a shallow rock, lies at the extremity of a reef which extends up to 2 miles S from the S extremity of the islet. An isolated shoal, with a depth of 6.8m, lies about 3 miles SE of the islet.

Vaindlo Light is shown from a tower, 17m high, standing on the central portion of the islet. A signal station is situated at the light.

Pohja Uhtja (59°41'N., 26°31'E.) is an extensive group of dangerous rocks, shoals, and islets lying 9 miles SSE of Vaindlo. This group extends for about 7 miles and is marked at its S end by a buoy. Uhtja Light is shown from a structure, 12m high, standing on the group, about 10 miles SSE of Vaindlo Light.

Ostrov Rodsher (59°58'N., 26°41'E.) is a rocky islet surrounded by a reef. A light is shown from a prominent tower, 19m high, standing on the N side of this islet. A racon is situated at the light.

Ostrova Virginy (59°57'N., 26°52'E.) consists of two rocky islets lying 1 mile apart. They are fringed by reefs, which are

marked by buoys, and fronted by shoals. A light is shown from a tower, 14m high, standing on the northeastern-most islet.

Ostrov Malyy Tyuters, lying 17 miles E of Vaindlo, is a low sandy island with a pine forest at its center. The island is surrounded by foul ground, rocky reefs, and boulders rising from the water.

Otrov Bolshoy Tyuters (59°51'N., 27°11'E.), lying 7 miles ENE of Ostrov Malyy Tyuters, is moderately high and densely wooded. A light is shown from a tower, 24m high, standing on the summit of this island.

A shoal bank, marked by a buoy, extends up to about 2.5 miles SSE of this island.

1.5 Ostrov Gogland (60°03'N., 26°59'E.) is 176m high and wooded. It has three peaks and is reported to be visible from a distance of 34 miles in clear weather. Gogland Light is shown from a framework tower, 23m high, standing on the heights at the N end of the island. Gogland S Light is shown from a tower, 26m high, standing on Mys Lounatrivi (60°01'N., 27°00'E.), the S extremity of the island. A radio-beacon is situated at this light.

During E winds, vessels may anchor, in depths of 36 to 54m, about 1 mile off the W side of Ostrov Gogland, but the holding ground is not good.

Small craft can anchor, in depths of 3 to 6m, within the small bay at Suurkyla, 1.5 miles SSE of the N extremity of the island, but it is exposed to E winds. The bay is sheltered by a breakwater and a village with a church stands at the head.

Vikalla, an extensive shallow reef, lies centered 7 miles S of the S extremity of Ostrov Gogland. The N and S extremities of the reef are marked by lighted buoys.

Ostrov Moshchnyy (60°00'N., 27°50'E.), located 24 miles E of Ostrov Gogland, is moderately high and wooded. Poluostrov Promezhutchnyy, the E part of the island is connected to the W and main part by a narrow isthmus, 5m high. Three small peninsulas extend N from the NW end of the island. Shoals extend up to about 6 miles S from the S end of the island and are marked by buoys. Bashnya Lavensari Light, equipped with a racon, is shown from a framework tower, 29m high, standing at the N end of the island.

Anchorage can be taken in Nore Kapel'lakht, about 0.7 mile N of the isthmus connecting the E and W parts of the island. The anchorage has depths of 8 to 14m, fine sand, but it is exposed to N winds.

Ostrov Malyy, lying 3 miles E of Ostrov Moschnyy, is low, wooded, and surrounded by reefs. The E and W sections of this island are joined by a sandy isthmus, 4m high. An islet, covered with grass, lies close W of the N extremity of the island, which is formed by a low spit. A lighted beacon, 27m high, stands on the W part of the island.

Anchorage, protected from S winds, can be obtained E of the N end of the island, in depths of 18 to 20m.

Shoals extend up to about 7 miles NNW and 5 miles S of Ostrov Malyy. They are marked by buoys and may best be seen on the chart.

Ostrov Seskar (60°02'N., 28°23'E.) is low, densely wooded, and surrounded by foul ground. Several villages stand on its W side. A light is shown from the SE extremity of the island. Seskar Light is shown from a prominent tower, 30m high, standing on the NW extremity of the island. Extensive shoals and reefs extend up to about 4 miles seaward from the W side of the island.

A pilot boarding location is centered approximately 2 miles E of Ostrov Seskar and is best seen on the chart. The location coincides with a regulated anchorage area, with an obstruction located in its NE corner.

Caution.—Prohibited areas, the limits of which are shown on the chart, lie centered 4 miles NE of Ostrov Malyy, about 10 miles W of Ostrov Moshchnyy, and in the vicinity of Ostrova Seskar.

The Gulf of Finland

1.6 Poosaspea Neem (59°14'N., 23°31'E.) is a densely-wooded cape fronted by a rocky reef. Poosaspea Light is shown from a prominent framework tower, 16m high, standing on the cape. On the E side of the cape there is a conspicuous ridge, on which stand several prominent windmills.

Dirhami, a small fishing harbor, is situated 1 mile S of Poosaspea Neem. A dangerous wreck, best seen on the chart, lies 2.4 miles NW of Dirhami Sadam, about halfway between the harbor and Osmusssaar.

The entrance to the Gulf of Finland lies between Osmussaar Island, located 4 miles NW of Poosaspea Neem, and the island of Russaro (59°46'N., 22°57'E.), the largest of the islands located S of Hankoniemi.

Toomanina (59°15'N., 23°40'E.), a headland fronted by shoals, lies 4.8 miles ENE of Poosaspea Neem. The coast between is sandy with wooded hills in places. A conspicuous tower stands on this headland.

Keibu Laht, a bay, is entered between Toomanina and Ristinina, a precipitous point, 2.7 miles NE. This bay provides anchorage, in depths of 6 to 9m, mud and sand, sheltered from NE, through S, to W winds. Local knowledge is advised.

Pakri Neem (59°23'N., 24°02'E.) is a headland faced by high cliffs. Pakri Light is shown from a tower, 52m high, standing on this headland. A signal station stands near the light. The ruins of a disused tower are situated close W of the light.

By Ivar Leidus [CC BY-SA 3.0 (https://creativecommons.org/licenses/by-sa/3.0/ee/deed.en)], from Wikimedia Commons

Pakri Light

Paldiski Laht (59°20'N., 24°00'E.), lying 13 miles E of Toomanina, extends SSE between Vaike Pakri and the mainland. It is the most sheltered bay in Estonia. The E shore is high and forms a plateau, while the S shore is low and marshy in some places.

Caution.—Numerous sunken mines are reported to lie in the

entrance of Paldiski Laht.

1.7 **Paldiski** (59°21'N., 24°02'E.) (World Port Index No. 28505), a small commercial port and former Russian naval base, is situated within Paldiski Laht. The North Harbor (Pohjasadam) consists of a small basin, protected by two moles, lying adjacent to the town. The South Harbor (Lounasadam), situated about 1.2 miles SE, consists of a large basin protected by a pier.

This port is under the jurisdiction of Tallinn and is considered to be part of the Port of Tallinn.

Paldiski —Northern Port
https://www.portofpaldiski.ee

Paldiski South Harbor
https://esteve.ee/en

Port of Tallinn (Paldiski South Harbor)
https://www.ts.ee/en

Winds—Weather.—Winds from E cause the water in the basin to fall while W winds cause it to rise. The maximum difference between highest and lowest water amounts to about 0.9m.

Ice.—Paldiski Laht freezes later than other ports in the Gulf of Finland. The ice lasts, on an average, for 33 days, but in a mild winter there may be none. The bay is kept open by icebreakers throughout the winter. The navigation season is normally the period from March 15 to February 1.

Depths—Limitations.—The entrance to North Harbor is 25m wide and has a depth of 7m. The basin is about 145m long and 37 to 73m wide.

South Harbor is protected by a pier, 400m long, which extends S and SSE. It provides about 1,200m of total berth space.

The port has facilities for tanker, ro-ro, timber, bulk, general cargo, and passenger vessels. The harbor can accommodate vessels up to 28,378 dwt, 250m in length, 34m beam, and 11.8 m draft. For more berthing information see table titled **Paldiski—Berth Information**.

Aspect.—Lighted ranges indicate the approach channel and the fairway leading to the pier.

Pilotage.—Pilotage is available through Tallinn. Vessels should send an ETA and request for pilotage 24 hours and 4 hours in advance. Pilots board in position 59°23'N, 24°00'E.

Contact Information.—See the table titled **Paldiski—Contact Information**.

Paldiski—Contact Information	
Pilots	
Call sign	Paldiski Pilot
VHF	VHF channel 9
Telephone	372-674-1010
	372-504-3825 (mobile)
Facsimile	372-674-1195
Port	
Telephone	372-651-1010
Facsimile	372-651-1011
E-mail	info@portofpaldiski.ee
Web site	http://www.portofpaldiski.ee

Regulations.—For the South Harbor, vessels are restricted from entering or leaving Quays 7, 8, or 9 when winds are above 30 mph.

Anchorage.—Two designated anchorage areas (A and D), best seen on the chart, serve Paldiski's North Harbor and South Harbor, as follows:

1. Area A lies to the W of the range line entering Pakri Laht. It is centered in position 59°19.9'N., 24°02.3'E. Anchoring is prohibited inside Area A within 0.1 mile of position 59°20.2'N, 24°02.4'E due to the presence of underwater obstructions, in depths of 17m, and within 0.2 mile of position 59°20.5'N, 24°02.1'E due to the presence of a sunken mine.
2. Area D lies just N of islands of Suur-Pakri and Vaike-Pakri centered in position 59°22.1'N., 23°54.7'E.

Small vessels may anchor SE of Vaike Pakri, in depths of 4 to 6m, mud and sand, sheltered from winds from all directions.

Paldiski—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Paldiski Northern Harbor							
No. 1	196m	9.5m	199m	—	24.0m	5,620 dwt	Ro/pax, ro-ro/lo-lo, and bunkers. 22,382gt.
No. 1A	60m	5.1m	55m	—	—	—	Breakbulk and bunkers.
No. 2	140m	5.1m	115m	—	—	—	
No. 3	35m	5.1m	30m	—	—	—	
No. 4	136m	3.9m	110m	—	—	—	
No. 5	38m	3.9m	35m	—	—	—	

Paldiski—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 6	310m	11.7m	250m	—	30.0m	28,378 dwt	Ro/pax, fertilizer, PCC, container, project/ heavy cargo, breakbulk, and bunkers. 42,424 gt and 604 teu.
No. 6B	—	8.8m	195m	—	15.8m	9,850 dwt	PCC, breakbulk, and bunkers. Berthing length of 155m (including dolphins). 9,233 gt.
No. 7	148m	12.4m	250m	11.8m	34.0m	17,389 dwt	Ro-ro/lo-lo, project/heavy cargo, breakbulk, and bunkers. Berthing length of 170m (including dolphins). 60,515 gt.

Caution.—A spit lies about 0.5 mile NW of the town of Paldiski. It is formed by the remains of an old stone mole and extends about 0.2 mile from the shore in front of an old fort.

A spoil ground area, which may best be seen on the chart, lies in the vicinity of the pilot boarding position.

An explosives dumping area, which may best be seen on the chart, lies close off the E side of Vaike-Pakri.

1.8 Lahepere Laht (59°22'N., 24°12'E.), entered between Pakrineem and Lohusalunina, 4.8 miles E, is open NW and has a bottom of rock covered with sand. The shores of the bay are wooded. Leetse is an estate standing on the W side of the bay, the buildings of which are visible from seaward.

Lohusalu Laht, lying between Lohusalunina and Suurupi, 6.5 miles NE, is sheltered from offshore winds. It affords anchorage for small vessels, in a depth of 5m, but is fringed by shoals. A marina is situated at the W side of this bay. Turisalu, a resort, stands on high ground, faced with reddish cliffs, between two rivers in the S part of the bay. A sewer pipe lies perpendicular to the shore, extending about 600m into the bay just W of Turisalu, and is best seen on the chart.

Suurupi (59°28'N., 24°23'E.) is a broad hilly promontory, 43m high. Ninamaa, a wooded headland, forms the NW extremity of this promontory and is fronted by shoals. Suurupi Light is shown from a prominent round tower, 22m high, standing 0.8 mile SE of this headland.

Naissaar (59°34'N., 24°31'E.), lying in the middle of the entrance to Tallinna Laht, is densely wooded; the tops of the trees rise to a height of 30m in places. From seaward, this island shows up distinctly as a dark belt against the mainland. The E side is sandy and hilly, but the W side is more level. A settlement, with a red church, stands at the S end of the island.

Naissaar Sadam (59°33.4'N., 24°33.3'E.) lies on the E side of the island. The small harbor is protected by a breakwater on its NE side. Vessels up to 36m in length and 2.5m draft may be accommodated. There are three berths along the inside of the breakwater in addition to two floating docks.

Hulkari Ots Light is shown from a framework tower, 15m high, standing on the SE extremity of the island.

Naissaare Kari, a reef, extends about 1.5 miles SSE from the vicinity of Hulkari Ots Light. It has depths of 3 to 9m and may best be seen on the chart.

Pikasaare Ots Light (59°36'N., 24°31'E.), also known as Naissaar Light, is shown from a prominent tower, 45m high, standing on the N extremity of the island.

Uus Madal (59°40'N., 24°36'E.), a shoal with a least depth of 3.2m, lies in the approaches about 4.3 miles NE of Pikasaare Ots Light and is marked by buoys.

Niassaare Madal is an extensive rocky shoal lying parallel with and 2 miles E of the E side of the island. It is marked on the N, W, and S sides by buoys and may best be seen on the chart.

Kesk Madal, a shoal with a least depth of 7.4m, lies about 3.8 miles ESE of Pikasaare Ots Light and is marked on its E side by a lighted buoy.

Aegna Saar, densely wooded, lies 7 miles E of Naissaar and is fronted by shoals. A narrow sandy isthmus extends 0.5 mile seaward and forms the NE extremity of this island.

Aegna Light (59°36'N., 24°44'E.) is shown from a beacon structure, 21m high, standing on a rock about 1 mile NNW of the island.

Kopli Laht (59°27'N., 24°39'E.) is entered between Kakumae Neem and Kopli Nina, the NW extremity of a peninsula, 2.5 miles E. Two shipyards, the buildings of which are conspicuous from seaward, as well as Vene-Balti, Bekkeri and Meeruse harbors, are all situated on the SW side of the Kopli Nina peninsula. The bay provides good anchorage. A lighted range situated at the head of the bay indicates the approach channel. See the Port of Tallinn (paragraph 1.9) for further details.

Tallinna Laht (59°36'N., 24°40'E.), entered between Naissaar and Aegna Island, extends SSE to the roadstead of Tallinna Reid. The port of Tallinn lies along the shore at the head of this roadstead.

Vahemadal (59°31'N., 24°40'E.), an extensive shoal, lies in the S part of Tallinna Reid, about 3.5 miles SE of the S extremity of Naissaar, and has a least depth of 3m. A light is shown from a prominent beacon tower, 14m high, standing near the S end of this shoal.

Leoutjevimadal (Kaguranna Madal) (59°30.8'N., 24°36.0.'E.) lies about 2 miles W of Vahemadal. This isolated rocky shoal has a least depth of 11m and lies within the TSS traffic lane.

Caution.—Submarine cables are laid within about 0.2 mile of the entrance to the northwesternmost shipyard in Kopli Laht; the area is marked by buoys.

Submarine cables are laid between the S end of Naissaar and the mainland. A historic wrecks exist about 10m NE of Naissaar.

A firing practice area lies centered about 4 miles WNW of

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Paldiski (South)

Aegna Saar

Pikasaare Ots Light.

A disused dumping ground area, the limits extends about 0.6 mile seaward from the N side of Aegna Saar. Historic wrecks lie NW and W of Aegna Light.

Tallinn (59°27'N., 24°46'E.)

World Port Index No. 28480

1.9 Tallinn, the capital of Estonia, is considered to be the most important port on the S side of the Gulf of Finland. The port is approached through Tallinn Laht and consists of several harbor areas. The Tallinn Port Authority is responsible for the following five constituent harbors:

1. Vanasadam (Old City Harbor).
2. Palijassaare Harbor, located some 3 miles W of Old Harbor in Tallinn Bay.
3. Paldiski South Harbor (see paragraph 1.7) located about 25 miles W of Tallinn city.
4. Muuga Harbor, (see paragraph 1.12) which is located about 8 miles NW of the city.
5. Saaremaa (see Pub. 194, Sailing Directions (Enroute) Baltic Sea (Southern Part), which is located about 135 miles SW of Tallinn. These harbors are all considered to be part of, or under the authority of, the port of Tallinn. Additional harbors also lie in close proximity to Tallinn including Vene-Balti and Miiduranna.

Vanasadam
https://www.ts.ee/en/old-city-harbour

Port Operator—Tallinn Old City Harbor and Paldiski South Harbor
https://esteve.ee/en

With European Union (EU) funding, the port of Helsinki, Finland and the port of Tallinn, Estonia are working together to

By Port of Tallinn / Tallinna Sadam [CC BY-SA 3.0], via Wikimedia Commons

Vanasadam—Old City Harbor

develop and improve infrastructure and operations. The project is titled TWIN-PORT.

Winds—Weather.—In Tallinna Reid, the prevailing winds are W or SW, but NE winds are the strongest. With strong N winds, especially during the autumn, heavy seas and swell are produced which may interfere with vessels attempting to maneuver in the port.

Ice.—Tallinna Laht may be frozen over in severe winters. From mid-January through March, the port is kept open by icebreakers, with sometimes only a single lane available to shipping. Ice has appeared in the inlet as early as November and has lasted until May.

Tides—Currents.—The tidal range in Tallinna Laht is very slight. The difference of the water level is due solely to the effects of the wind. A rise of water of about 0.4 to 0.5m from MLW is sometimes observed during NW and W winds. The reduced level of water is caused by SE and E winds.

Depths—Limitations.—Tallinn is situated on a natural deep harbor with small hillsides flanking the approaches. The harbor can accommodate vessel up to 166,164 dwt, 340m in length, 17.1m draft, and 50m beam. For more berthing information see the table titled **Tallinn—Berth Information**.

The approaches to the port from N and W via the Traffic Separation Schemes (TSS) are deep and clear (see Directions).

Vanasadam (Old City Harbor), formerly known as Kesklinna, lies in the S part of the Tallinn Laht and is a busy commercial harbor. The entrance to Vanasadam is narrow with shoal water to the S that is not particularly well marked. The harbor comprises 4 basins and two piers that extends NW of the harbor with berths for tankers, Ro-Ro, container and passenger vessels. See the accompanying Tallinn Berthing Information table for more details. A pedestrian swing bridge located across the canal leading to the Admiraliteedi Basin (Admiralty Basin) connect Terminal A and Terminal D. The bridge is 2.5m above water level and passing under the bridge is prohibited. The pedestrian bridge will be opened for small crafts 5 to 10 minutes after requesting permission to leave or enter the marina. Further information can be obtained Old City Marina web site https://www.ts.ee/en/old-city-marina under Old City Marina Rules.

Paljassaare Sadam and **Lahesuu Sadam** lie at the W side of the Tallinn Bay and are used by commercial vessels. There are four berths on the S side and seven berths on the N side. The basin provides facilities for container, ro-ro, and tanker vessels.

Tallinn—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Bekker Port							
No. 1	160m	8.0m	143m	5.5m	21.0m	17,356 dwt	Project/heavy cargo, breakbulk, and bunkers. Berth used for maintenance and supply. 11,885 gt and 962 teu.

Tallinn—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 2	140m	3.0m	150m	—	22.0m	4,144 dwt	Project/heavy cargo and bunkers. Continuous berthing length of 280m. Berth used for maintenance and supply. 1,599 gt.
No. 3	140m	3.2m	120m	—	11.0m	2,250 dwt	
No. 4	195m	10.5m	189.9m	6.5m	28.5m	37,930 dwt	Sand, ro-ro/lo-lo, containers, breakbulk, and bunkers. 24,145 gt and 604 teu.
Meeruse Port							
No. 1	63m	4.1m	63m	—	—	—	Breakbulk and bunkers.
No. 2	70m	2.7-4.2m	70m	—	—	—	
No. 3	24m	2.5-3.2m	24m	—	—	—	
No. 4	70m	2.5-4.7m	70m	—	—	—	
No. 5	116m	5.2m	116m	5.0m	15.8m	4,114 dwt	
No. 6	50m	2.0m	50m	—	—	—	
No. 7	42m	1.8m	42m	—	—	—	
No. 8	34m	1.8m	34m	—	—	—	
No. 9	62m	2.2m	62m	—	—	—	Breakbulk, and bunkers.
No. 10	54m	2.2m	63m	—	—	—	Breakbulk and bunkers.
No. 11	153m	3.6-8.0m	176m	—	18.9m	12,708 dwt	Ro-ro/lo-lo, breakbulk, bunkers, and reefer. 8,448 gt.
Muuga Harbor Dry Bulk Terminal							
No. 8	280m	14.4m	229m	—	32.2m	81,553 dwt	Fertilizer, breakbulk, and bunkers. Continuous berthing length of 590m. 43,968 gt.
No. 9	331m	17.4m	179.9m	16.8m	30.0m	39,475 dwt	Grain, breakbulk, and bunkers. 25,189 gt.
No. 10	335m	17.4m	229m	16.8m	32.2m	82,138 dwt	Grain, breakbulk, and bunkers. 44,130 gt.
Muuga Harbor General Cargo Terminal							
No. 4	278m	7.5m	128.4m	—	18.3m	8,370 dwt	Fertilizer, scrap metal, sugar, breakbulk, peat moss, bunkers. 6,310 gt.
No. 5	103m	7.1m	150m	—	18.2m	13,030 dwt	Fertilizer, scrap metal, sugar, breakbulk, peat moss, bunkers. 7,833 gt.
No. 6	157m	9.5m	199m	—	32.2m	57,700 dwt	Fertilizer, scrap metal, sugar, breakbulk, peat moss, bunkers. 57,700 gt. An increased loa permitted if smaller/no vessel on adjacent berth.
No. 6A	183m	10.9m	199m	—	32.2m	63,483 dwt	Fertilizer, scrap metal, sugar, breakbulk, peat moss, bunkers. 36,322 gt. An increased loa permitted if smaller/no vessel on adjacent berth.
No. 11	259m	12.9m	199m	—	32.2m	63,800 dwt	Breakbulk, others, ro-ro freight, and bunkers. Continuous berthing length of 634m. 6,668 to 36,311 gt.
No. 12	175m	12.4m	189.6m	—	23.6m	29,724 dwt	
No. 13	200m	8.6m	134.5m	—	18.2m	29,724 dwt	
Muuga Harbor Ro-Ro Container Terminal							
No. 14	219m	12.4m	142.4m	—	22.0m	16,558 dwt	Ro-ro freight, containers, breakbulk, and bunkers. 13,340 gt and 658 teu.

Tallinn—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 15	200m	12.4m	216m	—	35.2m	40,079 dwt	Containers, breakbulk, and bunkers. Continuous berthing length of 500m. 37,398 to 34,882 gt. and 3,600 teu.
No. 16	300m	14.5m	243.3m	—	35.2m	47,120 dwt	
No. 17	377m	14.5m	257.8m	—	35.2m	81,922 dwt	Containers, breakbulk, and bunkers. 43,04 gt and 4,132 teu.
Passenger Terminal (Old City Harbor)							
No. 1	156m	8.5m	245.6m	—	32.2m	7,505 dwt	Fast ferries, ro-ro/lo-lo, and bunkers. Berthing length of 252m (including dolphins).
No. 3	246m	8.0m	—	—	—	—	Fast ferries, ro-ro/lo-lo, and bunkers.
No. 5	222m	8.3m	—	—	—	—	Fast ferries, ro-ro/lo-lo, and bunkers.
No. 7	242m	8.5m	—	—	—	—	Fast ferries, ro-ro/lo-lo, and bunkers.
No. 8	197m	4.5-7.0m	100.2m	—	13.1m	1,380 dwt	Fast ferries, ro-ro/lo-lo, and bunkers. 3,504 gt.
No. 10	174m	7.7m	—	—	—	—	Fast ferries, ro-ro/lo-lo, and bunkers.
No. 12	257m	7.5m	—	—	—	—	Fast ferries, ro-ro/lo-lo, and bunkers.
No. 13	214m	8.0m	—	—	—	—	Cruise vessels, o/pax, ro-ro freight, breakbulk, and bunkers. Continuous berthing length of 593m. 42,289 gt.
No. 14	149m	10.0m	—	—	—	—	
No. 15	230m	10.0m	203.2m	—	28.1m	4,157 dwt	
No. 16	62m	10.0m	—	—	—	—	Ro-ro freight, breakbulk, bunkers, and small vessels.
No. 17	183m	10.0m	131.4m	—	18.0m	1,353 dwt	Cruise vessels, ro-ro freight, breakbulk, and bunkers. 9,976 gt.
No. 24	165m	10.7m	340m	—	37.5m	14,601 dwt	Cruise vessels, ro/pax. and bunkers. Berthing length of 339m (including dolphins). 113,321 gt.
No. 25	165m	10.7m	340m	—	37.5m	14,601 dwt	
No. 26	290m	—	340m	—	43.0m	19,610 dwt	Cruise vessels and bunkers.Berthing length of 385m (including dolphins). 153,516 to 181,541 gt.
No. 27	290m	—	340m	—	43.0m	19,209 dwt	
Patarei							
Passenger	134m	4.5m	—	—	—	—	Fast ferries and bunkers.
Patarei							
No. 1	200m	10.0m	115.4m	—	16.5m	6,405 dwt	Cruise vessels, fast ferries, breakbulk, and bunkers. 5,232 gt.
No. 2	165m	7.0m	204m	—	28.9m	6,150 dwt	Ro/pax, ro-ro/lo-lo, breakbulk, and bunkers. 43,537f gt.
Muuga Harbor Coal Terminal							
No. 31	210m	11.0m	200m	—	28.6 m	34,946 dwt	Clean products, coal, project/heavy cargo, breakbulk, multipurpose, and bunkers. Continuous berthing length of 575m. Increased loa permitted if smaller/no vessel on adjacent berth. Displacement: 42,500t to 135,039t. 29,324 to 63,076 gt.
No. 32	365m	17.1m	249m	16.8m	44.0m	115,166 dwt	

Tallinn—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 33	198m	11.0m	156.5m	—	23.0m	17,075 dwt	Clean products, coal, breakbulk, multipurpose, reefer, and bunkers. Used for support vessel. Displacement: 23,948t. 12,949 gt.
Muuga Industrial Area (Liquid Bulk)							
No. 1 Vopak Terminal	66m	11.4m	183m	11.0m	32.2m	51,409 dwt	Aviation fuel, petroleum products, crude, and bunkers. Berthing length of 205m (including dolphins). Displacement: 133,356t.
No. 1A Vopak Terminal	95m	14.4m	256.3m	14.0m	44.0m	114,880 dwt	Aviation fuel, petroleum products, crude, and bunkers. Berthing length of 210m (including dolphins). Displacement: 133,356t.
No. 2	66m	11.2m	117m	10.8m	26.0m	25,084 dwt	Petroleum products, crude, and bunkers. Berthing length of 205m (including dolphins). Displacement: 33,788t.
No. 2A Vopak Terminal	45m	6.6m	80m	6.2m	—	3,000 dwt	Dirty products and bunkers. Berthing length of 210m (including dolphins). Closed
No. 3	70m	8.2m	119m	7.8m	18.0m	7,108 dwt	Aviation fuel, chemicals, petroleum products, and bunkers. Berthing length of 100m (including dolphins). Displacement: 9,951t.
No. 3A	66m	13.0m	185.6m	12.6m	32.2m	50,956 dwt	Petroleum products, crude, and bunkers. Berthing length of 218m (including dolphins). Displacement: 61,271.
No. 7	310m	14.4m	276m	14.0m	48.0m	157,620 dwt	Crude, dirty products, fertilizer, multipurpose, and bunkers. Continuous berthing length of 590m. Displacement:184,134t. 82,178 gt.
No. 9A	98m	18.0m	276m	17.1m	49.9m	163,292 dwt	Aviation fuel, petroleum products, crude, and bunkers. Berthing length of 333m (including dolphins). Displacement: 189,283t.
No. 10A	98m	18.0m	275m	17.1m	50.0m	166,164 dwt	Aviation fuel, petroleum products, crude, and bunkers. Berthing length of 333m (including dolphins). Displacement: 192,935t.
Paldiski Biodiesel (Tallinn Paldiski South Harbor)							
No. 5	153m	9.0m	195m	8.6m	35.0m	55,604 dwt	Continuous berthing length of 315m. Vegetable oil, scrap metal, ro-ro/lo-lo, fishing, breakbulk, multipurpose, and bunkers. Displacement: 69,568t. 25,609 gt.
Vene Balti Port							
No. 2	123m	9.1m	157.4m	8.2m	24.5m	19,800 dwt	Clean products, breakbulk, multipurpose, and bunkers. Continuous berthing length of385m. Displacement: 11,436 to 24,320t. 12,936 gt
No. 3	152m	6.7m	143.1m	6.2m	24.0m	17,356 dwt	
No. 4	—	6.7m	155.2m	6.2m	23.4m	17,356 dwt	Servicing vessels. Continuous berthing length of 254m. Clean products, container,s breakbulk, bunkers, reefer, and multipurpose. 11,864 to 19,746 gt and 959 to 962 teu.
No. 5	—	6.2m	171.6m	5.8m	27.0m	31,177 dwt	

Tallinn—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 6	—	8.5m	179.8m	8.0m	29.0m	40,413 dwt	Clean products, scrap metal, containers, project/heavy, breakbulk, multipurpose, bunkers, and reefer. Servicing vessels. Continuous berthing length: 238m. Displacement: 22,883 to 64,609. 11,885to 32,742 gt and 646-to 962 teu.
No. 7	—	8.5m	190m	8.0m	32.2m	58,099 dwt	
No. 8	170m	6.0m	157.4m	5.5m	24.5m	19,800 dwt	Clean products, scrap metal, container, breakbulk, multipurpose, bunkers, and reefer. 3,329 gt and 332 teu.
No. 9	—	8.3m	159.6m	7.2m	38.8m	20,216 dwt	Clean products, containers, ro-ro/lo-lo, project/heavy cargo, multipurpose, breakbulk, reefer, and bunkers. Displacement: 22,883 to 39,034t. 11,885 t. Continuous berthing length: 465m. o 19,746 gt and 658 to 1,127 teu.
No. 10	—	8.6m	171.6m	7.2m	27.0m	31,759 dwt	
No. 11	—	8.6m	173.9m	7.2m	27.0m	31,773 dwt	
No. 12	—	8.6m	159m	7.2m	26.5m	21,353 dwt	
No. 13	—	8.6m	144.5m	7.2m	24.0m	17,355 dwt	
No. 14	—	8.5m	182.5m	7.2m	27.3m	37,418 dwt	Clean products, scrap metal, ro-ro/lo-lo. containers, project/heavy cargo, multipurpose, breakbulk, reefer, and bunkers. Continuous berthing length of 217m. Displacement: 45,975t. 15,542 gt. 962 teu.
No. 15	—	8.5m	190m	7.2m	32.0m	25,019 dwt	
No. 16	—	7.2m	179.8m	6.8m	29.0m	40,413 dwt	Containers, breakbulk, bunkers, and reefer. Continuous berthing length of 480m. Lay-by berths.
No. 17	—	7.2m	179.8m	6.8m	29.0m	40,413 dwt	
No. 18	—	7.2m	179.8m	6.8m	29.0m	40,413 dwt	
No. 19	—	7.7m	179.8m	7.0m	29.0m	40,413 dwt	
No. 20	—	7.7m	179.8m	7.0m	29.0m	40,413 dwt	
Alexela Terminal (Tallinn Paldiski South Harbor)							
No. 1	17m	12.0m	184m	11.6m	32.2m	49,999 dwt	Aviation fuel, chemicals, petroleum products, crude, LPG, and bunkers. Berthing length of 193m (including dolphins). Displacement: 61,391t. Gas capacity: 37,397m^3.
No. 7	20m	14.5m	250m	14.1m	44.0m	115,319 dwt	Aviation fuel, chemicals, crude, petroleum products, LPG, and bunkers. Berthing length of 250m (including dolphins). Displacement: 134,426t. Gas capacity: 88,200m^3.
Dekoil Terminal (Vene-Balti Harbor)							
No. 0	11m	11.4m	185m	11.0m	35.0m	48,000 dwt	Petroleum products and bunkersBerthing length of 80m (including dolphins). . Displacement: 48,163t.
No. 1	110m	9.2m	160m	8.3m	35.0m	17,356 dwt	Petroleum products and bunkers. Continuous berthing length of 385m. Displacement: 22,882t.

Several basins lie close SE of this harbor and are mostly used by naval, port authority, icebreaker, and fishing vessels.

Miiduranna Sadam lies on the NE side of the bay, 3.4 miles NNE of Vanasadam. The harbor is protected by a breakwater and is divided into two basins. Vessels up to 196m in length, 32m beam, and 12.3m draft can be accommodated. See paragraph 1.11 for more details.

Pirita harbor is located at the SE side of the Tallinna Laht at

the mouth of the Pirita river, 2 miles S of Miiduranna Sadam. This extensive yacht harbor is protected by two breakwaters.

Vene-Balti Port (59°27'N., 24°39'E.), a shipbuilding and repair complex, lies at the NE side of Kopli Laht. It has two main basins and several floating docks. Vessels up to 200m in length and 10.6m draft can be handled. A basin area, used by patrol vessels, lies S of this shipbuilding complex.

Contact Information.—See the table titled **Tallinn—Contact Information.**

Tallinn—Contact Information	
Port Authority	
Call sign	Radio 5
VHF	VHF channel 14
Telephone	372-631-8555
Facsimile	372-631-8166
E-mail	portoftallinn@portoftallinn.com
Web site	http://www.portoftallinn.com
Harbormaster	
Telephone	372-631-8250
Pilots	
Head Office	
Telephone	372-605-3888
	372-526-8432
Facsimile	372-605-3881
E-mail	tellimus@loots.ee
Web site	http://www.loots.ee
Muuga Pilots	
Call sign	Muuga Pilot
VHF	VHF channels 13, 16, and 72
Telephone	372-631-9621
Facsimile	372-631-9120
Paldiski South Pilots	
Call sign	Paldiski Pilot
VHF	VHF channel 9
Telephone	372-674-1010
	372-504-3825 (mobile)
Facsimile	372-674-1195
Paljassaare Pilots	
Call sign	Tallinn Pilot
VHF	VHF channel 72
Saaremaa Pilots	
Call sign	Saaremaa Sadam
VHF	VHF channels 14 and 16
Vanasadam Pilots	
Call sign	Tallinn Pilot
VHF	VHF channel 72
Tallinn Pilots	
Call sign	Tallinn Pilot
VHF	VHF channel 13
Traffic/VTS	
Call sign	Tallinn VTS
VHF	VHF channel 13
Telephone	372-620-5766
E-mail	tln.vts@vta.ee

Caution.—Several wrecks, best seen on the chart, lie in the vicinity of and approaches to Tallinn.

1.10 Bekkeri (Bekker) (59°27'N., 24°40'E.) and **Meeruse** (59°27'N., 24°40'E.) are small harbors lying at the E side of Kopli Laht. They are used by commercial vessels and fishing craft. At Bekkeri vessels up to 170m in length, 32m beam, and 8.1m draft can be accommodated. At Meeruse vessels up to 140m in length, 24m beam, and 6.3m draft can be accommodated.

Tallinn Bekkeri Port
https://tallinnbekkerport.com/en

Aspect.—The lanes and separation zones of the main Traffic Separation Schemes (TSS) located in the approaches to Tallinn are marked by lighted buoys and indicated by lighted ranges and sector lights, which may best be seen on the chart (see Directions).

Tallinna Laht Rear Range Light is shown from a prominent round tower, 40m high, standing 1.5 miles SE of the entrance to Vanasadam, the old harbor. Tallinna Laht Front Range Light is shown from a tower on a dwelling, 18m high, standing 0.6 mile NNW of the rear range light. This lighted range indicates the main fairway leading into Tallinna Laht.

For a description of the off-lying islands and islets in the approaches, see paragraph 1.3.

The city of Tallinn extends on two levels along the steep rocky coast in the SE portion of the bay. Numerous high buildings, towers, chimneys, and masts stand in the vicinity of city. In good visibility, the spire of Oleviste Church can be recognized from a distance of 25 miles. It is 125m high and stands close SW of Vanasadam harbor basin. Toompea Citadel, surrounded by a high stone wall, is also conspicuous. It stands 0.5 mile SW of Oleviste Church and has a church with a dark green spire. The high ruins of a prominent monastery stand on the E side of the bay, on the N bank of the Pirita River. A conspicuous obelisk is situated 1 mile SW of these ruins.

Pilotage.—General information regarding pilotage in Estonian waters are listed, as follows:

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Tallinna Laht Rear Range Light

1. Pilotage is compulsory for all foreign vessels navigating in the following pilotage areas:
   a. Tallinn Kunda-Loksa Paldiski.
   b. Vaiinameri.
   c. Parnu.
   d. Sillamae.
2. Pilotage is conducted at any time unless individual port rules and regulations have established other times of operation.
3. Pleasure craft (24m loa or less) are exempt from compulsory pilotage within Estonian territorial waters.
4. Pilotage for all ports in Estonia together with Deep Sea Pilotage is provided by Eesti Loots (Estonian Pilot).
5. Pilots can be ordered from a company providing pilotage services using e-mail through an agent licensed to operate in Estonia.
6. Orders for a licensed Deep Sea Pilot in the Baltic Sea area should be made 48 hours prior to arrival, and confirmed 2 hours prior to arrival.
7. Requests for pilotage should be made 24 hours in advance of expected arrival, and reconfirmed 6 hours and 2 hours prior to arrival at the pilot station.
8. Departing vessels must request pilotage at 4 hours and again at 1 hour in advance of ETD.
9. Vessels shifting position within port areas should do so with a pilot on board.

Pilots should be contacted by VHF through the TCS (Tallinn on VHF channel 13 and Muuga on VHF channel 16 or 72). They board, as follows:

1. Tallinn Bay (call sign: Tallinn Pilot)—1.5 miles WNW of Tallinn No. 1 Lighted Buoy (59°36.5'N., 24°40.2'E.) or 0.5 mile S of Suurupi No. 3 Lighted Buoy (59°30.0'N., 24°32.6'E.).
2. Kopli Bay (call sign: Kopli Pilot)—0.5 mile S of Suurupi No. 3 Lighted Buoy (59°30.0'N., 24°32.6'E.).
3. Port of Muuga (call sign: Muuga Pilot)—Vessels from NW are boarded in position 59°39.0'N, 24°44.0'E. Vessels from N or NE are boarded in position 59°39.0'N, 25°05.4'E.

Estonian Pilots
https://www.loots.ee

It is reported that during periods of inclement weather pilots may request vessels to proceed a distance within the TSS before boarding. Radar-assisted pilotage is available on request.

Regulations.—Vessels must send a report through Tallinn Coast Radio Station or the agent 72 hours and 24 hours in advance of arrival. The ETA report must include the draft (fore and aft), and purpose for the port-of-call.

On approaching the port, vessels bound for Tallinn Bay and Kopli Bay must contact the Tallinn Traffic Control by VHF. Vessels bound for Muuga Bay must contact the Muuga Traffic Control on VHF. Permission must be received before vessels can enter, leave, or shift berth in the port area.

GOFREP is a mandatory ship reporting system under SOLAS regulation, operates in the Gulf of Finland and its approaches. Shore-based facilities at Tallinn (VHF channel 61), Helsinki (VHF channel 60), and Saint Petersburg (VHF channel 74) are able to monitor shipping movements and provide improved advice and information about navigational hazards and weather conditions. For further information concerning GOFREP and other regulations pertaining to vessels approaching the ports along the S coast of the Gulf of Finland, see General Remarks in paragraph 1.1 and Finland in Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

The Traffic Separation Scheme (TSS) instituted by the local authorities in the S part of Tallinn Reid is not IMO-adopted. However, the authorities advise that the principles of Rule 10 of the COLREGS apply.

Vessels requiring icebreaker assistance should report, either directly to the harbormaster or through the agent, their ETA at the meridian of Ristna Light (58°°56.3'N., 22°°03.3'E.) 24 hours in advance. The Estonia Maritime Administration maintains control over ice-breaking operations. Information pertaining to the position of the ice edge and icebreaker pilotage will be supplied. Vessels bound for Tallinn, Kopli, or Muuga are usually requested to wait for icebreakers in position 59°10'N, 22°00'E.

Vessel Traffic Service.—A local Vessel Traffic Service (VTS) operates in the approaches to Tallinn Bay, Kopli Bay, and Muuga Bay. The VTS system area is bordered connecting the following points:

1. Ninamaa (59°28.4'N., 24°21.6'E.).
2. Position 59°29.5'N, 24°20.0'E.
3. Position 59°30.5'N, 24°20.0'E.
4. Position 59°40.0'N, 24°30.0'E.
5. Tallinn Light (59°42.7'N., 24°43.9'E.).

6. Keri Light (59°41.9'N., 25°01.4'E.).
7. Position 59°41.9'N, 25°12.3'E.
8. Rammu Saar (Loodo Ots) (59°34.7'N., 25°12.3'E.).
9. Ihasalu Nina (Uitru Spit) (59°32.5'N., 25°08.6'E.).

This system (Tallinn VTS) is mandatory for the following:

1. Vessels of 24m or more in length.
2. Vessels less than 24m in length when not under command, when restricted in ability to maneuver, or when having navigational equipment not in working order.
3. On request from Tallinn VTS.

All vessels within the VTS area must keep a continuous listening watch on VHF channel 13.

Vessels are required to report to Tallinn VTS when entering the area or leaving the port using the following format:

Designator	Information Required
ALFA	Name and call sign or IMO identification, or MMSI.
CHARLIE	Position (latitude/longitude) in two 6-digit groups.
DELTA	Bearing from a clearly-identified landmark.
ECHO	True course in a 3-digit group.
FOXTROT	Speed in knots in a 2-digit group.
INDIA	Destination within the VTS area and ETA.
LIMA	Route information.
OSCAR	Draft in meters.
PAPA	Cargo and dangerous cargo by IMO class and total amount.
QUEBEC	Brief details of defects or restrictions of navigability.
ROMEO	Description of pollution or dangerous goods lost overboard.
UNIFORM	Vessel type and length.
WHISKEY	Total number of persons onboard.
X-RAY	Miscellaneous remarks (ice class, bunkers etc.)

All vessels must then report to Tallinn VTS on VHF channel 13 when passing abeam of the following Reporting Points:

1. Tallinn No. 1 Lighted Buoy (59°36.5'N., 24°40.2'E.).
2. Suurupi No. 3 Lighted Buoy (59°30.0'N., 24°32.6'E.).

Vessels must also report immediately to Tallinn VTS in regard to the following:

1. Any incident, accident, danger, obstacle, or sea pollution.
2. Altering from their planned route.
3. When further information is requested by the VTS.

All vessels entering the area in order to anchor must advise Tallinn VTS of their intentions and report when anchoring or weighing anchor.

Contact Information.—The port of can be contacted by e-mail (tallinn@loots.ee).

Anchorage.—The bottom in the deeper parts of the roadstead is formed by soft mud. Close in, off the E shore, it is sand and, in places, rocks. Off the W shore it is mostly mud, sand, and stones.

Three designated anchorage areas, with depths of 15 to 30m, are situated in the roadstead and may best be seen on the chart. Area A, Area B, and Area C (dangerous cargo) lie centered 2.5 miles N, 1.9 miles NW, and 3.5 miles NW, respectively, of Tallinn Front Range Light.

An additional five designated anchorage areas lie in the outer approaches and may best be seen on the chart, as follows:

1. Area G lies centered 1 mile SW of Suurupi No. 3 Lighted Buoy (59°30.0'N., 24°32.6'E.) and has a depth of 30m, clay.
2. Area H lies centered 1.3 miles NW of Suurupi No. 3 Lighted Buoy and has depth of 34 to 37m. A restricted anchorage area abuts the E edge of Anchorage Area H.
3. Area F lies centered 1.3 miles NE of Hulkari Ots Light (59°32.5'N., 24°33.8'E.) and has depths of 17 to 33m, mud and sand. Anchoring and fishing is prohibited in an area just N of Anchorage Area F and is best seen on the chart.
4. Area E, for dangerous cargo, lies centered 1.8 miles ESE of Suurupi No. 3 Lighted Buoy and has depths of 31 to 37m, sand.
5. Area D, in Kopl Laht, lies centered 3.5 miles SE of Suurupi No. 3 Lighted Buoy and has depths of 19 to 26m, sand and mud.

Care is advised as obstructions have been reported to lie within the vicinity of these anchorage areas.

Directions.—Recommended routes and Traffic Separation Schemes (TSS), which may best be seen on the chart, lie in the N and W approaches to Tallinn Reid.

A Precautionary Area lies centered 4.5 miles SSW of Tallinn Light (59°43'N., 24°44'E.). A TSS, for vessels approaching from the E, extends about 1.2 miles E from the E side of the Precautionary Area. The inbound traffic lane is situated on the N side of the separation zone; the outbound traffic lane is situated on the S side of the separation zone.

Recommended Traffic Flow Routes, indicated by directional arrows, are situated adjacent to the NE, N, and W sides of the Precautionary Area; these routes are to be used by vessels approaching from the NE, N, and WNW, respectively.

The main TSS, which forms the approach route from N, is entered about 4.6 miles W of Pikasaare Ots Light (59°36'N., 24°31'E.). It extends SSE for about 7 miles from the S side of the Precautionary Area. The separation zone is marked by Tallinn No. 1 Lighted Buoy (59°36.5'N., 24°40.2'E.), moored at the N end, and by Tallinn No. 3 Lighted Buoy (59°29.8'N., 24°45.2'E.), moored at the S end. The inbound traffic lane is situated on the W side of the separation zone; the outbound traffic lane is situated on the E side of the separation zone. An Inshore Traffic Zone is located adjacent to the E side of the outbound lane.

The alignment of the Tallinn range lights indicates the direction of the separation zone in the TSS. It should be noted that vessels are prohibited from navigating on this alignment when proceeding between Tallinn No. 1 Lighted Buoy and Tallinn No. 3 Lighted Buoy.

Tallinn may also be approached from W. The TSS, forming the route from W, is entered about 2.5 miles NW of Suurupi Light (59°28'N., 24°23'E.). It extends E for about 7 miles, ENE for about 5 miles, and then joins the main TSS. The seaward

entrance of the scheme is marked by Suurupi No. 1 Lighted Buoy (59°30'N., 24°20'E.). The separation zone junction is marked by Suurupi No. 3 Lighted Buoy (59°30.0'N., 24°32.6'E.). The inbound traffic lane is situated on the S side of the separation zone and passes S of Vahemadal Shoal (59°31'N., 24°40'E.). The outbound lane passes N of Vahemadal Shoal and is situated on the N side of the separation zone.

It should be noted that vessels constrained by their draft may be required to deviate from the alignment of the lighted range indicating the outbound traffic lane in order to pass clear of Leoutjevimadal (Kaguranna Madal) (59°30.8'N., 24°36.0.'E.) (see paragraph 1.8.).

It should be noted that the Traffic Separation Schemes (TSS) described above are not IMO-adopted but the Estonian authorities have advised mariners that the principles of Rule 10 of the COLREGS applies.

Caution.—A local magnetic anomaly has been reported to exist on the E side of Tallinn Reid.

Several obstructions lie in the S part of Tallinn Reid. They are marked by buoys and may best be seen on the chart.

Miiduranna (59°30'N., 24°49'E.)

1.10 Miiduranna lies on the E side of Tallinn Bay about 3 miles NE of Vanasadam. This port is privately owned consisting of two basins. It has bulk and oil facilities. Tankers conduct loading from the Milstrand Oil Terminal. It is open year-round. The N basin has two berths and an oil jetty on the inside of the N breakwater. The S basin has seven berths for small vessels and general cargo.

Port of Miiduranna
https://www.miidurannasadam.ee/en

Winds—Weather.—The windy season usually lasts from October to November and can blow 54-58 knots, and in gusts of up to 62-69 knots. During strong W and SW winds, berthing is inadvisable.

Ice.—Ice can start at the beginning of December and last through to April.

Depths—Limitations.—Vessels up to 45,000 dwt, 196m in length, 32m beam, and 12.5m draft, can be accommodated in the harbor. For more berthing information see the table titled **Miiduranna—Berth Information**.

Pilotage.—Pilotage is compulsory for vessels entering, departing, and remooring, on a 24-hour basis, and is coordinated through Tallinn pilot station**.** Pilot boards in position 59°29.4'N, 24°33.0'E or position 59°36.8'N, 24°37.4'E.

Regulations.—Vessels entering Tallinn Bay must make contact with coast radar station, the Vessel Traffic Center, and contacted (call sign: Tallinn Traffic Control) on VHF channel 13. Miidurannа harbor uses VHF channel 10 for communication.

Anchorage.— Anchorages and traffic will be regulated by Tallinn VTS.

Muuga (59°30'N., 24°56'E.)

World Port Index No. 28484

1.11 Muugaa (Muuga Sadam), formerly known as Novotallinnsakiy, is a newly-developed complex lying within Muuga Laht. It specializes in bulk grain, reefer, chemical, timber, and vehicle cargo. This port is under the jurisdiction of and is considered to be part of the Port of Tallinn.

Winds—Weather.—The port and roadstead are unprotected from winds out of the NW, N, and NE. Even with only moderate winds from a N direction, dangerous surges may be experienced at the berths.

Ice.—See General Remarks in paragraph 1.1 and the port of Tallinn in paragraph 1.9.

Miiduranna—Berth Information

Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Miiduranna Terminal						
1	135m	4.6m	130m	4.2m	20.0m	General cargo.
2	90m	3.4m	60m	—	10.0m	—
3	75m	2.0m	45m	—	8.0m	—
4 (Inner)	80m	4.6m	70m	3.8m	18.0m	—
4 (Outer)	63m	5.9m	110m	5.6m	20.0m	General cargo.
5	134m	3.6m	110m	3.3m	20.0m	Wood chips.
6	20m	1.5m	12m	1.2m	4.0m	—
7	55m	2.0m	24m	—	5.0m	—
8	83m	3.8m	80m	3.5m	18.0m	—
Milstrand Terminal						
9	88m	4.6m	85m	4.2m	20.0m	Fuel oil.
10	93m	13.0m	196m	12.3m	32.0m	Diesel, heating oil, gasoline, and aviation fuel.

Port of Muuga
https://www.ts.ee/en/muuga-harbour/

Depths—Limitations.—The entrance channel is authorized for drafts up to 16.9m. The harbor is divided into two basins by the grain pier. The basins provide 28 berths. There are facilities for bulk, container, ro-ro, reefer, ferry, and tanker vessels.

An oil terminal is situated in the NW part of the W basin. For more berthing information see the table titled **Muuga—Berth Information** for more details.

Muuga Port has approved the construction of a liquefied natural gas (LNG) cargo terminal to be co-located with the coal terminal, which lies on the NE edge of the harbor. The location provides three berths.

Muuga—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Muuga Industrial Area (Liquid Bulk)							
No. 1 Vopak Termianl	66m	11.4m	183m	11.0m	32.2m	51,409 dwt	Berthing length of 205m (including dolphins). Aviation fuel, clean and dirty products, crude, and bunkers. Displacement: 62,295t.
No. 1A Vopak Termianl	95m	14.4m	256.3m	14.0m	44.0m	114,880 dwt	Berthing length of 210m (including dolphins). Aviation fuel, clean and dirty products, crude, and bunkers. Displacement: 133,356t.
No. 2	66m	11.2m	117m	10.8m	26.0m	25,084 dwt	Berthing length of 205m (including dolphins). Clean and dirty products, crude, and bunkers. Displacement:33,788t.
2A Vopak Termianl	45m	6.6m	80m	6.2m	—	3,000 dwt	Closed. Berthing length of 80m (including dolphin). Dirty products and bunkers.
No. 3	70m	8.2m	119.1m	7.8m	18.0m	7,108 dwt	Berthing length of 100m (including dolphin). Aviation fuel, chemicals, clean and dirty products, and bunkers. Displacement: 9,951t.
No. 3A	66m	13.0m	185m	12.6m	32.2m	50,956 dwt	Berthing length of 218m (including dolphin). Clean and dirty products, crude, and bunkers. Displacement: 61,271t.
No. 7	310m	14.4m	276m	14.0m	48.0m	157,620 dwt	Continuous berthing length of 590m. Crude, dirty products, fertilizer, breakbulk, multipurpose, and bunkers. Displacement: 184,134t.
No. 9A	98m	18.0m	276m	17.1m	49.9m	163,292 dwt	Berthing length of 333m (including dolphin). Aviation fuel, clean and dirty products, crude, and bunkers. Displacement: 189,283t.
No. 10A	98m	18.0m	275m	17.1m	50.0m	166,164 dwt	Berthing length: 333m (including dolphin). Aviation fuel, clean and dirty products, crude, and bunkers. Displacement: 192,935t.
Muuga Harbor General Cargo Terminal							
No. 4	278m	7.5m	128.4m	—	18.2m	8,370 dwt	Fertilizer, breakbulk, scrap metal, sugar, peat moss, and bunkers. 6,310GT.

Muuga—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 5	103m	7.1m	150.1m	—	18.2m	13,030 dwt	Continuous berthing length: 443m. Fertilizer, breakbulk, scrap metal, sugar, peat moss, and bunkers.7,833 gt.
No. 6	157m	9.5m	199.9m	—	32.2m	57,700 dwt	Fertilizer, breakbulk, scrap metal, sugar, and peat moss. Continuous berthing length of 443m. Vessels with a greater loa are permitted if no vessel or smaller vessel are on the adjacent berth. 33,331 to 36,322 gt.
No. 6A	183m	10.9m	199.9m	—	32.2m	63,483 dwt	
No. 11	259m	12.9m	199.9m	—	32.2m	63,800 dwt	Continuous berthing length of 634m. Breakbulk, ro-ro freight, reefer, and bunkers. 6,688 to 20,491 gt.
No. 12	175m	12.4m	189.6m	—	23.6m	29,724 dwt	
No. 13	200m	8.6m	134.5m	—	18.2m	9,851 dwt	
Muuga Harbor Dry Bulk Terminal							
No. 8	280m	14.4m	229m	—	32.2m	81,553 dwt	Fertilizer, breakbulk, and bunkers. Continuous berthing length of 590m. 43,968 gt.
No. 9	331m	17.4m	179.9m	16.8m	30.0m	39,475 dwt	Grain, breakbulk, and bunkers. 25,189 gt.
No.10	335m	17.4m	229m	16.8m	32.2m	82,138 dwt	Grain, breakbulk, and bunkers. 44,130 gt.
Muuga Harbor Ro-Ro and Container Terminal							
No. 14	219m	12.4m	142.4m	—	22.0m	16,558 dwt	Ro-ro freight, breakbulk, bunkers, and containers. 13,340 gt and 658 teu.
No. 15	200m	12.4m	216.1m	—	35.2m	40,079 dwt	Containers and bunkers. Continuous berthing length of 500m. 34,882 gt and 3,600teu.
No. 16	300m	14.5m	243.3m	—	35.2m	47,120 dwt	Breakbulk, bunkers, and containers. 37,398 gt and 3,600 teu.
No. 17	377m	14.5m	257.8m	—	35.2m	81,922 dwt	Breakbulk, bunkers, and containers. 43,044 gt and 4,132 teu.
Muuga Harbor Coal Terminal							
No. 31	210m	11.0m	200.9m	—	28.6m	34,946 dwt	Coal, clean products, breakbulk, multipurpose, and bunkers. Continuous berthing length of 575m. LOA increase permitted if smaller/no vessel on adjacent berth. 29,324GT. Displacement: 42,550t.
No. 32	365m	17.1m	249.9m	16.8m	44.0m	115,166 dwt	Coal, clean products, project/heavy cargo, multipurpose, and bunkers. Continuous berthing length: 575m. Displacement: 135,039t and 63,076 gt.
No. 33	198m	11.0m	156.5m	—	20.3m	17,072 dwt	Clean products, coal, breakbulk, multipurpose, bunkers, and reefer. Displacement: 23,948t and 12,949 gt. Used for support vessel.

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Port of Muuga

Aspect.—Several shoals lie adjacent to the approach passages and are marked by lighted buoys.

Muuga Light (59°33'N., 24°58.3'E.) is shown from a prominent tower, 15m high, standing on the E part of Karbimadal.

A lighted range, which may best be seen on the chart, indicates the entrance channel leading into the harbor. A conspicuous television tower and a prominent grain silo are situated 2 miles SW and 0.2 mile SE, respectively, of the front range light.

Several shoals lie adjacent to the approach and are marked by lighted buoys.

Pilotage.—See Pilotage for Tallinn (paragraph 1.9).

Regulations.—Speed in the approach channel is limited to 10 knots.

Vessels greater than 25,000 gt are usually not berthed with winds over 23 knots. With strong winds from NW, N, or NE, vessels may be required to proceed from the berth to a safe anchorage. It is reported that large vessels are berthed at the grain complex only during daylight, with wind velocities of not more than 19 knots. At all times, vessels must have their main engines available for use on 1 hour's notice.

It is advised that at least one-third of the vessel's crew must be aboard at any time, as well as either the master or the chief officer.

The use of tugs is reported to be mandatory for vessels over 2,000 gt.

Vessel Traffic Service.—A mandatory Vessel Traffic Service (VTS) system operates in the approaches to Tallinn Bay, Kopli Bay, and Muuga Bay. For further information, see Regulations for Tallinn (paragraph 1.9).

Anchorage.—There are six designated anchorage areas, as follows:

1. Anchorage Area N lies 2 miles SW of Uitri saar (59°32.4'N., 25°08.2'E.) and has depths of 19 to 38m, sand and clay. It provides shelter from winds from between ENE and S.
2. Anchorage Area K lies 1.5 miles S of Prangli Saar Light (59°36.9'N., 25°02.4'E.) and has depths of 22 to 60m, sand. It is for vessels carrying dangerous cargo.
3. Anchorage Area J and Anchorage Area M lie, respectively, 2.5 miles N and 1.5 miles NE of the grain pier. These areas have depths of 12 to 30m, sand and clay, and are situated on either side of the entrance range.
4. Anchorage Area I lies just E of Aegna Saar, centered on position 59°35.2'N, 24°49.0'E, with depths from 26 to 60m, sand, gravel, and mud. An obstruction best seen on the chart lies in the SW corner of this anchorage.
5. Anchorage Area L lies 1.5 miles E of Karbimadal, centered on position 59°32.5'N, 25°03.0'E, with depths of 45 to 60m, mud.

Directions.—Vessels from N may pass about 4 miles E of Keri Saar and then either E or W of Aksi Saar. An alternative route leads SE from the TSS lying in the approach to Tallinn. The harbor is then entered from the NE. A lighted range, which may best be seen on the chart, indicates the entrance channel leading to the harbor complex.

Karbimadal, an extensive rocky shoal, lies about 3.3 miles NNE of the front entrance range light and has a least depth of 1.8m. It is marked on the E side by Muuga Light and a lighted buoy. Vessels pass NE and SE of this shoal.

The VTS Ship Traffic Control Station may establish one-way traffic in the entrance channel with the passage of vessels of over 25,000 dwt, or in reduced visibility (see paragraph 1.9).

Caution.—It is reported that a container terminal is being constructed within the port.

Muuga to Sepelevskij

1.12 Ihasalu Nina (59°32'N., 25°09'E.), a headland, is located 7 miles ENE of Muuga and surmounted by a beacon and a tower.

Ihaslu Laht, a bay, is entered 2 miles SW of the headland, but is not suitable as an anchorage because it is deep and open to the NW. A below-water reef extends up to about 1.3 miles NW from the head of the bay.

Kaberneeme Laht (59°32'N., 25°14'E.) is entered between Ihasalu Nina and Rammu Saar, 2.8 miles NE. This bay is not suitable as an anchorage as it is also deep and open to the NW. A reef, with a least depth of 0.9m, extends about 1.7 miles NW from the head of the bay.

Rammu Saar is described with off-lying dangers in paragraph 1.3.

Koipsi Saar, lying 1 mile SE of Rammu Saar, is fairly high with a flat top. A settlement stands on its NE side. The island is separated from the mainland at Kaberneeme by a narrow channel.

Kolga Laht is entered between Rammu Saar and Juminda Nina, 9 miles ENE. Kuusalu church stands 2.8 miles S of the head of bay and is prominent. Valkla mill and several conspicuous buildings are situated on the high coast, about 3.8 miles NW of this church. Leesi church, also conspicuous over the tops of the trees, stands 2.5 miles S of Juminda Nina. A prominent beacon stands near a village at the head of the bay.

Juminda Nina, fronted by shoals, is a densely-wooded headland surmounted by several conspicuous gray structures and two framework towers. A light is shown from a round tower, 24m high, standing on this headland.

Pohjar Malusi, a low and rocky island, lies 6 miles WSW of the light near the middle of the entrance to the bay. An extensive area of islets, shoals, and rocks extends SE into the bay from this island and may best be seen on the chart. Pedasaar, a large islet, lies in the SW part of the bay and is connected to the head by a shallow sandy ridge. It is densely wooded and prominent from seaward. Vessels may anchor in the W part of the bay, but local knowledge is advised.

Hara Laht is entered between Juminda Nina and Purekkari Neem, about 5.5 miles E. This bay extends about 6 miles SSE between two peninsulas. Purekkara Neem is surmounted by a large rock and shoals, marked by a buoy at the seaward end, extend up to about 3 miles NNW of it.

The shores of this bay are mostly sandy and rocky, and the land is sparsely covered with pine woods. On the W side, a range of hills stretches the whole length of the peninsula and forms steep cliffs in places which are densely wooded. Several villages stand along the shores of the bay. At the head of the bay the land is low. Between Loksa, in the SE corner, and Odakivi, 3.5 miles N, the land is high, but it becomes low again further to the N. Hara Saar, lying close off the SW shore of this bay, is a densely wooded islet, 12m high, marked by a beacon.

Large vessels may anchor, in a depth of 40m, mud, about 0.7 miles NE of Hara Saar.

1.13 Loksa Sadam (59°35'N., 25°42'E.), a small harbor, is situated at the head of Hara Laht. It is reported that several prominent chimneys stand at a factory in the vicinity of the harbor.

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Juminda Nina Light

Depths—Limitations.—The harbor is protected by two breakwaters. Vessels up to 130m in length, 20m beam, and 4.2m draft can be accommodated. For more berthing information see the table titled **Loksa Sadam—Berth Information**.

Loksa Sadam—Berth Information

Berth	Length	Depth	Remarks
Loksa Terminal			
No. 1	84m	4.0m	General cargo and ro-ro.
No. 2	134m	4.6m	General cargo and ro-ro.
No. 3	120m	4.1m	General cargo and ro-ro.
No. 4	45m	3.7m	General cargo and ro-ro.

Pilotage.—Pilots are available and may be contacted by VHF. They board in position 59°40'N, 25°35'E. Vessels should send a request for pilotage and an ETA through the harbormaster or the Estonian Maritime Board Coordination Center at least 24 hours in advance.

Mohni Saar (59°41'N., 25°48'E.) is described with the off-lying dangers in paragraph 1.3.

Eru Laht is entered between Purekkari Neem, on the W side, and Mohni Saar. The W shore of the bay is wooded. The E

shore of the bay is formed by the Kamu peninsula, which is sandy, moderately high, and covered with tall pine trees. A prominent tower is reported to stand on the NW extremity of this peninsula. Foul ground and rocks extend NNW between the N end of the peninsula and Mohni Saar. The S shore of the bay is low and partly wooded. The village of Eru stands at the head of the bay. A beacon stands at Turbu Neem, about 4.3 miles SSE of Purekkari Neem. A river flows into the SW corner of the bay and is fronted by foul ground.

Anchorage may be obtained as convenient in the bay, but vessels usually anchor about 1.5 miles N of Eru at the head. Local knowledge is advised.

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Vergi Sadam Light

Kasmu Laht is entered between the NE extremity of the Kamu Peninsula and Lobineem, about 1.7 miles ENE. The shores of this bay are sandy, stony, and backed by trees. The S shore is low. The village of Ihumae, with a prominent white church, stands behind the trees on a steep hill, about 3 miles inland from the head of the bay.

Lobineem, surmounted by a tower, is rocky and, at some distance inland, covered with trees.

Anchorage may be obtained in any part of the bay in a convenient depth. Several dangerous wrecks are reported to lie in the vicinity of the entrance to this bay.

1.14 Vergi Sadam (59°36'N., 26°05'E.), a small fishing and pleasure craft harbor, lies about 5 miles SE of Lobineem. The coast between is fronted by foul ground. The N side of the harbor is protected by an islet connected to the mainland by a rocky reef. The E side is protected by a breakwater. A light is shown from a tower, 11m high, standing on the NE extremity of the islet.

The harbor has a least depth of 4m and is open to E winds. A dredged channel, about 75m wide, leads into the harbor and is indicated by lighted range. Local knowledge is advised.

Kalkgrund (Soemadal), an extensive shoal area, lies about 6.5 miles N of Vergi Sadam. It has a least depth of 0.5m and is marked by a buoy.

Vainupea (59°35'N., 26°16'E.) is located 5.2 miles E of Vergi Sadam. A light is shown from a framework tower, 20m high, standing on this cape. A white church, with a prominent red roof, stands close S of the light.

Snegi Madal, an extensive shoal area, lies about 6 miles N of Vainupea. It has a least depth of 2.6m and is marked buoys.

Pohja Uhtja, lying 6 miles E of Snegi Madal, is described with off-lying dangers in paragraph 1.4.

Toolse Neem, surmounted by the conspicuous ruins of a castle, is located 6.8 miles ESE of Vainupea. The coast between is formed in places by several white sand hills.

1.15 Kunda Laht (59°32'N., 26°32'E.) (World Port Index No. 28440) is entered between Toolse Neem and Ulluneeme, 3.5 miles ENE. This bay is sheltered from S and E winds. The E and S shores are low and covered with trees, meadows, and swamps. A limestone ridge rises steeply about 1 mile S of the head of the bay. The Kunda Jogi flows toward the bay through this ridge. Several cement works, with tall chimneys, stand on an area of high ground near the river bank, about 1.5 miles inland. A prominent mill is situated about 1.5 miles SE of the head of the bay.

Extensive reefs front the shores and for the most part are covered at HW. In the E part of the bay, the depths are more uniform and small vessels are able to approach within 0.8 mile of the shore.

Kunda—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Kunda Sadam Harbor							
No. 1	35m	8.4m	133.4m	7.1m	19.4m	10,106 dwt	Breakbulk.
No. 2	172m	9.4m	150m	8.6m	30.0m	12,000 dwt	Cement, breakbulk, and bunkers.

Kunda—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 3	34m	7.4m	35m	7.0m	15.0m	—	Cement, breakbulk, and bunkers. Auxiliary berth.
No. 4	103m	8.6m	131.8m	8.0m	30.0m	11,340 dwt	Chemicals, clean products, vegetable oils, cement, breakbulk, multipurpose, bunkers, and reefer.

Kunda Sadam, a small harbor, lies at the head of the bay. It consists of two piers and is used for the export of cement.

Depths—Limitations.—The entrance channel to the harbor is 70m wide and has a depth of 10.4m. It is indicated by a lighted range and marked by buoys.

Vessels up to 12,000 dwt, 150m in length, 30m beam, and 8.6m draft can be accommodated. For more berthing information see the table tittled **Kunda—Berth Information**.

Pilotage.—Pilotage is compulsory for all foreign vessels navigating through Tallin, Vainmameri, Parnu, and Sillamie. Pilots for Estonian ports as well as Deep Sea are provided by Esti Loots (Estonian Pilots). Pilots can be ordered via e-mail through an agent licensed to operate in Estonia. Request for deep sea pilots in the Baltic should be made 48 hours prior to arrival and confirmed 2 hours prior to arrival. Pilot requests should be made 24 hours in advance and confirmed 6 hours and 2 hours prior to pilot station arrival. Departing vessels must request pilots 4 hours and 1 hour prior to ETD. Vessels shifting positions within a port should have a pilot aboard.

Pilots board in position 59°38.0'N, 26°29.5'E, within Kunda Bay and in position 59°27.0'N, 27°55.0'E and position 9°29.0'N, 27°42.0'E, within Narva Bay.

Contact Information.—See table titled **Kunda—Contact Information**.

Kunda—Contact Information	
Port	
Call sign	Kunda Port
VHF	VHF channels 14 and 16
Telephone	372-322-9955
Facsimile	372-322-1463
E-mail	port.kunda@knc.ee
Web site	http://www.knc.ee
Harbormaster	
Telephone	372-322-9861
	372-534-77861 (mobile)
Pilots	
Call sign	Kunda Pilots
VHF	VHF channels 14 and 16
Telephone	372-506-0801
Facsimile	372-322-1940

Anchorage.—Vessels may anchor, in depths of 12 to 14m, sand, midway between the spar buoys marking the foul ground on either side of the entrance channel.

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Kunda Sadam

It is reported that a designated anchorage area lies about 4 miles N of the port, centered in position 59°34'N, 26°32'E.

Letipea Neem (59°33'N., 26°37'E.), fronted by foul ground, is located 1 mile NE of Ulluneeme, the E entrance point of Kunda Laht. Letipea Light is shown from a prominent tower, 14m high, standing on this cape.

Diomidi Madal, an extensive shoal area, lies centered 7.5 miles NE of Letipea Neem and has a least depth of 4.6m.

Neugrund, an extensive group of shallow rocks and shoals, lies 24 miles NE of Letipea Neem and is marked by buoys on the N, S, and W sides, and by a lighted buoy at the E side.

1.16 Narva Laht (59°33'N., 27°30'E.), also known as Narvskiy Zaliv, lies between Letipea Neem and Mys Kurgal'skiy, about 47 miles ENE. The coast of this bay is mainly sandy and backed by cliffs, decreasing in height to the E; the plateau surmounting the cliffs is covered with pastureland and villages, with small woodlands in places. The shore is fronted by shoals and foul ground in many places.

A small craft harbor, protected by a breakwater, lies at Mahu, 4 miles ESE of Letipea Neem, and has a depth of 3m.

A cement factory, with several tall and conspicuous chimneys, is situated at Aseri, about 9.5 miles SE of Letipea Neem. A prominent church stands about 4 miles W of Aseri.

Moldova (59°26'N., 27°03'E.) is situated 6 miles ESE of Aseri. A light is shown from a prominent framework tower, 28m high, standing near this town. Two prominent windmills are situated on a hill at Valaste, 15 miles E of Aseri.

A conspicuous windmill is situated at Toila, 20 miles E of

Aseri. The cliffs in the vicinity of Toila are very steep in places.

Sillamae, a resort, stands on the high sandy coast, about 8 miles E of Toila. Merikula, another resort, is situated in a wooded area, 6.5 miles E of Sillamae. The Sinimaed Hills, partly wooded and 90m high, extend between these two resorts. They stand about 1.5 miles inland and are conspicuous from seaward.

Caution.—Several dangerous wrecks, which may best be seen on the chart, lie in the SE part of Narva Laht.

Extensive areas of foul ground and shoals extend up to 16 miles W and 15 miles N of the peninsula forming the E side of Narva Laht. Banka Namsi (59°46'N., 27°35'E.) is the outermost danger on the W side. This bank has a least depth of 1.4m and is marked by buoys on its N, S, and W sides, and by a lighted buoy on its E side. For additional dangers lying in the approach Narva Laht, see paragraph 1.4 and paragraph 1.15.

A precautionary area, with a radius of 3 miles, lies centered about 4.5 miles NE of Sillamae and may best be seen on the chart. This area has been established due to the presence of a sunken mine.

1.17 Sillamae (59°24'N., 27°45'E.), the commercial port of Sillamae, has been established on the S coast of Narva Laht, about 1 mile NNW of the town. It is reported to be under continuing development.

Ice.—The port is generally free of ice all year round but ice-breaking assistance is available if required.

Depths—Limitations.—The harbor consists of an L-shaped jetty extending about 0.6 mile N from the shore. A finger pier extends 0.2 mile N from the knuckle of the jetty. Lights are shown from the heads of the jetty and the pier.

There is quayage which provides six main commercial berths. Facilities for general cargo, ro-ro, oil, LPG, and container vessels are under construction.

Vessels up to 162,397 dwt, 280.5m in length, 53m beam, and 15m draft can be accommodated. For more berthing information see the table titled **Sillamae—Berth Information.**

Sillamae—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Silsteve Terminal							
No. 5	191m	12.0m	189.9m	10.6m	30.0m	39,046 dwt	Ro-ro/lo-lo, fertilizer, grain, mineral ore, others, scrap metal, wood chips, container, project/heavy, breakbulk, and steel products. Berth visited by bulk carriers and used as a lay-by for tankers. 24,940 gt. 959 teu.
No. 6	122m	10.0m	145.6m	9.2m	25.0m	19,101 dwt	Fertilizer, grain, mineral ore, others, scrap metal, wood chips container, project/heavy cargo, breakbulk, and steel products. Berth visited by bulk carriers. Used as lay-by for tankers. 11,674 gt. 673 teu.
No. 11	175m	12.0m	204.9m	11.4m	32.2m	43,475 dwt	Ro-ro/lo-lo, LPG, project/heavy, breakbulk, multipurpose, and reefer. 36,459 gt. Gas capacity: 59,050m^3.
Sillamae Container Terminal							
No. 12	186m	12.5-15.5m	200m	11.2m	35.2m	62,647 dwt	Containers, project/heavy cargo, and breakbulk. Continuous berthing length of 825m. 34,882 to 44,343 gt. 336 to 3,600 teu.
No. 13	275m	12.5-15.5m	299m	14.6m	35.2m	81,800 dwt	
No. 14	275m	12.5-15.5m	299m	14.1m	32.2m	82,042 dwt	
No. 15	100m	12.5-15.5m	225m	13.3m	32.2m	77,747 dwt	
Alexela Sillamae Terminal							
No. 1	319m	16.0m	280.5m	15m.0	53.0m	162,397 dwt	Petroleum product and bunkers.
No. 2	319m	16.0m	242.4m	15.0m	44.0m	111,930 dwt	Petroleum product and bunkers.
No. 4	200m	12.0m	199.9m	6.7m	32.2m	61,400 dwt	Petroleum product. On occasion can be used as a lay-by for carriers.
Baltic Chemical Terminal							
No. 9	260m	13.0m	204.9m	12.4m	40.0m	65,065 dwt	Chemical gases and LPG. Deal with liquefied ammonia and liquid chemical goods (mainly UAN). Gas capacity: 59,058 m^3.

Sillamae—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 10	175m	12.0m	185.6m	10.5m	32.2m	47,122 dwt	Chemical gases. Deal with liquefied ammonia and liquid chemical goods (mainly UAN). 34,577 m^3..
Sillamae Tug Terminal							
Tug No. 1	25m	6.5m	—	4.0m	—	—	Berth used by tugs.
Tug No. 2	30m	6.5m	—	4.0m	—	—	
Tug No. 3	25m	6.5m	—	4.0m	—	—	

Sillamae (Silport)

Pilotage.—Pilotage is compulsory for all foreign commercial vessels. Vessels should send an ETA and a request for pilotage via their agent 24 hours in advance. The ETA should be confirmed 6 hours and 2 hours prior to arrival.

Pilotage.—Pilots board 0.6 mile N the outer fairway buoy, which is moored about 3.5 miles NW of the harbor.

Regulations.—Vessels should then contact the port on VHF channel 68 in order to receive permission to enter the harbor.

Contact Information.—The port can be contacted by e-mail (slport@silport.ee).

Caution.—Extensive construction is being carried out in the vicinity of the harbor. Numerous wrecks, best seen on the chart, lie within the approaches to the harbor.

1.18 Narva Joesuu (59°28'N., 28°03'E.), a small commercial and fishing harbor, is situated on the SW side of the entrance of the Narva Jogi River, in the SE corner of Narva Laht. The boundary between Estonia and Russia is situated in the vicinity of the Narva Jogi River.

Ice.—The approaches are usually free of ice from the middle of April until the beginning of November.

Depths—Limitations.—The river mouth is narrow and fronted by a bar. A dredged channel through the bar has a depth of 4.3m. The river becomes wider inside the mouth and is navigable as far as the town of Narva, 7.5 miles SE. Ocean-going vessels cannot ascend the river above the town because of a waterfall.

The harbor is well-sheltered from all winds, but access is impossible during gales. There is 260m of berthage, with depths of 3-9m alongside.

Aspect.—Narva Light is shown from a round tower, 30m high, standing on the S side of the entrance. From the vicinity of Fairway Buoy (59°28.7'N., 28°01.1'E.), the approach track leads 0.8 mile ESE toward the coast, about 0.3 mile NNW of

the entrance. A range, formed by beacon marks, then leads in a SSE direction into the river entrance. The old town, on the W bank of the river, is of medieval appearance and surrounded by fortified walls and towers.

Pilotage.—Pilotage is compulsory. The pilot station is situated close to the light tower. Pilots usually board vessels about 4 miles WSW of Narva Light.

Anchorage.—Vessels may anchor, in depths of 18 to 20m, about 2.8 miles WNW of the light. The anchorage is open to N and W winds, which on occasion will raise a heavy sea; however, the holding ground is good. Small vessels may anchor, in a depth of 15m, about 1.5 miles NW of the light.

Caution.—A disused spoil area, the limits of which are shown on the chart, lies centered about 2.5 miles NNW of the mouth of the Narva Jogi River.

1.19 Mys Kurgal'skiy (59°47'N., 28°06'E.), the E entrance point of Narva Laht, forms the NW extremity of the Kurgal'skiy Peninsula.

A small craft harbor, with depths of 3 to 4m, is situated at Gakkovo, 11.3 miles N of Narva Joesuu. The approach channel is indicated by a lighted range. Ostrov Reymosaar lies about 1 mile off the coast near this harbor.

A light is shown from a framework tower, 37m high, standing at Kaybolova, 5 miles N of Gakkovo. A radiobeacon is situated at this light. The coast between is fronted by foul ground, rocks, and islets, which may best be seen on the chart.

Caution.—A restricted area, the limits of which are shown on the chart, extends up to 5.5 miles N from the N end of the Kurgal'skiy Peninsula.

Extensive areas of foul ground and shoals, which may best be seen on the chart, extend up to 16 miles W and 15 miles N of the Kurgal'skiy Peninsula.

1.20 Luzhskaya Guba (Luzskaja Guba) (59°44'N., 28°19'E.), at the head of which is the mouth of Ust'-Luga, is entered between Mys Kurgal'skiy and Kolganpja, 14 miles ENE.

A lighted range, which may best be seen on the chart, is situated on Kolganpja and indicates the approach from the N. The front light is shown from a framework tower, 42m high, standing at an elevation of about 180m at Gorki, 3 miles SW of Kolganpja (59°43.9'N., 28°26.8'E.); the rear light (similar construction at 67m in height) is about 0.5 mile SE of front light. At the farm of Repino, about 2.5 miles SSW of Kolganpja, there is a prominent stone windmill.

The W shore of this bay is densely wooded; along the whole length of the E shore are Soykina Gora, which from NW and NE appear as two separate ridges, the southernmost one being generally about 90m high.

A harbor, known as Ruch'i (Ruc'i), lies at the E side of the bay, about 2 miles SW of Gorki Light. There were extensive facilities for servicing naval vessels here, but it is reported that the harbor, for the most part, is in a state of disrepair and has been abandoned.

Reka Vyb'ya enters the SW corner of Luzhskaya Guba, and about 1.8 miles E is the mouth of Reka Luga. Sandhills rise between the mouths of these two rivers.

Vessels may anchor within Luzhskaya Guba, in depths of 7 to 18m. Winds from between N and W raise a heavy sea throughout the bay.

Caution.—The bay and its approaches are encumbered by extensive shallow shoals which may best be seen on the chart. These shoals extend up to about 6 miles seaward of the entrance to the bay and are marked by lighted buoys and beacons.

Two areas dangerous to navigation are centered on (59°44.3'N., 28°22.8'E.) and (59°43.9'N., 28°23.1'E.) with a danger circle of 0.1 mile radius. The latter one, close W of the Luzhskiy Maritime Channel, is marked with a buoy moored 0.1mile E.

1.21 Ust-Luga (Reka Luga) (59°40'N., 28°19'E.) (World Port Index No. 28410) is a major port area located on the S and E shores of Luzhskaya Guba. This growing port covers three distinct areas:

1. The first area lies within the mouth of the Luga river, which forms a natural harbor available to small vessels, A timber terminal is located here. A settlement is situated close E of the mouth of the river. There is a red church with a prominent green roof.
2. The second area is located E of the river mouth and provides extensive deep water commercial berthing. Separate coal, oil and LNG terminals are located here.
3. About midway up the E side of Luzhskaya Gubu, just N of the old naval base at Ruch'i, lies a new harbor where the Novaya Gavan Terminal is located.

Ice.—The harbor is usually frozen over from January until the middle of April.

Depths—Limitations.—The river mouth is fronted by a bar across which a channel, dredged to a depth of 4.7m, extends as far as a sawmill about 2 miles inside the entrance. The channel, which is indicated by a lighted range and buoys, has a width of only 40m in places.

Vessels up to 177,897 dwt, 291.9m in length, 50m beam, and 15.5m draft can be handled. Vessels having the maximum draft must use tugs. The use of tugs for vessels with drafts of less than 4.4m is left to the discretion of the pilot.

The main commercial port at Ust'-Luga is capable of handling vessels up to 120,000 dwt. An entrance channel, 2.7 miles long, leads to the port. It is 150m wide and has a least dredged depth of 14m. Berthing details are given in the table titled **Ust-Luga (Reka Luga)—Berth Information**.

Pilotage.—Pilotage is compulsory for all vessels and is available at any time.

Requests for pilotage must be sent to the Pilot Service Controller at least 24 hours in advance and confirmed 1 hour before approaching the Port VTS boundary or the pilot boarding position.

Vessels intending to depart from the port or to carry out operations within the port must request pilotage at least 3 hours in advance.

Pilots board in the following positions:

1. Eastern area of the port—At Lighted Buoy No. 1 (59°56.4'N 28°34.6'E).
2. Western area of the port—In position 59°42.5'N, 28°17.4'E.

Vessel Traffic Service.—Ust'-Luga (Reka Luga) Vessel Traffic Service (VTS) operates in an area as defined below:

1. The port of Ust'-Luga water area and its approaches.
2. Luzhskiy Fairway No. 19, S of latitude 59°59.17'N.

3. Zapandyy Luzhskiy Fairway No. 21, S of latitude 60°02.31'N (Lighted buoy No. 1).
4. Recommended track No. 22, S of latitude 59°49.69'N (lighted buoy No 3).
5. Luzhskiy Maritime Channel Fairway, S of latitude 59°44.55'N (line between Lighted Buoy No. 1 and Lighted Buoy No. 2).
6. Recommended track S of latitude 59°43.4'N (line between Lighted Buoy No. 1 and Lighted Buoy No. 2 of Luzhskiy Maritime Channel Fairway).
7. Northern Approach Channel S of latitude 59°44.9'N (line between Lighted Buoy No. 1 and Lighted Buoy No. 2 of Luzhskiy Maritime Channel Fairway).
8. Anchorage Areas No. 10a, No. 11, and No. 12.

For further information on the requirements of St. Petersburg Coastal VTS, see paragraph 3.1.

Contact Information.—See the table titled **Ust'-Luga—Contact Information**.

Anchorage.—There are several charted anchorage areas located in the vicinity of Ust'-Luga, which are described as follows:

1. Anchorage Area 10A is located 4.8 miles NE of Mys Kolganpya, and more than 7 miles NE of the main port area of Ust'-Luga. An obstruction lies within the SW part this anchorage area in position 59°54.5'N, 28°36.5'E.
2. Anchorage Area 11 lies approximately 1 mile due W of the Novaya Gavan Terminal and is the closest anchorage area to Ust'-Luga.
3. Anchorage Area 12 lies close to the NW shore of Luzhskaya Guba, centered on position 59°46.6'N, 28°13.3'E, but the anchorage area is reserved exclusively for Russian naval vessels.

Caution.—It is reported that several new cargo terminals are under construction in the vicinity of the harbor.

Ust-Luga (Reka Luga)—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			Length	Draft	Beam	Size	
Auto Rail Ferry Terminal							
ARFT (West)	200m	9.5m	189.7m	—	21.6m	10,140 dwt	Rail, breakbulk, and bunkers. 20,729 gt.
ARFT (East)	210m	9.5m	187.3m	—	23.2m	9,958 dwt	Ro-ro passenger/vehicles/breakbulk, and bunkers. 20,126 gt.
Coal Terminal							
East	282m	16.0m	260.5m	—	43.0m	121,624 dwt	Continuous berthing length: 565m. Coal, breakbulk, and bunkers. Capacity: 12.4m/t/year. Rail link. 66,291GT.
West	282m	16.0m	260.5m	—	43.0m	121,624 dwt	
Fertilizer Terminal							
Fertilizer	—	—	—	—	—	70,000 dwt	Under construction (2022). Continuous berthing length: 980m. Fertilizer, phosphates, and breakbulk.
Lugaport Universal Trading Terminal							
No. 1	304m	17.5m	—	15.5m	—	—	Under construction. Iron ore and breakbulk.
No. 2	284m	17.5m	—	15.5m	—	—	Under construction. Iron ore and breakbulk.
No. 3	284m	17.5m	—	15.5m	—	—	Under construction. Iron ore and breakbulk.
No. 4	284m	17.5m	—	15.5m	—	—	Under construction. Grain and breakbulk.
No. 5	305m	17.5m	—	15.5m	—	—	Under construction. Grain and breakbulk.
Metallurgical Terminal							
Metallurgical	—	—	229.5m	—	38.0m	93,225 dwt	Steel products, others, breakbulk, and bunkers. Under construction (2022). Continuous berthing length of 980m. 51,265 gt.

Ust-Luga (Reka Luga)—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			Length	Draft	Beam	Size	
Novaya Gavan Terminal							
Ro-Ro	265m	12.0m	166.1m	—	22.9m	19,324 dwt	Ro-pax, project/heavy, breakbulk, and bunkers. 15,549 gt.
Sulphur Terminal							
No. 5	265m	16.0m	229m	—	32.2m	83,611 dwt	Continuous berthing length of 500m. Fertilizer, dry bulk sulfur products, breakbulk, and bunkers. 44,485 gt.
No. 6	235m	16.0m	229m	—	32.2m	83,611 dwt	
Timber Terminal Factor							
No. 3	81m	6.5m	128.2m	—	16.5m	6,582 dwt	Grain, others, wood chips, containers, breakbulk, and bunkers. Rail link. 5,313 gt and 356 teu.
No. 5	116m	6.5m	128.2m	—	16.5m	6,665 dwt	Grain, others, wood chips, containers, breakbulk, and bunkers. Rail link. 5,232 gt and 336 teu.
No. 7	118m	2.0m	—	—	—	—	Breakbulk. Closed. Rail link.
Ultramar Terminal							
Fertilizer No. 1	325m	17.2m	229m	15.0m	32.2m	81,700 dwt	Fertilizer, iron ore, transshipment, breakbulk, HBI, pellets, and bunkers.
Fertilizer No. 2	280m	17.2m	199.9m	14.5m	32.2m	61,288 dwt	Fertilizer, iron ore, breakbulk, HBI, pellets, and bunkers. Can be used as a lay by for tugs. At Fertilizer Berth No. 2 and Berth No. 3 it is possible to load two vessels simultaneously, two panamax size vessel, and moor four coastal vessel simultaneously
Fertilizer No. 3	270m	17.2m	189.9m	14.5m	32.2m	55,638 dwt	
Universal Transloading Terminal							
No. 3 (West)	255m	14.0m	255.2m	—	43.0m	115,000 dwt	Coal, breakbulk, and bunkers. Rail link. 64,123 gt.
No. 4 (North)	330m	16.0m	291.9m	14.0m	45.0m	177,897 dwt	Coal, breakbulk, bunkers. Rail link. 91,758 gt.
Ust-Luga Container Terminal							
No. 1	220m	13.5m	229m	12.1m	35.2m	83,027 dwt	Coal, containers, breakbulk, reefer, and bunkers. Continuous berthing length of 440m. Rail link. 44,218 gt and 3,600 teu.
No. 2	220m	13.5m	229m	12.1m	35.2m	83,027 dwt	
Yug 2 Transhipment Terminal							
No. 23	451m	12.8m	260.3m	11.1m	43.0m	121,332 dwt	Coal, ro-ro/lo-lo, fertilizer, containers, project/heavy cargo, breakbulk, livestock, and bunkers. Continuous berthing length of 903m. Rail link. 65,976 gt and 970 to 1,923 teu.
No. 24	451m	12.8m	260.5m	11.1m	43.0m	121,408 dwt	
Ust-Luga Complex							
No. 6	267m	—	256m	—	46.0m	122,018 dwt	Aviation fuel, petroleum products, and condensate.Continuous berthing length of 535m. Displacement: 141,934t.
No. 7	268m	—	255.9m	—	45.0m	119,456 dwt	

Ust-Luga (Reka Luga)—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			Length	Draft	Beam	Size	
Ust-Luga Oil Terminal							
No. 1	—	17.5m	274.4m	—	49.9m	163,292 dwt	Petroleum products and chemicals. Continuous berthing length of 1,676m. Displacement: 189,283t.
No. 2	—	17.5m	285.4m	—	50.0m	166,468 dwt	
No. 3	—	17.5m	277m	—	50.0m	163,292 dwt	
Reloading Liquefied Hydrocarbon Gases							
No. 59	60m	—	159.9m	—	25.6m	22,911 dwt	Chemicals, clean products, LPG. Berthing length of 191m (including dolphins). Gas capacity: 22,149 m^3. Displacement: 33,301t.
No. 60	73m	—	199.5m	—	32.2m	53,688 dwt	Chemicals, clean products, LPG. Berthing length of 218m (including dolphins). Gas capacity: 22,149 m^3. Displacement: 64,306t.
Oil Transshipment Terminal							
No. 4	—	17.5m	275m	—	50.0m	166,092 dwt	Petroleum products and chemicals. Continuous berthing length of 1,676m. Displacement: 192,935t and 184,134 gt. Very heavy FO handled.
No. 5	—	17.5m	276m	—	50.0m	163,220 dwt	

Ust'-Luga—Contact Information	
Port Authority	
Telephone	78-901-375-1162 (0830-1700)
Facsimile	78-812-493-4987
E-mail	hbmasteruluga@pasp.ru
Web site	https://www.pasp.ru
Port Controller	
Call sign	Ust'-Luga Radio 5
VHF	VHF channels 14 and 16
Telephone	78-921-3489319 (mobile—24 hours)
State Port Control Inspection	
Call sign	Ust'-Luga Radio 5
VHF	VHF channels 4, 10, and 16
Telephone	78-901-3152095 (0830-2030)
E-mail	portcontroluluga@pasp.ru
Container Terminal	
Telephone	78-812-454-0707
Facsimile	78-812-335-7711
E-mail	info@ulct.ru
Web site	http://www.ulct.ru
Pilots	
Call sign	Ust'-Luga Pilot

Ust'-Luga—Contact Information	
VHF	VHF channel 16
Telephone	78-812-449-2598 (24 hours)
	78-921-947-1282 (mobile)
Facsimile	78-813-759-1047
E-mail	pilot@ulg.rosmorport.ru
Vessel Traffic Service	
Call sign	Ust'-Luga Traffic
VHF	VHF channels 16, 69, and 86
MMSI	002734468
Telephone	78-921-945-1436 (mobile—24 hours)
	78-813-754-6502 (0900-1700)
Facsimile	78-813-754-6501
E-mail	traffic@ulg.rosmorport.ru

1.22 Mys Ustinskiy (59°55'N., 28°59'E.), fronted by foul ground and dangerous wrecks, is located 14 miles ENE of Kolganpja. A light is shown from a framework tower, 29m high, standing on this point.

Koporskaya Guba lies between the two points and derives its name from Koporskiy Castle, now in ruins but still prominent, standing on a hill about 12 miles S of Mys Ustinskiy. A church, with a green dome and spires, is situated within the ruins of the castle; another church, with a green dome, stands close SE. The land to the N of the castle is wooded, while meadows extend to the S.

By Aviateur - (http://fleetphoto.ru/photo/120972/) [CC BY-SA 4.0 (https://creativecommins.org/licenses/by-sa/4.0)], via Wikimedia Commons

Ust-Luga (Reka Luga)

A tall white chimney stands at Sista Palkino, on the SE shore of the bay, 6.5 miles S of Mys Ustinskiy.

The former Dibicha Palace is situated about 4.8 miles SE of Kolganpja. It is a prominent white stone building with a small tower.

Koporskaya Guba is open to N winds and, at times, SW winds raise a choppy sea. The shores of the bay are low, rocky, and covered with trees interspersed with meadows and marshy ground. There are no harbors in the bay but shelter is available.

During offshore winds, anchorage may be obtained, in depths of 11 to 18m, within the S part of the bay and in 23 to 31m, mud and sand, in the N part.

Caution.—Foul ground and shoal patches extend up to 2 miles from the shores of the bay and may best be seen on the chart.

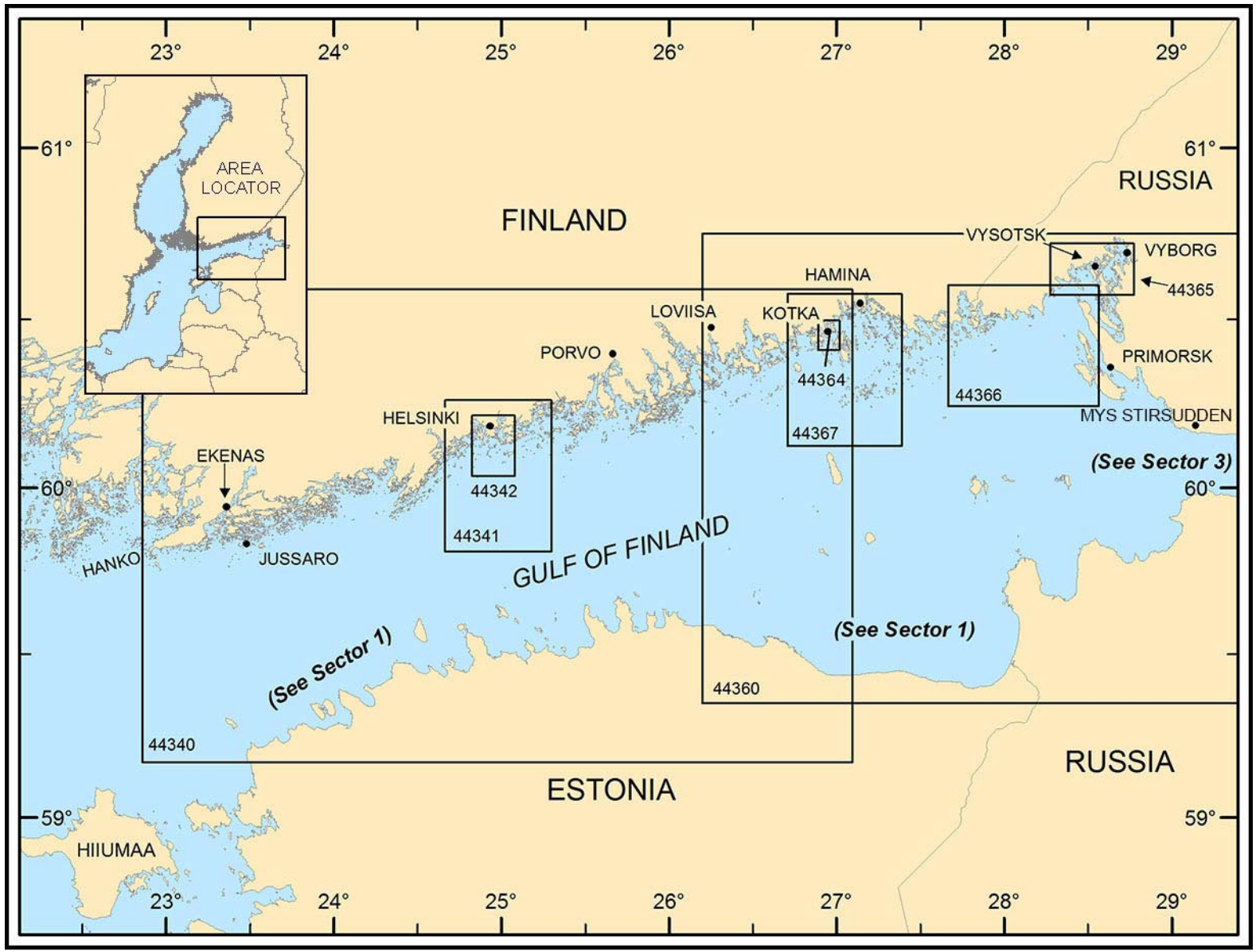
The W limit of the Kronshtadt Fortified Zone lies at the E side of Koporskiy Guba and may best be seen on the chart.

1.23 Sepelevskij (Shepelevskiy) (59°59'N., 29°08'E.), fronted by foul ground and wrecks, is located 6 miles NE of Mys Ustinskiy. Sepelevskij Light is shown from a prominent stone tower, 36m high, standing on this point, at the N end of the Karavalday Peninsula. A taller conspicuous communications tower is situated close to the light.

Mys Osinovyy, surmounted by a beacon, is located 2.5 miles SW of the light.

Banka Demanstey, an extensive shoal, lies centered 11 miles W of the light. It has a least depth of 4m and is marked by buoys.

The waters lying E of Sepelevskij are described in Sector 3.



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

SECTOR **2** — CHART INFORMATION

SECTOR 2

THE GULF OF FINLAND—NORTHERN SHORE—HANKO TO ST. PETERSBURG GUBA

Plan.—This sector describes the N shore of the Gulf of Finland from the cape of Hanko to Mys Stirsudden, the N entrance point of St. Petersburg Guba. The descriptive sequence is W to E.

General Remarks

2.1 Winds—Weather.—Fog is frequent in the vicinity of Hanko, particularly during April. During the period of ice thaw, thick patches of fog have also been reported along the inner routes as far E as Orrengrund.

Ice.—See General Remarks in paragraph 1.1.

For information pertaining to winter navigation, ice, and Finnish icebreaking services, including internet web sites, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Aspect.—Suomen Lahti is the Finnish name for the N shore of the Gulf of Finland. The Russians refer to it as Finskiy Zaliv. The coast is dominated by numerous inlets and fronted by islets, rocks, and shoals all of which extend many miles seaward in places. The coast is very rugged, but appears flat and monotonous. Elevation differences amount to no more than 10 to 20m. Dense forest characterizes the landscape. The E portion of the coast is not as extensively fronted with islets as the W part.

Natural landmarks hardly exist and are difficult to recognize from seaward. The coast and archipelago form poor radar images, but lights shown from many of the skerries along the sides of the approach passages make it possible to navigate safely. It is advisable to stay in the recommended passages and follow the designated Traffic Separation Schemes (TSS) and routes.

An inner passage (inshore route), authorized for drafts up to 5 or 6m, and a Winter Channel (coastal route), authorized for drafts up to 9m, lead through the off-lying dangers. Although both of these routes are well-defined by lighted ranges, local knowledge is advised.

Pilotage.—The IMO recommends that vessels constrained by their draft or vessels not registered in one of the Baltic states, and infrequently sailing the area, embark a deep-sea pilot. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for information on deep-sea pilotage.

All ordering of local pilots throughout Finland is carried out by the Finnpilot Order Center, Helsinki. For more information, see Pilotage in paragraph 2.11.

Regulations.—The Finnish authorities have instituted a system of restricted areas and semi-restricted areas throughout the whole of Finland's coastal waters. The limits of these areas may best be seen on the chart. Vessels are permitted to transit these areas only through the approved channels and with a pilot aboard.

Vessels are permitted to anchor within a restricted area only at specially designated anchorages for a duration of 48 hours or less.

See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for regulations pertaining to vessels within the waters of Finland and Russia. Vessels should also consult the pilot as well as the local authorities for details on local regulations.

Numerous nature reserve areas lie in the waters described within this sector and are affected by many prohibitions and rules. The majority of these areas are situated clear of the recommended routes.

The sea areas in the Gulf of Finland are monitored jointly by Finland, Estonia, and the Russian Federation. GOFREP is the mandatory ship reporting system established in the Gulf of Finland and its approaches.

For further information concerning GOFREP, see paragraph 1.1 in this publication and the Finland section in Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas. Additional information can be found in the Master's Guide provided on the VTS Finland website.

FinTraffic VTS—Master's Guide
https://www.fintraffic.fi/en/vts/masters-guide

Vessel Traffic Service.—Vessel Traffic Services are in effect in Helsinki (paragraph 2.11), Kotka (paragraph 2.18), Vyborg/Vostok (paragraph 2.27), and Primorsk (paragraph 2.30).

Vessels bound for Vyborg/Vostok and Primorsk also transit the coverage area of St. Petersburg Coastal VTS (paragraph 3.1).

English was adopted (2019) as the primary communication language in the VTS areas along the Finnish coast.

Information Service.—Providing information to vessels in the VTS area when they report, at set intervals, whenever necessary or when a vessel so requests. The reports include information about all vessel traffic services as provided in section 5 of the Finnish Vessel Traffic Service Act. The VTS Authority provides vessels with information on the following items of interest:

1. Other vessels in the VTS area.
2. Changes in matters concerning the VTS areas and traffic within it.
3. Meteorological and hydrological information.
4. Operation of pilots and ice breakers.
5. Condition and availability of fairways and status of aids to navigation.
6. Any danger threatening a vessel.
7. Other matters affecting the safety of vessel traffic.

Directions.—Several IMO-adopted Traffic Separation Schemes (TSS) form the main route through the Gulf of Finland. These include a TSS lying centered 20 miles SW of Russaro Light (59°46'N., 22°57'E.), a TSS lying centered 7.5 miles SSE of Porkkala Light (59°52'N., 24°18'E.), a TSS lying centered 8 miles SSE of Helsinki Light (59°57'N., 24°56'E.), and a TSS lying centered 6 miles SSE of Kalbadagrund Light (59°59'N., 25°36'E.). In addition, a large Precautionary Area

lies centered 12 miles SW of Helsinki Light. All of the above schemes and areas may best be seen on the appropriate charts.

For information concerning the Deep Water Route for loaded vessels outbound from Primorsk, see paragraph 2.30.

For information concerning the waters lying SW of the TSS centered 20 miles SW of Russaro Light (59°46'N., 22°57'E.) and the Deep Water Route leading through the E part of the Baltic Sea to the Gulf of Finland, see Sector 4 in Pub. 194, Sailing Directions (Enroute) Baltic Sea (Southern Part).

Caution.—Many sections of the inshore channels lying within the waters described in this sector are subject to speed restrictions.

During the winter, many buoys are removed while others may be damaged or break adrift.

Magnetic anomalies are reported to exist in several places within the Gulf of Finland and may best be seen on the chart.

In the coastal waters within this sector, numerous logs may be found adrift at all times of the year.

Areas dangerous due to mines laid during World War II exist within the Gulf of Finland. There is still a risk of danger in these areas when anchoring or carrying out seabed activities.

Due to various circumstances, including the discovery of obstructions, depths within the channels leading through the offshore dangers along this stretch of coast may change frequently. Therefore, vessels are advised to contact the local authorities in order to ascertain the latest information, including the maximum authorized drafts.

The Nord Stream 2 submarine gas pipeline is being constructed between Russia and Germany. This pipeline will extend in a WSW direction through the Gulf of Finland from the vicinity of Bukhta Portovaya (60°31'N., 28°05'E.) and then lead in a SSW direction to pass E of Faro (57°57'N., 19°10'E.).

Hanko to Helsinki

2.2 Hankoniemi (59°49'N., 22°54'E.), the peninsula extending SW from the mainland, is the N entrance point of the Gulf of Finland. It is bare, rocky, and rises to a height of 14m. The S side of this peninsula is fronted by numerous islands, rocks, and islets, between which lie deep passages.

The 40m curve lies up to 12 miles offshore in this vicinity. A rocky bank, with depths of less than 10m, extends up to about 8 miles S from the W extremity of the peninsula.

Russaro (59°46'N., 22°57'E.) is the largest of the islands lying S of Hankoniemi. It is formed of granite, partly covered by trees, and about 15m high. Foul ground fronts the island, except on its E side. Russaro Light is shown from a prominent tower, 21m high, standing at its S end of the island.

Lilla Tarnskar (59°45'N., 22°58'E.) lies about 1 mile SSE of Russaro Light and is the outermost of the islets lying in the S approach to Hankoniemi. A light is shown from a structure, 3m high, standing on this islet. A racon is situated at the light.

Georgsbank, with a least depth of 10m, lies 3.8 miles S of Lilla Tarnskar Light. It is marked by a buoy and is the outermost shoal in this vicinity.

Caution.—Due to the large number of dangers lying S and W of Hankoniemi, only the most prominent and outermost are described. Vessels are advised to keep strictly to the charted routes in the approaches. Navigation outside the recommended approach passages should only be attempted with local knowledge.

2.3 Hanko (Hango) (59°49'N., 22°57'E.) (World Port Index No. 28140) is kept open throughout the winter by the use of icebreakers. It is an important railway terminus and a popular resort during the summer.

Hanko Home Page
https://www.portofhanko.fi/en

Ice.—See General Remarks in paragraph 1.1.

Depths—Limitations.—Vessels are urged to contact the local authorities for the latest information on berths and depths at Hanko. The fairways leading to the port require local knowledge.

The main fairway channel, which is authorized for drafts up to 13m, approaches the port from the SE.

An inshore fairway, authorized for drafts up to 9m, leads from the pilot station at Uto (see paragraph 4.3). A route, authorized for drafts up to 7.3m, connects this 9m channel with Hanko Outer Harbor. An outer coastal passage, authorized for drafts up to 8.5m, and an inner coastal passage, authorized for drafts up to 5.5m, also lead from the E to the port.

Outer Harbor is situated close W of Tulliniemi, the SE extremity of the Hankoinemi peninsula. West Harbor is situated 2.5 miles E of Outer Harbor. Fishing Harbor lies close N of the entrance to West Harbor. East Harbor, consisting of an extensive yacht marina, is situated close E of West Harbor.

Outer Harbor provides 350m of quayage. A jetty, with two ro-ro ferry berths, extends from the NW side of the harbor.

West Harbor has 1,570m of total quayage, including three ro-ro berths.

Kune Oy Quay (Kuningattarenvuori) is situated on the SW side of the coast between East Harbor and West Harbor.

There are facilities for bulk, general cargo, container, ro-ro, and ferry vessels.Vessels up to 17,705 dwt, 250m in length and 13m draft can be accommodated in the harbor. For more berthing information see the table titled **Hanko—Berth Information**.

Hanko—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Outer Harbor							
OH 1	196m	10.5m	217.9m	7.3m	3.00m	17,611 dwt	PCC, container, breakbulk, bunkers, livestock. Low voltage electricity available 24/7. 42,424 gt and 643 teu.

Hanko—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
OH 2	170m	7.8m	171m	9.0m	25m	8,100 dwt	PCC, container, breakbulk, livestock. Berth may be used as a layby. Low voltage electricity available 24/7. 23,498 gt and 321 teu.
Tug Terminal							
Tug No. 1	56m	—	31.6m	5.0m	9.6m	—	Can berth numerous tug simultaneously. 324 gt.
Tug No. 2	25m	—	32.8m	4.9m	10.2m	125 dwt	356 gt.
Western Harbor							
Ro-Ro 1	245m	14.0m	250m	13m	34.0m	17,705 dwt	Ro-ro freight, containers, project/heavy cargo, steel products, bunkers, paper exports, car imports, containers, and breakbulk. Low voltage electricity available 24/7. 60,515 gt and 643 teu.
Ro-Ro 2	230m	10.1m	238m	8.4m	34.0m	17,705 dwt	
Ro-Ro 3	245m	10.1m	238m	8.3m	34.0m	17,611 dwt	Ro-ro freight, containers, project/heavy, steel products, bunkers, paper exports, car imports, containers, and breakbulk. Low voltage electricity available 24/7. 60,515 gt and 832 teu.
Ro-Ro 4	160m	10.1m	144.5m	—	—	12,692 dwt	Ro-ro freight, containers, project/heavy, steel products, bunkers, paper exports, car imports, containers, and breakbulk. Low voltage electricity available 24/7. 9,611 gt and 665 teu.
Ro-Ro 5	210m	8.6m	238m	—	34.0m	17,309 dwt	Ro-ro freight, containers, project/heavy, steel products, bunkers, paper exports, car imports, containers, and breakbulk. Low voltage electricity available 24/7. 60,515 gt and 68 teu.

Aspect.—The recommended routes and main channels leading to the port are indicated by lighted ranges and marked by buoys. Dangers lying adjacent to the fairways are marked by lights, beacons, or buoys.

Hanko 1 Lighted Beacon is situated 2.5 miles SE of Lilla Tarnskar Light and marks the outermost danger in the vicinity of the entrance to the main approach passage.

A water tower and a church, both conspicuous, stand in the S part of the town. On a N bearing, the church tower can not be identified due to the broad water tower situated directly behind it. A prominent multi-story white pilot station building stands on Tulliniemi, the SE extremity of the Hankoinemi peninsula.

Pilotage.—Hanko pilot station, situated on Tulliniemi, provides pilots for Koverhar, Tammisaari, and harbors in the Hanko-Turku region.

All ordering of local pilots throughout Finland is carried out by the Finnpilot Order Center, Helsinki. For more information, see Pilotage in paragraph 2.11.

Pilotage is compulsory. Pilot can be contacted by VHF on channel 16 and boards about 1.5 miles ENE of Russaro or, if required, about 4 miles WSW of Ajax Light.

Pilot boards in the following positions:

1. Hanko pilot boarding N—position 59°46.9'N, 23°00.3'E.
2. Hanko pilot boarding S—position 59°42.5'N, 23°05.8'E.
3. In bad weather, pilot boarding will be in Hanko Roads.

Hanko also provides pilotage for the Skuru area. The station is equipped with radar.

Vessel Traffic Service.—The Hanko VTS area covers the areas around Hankoniemi including the merchant shipping lanes in the area between Flackgrund and Jussaro, with the exception of the areas administered by the ports. The area is bounded by the following positions:

a. 59°55.0'N, 22°53.0'E.
b. 59°52.4'N, 22°50.2'E.
c. 59°40.5'N, 23°50.2'E.
d. 59°40.5'N, 23°22.3'E.
e. 59°42.0'N, 23°33.0'E.
f. 59°52.1'N, 23°33.0'E. (Flackgrund—Western Limit)
g. along latitude 59°40.5'N (Southern Limit)

Courtesy of Port of Hanko http://portofhanko.fi/en/medialle/

Hanko—West Harbor

See the graphic titled **Helsinki and Hanko VTS System** in paragraph 2.11 for reference.

The Hanko VTS provides traffic information, navigational assistance, and other information considered necessary for the safety of navigation.

All vessels of 24m loa and above are required to participate in Hanko VTS.

All vessels operating in the VTS area shall maintain a continuous listening watch on VHF channel 67.

All vessels must report to Hanko VTS on VHF channel 67 as follows:

1. Upon entering the VTS area.
2. Westbound vessels coming from the direction of Barosund must report 20 minutes before passing the Koverhar Channel (Nyberskan).

Note.—Westbound vessels must also report 20 minutes before passing Flachgrund to the Archipelago VTS on VHF channel 71.

3. Upon anchoring or berthing.
4. Before departure from a port or leaving anchorage.

All reports must contain the following information:

1. Vessel name.
2. Position
3. Destination.
4. Intended route and any change, or alternate route.

Vessels are required to notify Hanko VTS the following:

1. Any incident or accident affecting the vessel's safety.
2. Any incident or accident endangering the safety of navigation within the VTS area.
3. Any circumstance that may cause pollution of waters or the coast.
4. Any pollutant spills and containers or packages drifting in the sea.
5. If a vessel stops within the VTS area for any reason and when it resumes underway status.
6. Additional reports should be made in order to warn other vessels in the area.

Contact Information.—See the table titled **Hanko—Contact Information**.

Anchorage.—It is reported that a designated outer anchorage area, with depths of 20 to 30m, lies centered 5 miles S of Lilla Tarnskar Light and may best be seen on the chart.

Vessels may anchor, in depths of 29 to 31m, in a mud bottom, within the roadstead lying NW of Gustavsvarn. Gustavsvarn is an island located about 1 mile S of Hanko. Anchorage may also be taken 0.4 mile WSW of the entrance to West Harbor, in a depth of 29m.

Hanko—Contact Information	
Port	
VHF	VHF channels 12, 16, and 67

Hanko—Contact Information	
Telephone	358-10-235-5000 (Harbor Office)
	358-10-235-5013 (West Harbor and Outer Harbor)
	358-10-235-5018 (Koverhar)
E-mail	port@portofhanko.fi
	traffic@portofhanko.fi (West and Outer Harbors)
	koverhar.traffic@portofhanko.fi (Koverhar)
Web site	https://www.portofhanko.fi
Vessel Traffic Service	
Call sign	Hanko VTS
Telephone	358-20-448-5391 (Supervisor)
	358-20-448-5388 (Hanko VTS)
Facsimile	358-20-448-5380
E-mail	supervisors.hki@fintraffic.fi
	hanko.vts@fintraffic.fi
Web site	http://www.fintraffic.fi/en/masters-guide

Anchorage may be obtained at a loading place in Klamilanlahti, about 0.2 miles ESE of the head of the fishing harbor 60°30.4'N, 27°28.9'E, breakwater in a depth of about 5.5m.

Directions.—From the Traffic Separation Scheme (TSS) in the entrance of the Gulf of Finland, vessels should steer NNE for about 13 miles. They should pass ESE of Georgsbank and then approach the outer entrance of the main approach passage.

2.4 Tvarminneo (59°51'N., 23°14'E.), a peninsula, is located about 9 miles E of the port of Hanko. The coast between is quite rocky, indented by numerous inlets, and backed by wooded hills of moderate height. Numerous dangers, with irregular depths between them, extend up to about 6.5 miles seaward of the shore.

Two inshore fairway channels lead between these offshore dangers, about 1.5 miles off the coast. The outer fairway is authorized for drafts up to 9m and the inner fairway is authorized for drafts up to 5m. These channels are marked by lights, ranges, beacons, and buoys, but should not be used without local knowledge. Pilots for either of these channels may be obtained at Hanko.

Ajax Shoal (59°44'N., 23°13'E.), marked a by lighted beacon, is located on the NW side of the approaches to Tammisaari and is the outermost danger.

Segelskar (59°46'N., 23°23'E.), a rocky islet, lies in the outer approach, E of the main fairway. A conspicuous tower, 13m high, stands on this islet.

Langden (59°47'N., 23°15'E.), a small islet, lies on the NW side of the main fairway. Langden Light is shown from a tower standing on this islet. A racon is situated at the light.

2.5 Pohjanlahti (59°59'N., 23°27'E.), an inlet, extends NNE for about 8 miles from the vicinity of Tammisaari. A railroad swing bridge and a road lift bridge span the inlet at the N end of Tammisaari. The fjord forming the approach to this inlet is encumbered by numerous islands, islets, rocks, and shoals.

Langden Light

A main outer approach passage, about 9 miles in length, leads NNE from the Gulf of Finland to the entrance of this inlet. The fairway passes ESE of Ajax Shoal and Langden. It is authorized for drafts up to 12m as far as Syndalsholm (59°52'N., 23°15'E) and is indicated by lighted ranges. Local knowledge is required.

Lappohja (59°54'N., 23°16'E.), **Koverhar** (59°55'N., 23°19'E.), and **Skogby** (59°55'N., 23°19'E.), three small loading places, are situated within the approaches to Tammisaari.

Pilot boards in the following positions:

1. Hanko pilot boarding N—position 59°46.9'N, 23°00.3'E.
2. Hanko pilot boarding S—position 59°42.5'N, 23°05.8'E.
3. In bad weather, pilot boarding will be in Hanko Roads.

The channel leading from Syndalsholm to Koverhar is authorized for drafts up to 9m. There are two quays at Koverhar. The old quay is 250m long and the new quay is 120m long. Vessels up to 190m in length, 23m beam, and 9m draft can be handled. Two conspicuous chimneys and a tower stand in the vicinity of the harbor.

The channel leading from Syndalsholm to Lappohja is authorized for drafts up to 9.4m. The harbor provides several privately-owned piers.

Skogby provides a jetty, with a depth of 7m alongside, which can handle vessels up to 18,000 dwt and 165m in length.

It is reported that a new quay was under construction, but the harbor remains closed to commercial shipping.

2.6 Tammisaari (Ekenus) (59°59'N., 23°26'E.) (World Port Index No. 28170) is a small commercial and fishing port with two jetties. Navigating is generally possible between the end of April and the end of December.

The Tammisaari Archipelago fronts the mainland and extends up to about 6 miles offshore between the approach to Pohjanlahti and Hoggrund (59°55'N., 24°02'E.), which lies at the W entrance of Porkkalanselka.

Depths—Limitations.—The main channel leading from Syndalsholm (59°52'N., 23°15'E) is authorized for drafts up to 4.9m. An overhead cable, with a vertical clearance of 35m, spans the fjord about 0.4 mile SW of Odenso (59°56'N., 23°22'E). Vessels up to 6m draft can be accommodated in the harbor. The harbor contains two quays and a small craft basin. The main quay at Pohjankuru Skuru Terminal is 150m in length and can accommodate a vessels with a draft up to 6m. General cargo is handled at this quay.

Anchorage.—An anchorage lies about 3.5 miles SW of Tammisaari harbor. A waiting anchorage is established centered in position 59°40.5'N, 23°18.5E, in depths of 35-45m, for vessels approaching Tammisaari and Lappohja.

Caution.—The 40m curve lies 5 to 7 miles S of this archipelago; all dangers lie within this curve.

A fairway extends between Tammisaari and Porkkalanselka, leading S of the islands, and is authorized for drafts up to 5m. This fairway is intricate and, although well-marked with navigational aids, should not be attempted without local knowledge.

2.7 Jussaro (59°50'N., 23°34'E.) (World Port Index No. 28180), a rocky island, is covered with pine trees and is swampy in places. Its S extremity is marked by a cairn. A prominent disused light tower, 21m high, stands on the SE side of the island.

Lill Jussaro, a small island, lies close N of Jussaro and a sheltered harbor is formed between them. Range beacons indicate the entrance channel. Small vessels can anchor in the harbor in depths of 5.8 to 12m, mud. A jetty is situated at the W end of the harbor. An intricate passage, authorized for drafts up to 5m, leads from seaward to this harbor. Local knowledge is advised.

Sundharu (59°47'N., 23°33'E.), an islet, lies about 2 miles S of Jussaro. Jussaro Light is shown from a square tower, 24m high, standing on this islet.

Stengrund lies about 1.7 miles NE of the light. A fishing light is occasionally shown from a structure standing on this rock.

Vasterbadan (59°50'N., 23°47'E.) is a shoal with a depth of 3.7m. An above-water rock with the same name lies about 2.7 miles WNW of this shoal and is marked by a beacon. A rock, awash, lies about 0.8 mile ENE of the beacon.

2.8 Porkkalanselka (60°00'N., 24°10'E.), formerly known as Baro Sound, is an extensive bay encumbered with numerous islets and dangers. The entrance, about 10 miles wide, extends between Hoggrund (59°55'N., 24°02'E.) and the island of Makiluoto (59°55'N., 24°20'E.). The N shore of the bay is indented by

Jussaro Light

many small inlets. The W side is formed by the Tammisaari Archipelago, which extends up to 6 miles S from the coast. The E side is formed by a peninsula extending about 7 miles SSW from the coast and terminating in Porkkalanniemi.

The islets in the bay are mostly bare and rocky. The coast is low and wooded.

The port of Inkoo is situated in the NW part of the bay; Kantvik (Porrkala) lies in the NE part.

Porkkala Kallbadan Reef (59°52'N., 24°18'E.), an extensive rocky shoal area, lies 3.3 miles SSW of Makiluoto. Kalbadan Light is shown from a prominent tower on a dwelling, 20m high, standing on the NW side of this reef.

Haststen, a rock, lies about 3.7 miles W of the light and is marked by a beacon. A racon is situated at this beacon.

A main passage, authorized for drafts up to 13m, leads NNE from seaward, at the E side of the bay, to the pilot boarding place. It passes NW of Haststen and is indicated by a lighted range which may best be seen on the chart. A racon is situated at the front range light.

Another passage, authorized for drafts up to 7.9m, leads NNE from seaward and passes W of Porkkala Kallbadan Reef. It is indicated by a lighted range situated on islets lying close to Makiluoto.

There is also an inshore route, authorized for drafts up to 5m, for small vessels with local knowledge.

2.9 Inkoo (60°01'N., 23°58'E.) is the collective name given to the berthing areas situated around Fagervik, the northwestern-most inlet of the bay. The town of Inkoo, fronted by a marina, stands about 2.6 miles NE of these berths.

Inkoo—Berth Information

Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Beam	Size	
Inkoo Shipping Harbor Basin						
Quay 3 No. 1	—	7.8m	185.4m	25.3m	23,688 dwt	Breakbulk, steel products, and bunkers. Continuous berthing length of 229m. 5,335 to 25,335 gt.
Quay 3 No. 2	—	7.8m	119.2m	16.5m	7,120 dwt	
Quay 3 No. 3	—	7.8m	189.9m	30.0m	39,875 dwt	

Inkoo—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Beam	Size	
Quay 4 No. 4	—	7.8m	130.1m	18.2m	8,045 dwt	Continuous berthing length: 140m. Breakbulk, steel products, and bunkers. 1,385 to 5,313 gt.
Quay 4 No. 5	—	7.8m	115.4m	16.5m	6,405 dwt	
Inkoo Power Station						
No. 1	210m	10.0m	185.1m	26.4m	30,803 dwt	Continuous berthing length: 450m. Clean products, coal, breakbulk, multipurpose, and bunkers. Displacement: 39,439t. 19,814GT.
No. 2	240m	13.0m	229m	32.2m	80,959 dwt	Coal, breakbulk, and bunkers. Continuous berthing length of 450m. Coal, breakbulk, and bunkers. Displacement: 44,218t. Berth has been closed for dry cargo facilities. FSRU Exemplar now is operating; please see Floating LNG Terminal Finland for more details.
Floating LNG Terminal Finland (FLTF)						
FSRU Exemplar	—	—	—	—	—	LNG.
Inkoo Oil Terminal						
Tanker	19m	—	155.4m	23.7m	19,884 dwt	Berthing length: 225m (incl. dolphins). Clean products. Displacement: 27,104t.

Depths—Limitations.—The main approach channel is authorized for drafts up to 15.5m, as far as Sommargrundet (59°53.3'N., 24°13.3'E.) and then for a draft of 13m as far as the berths. The access fairway leading to the oil terminal is authorized for drafts up to 10m.

The IVO Quay, also known as the Power Plant Quay, has 240m of berthage. Vessels up to 80,959 dwt, 229m in length, and 32.2m beam can be accommodated.

Coal Harbour Basin provides two quays. The oil terminal consists of a T-shaped jetty. For more information see the table titled **Inkoo—Berthing Information**.

Aspect.—The intricate approach fairway is indicated by lighted ranges and marked by beacons. A conspicuous chimney, 152m high, stands at the power station.

Pilotage.—See Pilotage in paragraph 2.11.

2.10 Kantvik (Porkkala) (60°05'N., 24°23'E.) (World Port Index No. 28185), situated at the NE end of the bay, is the site of a sugar refinery.

Depths—Limitations.—The main approach channel is initially authorized for drafts as deep as 12m as far as Adgrundskobben (59°5.7'N., 24°16.8'E.), then 11.5m as far as Svino (60°04'N., 24°21'E.), and then 10.2m as far as Stora Tallholmen (60°04.6'N., 24°20.9'E.). The fairway leading N to the berths is authorized for drafts up to 9.2m.

For berthing information see the table titled **Kantvik—(Porkkala) Berth Information**. Vessels up to 9.2m draft can be accommodated in the harbor.

Pilotage.—See Pilotage in paragraph 2.11.

Caution.—The main channel is subject to silting and the local authorities should be contacted for the latest information concerning minimum depths.

Several submarine cables and pipelines extend across the fairways in the approaches to the harbor.

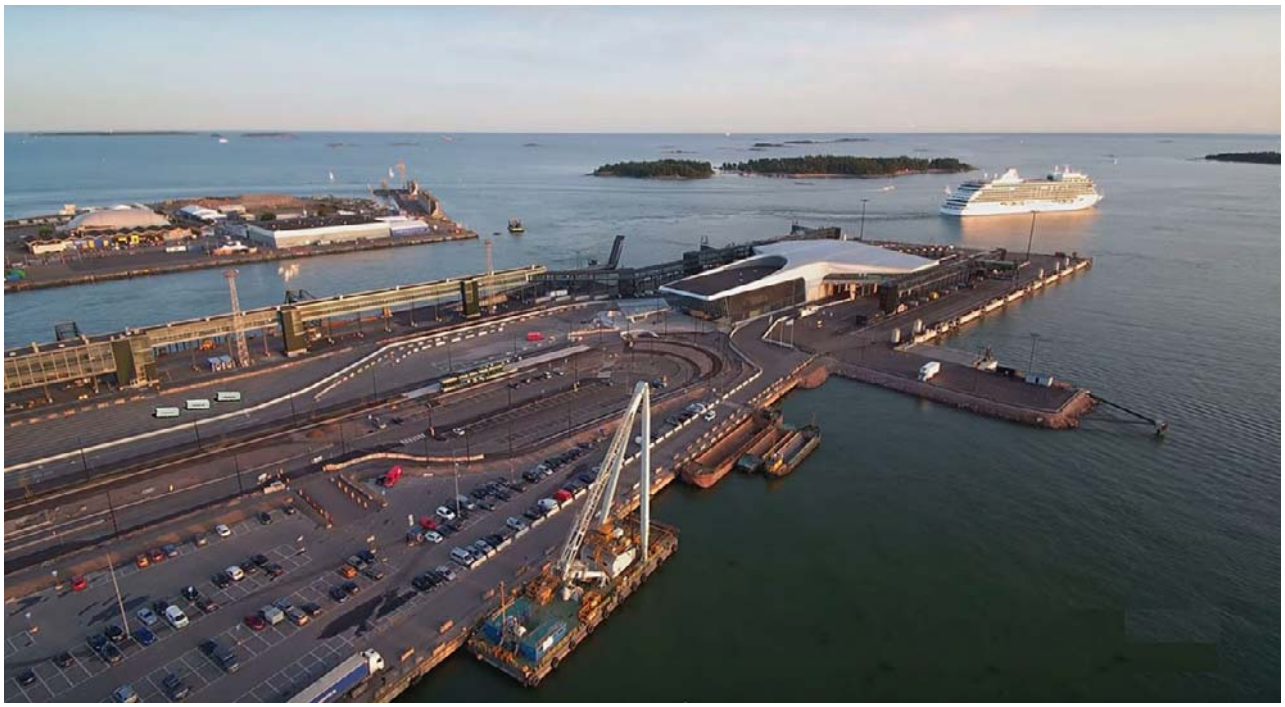
Kantvik (Porkkala)—Berth Information			
Berth	Length	Maximum Vessel Draft	Remarks
Porkkala			
North	110m	9.2m	Coal, rapeseed, molasses, and steel scrap.
Small	50m	5.3m	—
South	60m	8.5m	Coal, gypsum stone, and cement.

Between the island of Makiluoto, at the E side of Porkkalanselka, and Helsinki, about 24 miles E, the coast is fronted by numerous islets and patches of foul ground. Coastal fairways, used by small craft with local knowledge, lie about 1.5 miles offshore and lead between these dangers.

Espoonlahti (60°05'N., 24°40'E.), an inlet, indents the coast about 8 miles W of Helsinki and trends in a NW direction for almost 6 miles.

A conspicuous television mast stands at an elevation of about 300m at Esbo (60°11'N., 24°39'E.), on the N side of Espoolahti.

Helsinki Light (59°57'N., 24°56'E.), equipped with a racon, is shown from a prominent concrete tower, 25m high with a helicopter platform, standing about 14 miles S of the port area. It is situated at the E end of Helsingin Matala, a shoal area with a



Helsinki—West Harbor

least depth of 10.5m.

A shoal patch, with a depth of 4m, lies about 3.7 miles NNW of the light and is marked by a lighted beacon. Another shoal patch, with a depth of 2.7m, lies about 1.4 miles WSW of the lighted beacon.

Isolated depths of less than 20m lie up to about 6 miles W and SW of Helsinki Light.

A shoal patch, with a depth of 9.7m, lies about 4.7 miles SW of Helsinki Light. This shoal is the outermost danger in this vicinity and is marked by a buoy.

Graskarsbadan Light (60°02'N., 24°54'E.) is shown from a column standing on the northeasternmost of an extensive group of rocks and shallow shoals lying about 5.4 miles NNW of Helsinki Light.

Helsinki (60°10'N., 24°58'E.)

World Port Index No. 28190

2.11 The port of Helsinki, which is the capital of Finland, is of considerable commercial importance. It consists of several natural harbors lying on either side of a peninsula on which the city stands. There are also several repair and shipbuilding docks in the port.

Numerous islands and islets front the city and lie in the approaches to the port areas. They extend up to about 5.5 miles S of the city and may best be seen on the chart.

Helsinki Home Page
https://www.portofhelsinki.fi

Ice.—Icebreakers keep the port open all year round. Government icebreakers assist vessels from the open sea to the harbor when necessary.

Depths—Limitations.—The port can be divided into six separate harbor areas. West Harbor (Lansistama), consisting of the basins and berths in the W part of the port. South Harbor (Etelasatama), lying on the SW side of Katajanokka, a peninsula, which projects E from the NE part of the city.

North Harbor (Sornainen Satama), fronting the NE part of the city and situated at both sides of a peninsula, about 1 mile N of South Harbor. An area with a swept depth of 7.3m is situated S of North Harbor. Herttoniemen Satama is about 1.5 miles E of North Harbor. This area is reported to be closed to commercial shipping and is used only by pleasure craft. Laajasalo, the oil terminal, which is situated about 1.2 miles E of North Harbor.

For additional information see the table titled **Helsinki—Berth Information**. Vessels up to 62,041 dwt, 315.7m in length, and 37.6m beam can be accommodated.

Vuosaari (60°13'N., 25°11'E.) is located approximately 9 miles W of the West Harbor. There are facilities for general cargo, ro-ro, container, bulk, tanker, passenger, ferry, fishing, and cruise vessels. The main channel has a dredged depth of 11.0m. There are depths from 10.5 to 12.5m alongside.

Aspect.—Lauttasaarenselka, the W roadstead, lies between West Harbor and Lauttasaari, an island joined to the mainland by a causeway and several bridges.

Kruunuvuorenselka, the E roadstead, lies between North Harbor and Laajasalo oil terminal. It is enclosed by numerous small islands and shoal patches.

Several inlets lie at either side of the peninsula on which the city stands and may best be seen on the chart. These inlets are encum-

bered by numerous islands which are connected by bridges.

Harmaja lies 4.8 miles NE of Graskarsbadan Light (60°02'N., 24°54'E.). Harmaja Light is shown from a tower, 17m high, standing on the E part of the island. It forms the front light of the outer approach range. The rear range light is shown from Suomenlinna Church, a conspicuous church with a dome, situated on the N part of an island lying 2.5 miles N. Racons are situated at both of these range lights. This range indicates the main approach to the port from seaward. A prominent radio mast, 30m high, stands about 1.4 miles E of the church.

Helsinki—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Helsinki Power Plant							
Hanasaari SHA	150m	9.35m	160m	—	26.0m	25,532 dwt	Continuous berthing length: 310m. Coal.
Hanasaari SHB	160m	9.35m	159.2m	—	24.6m	21,353 dwt	
South Harbor (Etelasatama)							
EKJ	330m	5.5-8.8m	—	—	—	—	Closed. Coastal vessels and bunkers. Ice breaking quay.
Katajanokka EK5	120m	8.8m	131.5m	—	18.0m	1,377 dwt	Continuous berthing length: 520m. Cruise.
Katajanokka EK6	220m	8.8m	—	—	—	—	Closed. Continuous berthing length: 520m. Cruise, ro-ro passengers/vehicles/rail, and bunkers.
Katajanokka EK7	215m	8.8m	—	—	—	—	Closed. Cruise, ro-ro passengers/vehicles/rail, and bunkers.
Katajanokka EKL	180m	8.8m	—	—	—	—	Closed. Continuous berthing length: 520m. Cruise and ro-ro passengers/vehicles/rail.
Katajanokka ERB	300m	9.5-10.3m	—	—	—	—	Closed. Berthing length: 370m (incl. dolphins). Cruise and bunkers.
Lubeck ELY	75m	3.8m	—	—	—	—	Closed. Fast ferries and ro-ro passengers/vehicles/rail.
Makasiini EM3	260m	7.3m	—	—	—	—	Closed. Fast ferries and bunkers.
Olympia E01	150m	7.5m	—	—	—	—	Closed. Cruise and ro-pax.
Olympia E02	200m	8.8m	—	—	—	—	Closed. Cruise, ro-pax, and bunkers.
Pakkahuone EPL	130m	6.0m	—	—	—	—	Closed. Cruise.
Vuosaari Harbor							
AP North	180m	10.5-12.5m	—	—	—	—	Closed. Ro-ro/lo-lo and containers.
AP South	180m	10.5-12.5m	—	—	—	—	Closed. Ro-ro/lo-lo.
BP VB2	250m	12.5m	201.8m	—	32.2m	62,041 dwt	Ro-ro/lo-lo and containers.
BP VB3	250m	12.5m	189.9m	—	28.5m	38,146 dwt	Ro-ro/lo-lo and containers.
CP VC1	220m	10.5m	217.9m	—	26.5m	14,509 dwt	Fast ferries and ro-ro passengers/vehicles/rail.
CP VC2	220m	10.5m	187m	—	26.5m	11,170 dwt	Fast ferries and ro-ro passengers/vehicles/rail.

Helsinki—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
GP1 VG7	200m	—	162.5m	—	20.6m	8,702 dwt	Ro-ro/lo-lo and containers.
GP1 VG8	200m	—	162.5m	—	20.6m	8,702 dwt	
GP2 VG5	200m	—	162.5m	—	20.6m	8,702 dwt	Ro-ro/lo-lo and bunkers.
GP2 VG6	200m	—	187m	—	26.5m	11,623 dwt	Ro-ro/lo-lo, containers, and bunkers.
A VA6	180m	12.5m	179.9m	—	24.3m	7,477 dwt	Fast ferries.
D VD5	187m	12.5m	158.7m	—	21.7m	13,965 dwt	Continuous berthing length: 745m. Ro-ro freight and containers.
D VDA	186m	12.5m	200m	—	35.2m	39,938 dwt	
D VDB	186m	12.5m	200m	—	35.2m	39,964 dwt	Continuous berthing length: 745m. Ro-pax and containers.
D VDC	186m	12.5m	169.9m	—	26.9m	20,290dwt	Continuous berthing length: 745m. Containers.
E VEA	186m	12.5m	244.9m	—	32.2m	40,881 dwt	Continuous berthing length: 745m. Ro-ro freight and containers.
E VEB	186m	12.5m	244.9m	—	32.2m	40,881 dwt	Continuous berthing length: 745m. Containers.
E VEC	186m	12.5m	244.9m	—	32.2m	40,881 dwt	
E VED	187m	12.5m	216.2m	—	32.2m	33,659 dwt	
F VF3	163m	10.5m	217.9m	—	26.5m	14,509 dwt	Continuous berthing length: 490m. Ro-ro freight and containers.
F VF4	163m	10.5m	217.6m	—	26.5m	14,500 dwt	
F VFA	164m	10.5m	217.9m	—	26.5m	14,509 dwt	Continuous berthing length: 490m. Containers.
G VG9	156m	—	—	—	—	—	Closed. Ro-ro/lo-lo.
West Harbor (Lansisatama)							
Hietalahti LKL	80m	6.5m	—	—	—	—	Closed. Coastal.
Jatkasaari LJ3	156m	7.5-8.2m	—	—	—	—	Closed. Continuous berthing length: 470m. Cruise and ro-ro passengers/vehicle/rail.
Jatkasaari LJ4	190m	8.8m	—	—	—	—	Closed. Continuous berthing length: 380m. Cruise, bunkers, and ro-ro passengers/vehicles/rail.
Jatkasaari LJ5	190m	9.0m	—	—	—	—	Closed. Continuous berthing length: 380m. Cruise and bunkers.
Jatkasaari LJ6	320m	9.5m	201.7m	—	32.0m	4,650 dwt	Cruise, ro-ro passengers/vehicles/rail, and bunkers.
Jatkasaari LJ7	235m	11.0m	201.7m	—	32.0m	4,650 dwt	Cruise and bunkers.
Jatkasaari LJ8	275m	—	175m	—	27.6m	5,506 dwt	
Jatkasaari LJC	157m	6-7.5m	—	—	—	—	Closed. Continuous berthing length: 470m. Breakbulk.

Helsinki—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Jatkasaari LJD	157m	6.0-7.5m	—	—	—	—	Closed. Continuous berthing length of 470m. Breakbulk.
Mekki LMB	200m	12.1m	—	—	—	—	Closed. Continuous berthing length: 400m. Cruise and break-bulk.
Mekki LMA	200m	12.1m	—	—	—	—	Closed. Continuous berthing length: 400m. Cruise, ro-ro passenger/vehicles/rail, and bunkers.
Munkkisaari LHA	196m	7.4m	—	—	—	—	Cruise vessels and bunkers. Closed.
Munkkisaari LHB	320m	9.0m	293.9m	—	35.5m	11,161 dwt	Cruise vessels and bunkers Continuous berthing length of 675m.
Munkkisaari LHC	355m	9.8m	315.7m	—	37.6m	11,960 dwt	
Salmisaari Coal	135m	9.8m	160m	—	26.0m	25,532 dwt	Coal.
Saukko	420m	9.2m	—	—	—	—	Closed.
Saukko Sand	105m	4.5m	—	—	—	—	Sand. Closed.
Silli LSI	180m	6.0m	—	—	—	—	Coastal vessels. Closed. .
Tammasaari LTA	220m	7.5m	—	—	—	—	Fast ferries and coastal vessels. Closed.

The Lutheran Cathedral, a white building, stands close inland near the head of South Harbor; its green dome is conspicuous from seaward.

The Orthodox Uspenski Cathedral, a brick building, stands near the N side of the head of South Harbor and its green spire is conspicuous.

Lauttasaari water tower (60°10'N., 24°53'E.) stands 7.5 miles N of Graskarsbadan Light and is very conspicuous from seaward.

Pilotage.—Helsinki provides pilotage for the Hanko, Emasalo, and Porkkala regions.

Pilotage is compulsory for the following types of vessels:

1. A vessel or a vessel combination with a maximum loa of more than 70m or a maximum width of more than 14m or a maximum authorized summer load draft in salt water of more than 4.5m when operating in Finnish territorial waters and a maximum length of more than 25m in the Saimaa waterways or the Saimaa Canal.
2. A vessel carrying oil, liquefied gas, noxious liquid substances or dangerous goods in solid form in bulk.
3. A vessel carrying Irradiated Nuclear Fuel (INF) cargo.

Helsinki provides pilotage for Hanko, Emasalo and Porkkala regions. Pilots are ordered through the Finnpilot Order Centre, Southern Pilotage Zone.

Inbound vessels must provide 24-hour and 6-hour advance warning of their ETA at the pilot boarding position. Vessels must then place a binding pilotage order 3 hours prior to arrival. Pilots will contact inbound vessels on VHF when they are less than 1 hour from the boarding position.

Finnpilot Pilot Order Service
https://pilotorder.fi

Departing vessels must provide 24-hour and 6-hour advance warning through their agent. Vessels must then place a binding pilotage order 2 hours prior to departure.

Vessels shifting berth must provide 6 hours advance notice to the Pilot Order Center with a confirmation sent 2 hours in advance.

The Finnpilot Order Center will confirm receipt of the order using the same method as used to make the order. Orders using the form on the Internet Service can also be confirmed by e-mail if requested, providing an address is included. Orders placed by telephone are not confirmed separately after the call.

Finland is divided into three Pilotage Zones, as follows:

1. **Southern Pilotage Zone**—Includes the pilotage areas of Helsinki, Porkkala, Emasalo, and Hanko.
2. **Eastern Pilotage Zone**—Includes the pilotage areas of Kotka (Orrengrund, Haapasaari, and Santio) and the Saimaa Canal (Lake Saimaa).
3. **Western Pilotage Zone**—Includes the pilotage areas of the Archipelago Sea (Uto, Isokari, and Mariehamn), Rauma, Mantyluoto (Pori), Vaasa (Kristiinankaupunki and Kaskinen), Kokkola (Pietarsaari and vessels coming and go-

ing S from Rahja), and the Bay of Bothnia (Tornio, Oulu, Raahe, and vessels coming and going N from Rahja).

To provide preliminary information and to place an order for pilotage, see the table titled **Finnpilot Order Center—Contact Information**.

Finnpilot Order Center—Contact Information	
Southern Pilot Zone	
Telephone	358-400-907-977
Facsimile	358-29-52-53010
E-mail	pilotorder.south@finnpilot.fi
Web site	https://pilotorder.fi
Eastern Pilot Zone	
Telephone	358-400-907-978 (Kotka)
	358-40-487-3133 (Saimaa)
Facsimile	358-29 52 53011
E-mail	pilotorder.east@finnpilot.fi
Web site	https://pilotorder.fi
Western Pilot Zone	
Telephone	358-400-907-979
Facsimile	358-29-52-53012
E-mail	pilotorder.west@finnpilot.fi
Web site	https://pilotorder.fi
Head Office	
Telephone	358-29-52-53000
Facsimile	358-29-52-53001
E-mail	info@finnpilot.fi
Web site	https://finnpilot.fi

Pilot Boarding Locations	
Porkkala (Inkoo and Kantvik)	
Porkkala (South)	59°53'36.0"N, 24°11'39.6"E
Porkkala	
Porkkala (North)	59°55'39.6"N, 24°14'12.0"E
Helsinki	
Helsinki (South)	59°59'00.0"N, 24°56'54.0"E
Helsinki (North)	60°04'00.0"N, 24°58'12.0"E
Vuosaari	
Vuosaari	60°04'57.6"N, 25°09'47.4"E
Emasalo (Porvoo, Skoldvik, Tolkkinen & Kalkkiranta)	
Emasalo (North)	60°02'36.0"N, 25°33'48.0"E
Emasalo (South)	60°00'00.6"N, 25°32'37.2"E

During winter months, pilot boarding positions may be subject to alteration according to the prevailing weather conditions.

Vessels having a draft of more than 9m, a length of more than 160m, or a registered tonnage exceeding 18,000 tons can be piloted through Kustaanmiekka (60°08.3'N., 24°59.7'E.), the narrow fairway leading between the islands in the E part of the port, only during daylight hours. The master or pilot may also consider it necessary to request the assistance of a strong tug. Vessels having a length of more than 201m or a registered tonnage of more than 25,000 tons cannot be piloted through Kustaanmiekka, even though their draft is less than 9.6m. Such vessels will be instructed to anchor off the port.

Regulations.—The Gulf of Finland Reporting System (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). For further information concerning GOFREP, see Finland in Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Vessel Traffic Service.—A Vessel Traffic Service (VTS) operates in the approaches to the coast.

FinTraffic VTS Master's Guide
https://www.fintraffic.fi/en/vts/masters-guide

The VHF channels cover the main navigation routes in the Helsinki, Emasalo, and Porkkala regions. This VTS system consists of the following sectors:

1. **Helsinki VTS Sector 1—**The approaches to the port of Helsinki in the area between Kyto Lighthouse, Helsinki caisson and in the E, the area between Kaunissaari and Kalkkiranta. The sector also include the administrative area of the port of Helsinki. The area is bounded by lines joining the following positions:
   a. 60°08.7'N, 24°43.5'E.
   b. 59°55.5'N, 24°43.5'E
   c. 59°58.2'N, 25°20.0'E.
   d. 60°10.3'N, 25°20.0'E
   e. 60°15.5'N, 25°25.0'E.

   An updated version of the Helsinki VTS Master's Guide is posted on the Traffic Management Finland web site. See the link above for VTS Finland.
2. **Helsinki VTS Sector 2 (Western and Eastern)**—Covers the areas around Porkkala and Emasalo including the merchant shipping lanes, in the west the area between Jussarö and Kyto and in the east the area between Kalkkiranta and Emasalo, with the exception of the areas administered by the ports. The sector also covers the areas administered by the Port of Skoldvik and the Port of Tolkkinen.
3. **Helsinki VTS Sector 2 (Western)—**The area is bounded by lines joining the following positions:
   a. 59°52.1'N, 23°33.0'E.
   b. 59°42.0'N, 23°33.0'E
   c. 59°55.5'N, 24°43.5'E.
   d. 60°08.7'N, 24°43.5'E

   Fairways in Inkoo harbor are excluded.
4. **Helsinki VTS Sector 2 (Eastern)—**The area is bound by lines joining the following positions:

Henri Bergius [CC BY-SA 2.0 (https://creativecommons.org/licenses/by-sa/2.0)] via Wikimedia Commons

Helsinki—South Harbor in summer

e. 60°15.5'N, 25°25.0'E.
f. 60°10.3'N, 25°20.0'E
g. 59°58.2'N, 25°20.0'E.
h. 59°59.5'N, 25°44.5'E
i. 60°12.5'N, 25°41.2'E.

The following areas are where passing and overtaking are prohibited in VTS Sector 1:

1. In the 7.9m channel in the Sarkansalmi Strait between latitude 60°08.8'N and latitude 60°09.1'N.
2. In the Kustaanmiekka Strait between latitude 60°08.1'N and latitude 60°08.6'N in the 9.6m fairway.
3. In the 11.0m fairway in the N part of Vuosaari Channel between latitude 60°11.1'N and latitude 60°12.5'N.

This prohibition does not apply to meeting and overtaking situations in which at least one of the parties is a tug or a vessel whose size is comparable to a tug.

The following areas are where passing and overtaking should be avoided in VTS Sector 2 and the Emasalo Fairway:

1. Vessels should avoid passing and overtaking in the harbor area north of latitude 60°17.8'N (Quay 8). This prohibition does not apply to passing and overtaking situations in which at least one of the vessels is a tug or a vessel, the size of which is comparable to a tug.
2. Between Estamsudden and Varlaxudden.
3. Between Kollhallan and Neste C.
4. In the 9.0m fairway marked with lateral buoys in Stenoren.

Vessels are obligated to agree, well in advance, on passing and overtaking so that they meet outside these areas. When necessary, Helsinki VTS determines a place for passing or overtaking.

The working channel of Helsinki VTS Sector 1 is VHF channel 71. The working channel of Helsinki VTS Sector 2 is VHF channel 9.

Vessels must report their vessel name, reporting point name, destination, and intended route. If an alternative route is selected, this must be reported.

Before departure from Port of Helsinki, vessels shall submit a departure report in order to be given permission to depart.

In Helsinki South Harbor and West Harbor, vessels must submit a departure report when they are ready to depart in 5 minutes.

When leaving Vuosaari Harbor, the permission to depart is in force for 15 minutes, during which time the vessel must get underway. The vessel is required to give a report when underway.

Helsinki City Museum [CC BY 4.0 (https://creativecommons.org/licenses/by/4.0)] via Wikimedia Commons

Helsinki—North Harbor

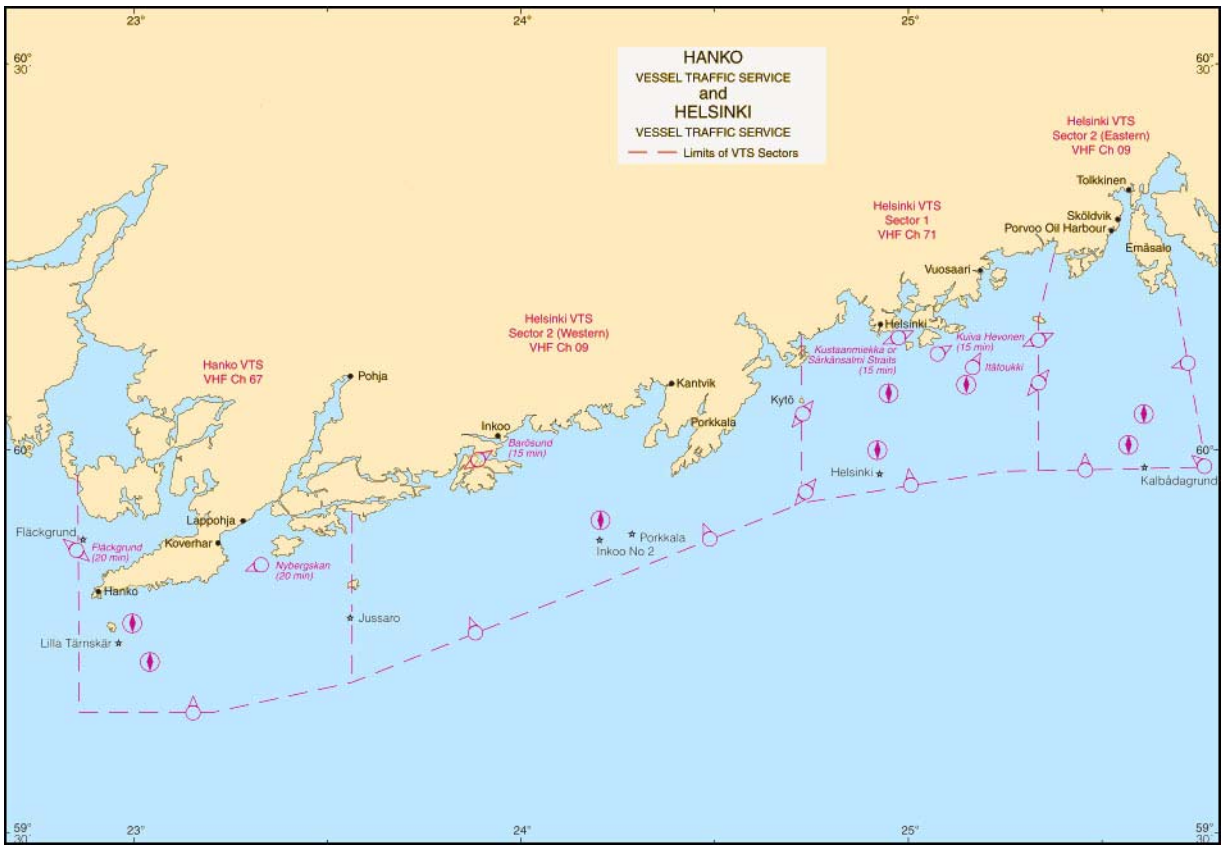
At the reporting points in the area:

1. Vessels must report 15 minutes before arriving at the Kustaanmiekka or Sarkansalmi straits.
2. Northbound vessels must report when passing Itatoukki.
3. Eastbound vessels must report 15 minutes before passing Kuiva Hevonen in the coastal fairway.
4. Fifteen (15) minutes before entering Barosund.

A preliminary notice of departure for vessels departing from Port of Helsinki is required. All vessels, except those in liner traffic sailing according to a published timetable, must give a preliminary notice of departure after berthing. Any changes to the time of departure indicated in the notice of departure or in the published liner traffic timetable must be reported to VTS as soon as possible. If a vessel departs later than the time reported in the notice of departure, the vessel must immediately report this to the VTS.

The following procedures apply to the Vuosaari fairway:

1. The organization of vessel traffic departing from Vuosaari Harbor includes a procedure regarding permission to depart. When a vessel that is ready to leave port submits a departure report, the VTS grants or denies permission to depart from the port depending on the traffic situation. A granted permission to depart is in force for 15 minutes. VTS does not grant permission to depart if there is a vessel in the fairway entering the harbor, and that vessel has passed Itatoukki, reported 15 minutes to Kuiva Hevonen or entered the area from the east from another sector. If the vessel is not ready to depart within 15 minutes and there are other vessels waiting for their turn to enter the area where meeting and overtaking is prohibited, the vessel misses its turn to depart. In that case the vessel must give a new departure report to the VTS before being granted permission to depart. The procedure regarding permission to depart also concerns vessels moving from one berth to another in the harbor area.
2. Vessels reporting at Itatoukki, entering sector 1 area from the E or reporting 15 minutes prior to passing Kuiva Hevonen, will be given information by the VTS about meeting traffic and other information relevant to the safe passage of the ship.
3. During strong winds (mean wind 13 m/s or more) the VTS recommends that vessels in Vuosaari fairway only meet south of Ostra Rodhallen. The VTS does not organize the traffic of meeting vessels outside the area where meeting and overtaking is prohibited, but vessels are requested to agree



Helsinki and Hanko VTS

among themselves on how to meet safely.

4. When the use of the fairway is restricted due to the wind situation and vessels have to wait for entrance into the fairway, they have the option to reduce speed in order to ensure a safe meeting south of Ostra Rodhallen. When organizing the traffic, the VTS makes sure that the vessel does not lose its turn to enter the fairway because of its reduced speed, by taking into account the original speed at which the vessel would have arrived at Itatoukki.

The following procedures apply to the approach to the Helsinki West Harbor fairway.

1. The VTS organizes inbound and outbound vessels to the West Harbor according to the schedules submitted by the vessels in advance.

2. A vessel leaving the West Harbor in Helsinki must submit a departure report in order to be granted permission to depart by the VTS. The departure report shall be submitted when the vessel is ready to depart within 5 minutes. During strong winds (maximum wind speed 15 m/s) the vessel will not be granted permission to depart if another vessel, with a length over 215m, is already in or about to enter the maneuvering basin.

3. Inbound vessels are well in advance informed about the order in which to enter the fairway. The order is based on the agreed berthing times obtained by the Port of Helsinki.

The following speed limits apply to the Helsinki VTS:

1. In all fairway sections leading to a Helsinki port N of the latitude 60°06.0'N, with Itakari as the E limit, the speed limit is 16 knots.

2. In the harbor basins in the Port of Helsinki and around Klippan the speed limit is 5 knots.

3. In the Vuosaari fairway a speed limit of 16 knots is in force between Ostra Rodhallen and Krokholmshallet.

4. A speed limit of 9 knots is in force between Krokholmshallet and Vuosaari Harbor as well as in the Vuosaari Harbor area.

5. During the winter season (1 November-31 March) a speed limit of 13 knots will be in force in the Vuosaari fairway between Krokholmshallet and Vuosaari Harbor.

Contact Information.—See the table titled **Helsinki—Contact Information**.

Anchorage.—A designated outer anchorage area, with depths of 22 to 45m, is centered about 1.4 miles NNW of Helsinki Light (59°57'N., 24°56'E.) and may best be seen on the chart.

Anchorage can be taken, in a depth of 22m, mud and stones, off the W side of Susisaari, about 0.6 mile SW of Harmaja Rear Range Light (Suomenlinna Church). This is a good temporary anchorage but is open to onshore winds.

Kruunuvuorenselka, the E roadstead, affords the best anchorage, in depths of 12 to 16.5m, mud. This anchorage is well-protected from all winds.

Directions.—The main approach to the port leads in a N direction from the Traffic Separation Scheme (TSS) in the Gulf

of Finland. This route, which is authorized for drafts up to 11m, passes close E of Helsinki Light (59°57'N., 24°56'E.) and is indicated by a lighted range (see Aspect). It then branches NW and N, at a junction about 3.8 miles N of the light, to approach the W and E areas of the port.

From the junction, the main channel, authorized for drafts up to 11m, leads NW and passes close NE of Graskarsbadarne Light (60°02'N., 24°54'E.). It then turns in a N direction and leads into West Harbour (Lansistama).

From the junction, the alternate channel, authorized for drafts up to 9.6m, leads NNE. It passes close E of Harmaja Front Range Light, through narrow passages between the islands, and into the harbors in the E part of the port.

The port may also be approached from W or E by using the Winter Channel. This coastal fairway is authorized for drafts up to 9m. The routes from the E and W lead in a W direction and in a NE direction, respectively, and meet the main alternate channel, authorized for drafts up to 9.6m, about 0.9 mile NNE of Harmaja Front Range Light.

A secondary channel, authorized for drafts up to 9m, also leads NNW from the alternate channel at a position about 1.5 miles S of Harmaja Front Range Light. It extends for 2 miles and joins the Winter Channel (coastal fairway) about 0.7 mile WNW of Harmaja Front Range Light.

Another approach route, authorized for drafts up to 7.5m, leads NE from seaward. It passes about 2.5 miles NW of Helsinki Light and meets the main approach channel 3.5 miles N of the light. This route is used by passenger ferries.

The fairway channels and routes, which may best be seen on the chart, are indicated by lighted ranges and marked by lighted beacons and buoys.

The seaward approach route to Vuosaari leads NE for 3 miles and N for 4 miles to the vicinity of Ytter Tjarhall Light (60°08'N., 25°19'E.), which is equipped with a racon. The inner part of the route, which is authorized for drafts up to 7.5m, passes close SW of the light and continues in a NW direction for about 4.5 miles through the off-lying dangers. It then leads in a NNE direction for about 1.5 miles to the harbor.

It is reported that a new primary seaward approach route to Vuosaari has been established. It has a minimum width of 200m, a dredged depth of 12.5m, and is authorized for drafts up to 11m. The route extends in a NNE direction from a position located about 3.5 miles E of Helsinki Light (59°57'N., 24°56'E.). It passes about 1.2 miles SSE of Lansitoukki (Vastertokan) (60°05.5'N., 25°08.0'E.) and close NNW of Itatoukki (Oster Tokan) (60°06.0'N., 25°11.8'E.), an islet marked with a racon. From close N of this islet the track continues in a N direction for about 5.5 miles through the off-lying dangers. It passes about 0.6 mile W of Estlotan (Estiluoto) (60°07.5'N., 25°13.5'E.), an islet marked by a prominent tower; close W of Kulva Hevonen (Torra Hasten) (60°10.5'N., 25°13.3'E.); and close W of Krokholmen (60°11.6'N., 25°13.9'E.). From close E of the E end of Lilla Baston (60°12.2'N., 25°12.7'E.) the route then extends for about 1 mile in a NW direction to the harbor entrance. Pilots for this route will board vessels about 2 miles SSW of Itatoukki (Oster Tokan). An anchorage area has been established along this route. It lies adjacent to the W side of the fairway, between Kulva Hevonen (Torra Hasten) and Krokholmen.

Caution.—Numerous submarine cables and pipelines, which may best be seen on the chart, extend between the many islands in the harbor and the approaches.

A spoil ground area lies S of Helsinki and a dangerous rock lies close N of the island of Harmaakari.

Due to silting, the authorized drafts in the approach routes may, on occasion, be reduced. Vessels are advised to contact the authorities in advance for the latest information concerning depths in the approach passages.

Helsinki—Contact Information	
Port	
VHF	VHF channels 12 and 16
Telephone	358-9-310-1621
Facsimile	358-9-310-33802
E-mail	port.helsinki@portofhel.fi
Web site	https://www.portofhelsinki.fi
Harbormaster	
Telephone	358-9-310-33676
Docking Master	
VHF	VHF channels 12 and 71
Telephone	358-9-310-33600
Facsimile	358-9-310-33619
Vuosaari Harbor	
VHF	VHF channel 12
Telephone	358-4-012-93745 (24 hours)
	358-4-065-73350
	358-4-04829571 (Supervisor: 0700-1500)
E-mail	shipservice.vuosaari@hel.fi (ship services)
	shipservice@hel.fi (waste handling)
VTS	
Call sign	Helsinki VTS
VHF	VHF channel 71 (Sector 1)
	VHF channel 9 (Sector 2)
Telephone	358-20-448-5385 (Sector 1)
	358-20-448-5389 (Sector 2)
	358-20-448-5391 (Supervisor)
Facsimile	358-20-448-5380
E-mail	helsinki.vts@vtsfinland.fi
	supervisors.hki@vtsfinland.fi
Tugs	
VHF	VHF channels 6, 8, and 16

Helsinki to Kotka

2.12 **Loviisa** (60°27'N., 26°14'E.), a port, lies about 40 miles ENE of Helsinki. The coast between is hilly, wooded, and fronted by numerous islands, islets, rocks, and shoals. These dangers lie up to 13 miles seaward of the coast and several inshore passages lead between them. Vessels should not attempt to enter the inshore channels without local knowledge.

The 40m curve lies up to 16 miles offshore in this vicinity. Within this curve, the depths are very irregular.

Porvoo and Loviisa are the only ports of any importance along this stretch of coast.

Kalbadagrund (59°59'N., 25°36'E.), an extensive reef, lies about 20 miles E of Helsinki Light and has a least depth of 2m. Kalbadagrund Light is shown from a prominent tower, 25m high with a helicopter platform, standing on the S part of this reef. A racon is situated at the light.

Shoals, with depths of 3.1m and 9.7m, lie about 4 miles E of the light and form the outermost dangers in this vicinity.

Porvoo Light (60°06'N., 25°36'E.) is shown from a prominent tower, 10m high, standing 6.5 miles N of Kalbadagrund Light. A racon is situated at the light.

Soderskar Beacon (60°07'N., 25°25'E.), a disused light tower, stands on an islet about 5.5 miles WNW of Porvoo Light. It is 30m high and prominent.

Tiiskeri (Digskar) (60°10'N., 26°16'E.), the largest islet of a group surrounded by foul ground, lies about 23 miles NE of Kalbadagrund. A light is shown from a tower, with a wind generator, standing on this islet. A racon is situated at the light.

Shoals, with depths of 7.2m to 10m, lie within about 3.5 miles SW of this light and form the outermost dangers in this vicinity.

Skarvgaddarna Light (60°11'N., 26°08'E.) is shown from a tower standing 4.2 miles WNW of Tiiskeri. A racon is situated at this light.

Gasskvattan Beacon (60°11'N., 26°03'E.), standing on an above-water rock, lies 2.3 miles W of Skarvgaddarna Light. A racon is situated at this beacon.

Emsalo (60°15'N., 25°37'E.) and **Vessolandet** (60°17'N., 25°43'E.) are two large islands occupying the greater portion of the indentation of the coast close S of Porvoo. Numerous islands and foul ground lie between the N ends of these islands.

2.13 **Porvoo** (60°23'N., 25°40'E.) (World Port Index No. 28210), also known as Skoldvik, is situated 27 miles E of Helsinki. The channel leading to this oil port is kept open by icebreakers, but is affected by ice from about the middle of December until April. For Traffic Service, see details on Helsinki VTS.

Depths—Limitations.—The main approach channel leading to the port is 270m wide and authorized for drafts up to 15.3m.

There are six berths for oil products and one for petrochemicals. There are LPG facilities at Berth No. 8 and Berth No. 9.

Vessels up to 157,460 dwt, 278m in length, 48m beam, and 15.3m draft can be accommodated.

During the ice-free period, all berths are surrounded by oil booms. In winter, vessels are limited to a maximum beam of 21.3m.

For more berthing information see table titled **Porvoo—Berth Information.**

Porvoo—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Neste Oil							
No. 1	60m	14.0m	185m	12.7m	32.2m	53,143 dwt	Berthing length: 283m (incl. dolphins). Aviation fuel, petroleum products, and bunkers. Displacement: 64,333t.
No. 2	104m	16.9m	278m	15.3m	48.0m	157,460 dwt	Berthing length: 376m (incl. dolphins). Petroleum product and bunkers. The LOA of a vessels may be increased with the harbor master's permission. Displacement: 184,134t.
No. 3	98m	16.9m	249.9m	15.3m	44.0m	116,027 dwt	Berthing length: 332m (incl. dolphins). Clean products and bunkers. Displacement: 137,088t.
No. 4	84m	15.7m	252m	14.5m	44.0m	117,099 dwt	Berthing length: 370m (incl. dolphins). Petroleum products and bunkers. Displacement: 137,092t.
No. 5	69m	10.5m	155.4m	9.5m	24.2m	19,999 dwt	Berthing length: 220m (incl. dolphins). Aviation fuel, chemicals, others, petroleum products, and bunkers. Displacement: 27,104t.

Porvoo—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 6/7	134m	7.2m	90.2m	—	12.5m	4,066 dwt	Closed. No vessel visits in one year(2022). Berthing length: 170m (incl. dolphins). Others, breakbulk, and bunkers. used by service craft.
No. 8	79m	14.5m	230.1m	13.5m	36.6m	56,691 dwt	Berthing length: 184m (incl. dolphins). Chemicals, LPG, and bunkers. Displacement: 77,523t.
No. 9	50m	8.4m	129m	7.6m	19.2m	11,340 dwt	Berthing length: 106m (incl. dolphins). Chemicals and LPG. Displacement: 15,696t.

Aspect.—Beacons and buoys, including virtual aids to navigation, mark the dangers in the approaches to the port. Porvoo Light along with Larsskar Light, 3.2 miles N, forms a range, which indicates the main approach from seaward. The route leads NNE and passes about 1.8 miles W of Kalbadagrund Light.

Pilotage.—Pilotage is provided by Helsinki (see paragraph 2.11). The pilot boards in Emasalo S (60°00.1'N., 25°32.6'E.) or in Emasalo N (60°02.6'N., 25°33.8'E.), about 2 miles WNW of Kalbadagrund Light.

Regulations.—Vessels should send the following information to the port (Fortum Harbour) 72 hours prior to arrival:

1. Vessel's name and nationality.
2. Master's name.
3. Owner or operator of vessel.
4. Telex, facsimile, and telephone numbers of vessel.
5. Draft fore and aft.
6. Port of departure.
7. Confirmed ETA.
8. Quantity, type, IMO class, and UN number of cargo.
9. Quantity, type, and IMO class of cargo to be loaded.
10. Three previous cargoes.
11. If cargo tanks are inerted and confirmation that oxygen content is below 8 per cent.
12. Thrusters, bow or stern (number and effect).
13. All equipment functioning well.
14. Quality and quantity of contained ballast water or mixtures containing oil or chemicals to be discharged.
15. Quality and quantity of waste to be discharged.
16. Quality and quantity of bunkers to be loaded.
17. Any measures subject to permission.
18. List of equipment relating to navigation, safety, or cargo handling not in working order.
19. If vessel is ready to load or discharge upon arrival.

Vessels should confirm the ETA 24 hours in advance and state the vessel's name and nationality, gt, draft fore and aft, ETA at pilot boarding position, and date and time of the notice.

Any change to the ETA must be forwarded immediately.

Vessels Traffic Service.—The Helsinki VTS provides vessels proceeding to or departing from Porvoo with service. See paragraph 2.11 for details.

Contact Information.—See the table titled **Porvoo—Contact Information**.

Porvoo—Contact Information	
Port	
Call sign	Neste Oil Harbor
VHF	VHF channels 16 and 21
Telephone	358-10-4583115 (24 hours)
	358-10-4583117 (24 hours)
Facsimile	358-10-4583757
E-mail	skoldvik.harbour@nesteoil.com
Traffic Coordinator	
Telephone	358-10-4583101
Hours	Monday-Friday (0800-1600)
Harbormaster	
Telephone	358-10-4583106
Hours	Monday-Friday (0800-1600)

Anchorage.—Anchorage can be taken, in a depth of 22m, good holding ground, close E of the oil harbor.

A designated anchorage area, with depths of 19 to 30m, lies centered about 3 miles NW of Kalbadagrund Light, W of the main entrance fairway. Generally, anchorage in the outer approaches is not safe except during calm weather.

2.14 Pellinge (Suur Pellinki) (60°13'N., 25°50'E.) is the largest island of a group which fronts the mainland and extends E for almost 7 miles. Numerous rocks and shoal patches extend up to about 13.5 miles S from this island, terminating in the vicinity of Kalbadagrund Light.

Fairways, with draft limitations of 7m and 7.3m, lead E and S of the group. They then branch to lead in a N direction through the E part of the islands and NE of **Vatskar** (60°18'N., 26°07'E.), where they rejoin and lead ENE to **Boiso** (60°20'N., 26°30'E.). A fairway, with a least charted depth of 2m, leads through the N part of the islands. These fairways, although well-marked by buoys, beacons, and lighted ranges, should not be used without local knowledge.

Kejvsalo Fjarden (60°22'N., 26°08'E.), entered about 3 miles N of Vatskar, extends about 11 miles NW. This inlet is encumbered by numerous islets and shoals, but a fairway, authorized for drafts up to 6.1m and marked by buoys, leads along the NE part to Pernaja (60°26'N., 26°03'E.), an anchorage loading place for Loviisa, located about 6 miles from the entrance. A fairway, authorized for drafts up to 4.3m, branches W about 2.3 miles SE of Pernaja and leads to a loading place in Isnasvik, 3 miles SW of Pernaja. There is a jetty, with a depth of 4.2m alongside, at Isnasvik.

Hamnskar (60°13'N., 26°18'E.), fronted by foul ground, is a low, bare islet with a monument situated at its W side. A light, used by fishing vessels, is shown from a structure standing on the E side of the islet.

Tainio Light (60°13'N., 26°25'E.) is shown from a tower, 14m high, standing on a shoal at the E side of the fairway leading to Loviisa. A racon is situated at the light.

Skarven Light (60°18'N., 26°21'E.) is shown from a tower standing on the N end of a group of reefs on which lie several islets. A racon is situated at this light.

Orrengrund (60°16'N., 26°27'E.) is a low sparsely-wooded island. It is steep-to on the W side, but foul ground extends up to about 0.5 mile SE from the S part of the island. The island of Baksor lies on this foul ground. A light is shown from a floodlit tower standing on the W side of the island. A prominent tower, 23m high, is situated close NE of the light. A lighted range is shown from the E part of the island; a racon is situated at the front light.

Vastra Baken Light is shown from a structure standing about 0.5 mile W of the W end of Orrengrund.

Lalatta Light (60°17'N., 26°33'E.) is shown from an islet surrounded by foul ground. A racon is situated at this light.

Range lights are also shown from Ostergrund, an islet about 1 mile NE of Orrengrund.

Stor Taktaren (60°20'N., 26°22'E.), with Yttre Taktaren located close S of it, lies on the SW side of the fairway leading to Loviisa. Foul ground extends up to 1.7 miles SE of these islets and is marked by spar buoys. Patches of foul ground also lie up to 1 mile E and between Stor Taktaren and Stora Rovaren, about 0.5 mile N. Range beacons are situated at various places on these islets.

Caution.—It is reported that overhead lines, with a minimum vertical clearance of 10.8m, extend across the channel leading to Pernaja (60°26'N., 26°03'E.). A shoal with a dangerous rock in position 60°19.1'N, 26°34.7'E is marked by a lighted buoy.

2.15 **Loviisa** (Lovisa) (60°27'N., 26°14'E.) (World Port Index No. 28220), a small port, lies at the head of Loviisanlahti (Lovisaviken) and includes the facilities at Valkom, which is situated on the W shore of the inlet, 2 miles S. The facilities at Loviisa are used mostly by local coasters.

Ice.—The main navigation season lasts from the end of April to the beginning of December. Generally, icebreakers keep the port open all year.

Depths—Limitations.—The main approach channel leading from seaward to the berthing facilities at Valkom is authorized for drafts up to 8.5m. The fairway continuing to Loviisa is authorized for drafts up to 4m.

There are facilities for container, ro-ro, tanker, bulk, and general cargo vessels.

There is a Sawmill Wharf at Loviisa and there is also a basin for small craft and yachts.

For berthing information see the table tiled **Loviisa—Berth Information**.

Loviisa—Berth Information

Berth	Length	Remarks
No. 1	163m	Cement.
No. 2	114m	—
No. 3	105m	—
No. 4	175m	—
No. 6	141m	—

Pilotage.—Pilotage is compulsory and must be requested through the Finnpilot Order Center, Helsinki (see paragraph 2.11). Pilots may be contacted by VHF and generally board in position 60°14'18.0"N, 26°25'21.6"E (Orrengrund).

Anchorage.—Anchorage can be taken, in a depth of 17m, mud, about 0.5 mile SW of Svartholm (60°23'N., 26°18'E.) and, in a depth of 9m, mud, about 0.5 mile NNE of Valkom.

Directions.—From E of Tiiskeri Light (60°10'N., 26°16'E.), an outer approach route, indicated by a lighted range, leads about 5.5 miles NNE to the vicinity of Orrengrund and the pilot boarding place. It passes SE of Hamnskar and NW of Tainio Light. An intricate fairway then leads in a NNW direction to the berths. It is indicated by ranges, sector lights, and beacons.

2.16 The coast between Loviisa and Hamina (60°34'N., 27°12'E.), 29 miles ENE, is densely wooded, as are several of the islands fronting it. The shore is indented by a number of inlets. The ports are Kotka and Hamina are situated along this stretch.

The 40m curve lies about 13 miles offshore to the W of Ostrov Gogland, which was described in paragraph 1.5. The depths are irregular and the dangers in this vicinity extend S to within 2 miles NW of Ostrov Gogland.

Between Munapirtti (60°25'N., 26°30'E.) and Kotko, 8 miles ENE, the islands, islets, and areas of foul ground extend up to 3.5 miles seaward. The outer dangers are marked by buoys, beacons, and lights.

Mustaviiri, an island, lies 1.8 miles SE of Lalatta Light and a conspicuous tower stands near its center. A shoal extends up to about 2.5 miles SSW from the SW part of this island.

Kotkan Majakka Light (60°10'N., 26°39'E.) is shown from a column, with a helicopter platform, standing on a shallow shoal. A racon is situated at the light.

A shoal area, with depths less than 10m, extends up to about 5.5 miles SSE from the light. Banka Margasova, marked by a lighted buoy, lies 1 mile NW of the light.

Haapasaari (60°17'N., 27°12'E.) is one of an extensive group of islands which, lying close to one another, appear as one island when seen from a distance. The larger islands are partly wooded and moderately high, while the smaller are low and bare.

Haapasaari is divided into E and W parts which are connected by a narrow isthmus. A prominent church, with a gray roof, stands on the E part and a radio tower is situated on the SW

part. A prominent square tower, with a pointed roof, stands on the NW side of the island. A light is shown from the NE extremity of the island; another light is shown from Kivikare, a rock lying close NE of the island.

Pilot boards in position 60°15.4'N, 26°26.8'E.

Good anchorage can be obtained off the S side of Haapasaari, in depths of 9 to 11m, clay, but local knowledge is advised. Anchorage can be obtained about 0.4 mile N of the N side of the island, in depths of 22 to 29m, mud. Anchorage may also be taken about 0.4 mile E of the island, in depths of 18 to 20m, sand and stone, but this anchorage is exposed to SW winds.

Veitkara (60°16'N., 27°15'E.), a small island, lies on a shoal at the SE end of the group. A light is shown from its N part. A racon is situated at the light.

2.17 **Luppi** (60°14'N., 27°02'E.), marked by a light, is the outermost of the islands and shoals which extend up to about 6 miles SW from Haapasaari.

Reippo, a shoal with above and below-water rocks, lies 1.5 miles W of Luppi. Numerous dangers, including rocks awash, extend up to about 6 miles SW from this shoal.

Tuomalamatala, a shoal with a depth of 7.9m, lies about 2.2 miles SSW of Veitkara. It is marked by a buoy and is the outermost danger in the approach to Haapasaari.

Merikari (60°21'N., 27°06'E.), an islet, lies 5 miles NW of Haapasaari and is marked by a light. Shoals, marked by buoys, front this islet on its S and W sides.

Rankki (60°22'N., 26°58'E.), an island, lies near the S end of an extensive shoal area. A light is shown from a tower, 6m high, standing on an islet located close S of the S extremity of the island.

Retonpaasi (60°22'N., 27°01'E.), a rock awash, lies about 1.5 miles E of the S end of Rankki and is marked by a lighted beacon.

Rankin Kivikari (60°21'N., 26°57'E.), a shoal with above-water rocks, lies about 0.8 mile SW of the S end of Rankki and is marked by a light at the N end. A racon is situated at the light.

Lellerinsaaret (60°24'N., 26°58'E.), a group of three islets and foul ground patches, lies about 1.5 miles NNE of Rankki. A light is shown from the easternmost islet of this group.

Hietakari (60°24'N., 27°00'E.) lies about 1 mile E of Lellerinsaaret on an area of foul ground about 0.5 mile off the W side of Kirkkomaansaari. A light is shown from this islet.

Kiviletto (60°18'N., 26°57'E.), a shoal with above-water rocks, lies about 4 miles NW of Luppi Light and is marked by a light.

Ristisaari, an islet, lies 4.2 miles WNW of Kiviletto near the S end of an area of foul ground. This foul area extends up to about 5 miles NNW and Kaunissaari, an island, is located in its N part. A light is shown from the N extremity of Kaunissaari and a beacon stands on a shoal about 0.3 mile S of the S extremity of Risisaari.

Kotka (60°28'N., 26°58'E.)

World Port Index No. 28230

2.18 Kotka, the second largest port of Finland, is situated at the mouth of the Kymijoki River and in a bay which is protected by numerous islands and islets. The city stands on the island of Kotka. The area is typically industrial with sawmills, sugar mills, pulp, cellulose, fertilizer, and chemical plants.

Port of Haminakotka
https://www.haminakotka.com

Ice.—The main navigation season lasts from the middle of April to the beginning of January, but the harbor is usually kept open all year by icebreakers. The quays are kept ice free by an underwater compressed air system which prevents ice formation.

Tides—Currents.—The water level is affected greatly by the winds. Gales from S to SW increase the water level of the harbor up to 0.9m above normal. Gales from N decrease the level about 0.3m. The currents are inappreciable, but since the Kymijoki, one of the largest rivers flowing into the Gulf of Finland from the numerous inner lakes, empties into the harbor, the set is nearly always S.

Depths—Limitations.—The main route leading from seaward to the harbor is authorized for vessels with drafts up to 75,800 dwt, 244.9m in length, 10m draft, and 35.2m beam.The smaller northeastern VTS route has a maximum authorized draft of 5.9m.

The port has facilities for ro-ro, bulk, tanker, general cargo, timber, container, and passenger vessels. In addition to the main facilities described below, several private quays and piers are situated within the port.

The Mussalo (60°27'N., 26°53'E.) district is situated in the SW part of the port and includes terminals for container, dry bulk, and liquid bulk vessels.

The container terminal basin, which is straddled by the B-Quay and C-Quay and provides eight berths. The completion (2019) of a 620m breakwater project, along with land reclamation and dredging, immediately to the W the Mussalo Container Terminal, created a new D-Quay area with a deep water basin and a charted depth of 17.5m.

The Mussalo Dry Bulk Terminal Quay, located along the A-Quay and provides four berths.

The liquid bulk terminal, operated by Oil tankings, consists of a pier which provides two berths (N1 and N2).

Approximately 0.4 mile N of the bulk liquid terminal is the Janska or Baltic Tank basin.

The City Terminal (Kantasatama) district, located approximately 3 mile NNE of Mussalo, is situated at the N most side of Kotka island. The Kantasatama is the oldest part of the port of Kotka and is gradually shifting from a wood-processing-industry cargo port to a passenger and cruise traffic hub.

The main quays at the City Terminal include Italaituri, Valilaituri, Pohjoislaituri, and Harniemenlaituri.

The Hietanen South Terminal, a bulk terminal, is situated close W of the City Terminal. The quay (T1-T4), also known as the Poland Quay, or sometimes Vasikkasaaten.

Hietanen harbor and ro-ro terminal are situated 1 mile N of the City Terminal. The quay provides six berths (H1-H6). Vessels up to 10m draft can be accommodated alongside.

Sunila Quay, a dry bulk terminal, is situated on the W side of the island of Pyotinen, close E of Hietanen. Provides two berths (S1-S2).

The Halla Terminal, involved in timber processing and export,

Kotka—Mussalo (oil terminal)

Kotka—Mussalo (dry bulk terminal)

is located on the E side of the Halla island/peninsula. It's two berths (U1-U2) comprise 240m of quay.

For more berthing information see table the titled **Kotka—Berth Information**

Kotka—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
City Terminal							
Italaituri	172m	—	153.4m	9.0-10.0m	20.6m	9,595 dwt	Cruise vessels, general cargo, and ro-ro/lo-lo.
Pohjoislaituri	98m	—	—	6.3-6.7m	—	—	Cruise vessels, general cargo, and ro-ro/lo-lo.
Valilaituri N	205m	—	165.7m	—	23.4m	11,407 dwt	Cruise vessels and ro-pax.
Valilaituri S	200m	—	165.7m	7.7-9m	23.4m	11,407 dwt	Cruise vessels.
Halla Terminal							
U1- U2	240m	—	132.2m	8.5m	18.8m	8,733 dwt	Ro-ro/lo-lo.
Hietanen Harbor							
H1	18m	—	134.4m	7.9m	20.0m	7,200 dwt	Ro-ro/lo-lo. Berthing length of 140m (including dolphins).
H2	155m	—	205m	10.0m	26.2m	18,250 dwt	—
H3-H5	—	—	217.9m	10.0m	26.5m	18,250 dwt	Ro-ro/lo-lo and containers. Continuous berthing length of 560m.
H6	186m	—	217.9m	10.0m	26.5m	18,250 dwt	Ro-ro freight.
Hietanen South (Poland Quay)							
T1-T4 Poland	—	—	153.2m	8.5m	23.6m	20,406 dwt	Breakbulk and others. Continuous berthing length of 360m.
Mussalo Bulk Terminal							
A1-A4	—	—	225m	13.5-15.3m	32.2m	75,800 dwt	Continuous berthing length of 600m.
Mussalo Container Terminal							
B0	142m	—	156.9m	10.0-12.0m	25.6m	18,148 dwt	Ro-ro/lo-lo and containers. Continuous berthing length of 852m.

Kotka—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
B1	142m	—	201.8m	10.0-12.0m	32.2m	62,045 dwt	Containers. Continuous berthing length: 852m.
B2	142m	—	179.9m	10.0-12.0m	29.9m	35,737 dwt	
B3	142m	—	189.9m	10.0-12.0m	28.5m	37,125 dwt	
B4	142m	—	189.9m	10.0-12.0m	28.5m	38,146 dwt	
B5	142m	—	201.8m	10.0-12.0m	32.2m	62,041 dwt	
C0	155m	—	140.6m	10.0-12.0m	23.2m	12,193 dwt	Ro-re/lo-lo and containers. Continuous berthing length of 930m.
C1	155m	—	244.9m	10.0-12.0m	35.2m	40,881 dwt	
C2	155m	—	244.9m	10.0-12.0m	35.2m	40,881 dwt	
C3	155m	—	216.2m	10.0-12.0m	35.2m	40,079 dwt	
C4	155m	—	244.9m	10.0-12.0m	35.2m	40,881 dwt	
C5	155m	—	244.9m	10.0-12.0m	35.2m	46,852 dwt	
Pohjolan Voima Power Plant (Mussalo)							
J1-J2	134m	—	99.9m	8.0-9.0m	13.3m	5,250 dwt	Breakbulk.
M1-M2	—	—	124m	8.0-9.0m	18.0m	10,624 dwt	Coal and breakbulk. Continuous berthing length of 200m.
Sunila Terminal							
S1	195m	—	154.6m	6.0-7.0m	18.9m	14,595 dwt	Continuous berthing length of 390m.
S2	195m	—	156.9m	7.4-7.7m	25.6m	18,148 dwt	
Oiltanking Sonmarin OY Terminal (Mussalo)							
N1	69m	15.0m	230m	13.5m	30.0m	40,000 dwt	Chemicals and bunkers.
N2	60m	11.5m	175m	10.0m	25.0m	20,000 dwt	Chemicals, crude products, and bunkers.

Aspect.—The harbor lies at the seaward end of a heavily wooded valley formed by the Kymijoki River. From seaward, the islands and the coast blend together.

Kotka—City Terminal

A prominent tower, with a chimney situated close NW, stands in the E part of Kotka. Another prominent chimney stands about 1 mile NNE of the tower. A conspicuous monument stands on the E part of Varissaari, an islet lying about 1.2 miles S of the tower. A prominent water tower is situated in the W part of the city. Kotka Church stands in the NE part of the city and is conspicuous.

The approach routes and entrance channels are indicated by lighted ranges which may best be seen on the chart. Adjacent dangers are marked by lights, beacons, and buoys.

Pilotage.—Kotka is part of the Finnpilot Pilotage Authority, Eastern Zone. See paragraph 1.1 for details on Finnpilot. Pilotage is compulsory for the following:

1. A vessel or a vessel combination with a maximum loa of more than 70m or a maximum width of more than 14m or whose greatest summer load draft in salt water is more than 4·5m.
2. A vessel carrying bulk cargo of hazardous substances or substances that can pollute the sea.
3. A vessel belonging to a foreign government, which is not used in commercial operations.

Pilots board, as follows:

1. Vessels with a maximum draft of 10m are advised to use the Orrengrund 10m fairway and the Orrengrund pilot boarding position (0°14'18.0"N., 26°25'21.6"E.).
2. Vessels with a maximum draft of 15.3m using the

Mussalo Fairway—Kotkan Majakka pilot boarding position (60°07'N., 26°30'E.).

3. Vessels with a maximum draft of 7.3m from or to the E—Haapasaari pilot boarding position (60°15'N., 27°16'E.) (closed during winter).

4. Vessels approaching from the E may embark a pilot at Santio (60°27'N., 27°42'E.).

Pilots can be contacted on VHF channel 13 or 16.

All ordering of local pilots throughout Finland is carried out by the Finnpilot Order Center with the major areas and more local areas, including Kotka.

Finnpilot Order Center—Contact Information	
Southern Pilot Zone	
Telephone	358-400-907-977
Facsimile	358-29-52-53010
E-mail	pilotorder.south@finnpilot.fi
Web site	https://pilotorder.fi
Eastern Pilot Zone	
Telephone	358-400-907-978 (Kotka)
	358-40-487-3133 (Saimaa)
Facsimile	358-29-52-53011
E-mail	pilotorder.east@finnpilot.fi
Web site	https://pilotorder.fi
Western Pilot Zone	
Telephone	358-400-907-979
Facsimile	358-29-52-53012
E-mail	pilotorder.west@finnpilot.fi
Web site	https://pilotorder.fi
Head Office	
Telephone	358-29-52-53000
Facsimile	358-29-52-53001
E-mail	info@finnpilot.fi
Web site	https://finnpilot.fi

Regulations.—GOFREP, a mandatory ship reporting system under SOLAS, operates in the Gulf of Finland and its approaches (see paragraph 2.1 for more details). More information regarding GOFREP and Kotka VTS may be found at the VTS Finland web site below.

Vessel Traffic Service.—Kotka Vessel Traffic Service (VTS) system operates within the approach fairways of the port pilotage area. Radio communications are in English, Finnish, and Swedish.

All vessels operating in the VTS area shall maintain a continuous watch on VHF channel 67.

All vessels with an loa of 24m and above are required to participate in the Kotka VTS.

FinTraffic VTS—Master's Guide
https://www.fintraffic.fi/en/vts/masters-guide

The Kotka VTS includes the approaches to the Ports of Kotka, Hamina and Lovisa and the coastal fairway and is bounded by lines joining the following approximate positions:

a. 60°12.5'N, 25°41.2'E.
b. 60°05.6'N, 25°43.0'E.
c. 60°10.3'N, 26°39.0'E.
d. 60°12.1'N, 26°45.9'E.
e. 60°12.0'N, 27°17.6'E.
f. The maritime boundary between Finland and Russia.

When reporting to the VTS, reports shall contain the following information:

1. Vessel's name.
2. Name of reporting point.
3. Destination.
4. Intended route. If an alternative route is selected, this must be reported.

Reporting is required:

1. When entering the VTS area.
2. Before anchoring.
3. Before leaving an anchorage.
4. After berthing.
5. Before leaving port.
6. At the reporting points in the area as well as 10 minutes before entering Ruotsinsalmi.

Kotka—Hietanen (ro-ro terminal)

Meeting and overtaking is permanently prohibited in the following areas covered by Kotka VTS:

1. In the Ruotsinsalmi 6.1m fairway between latitude 60º27'24"N and latitude 60º27'57"N.
2. In the Hamina 12,0m fairway between latitude 60º26.2'N and latitude 60º27.4'N.

Vessels must notify Kotka VTS of the following events taking place in the VTS area or its vicinity:

1. Any incident or accident affecting the vessel's safety.
2. Any incident endangering the safety of navigation.
3. Any circumstance that may cause pollution of waters of the coast.
4. Any pollutant spills and containers of packages drifting in the sea.

Hamina

Contact Information.—See the table titled **Kotka—Contact Information**.

Kotka—Contact Information	
Vessel Traffic Service	
Call sign	Kotka VTS
VHF	VHF channel 67
Telephone	358-20-448-5660 (Kotka VTS)
	358-20-448-5391 (Supervisor)
E-mail	kotka.vts@fintraffic.fi
	supervisor.hki@fintraffic.fi
Web site	http://www.fintraffic.fi/en/masters-guide

Anchorage.—Anchorage can be taken by vessels with local knowledge in Norskansalmi, the E roadstead of the N end of Kotka Island, in depths of 12 to 15m, clay and mud. Anchorage may also be taken, in depths of 6 to 11m, clay and sand, sheltered from all winds, off the N end of the island.

It is reported that designated outer anchorage areas are centered about 2 miles and 6 miles E of Tiiskeri Light (60°10'N., 26°16'E.).

Directions.—The main route, authorized for drafts up to 15.3m, leads from the SW to the harbor. From SE of Tiiskeri Light the channel leads in a NE direction, passing SE of Tainio Light, NW of Kotkan Majakka Light, and SE of Banka Margasova. Off the SW side of Kiviletto, the channel turns N. It then leads N and NNE into the harbor, passing W of Rankin Kivikari Light.

Another route, authorized for drafts up to 10m, leads from the W into the harbor. This route leads from E of Tiskeri Light and joins the Winter Channel coastal fairway, passing SE of Orrengrund and NNW of Lalatta Light. It continues in a NE direction and passes N of Kaunissaari Light. The channel then turns NNE and joins the main route leading into the harbor.

Two alternate fairways, authorized for drafts up to 7.3m, lead from the S and pass through the Haapasaari group. At the N side of the group they meet and form a single channel. This channel then leads NW and NNW into the harbor, passing E and N of Vahakari Light and ENE of Rankin Kivikari Light.

Caution.—An overhead cable, with a vertical clearance of 33m, spans the channel in the N part of the harbor.

Several submarine cables lie in the approaches to the harbor and may best be seen on the chart.

A submarine pipeline, which may best be seen on the chart, leads S and SE from the harbor area to the Haapasaari group.

Hamina (60°34'N., 27°12'E.)

World Port Index No. 28240

2.19 The port of Hamina, formerly known as Frederikshamn, lies at the head and along the W side of an inlet that indents the coast about 9 miles NE of Kotka. The shores of the inlet are steep-to for about 1 mile within the entrance. Numerous patches of foul ground and many islets, which may best be seen on the chart, extend across the inlet, providing shelter to the outer part of the harbor. Most of the islets are heavily wooded.

Ice.—The main navigation season lasts from the end of April to the end of December. Generally, the port is kept open

all year by icebreakers.

Depths—Limitations.—The deepest passage leading to the port is authorized for drafts up to 10m.

The Oil Terminal is situated in the S part of the port. There is an LPG pier. There are also three oil berths.

Palokangas Basin, lying close NNE of the Oil Terminal, has six berths. Hiirenkari Quay, close ENE of Palokangas Basin, has five berths.

Lakulahti Basin, close N of Hiirenkari Quay, has about 800m of total quayage. There are eight berths. Hillo Quay, close NNE of Lakulahti, has 345m of berthage.

For more berthing information see the table titled **Hamina—Berth Information.**

The port has extensive facilities for LPG, oil, general cargo, ro-ro, container, bulk, and timber vessels. Vessels up to 48,293 dwt, 216.7m in length, and 43m beam can be accommodated in the harbor.

Hamina—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Hiirenkari Logistics Terminal							
HK1	137m	7.6m	123m	—	16.7m	2,969 dwt	Continuous berthing length: 274m. General cargo.
HK2	137m	7.6m	123m	—	16.7m	5,375 dwt	
HK3	103m	8.3m	123m	—	18.2m	9,653 dwt	Continuous berthing length: 310m. General cargo and ro-ro freight.
HK4	103m	8.3m	154.6m	—	17.2m	14,603 dwt	
HK5	104m	8.3m	110.7m	—	14.0m	6,665 dwt	
HK6	14m	7.5m	—	—	—	—	Ro-ro freight.
Ro-Ro	22m	7.5m	—	—	—	—	Closed. Ro-ro freight.
Lakulahti Logistics Terminal							
H1	85m	6.5m	—	—	—	—	Closed. Continuous berthing length: 256m. General cargo and breakbulk.
H2	85m	6.5m	—	—	—	—	
H3	86m	6.5m	—	—	—	—	
L1	108m	8.3m	134.6m	—	21.5m	10,581 dwt	Continuous berthing length: 216m. General cargo and breakbulk.
L2	108m	8.3m	136.5m	—	18.9m	12,760 dwt	
L3	80m	7.9m	113.7m	—	17.3m	6,665 dwt	Continuous berthing length: 160m. Cement, ro-ro freight, containers, and general cargo.
L4	80m	7.9m	115.4m	—	17.3m	6,665 dwt	
L5	93m	7.9m	149.9m	—	18.2m	14,330 dwt	Continuous berthing length: 186m. Ro-ro freight, general cargo, and containers.
L6	93m	7.9m	156.8m	—	22.8m	17,966 dwt	
L7	61m	7.6m	122m	—	17.0m	7,092 dwt	Continuous berthing length: 122m. Ro-ro freight, general cargo, and containers.
L8	61m	7.6m	136.3m	—	18.9m	12,710 dwt	
Palokangas Container Terminal							
EU0	82m	11.2m	82.5m	—	12.5m	3,650 dwt	Containers.
EU1	157m	11.2m	158.6m	10.0-11.5m	25.6m	17,294 dwt	Continuous berthing length of 630m. Ro-ro freight and containers.
EU2	157m	12.7m	185.4m	10.0-11.5m	30.0m	37,682 dwt	
EU3	158m	12.7m	180m	11.5-12.0m	30.0m	37,666 dwt	
EU4	158m	13.2m	172.2m	11.5-12.0m	27.4m	24,983 dwt	
PK1	—	12.7m	199.9m	—	30.0m	37,637 dwt	Continuous berthing length: 300m. Ro-ro freight and containers.
PK2	100m	12.7m	—	—	—	—	Ro-ro freight and containers.
PK3	185m	12.3m	216.7m	—	43.0m	48,293 dwt	Ro-ro/lo-lo, general cargo, and containers.

Hamina—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Finngas Terminal							
LPG	30m	9.0m	170m	—	22.0m	15,990 dwt	Berthing length:170m (incl. dolphins). Chemicals and LPG.
Hamina Oil Terminal							
No. 1 Oil	35m	9.0m	140m	—	22.0m	16,028 dwt	Chemicals.
No. 2 Oil	72m	10.0m	184m	—	32.0m	40,870 dwt	Berthing length: 182m (incl. dolphins). Chemicals and dirty products.
No. 3 Oil	80m	12.0m	184.2m	—	32.2m	47,499 dwt	Berthing length: 150m (incl. dolphins). Chemicals.

Aspect.—Einonkarinmatala (60°26'N., 27°08'E.) is an isolated shoal marked by a light.

Hamina is a small commercial town with several prominent factories and sawmills. Tank farms situated in the port area are prominent from seaward.

The approach routes and entrance channels are best seen on the chart. Adjacent dangers are marked by lights, beacons, and buoys.

Pilotage.—Pilotage is compulsory. Pilots may be obtained from Kotka (see paragraph 2.18).

All ordering of local pilots throughout Finland is carried out by the Finnpilot Order Center, Helsinki. For more information, see Pilotage in paragraph 2.11.

The agent should advise the port authority of the vessel's ETA no later than on the Friday preceding the week of arrival. An ETA must be given 24 hours in advance of expected arrival, or upon departure from previous port if less than 24 hours away.

Contact Information.—See the table titled **Hamina—Contact Information**.

Hamina—Contact Information	
Port	
Call sign	Haminan Satama
	Hamina Port
VHF	VHF channels 12, 13, and 16
Telephone	358-20-790-8831
Port Authority	
Telephone	358-20-790-8800
E-mail	office@haminakotka.fi
Web site	https://www.haminakotka.fi
Ship Service	
Telephone	358-20-790-8840

Anchorage.—Anchorage can be obtained, in a depth of 14m, mud, outside the entrance of the inlet.

Within the harbor, anchorage may be taken 1.3 miles N of the entrance, in depths of 7 to 10m, and W of the fairway in the inner roadstead.

Directions.—The main and deepest passage leading to the port is the continuation of the Winter Channel (coastal route). This channel, which is authorized for drafts up to 10m, leads in an E direction from Kaunissaari, passing S of Merikari Light. It then turns NNE and passes SE and E of Aarholma (60°25'N., 27°18'E.). About 1.5 miles NE of Aarholma, the channel turns and approaches the harbor from the SE.

The most direct passage from seaward, which is authorized for drafts up to 7.3m, leads from S, passing through the Haapasaari group and approaching the port from the SW. Vessels with drafts up to 8.6m may enter the port by using the route leading in an E direction from Kaunissaari and then joining the S approach channel, about 3.5 miles N of the Haapasaari group.

Caution.—Submarine cables and pipelines, which may best be seen on the chart, extend across the harbor area.

Several mooring buoys are laid in the roads and in the vicinity of the berths.

Hamina to Vyborg

2.20 Between the entrances of the ports of Hamina and Vyborg (60°43'N., 28°45'E.), the coast is rocky, hilly, and predominately wooded. It is indented by several bays, inlets, and fjords. Virolahti (60°33'N., 27°45'E.), the largest of these inlets, is entered midway along this stretch of the coast.

The boundary between Finland and Russia runs through Virolahti.

Between Hamina and Virolahti, the coast is fronted by numerous islets and dangers, but E of Virolahti the off-lying features are not as numerous. There are several loading places and anchorages along this stretch of the coast, but none of commercial importance.

The inshore coastal channel, leading E from S of Kuorsalo (60°28'N., 27°23'E.) is authorized for vessels with drafts up to 7.3m, but is only available to vessels with local knowledge. Pilots for the passage may be obtained from Hamina.

Tammio (60°25'N., 27°25'E.) is the largest of an extensive group of barren islets and rocks. Foul ground surrounds this

group and also lies in patches within 1.3 miles N and 1.5 miles NW and W of it. A lighted range is shown from structures standing on the W part of Tammio and the S end of an islet lying close W of it.

The Vasikkasaari group lies about 1 mile NE of Tammio. A light is shown from Lotouri, a rock, lying midway on an area of foul ground extending NW from the group.

The route, authorized for drafts up to 7.3m, passes close N of this light and between the buoys marking the dangers extending S from Kuorsalo and N from Tammio and the Vasikkasaari group.

Mustamaa, an island, lies 2 miles E of the Vasikkasaari group. It is steep-to on the W side. An above-water rock, marked by a buoy moored close N, lies about 0.2 mile W of the NW extremity of the island. A cairn stands on the NW extremity and a pair of range beacons stands close NE. This range marks the fairway, authorized for drafts up to 4.6m, which leads through the foul ground lying between Mustamaa and Ruissaari, an island located 0.5 mile NNW. A light is shown from the SW extremity of Mustamaa.

The route leading between the off-lying islands to the E of Mustamaa is authorized for drafts up to 7.3m.

A large bay, indenting the coast in a NW direction, lies about 1 mile N of Mustamaa. It is formed by the mainland on the W and N sides and Siikasaari, an island connected to the mainland by an isthmus, on the E side. The bay has general depths of 11 to 18m, but is encumbered by several shoals and rocks. Fairways, authorized for drafts up to 7.3m and drafts up to 5.5m, lead to several loading anchorages situated within the bay. Local knowledge is required and pilots are available from Hamina.

Maringinlahti, a bay, lies on the NE side of the peninsula of Siikasaari (60°29' 27°36'E) and is entered close E of the SE extremity of the island. It has general depths of 4 to 11m. The fairway leading into the bay is authorized for drafts up to 3m. Anchorage can be taken in the N part of the bay, in a depth of 7.3m, stone and sand. Local knowledge is required.

Between the Haapasaari group and Virolahti, the offshore area offers no recognized access to the inshore channel.

Kilpisaari (60°17'N., 27°18'E.), moderately high, is one of the outermost islands in this vicinity and is covered with pine trees. Itakarit and Koivuluotok are islets marked by beacons lying 1 mile E and 3 miles NE, respectively, of Kilpisaari.

Majakartti (60°19'N., 27°35'E.), an islet, lies about 4.2 miles SE of Tammio. It is surrounded by shoals and marked by a beacon, 24m high. Isolated shoal patches and rocks extend up to about 6 miles ESE of this beacon. Banka Pitkyanen, the outermost danger, is marked by a buoy.

2.21 Ostrov Sommers (60°12'N., 27°39'E.), an islet, lies 6.5 miles SSE of Majakartti and is 15m high. A light is shown from a framework tower, 37m high, standing on the W part of this islet.

Ostrov Malyy Sommers, a rock, lies about 0.8 mile E of the light and is 1m high. A stranded wreck lies on a reef in the vicinity of this rock.

Ostrov Nerva (60°15'N., 27°57'E.), an above-water rock, lies 10 miles ENE of Ostrov Sommers. A light is shown from a framework tower, 37m high, standing on this rock. Banka Narvinmatala, an isolated shoal with a depth of 7m, lies about 3 miles NE of this light. An anchorage area exists about 4 miles NE of Ostrov Nerva.

Parrio (60°28'N., 27°42'E.), an island, lies about 5 miles ENE of Mustamaa. A beacon stands on the E side of the island and a light is shown from the SW side. Santio lies close E of Parrio. Both these islands are steep-to on their N and W sides, but are fringed by dangers elsewhere. A buoy marks the S extremity a shoal which extends up to about 1 mile SSE from the S side of Santio.

2.22 Ostrov Kopytin (60°26'N., 27°42'E.), an island, lies near the center of an extensive bank of foul ground, 1.5 miles S of Parrio. Islets and rocks extend up to about 1 mile NW and SE from this island. Detached shoal patches, with depths of 4.5 to 7m, lie up to about 0.7 mile farther NW and 1.2 miles SE. Lighted ranges are shown from structures standing on the island and on the islets in this vicinity.

Huovari, an islet, is located about 2 miles S of Ostrov Kopytin. It is marked by a light and lies on the S part of a shoal patch. Isolated shallow rocks lie up to about 1 mile W and 0.6 mile E of this shoal patch. Banka Okhtamatala, with depths of less than 20m, lies about 4 miles E of Huovari and is marked by a lighted buoy.

Ostrov Kozlinyy (60°27'N., 27°47'E.), an island 24m high, lies at the S end of an area of foul ground extending about 3 miles SE from the W entrance point of Virolahti. It forms the SW side of Kavonselka (Reyd Shtandart). A light is shown from the S extremity of the island.

Isolated shoals, marked by buoys, lie up to about 1.5 miles SE and 1.2 miles SW of the light. The W side of the island is fronted by foul ground and rocks.

Khemminginletto (60°27'N., 27°50'E.), a rock, lies 1.5 miles E of the part of Ostrov Kozlinyy and forms the E entrance point of Kavonselka (Reyd Shtandart). A light is shown from a framework tower, 6m high, standing on this rock.

Kavonselka (Reyd Shtandart) (60°28'N., 27°48'E.) is entered between Khemminginletto and Ostrov Kozlinyy. It extends about 2.5 miles NNW and has general depths of 7 to 27m. It was reported that this inlet is closed to navigation.

Caution.—An explosives dumping ground area, the limits of which may best be seen on the chart, lies centered 2.3 miles N of Ostrov Nerva.

2.23 Virolahti (60°32'N., 27°45'E.) may be entered through a narrow channel NE of Santio. This inlet extends about 5.5 miles from its entrance. The SE part of the inlet is formed by three large islands, of which Ostrov Bolshoy Pogranichnyy is the southernmost. There are general depths of 4 to 9m within the inlet, which gradually shoals near its head.

Pitkyapasskiy Reyd (60°29'N., 27°56'E.) is sheltered by Ostrov Bolshoy Pogranichnyy on the W side and by an archipelago of islands on the S side. This inlet affords safe anchorage, in depths of 11 to 13m, mud and sand. A fairway channel, having a least depth of 6.1m, enters the inlet at the E side of the anchorage. Local knowledge is required.

Ostrov Dolgiy Kamen (60°28'N., 27°52'E.), the main island in the archipelago lying S of Pitkyapasskiy Reyd, is 25m high and located 1.2 miles NNE of Khemminginletto Light.

Arkhipelag Bol'shoy Fiskar (60°29'N., 27°56'E.), a prominent group of comparatively high islets, lies centered 3.8 miles SE of Khemminginletto Light. The islets have a reddish ap-

pearance and are covered with low bushes. A light is shown from a tower, 10m high, standing on Ostrov Kinima, the central islet. Shoal patches and rocks extend up to about 2 miles N,S, and E, and 1.5 miles W of this light.

Mys Krestovyy (60°31'N., 28°14'E.) is located 12 miles ENE of the entrance to Pitkyapasskiy Reyd. Three small peninsulas project about 1.5 miles SSE from the intervening coast and are located equidistant from each other. Foul ground, shoal patches, and isolated rocks front the shore and extend up to about 4.5 miles seaward in places. The dangers lying adjacent to the recommended routes are marked by lights, buoys, and beacons. A turning basin with a radius of 300m exists W of Mys Krestovyy.

The three bays (Bukhta Chistopol'skaya, Bukhta Portovaya and Bukhta Dal'nyaya) formed between the three peninsulas (Mys Urpalanniemi, Poluostrov Burunnyy and Poluostrov Konyok) and Mys Krestovyy have general depths of 7 to 18m and afford safe anchorage to vessels with local knowledge.

The Portovaya compressor station lies on the Konyok peninsula and is the starting point of the Nord Stream 1 gas pipeline.

The **Portovaya LNG Terminal** (60°30'N., 28°37'E.) pier extends SE from the Konyok peninsula and across Ostrov Podvesel'nyy. The marine shipping terminal lies on the NE side of the L-shaped mole. Details regarding berth size, depths, and operations are currently unavailable (2020).

Mys Krestovyy, the W entrance point of Vyborgskiy Zaliv, is low, covered with trees, and surmounted by a conspicuous building. Its sandy extremity is barren and covered with rocks. A shoal bank extends about 1 mile SE from this headland and is marked by a lighted buoy.

A light is shown from a tower, 15m high, standing on a rocky mass about 1.4 miles SE of the headland. Shoal patches and rocks extend up to about 2 miles SE and SSE of the light.

Ostrov Malyy Fiskar, an islet fringed by foul ground, lies about 1.5 miles offshore, 5 miles W of Mys Krestovyy Light. A light is shown from a framework tower, 14m high, standing on this islet.

Banka Posluoto, with a least depth of 1.6m, lies about 1.8 miles ESE of Ostrov Malyy Fiskar and is marked by a buoy. Isolated shallow shoal patches extend up to about 3.8 miles SE of this rocky bank.

Ostrov Rondo (60°27'N., 28°22'E.), an island fronted by foul ground, lies 4 miles SE of Mys Krestovyy Light and is 11m high. A light (front range) is shown from a framework tower, 10m high, standing on the N part of this island.

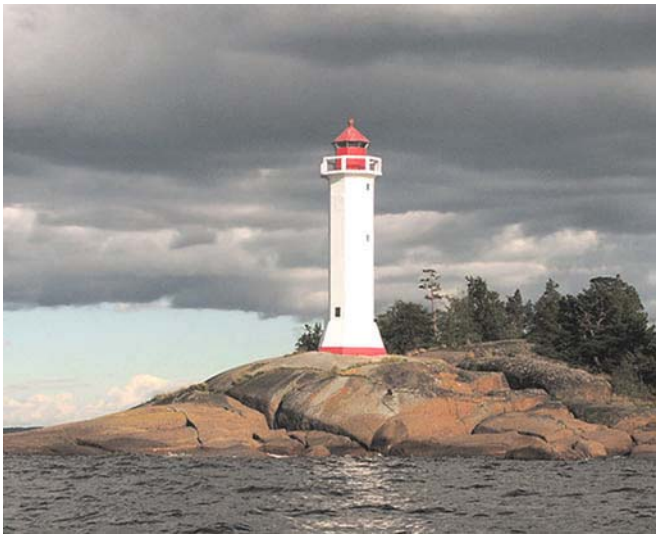
Banka Ruonninmatala, with a least depth of 5.4m, lies about 2 miles W of Ostrov Rondo and is marked by a lighted buoy.

Skala Khalli (60°24'N., 28°08'E.), a rock fringed by foul ground, lies about 7 miles WSW of Ostrov Rondo. A light is shown from a framework tower, 12m high, standing on this rock.

Banka Ruismatala (60°25'N., 28°13'E.), with a depth of less than 2m, lies about 2 miles E of Skala Khalli Light and is marked by a buoy.

2.24 Vyborgskiy Zaliv (60°30'N., 28°22'E.) is entered E of Mys Krestovyy and extends about 19 miles NE to the port of Vyborg at its head. The shores of the gulf and the islands lying within it are rocky and covered with pine forests. The gulf is subdivided into several parts by inlets, peninsulas, and islands.

Numerous shoal patches and dangers lie within the gulf and the approaches. The principal dangers are marked by lights, buoys, and beacons.



Povorotnyy Light (Ostrov Mayachnyy)

Anchorage.—Anchorage Area 18E, centered on position 60°20.00'N, 28°01.56'E, has depths of 30 to 47m, sand and mud bottom. Anchorage Area 18G, centered on position 60°25.21'N, 28°03.73'E, has depths of 29 to 38m, mud bottom.

Vyborgskiy (60°32'N., 28°23'E.), a bank with drying rocks, lies 4.4 miles N of Ostrov Rondo and is marked by a lighted buoy, moored at its S extremity. A light is shown from a prominent tower, 10m high, standing in the N part of the bank.

Ostrov Vikhrevoy (60°34'N., 28°26'E.), 23m high, lies about 3 miles NE of Vyborgskiy Light. This island is fronted by shoals. A beacon stands in its NW part and a light is shown from its E part.

Ostrov Mayachnyy (60°34.3'N., 28°25.5'E.) lies close N of the NW side of Ostrov Vikhrevoy. Povorotnyy Light is shown from a tower, 13m high, standing on this rocky islet.

Banka Tarantsova lies about 1 mile NW of the light. This isolated shoal has a least depth of 6.8m and is marked by a buoy.

Ostrov Igrivvy (60°36'N., 28°28'E.) is low and covered with thick woods. Foul ground extends up to 0.2 mile SE from Mys Teykarniyemi, the SE extremity of the island, and is marked by a lighted buoy.

2.25 Ostrov Krepysh (60°38'N., 28°32'E.), a comparatively large island, lies on the W side of the Vysotsk harbor area. A light (rear range) is shown from a tower, 16m high, standing on Mys Ostryy, the SW extremity of the island.

Banka Hallikivi (Khallikivi), with a least depth of 2.5m, lies centered about 0.5 mile SW of Mys Ostryy. A light (front range) is shown from a tower, 4m high, standing on the N part of this shoal and a lighted buoy marks the S part.

Banka Yalkamatala extends NW from the W side of Ostrov Vysotskiy, an island forming the S side of the Vysotsk harbor area. The N extremity of this shallow shoal lies about 0.6 mile SSW of Mys Ostryy and is marked by lighted buoys.

A breakwater extends SSE from the SE extremity of Ostrov Krepysh. A lighted buoy is moored off the seaward end of this

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City of Vyborg

breakwater and marks an obstruction formed by the ruins of a light tower. A detached breakwater lies with its N end located about 100m SSE of the obstruction. A light (front range) is shown from a column, 5m high, standing on the N end of this breakwater.

Gavan Vysotsk (Vysock) (60°37'N., 28°34'E.) (World Port Index No. 28310) is situated in the S and central parts of Vyborgskiy Zaliv, an extensive inlet. This harbor area is being developed as an outer loading port for Vyborg to relieve traffic congestion (see paragraph 2.27).

Gavan Vysotsk is situated on the E side of a narrow passage leading between Polustrov Vysotskiy, a jagged peninsula extending from the SE side of the bay, and several islands located in the bay's center. This passage also carries the main channel to Vyborg.

Generally, vessels up to 250m in length and 11.9m of draft can enter the port area. There are several quays in operation with depths of 12.7m alongside. See the berthing information table for Vyborg for more information.

Vyborg (60°43'N., 28°45'E.)

World Port Index No. 28300

2.26 Vyborg, known in Finnish as Viipuri, lies at the head of Vyborgskiy Zaliv, about 19 miles from the entrance. The town has changed hands several times in history, most recently in 1944 when the Soviet Union captured it from Finland during the Second World War.

Vyborgskiy Zaliv is divided into several port areas by projecting points and islands, which the main fairway passes around or between. There are two harbor areas in the port. Yuzhnaya, the SW harbor, is the primary commercial area and is situated on the W side of the Krepostnoy Bridge (Castle Bridge). Severnaya, the NE harbor, is situated at the E side of the bridge and is only used by small vessels.

Vyborg—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Passenger Terminal							
No. 1	70m	—	111m	4.4m	18.0m	—	Fast ferries and bunkers.
No. 2	68m	4.6m	—	—	—	—	Fast ferries, breakbulk, and bunkers.
Sea Port Vyborg							
No. 3	80m	4.6m	—	—	—	—	Breakbulk and bunkers.
No. 4	80m	—	128.1m	6.0m	—	6,477 dwt	Cement, breakbulk, and bunkers.

Vyborg—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 5	130m	7.2m	128m	6.5m	—	8,488 dwt	Cement, containers, and bunkers.
No. 6	103m	7.0m	150m	6.5m	25.0m	18,000 dwt	Clean products, cement, fertilizer, others, containers, transshipment, steel products, bunkers, and breakbulk.
No. 7	130m	8.2m	150m	6.5m	25.0m	18,000 dwt	Clean products, aggregates, fertilizer, containers, steel products, slag, scrap metal, breakbulk, and bunkers. Rail link.
No. 8	130m	8.2m	150m	6.5m	25.0m	18,000 dwt	Clean products, coal, fertilizer, steel products, scrap metal, slag, transshipment, bunkers, containers, and breakbulk.
No. 9	130m	8.2m	150m	6.5m	25.0m	18,000 dwt	Cement, coal, fertilizer, steel products, scrap metal, slag, containers, bunkers, and breakbulk.
No. 10	130m	8.2m	—	—	—	—	Continuous berthing length of 560m.
No. 11	75m	8.2m	—	—	—	—	Coal, breakbulk, and bunkers.
No. 12	150m	8.2m	150m	6.5m	25.0m	18,000 dwt	Coal, breakbulk, and bunkers
No. 13	168m	8.2m	150m	6.5m	25.0m	18,000 dwt	Chemicals, coal, project/heavy cargo, breakbulk, wine-making material, and bunkers.

Winds—Weather.—Although the tidal range is small, considerable changes in the water level may be caused by strong winds, variation in atmospheric pressure, and the seasonal increase of water during the ice melt. The greatest change due to weather conditions is 1.6m.

Ice.—Generally, ice appears about the middle of November and lasts until April. The port is kept open year round with the assistance of icebreakers.

Tides—Currents.—In the N and S entrances to Gavan Vysotsk, a strong wind-induced current may be encountered occasionally.

Depths—Limitations.—From seaward to the bulk terminal at Gavan Vysotsk the least dredged depth is charted at 12.7m. The dredged (2012)fairway leading NE and passing S of the SE extremity of Ostrov Krepysh has a charted depth of 6.9m.

Signals indicating a rising or falling water level and the velocity of the current are displayed from masts on either side of the harbor, day and night.

The S harbor at Vyborg provides numerous of quayage. The N harbor is restricted by a bridge to small vessels with a maximum beam of 7.3m. For more berthing information see table titled **Vysotsk—Berth Information**.

Vessels up to 18,000 dwt, 150m in length, a draft of 6.5m, and beam of 25m, can be accommodated in the harbor.

Vessels exceeding the above dimensions must receive special permission prior to entering the port areas. There are facilities for timber, bulk, general cargo, and passenger vessels.

Aspect.—The approach routes, entrance channels, and inner fairways are indicated by lighted ranges. The dangers lying adjacent to the fairways are marked by lights, beacons, and buoys.

The most prominent feature in the city of Vyborg is the castle standing on the small island which is connected to the NE side of the Krepostnoy Bridge. Its conspicuous tower, 74m high, dominates the surrounding area.

Pilotage.—Pilotage is compulsory. The pilot station is situated at the NW end of Ostrov Vikhrevoy. Vessels should send a request for pilotage and an ETA 24 hours in advance. Pilots may be contacted by VHF on channel 10.

Pilots can be contacted through the Pilot Service Controller.

Pilot Service Controller—Contact Information	
Call sign	Vyborg/Vysotsk Pilot
VHF	VHF channel 10 (Vyborg)
	VHF channel 18 (Vysotsk)
Telephone	78-812-380-7149 (24 hours)
	78-813-783-2481 (ext. 226) (Mon-Fri)
Facsimile	78-812-380-7149
E-mail	pilot@vbg.rosmorport.ru

Vessels bound for the Lukoil II Terminal, Vysotsk, board the pilot, as follows:

1. In the vicinity of Khalli Lighted Buoy (60°24.5'N., 28°05.0'E.) at the N end of the TSS.
2. In the vicinity of the Fairway Lighted Buoy (60°26'N., 27°43'E.).

Vessels bound for the ports of Vyborg or Vysotsk board the

pilot boards about 0.6 mile W of the N end of Ostrov Mayachnyy (60°34'N., 28°25'E.).

During inclement weather, the pilot boat will lead vessels into more sheltered waters within Bol'shoy Tranzundskiy Reid (60°35.5'N., 28°30.0'E.) before boarding.

Regulations.—Between the inner pilot boarding place and Banka Hallikivi, a speed restriction of 8 knots is in effect; then through the port entrance, a speed restriction of 6 knots is in effect. Within the intricate channel leading to the entrance of Vybork at the N end of Vyborgskiy Zaliv, overtaking is prohibited and a speed restriction of 6.5 knots is in effect.

Entry into the port areas of Vysotsk and Vyborg may only be carried out with special permission from the authorities when the visibility is less than 1 mile and/or the wind is greater than force 6.

All inbound vessels should send a message to the Port Authority at least 48 hours in advance. In the case of their voyage being less than 48 hours, vessels should send a message not later than 1 hour after leaving their last port of call. The message should include the ETA at the pilot boarding place, last port of call, volume and nature of cargo to be discharged or loaded, details of any dangerous cargo, details of any heavy lifts, name of charterer, length, draft, number of passengers, and details of any services required.

Vessels entering the port areas with maximum allowable drafts are considered to be constrained by their drafts. Such vessels must display one black ball by day and one all-round red light at night above the forward steaming light.

The use of tugs is compulsory for vessels over 100m in length without a bow thruster arriving at Vyborg. Tugs are also compulsory for vessels over 80m in length and 5m draft leaving Vyborg.

Vyborg Castle and Tower

Vessel Traffic Service.—Vyborg and Vystok Vessel Traffic Service (VTS) operates in the following area:

1. Fairway No. 4 E of Lighted Buoy No. 3.
2. Vyborgskiy Zaliv Traffic Separation Scheme E of Khalii Lighted Buoy.
3. North of Veprevskiy Light.
4. The water area of Vyborg and Vysotsk, including Lukoil II Terminal

Vessels bound for Vyborg, Vysotsk, or the Saymenskiy Canal must establish contact with the VTS (call sign: Vyborg Radio 5) on VHF channel 12 or 16 when approaching the S entrance to the Vysotsky Roads and follow instructions.

Vessels bound for Vyborg, Vysotsk, or the Saymenskiy Canal transit the coverage area of St. Petersburg Coastal VTS. For further information on the requirements of St. Petersburg Coastal VTS, see paragraph 3.1.

Contact Information.—The ports of Vyborg and Vysotsk can be contacted by e-mail (ivs@vbgport.ru).

Vyborgskiy Light

Anchorage.—Three designated anchorage areas, the limits of which are shown on the chart, lie within Tranzundskiy Reid, the outer roadstead located between Ostrov Igrivvy and the entrance to the port areas. They have general depths of 14 to 18m, mud and sand.

Two designated anchorage areas, the limits of which are shown on the chart, lie between Gavan Vystock and Vyborg. They have depths of 11 to 17m, sand and mud, but require local knowledge.

An anchorage area, with depths of 11 to 14m, lies adjacent to the N side of the deep-water route (see Directions) and may best be seen on the chart. Several obstructions and wrecks lie within the anchorage.

Directions.—The main approach from seaward is via the Traffic Separation Scheme (TSS) which leads NE from E of Ostrov Sommers to a position located about 2 miles W of Skala Khalli Light (60°24'N., 28°08'E.). A divided Safety Fairway, which may best be seen on the chart, then leads to the port entrance. This route leads ENE from the N end of the TSS toward Ostrov Rondo. The inbound track is situated on the S side of the fairway and passes S of Banka Ruismatala (see paragraph 2.23). The outbound track is situated on the N side of the fairway and passes N of Banka Ruismatala. From the vicinty of Ostrov Rondo, the route turns NE and N and passes about 0.7

mile W of Vyborgskiy Bank. About 1.5 miles NNW of Vyborgskiy Bank, the route turns NE and leads to the inner pilot boarding place located W of Ostrov Mayachnyy. It then continues ENE, NE, and ENE to join the entrance fairway, passing S of Mys Teykarniyemi and between Banka Hallikivi and Banka Yalkamatala. The entrance fairway leads ENE between the ruins of the light tower, on the N side, and the N end of the detached breakwater, on the S side.

The inshore channel leads 6.4 miles in a NE direction from S of Mys Krestovyy to the inner pilot boarding place in the vicinity of Ostrov Mayachnyy.

A deep-water route also leads into the port. This channel, which is swept to a depth of 10.7m, is marked by buoys. It branches NNE for about 0.7 mile from the NW side of the Safety Fairway at a position located about 1 mile SW of Banka Hallikivi. The channel then leads ENE for about 0.6 mile and SE for 0.3 mile, passing N of Banka Hallikivi and SW of Mys Ostryy. It continues E for about 0.2 mile and joins the main fairway close outside the port entrance.

Caution.—Care should be exercised when within the harbor areas of Gavan Vystock as numerous piles, many in a dilapidated condition, are present.

Several isolated patches, with depths of less than 10m, lie within Tranzundskiy Reid, the outer roadstead, and adjacent to the designated anchorage areas.

Care should be taken when navigating in the vicinity of Vyborgskiy Bank as vessels have frequently wrecked on this shoal area.

A recommended route, which may best be seen on the chart, extends in a N direction from the vicinity of Veprevskiy Light (60°28'N., 28°26'E.) to the inner pilot boarding place located W of Ostrov Mayachnyy. It is reported that navigation along this route is prohibited for foreign vessels.

It is reported that extensive dredging has been carried out in the TSS leading NE from the vicinty of Ostrov Sommers and, in parts, has a minimum depth of 14.5m. This is to enable deep-draft vessels to reach the new facilities at Vystock.

Vyborg to St. Petersburg Guba

2.27 The **Saimaa Canal** (60°43'N., 28°45'E.) connects the Gulf of Finland with lakes and inland waterways extending for over 200 miles N of Lake Saimaa. It was originally opened in 1856 and extensively modified in 1968.

The canal, which is known in Russian as the Saymenskiy Canal, is open to international shipping. It is reached by a channel, 8 miles long, which is entered from the fairway leading between Gavan Vysotsk and Vyborg.

The canal, which has a total length of 23 miles, passes through both Finnish and Russian territory. It has five locks in the Russian area and three in the Finnish area, rising a total of 75m. Thirteen bridges cross the canal; seven of these are bascule bridges or swing bridges, with the remainder being fixed bridges with a least vertical clearance of 25m.

It was reported that the canal had been swept to a depth of 5.1m. Generally, navigation is limited to vessels with a maximum draft of 4.3m, a length of 82m, a beam of 12.2m, and a masthead height of 24.5m. Larger vessels may be allowed to transit the canal at times but special permission from the canal administration must be received in advance.

The canal has floodlights so that it can accommodate traffic at night as well as in limited visibility. Transit of the canal takes between 6 and 8 hours, depending on traffic. Speed is limited to 6 knots in the canal and 8 knots in the lakes. With the use of icebreakers, the season usually starts in early April and extends into January.

The area is covered by the Finnish publication “Atlas of Saimaa Canal” and a large scale Finnish Chart. Vessels may be allowed to transit the canal, subject to permission of the Authority.

The following is a list of important ports in the Saimaa Lakes district:

1. Imatra (61°10'N., 28°50'E.).
2. Joensuu (62°35'N., 29°45'E.).
3. Joutseno (61°08'N., 28°29'E.).
4. Kuopio (62°51'N., 27°30'E.).
5. Lappeenranta (61°04'N., 28°15'E.).
6. Puhos (62°06'N., 28°45'E.).
7. Varkaus (62°20'N., 27°50'E.).

Transit of the canal as far as Brusnitchnoe (60°48.6'N., 28°44.4'E.) is taken by Russian pilots. Finnish pilots then take vessels to Malkia Lock, at the N end of the canal. The canal is managed by the Regional Waterways Division, Itainen Kanavatie 2, 53420 Lappeenranta, Finland, which is part of the Finnish National Board of Navigation.

Pilotage.—Pilotage is compulsory. The Saimaa Canal is part of the Eastern Pilotage Zone of Finnpilot Pilotage and pilots are ordered through the Finnpilot Order Center. See paragraph 1.1 for general procedures and contact details.

The pilot boards in the following positions:

1. Juustila—60°48.6'N, 28°44.3'E.
2. Soskua—61°02.2'N, 28°44.3'E.
3. Malkia—61°04.7'N, 28°17.4E.
4. Puumala—61°31.4'N, 27°10.2'E.
5. Simina—61°50.9'N, 28°52.3'E.
6. Haapavesi—61°54.0'N, 28°49.4'E.
7. Taipaleen kanava—62°18.2'N, 27°54.6'E.
8. Voukala—62°09.3'N, 29°12.3'E.

Vessel Traffic Service (VTS).—The Saimaa Canal Authority operates a VTS starting at the Malkia lock and consists of the deep water routes in the Saimaa lake district and the fairways connected with these.

The Saimaa VTS provides the following types of services:

1. Information service.
2. Traffic organization service.
3. Navigational assistance service.

Mandatory participation and other requirements in the VTS are listed below:

1. Vessels of 24m los or longer.
2. When navigating in the VTS area, vessels are required to maintain a continuous listening watch on VHF channel 9.
3. Vessels navigating in the VTS area, which are not obliged to participate in the VTS, are recommended to maintain a listening watch on VHF channel 9.
4. Participating vessels are required to make reports, as follows:
   a. Upon entry into the VTS area.
   b. Before anchoring.
   c. Before leaving an anchorage.
   d. After berthing.

e. Before leaving port.

f. At the reporting points in the area 10 minutes before passing the following places:

i. Kuhaluoto, southbound.
ii. Vekaransalonsalmi.
iii. Hatinvirta.
iv. Puumalansalmi.
v. Pahikka.
vi. Vekaransalmi.
vii. Harkinsalo, northbound.
viii. Kommersalmi, southbound.
ix. Laitaatsalmi.
x. Matarinsalmi.
xi. Haponlahden kaivanto, northbound.
xii. Sorsavirta, when from direction of Joensuu.
xiii. Virtasaari, when from direction of Varkaus.
xiv. Tappuvirta.
xv. Tahkosalmi.
xvi. Sinikonniemi, southbound.
xvii. Muuraispuro, northbound.
xviii. Patasalmi, northbound.
xix. Kolikon kaivanto, southbound.
xx. Kortesalmi, northbound.
xxi. Aittoluoto, southbound.
xxii. Hanhivirta.
xxiii. Vihtakanta. (report is not required if vessel has reported 1 hour before the opening bridge)
xxiv. Vuosalmi, northbound.
xxv. Vuoharju, southbound.

g. Vessels towing timber rafts are an exception to the above. These should report to the VTS when approaching the above mentioned narrow passages so far in advance that the towage can be interrupted before the narrow passage, in case for example, a vessel in distress or some other obstruction.

h. Opening bridges—Kyronsalmi Road and Railway Bridge and the Vihtakanta.

i. Vessels using deep water route must report to Saimaa VTS 1 hour before passing the bridges and then the Saimaa VTS will order the opening of the bridges.

Reports should include the following information:

1. Vessel's name.
2. Name of reporting point.
3. Destination.
4. Intended route. If an alternative route is selected, this must be reported.

Contact Information.—See the table titled **Saimaa—Contact Information**.

Saimaa—Contact Information	
Vessel Traffic Service	
Call sign	Saimaa VTS
VHF	VHF channel 9
Telephone	358-20-637-3745
E-mail	saimaa.vts@fintraffic.fi
Web site	http://www.fintraffic.fi/en/masters-guide

2.28 Between the main entrance to Vyborgskiy Zaliv and Mys Stirsudden, about 29 miles SE, the coast is indented by several bays. The shore is fronted by irregular depths and numerous detached dangers.

Proliv Byerkezund (Koiviston Salmi) (60°28'N., 28°30'E.), a sound, connects Vyborgskiy Zaliv with the E part of the Gulf of Finland and provides a direct route between Vyborg and St. Petersburg.

The mainland coast on the NE side of the sound rises gradually to a chain of hills, 55 to 85m high. Numerous houses and villages are situated on the slopes of these hills. The three Berezovyy islands, which are comparatively high and wooded, form the SW side of this sound. A remarkable hill rises to a height of 115m on Ostrov Zapadnyy Berezovyy, the outermost island.

The sound has general depths of 14 to 33m. The fairway channel leading through the dangers in the sound is well-marked and available for vessels with drafts up to 9.1m.

Sheltered anchorage can be found within the sound, but S winds cause a heavy swell in its S part and local knowledge is required.

Caution.—It is reported that passage through the N part of Proliv Byerkezund is restricted to local fishing vessels and Russian naval vessels.

2.29 **Primorsk** (60°22'N., 28°38'E.) (World Port Index No. 28360), a major oil export terminal, is situated along the shores of an enclosed bay at the E side of Proliv Byerkezund.

Ice.—In severe conditions, icebreaker assistance is provided. Generally, the ice season lasts from the beginning of December to the end of April. The maximum ice coverage occurs in March.

The Captain of the Port of St. Petersburg directs all icebreaker operations. Vessels requiring assistance should send a request via their agent 24 hours in advance.

During the period of ice navigation, vessels proceeding to the port are advised to send their ETA at the designated convoy position to the Port Captain at Primorsk 48 hours, 24 hours, and 12 hours in advance. On approaching the convoy position, vessels should establish VHF contact with the nearest icebreaker and follow instructions. Vessels should advise Primorsk VTS (SUDS) the times of commencement and completion of icebreaker pilotage.

Depths—Limitations.—The harbor is protected by breakwaters and has depths of 5.5 to 9m, decreasing gradually toward the shore. There are two piers and an oil terminal consists of a T-shaped jetty, which extends about 0.2 mile SW from the shore. There are also several mooring buoys.

Vessel up to 150,000 dwt, 307m in length, 55m beam, and 15.8m draft can be handled. For more berthing information see table titled **Primorsk—Berth Information**.

Aspect.—A church with a prominent spire stands on the N side of the harbor entrance.

It is reported that the Safety Fairway is marked by lighted buoys and is indicated by a lighted range.

Pilotage.—Waiting Area No. 6, which may best be seen on the chart, is situated 3 miles W of Ostrov Rodsher (59°58'N., 26°41'E.). Pilotage is compulsory for vessels of 50,000 dwt and over between this waiting area, or the entrance of the TSS located about 9 miles E of Ostrov Rodsher, and the port.

Primorsk Oil Terminal

Waiting Area No. 7, which may best be seen on the chart, is situated about 11 miles NE of Ostrov Seskar (60°02'N., 28°23'E.), on the NW side of the Safety Fairway. Pilotage is compulsory for vessels of less than 50,000 dwt between this waiting area, or the beginning of the second reach of the Safety Fairway, and the port.

Tug service is compulsory between Waiting Area No. 7 and the port for vessels in ballast, and between Ostrov Seskar and the port for loaded vessels.

Pilots can be contacted on VHF channels 15 and 17 and board, as follows:

1. Pilotage is compulsory for all vessels in the Bol'shoy Korabel'nyy fairway to and from Primorsk Oil Terminal. The pilot boarding position for all vessels is in 60°11.8'N, 28°44.7'E.
2. By special request pilots will board in position 59°59.8'N, 26°40.0'E, about 1.7 miles NNW of Ostrov Rodsher Light. A shoal depth of 27m was reported (2021) to lie on the bank located approximately 1.25 miles NW of Rodsher Light and can best be seen on the chart.
3. Vessels proceeding SE through Proliv Byerkezund—Position 60°22.4'N, 28°34.4'E.
4. Vessels proceeding NW through Proliv Byerkezund—Position 60°14.7'N, 28°50.7'E.

Vessels should send an ETA at Waiting Area No. 7, via the agent, to the Port Captain 48 hours and 24 hours in advance. This ETA should be confirmed by VHF 4 hours prior to arrival.

Vessels should sent a request for pilotage to the Port Captain 24 hours before arriving at the appropriate boarding position. This request should be confirmed by VHF 2 hours in advance.

Primorsk—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Balttrans Service							
No. 8	44m	14.7m	228m	13.7m	32.2m	76,400 dwt	Clean products and bunkers. Berthing length of 344m (including dolphins).
No. 9	44m	11.8m	185m	10.8m	32.2m	47,100 dwt	Clean products and bunkers. Berthing length of 318m (including dolphins).

Primorsk—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Primorsk Sea Trade Port LLC							
No. 1	46m	17.8m	307m	15.8m	55.0m	150,000 dwt	Crude and bunkers.Berthing length of 375m (including dolphins). Displacement: 182,000t.
No. 2	46m	17.8m	307m	15.8m	55.0m	150,000 dwt	
No. 3	48m	17.8m	307m	15.8m	55.0m	150,000 dwt	Clean products, crude, and bunkers.Berthing length of 385m. Displacement: 182,000t.
No. 4	48m	17.8m	307m	15.8m	5.05m	150,000 dwt	

Any changes should be sent via the agent not less than 1 hour 30 minutes in advance.

Vessels transiting the port area should contact the Port Captain by VHF 2 hours prior to arriving at the appropriate boarding position in Proliv Byerkezund.

Departing vessels should request pilotage in writing or by telephone not less than 2 hours before sailing.

Regulations.—Tankers bound for the port in winter are required to be double-hulled.

In addition to regular navigation equipment, tankers are required to be fitted with an Electronic Chart Display and Information System (ECDIS) and a Satellite System (GPS/GLONASS). If these systems are not available, they may be provided by the pilot service.

Vessel Traffic Service.—Primorsk Vessel Traffic Service (VTS) operates in the port area and includes Proliv Byorkyozund S of 60°25'N, including Fairway No. 5 S to its intersection with Fairway No. 1, and Primorskiy Fairway No. 5A SW to the intersection with the Ostrov Seskar TSS (the line between Lighted Buoy No. 1 and Lighted Buoy No. 2. Also included is the inner roadstead, including anchorage Area No. 6 and anchorage Area No. 6A; and the turning circle for swinging large tankers.

Vessels must contact the Traffic Control Center of the Primorsk VTS (call sign: Primorsk Traffic) on VHF channel 68 (reserve channel: VHF channel 9) 1 hour before entering the VTS area.

Vessels must, on request, advise the Traffic Control Center of their bearing and distance from Seskar Light (60°02'N., 28°22'E.).

Vessels should maintain a continuous listening watch on VHF channel 68.

Vessels proceeding to Proliv Byerkezund should establish VHF contact with Primorsk VTS when 30 miles from the port to request permission to enter the area.

Vessels bound for Primorsk transit the coverage area of St. Petersburg Coastal VTS. For further information on the requirements of St. Petersburg Coastal VTS, see paragraph 3.1.

Contact Information.—See the table titled **Primorsk—Contact Information**.

Primorsk—Contact Information	
State Port Control Inspection	
Call sign	Primorsk Port Control
VHF	VHF channels 9 and 67

Primorsk—Contact Information	
Telephone	78-812-245-1664
	78-921-348-9487
Facsimile	78-812-245-1664
	78-812-245-1667
E-mail	ign.primorsk@mail.pasp.ru
	primorskauthority@mail.pasp.ru
Pilots	
Call sign	Primorsk Pilot
VHF	VHF channels 15 and 17
Vessel Traffic Service	
Call sign	Primorsk Traffic
VHF	VHF channels 9 and 68
MMSI	002734453
Telephone	78-812-380-7153
	78-921-951-9312 (mobile)
Facsimile	78-812-380-7086
E-mail	vtsprim@spb.rosmorport.ru
Tugs	
VHF	VHF channel 6

Directions.—The main approach from seaward is via the Traffic Separation Scheme (TSS), which leads N of Ostrov Rodsher (59°58'N., 26°41'E.) and S of Ostrov Gogland (60°03'N., 26°59'E.). This scheme continues in a NE direction to the junction centered about 4 miles ESE of Ostrov Sommers (60°12'N., 27°39'E.) and then ESE and SE to a position N of Ostrov Seskar (60°02'N., 28°23'E.).

A Deep-Water Route has been established between the S end of Ostrov Gogland and a position about 7 miles NW of Ostrov Rodsher. This route, which has a least depth of 15m, passes N of the TSS traffic lanes and is for the use of outbound loaded vessels from Primorsk. It is 1,000m wide and may best be seen on the chart.

A Precautionary Area has been established about 3 miles N of Ostrov Seskar. The TSS traffic lanes and a Safety Fairway, which leads to St. Petersburg, extend E from the E side of this area and may best be seen on the chart (see paragraph 3.1).

Primorsk Safety Fairway, which extends about 14 miles in a NE direction and then about 4 miles in a NW direction, leads from the NE side of the Precautionary Area to the oil terminal.

2.30 Ostrov Syarkkyaluoto (60°18'N., 28°48'E.), an islet, lies near the outer end of an area of foul ground on the SE side of Proliv Byerkezund. A light is shown from a framework tower,12m high, standing on this islet.

Mys Kyurenniyemi (60°16'N., 28°55'E.) is located 4 miles SE of Ostrov Syarkkyaluoto. A light is shown from a framework tower, 12m high, standing on this headland. Shoals extend up to about 2 miles S and SW of this light.

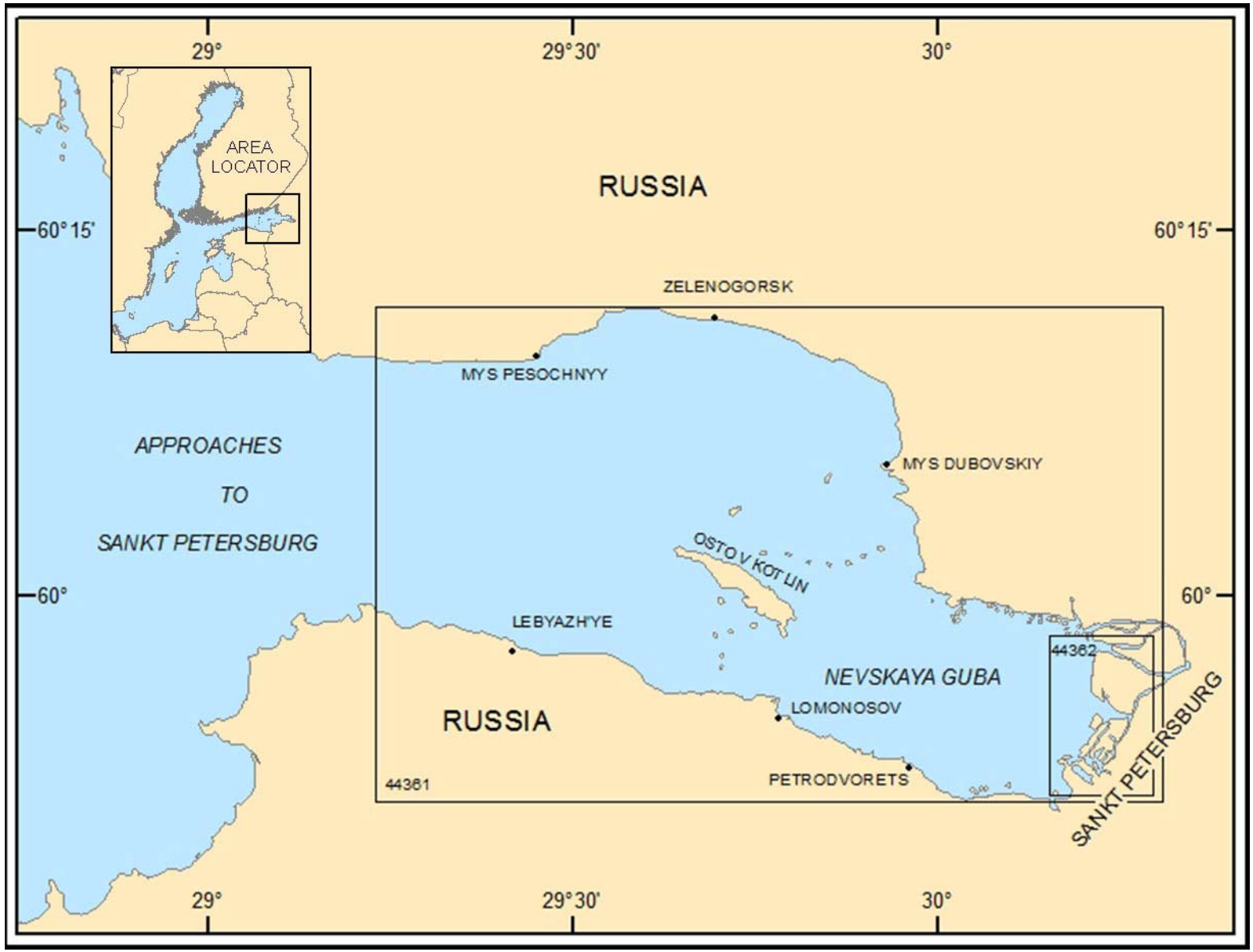
The 20m curve lies between less than 1 mile and about 2 miles off the W sides of the Berezovyy islands, but numerous detached shoal patches, with depths less than 10m, lie within about 8 miles W and SW of these islands.

Banka Shrednyaya (60°11'N., 28°20'E.), with a least depth of 6.4m, lies about 17.5 miles WSW of Mys Kyurenniyemi and is marked by a lighted buoy. Banka Agamemnon, with a least depth of 8.2m, lies about 6 miles E of this isolated shoal bank and is marked by a buoy.

Mys Stirsudden (60°11'N., 29°01'E.), the N entrance point of St. Petersburg Guba, is a low and rocky headland located 6 miles SE of Mys Kyurenniyemi. Gora Torkalla, a prominent hill, is 100m high and rises 5.8 miles NNE of this headland.

Stirsudden Light is shown from a prominent tower, 28m high, standing 0.6 mile ENE of the headland. Shoals front the shore in the vicinity of this headland and Banka Diomid, with depths of less than 10m, extends up to about 4.5 miles S of it.

The waters lying E of Mys Stirsudden are described in Sector 3.



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

SECTOR **3** — CHART INFORMATION

SECTOR 3

RUSSIA—ST. PETERSBURG GUBA AND NEVSKAYA GUBA

Plan.—This sector describes the S and N coasts of St. Petersburg Guba and the approach from seaward to Kronshtadt that forms part of the main shipping channel to St. Petersburg. In addition, Kronshtadt, the S and N coasts of Nevskaya Guba, and the port of St. Petersburg are also detailed. The descriptive sequence is from W to E.

General Remarks

3.1 Tides—Currents.—At Kronshtadt, regular observations of the effects of wind on the water level have been made over a period of decades. These observations indicate that there are periodic changes in the water level due mainly to the flow of river water into the Baltic Sea and then into the North Sea, and due partly to meteorological conditions. The periodic changes are relatively small and follow a definite routine, showing two maximum and two minimum effects in each year. The former changes occur in August, December, and January and the latter in April, May, and October. The extreme difference in level between the maximum rise and the minimum fall of these seasonal changes may reach 0.9m.

The effect of the tide is small; the range at Kronshtadt due to this cause is not more than about 0.1m. The changes due to meteorological conditions are more pronounced at times, especially in the mouth of the Neva, where they cause heavy floods and serious damage.

At Kronshtadt, the water has been known to rise about 1.4m in 6 hours due to the meteorological changes. These conditions are more noticeable in their effect during the autumn and winter than during spring and summer. In general, E winds lower the water level and the W winds raise it. The force of the wind is of greater consequence than its direction.

The water level begins to rise somewhat earlier than the freshening or shifting of the wind, and it attains its maximum height before the wind reaches its greatest force. Any appreciable rise of the water level is a certain indication of W winds. When certain conditions of wind and barometric pressure occur at the same time, the rise of the water level may be considerable.

At Kronshtadt, an increase of more than 3m above normal has been recorded, and at St. Petersburg, a rise of more than 3.5m above normal has been recorded. These extreme rises, which cause floods, are not frequent in October and November; the maximum rise at St. Petersburg during the months of February, March, April, and June has not exceeded 1.8m. The maximum difference between the high and low level at Kronshtadt in the last 100 years is 4.6m.

With winds from NNE through N to SSE, the water rises at Kronshtadt and falls with those from other directions.

The current in Nevskaya Guba sets W in mid-channel between Ostrov Kotlis and Mys Lisiy Nos at a velocity of about 0.25 knot, but in the S area of the estuary it is weaker. During light E winds, there is a W set with a velocity of about 0.5 knot and with strong winds from that direction, the set attains a velocity, at times, of about 1.5 knots. No current is perceptible along the shores of the estuary.

Depths—Limitations.—The Safety Fairway, which extends between the TSS traffic lanes located off Ostrov Seskar (60°02'N., 28°23'E.) and St. Petersburg Lighted Buoy (60°02'N., 29°26'E.), has general depths of 20 to 31m; however, several shoal patches, wrecks, and obstructions exist within and adjacent to the fairway. All these dangers may best be seen on the chart. This fairway also passes through a former Mine Danger Area, as well as the Kronshtadt Fortified Zone.

Vessels up to 260m in length, 40m beam, and 11m fresh water draft are able to proceed to St. Petersburg.

Vessels exceeding 170m in length or with drafts of 8.5m and over are considered to be constrained by their draft. Such vessels must display the appropriate signals. Vessels displaying these signals are given the right-of-way. Vessels constrained by draft must employ tugs in the narrows between Lesnoy Mol (59°53'N, 30°12'E.) and Bolshaya Neva (59°55'N, 30°15'E.).

Pilotage.—Pilotage is compulsory for all vessel and is available 24 hours.

Requests for pilotage should be ordered through the agents 12 hours, and confirmed 4 hours, in advance, unless stated otherwise in station entry.

Vessels intending to arrive at or depart from the freight operations areas of Gorskaya, Litke (Ostrov Kotlin), and the Port of Lomonovskaya Gavan must request pilotage at least 3 hours in advance.

Vessels intending to arrive or depart the Port of Saint Petersburg must request pilots at least 2 hours in advance.

Pilots board in the vicinity of St. Petersburg Lighted Buoy (60°01.6'N., 29°25.9'E.), or near the Lighted buoy No. 2 (60°05'.2N., 29°48'.0E). In bad weather, vessels may be required to follow the pilot vessel to a sheltered area for boarding.

See the table titled **Saint Petersburg—Pilot Contact Information**.

Regulations.—The sea areas in the Gulf of Finland are monitored jointly by Finland, Estonia, and the Russian Federation. GOFREP is the mandatory ship reporting system, under SOLAS, established in the Gulf of Finland and its approaches.

Saint Petersburg—Pilot Contact Information	
Pilot Vessel Controller	
Call sign	Saint Petersburg Pilot
	Peterburg Lotsman
VHF	VHF channels 9, 16, 67, and 70
Telephone	78-812-7161973
MMSI	273436530
Marine Pilots Controller	
Call sign	Petersburg Radio 21

Saint Petersburg—Pilot Contact Information	
VHF	VHF channels 9 and 67
Telephone	78-812-7149595 (24 hours)
	78-921-9057808 (mobile)
	78-812-3807067 (Monday-Friday)
Facsimile	78-812-324-5737
E-mail	n.boykova@spb.rosmorport.ru
Pilot Organization	
Call sign	Peterburg Radio 11
VHF	VHF channels 9, 20, and 67

For further information concerning GOFREP, see paragraph 1.1 in this publication and in the Finland section of Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Vessels bound for ports in Russia should send an ETA to their agents 12 days, 96 hours, and 12 hours in advance. All oil, gas, and chemical tankers should send an ETA 14 days, 72 hours, and 12 hours in advance.

In Kronshtadtskiy Korabelnyy Farvater and St. Petersburg Morskoy Kanal W of the sea walls, speed is restricted to 10 knots. Within the moles and in the harbor area, speed must not exceed 6 knots; the speed limit is 3 knots when passing vessels secured alongside and engaged in diving operations, etc. If steerage-way can not be maintained at these speeds, tugs must be employed.

Overtaking in the main fairway is permitted only along the port side of the vessels being passed. Elsewhere in the port, overtaking is permitted on either side.

Vessels carrying explosives, inflammables, or poisonous materials are to await instructions at the St. Petersburg Lighted Buoy.

Vessels are urged to contact the local authorities and the pilot for information on local navigation regulations. The use of the vessel's bridge equipment may be restricted.

See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for regulations pertaining to vessels in Russian waters.

Vessels must send their ETA at Saint Petersburg Lighted Buoy or in ice conditions (at the beginning edge of the ice) 48 hours, 24 hours, and 4 hours in advance through their agent.

With a visibility of less than 2 miles, vessels navigating between Uuzhnaya Damba (the NE entrance breakwater of St. Petersburg) and St. Petersburg Lighted Buoy are required to maintain a listening watch on VHF channel 12.

Anchored vessels or vessels berthed alongside are requested not to use VHF channel 6, 8, 9, 11, 12, 13, 14, or 26 for intership communications.

Vessel Traffic Service.—The Saint Petersburg Coastal Vessel Traffic Service (VTS) covers the E part of the Gulf of Finland from the E boundary of the Gulf of Finland Ship Reporting System (GOFREP) within the Russian territorial limits, excluding the areas covered by individual port VTS centers (Vyborg, Vysotsk, Primorsk, Ust-Luga, and the Saint Petersburg Port VTS). The Saint Petersburg Coastal VTS area is divided into two sectors:

1. Sector 1 (W of longitude 28°00.0'E).
2. Sector 2 (E of longitude 28°00.0'E).

In addition to inbound and outbound vessels, the Saint Petersburg Port VTS controls traffic from Lighted Buoy No. 14 (60°01.7'N., 28°20.1'E.) to Zolotyye Vorota. Within the port of Saint Petersburg, the Saint Petersburg Internal Port VTS Center controls the traffic from Zolotyye Vorota to the Blagoveshchenskiy Bridge (59°56.1'N., 30°17.4'E.).

Participation in the Vessel Traffic Services (Saint Petersburg Coastal VTS, Saint Petersburg Port VTS, Primorsk Port VTS, Vyborg and Vystok VTS, and Ust Luga Port VTS) is mandatory for the following vessels:

1. All vessels of 300 gross tons and over.
2. Vessels of less than 300 gross tons, as follows:
   a. If there is a loss of control or if it is necessary to anchor in a TSS fairway of a channel.
   b. When restricted in maneuverability.
   c. When the vessel's navigational equipment is malfunctioning.
3. The working languages of the VTS are Russian and English.
4. Vessels of less than 80 gt and non self-propelled vessels with a load capacity of 150 kg or more (small vessels) must obtain permission to navigate in the VTS area and subsequently follow instructions issued by the Coastal or Port VTS Centers.
5. Vessels must repeat instructions from a VTS Center relating to them and, if unable to comply with the instructions, must state the reason and describe their subsequent action.

The two types of required reports are known as a Full Report and a Short Report.

Contents of Short Report	
ID	**Information Required**
A	Vessel name, type of vessel, IMO number, country of ownership, and flag.
C	Position of vessel (latitude/longitude).
D	Position of vessel (bearing and distance from landmark).
E	Course
F	Speed in knots, including maximum and minimum speed.
X	Engine power, ice strengthening class, or other information.

Contents of Full Report	
ID	**Information Required**
A	Vessel name, type of vessel, IMO number, country of ownership, and flag.
F	Speed in knots, including maximum and minimum speed.
G	Port of departure.

Contents of Full Report	
ID	**Information Required**
H	Time and place of entry into VTS.
I	Destination port and ETA.
K	Date, time, and place of departure from VTS or the arrival at destination port.
O	Actual draft (forward and aft).
P	Type and amount of cargo.
Q	Condition of radars and any restrictions in the control of vessel.
U	Net register tons and vessel dimensions.
X	Engine power, ice strengthening class, or other information.

Vessels must submit a Full Report, as follows:

1. On departure from the GOFREP area and heading in to the Saint Petersburg Coastal VTS.—Sent to Saint Petersburg Coastal VTS on VHF channel 74 or via AIS.
2. On departure from a Russian port towards the W and navigating the GOFREP.—Sent to Saint Petersburg Coastal VTS by e-mail (gofrep@rsbm.ru).

Vessels must submit a Short Report, as follows:

1. When navigating the area covered by the Saint Petersburg Coastal VTS along the shipping routes within the Bol'shoy Korabel'nyy Fairway.—Sent to Saint Petersburg Coastal VTS on VHF channel 74.
2. Before crossing from the VTS area covered by Saint Petersburg Coastal VTS to the area covered by a port VTS—Sent to the port's VTS on the appropriate VHF channel.
3. Before crossing from Saint Petersburg Coastal VTS area to the GOFREP area.—Send to Saint Petersburg Coastal VTS on VHF channel 74 and to Helsinki Traffic on VHF channel 60.
4. Before crossing in either direction from Saint Petersburg Coastal VTS to Kotka VTS (Finland) along Kotka Fairway No. 4 and vice-versa.—Send to Saint Petersburg Coastal VTS on VHF channel 74 and Kotka Traffic on VHF channel 67.
5. Upon arrival at the port of destination.—Sent to the relevant port VTS on the appropriate VHF channel.
6. When crossing into Russian Territorial Waters at an unspecified point.—Sent to the nearest port VTS on VHF.

Saint Petersburg VTS—Contact Information	
Saint Petersburg Coastal VTS	
Call sign	Saint Petersburg Traffic
VHF	VHF channels 10, 16 (Sector 2), and 74 (Sector 1)
MMSI	002734469
Telephone	7-8-812-380-7081
Facsimile	7-8-812-380-7020
E-mail	gofrep@rsbm.ru
Saint Petersburg Port VTS	
Call sign	Petersburg Radio 19
VHF	VHF channels 9, 12, 13, 16, 30, 67, and 73
MMSI	002734450
Telephone	7-8-812-3807010
Facsimile	7-8-812-3807020
E-mail	vts.raskat@spb.rosmorport.ru
Pilot Organization	
Call sign	Peterburg Radio 17
VHF	VHF channels 9, 13, and 67
Telephone	7-8-812-3274120
E-mail	vts@mail.pasp.ru

On arrival at the port of destination, items A and X need to be reported, along with anchor details and coordinates.

Vessels proceeding to Russian ports must provide the following additional information 1 hour prior to arrival in the area covered by the port VTS:

1. Vessels bound for Saint Petersburg.—Advise the pilot vessel of the time of approach at Sanki Peterburgskiy Lighted Bouy (60°01.6'N., 29°25.9'E.).
2. Vessels bound for the Port of Vyborg/Vysotsk, Primorsk or Ust-Luga.—Stop and establish radio contact with the appropriate VTS center.
3. When crossing into areas covered by a port VTS.—Vessels must comply with the requests for the port VTS and the local navigation rules for that port.

Inbound Reporting Points		
Reporting Point	**VTS**	**VHF channel**
Departing GOFREP area/entering Coastal VTS area	Saint Petersburg Traffic (Full Report required)	74
	Tallin Traffic (Full Report required)	61
Entering Russian territorial waters from the Kotka VTS area	Saint Petersburg Traffic (Short Report required)	74
Passing Lighted Buoy No. 1 (59°58.5'N., 27°03.0'E.)		
Passing Lighted Buoy No. 4 (60°11.6'N., 27°46.2'E.)		

Inbound Reporting Points		
Reporting Point	**VTS**	**VHF channel**
Vessels bound for Vyborg and Vysotsk		
On entering the VTS port area and on arrival	Vysotsk Traffic (Short Report required)	9
Vessels bound for Vyborg		
Between the breakwaters at Vysotsk (60°36.6'N., 28°33.0'E.) and on arrival	Vyborg Radio 5	12
Vessels bound for Ust'Luga		
Upon entering the VTS port area and on arrival	Ust'Luga Traffic (Short Report Required)	69
Vessels bound for Primorsk		
When entering the VTS port area and upon arrival	Primorsk Traffic (Short Report Required)	68
Vessels bound for Saint Petersburg		
Passing Buoy No. 8 (60°02.8'N., 28°31.9'E.)	Saint Petersburg Traffic (Short Report Required)	10
One (1) hour before entering the VTS port area	Petersburg Lotsman/Saint Petersburg Pilot to confirm pilot request (Short Report Request)	9
Passing Lighted Buoy No. 14 (60°01.7'N., 29°20.0'E.)	Petersburg Radio 9 (Short Report required)	12
	Saint Petersburg Traffic (Short Report required)	10
Passing Saint Petersburg Lighted Buoy (60°02.0'N., 29°25.9'E.)	Petersburg Radio 17	9
Passing the protective dam (59°59.2'N., 29°41.5'E.)		
Passing Lighted Buoys No. 23/24 (59°57.8'N., 29°48.'E.)		
Passing Lighted Buoys No. 29/30 (59°56.2'N., 29°55.8'E.)		
Upon entering Saint Petersburg Morskoy Canal (59°54.2'N., 30°05.8'E.) and on arrival		

Outbound Reporting Points		
Reporting Point	**VTS**	**VHF Channel**
Vessels departing Saint Petersburg		
Departing Saint Petersburg Morskoy Canal (59°54.2'N., 30°05.8'E.)	Petersburg Radio 17	9
Passing Lighted Buoys No. 29/30 (59°59.2'N., 29°55.8.'E.)		
Passing Lighted Buoys No. 23/24 (59°57.8'N., 29°48.0'E.)		
Passing the protective dam (59°59.2'N., 29°41.5'E.)		
Passing Saint Petersburg Lighted Buoy (60°01.6'N., 29°25.9'E.)		
Passing Lighted Buoy No. 13A (60°01.7'N., 29°20.0'E.)	Petersburg Radio 9 (Short Report Required)	12
	Saint Petersburg Traffic (Short Report Required)	10
Passing Lighted Buoy No. 8 (60°02.8'N., 28°31.9'E.)	Saint Petersburg Traffic (Short Report Required)	10
Vessels departing from Ust'Luga		
Upon departure from the port VTS area	Saint Petersburg Traffic (Short Report Required)	74

Outbound Reporting Points		
Reporting Point	**VTS**	**VHF Channel**
Vessels departing from Primorsk		
Upon departure from the port VTS area	Primorsk Traffic (Short Report Required)	74
Vessels departing from Vyborg and Vysotsk		
Upon departure from the port VTS area	Saint Petersburg Traffic (Short Report Required)	74
Vessels transiting Coastal VTS area		
Passing Lighted Buoy No. 4 (60°11.6'N., 27°48.2'E.)	Saint Petersburg Traffic (Short Report Required)	74
Passing Lighted Buoy No. 1 (59°58.5'N., 27°03.0'E.)		
Departing Russian Territorial Waters and entering Kotka VTS area	Kotka VTS (Short Report Required)	67
	Saint Petersburg Traffic (Short Report Required)	74
Departing Coastal VTS area/entering GOFREP area	Helsinki Traffic (Short Report Required)	60
	Saint Petersburg Traffic (Short Report Required)	74

Vessels in transit from Reka Neva to the port of Saint Petersburg, or in transit to the W, must send a report to Saint Petersburg Port VTS on VHF channel 9, 1 hour before approaching the Leytenanta Shimidta Bridge or the Tuchkov Bridge.

Additionally, any incidents of pollution or sightings of marine environmental pollution should also be reported.

Vessels intending to operate in the main ship channel between the harbor entrance and the harbor area NE of Lesnoy Mol, should request permission to proceed before passing the harbor entrance if inbound, and before departing berth, if outbound.

Vessels intending to navigate between the area NE of Lesnoy Mole and the NE end of the harbor should contact the Nevskiye Vorota signal station before reaching the SE end of Berth 31 if northeast bound, or before passing Nevskiye Vorota if southeast-bound. In winter, permission should be obtained from the Ship Control Center.

The radar station is available for assistance in poor visibility.

Storm warnings or a water rise of 1.5m above normal will be broadcast to vessels in St. Petersburg harbor or anchorages.

Anchorage.—Waiting Anchorage Area No. 4, which may best be seen on the chart, lies centered about 1 mile NW of St. Petersburg Lighted Buoy (60°02'N, 29°26'E.). It has depths of 20 to 25m, mud and sand, with good holding ground. Mariners are cautioned to the existence of numerous obstructions consisting of lost anchors and chains, best seen on the chart, which lie within and adjacent to this waiting area.

It is reported that Anchorage Area No. 5 and Anchorage Area No. 5A have been established about 5 miles NNW of St. Petersburg Fairway Lighted Buoy.

Directions.—Vessels approaching St. Petersburg Guba should make use of the several Traffic Separation Schemes (TSS) in the Gulf of Finland, which are best seen on the chart.

A buoyed Safety Fairway leads from the TSS traffic lanes located at the E side of the Precautionary Area off Ostrov Seskar (60°02'N., 28°23'E.), through the Kronshtadt Fortified Zone, to the pilot boarding place and waiting anchorage. This channel has a bottom width of 80m and is marked by buoys. The Russian authorities recommend adhering to this fairway, particularly within the Kronshtadt Fortified Zone.

Caution.—Deep-draft vessels sometimes conduct cargo lightering operations in the vicinity of the outer anchorage prior to entering the ports.

It is reported that the buoys, lights, and beacons of the TSS lying in the outer approach to St. Petersburg may be missing or unlit.

There is periodic dredging of the main channel fairways in both the approaches and the ports during the summer navigation season.

Uncharted floating aids may be established in the vicinity of dredging operations and charted floating aids may be out of position. Care must be exercised when navigating in the work areas.

A number of designated spoil (dumping) ground areas lie in the outer approaches and may best be seen on the chart.

Several restricted areas, including unexploded ordnance areas and mine sweeping exercise areas, lie in the outer approaches and may best be seen on the chart.

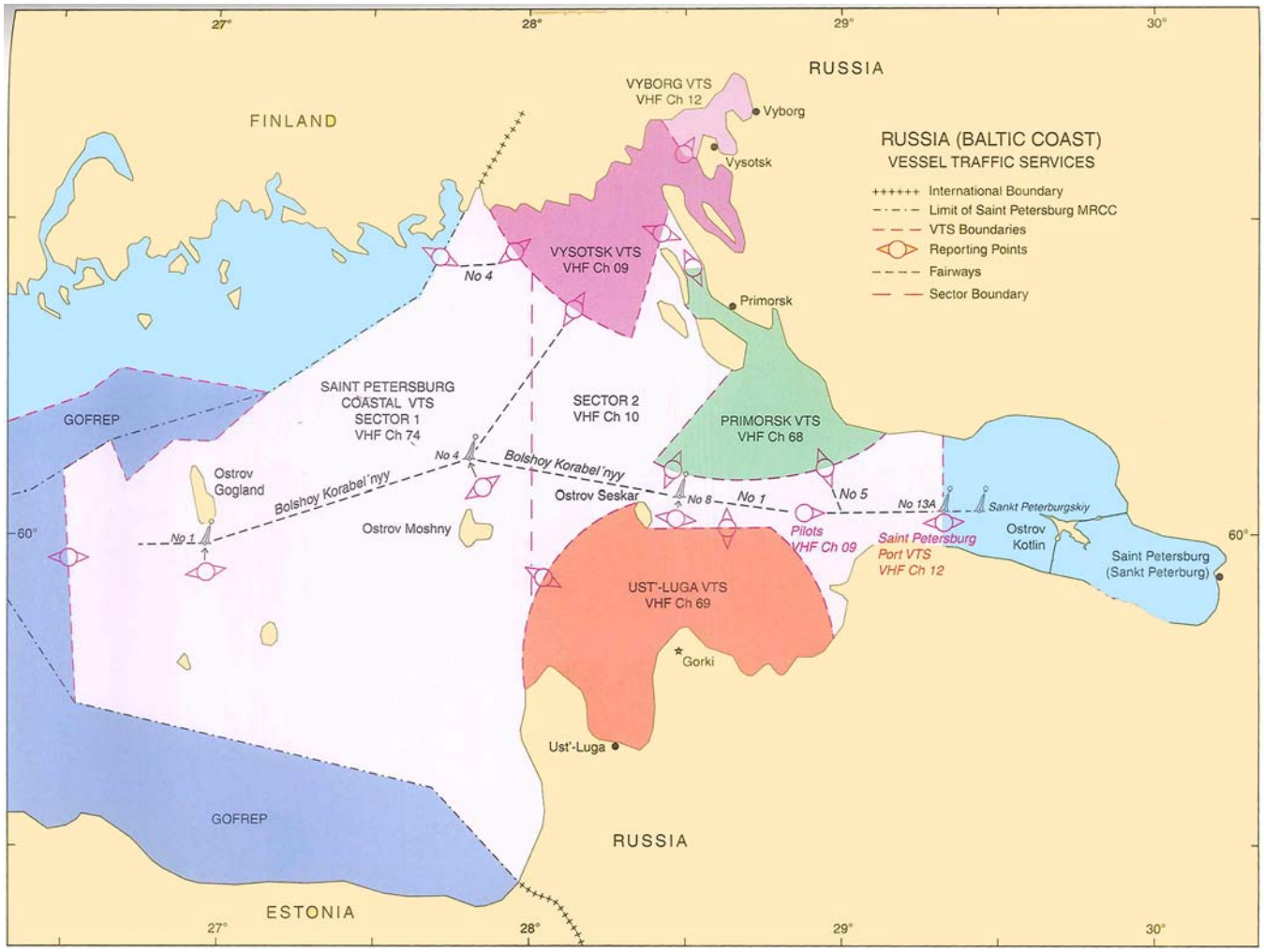
Kronshtadt Fortified Zone is entered on passing longitude 29°00'E. Practically the whole of St. Petersburg Guba lies in a Fortified Zone, which may best be seen on the chart. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for regulations pertaining to Fortified Zones.

Extensive areas are prohibited to navigation, the limits of which are subject to change without notice. Permission to enter the Fortified Zone must be secured from the military authorities in advance, as well as permission to enter Kronshtadt or St. Petersburg.

Vessels must not deviate from the charted courses. A vessel entering a prohibited area will be warned by the firing of a gun or rocket, and such vessel must stop and await orders. Vessels failing to heave-to may be detained.

St. Petersburg Guba

3.2 St. Petersburg Guba, including Nevskaya Guba, extends in an ESE direction for 35 miles from its entrance between Sepelevskij and Mys Stirsudden, 12 miles NNW.



Russian Baltic Coast VTS Boundaries

Kronshtadtskiy Korabelnyy Farvater, about 12 miles long, leads from the E end of the buoyed channel (Safety Fairway) to the vicinity of Kronshtadt. The St. Petersburg Morskoy Kanal then leads to St. Petersburg. Secondary channels, for small craft, lie on either side of this canal.

North shore.—Mys Flotskiy, a low point, is located 4 miles ESE of Mys Stirsudden (see paragraph 2.31). A light is shown from a framework tower, 20m high, standing on this point.

Mys Pesochnyy is located 9 miles E of Mys Flotskiy and the coats is moderately high and predominantly wooded.

Gora Torkalla, 100m high, stands about 6 miles NNE of Mys Stirsudden and is conspicuous, as it is the highest hill on this part of the coast.

A conspicuous church is situated at Gorod Zelenogorsk (60°12'N., 29°42'E.).

Between Mys Pesochnyy and Mys Dubovskiy, about 15 miles ESE, the shore is mostly sandy, with some marshy areas, and fringed with boulders. Numerous dangers lie between Mys Dubovskiy and Ostrov Kotlin.

A conspicuous tower stands on Mys Lisiy Nos, 4.5 miles S of Mys Dubovskiy. The coast between is low, sandy, and wooded. Numerous holiday resorts stand along this stretch, some close to the shore.

South shore.—The coast is low between Sepelevskij (see paragraph 1.24) and Mys Seraya Loshad, about 2.5 miles ENE. At Sepelevskij, a range of low hills rises, increasing in height as they trend E, until at Mys Krasnaya Gorka, 4 miles farther E, they form a red sandy cliff. This cliff is conspicuous from seaward, but invisible from W. Between Mys Krasnaya Gorka and Bronnaya Gora, 9.5 miles E, the coast is bordered by low, sandy hills.

Conspicuous churches are situated at Gory Valday (59°58'N., 29°12'E.) and Bol'shaya Izhora (59°56'N., 29°34'E.).

3.3 Ostrov Kotlin (60°00'N., 29°46'E.) is located at the seaward entrance to Nevskaya Guba. The island is low and its center and W parts are covered with vegetation. The W end of the island consists of a low, rocky cape. The port of Kronshtadt lies at the SE side of the island.

A causeway, with a road, extends in an E direction and connects the N part of the island to Mys Lisiy Nos, on the N shore.

By Alexandrov [CC BY-SA 3.0], via Wikimedia Commons

Kronshtadt—Dome of the Naval Cathedral

Tolbukhin Light

An area of reclaimed land, about 0.4 mile wide, extends SSW from the S shore of the island to the N edge of the fairway channel. Opposite this reclaimed area, a dam extends for about 3 miles from the S shore to the S edge of the fairway channel.

Tolbukhin Light (60°03'N., 29°33'E.) is shown from a conspicuous tower with a dwelling, 30m high, standing on a rocky islet, 3 miles WNW of the W end of Ostrov Kotlin.

The island is fringed by a rocky shoal which extends W from its W side to the vicinity of the light.

Londonskaya Otmel (59°59'N., 29°30'E.), an extensive rocky shoal, extends up to about 2.5 miles from the S shore, S of Tolbukhin Light. Several dangers lie on this shallow shoal and may best be seen on the chart.

3.4 Kronshtadt (59°59'N., 29°47'E.) (World Port Index No. 28400) is situated at the E end of Ostrov Kotlin and is the largest Russian military harbor on the Baltic. The port consists of a town fronted by five artificial harbors. Foreign commercial vessels may enter the harbor only with special permission.

Tides—Currents.—The current in the roadstead runs to the E with winds from the W, at a velocity of 0.5 to 1.5 knots; after sustained W winds bank up the water, the velocity may even reach 3 knots.

Depths—Limitations.—Kabotazhnaya Gavan, the coaster harbor, has depths of 1.5 to 7m, with the greatest depths being in the S part of the harbor.

Kupecheskaya Gavan, the commercial harbor is in the N part. Srednyaya Gavan, used by naval vessels in the S and E parts, but the N part is shallow.

Voyennaya Gavan, also used by naval vessels, is connected to Srednyaya Gavan.

Zavodskaya Gavan fronts the E side of the island and is used by power boats. For more berthing information see the table titled **Kronshtadt—Berth Information**.

Vessels up to 21,150 dwt, with a maximum length of 168m, a maximum draft of 8.9m, and a maximum beam of 25.6m can enter the port.

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

A foundry chimney and the dome of the Naval Cathedral, both prominent, are situated in the town.

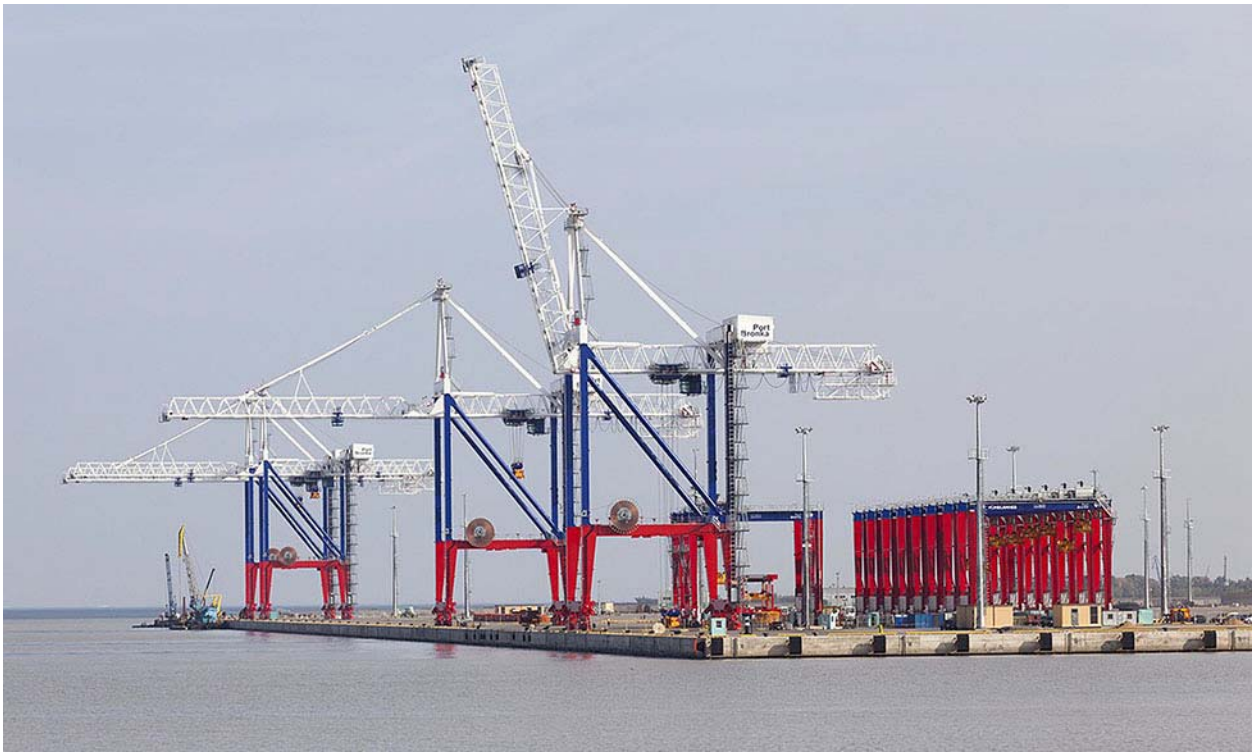
Ostrov Kronshlot, a fortified island, lies close S of the fairway, in the vicinity of the port, and is marked by lights.

For determining the error of the compass during the transit of the roadstead, marks are placed on the outer walls of the harbor basins indicating the true bearing of the foundry chimney. These marks are visible from a distance of 5 miles.

Each complete 10° is shown by two white figures on a background of black and red diagonal stripes. The intervening degrees are shown only by the last number, with even numbers on a black background and odd numbers on a red background. Half degrees are marked by a small white circular disc with a black border.

Kronshtadt—Berth Information

Berth	Length	Maximum Vessel				Remarks
		LOA	Draft	Beam	Size	
Oritkari Harbor						
No. 1	150m	151.7m	8.9m	23.4m	13,000 dwt	Ro-ro/lo-lo, containers, transshipment, breakbulk, and reefer.
No. 2	171m	168m	8.9m	25.6m	21,150 dwt	Ro-ro/lo-lo, containers, transshipment, breakbulk, and reefer.



By Amendment22 [CC BY-SA 4.0], via Wikimedia Commons

Port Bronka

In Bol'shoy Reyd, the bearings shown are from 079° through E to 101°; in Malyy Reyd, from 078° through N to 355°; and in Vostochny Reyd, from 337° to 254° through W. Separate marks for 271° and 278° are shown on two of the piers.

Regulations.—When approaching the harbor entrances, proceeding through narrow passages, and generally whenever a close-quarters situation is possible, vessels shall proceed at slow speed and sound a prolonged blast of the whistle.

Vessels intending to enter or leave a harbor shall, at a distance of about 100m from the entrance, sound several prolonged blasts of the whistle to warn vessels on the other side of the harbor wall. The entrance shall not be approached by vessels intending to pass through until the passage is clear; this is shown by a signal hoisted at the signal mast at the entrance.

Anchorage.—Anchoring in the roadstead of Kronshtadt is strictly prohibited, except in the following authorized anchorages:

1. Area 2 (59°58.09'N., 29°47.77'E.)—A small anchorage area situated just NE of the intersections of Fairway No. 2 and Fairway No. 7, SSE of the S point of Kronshtadt island. An obstruction is situated in the E part of the anchorage.
2. Area 3—Anchorage may be obtained on the S side of Fairway No. 2, with a minimum depth of 7m, in position 59°58'51.6"N., 29°42'50.4"E., which lies on the E side of the S causeway that connects Kronshtadt island to the mainland.

Directions.—Kronshtadtskiy Korabel'nyy Farvater leads from the pilot boarding place, in the vicinity of St. Petersburg Lighted Buoy, to the roadstead of Kronshtadt.

Caution.—During the day, some ranges in the vicinity of the roadstead are difficult to identify against the buildings in the background.

A submarine cable extends SW and W into the fairway from the port and may best be seen on the chart.

Nevskaya Guba

3.5 Nevskaya Guba lies between Ostrov Kotlin and the mouth of the Reka Neva. The S shore, on which there are many villages, descends to the sea in terraces. Both the N and S shores are densely wooded.

Between Mys Lisiy Nos and Lakhta, 6 miles ESE, the N shore of Nevskaya Guba is low, sandy, and wooded. Off the villages of Dubi and Verperow, about 1.2 and 1.8 miles SE of Mys Lisiy Nos, respectively, are two low-lying rocky islets, the easternmost of which is Ostrovki Verperluda. The white tower of the biological institute, standing 5.2 miles E of Mys Lisiy Nos, and Lakhtinskiy Rescue Station, now disused, situated 1.5 miles farther E, are good landmarks. Numerous holiday resorts, some close to the shore, are situated between Mys Lisiy Nos and Lakhta.

On the S shore, a prominent palace stands on a hill near the town of Lomonosov, S of the E end of Ostrov Kotlin. Martyshkina Church, also prominent, is situated 1.8 miles ESE of the palace.

At Petrodvorets, 5 miles ESE, the former palace, with its golden emblem, and the cathedral are conspicuous.

The St. Petersburg Morskoy Kanal connects the E end of Kronshtadtskiy Korabel'nyy Farvater with the harbor of St. Petersburg. This canal is about 15 miles long. It is marked by

buoys and indicated by lighted ranges which may best be seen on the chart.

Vessels entering the canal are usually limited to a maximum length of 260m, a maximum beam of 40m, and a maximum fresh water draft of 11m.

Lomonosov—Berth Information

Berth	Length	Remarks
Ferry Terminal		
Ferry	—	Passengers.
Lomonosov Port		
North	195m	Chemicals and transshipment.
South	195m	Chemicals and transshipment.
West	180m	General cargo and transshipment.
East	415m	General cargo and transshipment.

Other minor channels, used by local craft, connect several small harbors within Nevskaya Guba and may best be seen on the chart.

Lomonosov (59°55'N., 29°46'E.) (World Port Index No. 28390) is located on the southern shore of the Gulf of Finland approximately 40m W of St. Petersburg. Lomonosov is small naval harbor protected by two breakwaters.

Depths—Limitations.—A channel leads S from the main fairway at the E end of Ostrov Kotlin to this harbor. Vessels up to 160m in length, with a maximum beam of 30m and a maximum draft of 7.5m, can be handled in the harbor. For more information see table titled **Lomonosov—Berth Information**.

Caution.—An obstruction lies 0.4 mile N from the head of E mole; another obstruction lies with a depth of 5.7m at the edge of the channel from the same mole.

3.6 **Port Bronka** (59°56'N., 29°41'E) has been established in order to supplement the future container growth potential in Russia. The port is now operational (2022) with a on dock rail terminal withing the port.

Depths—Limitations.—The approach channel leading to the terminal is reported to be dredged to a depth between 10.7m and 13.4m. Vessels up to 60,417 dwt, 260.3m in length, 14.4m draft, and 34.6m beam can be accommodated.

Port Bronka has a container terminal that consists of eights berths. A ro-ro terminal and a container terminal with more berths are under constructions (2023). For more berthing information see the table titled **Port Bronka—Berth Information**.

St. Petersburg (59°56'N., 30°18'E.)

World Port Index No. 28370

3.7 The port of St. Petersburg (Sankt Peterburg) is situated on the banks of the Reka Neva and the islands forming its delta. The city, which was once the capital of Russia, was previously known as Leningrad and Petrograd. The port, used by both naval and commercial vessels, is connected by an interior waterway canal system with the White Sea, the Caspian Sea, and the Black Sea.

St. Petersburg Port Authority
https://www.rosmorport.ru

Ice.—Navigation is possible all year round with icebreaker assistance from the end of November until about the last week of April. Ice first begins to form in the middle of November. The thickness of the ice averages 0.7m and is never more than 1m.

Winds—Weather.—Within Nevskaya Guba, SW and W winds prevail in winter and represent 70 to 75 per cent of recordings. In summer, W and NW winds prevail and represent 21 per cent and 18 per cent of recordings, respectively. In spring, the most frequent winds are W and represent 16 to 27 per cent of recordings. In the fall, SW winds prevail and represent 17 to 24 per cent of recordings. Wind force decreases in spring and summer, but increases in the fall and winter.

Port Bronka—Berth Information

Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Beam	Size	
Container Terminal						
No. 1	260m	14.4m	199.8m	32.2m	56,618 dwt	Containers. Continuous berthing length of 1,220m. 29,516 to 57,147 gt and 2,487 teu.
No. 3	240m	14.4m	195.1m	32.2m	34,768 dwt	
No. 4	240m	14.4m	195.1m	32.2m	37,768 dwt	
No. 5	240m	14.4m	195.1m	32.2m	37,667 dwt	
No. 6	240m	14.4m	260.3m	34.6m	60,417 dwt	
Ro-Ro Terminal						
No. 1	—	—	—	—	—	Ro/pax. Pier under construction, operational (2017).
No. 1a	—	—	—	—	—	Ro/pax. Pier under construction, operational (2017).

Port Bronka—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Beam	Size	
No. 2	210m	12.5m	217.9m	26.5m	14,509 dwt	Ro-ro/lo-lo. 33,816 gt.

Calms are most frequent in spring and summer and represent 30 per cent of recordings. Storms are mainly recorded during fall and winter; their occurrence fluctuates around 10 per cent of recordings.

Storms are most frequently related to S and SW winds, though they also occur during NW, NE, and E winds. The duration of these storms seldom exceeds 24 hours.

The number of days with fog in Nevskaya Guba averages 57 per year. The largest number of days with fog is recorded during the September to April period, and varies from 5 to 8 days per month. During this period, fogs are thicker and last longer. In winter, fogs occur most frequently during E and NE winds and more rarely during NW and N winds. In spring, fogs are formed during SW and W winds.

St. Petersburg—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Baltic Bulk Terminal							
No. 106	240m	—	237m	11.0m	36.8m	87,447 dwt	Continuous berthing length: 473m and berthing length: 505m (incl. dolphins). Fertilizer, mineral ore, bunkers, and reefer. 47,984GT.
No. 107	265m	—	229m	11.0m	38.0m	88,279 dwt	Continuous berthing length: 473m and berthing length: 505m (incl. dolphins). Fertilizer, mineral ore, and bunkers. 48,036GT.
Baltic Marine Engineering Works (BSMZ)							
BMSZ No. 1	148m	7.5m	139.9m	6.4m	18.5m	8,985 dwt	Breakbulk and bunkers. 6,382GT.
BMSZ No. 2	170m	—	139.9m	7.9m	18.0m	7,661 dwt	Breakbulk and bunkers. 5,084GT.
BMSZ No. 3	148m	—	139.9m	7.9m	18.2m	10,750 dwt	Breakbulk and bunkers. 7,196GT.
Center For Commercial Vehicles and Forest JSC (CCTL)							
CB No. 1	94m	—	120m	5.0m	20.5m	6,993 dwt	Continuous berthing length: 176m. Containers, breakbulk, and bunkers. 7,966GT.
CB No. 2	82m	—	132.2m	5.4m	18.2m	8,733 dwt	Continuous berthing length: 176m. Containers, breakbulk, and bunkers. 6,204GT
CB No. 3	25m	—	118.9m	4.6m	14.5m	6,582 dwt	Containers, breakbulk, and bunkers. 4,087GT
CB No. 7	192m	—	128.2m	7.0m	16.5m	5,485 dwt	Containers, breakbulk, and bunkers. 4,970GT.
CJSC 'Factory Morgidrostroy'							
ZB No. 1	140m	—	189.9m	9.6m	30.7m	23,169 dwt	Continuous berthing length: 380m. Bunkers, others, and reefer. 22,452GT and 607TEU.
ZB No. 2	140m	—	189.9m	9.6m	30.7m	23,169 dwt	

St. Petersburg—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
ZB No. 3	90m	—	188.9m	9.6m	27.4m	39,070 dwt	Continuous berthing length: 380m. Bunkers, others, and reefer. 24,090GT and 598TEU.
Container Terminal Saint-Petersburg (CTSP)							
No. 101A	189m	—	159.9m	9.6m	26.0m	23,650 dwt	Breakbulk and bunkers. 19,955GT.
No. 101B (N)	257m	11.9m	281m	11.0m	42.0m	107,525 dwt	Continuous berthing length: 477m. Containers, bunkers, and reefer. 60,379GT and 4,112TEU.
No. 101B (S)	220m	11.9m	257.8m	11.0m	32.2m	56,811 dwt	Continuous berthing length: 477m. Containers, bunkers, and reefer. 39,812GT and 4,132TEU.
No. 102	176m	11.2m	244.9m	10.7m	32.2m	40,881 dwt	Continuous berthing length: 491m. Containers, bunkers, and reefer. 39,174GT and 2,992TEU.
No. 102A	131m	11.2m	224.9m	10.2m	32.2m	64,043 dwt	Continuous berthing length: 491m. Containers, bunkers, and reefer. 39,174GT and 3,430TEU.
No. 103	184m	—	216.1m	10.1m	32.2m	63,570 dwt	Continuous berthing length: 491m. Containers, bunkers, and reefer. 37,071GT and 3,007TEU.
First Container Terminal (FCT)							
No. 83	245m	9.8m	210.1m	—	35.2m	40,079 dwt	Containers, bunkers, and reefer. 34,882GT and 3,600TEU.
No. 84	110m	—	168.1m	7.5m	27.2m	21,293 dwt	Containers, coastal vessels, and bunkers. 17,488GT and 1,638TEU.
No. 85	185m	11.5m	210.1m	—	35.2m	40,079 dwt	Containers, bunkers, and reefer. 34,882GT and 3,600TEU.
No. 86	175m	11.5m	210.1m	—	35.2m	40,079 dwt	
No. 87	175m	11.5m	210m	—	35.2m	40,079 dwt	
Gutuevsky Korsh							
No. 08	130m	6.5m	77.6m	—	16.3m	258 dwt	Coastal and bunkers. 2,427GT.
No. 09	159m	6.5m	96.3m	—	15.1m	4,794 dwt	Coastal and bunkers. 3,206GT.
No. 10	65m	6.3m	59.6m	—	11.0m	1,580 dwt	Coastal and bunkers. 878GT.
No. 12	100m	6.3m	—	—	—	—	Closed. Coastal and bunkers. Run SQL for 36 months and no vessel during this period.(2022)
No. 13	130m	6.3m	—	—	—	—	Closed. Coastal and bunkers. Run SQL for 36 months and no vessel during this period.(2022)
No. 14	85m	6.3m	83m	—	14.0m	3,320 dwt	Closed. Coastal and bunkers. 2,002GT.
Icebreaker Quay							
Icebreaker	536m	—	—	—	—	—	Mooring icebreakers.

St. Petersburg—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Kanonersky Shipyard							
No. 1K	126m	—	189.7m	6.0m	26.0m	13,059 dwt	Continuous berthing length: 334m. Shiplift/LASH and bunkers. 20,729GT.
No. 2K	100m	—	142.4m	6.0m	23.2m	12,712 dwt	Continuous berthing length: 334m. Shiplift/LASH and bunkers. 12,679GT
No. 3K	108m	—	189.7m	5.3m	21.6m	13,451 dwt	Continuous berthing length: 334m. Shiplift/LASH and bunkers. 20,729GT.
No. 4K	136m	—	190m	6.0m	32.2m	53,857 dwt	Shiplift/LASH and bunkers. 32,661GT.
No. 10K	126m	—	260.3m	6.1m	34.6m	41,401 dwt	Continuous berthing length: 303m. Shiplift/LASH and bunkers. 44,354GT.
No. 11K	100m	—	187.3m	5.7m	26.5m	10,338 dwt	Continuous berthing length: 200m. Shiplift/LASH and bunkers. 20,126GT.
No. 12K	100m	—	248.9m	5.4m	34.0m	41,401 dwt	Continuous berthing length: 200m. Shiplift/LASH, coastal, and bunkers. 44,354GT.
Passenger Port of St. Petersburg 'Marine Facade'							
No. 1	375m	10.7m	333.3m	—	43.0m	14,601 dwt	Continuous berthing length: 593m. Cruise and fast ferries. 171,598GT.
No. 2	218m	10.7m	311.1m	—	38.6m	22,910 dwt	Continuous berthing length: 593m. Cruise and fast ferries. 139,999GT.
No. 3	269m	10.7m	285.1m	—	32.2m	10,939 dwt	Continuous berthing length: 810m. Cruise and fast ferries. 84,342GT.
No. 4	271m	10.7m	333.3m	—	38.4m	12,614 dwt	Continuous berthing length: 810m. Others and cruise.143,730GT.
No. 5	270m	10.7m	315.7m	—	32.2m	11,960 dwt	Continuous berthing length: 810m. Cruise. 111,554Gt.
No. 6	288m	10.7m	300m	—	37.5m	14,601 dwt	Continuous berthing length: 663m. Cruise. 115,875GT.
No. 7	375m	10.7m	333.3m	—	43,0m	14,601 dwt	Continuous berthing length: 663m. Cruise. 171,598GT.
Passenger Terminal 'English Embankment'							
Centre	144m	—	181m	6.8m	25.4m	5,100 dwt	Continuous berthing length: 432m. Cruise and bunkers. 30,277GT.
East	144m	—	198.6m	8.5m	25.4m	5,330 dwt	Continuous berthing length: 432m. Cruise and bunkers. 30,277GT.

St. Petersburg—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
West	144m	—	138.8m	5.7m	16.9m	5,100 dwt	Continuous berthing length: 432m. Cruise and bunkers. 4,846GT.
Passenger Terminal 'Lieutenant Schmidt'							
North	216m	—	210.7m	8.5m	26.5m	6,980 dwt	Cruise and bunkers. 34,444GT.
South	252m	—	210.7m	8.5m	28.9m	6,879 dwt	
Petrolesport Terminal (PLP)							
No. 42	143m	—	210.1m	10.9m	35.2m	64,050 dwt	Continuous berthing length: 302m. Scrap metal, others, containers, bunkers, and reefer. 42,424GT.
No. 43	159m	—	205m	10.9m	32.2m	63,301 dwt	Continuous berthing length: 302m. Scrap metal, others, containers, bunkers, and reefer. 35,884GT.
No. 46	300m	11,0m	260.3m	—	35.2m	74,181 dwt	Continuous berthing length: 1,044m. Ro-ro freight, containers, and bunkers. 57,147GT.
No. 47	190m	11,0m	260.3m	—	35.2m	63,800 dwt	Continuous berthing length: 1,044m. Containers and bunkers. 42,424GT.
No. 48	189m	11.0m	244.9m	—	35.2m	60,436 dwt	Continuous berthing length: 1,044m. Containers and bunkers. 39,174GT.
No. 49	210m	14.0m	244.9m	—	35.2m	61,411 dwt	Continuous berthing length: 1,044m. Containers and bunkers. 34,882GT.
No. 50	155m	14.0m	244.9m	—	32.2m	63,657 dwt	Continuous berthing length: 1,044m. Containers and bunkers. 39,174GT.
No. 56	139m	—	180.5m	7.7m	29.8m	37,717 dwt	Continuous berthing length: 450m. Containers, others, breakbulk, reefer, and bunkers. 23,232GT.
No. 57	127m	—	166.4m	7.7m	27.4m	28,164 dwt	Continuous berthing length: 450m. Containers, others, breakbulk, reefer, and bunkers. 20,965GT.
No. 58	184m	—	128.2m	4.2m	16.5m	6,264 dwt	Continuous berthing length: 450m. Containers, others, breakbulk, reefer, and bunkers. 5,344GT.
No. 60	160m	—	165.7m	7.7m	25.0m	11,407 dwt	Continuous berthing length: 767m. PCC, others, container, breakbulk, bunkers, and reefer. 23,498GT.
No. 61	160m	—	147.9m	7.7m	25.0m	7,378 dwt	

St. Petersburg—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 62	160m	—	189.9m	7.7m	32.2m	56,816 dwt	Continuous berthing length: 767m. PCC, others, container, breakbulk, bunkers and reefer. 33,049GT.
No. 63	160m	—	189.9m	7.7m	32.0m	48,549 dwt	Continuous berthing length: 767m. Container, others, breakbulk, bunkers and reefer. 27,729GT.
No. 64	127m	—	151.9m	7.5m	23.0m	10,332 dwt	Continuous berthing length: 767m. Container, others, breakbulk, bunkers and reefer. 10,519GT.
Rusmarine Forwarding							
CB No.13	150m	—	99.6m	7.4m	17.6m	4,830 dwt	Breakbulk and bunkers. 4,998GT.
Saint Peter's Terminal							
No. 5K	120m	—	156.5m	6.0m	23.0m	12,891 dwt	Shiplift/LASH and bunkers. 10,842GT.
No. 9K	177m	—	192.9m	6.1m	27.8m	30,345 dwt	Continuous berthing length: 303m. Shiplift/LASH and bunkers. 23,132GT.
No. 15k	139m	8.7m	178.5m	—	26.0m	16,950 dwt	Continuous berthing length: 300m. Containers, bunkers, and reefer. 14,406GT.
No. 16K	161m	9.2m	189.9m	—	30.7m	22,715 dwt	Continuous berthing length: 300m. Containers, bunkers, and reefer. 22,452GT.
No. 17K	202m	9.5m	189.9m	—	30.7m	33,271 dwt	Container, bunkers, and reefer. 27,279GT.
Sea Fishing Port							
P No. 1	110m	—	97.6m	7.0m	15.7m	4,000 dwt	Ro-ro/lo-lo and bunkers. 3,817GT.
P No. 2	112m	—	133.9m	8.3m	18.0m	7,911 dwt	Ro-ro/lo-lo and bunkers. 6,989GT.
P No. 3	131m	—	164.3m	8.3m	24.0m	16,580 dwt	Ro-ro/lo-lo, containers, bunkers, and reefer. 14,406GT.
P No. 4	120m	—	188.6m	8.3m	26.0m	16,580 dwt	Ro-ro/lo-lo, containers, bunkers, and reefer. 17,421GT.
P No. 5	97m	—	188.6m	8.0m	26.0m	16,580 dwt	
P No. 6	100m	—	188.6m	8.3m	26.0m	16,580 dwt	Ro-ro/lo-lo, containers, bunkers, and reefer. 17,411GT.
Sea Passenger Terminal							
A (N)	125m	—	114m	8.5m	13.0m	3,180 dwt	Continuous berthing length of 389m. Ro/pax and bunkers. 2,516GT.
A (S)	70m	—	96.3m	7.0m	15.1m	4,794 dwt	Ro/pax and bunkers. 3,206GT.

St. Petersburg—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
B (N)	132m	—	150m	8.5m	22.5m	11,579 dwt	Continuous berthing length: 389m. Cruise, breakbulk, and bunkers. 10,374GT.
B (S)	132m	—	114m	9.0m	15.1m	4,794 dwt	Continuous berthing length: 389m. Cruise, breakbulk, and bunkers. 3,206GT.
E	138m	—	148.5m	7.3m	20.6m	11,579 dwt	Breakbulk and bunkers. 9,070GT.
G	135m	—	133.4m	7.3m	20.6m	7,480 dwt	Ro/pax and bunkers. 10,085GT.
Second Stevedore Company							
No. 1	175m	—	199.9m	9.3m	32.2m	63,529 dwt	Continuous berthing length: 515m. Scrap metal and bunkers. 36,355GT.
No. 2	175m	—	260.3m	9.3m	34.6m	63,263 dwt	Continuous berthing length: 515m. Scrap metal and bunkers. 38,226GT.
No. 3	165m	—	199.9m	9.4m	32.2m	64,050 dwt	Continuous berthing length: 515m. Scrap metal and bunkers. 36,463GT.
No. 4	150m	—	199.9m	9.2m	32.2m	53,162 dwt	Continuous berthing length: 623m. Breakbulk and bunkers. 32,474GT.
No. 5	150m	—	192.9m	9.8m	29.4m	33,271 dwt	Continuous berthing length: 623m. Breakbulk and bunkers. 23,132GT.
No. 6	150m	—	192.9m	9.5m	32.0m	38,743 dwt	Continuous berthing length: 623m. Breakbulk and bunkers. 25,546GT.
No. 7	173m	—	189.9m	9.6m	32.2m	58,749 dwt	Continuous berthing length: 623m. Breakbulk and bunkers. 32,415GT.
Setos Service							
No. CC	200m	—	140.8m	5.3m	18.2m	8,269 dwt	Steel products and breakbulk. 7,138GT.
Severnaya Verf Shipbuilding Plant							
CB No. 4	210m	—	99m	3.0m	14.0m	4,237 dwt	Bunkers. 2,428GT.
CB No. 6	140m	—	100.7m	—	15.2m	4,815 dwt	Bunkers. Vessel berthing prohibited. 3,618GT.
CB No. 8	144m	10.0m	83m	7.1m	13.7m	3,150 dwt	Continuous berthing length: 594m. Bunkers. Ship building berth. 2,260GT.
CB No. 9	150m	10.0m	60.5m	7.9m	11.0m	1,652 dwt	Continuous berthing length: 594m. Bunkers. Ship building berth. 950GT.

St. Petersburg—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
CB No. 10	150m	10.0m	87m	8.5m	14.0m	3,233 dwt	Continuous berthing length: 594m. Bunkers. Ship building berth. Bunkers. Ship building berth. 2,551GT.
CB No. 11	150m	10.0m	99m	8.1m	12.5m	4,237 dwt	Continuous berthing length: 594m. Bunkers. Ship building berth. 2,428GT.
CB No. 12	32m	—	118.9m	—	13.3m	6,582 dwt	Coastal and bunkers. 4,087GT.
CB No. 14	180m	—	132.6m	—	16.5m	5,029 dwt	Bunkers. Ship building plant. 3,458GT.
Severnaya Neva-Metall Terminal							
No. 71	213m	—	192.9m	10.9m	32.2m	58,000 dwt	Continuous berthing length: 738m. Steel products and bunkers. 33,010GT.
No. 72	175m	11.0m	199.9m	—	32.2m	63,562 dwt	Continuous berthing length: 738m. Steel products and bunkers. 36,362GT.
No. 73	175m	—	199.9m	11.0m	32.2m	63,607 dwt	Continuous berthing length: 738m. Container and bunkers. 36,353GT.
No. 74	175m	—	192.9m	11.0m	32.2m	58,593 dwt	Continuous berthing length: 738m. Container and bunkers. 34,206GT.
The Baltic Shipyard (Baltiysky Zavod JSC)							
BZ No. 1	160m	—	260.3m	9.0m	34.6m	34,615 dwt	Shiplift/LASH and bunkers. 38,226GT.
BZ No. 2	165m	—	260.3m	9.0m	34.6m	34,615 dwt	
BZ No. 3	85m	—	197m	6.5m	32.2m	58,738 dwt	Coastal and bunkers. 33,232GT.
BZ No. 4	80m	—	138.8m	8.2m	16.7m	5,100 dwt	Shiplift/LASH and bunkers. 4,846GT.
BZ No. 5	148m	—	138.8m	8.3m	17.6m	5,100 dwt	Shiplift/LASH and bunkers. 4,998GT.
BZ No. 6	170m	—	138.3m	6.2m	16.5m	6,879 dwt	Shiplift/LASH and bunkers. 3,969GT.
BZ No. 7	210m	—	179.4m	—	28.0m	33,107 dwt	Shiplift/LASH and bunkers. 22,863GT. Vessel berthing prohibited.
BZ No. 8	204m	—	138.8m	—	16.7m	5,330 dwt	Shiplift/LASH and bunkers. 4,846GT. Vessel berthing prohibited.
BZ No. 9	210m	—	138.8m	9.0m	16.7m	5,330 dwt	Bunkers. 4,846GT.
Third Stevedore Company Car Terminal							
No. 67	160m	—	140.8m	7.6m	18.2m	8,269 dwt	Continuous berthing length of 647m. PCC and bunkers. 5,685GT.

St. Petersburg—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 68	175m	—	140.8m	7.6m	18.2m	8,269 dwt	Continuous berthing length: 647m. PCC and bunkers. 5,685GT.
No. 69	175m	—	141m	6.0m	18.2m	9,823 dwt	Continuous berthing length: 647m. PCC and bunkers. 6,668GT.
No. 70	137m	—	141m	6.5m	17.0m	7,036 dwt	Continuous berthing length: 647m. PCC and bunkers. 5,083GT.
Vasileostrovsky Cargo Terminal (VGT)							
No. 13	145m	—	—	3.7m	—	—	Closed. Continuous berthing length: 452m. Coastal and bunkers. Berth closed due to no vessel calling activity for the past 36 months (2022).
No. 14	130m	—	—	4.0m	—	—	Closed. Continuous berthing length: 452m. Bunkers. Berth closed due to no vessel calling activity for the past 36 months (2022).
No. 15	125m	—	—	4.2m	—	—	Closed. Continuous berthing length: 452m. Coastal and bunkers. Berth closed due to no vessel calling activity for the past 36 months (2022).
No. 16	52m	—	—	4.2m	—	—	
First Stevedore Company							
No. 15	132m	—	199.9m	9.8m	32.2m	63,590 dwt	Continuous berthing length: 264m. Breakbulk and bunkers. 36,415GT.
No. 16	132m	—	188.6m	9.8m	30.0m	34,205 dwt	Continuous berthing length: 264m. Breakbulk and bunkers. 17,421GT.
No. 17	175m	—	165m	9.6m	25.6m	18,305 dwt	Continuous berthing length: 1,313m. Breakbulk and bunkers. 14,784GT.
No. 18	175m	—	164.3m	9.8m	24.4m	17,356 dwt	Continuous berthing length: 1,313m. Breakbulk and bunkers. 14,406GT.
No. 19	188m	—	165m	9.8m	24.0m	17,356 dwt	
No. 20	175m	—	164.3m	9.6m	24.0m	16,950 dwt	
No. 21	175m	—	189.9m	9.6m	30.7m	31,754 dwt	Continuous berthing length: 1,313m. Breakbulk, reefer, and bunkers. 22,622GT and 669TEU.
No. 22	144m	—	189.9m	9.6m	30.7m	23,169 dwt	Continuous berthing length: 1,313m. Breakbulk and bunkers. 22,452GT and 607TEU.

St. Petersburg—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 23	281m	—	228.9m	9.8m	32.2m	81,557 dwt	Continuous berthing length: 1,313m. Breakbulk, and reefer, and bunkers. 43,621GT and 1,923TEU.
No. 25	8m	5.6m	199.9m	—	32.2m	62,996 dwt	Berthing length: 52m (incl. dolphin). Breakbulk, reefer, and bunkers. 36,354GT and 783TEU.
No. 26	5m	5.6m	126.4m	—	20.0m	7,195 dwt	Berthing length: 42m (incl. dolphin). Breakbulk and bunkers. 8,831GT.
No. 27	81m	—	155.2m	9.0m	23.4m	12,912 dwt	Breakbulk, reefer, and bunkers. 11,443GT and 332TEU.
No. 28	—	—	96.3m	—	15.1m	4,739 dwt	Berthing length: 180m (incl. dolphin). Clean products.
No. 29	241m	—	228.9m	10.9m	32.2m	81,557 dwt	Continuous berthing length: 724m. Cruise, others, containers, steel products, breakbulk, and bunkers. 43,621GT.
No. 30	250m	—	199.9m	10.2m	32.2m	63,562 dwt	Continuous berthing length: 724m. Cruise, others, containers, steel products, breakbulk, and bunkers. 36,353GT and 1,158TEU.
No. 32	233m	—	225m	10.3m	32.2m	74,559 dwt	Continuous berthing length: 724m. Cruise, others, containers, steel products, breakbulk, and bunkers. 40,972GT.
No. 33	217m	—	192.9m	9.5m	27.8m	30,345 dwt	Cruise, coastal, and bunkers. 23,132GT.
No. 34	175m	—	199.9m	11.0m	23.5m	36,563 dwt	Continuous berthing length: 525m. Containers, steel products, others, breakbulk, and bunkers. 20,659GT.
No. 35	175m	—	199.9m	11.0m	32.2m	63,459 dwt	Continuous berthing length: 525m. Others, ro-ro passenger/vehicles/rail, steel products, breakbulk, and bunkers. 36,300GT.
No. 36	175m	—	199.9m	11.0m	32.2m	63,590 dwt	Continuous berthing length: 525m. fast ferries and bunkers. 36,415GT.
No. 37	68m	—	147.6m	11.0m	17.6m	12,447 dwt	Breakbulk and bunkers.
No. 38	175m	—	199.9m	11.0m	32.2m	62,966 dwt	Continuous berthing length: 700m. Containers, breakbulk, and bunkers. 42,424GT.
No. 39	175m	—	260.3m	9.1m	34.6m	64,012 dwt	Continuous berthing length: 700m. Containers, breakbulk, and bunkers. 38,226GT.

St. Petersburg—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 40	175m	—	199.9m	9.7m	32.2m	63,590 dwt	Continuous berthing length: 700m. Containers, breakbulk, and bunkers. 36,415GT.
No. 41	175m	—	166.3m	9.3m	27.4m	28,309 dwt	Continuous berthing length: 700m. Containers, breakbulk, and bunkers. 20,682GT.
JSC Tetramet							
No. 4	72m	—	141m	6.3m	22.4m	10,750 dwt	Steel products, breakbulk, and bunkers. 21,143GT.
No. 5	145m	—	141m	6.1m	19.2m	8,227 dwt	General cargo, ferrous metals, steel products, breakbulk, and bunkers. 7,138GT.
Bunkering	30m	—	124.8m	—	17.2m	8,000 dwt	Berthing length: 120m (incl. dolphins). Clean products and bunkers. 5,045GT.
TT	150m	—	139.9m	4.6m	18.2m	8,250 dwt	Steel products, others, and breakbulk. 7,138GT.
Marine Terminal Interferrum Metal							
IF-2	167m	—	184.3m	6.3m	32.2m	50,922 dwt	Breakbulk and others. 30,119GT.
Intekhport							
No. 105	5m	8.0m	77.7m	—	14.0m	3,320 dwt	Berthing length: 124m (incl. dolphins). Dirty products and bunkers.
Marine Fuel Terminal (Turukhtannye Island)							
CB No. 15	160m	—	139.9m	6.2m	18.6m	9,230 dwt	Clean products, dirty products, and bunkers.
CB No. 16	33m	—	150.1m	5.4m	24.0m	16,714 dwt	Clean products, general cargo, bulk cargo, and project/heavy cargo.
Petersburg Oil Terminal (POT)							
No. 112 A	15m	11.5m	185.6m	11.0m	32.2m	49,990 dwt	Clean, dirty products, and bunkers.
No. 112 B	115m	—	225m	11.0m	32.2m	76,015 dwt	Continuous berthing length: 231m. Clean and dirty products.
No. 112 V	—	11.9m	210.1m	11.0m	35.2m	40,000 dwt	Continuous berthing length: 231m. Clean and dirty products.
PNT No. 1	45m	—	183m	5.8m	32.2m	45,546 dwt	Berthing length: 178m (incl. dolphins). Dirty products.
PNT No. 2	31m	—	183m	5.8m	30.6m	38,695 dwt	Dirty products.
PNT No. 3	—	12.0m	247.4m	11.0m	42.0m	115,577 dwt	Berthing length: 350m (incl. dolphins). Crude and dirty products.
PNT No. 4	—	12.0m	247.4m	11.0m	42.0m	115,577 dwt	
Severnaya Wharf							
CB No. 5	150m	3.0m	83m	—	13.7m	3,150 dwt	Dirty products.

St. Petersburg—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
STS Anchorage 5a							
Transshipment Anchorage	—	25.0m	—	10.5m	—	—	Dirty products. Berthing restrictions depend on mother ship size. The STS operations with storage tankers carry out during summer navigation from May to November.

Tides—Currents.—Basic level fluctuations are caused by the cumulative effect of rollers and by the seiche phenomena. The cumulative fluctuations usually occur suddenly, last a short period of time, and are intensive. Level increases are usually brought on by winds of W directions and decreases by winds of E directions. The value of these fluctuations of level seldom exceeds 0.5m in the spring and summer, but in the fall and winter it reaches 1.2m.

Particularly high rises of water are observed in Nevskaya Guba, which in some years has recorded 2.5 to 3.5m, although it was reported that the rise has been as high as 3.9m. In the Reka Neva estuary, the strongest water level fluctuations occur during SW fall storms.

By User: Drozdov VA [Public Domain], via Wikimedia Commons

St. Petersburg—Passenger Terminal Berths

Seiche level fluctuations usually do not exceed 0.2 to 0.3m, and only in isolated cases do they reach 1m.

The current velocity of the Reka Neva averages about 2 knots, increasing to 3 knots with N winds, and becoming weaker during W winds.

Depths—Limitations.—Vessels up to 115,577 dwt, with a maximum length of 333.3m, a maximum draft of 11m, and a maximum beam of 43m can be accommodated. Ocean-going vessels enter via the St. Petersburg Morskoy Kanal. Four other minor channels lead to the port and are used by local small craft.

The port is separated from Nevskaya Guba by Kanonerskaya Otmel. The canal, the main entrance channel, enters the S part

St. Petersburg—Container Terminal Berths

of the port. A fairway, swept to a depth of 9.8m, then leads NE to the N part. The main harbor basins lie E of this fairway.

Between the entrance sea walls, the channel is reported to be dredged to a depth of 11.3m.

Ugolnaya Gavan, at the S end of the harbor complex, is bound on its SW side by Ugolnyy Mol and on its NE side by Lesnoy Mol. An oil berth is situated in the NW part.

Reyd Lesnoyo Mola, the basin lying N of Lesnoy Mol, has depths of 5 to 11.5m alongside the quay on the SW side.

Barochnyy Basseyn lies close NE of Reyd Lesnoyo Mola.

Vostochnyy Basseyn is approached via a channel, with a dredged depth of 8.5m, which leads from the SE side of Barochnyy Basseyn and along the N side of Krivaya Damba, a detached breakwater.

Morskoy Kanal, leading to the N part of the port, has berths situated along its E side.

Gutuyevskiy Kovsh is a small basin which extends E from the N end of the canal.

Novaya Kanonerskiy Gavan, a ship repair harbor, has depths of 6.5 to 8m in the approach channel and 4 to 8m in the basin. This harbor area lies between Ostrov Kanonerskiy and Ostrov Belyy. The approach channel leads W between Bolshaya Neva and Neviskiye Vorota, the N entrance to the port.

An international passenger terminal is situated on the N shore of Bolshaya Neva.

There is berthage alongside the N and W banks of the river. The port has facilities for tanker, bulk, general cargo, container, ro-ro, timber, reefer, cruise, and passenger vessels. There are

also facilities for pleasure craft and yachts. For more berthing information see the table titled **St. Petersburg—Berth Information**.

A turning circle with a radius of 280m has been established for use by container vessels, and is centered at (59°59'N., 29°43.1'E.) close N of Waiting Area No 3

Aspect.—The entire St. Petersburg area is comparatively low, varying from 5m high in the S and E parts, to 10m high in the N part. The region is dominated by the delta of the river.

When approaching the port, the Admiralty, is conspicuous. This large building is 74m high with a gilded tower and spire. It is situated on the S bank of the Reka Neva, nearly 0.5 mile above the Lieutenant Shmidt Bridge.

Dvoryetz Iskussrv, or Palace of Arts, formerly the Winter Palace, stands close NE of the Admiralty.

The gilded dome of Issacs Cathedral, standing close S of the Admiralty, is very conspicuous. Also conspicuous is the gilded and lofty spire of the cathedral rising from the Peter and Paul Fortress. It is situated on the opposite shore of the Reka Neva, NE of the Admiralty.

Pilotage.—Pilotage is compulsory for entry and departure from all Russian Ports. Pilots are also required for docking and undocking.

See Pilotage under General Remarks in paragraph 3.1. Departing vessels should order a pilot at least 2 hours prior to departure. Deep-sea pilots are available upon request.

St. Petersburg SPB Pilot Ltd
https://www.spb-pilot.com

1. In bad weather vessels may be required to follow the pilot vessel until the pilot can board.
2. The pilot boards in the following positions:
   a. Near Sankt Peterburgskly Lighted Buoy (60°01.6'N., 29°25.9'E.).
   b. Near Lighted Buoy No. 2 (60°05.3'N., 29°48.0'E.).

Regulations.—See Regulations under General Remarks in paragraph 3.1.

Vessels exceeding 170m in length or with drafts of 8.5m and over are considered to be constrained by their draft and must display the appropriate signals. Such vessels have the right of way and must employ tugs in the narrows within the St. Petersburg Morskoy Kanal.

Vessel Traffic Service.—In addition to participating in the Saint Petersburg Port Vessel Traffic Service, vessels bound for Saint Petersburg transit the coverage area of St. Petersburg Coastal VTS. See paragraph 3.1 for further information.

Signals.—Storm signals are shown, by day, from the meteorological station at Lebyazh'ye (59°58'N., 29°26'E.) and from the lower yardarm of a mast at Lomonosov.

Contact Information.—See the table titled **Saint Petersburg—Contact Information**.

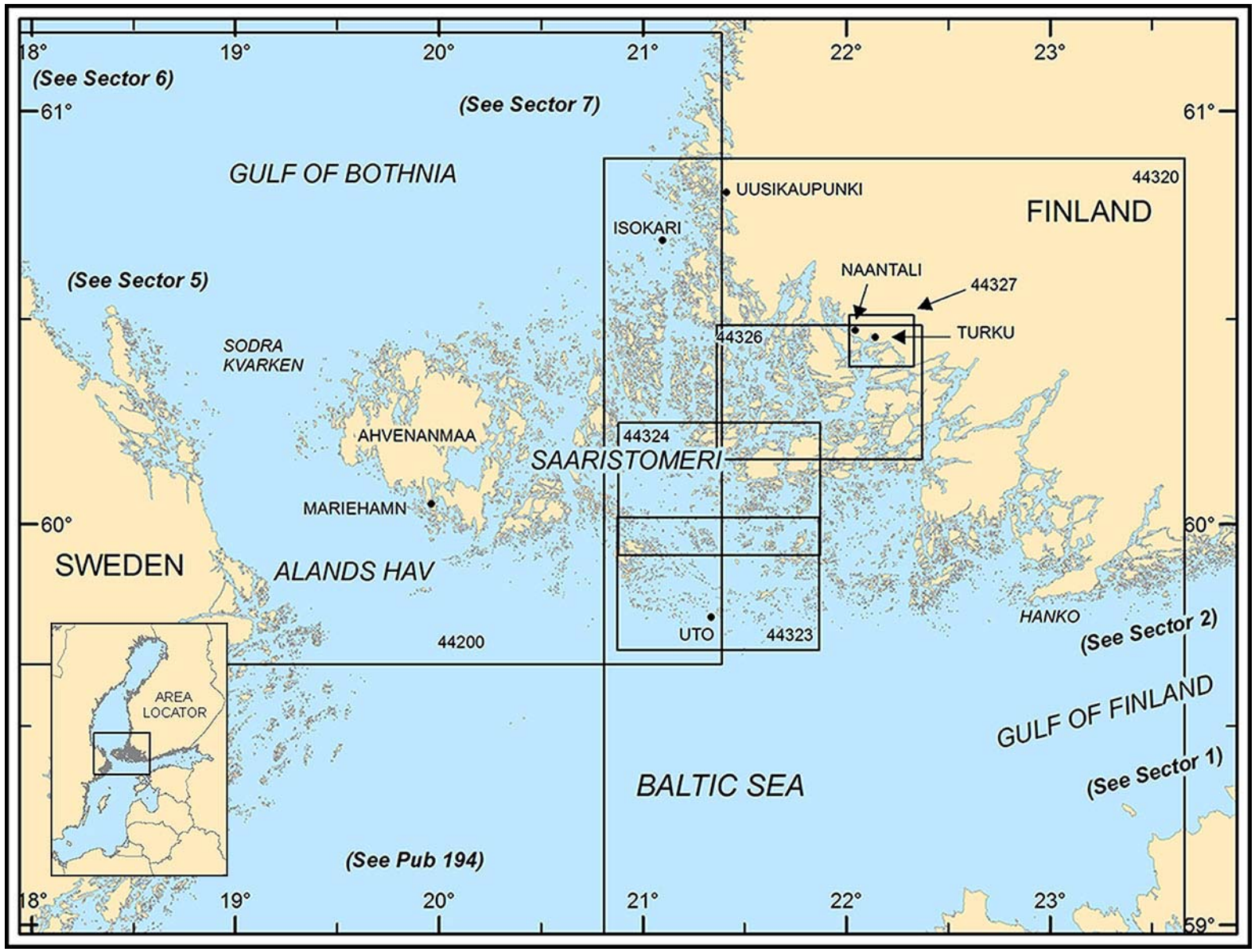
Saint Petersburg—Contact Information	
Saint Petersburg Port VTS	
Call sign	Petersburg Radio 19
VHF	VHF channels 9, 12, 13, 16, 30, 67, and 73
Telephone	7-8-812-3807010
Facsimile	7-8-812-3807020
E-mail	vts.raskat@spb.rosmorport.ru
Internal Port VTS	
Call sign	Peterburg Radio 17
VHF	VHF channels 9, 13, and 67
Telephone	7-8-812-3274120
E-mail	vts@mail.pasp.ru

Anchorage.—Several anchorage waiting areas are situated adjacent to the sides of the St. Petersburg Morskoy Kanal and may best be seen on the chart.

A waiting area for Outer Anchorage Area No. 3a, centered on position 59°59.1'N, 29°42.5'E, has a radius of 265m, in an area dredged to 11.4m (2013). Care should be taken to avoid anchoring near a submarine cable laid through the upper half of the anchorage.

Anchorage Area No. 4a is centered 2.5 miles WSW of Saint Petersburg No. 1 Lighted Buoy (60°01.6'N., 29°25.9'E.), on Fairway No. 1. Waiting Area No. 1, directly N of Anchorage Area No. 4a, can be used by non-Russian vessels for anchoring; however, care should be taken to avoid obstructions which lie within and along the boundary of both anchorage areas. A lost anchor with attached chain was reported (2020) as a submerged obstruction within Anchorage Area 4a.

Caution.—Care is advised as the entrance channel narrows to a width of about 70m between the sea walls, which were reported to be in a poor state of repair.



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

SECTOR **4** — CHART INFORMATION

SECTOR 4

THE ALAND ISLANDS AND THE ADJACENT FINNISH COAST

Plan.—This sector describes the Aland Islands and those dangers lying along the seaward edges of the archipelago extending from the Finnish coast. The descriptive sequence is W from the cape of Hanko (Hangoudd) (59°49'N., 22°54'E.) to Sodra Kvarken (60°18'N., 19°00'E.) and then E to Isokari (60°43'N., 21°01'E.). The ports of Turku and Naantali, situated at the SW corner of Finland, are described at the end of this sector.

General Remarks

4.1 Winds—Weather.—Among the islands, SW winds prevail. Winds from SE are usually accompanied by rain and N winds are accompanied by squalls.

Fog occurs in the spring and autumn. The fog is usually thick and dry in the spring, and damp with fine rain in the autumn.

Ice.—During an average winter ice forms within the inlets of the Ahvenanmaa Islands in the middle of January, and quickly extends around these islands and over the sea to the E of them. By the beginning of February the whole sea area between the Ahvenanmaa Islands and the Finnish coast is ice-encumbered. In the middle of February, the N part of the Aland Sea and Sodra Kvarken are ice-covered. After the middle of March the ice begins to decrease, and by the beginning of April, the Aland Sea and Sodra Kvarken are open. At the end of April the sea between the Ahvenanmaa Islands and the Finnish coast is clear.

A passage is usually kept open all winter through Rodhamnsfjarden and Foglofjard as far as Turku. If the winter antic-yclone to the SE extends W and N, giving a period of E winds and cold weather over the Baltic, a great deal of ice is heaped up on the S coast off the Ahvenanmaa Islands. On the S side of the Aland Sea, traffic is unhindered in very mild winters.

The earliest reports of ice in the N part of the Gulf of Bothnia occur usually in November. Ice first forms within inlets and in shallow water along the coasts. It is slow to extend seaward but extends quite rapidly along the coasts. By the middle of January a continuous belt of ice surrounds most of the coasts and much of the sea area in the gulf N of latitude 63° is frozen. Ice conditions are usually at their peak by the end of February. Normally, ice conditions improve from early March onward. Ice recedes N and has usually left Turku (60°27'N., 22°15'E.) and Gavle (60°41'N., 17°10'E.) by 14 April. The N part of the gulf is normally ice-free by the middle of May.

For information pertaining to winter navigation, ice, and Finnish icebreaking services, including internet web sites, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Tides—Currents.—Currents are generally dependent on the direction of the wind, but strongly divided by the islands and shoals. The water level is a good indication of expected winds. A rise precedes winds from the SE or SW, and a fall precedes those from the N.

Aspect.—The peninsula of Hankoinemi and the dangers adjacent to it are described in paragraph 2.2.

The Aland Islands, located in the entrance of the Gulf of Bothnia, are separated from the coast of Sweden by the Aland Sea and Sodra Kvarken.

Saaristomeri, the waters lying between the Aland Islands and the mainland of Finland, are encumbered by islands, islets, and innumerable rocks and shoals.

Aland Island (Ahvenanmaa), the largest of the group, is partially wooded and intersected by numerous inlets. It is reported that about two-thirds of the inhabitants of the group reside on this island and are of Swedish extraction.

Pilotage.—Pilotage is compulsory within the archipelago area for all merchant vessels and foreign warships; all tankers over 15,000 dwt when loaded must carry two pilots.

All ordering of local pilots throughout Finland is carried out by the Finnpilot Order Center. For more details on the Finnpilot Center see paragraph 1.1

The IMO recommends that vessels constrained by their draft or vessels not registered in one of the Baltic states, and infrequently sailing the area, embark a deep-sea pilot.

Vessels requiring a licensed Deep Sea Pilot in the Baltic should make a request at least 12 hours in advance to the local agents.

Pilots should be ordered by one of the following methods:

1. Web site, using the Pilot Order Form.
2. Telephone.
3. Facsimile.
4. E-mail.

The Finnpilot Order Center will confirm receipt of the preliminary information or Pilot order using the same method as used to make the order. An order placed using a form on the internet can also be confirmed via e-mail if requested by the customer, providing an e-mail address is included in the order information or is otherwise known by Finnpilot. (An order placed by telephone is not confirmed separately after the telephone call). There is no pilot ordering via VHF radio.

The following procedures are in place for inbound and outbound vessels:

1. Inbound vessels:
   a. Vessels must provide 12 hour and 3 hour advance notification of ETA at the pilot boarding position to the Pilot Order Center.
   b. Vessels must place a binding pilotage order to the Pilot Order Center 3 hour prior to arrival at the pilot boarding position.
2. Outbound vessels:
   a. The vessel's agent or the vessel must provide 12 hour and 2 hour advance notification of departure to the Pilot Order Center.
   b. The vessel’s agent or the vessel must provide a binding pilotage order 2 hour before departure to the Pilot Order Center.
3. Vessels shifting berth must provide 2 hour advance notice to the Pilot Order Center.
4. During the winter months, pilot boarding positions

may be subject to alteration according to the prevailing weather conditions.

Pilots for the archipelago area board vessels in the following positions:

1. For vessels approaching from S—About 3 miles SSW of Uto.
2. For vessels approaching from W bound for Farjsundet, Degerby, and all other destinations in the E part of the archipelago—In position 59°56.6'N, 19°57.6'E. This boarding position is also used by vessels transiting the Archipelago Sea bound for Hanko during ice conditions.
3. For vessels approaching from N—In position 60°44.47'N, 20°55.03'E (Isokari).
4. For vessels approaching from SE—About 1.5 miles ENE of Russaro.
5. For the port of Mariehamn (Maarianhamina)—In a position approximately 1.5 miles SSW of Nyhamn Tower or 1.25 miles WSW of Marhallan Light.
6. For vessels transiting Saarstomeri bound for Hanko during ice conditions—In position 59°56.3'N, 19°56.3E.

Regulations.—The Finnish authorities have instituted a system of restricted areas and semi-restricted areas throughout the whole of Finland's coastal waters. The limits of the areas lying within the waters described in this sector may best be seen on the chart.

Vessels are permitted to transit these restricted areas only through an approved channel, with a pilot aboard.

Anchoring is prohibited in marked areas. Short-time anchoring is allowed by permission of the VTS.

Areas dangerous due to mines laid during World War II exist within the waters described in this sector. There is still a risk of danger in these areas and anchoring or carrying out any seabed activities are prohibited without special permission.

See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for regulations pertaining to vessels within the waters of Finland. Vessels should also consult the pilot as well as the local authorities for details on local regulations.

Vessel Traffic Service (VTS).—The Archipelago VTS area covers the Archipelago Sea, including merchant shipping lanes. The eastern boundary is Flackgrund Light, the northern boundary Hylkkari Light and at sea the boundary line follows the outer limits of the VTS area. The VTS area also covers the areas administered by the Port of Turku and the Port of Naantali. See the graphic titled **Archipelago (Saaristomeri) VTS** for clarification.

FinTraffic VTS—Master's Guide
https://www.fintraffic.fi/en/vts/masters-guide

The Archipelago VTS provides the following types of services:

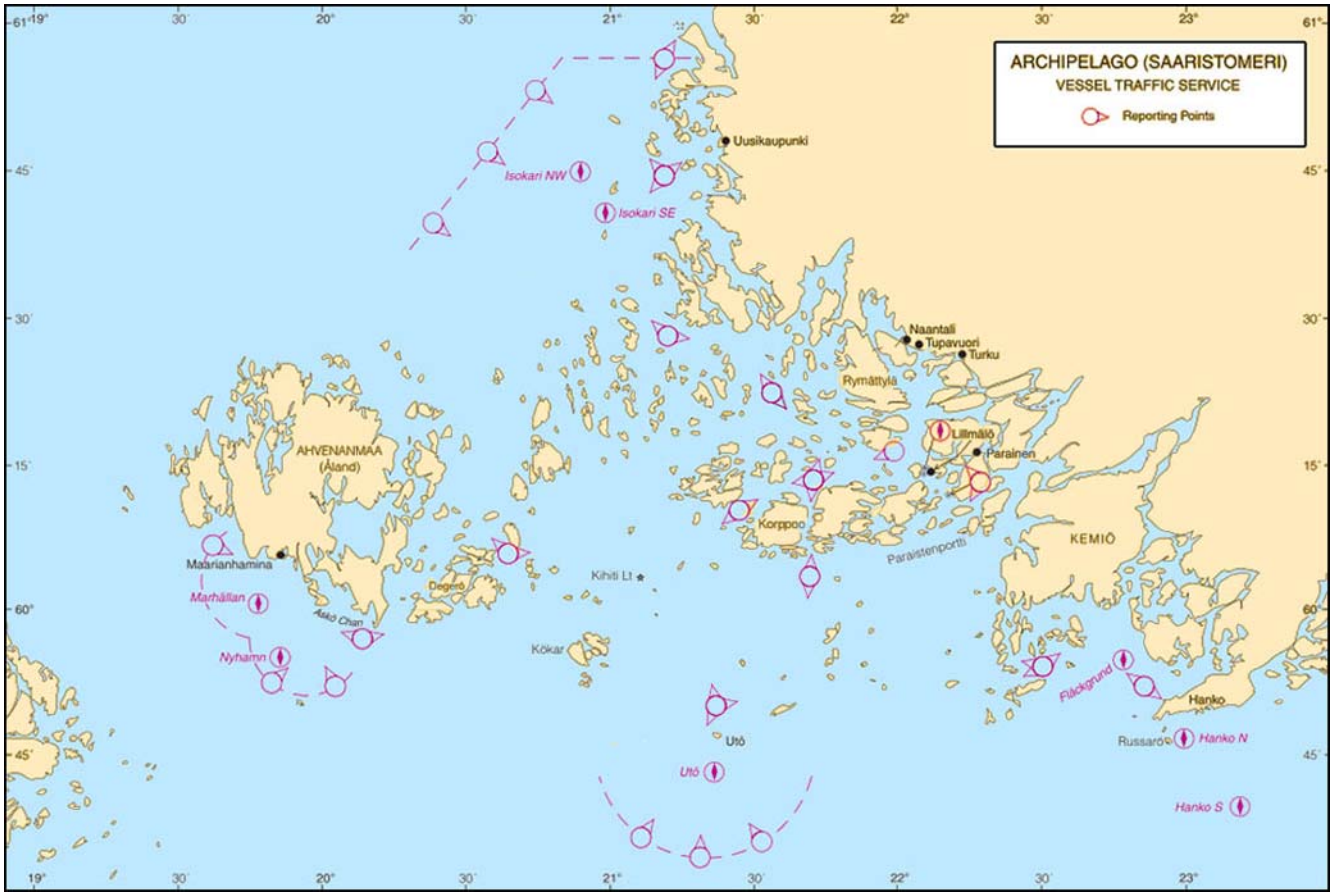
1. Information service.
2. Traffic organization service.
3. Navigational assistance service.

Mandatory participation and other requirements in the VTS are listed below:

1. Vessels of 24m loa or over are obliged to participate in the VTS.
2. When navigating in the VTS area, vessels are required to maintain a continuous listening watch on VHF channel 71.
3. Vessels navigating in the VTS area, which are not obliged to participate in the VTS, are recommended to maintain a listening watch on VHF channel 71.
4. Participating vessels are required to make reports, as follows:
   a. Upon entry into the VTS area.
   b. Before anchoring.
   c. Before leaving an anchorage.
   d. After berthing.
   e. A departure report before leaving the Port of Turku or Naantali. The permission to depart issued by the VTS is valid for 20 minutes, during which time the vessel must get underway. If the vessel's departure is delayed, it will have to request a new permission to depart. This does not apply to departures from the Aura River.
   f. At 20 minutes before passing the following reporting points:
      i. Fagerholm (60°06.2'N, 21°41.6'E.).
      ii. Lovskar (60°13.3'N, 21°42.9'E.).
      iii. Smorgrund (60°10.3'N, 21°26.1'E.).
      iv. Hylkkari (60°57.0'N, 21°08.5'E.).
      v. Ljungo (60°05.7'N, 20°40.5'E,) westbound vessels report their selected route.
      vi. Ledsund (59°57.9'N, 20°10.6'E.). or S of Ledskar (59°57.4'N, 20°10.3'E,) eastbound vessels report their selected route.
      vii. Flackgrund (59°52.2'N, 22°50.0'E.)
      viii. Askgrund (60°11.8'N, 22°10.3'E.).
      ix. Marhallan or Korso, on arrival at the VTS area.
   g. Southbound vessels shall report 20 minutes before passing Hylkkari Light to Archipelago VTS on VHF channel 71.
   h. Northbound vessels shall report 20 minutes before passing Hylkkari Light to West Coast VTS on VHF channel 9.
   i. Westbound vessels shall report 20 minutes before passing Flackgrund Light to Archipelago VTS on VHF channel 71.
   j. Eastbound vessels shall report 20 minutes before passing Flackgrund Light to Hanko VTS on VHF channel 67.
   k. When passing the following reporting points:
      i. Orhisaari, only westbound vessels report their selected route.
   l. East of Kihti Light 60°0.64'N, 21°0.38'E, commuter and archipelago ferries with operational AIS in use are only required to report when the visibility is less than 1 mile.
   m. At 10 minutes before arriving in Langnas 60°07.30'N, 20°17.94'E, for vessels arriving from the directions of Godby.

Reports should include the following information:

1. Vessel's name.
2. Name of reporting point.
3. Destination.
4. Intended route. If an alternative route is selected, this must be reported.



Archipelago (Saaristomeri) VTS

Within the VTS there are certain areas with meeting and overtaking prohibitions (unless one of the parties is a tug or a vessel whose size in comparable to a tug). Meeting and overtaking is permanently prohibited in the following areas:

1. At Lovskar between longitude 21°43.0'E and longitude 21°45.2'E, in the 15.3m fairway.
2. At Ledsund between the longitude 20°09.7'E and longitude 20°10.6'E, in the 7.0m fairway.
3. At Ljungo between the longitudes 20°40.7'E and longitude 20°42.0'E, in the 8.2m fairway.
4. At Hulgrund between the longitudes 20°22.2'E and 20°23.2'E, in the 7.0m fairway.
5. At Ronngrund between the latitudes 60°17.3'N and 60°16.3'N, in the 10.0m fairway.
6. In the fairway section Porokari.Saaronniemi between latitudes 60°24.4'N and 60°25.3'N in the 15.3m fairway.

Contact Information.—See the table titled **Saaristomeri—Contact Information**.

Saaristomeri—Contact Information	
Archipelago (Saaristomeri) VTS	
Call sign	Archipelago VTS
VHF	VHF channel 71

Saaristomeri—Contact Information	
Telephone	358-204-486521 (Archipelago VTS)
	358-204-486522 (Supervisor)
E-mail	supervisors.west@fintraffic.fi
	archipelago.vts@fintraffic.fi
Web site	https://www.fintraffic.fi/en/masters-guide

Directions.—The main offshore shipping routes leading to ports in the Gulf of Bothnia pass W of the Aland Islands and through Sodra Kvarken (see paragraph 5.8).

Channels, requiring extensive local knowledge, lead between the islands and dangers, and connect the Aland Islands with the mainland. The main approaches to these channels from seaward are, as follows:

1. From the SW—through Rodhamnsfjarden (via Nyhamn).
2. From the S—by a channel passing W of Uto (59°47'N., 21°22'E.).
3. From the E—using the NW approaches to Hanko.
4. From the N—via Isokari.

Caution.—Strong S to SW winds cause treacherous seas among the islands off the S and SW coasts of Finland, between Uto (59°47'N., 21°22'E.) and Bengtskar (59°43'N., 22°30'E.).

Wave heights can increase suddenly from 4 to 6m in this area.

Local magnetic anomalies are reported to exist within several areas covered by this sector, including areas between the SW side of the Aland Islands and the Swedish coast, as well as about 10 miles SW and SE of Uto.

During the summer, heavy traffic, including numerous small craft and ferries, may be encountered in the waters lying between the Swedish coast and the E side of the Aland Islands.

Hanko to Uto

4.2 The Skerries between Hanko and Uto, about 46 miles W, form an extension of the S coast of Finland and bound the Gulf of Finland on the NW side. They form a chain of predominantly barren islets, rocks, and shoals lying in close proximity to one another. Channels lead to the larger islands and to the mainland.

The bottom consists of coarse and fine sand in places, more frequently of mud, and yet more often of stones.

A number of dangerous shoals and areas with irregular depths lie seaward of the Skerries and extend S as far as the parallel of 59°35'N. Therefore, vessels entering the Gulf of Finland on the N side are advised to remain S of the above parallel and to pass the outer skerries at a distance of 8 to 10 miles.

Entry between the cape of Hanko and Uto should not be attempted without local knowledge. Therefore only the most conspicuous islands and off-lying dangers will be described.

Morgonlandet (59°46'N., 22°42'E.) is 6m high; its summit is barren. The E part of this island is lower than the W. The island is readily identified from seaward by its isolated position.

Dommaskar (59°45'N., 22°30'E.) is a barren islet about 6m high. It may easily be identified from seaward by its dark color.

Bengtskar (59°43'N., 22°30'E.) is one of the southernmost islets in the approaches to the Gulf of Finland. Bengtskar Light is shown from a conspicuous tower with a building and wind generator, 46m high, standing on this islet.

Oro (59°49'N., 22°20'E.) is partially wooded and although lying some distance N of the outer dangers, it may easily be identified from seaward.

Vano Kalkskar (59°47'N., 22°05'E.) is a barren, rocky islet about 15m high.

Oleg (59°35'N., 21°58'E.), a shoal on which a wreck with a depth of 12.7m lies, is the southernmost danger located between Hanko and Uto.

Jurmo (59°50'N., 21°36'E.) rises to a height of 22m on the N side. A red wooden church, with a weather vane on the E angle of the roof, stands on the N side of this island and is visible from the channel leading between Uto and Lom (Lohm), 21 miles NNE.

4.3 **Uto** (59°47'N., 21°22'E.) is a barren, hilly island lying on the SW side of a group. It is located at the entrance of the channel which leads through Vidskars Fjard to Turku, 48 miles NE. Uto Light is shown from a tower, 24m high, standing on the summit of the island.

Range lights are shown from structures situated at the W side of the island and indicate the main entrance route leading in a NNE direction from seaward. Another lighted range, situated about 4 miles NNW of Uto, indicates the main fairway leading past this island.

dr. erors [CC BY 3.0 (https://creativecommons.org/licenses/by/3.0)], via Wikimedia Commons

Bengtskar

Depths—Limitations.—Uto Harbor lies between the N side of the island and Enskar, the N peninsula. The N side of the harbor is protected by Ormskar, a bare and hilly island lying close NE of Enskar.

The harbor has depths of 3 to 9m, but can only accommodate vessels with drafts up to 9m. A channel, authorized for drafts up to 4m and marked by a lighted range, leads to the anchorage of the harbor. Local knowledge is required.

For more berthing information see table titled **Uto—Berth Information**.

Uto—Berth Information

Berth	Length	Maximum Vessel Draft	Remarks
Hannas Horisont			
Main	30m	9.0m	Passenger and ferries.
Outer W	43m	—	Passenger and ro-ro.

Lillharun (59°44'N., 21°24'E.), an islet, 7m high, is fronted by foul ground. It lies at the E side of the main channel and about 3.2 miles SSE of Uto. A light is shown from a tower, surmounted by a wind generator, standing on this islet. A racon is situated at the light.

Grimsorar, marked by a beacon, is a group of rocks, 4 to 7m high, lying centered 4.2 miles SSE of Lillharum.

Uto Langan (59°41'N., 21°30'E.), an islet, 3.4m high, lies about 1 mile N of Grimsorar beacon.

A shoal, with a least depth of 6.7m, lies about 2.3 miles S of Grimsorar beacon and is marked by a buoy.

Formansbadan, with a least depth of 0.9m, lies on the W side of the main channel, about 3.2 miles WNW of Lillharun.

Bokullankivi Light (59°51'N., 21°25'E.) is shown from a tower, surmounted by a wind generator, standing on an islet, 4 miles NNE of Uto. A racon is situated at the light.

Caution.—Local magnetic anomalies are reported to exist in

the area surrounding Lillharun and in another area centered about 7 miles ESE. Other anomalies are also reported to exist in areas lying about 10 miles SSE and WSW of Lillharun. A transshipment area exists S of Uto Light.

Uto to Mariehamn

4.4 Many islands and rocks, along with numerous shoals, extend up to about 13 miles W from Uto. They are separated from another group of dangers lying farther W by Kokarsfjarden (Kokarin Selka).

Vastra Morskas (59°47'N., 21°09'E.) is the largest of the numerous islands lying up to 13 miles W of Uto. The surrounding area is encumbered with rocks and shoals. The island is 17m high in the S part, about 13m high in the NE part, and is covered with bushes.

Bogskar (59°30'N., 20°21'E.), a group of rocks fronted by shoals, is the southernmost danger in the Aland archipelago. Bogskar Light is shown from a 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.

Suomen Leijiona (59°28'N., 20°49'E.), a shoal, has a least depth of 10.4m and lies about 14.5 miles ESE of Bogskar. Suomen Leijiona Light is shown from a tower, 14m high, standing on the S part of this shoal. An AIS is situated at the light.

Svenska Bjorn Light (59°33'N., 20°01'E.) is shown from a tower, with a helicopter platform,32m high, standing on Sodra Klatten, a shoal. A racon is situated at the light. 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.

During wintertime, vessels bound for Swedish and Finnish ports with traffic restrictions in the Gulf of Bothnia are requested to report the information by VHF as shown in the table titled **Winter Reporting Information**.

Winter Reporting Information	
Reporting Line	Latitude 60°00'N. A more southerly line may be given depending on the ice conditions
Call sign	ICE INFO
VHF	VHF channel 78
Telephone	46-10-492-76-00
Required Information	Vessel name, call sign, nationality, destination, ETA, and speed
Language	Swedish or English

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.

Caution.—It is reported that a large ODAS buoy is moored about 17 miles SSE of Suomen Leijiona Light.

4.5 **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.

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. It is reported that this light structure has been destroyed and a lighted buoy is moored close E of the ruins.

Trosleln Ostra Lighted Beacon stands on a shoal on the NE side of the fairway.

Flotjan (59°49'N., 19°47'E.), a large rocky shoal, lies about 9 miles NW of Troskeln Ostra Light and is the outermost danger in the SW approach to Foglofjard. Flotjan Light is shown from a tower standing on the S part of the shoal. A racon is situated at the light.

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Lagskar Light

Lagskar (59°50'N., 19°55'E.), an islet fronted by an extensive area of foul ground and rocks, lies 4.5 miles ENE of Flotjan. A light is shown from a tower, 33m high, standing on the N side of this islet.

Nyhamn Light (59°58'N., 19°57'E.) is shown from a tower, 34m high with a wide top, standing on the S side of Lilla Batskar, a small island lying 7.3 miles N of Lagskar. A small harbor, used by pilot vessels, is situated at the NE side of this island. It is reported that this light is no longer operational.

Pilotage.—Pilots board in the following positions:

1. Uto (59°44.6'N., 21°20.5'E.).
2. Nyhamn (59°56.3'N., 19°56.3'E.).
3. Isokari NW (60°44.5'N., 20°54.5'E.).
4. Isokari SE (60°42.1'N., 20°59.9'E.).
5. Hanko N (59°46.9'N., 23°00.3'E.).
6. Hanko S (59°42.5'N., 23°05.8'E.).
7. Lillmalo (60°13.8'N., 22°06.6'E.).
8. Flackgrund (59°52.9'N., 22°48.5'E.)

Rodhamnsfjarden (59°56'N., 19°58'E.) is entered between Lilla Batskar and Oxbadar, a group of dangerous rocks lying 3.2 miles SSE. A main route, authorized for drafts up to 9m, leads from seaward through this passage. The fairway is indicated by a lighted range, but is reported to be dangerously narrow in places for large vessels.

4.6 **Offshore route.—**The offshore route leading from

the S to the Gulf of Bothnia passes though the Ahvenanmeren Deep-Draft Channel and the Aland Sea. The channel is swept to a depth of 18.2m 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 E of Svenska Bjorn Light (59°33'N., 20°01'E.). It then leads 4 miles N and turns NW, passing, with a minimum width of 1 mile, N 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.).

Vessels proceeding W out of the Gulf of Finland into the Aland Sea can pass N of Suomen Leijiona Light (59°28'N., 20°49'E.) and join the main route in the vicinity of Bogskar Light.

For the route and dangers lying S of Bogskar Light, see Pub. 194, Sailing Directions (Enroute) Baltic Sea (Southern Part).

Caution.—A Traffic Separation Scheme (TSS) and two-way route, best scene on the chart, lie in an E-W direction between Flotjan Light (59°49'N., 19°47'E.) and the Halder Buoy some 14 miles in distance. Vessels with drafts greater than 7.6m should avoid this route and instead use the main TSS route through the South Aland Sea to and from the Svenska Bjorn Light (59°33'N., 20°01'E.). See paragraph 4.9 for further information.

4.7 Between **Nyhamn Light** (59°58'N., 19°57'E.) and Hammarudda, the SW extremity of Aland Island, 10 miles NW, there are many off-lying dangers. The entrance fairways leading to Mariehamn lie between these dangers and require local knowledge.

Marhallan (60°02'N., 19°52'E.), a rock, lies about 3.5 miles SW of the harbor entrance and 5 miles NNW of Nyhamn Light. A light is shown from a floodlit tower standing on this rock.

Kobbaklintar, a group of islets lying on an area of foul ground, is located about 0.3 mile E of Marhallan.

Korso is the westernmost islet of this group. Two sets of lighted ranges are shown from structures standing in this vicinity and indicate channels leading N and S of Marhallan. A racon is situated at the front range light.

A light is shown from Tvibenan Islet, which lies on the W side of the main channel, 0.5 mile W of KorMso. Hetronklubb Islet lies on the E side of the channel and is marked by a beacon. The islet of Skogo, 0.7 mile of Korso, has foul ground extending up to about 0.3 mile NE and SE from it.

A shoal, with a depth of 4.9m, lies between Skogo and Vitfagelskar, another islet located 0.7 mile NE. Vitfagelskar is marked by a cairn beacon. Another beacon, fitted with a radar reflector, stand on the W side of the channel, about 0.3 mile E of Skogo.

Druvan Beacon stands on the N extremity of an islet of the same name, about 0.3 mile N of Skogo.

Grano, with its adjacent dangers, fronts the entrance of the harbor and lies about 0.8 mile NE of Korso. Granoklubb and Granskar, fronted by foul ground, lie close NW and 0.3 mile W of Grano, respectively. A beacon stands on the N end of Granoklubb.

Foul ground extends about 0.3 mile S of Grano; a 5.8m shoal lies 0.3 mile N of Grano. A 5.5m shoal lies in the fairway close W of Granskar. A light is shown from the NE extremity of Grano; buoys mark the surrounding dangers.

Mariehamn (Maarianhamina) (60°06'N., 19°55'E.)

World Port Index No. 27920

4.8 The port of **Mariehamn**, a major ferry terminal, is situated on the S side of Aland Island, about 89 miles WNW of the cape of Hanko. The town is the largest in this island group. The small natural E and W harbors are well sheltered, but the E harbor is now used only for small craft. An airport is situated close N of the town.

Winds—Weather.—See the General Remarks in paragraph 4.1.

Ice.—The port is free of ice, except when the harbor is affected by the coldest winters, and then the harbor is kept open by icebreaker assistance.

Depths—Limitations.—The E harbor has depths of 1 to 4.5m and is used only by small craft.

The W harbor provides a total of 795m of quayage. There's an oil berth at the power station.There are facilities for ro-ro, timber, general cargo, passenger, automobile ferry, and tanker vessels. For more berthing information see the table titled **Mariehamn—Berth Information**.

Vessels up to 240m in length and 7.6m draft can be accommodated, but require twin-screw propellers and a bow thruster for safe maneuvering.

Mariehamn—Berth Information

Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
Cruise Terminal					
Jetty 1-2 International Cruise Line Quay	250m	8.2m	240m	7.6m	Cruise vessels and bunkers.
Port of Mariehamn					
Jetty 3	190m	7.7m	—	—	Cruise vessels and ro-ro passenger/vehicles/rails.

Mariehamn—Berth Information					
Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
Jetty 4	125m	7.8m	—	—	Cruise vessels and ro-ro passenger/vehicles/rails. Berthing length of 190m (including dolphins).
Jetty 5	85m	7.7m	—	—	Cruise vessels and ro-ro passenger/vehicles/rails. Berthing length of 140m (including dolphins).
Jetty 6	210m	8.2m	—	—	Cruise vessels and ro-ro passenger/vehicles/rails. Berthing length of 250m (including dolphins).
Klintkajen	30m	5.0m	—	—	Cement, sand, and breakbulk. Can be used as a lay-by berth for vessel repairs and inspection.
Mariehamn Power Plant					
North	—	6.5m	150m	—	Dirty products. Berthing length of 50m (including dolphins). Mainly used by vessels for mooring. Occasional loading of cargo. Two vessels can be moored side by side alongside.
South	—	6.5m	150m	—	Dirty products. Berthing length of 75m (including dolphins). Mainly used by vessels for mooring. Occasional loading of cargo. Two vessels can be moored side by side alongside.

Aspect.—Mariehamn is difficult to view from seaward due to the heavily-wooded hills in the vicinity.

An aeronautical light is shown from a tower standing at an elevation of 81m in the vicinity of the airport, 2 miles N of the town. A prominent television tower, 196m high, stands about 9 miles NE of the town and is visible from all directions from seaward. A conspicuous water tower is situated in the town.

The fairway channels leading to the port are indicated by lighted ranges. Dangers lying adjacent to the fairways are marked by lights, beacons, and buoys.

Pilotage.—Pilotage is compulsory for foreign vessels. See paragraph 4.1 for further details.

Pilots board in the following positions:

1. Marhallan—In a position approximately 1.5 miles SSW of Nyhamn Tower or 1.25 miles WSW of Marhallan Light.
2. Nyhamn (for the ports of Farjsundet, Degerby and all other destinations in the Eastern Aland Archipelago)—In position 59°56.3'N, 19°56.3'E.

The Nyhamn pilot boarding position is also used for vessels transiting Saaristomeri bound for Hanko during ice conditions in the Northern Baltic.

Contact Information.—See the table titled **Mariehamn—Contact Information**.

Mariehamn—Contact Information	
Port	
Call sign	Mariehamn Port
VHF	VHF channels 12, 13, and 16
Telephone	358-18-5310 (switchboard)
E-mail	info@hamnen.ax
Web site	https://www.mariehamnshamn.ax

Mariehamn—Contact Information	
Port Service Office	
Telephone	358 18 531476
	358-400-789556 (mobile)
E-mail	hamnbetjaning@hamnen.ax
Harbormaster	
Telephone	358-400-781181 (mobile)
	358-18-531473

Anchorage.—Anchorage is available about 0.5 mile NE of Skogo, in depths of 17 to 29m, mud and stones. The port provides well-sheltered anchorage because of the numerous offlying islands.

Directions.—Vessels can reach the port by using a main channel authorized for drafts up to 8.0m. This channel can be entered from seaward by steering in a NE direction, on a lighted range, and passing close SE of Marhallan Light. It can also be approached from S by steering in a NNE direction for 1.5 miles and passing between Masskar and Kvasten, 0.5 mile W. This fairway then leads about 0.7 mile NNW to join the main channel, passing between Kobbaklintar and Artskar.

A channel from Ledskar, authorized for drafts up to 3.3m, leads close NE of Lango and then NNW to Slemmern, lying on the E side of Mariehamn.

Caution.—Two submarine cables extend in a SW direction from Mockelo to the W side of the port.

The Aland Islands

4.9 Between **Hammarudda** (60°05'N., 19°46'E.), the SW extremity of Aland Island, and the islet of Sodra Salskar (60°25'N., 19°36'E.), 20 miles NNW, the Aland Islands extend

W about 12 miles to **Yttre Borgen** (Ytre Borgen) (60°16'N., 19°16'E.), their outermost rock.

Eckero, the largest island of the group, is separated from Aland Island by Marsund, a narrow strait, authorized for drafts up to 2.1m. Numerous islets, rocks, and reefs lie within this area and many navigable channels lead between them.

The dangers situated at the E side of Sodra Kvarken are described beginning in paragraph 5.8.

A channel, with a least depth of 6.1m, leads between the islets and reefs fringing the W and N side of Eckero and into the Gulf of Bothnia. It is marked by beacons and buoys, but local knowledge is necessary.

Eckero Fjord, indenting the S side of Eckero, affords anchorage for vessels with local knowledge, in depths of 12 to 14m. The anchorage lies about 0.5 mile N of the N extremity of the island of **Torpo** (60°10'N., 19°37'E.), which is located on the W side of the entrance to the fjord.

The fairway leading to this anchorage runs ENE between Rodskar and Vittingen and then leads E of Torpo in a NNW direction.

The bay lying between Hammarudda and the S extremity of Eckero, about 6 miles NW, is encumbered with a number of dangerous shoals.

Utbadan, an above-water rock fronted by dangers, lies about 1.5 miles WSW of Hammarudda. A lighted beacon, 6m high, stands on this rock.

Regulations—Vessels navigating in the South Aland Sea routing system are monitored by Aland Sea Traffic by means of AIS. Vessels violating the COLREGs or neglecting the carriage requirements of AIS are identified and reported to the relevant flag state. The traffic separation scheme (TSS) off South Aland Islands is best seen on the chart.

Caution.—Numerous submarine cables have been laid across Alands Hav, between the large island of Aland and the Swedish coast. These cables may best be seen on the chart.

4.10 Off-lying islands and dangers.—The southwesternmost danger is **Gisslan** (60°10'N., 19°18'E.), an islet lying about 14 miles WNW of Hammarudda. This islet, which is marked by a light, is fronted by foul ground extending up to about 0.4 mile seaward.

Signilskar (60°12'N., 19°20'E.) (World Port Index No. 27870), a large island, lies about 2.5 miles NE of Gisslan. It is separated from Eckero by a channel 4.5 miles wide, in which lie several islets and numerous dangers. Close to the NNW side of Signilskar, the island of Enskar provides anchorage for vessels with local knowledge within the entrance of a bay indenting its S side.

Glasskar and Tollingarna lie 1.5 miles ESE and 2.5 miles E, respectively, of the S extremity of Signilskar, with Tollingbadarna, marked by a light, located 0.5 mile farther E.

Batgrund, with a depth of 5.2m and marked by a buoy on its W side, lies midway between Tollingarna and the W side of Eckero.

Yttre Borgen (60°16'N., 19°16'E.), the westernmost danger in this area, is located 6.5 miles NNW of Gisslan. This rock is closely surrounded by shallow water. Lagbadan, Masskar, and Flyttorna lie between Enskar and this rock. Sydbrotten, with a depth of 0.6m, lies about 6 miles NNE of Yttre Borgen.

Markallarna, formed by two rocks, lies 4.7 miles NNE of Sydbrotten. Sydbrotten and Markallarna form the outermost dangers on the NW side of the Aland Islands.

Caution.—Submarine cables, which may best be seen on the chart, extend between Enskar and Signilskar. They also extend ESE and then ENE to the W side of Eckero.

4.11 The N side of the Aland Islands is moderately high and the elevated land standing on the E side of Eckero can be seen from a considerable distance seaward. A radio mast, 40m high, stands at an elevation of 138m on **Getaberget** (60°23'N., 19°51'E.) and is a prominent landmark.

Sodra Salskar Light

The area SE of a line drawn between Sodra Salskar and **Isokari** (60°43'N., 21°01'E.), about 46 miles ENE, is encumbered by a myriad of islets, rocks, and reefs between which are several hazardous, but navigable channels. In this area several isolated dangers lie almost 5 miles NW of a line of bearing previously mentioned, but since their positions have not been determined accurately, mariners are cautioned to stay clear of these dangers.

Isokari, situated 10 miles off the mainland coast of Finland, is profusely indented and fronted by hundreds of islets, rocks, and reefs.

4.12 Off-lying islands and dangers.—Hogsten (60°21'N., 19°27'E.), an islet, lies about 10 miles ENE of Market Light (60°18'N., 19°08'E.) (see paragraph 5.9) and is marked by a beacon, 16m high. The islet of Rodakon lies on foul ground, about 2.5 miles SSE of Hogsten. Several above-water rocks and shallow shoals lie up to 7 miles from Hogsten at the seaward side.

Sodra Salskar (60°25'N., 19°36'E.), a large rocky islet, lies 5.5 miles NE of Hogsten. A light is shown from a tower, 32m high, standing on this islet.

Tartarusa, a rocky shoal with a depth of 4m, lies about 4.2 miles NNW of Salskar Light.

Ostra Malen and Vastra Malen, above-water rocks, lie about 4.5 miles W of Salskar Light and a group of shoals, with a least depth of 1.2m, lies about 3.2 miles farther W.

Below-water rocks and shoals compound the dangers lying within 3 miles NW and SW of Vastra Malen.

Dano Gamlan, an island, lies 4.7 miles E of Sodra Salskar Light. A beacon stands on the W side of Mellanskar and another on Halvman, two islets, located about 0.5 mile N and 0.5

mile NNW, respectively, of the NW extremity of Dano Gamlan.

Iarnbodan is the southernmost of two above-water rocks lying about 3.7 miles NNW of Halvman Beacon. Yttre Margrund and Inre Margrund, each with a depth of 0.6m, lie about 1.2 miles ESE and 1.7 miles SE, respectively, of Iarnbodan.

Brunkan, an above-water rock, lies on the N side of the coastal track about 0.5 mile NE of Mellanskar; shoals, with depths of 0.6 to 6.1m, lie within 1 mile NE and NW of this rock. Shoal water fringes the S side of Brunkan and is marked by a buoy.

Kallan (60°27'N., 19°45'E.), an islet from which a light is shown, lies 1 mile WNW of Brunkan.

Jarngrynnorna (60°34'N., 19°53'E.), a shoal, lies about 8 miles NNE of Mellanskar Beacon. It has a depth of 2.7m and is marked by buoys. Isolated shoal patches, with depths of less than 10m, lie up to about 5 miles N of this shoal.

4.13 **Koxnan** (Koksnan) (60°28'N., 19°57'E.), from which a light is shown, lies about 5.5 miles ENE of Mellanskar Beacon. Shoal water extending about 0.5 mile S from Koxnan is marked by a buoy.

Ranno (60°32'N., 20°12'E.), with Norrskar close N, is one of the outermost islets in this vicinity. A light is shown from a building standing on this islet. A racon is situated at the light.

Ytterstberg (60°34'N., 20°32'E.), an above-water rock, lies about 16 miles SW of Isokari Light; it is fringed by shoals which extend up to about 1 mile S. A rocky shoal, with a depth of 2.4m, and another shoal, with a depth of 4m, lie about 1.5 miles SW and 1.2 miles WNW, respectively, of Ytterstberg.

Lights are occasionally shown from Inre Bredan, an islet lying 5.8 miles E of Ytterstberg, and from Langor, another islet lying 4.5 miles SSE of Inre Bredan.

Ytterstbergsbrott (60°37'N., 20°33'E.) lies about 2.2 miles N of Ytterstberg and has a depth of 0.9m. It is one of the outermost dangers lying NW of Saaristomeri. Numerous rocks, shoals, and islets encumber the seaward approaches to this area and to the SSW.

Petterssonsgrund (60°41'N., 20°44'E.), an isolated shoal patch, has a least depth of 8.1m, and lies about 8.5 miles WSW of Isokari Light (60°43'N., 21°01'E.). A shoal, with a depth of 1.8m, lies about 1.2 miles SE of this patch at the NE edge of an area of foul ground.

An extensive area encumbered with numerous islets, rocks, and shoals lies E and SE of Petterssonsgrund.

Matinmatala, a shoal with a least depth of 2.7m, lies 2 miles S of Isokari and is marked by a buoy.

The main approach channel from seaward in this vicinity, which is authorized for drafts up to 10m, leads SE and passes SW of Isokari.

Fairways from Seaward to Turku and Naantali

4.14 The following are the five main fairways leading to the ports of Turku and Naantali, as follows:

1. From the Baltic Sea by way of Uto—a 61-mile long fairway authorized for drafts up to 13m.
2. From the Baltic Sea by way of Uto—a 53-mile long fairway authorized for drafts up to 10m.
3. From the Aland Sea via Nyhamn—a 83-mile long fairway authorized for drafts up to 9m.
4. From the Gulf of Bothnia via Isokari—a 58-mile long fairway authorized for drafts up to 10m.
5. From the Gulf of Finland via Hanko—a 61-mile long fairway authorized for drafts up to 7.5m.

The authorized drafts for the above routes are sometimes slightly reduced for temporary periods and the authorities should be contacted for the latest information.

See paragraph 4.1 for details concerning pilotage. The harbors are kept open all year with icebreaker assistance. Although the fairways are well marked, they are extremely long, narrow, and intricate. Local knowledge is necessary. Pilots should be consulted for information concerning anchorages along the fairways.

Turku (60°27'N., 22°15'E.)

World Port Index No. 27820

4.15 The port of Turku, formerly known as Abo, is situated at the mouth of the Aurajoki River. The port is a major automobile ferry terminal and is connected by railways and roadways to towns in Finland, Sweden, Germany, and Russia. There are also facilities for shipbuilding and repairs.

Turku Home Page
https://www.portofturku.fi

Tides—Currents.—The harbor has virtually no tide and the current is negligible.

Turku—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Linnanaukko							
No. 22	68m	7.5m	198.6m	—	2.04m	2,557 dwt	Berthing length: 90m (incl. dolphins) and Continuous berthing length: 205m. Cruise, ro-pax, and bunkers. 28,890GT.
No. 23	68m	7.5m	138.7m	—	22.0m	4,030 dwt	Continuous berthing length: 205m. Ro-pax, and bunkers. 15,651GT.

Turku—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 24	69m	7.5m	169.4m	—	27.6m	3,690 dwt	Continuous berthing length: 205m. Ro-pax, and bunkers. 34,384GT.
No. 25	81m	7.5m	175.4m	—	23.0m	5,019 dwt	Continuous berthing length: 490m. Ro-pax, bunkers, and breakbulk. 22,496GT.
No. 26	81m	7.5m	89.9m	—	15.2m	4,202 dwt	Continuous berthing length: 490m. Ro-pax, bunkers, and breakbulk. 2,984GT.
No. 27	82m	7.5m	87.9m	—	12.8m	3,110 dwt	Continuous berthing length: 490m. Ro-pax, bunkers, and breakbulk. 2,673GT.
No. 28	82m	7.5m	89.9m	—	13.6m	4,161 dwt	Continuous berthing length: 490m. Breakbulk and bunkers. 2,820GT.
No. 29	82m	7.5m	89.7m	—	13.6m	4,161 dwt	Continuous berthing length: 490m. Breakbulk and bunkers. 2,863GT.
No. 30	82m	7.5m	89.2m	—	13.3m	3,780 dwt	Continuous berthing length: 490m. Breakbulk and bunkers. 2,868GT.
No. 31	98m	7.5m	89.7m	—	13.6m	4,161 dwt	Breakbulk and bunkers. 2,863GT.
Passenger Harbor Terminal							
S1	—	6.0m	—	—	—	—	Berthing length: 152m (incl. dolphins). Ro/pax, bunkers, and ro-ro/lo-lo.
S2	—	6.0m	212.1m	—	29.0m	6,287 dwt	Berthing length: 170m (incl. dolphins). Cruise, bunkers, and ro-pax. 48,915GT.
S3	118m	6.0m	—	—	—	—	Cruise and bunker.
V1	178m	6.0m	218.2m	—	31.8m	6,107 dwt	Ro/pax, bunkers, and ro-ro freight. 57,565GT.
V2	100m	6.0m	—	—	—	—	Ro/pax, bunkers, and ro-ro freight.
Pansio Harbor							
P-23	60m	9.0m	168m	—	26.4m	24,035 dwt	Berthing length: 140m (incl. dolphins). Chemicals, clean products, vegetable oils, and bunkers. Displacement: 32,008t.
P-24 E	58m	9.0m	—	—	—	—	No vessel in one year (2022). Closed. Berthing length: 188m (incl. dolphins). Clean products and bunkers.
P-24 W	63m	9.0m	71.8m	—	16.0m	2,350 dwt	Berthing length: 192m (incl. dolphins). Ro-ro freight, project/heavy cargo, and breakbulk. 2,267 gt.
West Harbor							
32	86m	8.5m	—	—	—	—	Continuous berthing length: 430m. Breakbulk, others, and bunkers.

Turku—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
33	86m	8.5m	89m	—	12.5m	3,650 dwt	Continuous berthing length: 430m. Breakbulk, others, and bunkers. 2,528GT.
34	86m	8.5m	138.3m	8.3m	19.7m	11,340 dwt	Continuous berthing length: 430m. Chemicals, clean products, breakbulk, multipurpose, and bunkers. Displacement: 15,639t. 7,903GT.
35	86m	8.5m	133.4m	—	18.2m	9,067 dwt	Continuous berthing length: 430m. Other, breakbulk, and bunkers. 6,219GT.
36	86m	8.5m	132.2m	—	15.8m	8,734 dwt	Continuous berthing length: 430m. Others, breakbulk, and bunkers.
37	115m	8.5m	—	—	—	—	Breakbulk and bunkers.
38	106m	8.5m	217.9m	—	26.5m	14,509 dwt	Continuous berthing length: 320m. Ro-ro freight, containers, bunkers, and breakbulk. 33,816GT and 630TEU.
39	107m	8.5m	217.9m	—	26.5m	14,509 dwt	Continuous berthing length: 320m. Ro-ro freight, containers, bunkers, and breakbulk. 33,816GT and 630TEU.
40	76m	8.5m	89.7m	—	13.6m	4,618 dwt.	Continuous berthing length: 320m. Container, breakbulk, and bunkers. 2,854GT and 213TEU.
41	140m	8.5m	191.4m	—	26.2m	12,784 dwt	Continuous berthing length: 206m. Clinker, others, ro-ro/lo-lo, bunkers, and breakbulk. 24,133GT.

Depths—Limitations.—The main berthing facilities are spread along the mainland, which is fronted by several islands. The largest of these islands are Hirvensalo (60°25'N., 22°10'E.), Ruissalo (60°26'N., 22°10'E.), and Luonnonmaa (60°28'N., 22°00'E.). The channels leading to the main port complexes lead between these islands. The facilities lie at the mouth of the Aurajoki River, along the river channel, and along the fairway lying between the mainland and the fronting islands on either side of the river mouth.

The entrance channel leading to the main harbor is authorized for drafts up to 10m. The entrance channel leading to the oil terminal is authorized for drafts up to 9m.

The main harbor has quayage and provides berths. There are facilities for passenger, cruise, bulk, general cargo, container, ro-ro, timber, ferry, oil, and LPG vessels. Generally, vessels up to 24,035 dwt, 218.2m in length and 31.8m beam can be accommodated in the main harbor. For more berthing information see the table titled **Turku—Berth Information**.

Pilotage.—Pilotage from seaward is compulsory, although, harbor pilotage is not. See paragraph 4.1 for further details. The sea pilot will be able to advise vessels on pilot exchange points and recommendations with regard to harbor pilotage. See the table titled **Sea Pilot Stations—Pilot Boarding Positions**.

Harbor pilots generally board regular vessels in the vicinity of Kalkkiniemi Lighted Buoy T12 (60°25.3'N., 22°10.6'E.) and deep-draft vessels in the vicinity of Kuuva Light (60°24.5'N., 22°07.5'E.).

Turku

Regulations.—See paragraph 4.1 for details concerning the Archipelago Vessel Traffic Service (VTS) and multiple Restricted Areas.

When passing Rajakari Light (60°22.7'N., 22°06.0'E.), all vessels bound for the port must report to Turku Port Control on VHF channel 12.

Tankers are prohibited from passing in Pansio Channel and must report to Turku Port Control.

Generally, vessels are prohibited from passing in Rajakari-Port of Turku Channel (10m draft limit) between Kuuva Light (60°24.5'N., 22°07.5'E.) and the port. However, minor vessels may pass each other between Kuuva Light and Janissaari Light (60°25.3'N., 22°10.9'E.).

Turku—Contact Information	
Port	
VHF	VHF channel 12
Telephone	358-2-2674122
Facsimile	358-2-2674124
E-mail	portcontrol@turku.fi
Web site	https://www.portofturku.fi
Harbormaster	
Telephone	358-2-2674123
Traffic/VTS	
VHF	VHF channel 71

Between Janissaari Light and the port, minor vessels and cargo vessels of such size that they can pass each other safely may do so. It is assumed that both vessels have agreed between themselves on this matter in advance and both vessels accept such an encounter. In addition, Turku Port Control must be informed of this situation.

All vessels must report to Archipelago VTS Center when entering and exiting the Turku Port Control area.

Vessels need to advise agents of their ETA 24 hours, 12 hours, and 6 hours prior to arrival.

Contact Information.—See the table titled **Turku—Contact Information**.

Caution.—Several submarine cables and pipelines cross the approach channels at numerous points along the route.

Naantali (60°28'N., 22°02'E.)

World Port Index No. 27805

4.16 Naantali, a ferry terminal and commercial bulk port, is situated close W of Turku. There are also facilities for shipbuilding and repairs.

Naantali Home Page
https://www.naantali.fi/satama

Tides—Currents.—The harbor has virtually no tide and the current is negligible.

Depths—Limitations.—The main entrance channel is authorized for drafts up to 13m. The oil terminal (Tupavuori) has three berths. There is a Bulk Cargo Quay

There are three ro-ro ferry berths. The port provides facilities for ro-ro ferry, bulk, general cargo, timber, and tanker vessels. Vessels up to 117,099 dwt, 252m in length, 13m draft, and 44m beam can be accommodated.

A fairway, authorized for drafts up to 7.7m, leads to the shipyard. The drydock, generally used for building, is 255m long and 70m wide, with a depth of 8.2m on the sill.

For more berthing information see the table tilted **Naantali—Berth Information.**

Naantali—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Naantali Main Harbor							
No. 15	123m	13.0m	190m	—	32.2m	53,565 dwt	Continuous berthing length: 370m. Coal, cement, grain, and breakbulk. 32,474GT.
No. 16	123m	13.0m	229m	—	32.2m	81,810 dwt	Continuous berthing length: 370m. Cement and grain. 43,044GT.
No. 17	124m	13.0m	158m	—	24.6m	19,625 dwt	Continuous berthing length: 370m. Grain. 14,665GT.
No. 20	130m	8.0m	108.3m	—	20.4m	4,898 dwt	Continuous berthing length: 170m. Ro-ro passenger/vehicle/rail. 6,040GT.
No. 22	28m	4.9m	—	—	—	—	Closed. No vessels have called at this berth (2022).
No. 23	48m	—	158m	8.0m	24.6m	19,625 dwt	Continuous berthing length: 110m. Chemicals, cement, breakbulk, and multipurpose. Displacement: 26,050t. 14,665GT.

Naantali—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 24	62m	—	132.2m	8.0m	18.0m	8,241 dwt	Continuous berthing length: 110m. Chemicals, ro/pax, bunkers, multipurpose, and breakbulk. Displacement: 5,642GT.
No. 25	32m	5.0m	—	—	—	—	Closed. No vessels have called at this berth (2022).
No. 26	106m	8.0m	155.4m	—	25.2m	20,499 dwt	Berthing length: 148m (incl. dolphins). Ro-ro/lo-lo. 14,841GT.
No. 27	135m	8.0m	108.3m	—	20.4m	2,566 dwt	Berthing length: 178m (incl. dolphins). Ro-ro/lo-lo. 6,040GT and 200TEU.
No. 30	50m	—	—	—	—	—	Aggregates.
No. 31	123m	—	—	—	—	—	Aggregates, others, and bulk cargo.
Neste Oil							
No. 1	53m	9.5m	140m	7.0m	23.0m	15,200 dwt	Clean products, bunkers, chemicals, and aviation fuel. Displacement: 20,9774t.
No. 2	80m	12.3m	169.5m	10.0m	24.0m	25,117 dwt	Chemical gases, chemicals, petroleums products, bunkers, and aviation fuel. Displacement: 33,000t.
No. 3	96m	15.3m	252m	1.03m	44.0m	117,099 dwt	Berthing length: 345m (incl. dolphins). Chemicals, bunkers, and petroleums products. Displacement: 137,092t.

Sea Pilot Stations—Pilot Boarding Positions		
Southeast approach	Hanko N	59°46.9'N, 23°00.3'E
	Hanko S	59°42.5'N, 23°05.8'E
	In bad weather, in Hanko Roads	
South approach	Uto	59°44.6'N, 21°20.5'E
Southwest approach	Marhallan	60°01.0'N, 19°50.5'E
	Nyhamn	59°56.3'N, 19°56.3'E for the ports of Farjsundet, Degerby and to all other destinations in the eastern Aland Archipelago. This pilot boarding position is also used for vessels transiting Saaristomeri bound for Hanko during ice conditions in the northern Baltic.
Northwest approach	Isokari NW	60°44.5'N, 20°54.5'E
	Isokari SE	60°42.1'N, 20°59.9'E
Lillmalo	Lillmalo	60°13.8'N, 22°06.6'E

Aspect.—Several conspicuous silos stand in the vicinity of the harbor berths.

Pilotage.—Pilotage is compulsory. See paragraph 4.1 for further details. The sea pilot will be able to advise vessels on pilot exchange points. Harbor pilots are stationed in the vicinity of Tupalahti Light (60°27'.4N., 22°03.6'E.).

Regulations.—See paragraph 4.1 for details concerning the Vessel Traffic Service (VTS). In addition, see Regulations under Turku in paragraph 4.15.

Vessels are required to maintain a listening watch on VHF channel 11, while in the harbor area.

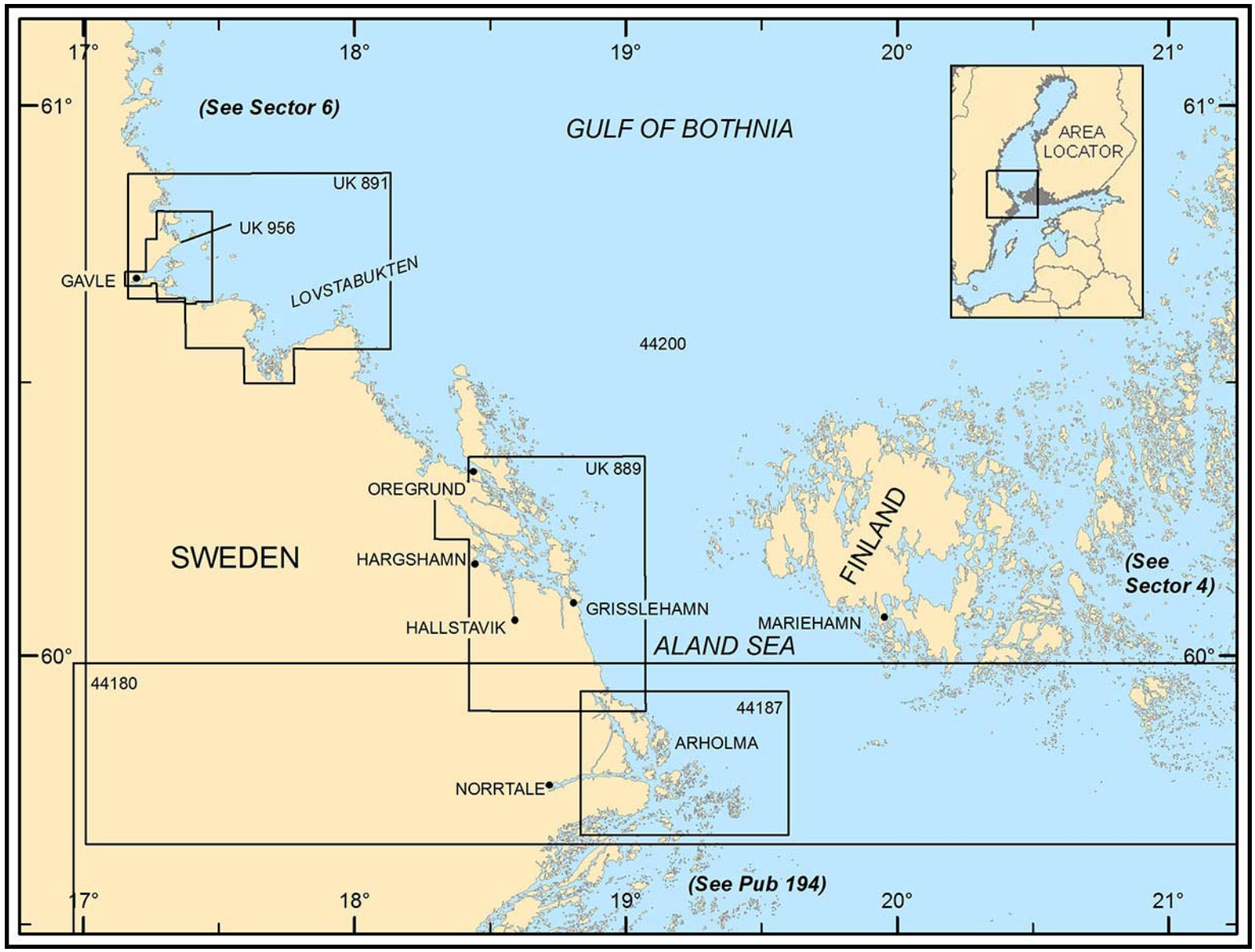
Vessels at anchor must report to Naantali Port Control 20 minutes prior to weighing anchor.

Contact Information.—See the table titled **Naantali—Contact Information**.

Naantali—Contact Information	
Port	
Call sign	Naantali Port Control
VHF	VHF channels 11, 12, 13, and 16

Naantali—Contact Information	
Telephone	358-44-7334550 (mobile)
	358-2-4375515
Facsimile	358-2-4351420
E-mail	portcontrol@portofnaantali.fi
	satama@portofnaantali.fi
Web site	http://www.portofnaantali.fi

Caution.—Several submarine cables and pipelines cross the approach channels at numerous points along the route.



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

SECTOR **5** — CHART INFORMATION

SECTOR 5

SODRA KVARKEN AND THE ADJACENT SWEDISH COAST

Plan.—This sector describes a portion of the E coast of Sweden between Arholma and Lovstabukten, with its limits on the Aland Sea; and Sodra Kvarken, the main passage leading N from the Aland Sea into the Gulf of Bothnia. The descriptive sequence is N and NW from Arholma.

General Remarks

5.1 Tides—Currents.—Discharge from the rivers and the general counterclockwise water circulation in the Baltic Sea cause what the Swedes refer to as the "net current" through the Stockholm archipelago. The "net current" is very weak, about 0.2 knot, and is easily allowed for. However, currents caused by weather and winds, particularly in narrow passages such as Sodra Kvarken, may reach a velocity of several knots.

Ice.—The Swedish Maritime Administration Icebreaking Division, in Gothenburg, operates ten icebreakers around the Swedish coast and maintains 24-hour operations at the Ice Center.

The Icebreaking Division provides a brief account of the ice situation for each day from the areas where icebreakers are operating, together with instructions on safe ship routes and an updated "Ice Chart" for winter navigation the "Ice Chart" can be accessed at the Swedish Maritime Administration home page.

Swedish Maritime Administration Home Page
https://www.sjofartsverket.se/en

Icebreaking Management—Contact Information	
Telephone	46-771-63-25-25
E-mail	opc@sjofartsverket.se

Daily updated ice maps and current ice restrictions are also published on the following web sites:

Swedish Meteorological and Hydrological Institute
https://www.smhi.se/en/services

Baltic Icebreaking Management
http://www.baltice.org

The main function of ice-breaking is to break ice between open waters and the waters protected from sea ice, pack ice, and other obstacles.

The purpose of icebreaking is to procure the efficiency of commercial shipping by minimizing cost and maximizing standards of service in winter months. The services also provide an appropriate traffic restriction policy to accomplish safe and efficient transits to and from Swedish ports.

Restrictions are imposed to improve on safety and efficiency of vessels traffic. Icebreaker assistance is given only to vessels those meet with the appropriate classification society requirements on hull integrity.

Information on ice report, restraining conditions, existing restrictions, traffic directions, cargo limitations and restrictions, port infrastructure, and winter navigation guidance can be obtained from the web sites.

During the winter months vessels bound for Swedish and Finish ports in the Gulf of Bothnia are requested to report to ICE INFO. For further details, see Pub. 140, Sailing Directions (Planning Guide) for the North Atlantic Ocean and Adjacent Seas.

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 MARPOL/73 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.

Generally, pilots must be requested at least 5 hours in advance stating when and the area where pilotage is required. Any amendments should be sent at least 3 hours before the requested time. If continuous pilotage is required on voyages exceeding 12 hours, this must be reported when ordering.

Deep-sea pilots and pilotage service required outside of normal operating hours should be ordered at least 24 hours in advance. Vessels should establish VHF radio contact with the pilot station before arrival.

Application for pilotage exemption certificates for certain fairways may be made to the pilotage authority in the area concerned. Exemption certificates may be held for a period of two years for certain pilotage areas and channels.

The main pilot station along this part of the coast is situated at Svartklubben. Pilots, who may be contacted on VHF channel 13, will board vessels at the following pilot boarding positions, best seen of the chart, as follows:

1. The North Pilot Boarding Position is located about 3 miles ENE of Svartklubben Light in position 60°11.7'N, 18°55.0'E.
2. The South Pilot Boarding Position is located about 2.25 miles SE of Svartklubben Light in position 60°08.8'N, 18°52.5''E.

The Svartklubben pilotage area lies between a line extending E from Rodhall (60°36.0'N., 17°59.5'E.) and latitude 59°50'N.

Pilotage is compulsory for vessels, as follows:

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

In certain pilot channels between Svartklubben and Hallstavik, pilotage is compulsory, as follows:

1. All Category 1 vessels.
2. Category 2 and 3 vessels of over 80m length, 15m beam, and 5m draft.

In certain pilot channels between Svartklubben and Forsmark, pilotage is compulsory, as follows:

1. All Category 1 vessels.
2. Category 2 and 3 vessels of over 80m length, 15m beam, and 4.5m draft.

All ordering of pilots from the station at Svartklubben must be carried out through VTS Stockholm.

See Pub. 194, Sailing Directions (Enroute) Baltic Sea (Southern Part) for information concerning VTS Stockholm.

For information pertaining to icebreaking vessels, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

It should be noted that ordering of pilots in the Swedish waters described within this sector is presently carried out through the main VTS systems. However, it is reported that procedures for the initial ordering of pilots via the internet will be introduced in the near future. For additional information concerning these procedures, see the following Swedish Maritime Administration web site:

Regulations.—Channels leading through and into the Stockholm archipelago (Stockholms Skargard) are subject to a mandatory Vessel Traffic Service (VTS) system. The information centers will pass navigational and traffic details as required. Reporting is mandatory for vessels over 300 gt or over 50m in length, as well as vessels under tow that have a combined length of over 50m.

See Pub. 194, Sailing Directions (Enroute) Baltic Sea (Southern Part) for information concerning VTS Stockholm.

The Swedish authorities have instituted a system of restricted areas and semi-restricted areas throughout the coastal waters. The limits of these areas may best be seen on the chart. Vessels are generally permitted to transit these areas only through the approved channels, and with a pilot aboard. For further details, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Directions.—From the vicinity of Flotjan Light (59°49'N., 19°47'E.) (see paragraph 4.5), the main offshore route continues in a NW direction through the center of the Aland Sea. It then turns N and passes though Sodra Kvarken.

Caution.—When proceeding through the Aland Sea and Sodra Kvarken, the Swedish coast and its fringing islands will be observed to be comparatively high, in contrast to the low Finnish coast. With the Swedish side being steep-to, it may tend to appear closer than the low Finnish side. Vessels should take care in ascertaining their position before altering course toward the Finnish side of the gulf. The Stockholm archipelago area has few distinguishing landmarks.

Special marks and buoys are occasionally placed temporarily on and off the Swedish coast, during the summer season, for the purpose of making surveys. Vessels are warned not to mistake these special marks for the navigational aids.

Fishing for herring during the autumn months is carried out around the shoals lying N of Orskar, in the approaches to Gavlebukten, and on Finnegrunden. Vessels may encounter heavy concentrations of fishing gear in these areas.

Several submarine cables extend across the Alands Sea and may best be seen on the chart.

During the winter, many buoys in these waters are removed while others may be damaged or break adrift.

In the coastal waters within this sector, numerous logs may be found adrift at all times of the year.

Areas dangerous due to mines laid during World War II exist within the waters described in this sector. There is still a risk of danger in these areas when anchoring or carrying out any seabed activities.

Arholma to Sodra Kvarken

5.2 Arholma (59°50'N., 19°07'E.), an island, lies off the E coast of Sweden, about 20 miles W of Flotjan Light (59°49'N., 19°47'E.). The coast between this island and Grisslehamn, 17 miles NNW, is heavily wooded and fronted by Bjorko and Vaddo. A prominent beacon tower, 16m high, stands on the W and tallest part of Arholma.

Stockholms Skargard is an area consisting of numerous islands, islets, rocks, and shoals lying S of Arholma. It extends, in places, up to 30 miles seaward of the mainland coast.

The Arholma entrance to Stockholm Skargard is authorized for vessels with drafts up to 7m. The main channel from seaward leads SSE and passes close W of Simpnasklubb Light.

Stockholms Skargard and the channels passing through it are described in Pub. 194, Sailing Directions (Enroute) Baltic Sea (Southern Part).

Simpnasklubb Light

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 2.4 miles NW of the N extremity of Arholma.

Norrbadan, a rock awash, lies about 0.4 mile ENE of the light. This rock forms the outermost danger in this vicinity and is marked by a buoy.

Vaddo Kasberg, located on the S part of Vaddo, is 50m high

and bare on the S side of its summit. This hill is therefore conspicuous along the otherwise wooded section of coastline. A conspicuous television tower, with aeronautical lights, stands close N of the summit, 8.5 miles NW of Simpnasklubb Light.

In contrast to this part of the coast, Vaddo is quite rocky, except for a moderately steep-to 3.5 mile stretch extending S of Grisslehamn. In the vicinity of Grisslehamn, a number of houses and other buildings are clearly visible from seaward on the E and SE side of the town.

The Vaddo Kanal, 12 miles long, connects Stockholm Skargard to Oregrunds Skargard. It leads along the W side of Vaddo Island and has a least depth of 2m. Several overhead cables and bridges span the fairway of this canal.

Caution.—A defensive minefield area, through which surface navigation is permitted, lies between Arholma and Bjorko. Anchoring and fishing are prohibited in the fairway within this area. Vessels should avoid transiting the area during thunderstorm activity.

An area in which anchoring, diving, and fishing are prohibited lies centered 13.5 miles ESE of Simpnasklubb Light and may best be seen on the chart. A wreck with unexploded ammunition lies in this area.

Several submarine cables, which may best be seen on the chart, extend seaward from the E sides of Bjorko and Vaddo.

5.3 **Grisslehamn** (60°06'N., 18°49'E.) (World Port Index No. 25440) is situated on the narrow isthmus connecting the N end of Vaddo with the peninsula of Byholma. This small port consists of two natural harbors, one on each side of the isthmus. The harbor on the W side is only used by small craft. The harbor on the E side is used by automobile ferries and fishing vessels.

Winds—Weather.—The easternmost harbor is open to winds between the E and W.

Ice.—The port is normally closed by ice from early January to early March.

Depths—Limitations.—The easternmost harbor is entered through a channel, which is authorized for vessels with drafts up to 6m. Local knowledge is advised.

A ferry berth, 115m long, is situated at the N side of the harbor. The inner part of the harbor has depths of 2 to 4.5m alongside and provides piers for small craft and fishing vessels.

Aspect.—Loskaret, a barren and rocky islet, lies off the N entrance point of the easternmost harbor and is prominent.

A conspicuous radio mast stands, at an elevation of 140m, about 0.5 mile S of the easternmost harbor.

A lighted range indicates the approach channel, but the posts are unmarked and are reported to be difficult to make out by day.

Regulations.—A maximum speed of 5 knots is enforced in the vicinity of the harbor.

Anchorage.—Vessels with local knowledge can anchor, in depths of 8 to 9m, sand and clay, W of Loskaret, but vessels must be ready to put to sea if the wind shifts to between E and S.

5.4 A chain of islands, of which the largest are Singo (60°11'N., 18°46'E.) and Graso (60°24'N., 18°27'E.), extends 28 miles in a NNW direction from the N end of Vaddo. Oregrunds Skargard and Oregrundsgrepen lie between these islands and the mainland to the W. Several small harbors are situated along the shores of these two areas of water.

Svartklubben Light

Svartklubben Light (60°11'N., 18°50'E.), equipped with a racon, is shown from a prominent floodlit tower, 12m high, standing on a skerry, 7m high, lying close off the wooded island of Singo.

Stora Laget, a group of small islets, lies 2 miles N of Svartklubben Light. A racon is situated at this group.

From seaward of Svartklubben Light, an aeronautical light shown at an elevation of 375m at Palsmoraasen (60°16'N., 18°05'E.) may be seen.

Oregrunds Skargard (60°16'N., 18°36'E.), consisting of the waters lying SE of Oregrund (60°20'N., 18°27'E.), is enclosed on the E side by Singo and other off-lying islands and on the W side by the mainland. The waters lying NW of Oregrund are known as Oregrundsgrepen

The main entrance leading from seaward into Oregrunds Skargard is through Jossans Inlopp, situated about 2 miles NE of Svartklubben Light. This channel is authorized for drafts up to 10.4m as far as Vassaro (60°15'N., 18°42'E.). The fairway then continues NW to Oregrund and is authorized for drafts up to 6.5m.

The secondary entrance channel leads NW and passes close NE of Svartklubben Light. This channel, which is authorized for drafts up to 7m, continues NW for about 6 miles and then joins the main fairway, close SW of Vassaro.

These entrance routes are well-marked and may best be seen on the chart.

The channels leading through Oregrunds Skargard and Oregrundsgrepen can be used to good advantage, particularly at night and in bad weather, as an alternative to passing through Sodra Kvarken. Good anchorage may be obtained in several places along this route; however, local knowledge or the services of a pilot is necessary (see paragraph 5.1).

Singofjarden is the expanse of water lying W of Singo and Fogdo; extending from it are Raggarofjarden, Galtfjarden, and Herrang. A route, authorized for drafts up to 8.5m, leads in a S direction from SW of Vassaro into Singofjarden.

Caution.—An area, which has not been fully surveyed, extends up to 7 miles E of Graso (60°24'N., 18°27'E.) and may best be seen on the chart.

It is reported that less depths than charted exist within the main entrance channel leading from seaward into Oregrunds Skargard through Jossans Inlopp. The local authorities should be contacted for the latest information concerning maximum authorized drafts.

Hargshamn

5.5 Hallstavik (60°03'N., 18°35'E.) (World Port Index No. 25460) is situated at the head of the Edeboviken, a narrow inlet leading S from Singofjarden. This small port, which is privately owned, exports paper and timber products.

Ice.—The harbor is normally obstructed by ice from early January to the end of March, but is kept open by an icebreaker.

Depths—Limitations.—The main entrance channel is authorized for drafts up to 6.9m. Overhead cables, with a vertical clearance of 40m, span the entrance channel and the S part of the harbor.

The paper factory quay, at the E side of the harbor. Oil can be discharged at this quay. It is reported that pontoons are situated between the side of the vessel and the quay for mooring purposes.

The paper warehouse quay, at the SW side of the harbor, forms a berth with two breasting dolphins, and has a depth of 7.2m alongside. A ro-ro ramp is located inside the dolphins.

Clay Pier projects into the harbor and provides a ro-ro berth with a depth of 6.6m alongside.

Vessels up to 7m draft can be accommodated in the harbor. For more berthing information see the table titled **Hallstavik—Berth Information**.

Regulations.—Tankers may enter and leave only during daylight. Vessels over 150m in length and 20m beam may only enter by daylight.

Speed restrictions are in force within the entrance channel.

Hallstavik—Berth Information

Berth	Length	Depth	Maximum Vessel Draft	Remarks
Paper Quay				
No. 1/2	—	7.5m	7.0m	Paper reels. Continuous berthing length of 170m.
Ro-Ro No. 3	75m	7.5m	7.0m	Paper reels and ro-ro.
China Clay Terminal				
China Clay	75m	6.0m	6.0m	Dry bulk.
New Terminal				
No. 5	25m	7.5m	7.0m	Ro-ro.
No. 6	—	8.0m	7.0m	Paper reels, wood packages, and general cargo. Continuous berthing length of 300m.
No. 7	—	8.0m	7.0m	

Caution.—Numerous log rafts may be secured along the sides of the approach channel.

5.6 Hargshamn (60°11'N., 18°27'E.) (World Port Index No. 25480), a small harbor, lies at the W side of Galtfjarden and exports ore products and timber.

Port of Hargshamn
https://www.hargshamn.se/eng

Ice.—The harbor is normally obstructed by ice from early January to the end of March, but is kept open by an icebreaker.

Depths—Limitations.—The main entrance channel is authorized for drafts up to 8.5m. The harbor consists of a series of berths situated along the SW shore of the mainland opposite the island of Glotan.

The Large Quay, the Ferry Dock, and the Ore Quay is 90m long and has depths of 11.6m alongside. The Small Quay is 40m long and has a depth of 8.4m alongside.

During the day vessels up to 185m in length, 28m beam, and 8.5m draft can be accommodated in the harbor. At night vessels up to 150m in length, 20m beam, and 7m draft can be accommodated in the harbor.

For more berthing information see the table titled **Hargshamn—Berth Information**.

Pilotage.—Pilotage is compulsory for vessels of more than 80m loa, a beam of 16m, or draft of 5.5m.

Pilots are normally ordered through 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 for pilots must be made through the FRS at least 24 hours in advance of ETA, then reconfirmed at least 5 hours in advance. Only in exceptional cases can a pilot be ordered through e-mail, telephone, or VHF.

Pilots primarily board off Svartklubben Light. They will also board off Oregrund, off Engelska Light (60°22.2'N., 18°20'E.), and off Djursten Light (60°22.2'N., 18°24.3'E.) on a request basis.

Hargshamn—Pilot Contact Information	
Pilots	
Call sign	East Coast Pilot
VHF	VHF channel 13
Telephone	46-771-630645
Facsimile	46-10-4785049
E-mail	eastcoastpilot@sjofartsverket.se
Web site	http://www.sjorartsverket.se

Vessel Traffic Service (VTS).—Vessels proceeding to and from this port must participate in the VTS managed by the port of Stockholm. See Pub. 194, Sailing Directions (Enroute) Baltic Sea (Southern Part) for information concerning VTS Stockholm.

Anchorage.—Vessels may anchor, in depths of 6.5 to 12m, loose mud, within the basin lying SW of Glotan.

5.7 Oregrund (60°20'N., 18°27'E.) (World Port Index No. 25510), a small harbor, is situated at the head of Oregrundsgrepen and protected by a breakwater, 150m long. It is usually closed by ice from January until the beginning of April.

The belfry of the church in the town is prominent and an old lightship stands as a monument on the E side of the entrance.

The harbor is used by fishing vessels, small craft, yachts, and an automobile ferry. The main quay, 100m long, is situated at the W side of the harbor basin and has depths of 2.5 to 4m alongside. The roadstead has depths of 14 to 20m, stiff mud, but is seldom used by vessels because the anchorage is exposed to N winds.

Kallero (60°21'N., 18°16'E.), a small harbor, is situated about 2.5 miles inside Kallrigafjarden, which is entered 4.5 miles WNW of Oregrund. The entrance channel is authorized for drafts up to 4.3m.

The main quay is 110m long and has depths of 3.5 to 5m alongside. Vessels with local knowledge can anchor, in a depth of 5m, clay and mud, off the harbor.

Hargshamn—Berth Information				
Berth	**Length**	**Depth**	**Maximum Vessel Draft**	**Remarks**
Ferry Terminal				
Farjelaget	—	8.0m	7.2m	Ro-ro/rail.
General Cargo Terminal (Lilla Kajen)				
Lilla Kajen	40m	8.0m	7.3m	General cargo.
General Cargo Terminal (Stora Kajen)				
Stora Kajen	100m	12.0m	8.5m	Bulk cargo, timber, project cargo, and general cargo.
Ore Terminal				
Malmkajen	95m	11.0m	8.5m	Iron ore.

Forsmark (60°24'N., 18°13'E.), a small private harbor, is situated 8 miles NW of Oregrund and serves a power station. It is formed by a breakwater and a pier. The entrance channel is authorized for drafts up to 5.5m. There is a quay, 95m long, and a ro-ro ramp, with three breasting dolphins. Both berths have depths of 6m alongside.

Caution.—It is reported that less depths than charted exist within the entrance channel leading to Kallero and the local authorities should be contacted for the latest information concerning maximum authorized drafts.

A restricted area extends SE from the harbor at Fosmark toward the entrance fairway. Entry into this area is prohibited without permission from the authorities.

Sodra Kvarken

5.8 Sodra Kvarken (60°18'N., 19°00'E.), the main offshore passage, lies between the E edge of the dangers extending N for 20 miles from Svartklubben Light and those dangers extending W from the Aland Islands (Ahvenanmaa).

The main channel, through which the route passes, is swept to a least depth of 18.2m. The approaches on the N and S sides of this channel have depths of over 100m.

Aside from occasional drift ice, the passage is normally free from ice until the late winter freeze in March.

5.9 East side.—Solovjeva (60°11'N., 19°11'E.), marked by a lighted beacon, lies 3 miles WNW of Gisslan Light (60°10'N., 19°18'E.) (see paragraph 4.10) It is the southernmost danger of a line of detached rocks that extends about 7 miles SSE from Market, on the E side of the passage.

Brentonsgrund, with a depth of 4.9m; Sodra Sankan, with a depth of 0.6m; Stor Sankan, awash; and Norra Sankan, with a depth of 1.2m, lie, respectively, 2.3, 3.5, 5.2, and 6.7 miles N of Solojeva.

Market (60°18'N., 19°08'E.), an islet through which the border between Sweden and Finland runs, lies about 7 miles N of Solojeva. A light is shown from a tower, 14m high, at the corner of a prominent white house standing on this islet.

Marketshaller, an above-water rock, lies about 0.7 mile NW of Market Light.

Marketskallen Light (60°19'N., 19°02'E.) is shown from a tower, 17m high with a helicopter platform, situated 3 miles W of Market. A racon is situated at this light.

Market Light

Sodra Kvarken Light (60°26'N., 19°05'E.) is shown from a prominent structure, 17m high, standing on a shoal about 8 miles N of Market. A racon is situated at this light.

Caution.—Vessels are advised against passing E of Market as the area is not well-marked nor adequately surveyed.

An area dangerous to fishing and anchoring due to bottom mines is formed between Understen and Market; the limits of the area are best seen on the chart.

5.10 West side—Halsaren (60°13.2'N., 18°54.8'E.) is a small pinnacle rock, 6m high, lying 4.8 miles NE of Svartklubben Light. It is dark in color and can be distinguished from a considerable distance, particularly from the N. An isolated shoal patch, with a depth of 9.7m, lies about 0.5 mile NE of this rock.

Travarn, a small rocky shoal, lies about 1 mile N of Halsaren. When there is any sea, the breakers in the vicinity of this shoal are visible from a considerable distance.

Understen Light (60°17'N., 18°55'E.) is situated on a rocky ledge 3.2 miles N of Halsaren. It is shown from a prominent tower, 39m high. A dark round tower stands close W of the light and is conspicuous in contrast to the other buildings on the rock.

Nyberget and Oldbergsgrund, marked by buoys, lie about 1.5 and 2.2 miles NNE of Light.

Oldbergsgrund Lighted Buoy(60°19'N., 18°59'E.) marks the E side of a shoal area extending NE from Nyberget.

Hoppetsgrund (60°22'N., 18°53'E.), with a depth of 2.3m, is marked on its E side by a buoy. This shoal lies about 5 miles NNW of Understen Light. Baldersgrund, a rock awash, lies 1 mile NNW of Hoppetsgrund.

Grundkallen Light (60°30'N., 18°51'E.) is shown from a prominent tower, 34m high with a helicopter platform, standing 8 miles NW of Sodra Kvarken. A racon is situated at this light.

Grundkallegrund, an extensive bank, extends up to about 5.5 miles S and 3 miles SE of the light. This bank is composed of numerous steep-to and shallow shoals, some awash. It is marked on the E side by buoys. A conspicuous disused light structure is reported to stand near the S end of the bank, about 4 miles SSW of Grundkallen Light.

Giffardsgrund, a group of shoals with a least depth of 1.4m, lies about 4 miles NW of Grundkallen Light and is marked by a buoy.

Directions.—The main offshore route continues in a NW direction up the middle of the Aland Sea, passing NE of Simpnasklubb Light and W of Solovjeva. It then turns N and passes E of Understen Light and between Marketskallen Light and Oldbergsgrund Lighted Buoy, about 1.2 miles WNW. The route then leads W of Sodra Kvarken Light and NE of Grundkallen Light.

Caution.—An area, which is incompletely surveyed, lies W of Understen Light and extends up to 7 miles from the E coast of Graso.

Generally, the soundings give very little warning of the close approach to the off-lying shoals which are mostly steep-to.

5.11 Argos Grund Light (60°38'N., 18°22'E.) is shown from a prominent structure, 18m high, standing on the N part of a shoal about 16.5 miles NW of Grundkallen Light. A racon is situated at this light.

Orskar Light (60°32'N., 18°23'E.) is shown from a prominent tower, 33m high, standing on the N part of Orskar.

Two prominent radio masts stand at an elevation of 120m about 2 miles SSE of the light, on the island of Graso.

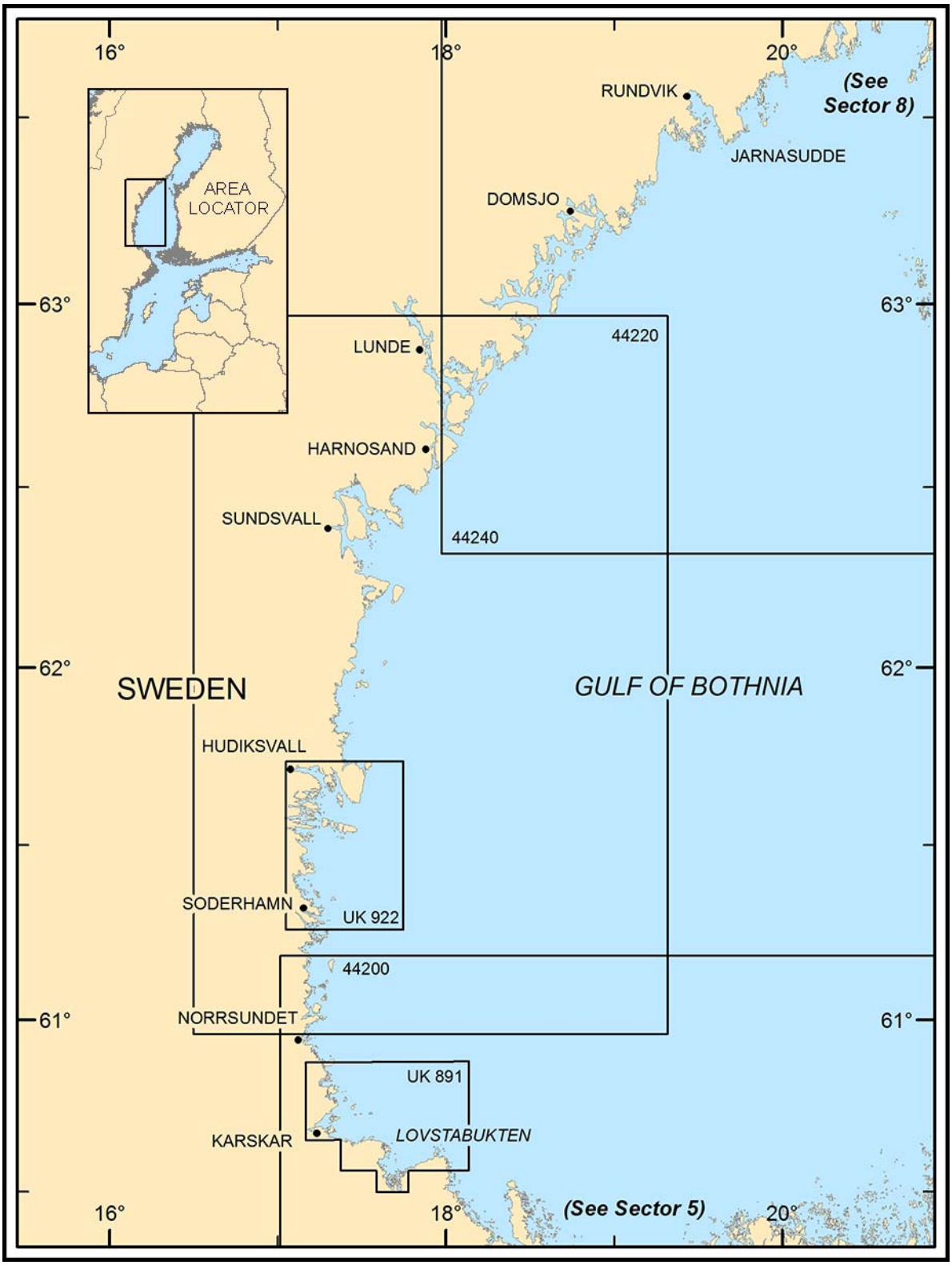
A prominent lookout tower, 15m high, is situated at the village of Norrboda, close SSW of the radio masts.

Bjorn Light (60°38'N., 17°59'E.) is shown from a tower, 25m high, standing on an islet lying 2.3 miles N of the mainland. This islet lies 11 miles W of Argos Grund Light at the outer edge of the numerous rocks and shoals fronting the mainland in this vicinity. A number of conspicuous buildings are situated on the islet.

The main approach into Oregrundsgrepen, which is encumbered by numerous shoals on both sides of the passage, lies between Bjorn Light and Argos Light. The fairway channel continues SE to Oregrund and is authorized for drafts up to 6.5m.

For details of the waters lying W and N of Bjorn Light, see paragraph 6.2.

Orskar Light



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

SECTOR **6** — CHART INFORMATION

SECTOR 6

SWEDEN—EAST COAST—LOVSTABUKTEN TO JARNASUDDE

Plan.—This sector describes the greater part of the Swedish coast bordering the S portion of the Gulf of Bothnia, between Lovstabukten and Jarnasudde (63°26'N., 19°39'E.). The descriptive sequence is S to N.

General Remarks

6.1 Tides—Currents.—Along the Swedish shore of the Gulf of Bothnia, the general set of the current is S in calm weather, with a tendency to set toward the land. The currents are affected by the wind. A change in the current often precedes a storm by an interval of several hours to a day.

The current in the Angermanalven river sets generally S through the estuary and is usually weak. However, during spring freshets the current may sometimes attain a considerable velocity at Nyland (63°00'N., 17°46'E.) and in the narrow passages.

Near Ostra and Vastra Finngrunden (60°59'N., 18°36'E.) the current usually sets SE or ESE, and frequently attains a rate of 1 knot. The direction varies with sudden changes of wind and weather. In the approaches to Gavle (60°41'N., 17°10'E.), the current is weak and its direction variable.

Swedish Maritime Administration Home Page
https://www.sjofartsverket.se/en

Ice.—See General Remarks in paragraph 5.1.

Pilotage.—See paragraph 5.1 and Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for information pertaining to vessels in Swedish waters.

The main pilot stations along this part of the coast are situated at Gavle, Sundsvall, and Ornskoldsvik.

The station at Gavle provides pilotage for the area lying between a line bearing 090° from Rodhall (60°36'N., 17°59'E.) and latitude 62°08'N (see paragraph 6.7).

The station at Sundsvall provides pilotage for the area lying between latitude 62°08'N and latitude 62°50'N, including Gaviksfjarden and Angermanalven (see paragraph 6.43). Requests for pilotage in this area must be made through the VTS station at Gavle (see paragraph 6.7).

The station at Ornskoldsvik provides pilotage for the area between a line bearing 140° through Norrbyskar (63°33'N., 19°52'E.) and latitude 62°50'N (see paragraph 6.52). Requests for pilotage in this area must be made through the VTS station at Lulea (see paragraph 9.19).

It should be noted that ordering of pilots in the Swedish waters described within this sector is presently carried out through the main VTS systems. However, it is reported that procedures for the initial ordering of pilots via the internet will be introduced in the near future. For additional information concerning these procedures, see the following web site:

Regulations.—Channels leading through and into the Stockholm archipelago are subject to a mandatory Vessel Traffic Service (VTS) system. The information centers will pass navigational and traffic details as required. Reporting is mandatory for vessels over 300 gt or over 50m in length, as well as for vessels under tow that have a combined length of over 50m.

The Swedish authorities have instituted a system of restricted areas and semi-restricted areas throughout the coastal waters. The limits of these areas may best be seen on the chart. Vessels are generally permitted to transit these areas only through the approved channels, and with a pilot aboard. For further details, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Caution.—During the winter, many buoys in these waters are removed while others may be damaged or break adrift.

In the coastal waters within this sector, numerous logs may be found adrift at all times of the year.

Areas dangerous due to mines laid during World War II exist within the waters described in this sector. There is still a risk of danger in these areas when anchoring or carrying out any sea bed activities.

Due to various circumstances, including the discovery of obstructions, depths within the channels leading through the offshore dangers along this stretch of coast may change frequently. Therefore, vessels are advised to contact the local authorities in order to ascertain the latest information, including the maximum authorized drafts.

Lovstabukten to Gavle

6.2 Lovstabukten (60°38'N., 17°45'E.), a large bay, is entered between Bjorn and a point on the mainland about 10.5 miles W. It is encumbered with numerous islets and dangers, and should not be entered without local knowledge. The shores of the bay are low and wooded.

Several small harbors, mostly used by fishing vessels and small craft, are situated within this bay. Timber rafts are assembled off some of these harbors.

Bjorn Light

Bjorn Light (60°38'N., 17°59'E.), described in paragraph 5.11, is shown from the northernmost islet of a group of dangers extending up to about 2.5 miles N from the mainland coast, on the E side of Lovstabukten.

Boliviagrundet, a rocky shoal with a depth of 6.9m, lies about 2.4 miles E of Bjorn Light and is the outermost danger in this vicinity.

Campsgrund (60°42'N., 17°51'E.) lies about 5 miles NW of Bjorn Light in the approach to Lovstabukten. This shoal has a least depth of 8m and is marked by a lighted buoy.

Caution.—A firing and bombing practice exercise area, which extends 1.5 miles N from the shore, is situated off Norrskaten, in the NE part of Lovstabukten, about 3.5 miles SW of Bjorn Light.

6.3 **Finngrunden** (60°58'N., 18°03'E.) lies about 40 miles offshore and fronts the approach to Gavlebukten. It consists of two extensive banks of sand and gravel, which may best be seen on the chart.

Ostra Banken, the outer bank, lies with its S extremity located about 21 miles NE of Bjorn Light. A shoal patch, with a least depth of 1.5m, lies near the S end of the bank and other patches, with depths of 3.2 to 3.5m, are located in the N part. The S end and E sides of this bank are marked by buoys.

The position of this bank can be easily distinguished during daylight as the color of the water, being dark at a greater depth, suddenly changes and becomes very light at the edges.

Finngrundet Light (60°59'N., 18°36'E.), equipped with a racon, is shown from a prominent tower, 25m high, standing 27 miles NE of Bjorn and 4 miles E of Ostra Banken.

An isolated shoal patch, with a least depth of 6.6m, lies 13 miles WNW of Finngrundet Light and is marked by a buoy.

Vastra Banken, the inner bank, lies about 6 miles W of Ostra Finngrunden and consists of several shoal patches. The northeasternmost patch has a least depth of 0.6m and is marked by a lighted buoy moored on its E side.

Vastra Banken Light (60°53'N., 17°55'E.), equipped with a racon, is shown from a prominent tower, 27m high, standing on the S part of Vastra Banken, about 21 miles WSW of Finngrundet Light. A patch lying about 2 miles NNE of this light has a least depth of 3.2m and is marked by a buoy.

Utknallen, a shoal with a depth of 6.8m, lies about 4 miles WNW of Vastra Banken Light and is marked by a buoy.

Blockbanken, with a depth of 5.8m, lies about 5.5 miles SSW of Utknallen and consists of large boulders.

Sylen (61°15'N., 18°27'E.), an isolated shoal patch, lies about 16.5 miles NNW of Finngrunden Light. It has a least depth of 9.4m and is marked by a lighted buoy.

Directions.—The coastal route leads NW from NNE of Bjorn Light. Vessels may pass NE of Campsgrund, SW of Vastra Banken Light, NE of Blockbanken, and WSW of Utknallen. They may then continue NNW to a position located E of Gashallan Light (61°01'N., 17°17'E.).

The depths along this route are irregular, especially between Blockbanken and Utknallen, where there are isolated shoal depths of less than 15m.

Approaches to Gavle

6.4 Gavlebukten is a bight lying between Bjorn and Gashallan, about 30 miles NW. The coast in this vicinity is generally low and wooded. The shores of the bight are fronted by numerous islands, islets, and shoals, which may best be seen on the chart.

Esborn Hillberg[CC BY-SA 3.0 (https://creativecommons.org/licenses/by-sa/3.0)], via Wikimedia Commons

Eggegrund Light

The SW part of the bight fronts the port of Gavle and is encumbered with numerous dangers, which lie up to about 8 miles offshore in places.

Iggon Light (60°52'N., 17°18'E.) is shown occasionally from a structure standing on the E side of an island lying close offshore, 8 miles S of Gashallan. The island is covered by dark, dense woods and is prominent from seaward.

Vicksellsgrundet, a large bank formed by several shoals, lies centered 3 miles NNE of Iggon Light and is the outermost danger in this vicinity. It has a least depth of 2m and is marked by buoys.

Eggegrund Light (60°44'N., 17°34'E.) is shown from a prominent tower, 26m high, standing on the SE end of an islet of the same name, lying about 13.5 miles WNW of Bjorn Light. Some houses are situated near the light tower. The islet is sandy, 5m high, partly wooded, and fringed by a narrow reef.

Purrutsgrund Light (60°47'N., 17°27'E.), equipped with a racon, is shown from a metal tower, 5m high, standing on a shoal lying 4.3 miles NW of Eggegrund Light. This light marks

the SE extremity of the coastal bank, which extends up to about 4.5 miles seaward on the N side of the approach to the port of Gavle.

Trodjehallan Light (60°48'N., 17°21'E.) is shown from a tower, 10m high, standing on a barren rock, 4m high, lying about 0.7 mile offshore, 3.2 miles WNW of Purrutsgrund Light.

Lovgrunds Rabbar is a large shoal area, with several rocks awash, lying between 1 mile and 4 miles NE of Purrutsgrund Light. This shoal area is steep-to on its NW side and is marked by buoys.

Petres Bank, a detached gravel shoal, lies S of the SE end of Lovgrunds Rabbar, 2.8 miles NNE of Eggegrund Light. It has a least depth of 2.4m and is marked by a buoy.

Hansbadan, a shoal with a least depth of 5.9m, lies centered 1 mile ENE of Eggegrund Light and is marked at the N end by a buoy.

Grussankan, a narrow shoal, extends about 0.5 mile SSE from the S end of Hansbadan. It has a least depth of 10.4m and is marked at its S end by a buoy.

Vaktaren lies about 1.2 miles S of the S end of Grussankan and 2 miles SE of Eggegrund Light. This shoal has a least depth of 8m and is marked on its N side by a lighted buoy. It is located at the N end of an area of foul ground and dangerous rocks, which extends about 4 miles NNE from the mainland on the S side of the approach to the port of Gavle.

6.5 Skraddarha lan Light (60°46'N., 17°22'E.) is shown from a structure standing on an islet about 0.3 mile offshore, 3 miles WSW of Purrutsgrund Light.

Vitgrund and Norrskar are two low islets, fringed by shoals, lying 1 mile E and 1.3 miles ENE, respectively, of Skraddarhallan Light.

Limo Light (60°42.9'N., 17°22'E.) is shown from a framework tower, with a white rectangle and a red band, 14m high, standing on an island of the same name. The island is wooded, 15m high, and lies in the middle of the approach, 6 miles W of Eggegrund Light.

Ytteriskan Light (60°44'N., 17°20'E.) is shown from a metal floodlit tower, 5m high, standing on a rock lying about 1.3 miles NNW of Limo Light.

Bonan Light (60°44'N., 17°19'E.) is shown from a tower, 10m high, standing on the mainland, 0.6 mile NW of Ytterisskan Light. A prominent disused light tower with a dwelling is located near the light.

Lovgrund, 10m high and partly wooded, lies 3.5 miles WNW of Eggegrund Light. A chapel and some cottages stand on the NE part of this island.

Sjalstenarna lies 2 miles W of Eggegrund Light and consists of two bare islets fringed by partly awash rocks.

Grasjalsbadan, a wooded islet, lies 0.8 mile W of Sjalstenarne and is also fringed by rocks. Sjalstensgrund, a shoal with a least depth of 1.4m, lies about midway between Sjalstenarna and Grasjalsbadan.

Numerous other shoals and dangers, with depths of less 10m, lie in the approaches and may best be seen on the chart.

Limo Island lies in the NE part of an extensive area of rocks and shoals which fronts the port. Orarnas, a low and wooded island, lies 1 mile SSW of Limo, in the S part of this area.

Bonan Light

Holmuddsrannan (60°44'N., 17°20'E.), entered close SW of Ytteriskan Light, is the main channel leading to the port. This channel, which is about 1 mile long and 126m wide, extends SW through the N part of the above area of rocks and shoals. This channel may only be used by vessels not exceeding 40m in length during daylight hours.

Caution.—Several submarine cables lie in the approaches to the W of Eggegrund Island and may best be seen on the chart.

6.6 Directions—Approach Routes.—There are three main approach routes and one inshore channel leading to the port entrance.

The **East Deep-Water Route**, which is authorized for drafts up to 10.2m, leads W for about 18 miles from a position located NE of Bjorn Light. It passes N of Campsgrund, between Vakaren and Grussankan, and S of Eggegrund Light to a position located 0.7 mile S of Grasjalsbadan. The route continues WNW for about 4 miles using the white sector of Bonan Light. It then passes close N of Ytteriskan Light and leads SW to the outer entrance of Holmuddsrannan.

Vessels requiring more maneuvering room may head NW, using the white sector of Skraddarhallan Light, from the position located S of Grasjalsbadan before changing course to SW.

The **East Alternative Route**, which is authorized for drafts up to 9.5m, leads WNW for about 17 miles from a position located NE of Bjorn Light. It passes NNE of Campsgrund, between Hansbadan and Petres Bank, and NNE of Eggegrund Light to a position located 0.7 mile S of Purrutsgrund Light. The route then continues SW for 1.5 miles and WSW for 2.5 miles to the outer entrance of Holmuddsrannan. It passes between Vitgrund and Lovgrund, and close N of Ytteriskan Light.

At night, vessels may pass between Hansbadan and Petres Bank by using the white sector of Trodjehallan Light. When about 0.4 mile E of Purrutsgrund Light, they should change course to the SW and follow the route leading between Vitgrund and Lovgrund. Vessels may then use the white sector of Bonan Light to approach the outer entrance of Holmuddsrannan. This route may be used in the winter.

The **North Route** leads SE for about 5 miles from a position located off Iggon Light. It passes between Purrutsgrund Light and the SW end of Lovgrunds Rabbar. The route then leads

SW and joins the East Alternative Route. At night, the route initially leads SE using the white sector of Eggegrund Light. This route has a least depth of 12.9m up to the vicinity of Purrutsgrund Light, but, after joining the East Alternative Route it is only authorized for drafts up to 9.5m.

The **Inshore Channel**, which is authorized for drafts up to 3.7m, leads S and SSE for 5 miles from a position SSE of Iggon Light. It passes close E of Trodjehallan Light and Skraddarhallan Light. Vessels should then steer SW to the outer entrance of Holmuddsrannan. The channel is very narrow in places and should be used only by small vessels. Local knowledge is advised.

Anchorage.—Anchorage may be obtained, in depths of 15 to 21m, within an area, designated A, centered 0.6 mile ENE of Bonan Light (60°44'N., 17°19'E.). The bottom is formed of sand and clay, with good holding ground, but this roadstead is exposed to E winds.

Anchorage may be obtained, in depths of 13 to 23m, sand, within an area, designated B, centered 2 miles ESE of Limo Light (60°43'N., 17°22'E.). Vessels must remain clear of the white sector of this light. During E winds, pilots are often unable to embark in this roadstead and the anchorage, designated A, located ENE of Bonan Light is preferable.

It is reported that anchorage may be obtained, in depths of 18 to 25m, sand and clay, within an area, designated G, centered close SW of Lovgrund, 2.3 miles NE of Limo Light (60°43'N., 17°22'E.).

Anchorage may also be obtained off Skutskar-Harnas (see paragraph 6.8).

Caution.—A mined area, through which surface navigation is permitted, lies across Holmuddsrannan and the NE end of Yttrefjarden. Vessels transiting the area during a thunderstorm do so at their own risk.

The maximum authorized drafts stated for the approach routes may vary due to silting and the local authorities should be contacted prior to entry.

Gavle (60°41'N., 17°10'E.)

World Port Index No. 25590

6.7 Gavle (Gefle), one of the oldest towns in Sweden, is situated at the mouth of the Gavle River. The port consists of Yttrefjarden, the outer harbor and roadstead, and Inre Fjarden, the small natural inner harbor.

Port of Gavle
https://gavlehamn.se

Tides—Currents.—Normal HW is approximately 0.3m above mean sea level; normal LW is approximately 0.2m below. Gales from the NE cause an exceptionally high HW level, which is usually followed by an exceptionally low LW level; the former is as much as 1.2m above mean sea level while the latter is much as 0.9m below mean sea level.

The current in the approaches is weak and variable in direction. Within Yttrefjarden, there is a slight current generally setting E.

Tide gages are displayed close by Holmudden (60°43.9'N., 17°19.0'E.) and on the NE side of Lighted Beacon No. H4 (60°43.9'N., 17°19.6'E.).

Ice.—Ice obstructs navigation from the end of January to the end of March, but the harbor is kept open by ice breakers.

Depths—Limitations.—Yttrefjarden, the outer harbor and roadstead of the port, can be entered via two channels. Bakharsrannan, the S channel, leads between the islands of Limon and Orarna. It is available only for small craft, with drafts up to 2.7m, during daylight hours.

Holmuddsrannan, the N and main channel, has a dredged depth of 13.5m and is authorized for vessels with drafts up to 10.4m. For routes and draft limitations in the approaches, see paragraph 6.6.

Inre Fjarden, the inner harbor, fronts the town and is closed to commercial shipping. The entrance channel is no longer dredged and is only used by pleasure craft.

The main facilities are situated in the vicinity of Frederiksskans, at the W end of Yttrefjarden.

New Oil Quay, berth 21 (60°41.6'N., 17°13.7'E.) is at the outer end on the N side.

East Basin (60°41.5'N., 17°13.3'E.) is at its W side. Vessels, with drafts up to 8.7m, can be handled here. A floating quay installation is situated at the E side of the basin. A quay is situated at the N end of this basin.

Gavle—Berthing Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Bulk Terminal							
Quay No. 4-6 (Southwest)	—	7.6m	132.2m	7.1m	17.8m	10,049 dwt	Cement, scrap metal, clay, steel products, and breakbulk. Continuous berthing length of 285m. Berth No. 4 at W end has a depth of 7m and maximum draft of 6.5m.
Quay No. 7/8 (South)	—	8.0m	134.5m	7.5m	18.2m	9,278 dwt	Wood chips, road salt, chalk for paper mill, and breakbulk. Continuous berthing length of 280m. Berth No. 7 on the W end has a depth of 8.7m with maximum draft of 8.2m.

Gavle—Berthing Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Quay No. 9-15 (East)	—	9.2m	204.3m	8.7m	32.2m	50,761 dwt	Scrap metal, project/heavy cargo, steel products, breakbulk, kalin clay, and sawn wood products. Continuous berthing length of 582m. Berth Nos. 12-14 at N end have a depth of 8.6m with maximum allowable draft of 8.1m.
Quay No. 16 (Slide Loading)	—	8.8m	88.9m	8.3m	15.2m	4,202 dwt	Fine grained lead and zinc. Berthing length of 72m (incl. dolphins).
Container Terminal							
Quay No. 17-19	—	10.5m	190m	10.0m	—	23,011 dwt	Containers and reefer. Continuous berthing length of 340m. 1,500 teu.
Quay No. 17-19	—	13.4m	366m	12.9m	—	—	Containers and reefer. Continuous berthing length of 360m. Under construction. 14,000 teu.
Grandden Terminal							
Quay No. 301-303	—	10.7m	199.9m	10.2m	32.2m	63,413 dwt	Containers and breakbulk. Continuous berthing length of 420m.
Energy Terminal							
Quay No. 01	—	9.1m	190m	8.6m	28.0m	30,000 dwt	Chemicals, dirty products, and bunkers. Berthing length of 88m (including dolphins). Displacement: 35,000t.
Quay No. 27	80m	13.4m	245m	12.9m	42,0m	100,000 dwt	Aviation fuel, clean products, and bunkers. Maximum manifold height is 16.8m for 10in MLA and 19m for 12in MLA.

Southwest Quay have a ro-ro berth and is situated at the W end of Southwest Quay.

Coastal Tanker Quay, consisting of a wharf with a breasting dolphin. Granudden Terminal, on the S side, has two timber product berths.

There are facilities for general cargo, bulk, tanker, ro-ro, and timber product vessels. Vessels up to 100,000 dwt, 366m in length, 42m beam, and 12.9m draft can be accommodated.

For additional outport facilities, see paragraph 6.9. For more berthing information see the table titled **Gavle—Berthing Information**.

Aspect.—The approach routes are indicated by lighted ranges and directional sector lights. Holmuddsrannan, the main entrance channel, is marked by lighted buoys and lighted floodlit beacons.

Herosgrund Light is shown from a floodlit tower standing in the vicinity of a group of shoals lying within Yttrefjarden, about 1 mile SW of the inner entrance of Holmuddsrannan.

A prominent wind generator, 54m high, stands close N of the New Oil Quay. A conspicuous tank farm is situated in the vicinity of the harbor.

Vessels should send an ETA and request for pilotage 5 hours in advance. All requests for pilotage in the area (including Sundsvall, Hudiksvall, and Soderhamn) must be made through the Gavle VTS station.

Pilotage.—The pilotage area for Gavle lies between a line bearing 090° from Rodhall (60°36'N., 17°59'E.) and latitude 62°08'N.

Pilotage is compulsory for vessels, as follows:

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.

For Soderhamn and Ljusnefjarden—in position 61°12.9'N, 17°20.9'E.

4. For Gavle—close S of Grasjalsbadan (60°42.0'N., 17°29.0 'E.).
5. For Hudiksvall—in position 61°15.9'N, 17°24.0'E or, by special arrangement, about 1.5 miles S of Hurnsudde in position 61°35.7'N, 17°29.0'E.

Regulations.—A Reporting and Information System has been established in the Gulf of Bothnia and is operated by Vessel Traffic Services (VTS) at Gavle and Lulea.

Pilots board vessels, as follows:

The system is mandatory for vessels over 300 gt, and vessels, including tows, over 45m in length.

Approaching vessels must send a report to VTS Gavle 30

Gavle Harbor

minutes before passing the first Reporting Point (see below). Vessels with an Automated Identification System (AIS) are not obliged to send this report.

Participating vessels must report to VTS Gavle on passing the following Reporting Points (RP):

1. RP No. 11 Vaktaren (60°42.7'N., 17°36.2'E.).
2. RP No. 12 Purrutsgrund (60°46.7'N., 17°27.5'E.).
3. RP No. 13 Valkommen (60°57.8'N., 17°15.0'E.).
4. RP No. 21 Storjungfrun S (61°06.9'N., 17°21.3'E.).
5. RP No. 22 Blomman (61°11.5'N., 17°17.5'E.).
6. RP No. 23 Hallgrund (61°15.8'N., 17°22.0'E.).
7. RP No. 31 Tihallsten (61°31.5'N., 17°19.0'E.).
8. RP No. 32 Hudiksgrund (61°35.0'N., 17°24.0'E.).
9. RP No. 41 Britas Klack (61°53.1'N., 17°27.7'E.).
10. RP No. 52 Bramon N (62°17.4'N., 17°40.4'E.).
11. RP No. 53 Astholmsudde (62°22.8'N., 17°43.8'E.).
12. RP No. 61 Hamo (62°36.6'N., 18°05.8'E.).
13. RP No. 62 Storon S (62°43.4'N., 18°12.8'E.).
14. RP No. 63 Storon N (62°47.6'N., 18°17.0'E.).
15. RP No. 64 Ramon (62°50.0'N., 17°54.0'E.).
16. RP No. 65 Brunne (62°56.0'N., 17°50.0'E.) (outbound).

Reports must include the vessel's name, call sign, position, and destination.

Vessels must report their name, position, and destination when arriving at or leaving a berth (including an anchorage), when changing route, when being involved in an accident (including groundings and collisions), and on the occurrence of any defect affecting the safety of navigation. The report should be sent 10 minutes prior to leaving a berth or an anchorage.

Participating vessels must maintain a continuous listening watch on VHF channel 13 after the first report.

Gavle VTS may be contacted on VHF channels 13 and 16 or by e-mail (vtsgavle@sjofartsverket.se).

All vessels must proceed through Holmuddsrannan, the main entrance channel, at a slow speed.

Vessels entering Yttrefjarden have priority in the channel over those leaving. However, towed vessels have priority over all other vessels.

Vessels over 172m in length or 7.35m draft are prohibited from passing through Holmuddsrannan during darkness.

Vessels with drafts over 9m must use tugs when passing through Holmuddsrannan.

Berthing at the New Oil Quay at night is restricted to tankers of 172m in length, 25m beam, and 7.5m draft.

Anchorage.—Three inner anchorage areas, designated D, E, and F, are situated in the S part of Yttrefjarden. They have depths of 11 to 15m, mud and clay, and may best be seen on the chart. For information concerning anchorages in the outer approaches, see paragraph 6.6.

Caution.—Prohibited anchorage areas, the limits of which may best be seen on the chart, are situated in the SW part of Yttrefjarden, close N of Herosgrund Light, and in the vicinity of Holmuddsrannan, the main entrance channel.

6.8 Skutskar-Harnas (60°39'N., 17°24'E.) (World Port Index No. 25550), a small harbor, is situated 18 miles W of Bjorn, in the S approach to Gavle. It is well-protected by two breakwaters. This harbor serves the towns of Skutskar and Harnas, which stand, respectively, on its SE and W sides.

Ice.—The harbor is normally closed because of ice from early January to early April.

Depths—Limitations.—The harbor is approached by using the East Deep-Water Route for Gavle (see paragraph 6.6) and then proceeding SW toward the port entrance. An entrance channel, which leads S between the breakwaters, has a least depth of 9.1m and is authorized for vessels with drafts up to 7.2m.

Several shallow areas lie within the harbor and dredged fairways lead through them to the berths. The fairway leading to Skutskar, situated at the E side of the harbor. The fairway leading to Harnash, situated at the SW side of the harbor. Massakajen is the main wood pulp pier at Harnash.

The two berths at Skutskar are designated as T1 and T2. For more berthing information see table titled **Skutskar-Harnas—Berth Information**. Vessels up to 22,430 dwt, 149.9m in length, 6.9m draft, and 24.6m beam. can be accommodated

It is reported that the harbor is used only for the import of electrolysis salt, oil, and sulfur. The harbor's principal exports are resin, oil, pulp, and timber goods.

Aspect.—The entrance channel is indicated by a lighted range and is marked by buoys. A light is shown from a mast standing at the head of the W breakwater.

A church, with a prominent black pointed spire, stands in the town of Skutskar. The tower and chimneys of the wood pulp factory, standing at the SW side of the harbor, are clearly visible from seaward. A prominent water tower is situated at the SE side of the harbor.

Pilotage.—Pilots are provided by the Gavle pilot station.

Anchorage.—Vessels can anchor, at the outer anchorage, Yttre Fjarden which is a sheltered anchorage with a depth of 14m, clay, within an area, designated as anchorage area E. Anchoring is prohibited in Holmuddsrannan, the dredged channel, and in Gavle Harbor.

Caution.—Local knowledge is required and large vessels should not enter the harbor during darkness.

6.9 Karskar (60°41'N., 17°16'E.) (World Port Index No. 25570), an out-port of Gavle, is situated in the S part of Yttrefjarden.

Depths—Limitations.—Karskar is approached through a channel authorized for drafts up to 7.8m. There is an oil pier with berths for tankers on each side. There are also two quays. The pier at Kastet, 0.5 mile NW of Kaskar, is reported to be disused. Vessels up to 220m in length, 10.1m draft, and 30m beam can be accommodated during the day; vessels up to 172m in length, 7.6m draft, and 25m beam can be accommodated at night.

There is an oil pier with berths for tankers on each side. There are also two quays. The pier at Kastet, 0.5 mile NW of Kaskar, is reported to be disused. For more berthing information see table titled **Karskar—Berth Information**.

Langharen (60°41'N., 17°17'E.), another outport of Gavle, is situated in the S part of Yttrefjarden, close E of Karskar. It consists of a tanker terminal. The berth is 60m long and has a depth of 10.9m alongside. Tankers up to 220m in length and 10.4m draft can be accommodated. Berthing is carried out during daylight only and vessels enter stern first.

Karskar—Berth Information

Berth	Length	Maximum Vessel		Remarks
		LOA	Draft	
Bogserbatspir				
West	202m	—	7.8m	Dry cargo.
Cementa				
East	202m	—	7.8m	Dry cargo and turpentine.
Sandaskar ore Harbor				
No. 201	66m	220m	10.1m	Fuel oil.

Gavle to Ljusnefjarden

6.10 Gashallan (61°01'N., 17°17'E.), a barren islet, lies about 0.5 mile offshore and is 6m high. A light is shown from a prominent tower, 8m high, standing on this islet.

Knaggen, a group of shoals, extends up to about 0.8 mile E and SE of the light. This group has a least depth of 3.4m and is marked by a buoy.

The approaches to Norrsundet include the area lying between Iggon Light (60°52'N., 17°18'E.) and Gashallan, about 8 miles N.

The mainland and larger islands bordering this area are covered with forest. The shore is fronted by numerous islands, islets, rocks, and shoals, which may best be seen on the chart.

Several anchorages and small harbors of refuge lie along this part of the coast, but local knowledge is required for entry.

Vicksellsgrundet, a large shoal bank, lies on the S side of the approach and has been previously described in paragraph 6.4.

A group of small islands, islets, and shoals, which may be best seen on the chart, fronts Norrsundet and extends about 3 miles NE from the coast.

6.11 Bjorn Beacon (60°57.0'N., 17°13.3'E.), a framework mast, 11m high, stands on a barren islet lying on the outer part of this group.

Forstugund, a shoal patch, lies about 1.7 miles ESE of Bjorn Beacon. It has a least depth of 3.4m and is marked by a buoy. Valkommen, a shoal patch, lies about 1 mile ENE of Bjorn Beacon. It has a least depth of 7m and is marked by a buoy. These two shoal patches form the outermost dangers in the approach to Norrrsundet.

Skutskar-Harnas—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Stora Enso Terminal							
Fyruddshamnen Vedkaj	250m	7.2m	149.9m	6.9m	24.6m	22,430 dwt	Bio fuels, chemicals, breakbulk, and multipurpose. 13,122 gt.

Skutskar-Harnas—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Skutskarshamn Massakajen	190m	—	30m	4.6m	8.4m	—	Berth currently used by tugs. 239 gt.

Saltarsfjarden (60°56'N., 17°11'E.), a bay lying close S of Norrsundet, provides anchorage, exposed to E winds, in a depth of 18m, sand. The entrance lies about 1.3 miles SW of Bjorn Beacon and is encumbered by a group of dangerous shoals, known as Saltarsgrundet, on the N side.

This anchorage is usually icebound from the end of January to the beginning of April. The approach is indicated by range beacons. Vessels should head in a SW direction and pass between Forstugund and Valkommen shoals. When within about 0.4 mile of the shore, vessels should change course and head W into the bay. Local knowledge is advised.

6.12 Norrsundet (60°56'N., 17°10'E.) (World Port Index No. 25610), a small and well-sheltered harbor, is situated 5 miles SW of Gashallan Light. It handles timber products.

Ice.—Ice usually obstructs the harbor from the end of January to the beginning of April.

Depths—Limitations.—From a position located about 2 miles SSE of Gashallan Light, the main approach route leads WSW for 5 miles between the dangers fronting the port. It passes about 0.4 mile NNW of Valkommen shoal and Bjorn Beacon. A dredged entrance channel, which is authorized for drafts up to 6.4m, then continues SW and leads into the harbor.

A secondary approach route, authorized for drafts up to 5.4m, leads from S. From a position NE of Iggon Light, the route leads in a NW direction for about 6 miles and joins the main route, 1.3 miles NE of Bjorn Beacon. It passes close SW of the SW side of Vicksellsgrundet, close NE of Forstugund, and close ENE of Valkommen.

The commercial facilities are situated on the SW side of the harbor. Trautlastingskajen, a timber-loading quay, and Massakajen, a pulp quay.

Vessels up to 5,880 dwt, 140m in length, 16m beam, and 6.4m draft can be accommodated. Vessels entering at night are limited to a length of 100m.

For more berthing information see table titled **Norrsundet—Berthing Information.**

Aspect.—The harbor lies within an inlet, which is formed by the island of Granskar, on the N side, and the peninsula of Farholmen, on the S side. The island of Granskar is connected to the mainland by causeways.

The approach route is indicated by a sector light. The entrance channel is indicated by a lighted range and is marked by buoys.

A prominent chimney stands in the vicinity of the pulp mill and is illuminated at night.

Pilotage.—Pilots may be obtained from the Gavle pilot station (see paragraph 6.7).

Anchorage.—Anchorage is available close N of the island of Dodmanskar (60°57'N., 17°12'E.), about 0.7 mile W of Bjorn Beacon. This inner roadstead has depths of 15 to 17m, sand, gravel, and clay.

An outer anchorage area, designated N, lies centered about 2 miles SSW of Gashallan Light (60°01'N., 17°17'E.), on the N side of the approach track. It has depths of 16 to 20m and may best be seen on the chart.

Caution.—It is reported that severe magnetic disturbances have been experienced in the approach to the port.

6.13 Kuson (61°02'N., 17°14'E.), a wooded island, lies 2 miles NW of Gashallan Light. This island is 33m high and is fringed by shoals extending up to 1.2 miles E of it.

A prominent radio mast stands 8 miles WNW of Kuson.

Sundsmars Redd (61°01'N., 17°13'E.), a sheltered roadstead, lies 2.3 miles WNW of Gasholmen Light. It is located between the peninsula of Sundsmarnaset, 41m high, and the SW part of Kuson. This roadstead is considered to be one of the best refuge anchorages along this part of the coast. It is usually icebound from the middle of December to the end of April.

The anchorage has depths from 10 to 13m, stones, sand, and clay. The anchorage may be entered from the N via a channel leading S and passing close W of the Kuson or from the E via a channel, available for drafts up to 5m, leading W and passing S of Kuson. Both channels are buoyed. A reef extends from the S side of Kuson and constricts the fairway to a width of about 180m. Local knowledge is advised.

Between Kuson and Ljusnefjarden, about 9 miles N, the coast is generally low and wooded. The shore is fronted by a number of islands, islets, and shoals, which may best be seen on the chart. Only the outer dangers are described below.

An extensive area of islets, rocks, and shoals fronts the mainland shore to the N of Kuson and extends up to about 5 miles NNE of this island.

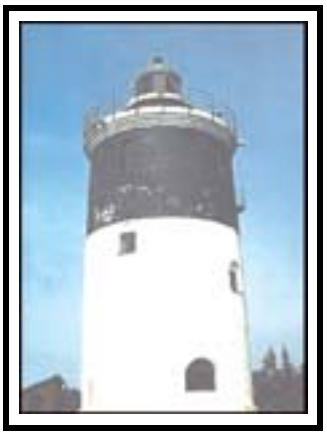
Norrsundet—Berthing Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Norrsundet Terminal							
Quay No. 1	307m	6.6m	140m	6.2m	16.0m	5,880 dwt	Wood chips and breakbulk. 4,185 gt.
Quay No. 2	186m	4.3m	89.9m	3.4m	15.2m	4,352 dwt	Wood chips and breakbulk. 3,323 gt.

Tupparna (61°10'N., 17°20'E.), a low and partly wooded islet, lies about 4 miles offshore, at the NE end of this area. Tuppstorgrund, a shoal with a least depth of 2.4m, lies about 0.4 mile E of this islet, near the edge of the area.

Reveljen (61°07'N., 17°21'E.), a detached shoal, lies about 1.3 miles E of Tupparna. It has a least depth of 5.7m and is marked by a buoy.

Storjungfrun (61°10'N., 17°20'E.), a densely-wooded island, lies about 4 miles offshore and is 22m high. The W side of the island is clear of dangers. However, the E side and S end of the island are fronted by dangers and should not be approached within 1 mile.

A light is shown from a prominent tower, 21m high, standing on the NE end of the island. A number of cottages and a chapel are situated in the vicinity of the light.



Storjungfrun Light

Anchorage may be obtained by vessels with local knowledge close to the W side of this island, about 1 mile SSW of Kalkudden, the W extremity, in depths of 9 to 18m, but the bottom shelves steeply. Anchorage may also be obtained within an area centered 1 mile NW of Kalkudden.

Storgrundet (61°09'N., 17°27'E.), an extensive shoal, lies centered 3 miles E of Storjungfrun and consists of gravel, sand, and shingle. It has a least depth of 0.5m and is marked on the E and W sides by buoys.

Enskar (61°14'N., 17°17'E.), an indented island, lies 2 miles offshore, about 4.5 miles NNW of Storjungfrun Light. It is located on the outer part of an extensive area of dangers fronting the coast. Klumpudden Light is shown from a structure standing on the N part of this island.

Ellegrund, a shoal with a depth of 1.1m, lies about 0.5 mile E of the SE end of Enskar. A detached shoal patch, with a least depth of 8.4m, lies 0.7 mile ENE of Ellegrund and is the outermost danger in this vicinity.

Caution.—Permanent fishing equipment may be found around Storjungfrun.

A submarine pipeline, which may best be seen on the chart, extends between the W side of Storjungfrun and the mainland.

Ljusnefjarden

6.14 Ljusnefjarden (61°13'N., 17°12'E.) is entered about 4 miles WNW of the N end of Storjungfrun. The approach to the inlet lies between Storjungfrun and Enskar, 4.5 miles NNW. The S side of the approach is comparatively free from dangers, but on the N side, shoals extend up to about 3.5 miles from the mainland.

The harbors of Vallvik, Ljusne, Orrskarshamnen, and Ala are situated within this large inlet.

Blomman (61°12'N., 17°16'E.), a shoal with a least depth of 7m, lies about 2 miles S of the SW end of Enskar and is marked by a lighted buoy. It is the outermost shoal on the SE side of the dangers bordering the N approach to Ljusnefjarden.

Fabodvallshararna (61°11.5'N., 17°10.7'E.), a group of wooded islets, lies near the shore, close within the S entrance point of Ljusnefjarden.

Vallvik Light (61°11.5'N., 17°10.8'E.) is shown from a tower standing on the S end of the southernmost islet of Fabodvallshararna.

Saggrund (61°12'N., 17°12'E.), a shoal with a least depth of 1.3m, lies about 0.5 mile NE of Fabodvallshararna and is marked by a buoy. It is the outermost shoal on the SW side of the dangers bordering the N approach to Ljusnefjard.

Storgrytan, a sparsely wooded islet, lies about 0.5 mile NW of the NW end of Fabodvallshararna and steep, rugged reddish rocks fringe its NE side. A light is shown from a structure standing at the N extremity of this islet.

Lekskaraen, a shoal with rocks awash, lies about 0.3 mile NNE of Storgrytan Light. It is marked by a beacon and two buoys.

Nestorsgrund, a shoal with a least depth of 3.3m, lies about 0.4 mile ENE of WSW Storgrytan Light and is marked by a lighted buoy.

Abrahamsharen, an islet, lies about 1 mile ENE of Storgrytan Light, near the S end of the dangers extending S from the mainland.

Ice.—The harbors within the inlet are usually icebound between February and April.

Aspect.—The main approach route leading into the inlet is indicated by a lighted range and a directional sector light.

Vardberget, a rounded hill, stands on the NW side of the inlet, 1.8 miles NW of Vallvik Light. It is 50m high and prominent from seaward.

A number of conspicuous chimneys, 65m high, stand in the vicinity of the wood pulp factory, 0.2 mile S of Vallvik Light. A tower is situated close S of the factory.

Pilotage.—Pilots for the harbors in Ljusnefjarden are provided by the Gavle pilot station (see paragraph 6.7). Pilotage should be requested 24 hours in advance. It is reported that vessels must contact VTS Gavle on VHF channel 13 prior to entering the harbor area. Pilots board about 2.8 miles N of Storjungfrun Light.

Directions.—The main approach route, which is authorized for drafts up to 11.1m, leads NNW for about 10 miles from a position located E of Gashallan Light. It passes between the island of Storjungfrun and Storgrundet shoal. The route then continues W for about 4.5 miles and leads into the S part of the inlet. This section of the route passes S of Blomman and is indicated by the white sector of Vallvik Light.

From the N, a route, which passes 1.6 miles ESE of the SE end of Enskar, leads SSW and joins the main approach route about 1.7 miles NW of Storjungfrun Light.

An alternate route, which is authorized for drafts up to 7.5m,

leads in a NW direction for about 7 miles to a position located 0.6 mile E of Vallvik Light, at the inlet entrance. It passes between Reveljen and the dangers fronting the S end of Storjungfrun. The route then continues NW between the mainland and the W side of Storjungfrun.

An inshore route, which is authorized for drafts up to 5.1m, leads inside the dangers fronting the coast between Gashallan Light and Storjungfrun. The channel is narrow in places and local knowledge is required. This route is usually blocked by ice between December and April.

6.15 Vallvik (61°11'N., 17°10'E.) (World Port Index No. 25640), a small industrial harbor, is situated near the S entrance point of Ljusnefjarden.

Depths—Limitations.—The harbor can be entered through two channels, which are both authorized for drafts up to 7.5m.

The shorter channel leads WNW for 0.7 mile from a position located 0.6 mile E of Vallvik Light. It then continues SW between Fabodvallshararna and Storgrytan. This part of the channel is marked by buoys and is very narrow in places.

The longer channel leads NW for 1.3 miles from a position located 0.6 mile E of Vallvik Light. It passes SW of Saggrundand and Nestorsgrund. The channel then continues SW, rounds the N end of Storgrytan, and leads SE for 0.7 mile to the harbor.

The main a quay is 202m long, extending ESE from the root of the pier on the NE side. It has depths of 5-8.1m alongside. The quay handles wood pulp and timber. The maximum draft for the harbor is 7m.

Aspect.—The inner part of the entrance channel is indicated by a lighted range and is marked by buoys.

Anchorage.—Vessels can anchor, in depths of 12 to 15m, clay, N or S of Nestorsgrund, staying clear of the harbor entrance channels.

Well-sheltered anchorage may also be obtained, in a depth of 10m, clay, about 0.3 mile WSW of Lekskaraen.

Caution.—Vessels over 5,000 dwt are advised to enter or leave the harbor during daylight hours only.

6.16 Ljusne (61°12'N., 17°08'E.) (World Port Index No. 25650), a small commercial and fishing harbor, is situated at the W side of Ljusnefjarden, at the mouth of a river.

Depths—Limitations.—The harbor is initially approached by using the longer channel to Vallvik. From a position located N of Storgrytan, a buoyed fairway, which is authorized for drafts up to 3.6m, leads W to the entrance.

The commercial quay, on the N side of the harbor, is 100m long and has a depth of 4.5m alongside. The fishing quay, on the S side of the harbor, is 80m long and has a depth of 4m alongside.

A quay extends about 190m ESE from the root of the pier on the NE side. It has depth of 2.4 to 5m alongside, but is no longer used by commercial vessels.

Aspect.—The inner part of the entrance channel is indicated by lighted ranges and is marked by buoys.

Anchorage.—Vessels may find well-sheltered anchorage, in a depth of 10m, clay, W of Storgrytan.

6.17 Orrskarshamnen (61°13'N., 17°10'E.), a small commercial harbor, is situated at the NW side of Ljusnefjarden. It has a pier for unloading general cargo.

Depths—Limitations.—From a position located 0.6 mile E of Vallvik Light, a buoyed channel, 110m wide, leads in a NW direction for about 1.5 miles to the harbor. It passes SW of Saggrund and NE of Nestorsgrund. This channel is authorized for drafts up to 11.0m.

A concrete pier, equipped with a conveyor system for loading wood chips, is situated in the S part of the harbor. The berth on the E side of the pier is 100m long and has a depth of 11m alongside. The berth on the W side is 90m long and has a depth of 10.8m alongside.

A quay, situated close NW of the pier, has a berth, 100m long, with a depth of 9.7m alongside.

Aspect.—The inner part of the entrance channel is indicated by a lighted range.

6.18 Ala (61°13'N., 17°10'E.), a small commercial harbor, is situated at the N side of Ljusnefjarden.

Depths—Limitations.—From a position located 0.6 mile E of Vallvik Light, the channel leads in a NNW direction for about 1.7 miles to the harbor. It passes close WSW of Saggrund and between Nestorsgrund shoal and the islet of Abrahamsharen. This channel is authorized for drafts up to 7.4m.

Vessels with a maximum draft of 5.8m can be accommodated. For more berthing information see table titled **Ale—Berth Information**.

Ala—BerthiInformation

Berth	Length	Depth	Maximum Vessel Draft	Remarks
Port Ala Terminal				
North	130m	5.8m	—	General cargo, timber, and pulp.
South	120m	7.7-8.0m	5.8m	General cargo, timber, and pulp.

Aspect.—The inner part of the entrance channel is indicated by a lighted range and is marked by buoys.

Caution.—Vessels with drafts over 5.5m must enter during daylight.

Ljusnefjarden to Hudiksvall

6.19 Hallgrund Light (61°17'N., 17°24'E.), equipped with a racon, is shown from a prominent floodlit tower, 23m high, standing on a rock, awash, 4 miles NE of Enskar. Shoals, with depth of less than 10m, extend up to about 0.8 mile NE and 0.4 mile SW of the light.

Soderhamnsfjarden (61°17'N., 17°10'E.), entered 3.5 miles W of Hallgrund Light, extends about 5.5 miles NW. The entrance to this inlet lies between the N side of Enskar and the E end of the Skaton Peninsula, 2.1 miles N.

The approaches and entrance to Soderhamnsfjarden are encumbered by numerous small islands, islets, rocks, and shoals, which may best be seen on the chart.

Hallgrund Light

Norrutharet Light (61°16'N., 17°18'E.) is shown from a prominent tower, 10m high, standing on the N end of a small island, 3.2 miles WSW of Hallgrund Light.

Storgrund, a shoal area with a least depth of 0.6m, lies centered 1 mile ESE of Norrutharet Light. It is marked by buoys and is the outermost danger on the S side of the approach to the inlet.

Otterhallan Light (61°16'N., 17°18'E.), equipped with a racon, is shown from a framework tower standing on a red rock lying 1.5 miles WNW of Norrutharet Light.

Caution.—A submarine cable, which may best be seen on the chart, extends between Hallgrund Light and the Skaton Peninsula.

6.20 Soderhamn (61°18'N., 17°05'E.) (World Port Index No. 25720) is situated at the head of Soderhamnsfjarden. The port includes the facilities at Stugsund, in the NW part of the inlet; at Sandarne, in the SW part; and at Langror, close N of Sandarne.

Tides—Currents.—The water level normally varies from 0.6m above to 0.4 below mean level. A higher level occurs with S and W winds, a lower level with N winds.

Currents in the approach to the inlet are negligible.

Ice.—In the Soderhamn archipelago, ice usually occurs from early January to early April. Shipping channels are kept open with the aid of icebreakers.

Depths—Limitations.—The main approach route leads W for about 5 miles from a position located 0.8 mile S of Hallgrund Light. It passes N of Storgrund, N of Norrutharet Light, and S of the dangers fronting the S side of the Skaton Peninsula. A dredged entrance channel, which is authorized for drafts up to 7.9m, then leads W and passes S of Otterhallan Light. It is 1 mile long and 60m wide.

The branch channel leading WSW to Sandarne is authorized for drafts up to 6.3m.

The branch channel leading NW and WSW to Langror is authorized for drafts up to 7.9m.

The branch channel leading NW to Stugsund is authorized for drafts up to 5.7m. The continuing channel leading NW to Soderhamn is authorized for drafts up to 2.5m.

Soderhamn has berthage and it is used only by recreational craft. Stugsund has berthage, it has facilities for handling bulk cargoes.

Langror has a quay, it has facilities for handling oil and general cargoes. Sandarne has a quay, 438m long, with a depth of 7.1m alongside. It has facilities for handling liquid resin. Vessels up to 11m draft can be accommodated. For more berthing information see table titled **Soderhamn—Berthing Information.**

Aspect.—The entrance channels are indicated by lighted ranges and are marked by buoys.

A prominent chimney, 75m high, stands at Sandarne; and a number of conspicuous silos are situated at Stugsund.

Skeppskolsberget, 322m high, stands about 13.5 miles WSW of Soderhamn. This prominent hill resembles the keel of a ship turned bottom up.

An aeronautical light is shown from a structure, 56m high, standing in the vicinity of the airport, about 2 miles W of Sandarne.

Pilotage.—Pilotage is compulsory. Pilots must be requested through Gavle VTS (see paragraph 6.7). Pilots may be contacted by VHF and board about 1.5 miles S of Hallgrund Light.

Soderhamn—Berthing Information

Berth	Length	Maximum Vessel		Remarks
		LOA	Draft	
Orrskar Terminal				
East	100m	250m	11.0m	Breakbulk.
NorthEast	100m	250m	11.0m	
Stugsunds Hamn Terminal				
Stugsunds	490m	140m	5.1m	Breakbulk and cement.
Langror Terminal				
Langror	80m	165m	7.3m	Chemicals, dirty products, multipurpose, bunkers, and breakbulk.
Sandarne Terminal				
Sandarne	435m	—	—	Chemicals, wood chips, breakbulk, and bunkers.

Regulations.—A mandatory Reporting and Information System has been established in the Gulf of Bothnia and is operated by Vessel Traffic Services (VTS) at Gavle and Lulea. For further information, see Gavle (paragraph 6.7).

Soderhamn—Pilots Contact Information	
Pilot	
Call sign	North Coast Pilot
VHF	VHF channels 13 and 16
Telephone	46-771-630610
Facsimile	46-26-99469
E-mail	northcoastpilot@sjofartsverket.se
Web site	https://www.sjofartsverket.se

Speed restrictions apply within the entrance channels.

From the vicinity of Otterhallan Light, vessels proceeding to Langror must be accompanied by tugs. Vessels can berth at Langror only during daylight.

Anchorage.—Lilljungfruns Redd, located 1 mile SW of Norrutharet Light and 0.4 mile N of Enskar, provides anchorage, in depths of 11 to 20m, mud and rock. Vessels can enter this roadstead through a branch channel, which is authorized for drafts up to 8.9m, to complete loading if necessary.

Branthalls Redd lies W of the island of Branthall, 1.1 miles WSW of Otterhallan Light. This roadstead provides anchorage, in depths of 7 to 13m, mud.

Prastholms Redd lies close NE of Langror. This roadstead provides anchorage, in a depth of 7m, mud.

Caution.—During winter, an ice bridge is laid out between Stugsund and the N side of the inlet, 100m NE. Traffic signals are exhibited. A white light indicates that the bridge is open for the passage of vessels. A red light indicates that the bridge is closed and the passage of vessels is prohibited.

6.21 The coast between Hallgrund Light and the island of Agon, 16 miles N, is greatly indented. The shore is fronted by numerous small islands, islets, rocks, and shoals, which extend up to 4.5 miles seaward in places and may best be seen on the chart. Only the outermost of these dangers are described below.

Several local fishing and small craft harbors are located along this stretch of coast but there are no commercial ports.

Yttergrund (61°18'N., 17°21'E.), a large shoal bank, lies centered 1.8 miles WNW of Hallgrund Light. It has a least depth of 3m and is marked by buoys. Several detached shoal patches, with depth of less than 8m, lie between this bank and the light.

Skroveln, a shoal with a least depth of 0.8m, lies 2.3 miles W of Hallgrund Light and is marked by a buoy. This shoal is located at the S end of an extensive area of foul ground, which fronts the mainland peninsula of Stalnaset (61°19'N., 17°14'E.) and extends up to about 2 miles seaward.

Prastgrundet (61°21'N., 17°20'E.), 10m high, lies 4.5 miles NNW of Hallgrund Light. The greater part of this island is wooded, but the S end is barren except for some large boulders. A light is shown from a tower, 6m high. standing on the SW side of the island.

Foul ground and shallow shoals extend up to about 1 mile NE and 0.8 mile SW of Prastgrundet.

Vitgrund Light (61°23'N., 17°12'E.) is shown from a framework tower, 5m high, standing on the N part of an islet lying 4.7 miles NW of Prastgrundet Light. This islet lies 2.1 miles offshore, on an extensive chain of dangers fronting the coast.

Vitgrund Light

Tattingen (61°26'N., 17°17'E.), with a least depth of 5.9m, is a large shoal bank lying 3.8 miles NE of Vitgrund Light. This bank is located 2.3 miles offshore and is the outermost danger in this vicinity.

Storgrund, with above-water rocks, is a shoal lying centered about 0.7 mile SW of Tattingen.

Fiske (61°31'N., 17°13'E.), marked by a light, is an islet lying about 5 miles NNW of Tattingen, in the outer approach to Enhammarsfjarden. Shoal patches, with depths of less than 10m, lie up to about 1.5 miles SE of Fiske Light.

Idensgrund, a detached shoal with a least depth of 3.6m, lies about 1.3 miles NE of Fiske Light.

6.22 **Agon** (61°33'N., 17°27'E.), a wooded island, lies at the outer end of a chain of islands, which extends E for about 7 miles from Vatnasudde, on the mainland.

Ago Light

Ago Light (61°32.5'N., 17°28.0'E.) is shown from a prominent round tower, 15m high, standing at the E extremity of Agon. A disused light tower, with a dwelling, is located near the light.

Small vessels, with local knowledge, may obtain sheltered anchorage, in depths of 7 to 25m, gravel and mud, within a nar-

row inlet indenting the SW side of the island. A channel, authorized for drafts up to 5.8m, leads to this anchorage.

Tihalan, an islet, lies 1 mile S of Agon and is located near the center of a group of dangers, about 3 miles long, which front the S side of the island.

Gretasklackar (61°30'N., 17°46'E.), a group of four shoals with a least depth of 9m, lies 9 miles ESE of Ago Light.

Caution.—Due to the numerous shoals lying between Prastgrundet and the mainland, vessels passing W of this island require local knowledge.

Approaches to Hudiksvall

6.23 **Hudiksvall** (61°35'N., 17°28'E.), an extensive inlet, is encumbered by numerous small islands, rocks, and shoals, which may best be seen on the chart. The shores are wooded and hilly.

Iggesund and Hudiksvall are the main commercial ports situated within this inlet. Krakon (61°34'N., 17°20'E.), Njutanger (61°36'N., 17°04'E.), Holick (61°38'N., 17°26'E.), Karingon (61°39'N., 17°14'E.), Saltvik (61°41'N., 17°15'E.), and Lingaro (61°43'N., 17°15'E.) are harbors used only by small craft and pleasure boats. There are also several marinas.

The approach to Hudiksvall is bordered, on the S side, by a chain of islands extending 7 miles E from the mainland. Agon is the outermost island of this chain (see paragraph 6.23). The approach, on the N side, is bordered by the S side of the peninsula of Hornslandet, located 4.8 miles N.

The peninsula of Hornslandet is 115m high and partly wooded. At a distance, from the NE, it appears to be separated from the mainland. The E side of this peninsula is light colored and moderately steep.

Krakskar Light (61°34'N., 17°20'E.) is shown from a prominent tower, 6m high, standing on the N extremity of Krakon, 4.3 miles WNW of Ago Light.

Holickskar Light (61°37'N., 17°27'E.) is shown from a tower, 6m high, standing on the SW extremity of the Hornslandet Peninsula, 4.5 miles NE of Krakskar Light.

Myran (61°36'N., 17°28'E.), a group of shoals with a least depth of 2.9m, lies about 1 mile SE of Holickskar Light and fronts the S side of the Hornslandet Peninsula.

Olofsgrund (61°34'N., 17°28'E.), a detached shoal bank, lies 1.4 miles N of Ago Light. It has a least depth of 5.1m and is marked by buoys.

Hudiksgrund (61°36'N., 17°25'E.), a detached shoal bank, lies about 1.5 miles SSW of Holickskar Light. It has a least depth of 4.6m and is marked by a buoy.

An isolated shoal, with a depth of 9.6m, lies about 1 mile S of Hudiksgrund, 2.8 miles NW of Ago Light, and is marked by a buoy.

Pilotage.—Pilotage within Hudiksvall is compulsory. Pilots must be requested through Gavle VTS (see paragraph 6.7). Pilots may be contacted by VHF and board in the vicinity of Hallgrund Light (61°17'N., 17°24'E.) or, by special arrangement, about 3 miles N of Ago Light.

Directions.—Two main approach routes lead from seaward and are both authorized for drafts up to 9.9m.

Vessels may head WSW and pass between Myran shoal and Olofsgrund shoal or they may head W and pass between the N side of Agon Island and Olofsgrund shoal.

Vessels may then pass S and W or N of the isolated 9.6m shoal lying 1 mile S of Hudiksgrund. Deep-draft vessels are advised to pass S and W of the latter shoal.

Hudiksvall (61°44'N., 17°07'E.)

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6.24 Hudiksvall, which mainly handles timber products, is situated at the head of Hudiksvallsfjarden, about 14 miles NW of the entrance to the inlet.

Ice.—Hudiksvallsfjarden is usually ice-covered from the middle of December to the end of April. The channel is kept open by icebreakers but berthing delays may occur.

Tides—Currents.—The water level within the inlet is lowered by N winds and raised by S winds. Currents in the approaches are negligible.

Depths—Limitations.—The route leading NW from S of Hudiksgrund has a least depth of 11m and is authorized for drafts up to 9.9m.

The main channel leading into Hudiksvallsfjarden passes through Saltvikssundet, a narrow passage 1.5 miles long, located 5 miles SE of the port. Kastellholm, a small islet, lies in the approach to the berths and buoyed channels pass each side of it.

Oljekajen, a T-shaped oil jetty and Stenkajen is the main quay. Kattvikskajen, with a ro-ro ramp at the S end.

Vessels with a draft up to 9.9m draft can be accommodated. For more berthing information see table titled **Hudiksvall—Berth Information**.

Hudiksvall—Berth Information

Berth	Length	Depth	Remarks
Hudiksvall Port			
Ferry	200m	—	Passengers.
Hudiksvall			
Oil	62m	11.0m	Oil products. Closed.

Aspect.—The entrance channel is indicated by lighted ranges and marked by buoys and beacons.

Blaxasberget, 460m high, stands 11 miles WSW of Hudiksvall. This hill is precipitous on its E and S sides and is especially conspicuous from SE.

Storberget, a prominent hill, rises 8 miles W of Hudiksvall. An aeronautical light is shown from a mast, with an elevation of 335m, standing on the N side of this hill.

Regulations.—A mandatory Reporting and Information System has been established in the Gulf of Bothnia and is operated by Vessel Traffic Services (VTS) at Gavle and Lulea. For further information, see Gavle (paragraph 6.7).

At night, berthing at Oljekajen, the oil jetty, is restricted to tankers of not more than 100m in length.

Speed restrictions apply within the port.

Tugs are compulsory for cargo vessels over 8,000 tons and tankers over 6,000 tons.

Anchorage.—Vessels may anchor, in depths of 8 to 23m, mud and sludge, close SE of Kastellholm islet.

Caution.—A submarine cable and a submarine pipeline,

which may best be seen on the chart, extend across the harbor close W of the oil jetty.

Hudiksvall to Sundsvallsbukten

6.25 Iggesund (61°38'N., 17°07'E.) (World Port Index No. 25760) is situated at the head of a narrow inlet, 5 miles S of Hudiksvall.

Ice.—The channel leading to Iggesund is normally obstructed by ice from January to April.

Depths—Limitations.—The routes leading from seaward into Hudiksvall are authorized for drafts up to 9.9m.

The entrance channel leading to the harbor is authorized for drafts up to 8m as far W as Skarnas Terminal, the commercial facility. The maximum vessel the harbor can handle is up to 7.3m draft.

Skarnas Terminal consists of a concrete pier and a quay. The pier is at the E side of the terminal and the berth is on the N side. The berth on the S side is 140m long and has a depth of 8.2m alongside.

The quay, located W of the pier. For more berthing information see the table titled **Iggesund—Berth Information**.

Iggesund—Berth Information

Berth	Length	Maximum Vessel		Remarks
		LOA	Draft	
Skarnas Terminal				
Lo-Lo	240m	—	—	Lo-lo.
Skarnas	140m	160m	7.3m	Ro-ro and petroleum products.

Regulations.—A mandatory Reporting and Information System has been established in the Gulf of Bothnia and is operated by Vessel Traffic Services (VTS) at Gavle and Lulea. For further information, see Gavle (paragraph 6.7).

Vessels bound to or from Skarnas Terminal should make a general call on VHF channel 16 prior to proceeding through Dukarsund, the narrow entrance channel. Inbound vessels should call when passing Bondgrund shoal (61°37'N., 17°16'E.); outbound vessels should call before leaving the berth.

Contact Information.—See the table titled **Iggesund—Contact Information**.

Iggesund—Contact Information

Pilots	
Call sign	North Coast Pilot
VHF	VHF channels 13 and 16
Telephone	46-771-630610
Facsimile	46-26-99469
E-mail	northcoastpilot@sjofartsverket.se
Web site	https://www.sjofartsverket.se

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

The buildings and chimneys, up to 125m high, of the textile factory at Iggesund are conspicuous.

Anchorage.—Anchorage can be obtained, in depths of 10 to 12m, mud, SW of Skarnas Terminal.

Caution.—It is reported that less depths than charted exist within the entrance channel leading to Skarnas Terminal and the local authorities should be contacted for the latest information concerning maximum authorized drafts.

6.26 The coast between the peninsula of Hornslandet and the S entrance of Sundsvallsbukten, 32 miles N, is mostly high and wooded. The shore is fronted by numerous islands, rocks, and shoals, which may best be seen on the chart. Only the outer dangers are described below. Several small fishing boat harbors are situated along this stretch of the coast.

Balson (61°43'N., 17°32'E.), a wooded island, lies close off the NE side of the peninsula of Hornslandet and is fringed by shoals. Its N and S sides should not be approached within 1 mile and its E side should not be approached within 0.5 mile.

Balson Light is shown from a prominent tower, 6m high, standing on a rock lying close off the E side of the island.

Balsosund, a narrow passage encumbered by rocks and shoals, separates Balson from the NE side of Hornslandet. A buoyed channel, which is authorized for drafts up to 3.9m, leads through this passage and may be used by small vessels with local knowledge.

Kuggorarna, a bare islet, lies at the SW end of Balsosund. A prominent chapel, with a belfry, stands on this islet.

Anchorage may be obtained by small vessels, with local knowledge, in a depth of 13m, sand and stones, between the N end of Kuggorarna and the E side of the mainland peninsula.

Arnoviken (61°43'N., 17°24'E.) lies at the NW side of Hornslandet, 3.5 miles W of Balson. This inlet provides sheltered anchorage and is accessible to vessels of medium draft. Halvarskar, a wooded islet, lies on the W side of the entrance and Hastholmen, another islet, lies close off the N extremity of Hornslandet. The best anchorage is in depths of 20 to 25m, mud and sand, at the head of the inlet. The entrance channel is available to vessels with drafts up to 4.9m. Local knowledge is advised. Ice usually obstructs this inlet from November to May.

6.27 Bergo Light (61°49'N., 17°25'E.) is shown occasionally from a structure standing on the mainland, 7 miles NW of Balso Light. Rocks and shoals extend up to about 1 mile seaward from the shore in the vicinity of this light.

Remmarharet (61°51'N., 17°26'E.), an above-water rock, lies on a large shoal bank centered 2 miles NNE of Bergo Light. A prominent beacon, 4m high, stands on this rock.

Britas Klack (61°53'N., 17°28'E.), with a least depth of 2.3m, lies 3 miles offshore, about 5 miles NNE of Bergo Light. This shoal is marked at its S and W sides by buoys.

A detached shoal bank, with above-water rocks, lies centered 1.7 miles NNE of Britas Klack.

Glavsberget, rising 9.5 miles WNW of Bergo Light, is 187m high and consists of several large rocky hummocks, which are clearly visible from SE. From the E, this hill appears more compact.

Bolleberget, rising about 14 miles NW of Bergo Light, is 294m high. This hill can be easily distinguished from the others in the vicinity and is conspicuous from seaward.

Caution.—Eystrasaltbanken (61°46'N., 18°52'E.), a shoal bank with a least depth of 12m, lies about 38 miles E of the NE extremity of the island of Balson.

6.28 Stocka (61°54'N., 17°21'E.) (World Port Index No. 25800), a former commercial harbor, is situated on the S side of a small inlet, 12 miles NNW of Balso Light.

The inlet is sheltered by several shoals and the islets of Ingaskar and Ronnskar, which lie in the entrance. A breakwater extends NE from the S shore of the inlet toward Ingaskar. There are depths of 5.5 to 6.4m, clay, gravel and stones in the inlet, which narrows toward its head. The entrance channel, which leads close S of Britas Klack shoal, is authorized for drafts up to 5.4m. Ice usually obstructs the harbor from January to March. Local knowledge is required.

A pier, used for laying up, is situated in the SW part of the harbor. The outer part of the N side of the pier provides a berth, 110m long, with a depth of 5.1m alongside. The inner part provides a berth, 50m long, with depths of 1.9 to 3.9m. The S side of the pier provides a berth, 65m long, with a depth of 3.8m alongside.

Anchorage may be taken, in depths of 4 to 6.5m, stone, clay, and sand, close W of Ingaskar.

Four prominent wind generators stand near the coast about 1 mile SSE of Stocka.

A conspicuous chimney is situated at Stromsbuck, about 1.5 miles S of Stocka. A tower stands close N of this chimney but is prominent only when viewed from the S and SE.

Jattholmarna (61°57'N., 17°31'E.), lying about 3 miles offshore, consists of two moderately-high wooded islands, which are separated from each other by a narrow channel. This channel may only be seen from N or S. The islands are fringed by rocks and shoals.

Vitorarna, consisting of two islets, lies on a shoal bank 1.2 miles N of Jattholmarna. The N and larger islet is mostly wooded; a beacon stands on the S islet.

Hartefjarden, an inlet, indents the mainland, 2.5 miles W of Vitorarna. Harteskar, a small islet, lies in the middle of the entrance. Anchorage may be obtained, in a depth of 10m, sand, within this inlet but it is open to winds from between E and S. The entrance channel leads SW of Harteskar and is authorized for small vessels with drafts up to 7m. Local knowledge is advised.

Gran (62°01'N., 17°38'E.), a moderately-high wooded island, lies about 5 miles offshore, 4.5 miles NE of Jattholmarna. A small fishing harbor, protected by a breakwater, is situated at the E side of this island.

A light is shown from a prominent framework tower surmounting a dwelling near the center of the island.

6.29 Lillgrund (62°03'N., 17°40'E.), a shoal bank with rocks, awash, lies centered 2 miles NNE of Gran and is marked by buoys.

Norra Myran, a shoal bank with a least depth of 3.2m, lies centered 2.3 miles WNW of Gran and is marked by a buoy.

Hundgrund (62°07'N., 17°48'E.), with a least depth of 6m, lies 7.5 miles NE of Gran. This shoal is the outermost danger in this vicinity and is marked by a buoy.

Orraklinten, 242m high, rises 12.3 miles NW of Gran. This prominent hill is very steep on its N side, but appears to have three summits of equal elevation when viewed from the S.

Bramon (62°13'N., 17°43'E.), 73m high and densely wooded, lies 1.5 miles off the Bjorko Peninsula, 12 miles NNE of Gran. A light is shown from a prominent tower, 16m high, standing on the NE side of this island.

Bramon Light

Revhallan, a shoal with a least depth of 0.8m, lies about 0.4 mile NE of the light and is marked by a buoy.

Bramo Kalv, a wooded islet, lies close off the SW end of Bramon. A light is shown from a prominent tower, 9m high, standing on the SW side of this islet.

Bramosund lies between the mainland and the W side of Bramon. This sound is generally clear of dangers but foul ground fringes the mainland shore. The passage is available to vessels with drafts up to 10m. Local knowledge is advised.

Anchorage may be obtained, in depths of 14 to 25m, sand and mud over clay, close off Sanna, a village standing on the W side of Bramon 1.2 miles N of Bramo Kalv Light.

The current sets moderately through the sound and is frequently strong. The most troublesome sea is raised by SW winds.

Lorudden (62°14'N., 17°39'E.), a high point, is situated on the mainland at the NW end of Bramosund and is marked by a light.

Caution.—Several nature reserves, including the waters surrounding the island of Gran and the islets of Vitorarna, are situated along the coast between Hornslandet and the S entrance of Sundsvallsbukten. Entry into these reserves is affected by numerous restrictions.

Submarine cables, which may best be seen on the chart, extend across Bramosund, about 1.3 miles S of Lorudden Light.

Sundsvallsbukten

6.30 Sundsvallsbuken (62°20'N., 17°35'E.), a large bay, is entered between the island of Bramon and the island of Aston, 9.5 miles N. Sundsvall, with its associated harbors, is the principal port lying within this bay. A number of former timber-loading berths are situated throughout the bay but most of these

are no longer open to commercial shipping.

Astholmsudde (62°23'N., 17°44'E.) is the SE point of Aston and the highest part of the island. A light is shown from a structure standing on this point. A beacon, 5m high, is situated close N of the light.

The bay is encumbered by many islands, rocks, and shoals, which may best be seen on the chart. Only the outermost dangers are described below.

Kattgrundet (62°16'N., 17°45'E.), with a least depth of 9.9m, lies about 3.2 miles N of Bramon Light. This shoal is the outermost danger on the S side of the approach.

Sjogrund, a shoal patch with a least depth of 8.5, lies about 3.8 miles NW of Lorudden Light. Storgrunden, a shoal bank with a rock, awash, lies centered about 1 mile WNW of Sjogrund. Knuten, a shoal with a least depth of 2.8m, lies near the NW side of Storgrunden, about 1.4 miles NW of Sjogrund. These three shoals form the outermost dangers on the S side of the entrance.

Alnon (62°23'N., 17°28'E.), a large island, encumbers the inner part of the bay and rises to a height of 120m in its SW part.

Gubben Light (62°21'N., 17°35'E.) is shown from a prominent floodlit tower, 10m high, standing an islet lying 1.5 miles ESE of the SE extremity of Alnon.

Draget, lying 1.3 miles SSW of Gubben light, is the southernmost islet of a chain of islands and islets extending up to 1.8 miles S from the SE extremity of Alnon.

A shoal, with a depth of 6.3m, lies about 0.3 mile SSW of Draget. Vastra Asen, a detached shoal with a depth of 2.7m lies about 0.3 mile WSW of Draget and is marked by buoy. These two shoals form the outermost dangers in this vicinity.

Rodon, 92m high and hilly, is located 2.5 miles N of Gubben Light and is the largest of several islands lying close off the E side of Alnon. Its shoreline is reddish in color.

Rodogubben Light (62°23'N., 17°36'E.) is shown from a prominent tower, 12m high, standing on a small islet lying close off the SE side of Rodon.

Granon, an island marked by a light on its NW side, lies 3.5 miles NNW of Rodogubben Light.

Draghallan Light from SW

6.31 Draghallan Light (62°20'N., 17°26'E.) is shown from a prominent tower, 14m high, standing on a rocky shoal lying about 0.8 mile S of the SW extremity of Alnon. The N side of this rocky shoal is marked by a lighted buoy.

A shoal, with a least depth of 2.7m, lies close SE of the light and is marked by a buoy. A detached shoal patch, with a depth of 8.2m, lies 0.4 mile N of the light and is marked by a lighted buoy.

Alnosundet (62°26'N., 17°24'E.) is the passage lying between the mainland and the W side of Alnon. The Alnobron Bridge spans this passage about 5.7 miles NNW of Draghallan Light and is marked by a racon.

The navigable channel leading under the bridge is 70m wide and has a vertical clearance of 39m.

Klingerfjarden (62°29'N., 17°28'E.) is an inlet lying between the N end of Alnon and the head of the bay.

Anchorage.—Designated anchorage areas lie in the outer part of the bay and may best be seen on the chart. Area A and Area B are centered about 5 miles S and 1 mile ENE, respectively, of Gubben Light (62°13'N., 17°43'E.). Area C is centered 2 miles N of Rodogubben Light (62°23'N., 17°36'E.).

Directions.—Two approach routes, which may best be seen on the chart, lead into the bay and converge in the vicinity of Draghallan Light.

The main route, which is authorized for drafts up to 13m, leads W for about 2 miles from a position located 0.6 mile SE of Astholmsudde Light. It continues WSW for about 5 miles and passes midway between Rodogubben Light and Gubben Light and close SSE of the SE extremity of Alnon island. This main route then leads SW and rounds Draghallan Light on the S side.

Vessels, with drafts up to 8m, may use the channel leading between the N side of Draghallan Light and the detached 8.2m shoal patch lying 0.4 mile N.

The secondary approach route, which is authorized for drafts up to 10m, leads NW for about 5 miles from a position located 1.2 miles E of Bramon Light (62°13'N., 17°43'E.). It passes between the N side of Bramon island and Kattgrundet shoal. The route then continues WNW for about 7 miles and rounds Draghallan Light, on the S side. It passes about 0.9 mile NNE of Knuten shoal and 0.6 mile SSW of Vastra Asen shoal.

The alternate route through Bramosund, which is authorized for drafts up to 10m, joins this secondary route at a position located about 4.5 miles SE of Gubben Light (see paragraph 6.31).

Caution.—Floating logs may be encountered in the approaches to Sundsvallsbuken.

A military exercise area lies in the approaches to Sundsvallsbukten. It is situated between Bramon (62°13'N., 17°43'E.) and Skarpudden (62°29'N., 17°49'E.) and extends up to 10 miles seaward.

Several submarine cables, which may best be seen on the chart, extend across the routes within Sundsvallsbuken.

A restricted area and dumping ground for chemicals lies approximately 4 miles ESE of Astholmsudde.

Sundsvall (62°23'N., 17°21'E.)

World Port Index No. 25910

6.32 Sundsvall is situated at the head of Sundsvallsfjarden, an inlet located at the W side of Sundsvallsbukten. The port also includes the facilities at Vindskarvarv, Ortviken, Kubikenborg, Skonsberg, and Cementsilokajen, which are situated within Sundsvallfjarden; and the harbors of Tunadalshamnen, Johannedal, and Ostrand, which are situated in Alnosundet. The head of Sundsvallsfjarden, W of Vindskarsvarv (62°23.0'N., 17°21.1'E.), is spanned by a bridge. The main navigable passage under Sundsvallsbron has a width of 90m and is

marked by lighted buoys, with vertical clearance of 32m. A racon transmits from the center of the bridge.

The port exports various wood products and aluminum, and imports bauxite, oil, and fertilizers.

Ice.—The port is usually operated all year round. However, ships may be delayed by ice from December to April.

Tides—Currents.—The greatest extremes of water level observed in Sundsvallsbukten are about 0.8m above and 1.1m below mean sea level. Higher water levels occur with E and SE winds, and low water levels with N and prolonged NNE winds. The timing of high or low water is unpredictable and depends entirely on the wind direction and velocity.

Aspect.—The approach routes and entrance channels are indicated by directional sector lights and lighted ranges. The fairways are marked by buoys.

Tjuvholmen, an islet 35m high, lies in the entrance to Sundsvallsfjarden and is marked by a light on its W side.

Five prominent chimneys, at an aluminum works, and a conspicuous silo stand on the S side of Sundsvallsfjarden, about 0.4 mile SSW of Tjuvholmen Light.

A conspicuous radio mast stands on a hill about 3 miles SSW of Draghallan Light.

An aeronautical light is shown from a conspicuous framework tower standing on the N slope of Sodra Stadsberget, 3.8 miles WNW of Draghallan Light.

A conspicuous floodlit pilot lookout tower stands on Skorven, an islet lying close off the SE extremity of Alnon.

A conspicuous church, with a square tower and a spire, stands in the S part of Njurunda, 5.3 miles SSW of Draghallan Light.

Depths—Limitations.—From close W of Draghallan Light, the main route, which is authorized for drafts up to 13m, leads 2.5 miles NW to the entrance of Sundsvallsfjarden. The channel passing N of Tjuvholmen is authorized for drafts up to 12m and the channel passing S of this islet is authorized for drafts up to 11.3m. The channel leading to the inner part of Sundsvallsfjarden is authorized for drafts up to 7.8m.

The channel leading into Alnosundet from the vicinity of Tjuvholmen is authorized for drafts up to 12m as far as Tunadalshamnen, 1 mile S of the bridge. The channel continuing to the anchorage off Ostrand, at the NW end of Alnosundet, is authorized for drafts up to 9m. The channel leading from Ostrand anchorage to the berths is authorized for drafts up to 7m.

Vindskarvarv, an oil terminal, is situated on the SE side of the inlet. Ortviken, a harbor situated on the NE side of the inlet, has three quays.

Kubikenborg, a harbor situated on the SE side of the inlet, has a quay. Skonsberg, a harbor on the N side of the inlet, has a quay.

Vessels should note the presence of a supply pipeline which lies just off Berths No. 30 and No. 32 at Norra kajen.

Cementsilokajen, a harbor on the S side of the inlet, has a quay. Sundvall Harbor, also known as Stadshamnen, has 740m of quayage. There is also a reserve berth.

A new ferry berth with a ro-ro ramp, has been constructed at the Town Quay.

Tunadalshamnen Harbor is situated at the SW side of Alnosundet and provides three quays. Johannedal Harbor is situated on the W side of Alnosundet, close N of the bridge. Ostrand Harbor, at the NW end of Alnosundet, has a quay.

Obstructions lie both N and S of the berth. For more berthing information see table titled **Sundsvall—Berth Information**.

The port has facilities for tanker, ro-ro, container, timber, bulk, general cargo, LPG, cruise, and ferry vessels. Vessels up to 75,000 dwt, 250m in length, 33m beam, and 11.3m draft can be handled.

Sundsvall—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Kubikenborg							
Kubikenborg	153m	10.1m	—	—	—	—	Alumina and bunkers.
Ortviken							
No. 1	157m	6.9m	—	—	—	—	Breakbulk and bunkers.
No. 2	90m	6.5m	—	—	—	—	
No. 3	165m	11.3m	—	—	—	—	Wood chips, breakbulk and bunkers.
Skanska Sundsvall Terminal							
Cement	15m	6.9m	—	—	—	—	Cement and bunkers. Berthing length of 53m (including dolphins).
Soraker							
Soraker	180m	6.3m	115m	5.8m	—	—	Breakbulk and bunkers.
Stockvik							
Large	195m	6.5m	190m	6.3m	See Remarks	12,000 dwt	Coal, limestone, breakbulk, and bunkers. Beam unrestricted.

Sundsvall—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
T-Jetty	20m	4.6m	—	—	See Remarks	—	Breakbulk and bunkers. Beam unrestricted.
Vistvarv							
Paper	150m	10.6m	—	—	—	—	Breakbulk and bunkers.
Ostrand							
Ostrand Hamn	90m	—	135m	7.5m	See Remarks	—	Chemicals, breakbulk, multi-purpose, and bunkers. Berthing length of 115m (including dolphins). Beam unrestricted.
Tunadalshamnen							
North	180m	12.3m	—	—	—	—	Container and bunkers.
South	660m	12.3m	200m	11.3m	33.0m	—	Ro-ro/lo-lo, others, containers, breakbulk, kaolinite clay, stone crushing, chalk, and bunkers. Contains three berths.
Tanker	62m	11.8m	200m	11.3m	33.0m	—	Clean products, LPG, kaolinite clay, stone crushing, chalk, multipurpose, and bunkers. Berthing length of 94m (including dolphins).
Timber	195m	4.5-7.3m	—	—	—	—	Wood chips, breakbulk, and bunkers.
Sundsvall Oil Terminal							
Oil (Vindskarsvarv)	100m	12.0m	250m	11.3m	33.0m	75,000 dwt	Aviation fuel, clean products, dirty products, and bunkers.

Pilotage.—The pilotage area for Sundsvall lies between latitude 62°08'N and latitude 62°50'N (including Gaviksfjarden and Angermanalven).

Pilot ordering should normally be carried out via the e-Services section on the Swedish Maritime Administration web site (https://www.sjofartsverket.se), in conjunction with the reporting on the Vessel Reporting System (FRS) section.

Pilotage is compulsory for vessels, as follows:

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 pilot channels within Angermanalven, on passage for Sannasundet, pilotage is compulsory, as follows:

1. All Category 1 vessels.
2. Category 2 vessels of 80m in length, 15m beam, and 5m draft and over.
3. Category 3 vessels of 90m in length, 16m beam, and 5.5m draft and over.

In certain pilot channels for passage through Alnobron for the following:

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 70m LOA, 14m beam, and 4.5m draft and over.

Pilot ordering should normally be carried out via the e-Services section on the Swedish Maritime Administration web site (https://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 can be contacted by VHF and board in Sundsvallsbukten, about 2.5 miles E of Gubben Light.

Regulations.—A mandatory Reporting and Information System has been established in the Gulf of Bothnia and is operated by Vessel Traffic Services (VTS) at Gavle and Lulea. For further information, see Gavle (paragraph 6.7).

Contact Information.—See the table titled **Sundsvall—Contact Information**.

Sundsvall—Contact Information	
Pilot Ordering Center	
Call sign	North Coast Pilot

Sundsvall—Contact Information	
VHF	VHF channels 13 and 16
Telephone	46-771-630610
Facsimile	46-26-99469
E-mail	northcoastpilot@sjofartsverket.se
Web site	https://www.sjofartsverket.se
Sundsvall Pilots	
Call sign	Lotsarna Spikarna (Sundsvall)
	Spikarna (Sundsvall) Pilots
VHF	VHF channels 13 and 16
Telephone	46-60-586000
	46-60-586007
Facsimile	46-60-586403

Anchorage.—Anchorage may be obtained, in depths of 29 to 32m, mud, E of Tjuvholmen islet or, in depths of 10 to 20m, clay and mud, within Sundsvallsfjarden.

Anchorage may be obtained by vessels with drafts up to 9m close off the quays at Ostrand.

Caution.—Submarine pipelines, which may best be seen on the chart, extend 0.8 mile ENE from a point located on the N side of Sundsvallsfjarden, 0.5 mile NNW of Tjuvholmen Light; and extend 1.2 miles ENE from the vicinity of Ostrand.

Several submarine cables and a pipeline, which may best be seen on the chart, extend across Alnosundet.

6.33 Stockvik (62°20'N., 17°23'E.) (World Port Index No. 25900) is situated on the NW side of Ljungan Inlet, about 2 miles W of Draghallan Light. Limestone, coke, methanol, and oil are imported here; and ammonium nitrate and carbide are exported.

The channel leading to the anchorage from the vicinity of Draghallan Light is authorized for drafts up to 13m. The channel leading to the berth is authorized for drafts up to 6.3m.

The harbor is protected by a detached breakwater, 200m long. Stora Kajen, the N and main berth, is 195m long and has depths of 6 to 6.5m alongside. A T-headed jetty, 20m long, is situated close S of the main berth and has a depth of 4.6m alongside. Vessels up to 190m in length and 6.3m draft can be handled at the port. Silting occasionally occurs at the N end of Stora Kajen.

Vessels can anchor, in a depth of 29m, clay, close off the harbor.

6.34 Klingerfjarden (62°29'N., 17°28'E.), lying between the N end of Alnon and the head of Sundsvallsbukten, can be entered from seaward and via the N end of Alnosundet. Both routes are authorized for drafts up to 9m.

The ports of Vivstavarv and Soraker are situated in Klingerfjarden along with several small craft harbors.

The main route from seaward leads between the E side of Alnon and the mainland to the NE. An alternative channel, which joins the main route, passes between the E side of Alnon and the W side Rodon islet.

Regulations.—Designated safety areas, which may best be seen on the chart, lie S of Sundsvall Airport (62°32'N., 17°27'E.), in the NE part of Klingerfjarden. Vessels with an air draft over 20m must contact North Coast Pilots on VHF channel 13 or by telephone (46-771-630620) at least 2 hours prior to entering Area A, which extends about 0.7 mile SSE from the N shore. Vessels with an air draft over 40m must contact North Coast Pilots at least 2 hours prior to entering Area B, which extends between about 0.7 mile and 1.2 miles SSE from the N shore.

6.35 Vivstavarv (62°29'N., 17°22'E.) (World Port Index No. 26140) lies on the NW side of Klingerfjarden. Liquid resin and paper products are exported; and fuel oil and caustic soda are imported.

The channel leading to the anchorage is authorized for drafts up to 9m; the channel leading to the berths is authorized for drafts up to 7.3m.

Papperskajen, the paper quay, is 145m long and has depths of 7.8 to 10.6m alongside. Pulp Quay is 90m long and has depths of 4.7 to 6m alongside. Vessels up to 130m in length can be handled with the maximum draft depending on their length. Vessels with drafts up to 9m can anchor off the harbor and secure to stern moorings.

Soraker (62°30'N., 17°30'E.) (World Port Index No. 26180) lies on the E side of Klingerfjarden. Salt, fertilizer, steel, and limestone are imported; and machine goods are exported.

The approach channel is authorized for drafts up to 5.8m. The harbor consists of a dredged basin, 190m long and 30m wide. The quay, situated in the inner part of the basin, is 180m long and has a depth of 6.1m alongside.

Vessels up to 90m in length and 5.8m draft can be accommodated. Vessels with drafts of 4m and over must be assisted by a tug.

Caution.—Several log pond areas are situated adjacent to the shore in the vicinity of Vivstavarv.

Sundsvallsbukten to Harnosand

6.36 Skarpudden (62°29'N., 17°49'E.), marked by a light, is located 6 miles NE of Astholmsudde Light.

Nygrund, a detached shoal with a depth of 4.8m, lies about 0.8 mile SW of Skarpudden and is marked by a buoy; Isaksgrundet, a rock awash, lies about 0.5 mile ESE of Skarpudden and is marked by a buoy; and Glogrund, a detached shoal with a depth of 10m, lies about 0.5 mile offshore, 1.5 miles NE of Skarpudden.

Avikebukten (62°28'N., 17°44'E.), a large bay, is entered S of Skarpudden. Fjardgrunden, a shoal with a least depth of 3.8m, lies in the S part of this bay, about 3 miles SW of Skarpudden Light.

Anchorage can be obtained, by vessels with local knowledge, in various locations within Avikebikten, in depths of 5 to 25m, sand.

Byviken (62°33'N., 17°53'E.), entered about 4 miles NNE of Skarpudden Light, is clear of dangers to within 0.4 mile of its head. This inlet affords anchorage to vessels, with local knowledge, in depths of 10 to 13m, sand and stone, but it is exposed to winds from the SE. Norra Baden and Sodra Baden are two islets lying close off the N entrance point.

An aeronautical light is shown, at an elevation of 270m, from a prominent framework mast standing at Ljustorp, 15 miles

WNW of Skarpudden Light.

Caution.—Vanta Litets Grund (62°30'N., 18°16'E.), lying 12.5 miles E of Skarpudden Light, consists of two steep-to shoals, which are composed of stones and pointed rocks. The northeasternmost shoal has a least depth of 6.3m; the southwesternmost shoal has a least depth of 4.1m. A light is shown from a prominent tower, 20m high, standing on the NE shoal and a buoy marks the SW shoal.

The depths in the vicinity of Vanta Litets Grund are very irregular and the area should be given a wide berth.

Approaches to Harnosand and Angermanalven

6.37 The approaches to Harnosand and Angermanalven lie between the N entrance point of Byviken and Karingbergsudden Light (62°47.5'N., 18°11.2'E.), about 18 miles NE. The mainland coast in this vicinity is fronted by several large islands and islets. A number of entrance channels lead between the islands. Several small craft harbors lie along the sides of these passages.

Harnon (62°36'N., 17°59'E.), an island lying with its S extremity located about 5.7 miles NE of Skarpudden Light, is moderately high, with wooded ridges separated by deep valleys. The sides of the hills near the sea are gray, bare, and intersected by ravines. From seaward, this island appears to be the same height as the mainland behind it.

Storholmen Light is shown from a structure standing at the SW end of the island. Harno Vardkasberget, a gray hill, rises about 3.5 miles NNE of the light and is conspicuous from seaward. It is 175m high and surmounted by a small lookout tower. A prominent radio mast stands 0.3 mile ESE of this hill.

Harnoklubb Light (62°36'N., 18°04'E.) is shown from a tower, 6m high, standing on a point located on the E side of the island, 4.5 miles NE of Storholmen Light. A barren hill, 82m high, rises close WSW of the light and is surmounted by a beacon, 11m high. Close SE of and below the beacon is a large, white mark, which is conspicuous from seaward.

Harno Sodra Light is shown from a tower, 6m high, standing 0.6 mile NNE of Harnoklubb Light. A conspicuous white building, a former pilot station, is situated on the coast, 0.5 mile NNW of this light.

Lungon (62°39'N., 18°04'E.), lying 1 mile N of Harnon, is a wooded island, which rises to a height of 50m in its N part. A light is shown from a prominent tower, 15m high, standing on the SE extremity of the island.

Anchorage can be taken, in depths of 8 to 15m, within Sundhamn, a narrow inlet indenting the NE side of the island. Local knowledge is required.

Stromskaten Light (62°40'N., 18°00'E.) is shown from a floodlit structure standing on the SW extremity of the island.

Bogrundet, a shoal bank with rocks awash, lies about 0.3 mile off the S side of the island, 1.3 miles ESE of Stromskaten Light. Hakansgrund, a shoal with a least depth of 2m, lies about 0.3 mile off the S side of the island, 0.7 mile W of the SE extremity. Both of these dangers are marked by buoys.

6.38 **Hemson** (62°43'N., 18°05'E.), lying close N of Lungon, is high and hilly. The shores of this island are reddish in color in several places. Hemsohatt, a prominent hill, rises on the SE part of the island. It is 208m high and resembles a hat with a wide brim. Another prominent hill, 223m high, stands about 2 miles NNW Hemsohatt.

Utanofjarden, an inlet, indents the middle of the E side of Hemson and provides anchorage to vessels with local knowledge. Storgrundet, a shoal with a least depth of 4.5m, lies near the center of the entrance. The entrance channel, which is authorized for drafts up to 6m, leads W and passes N of this shoal. Juviken, a small bay lying on the S side of the inlet, has depths of 15 to 25m, clay. Prasthushamn, a small bay lying on the N side of the inlet, has depths of 12 to 20m, clay and sand.

Two prominent radio masts stand on the shore of Prasthushamn.

Nordanoviken, a bay indenting the middle of the N side of Hemson, provides well-sheltered anchorage, in depths of 18 to 22m, clay, within its S part. Local knowledge is required. The N part of the bay is unsuitable because the depths are considerable.

Storon (62°46'N., 18°13'E.), a wooded island, lies 2 miles NE of the NE end of Hemson. It is fairly high and attains an elevation of 56m in the N part.

Karingsbergsudden Light is shown from a point on the mainland located 1.6 miles WNW of the NE extremity of Storon. Gronviksfjarden, a bay used only by small craft and pleasure boats, is entered close W of this light.

Gronviksgrundet, an islet, lies 0.4 mile SSE of Karingsbergsudden Light and is marked by a beacon at its N end.

Caution.—A submarine cable, which may best be seen on the chart, extends across the W side of Utanofjarden.

A spoil ground area, which may best be seen on the chart, lies centered 2.5 miles ENE of Harnoklubb Light.

The approaches to Harnosand and Angermanalven lie within the Hemson Semi-restricted Area, which includes the waters between the islands of Storon, Hemson, Lungon, and Harnon. The limits of this area may best be seen on the chart. Vessels proceeding through the area must keep to the designated pilotage routes.

For further information on restricted and semi-restricted areas, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

A cable ferry is in use during the ice-free part of the year between Strinningen (62°41.5'N., 17°59.1'E.) and Sanna (62°41.4'N., 17°59.8'E.). Vessels may only pass the route when the ferry is stopped at any of the ferry berths and the wires have been lowered. Vessels over 300 gross tons should call the ferry on VHF channel 6 upon passing any of the following radio reporting points to obtain information prior to passage:

1. Northbound—South of Stromskatan in position 62°39.2'N, 18°00.2'E.
2. Westbound—North of Ornskarsgrund in position 62°40.4'N, 18°05.4'E.
3. Southbound—East of Valon in position 62°44.3'N, 17°59.8'E.

6.39 **Sodrasundet** (62°36'N., 17°56'E.), forming the S approach to Harnosand, leads in a N direction between the W side of Harnon and the mainland. An overhead cable, with a vertical clearance of 20m, spans this passage about 3 miles N of the seaward entrance.

An inlet, lying at the SE end of the passage, leads to Solumshamn, which is situated on the SW part of Harnon. This inlet provides good anchorage to vessels with local knowledge, in depths of 10 to 33m, clay and sand. Vessels should not proceed

too far inside a line joining the entrance points because two shoals, with least depths of 7.4m and 3.6m, lie about 0.2 mile and 0.3 mile, respectively, SSE of the N entrance point.

Anchorage can also be taken, in depths of 10 to 12m, clay and mid, within Norra Falloviken, a narrow inlet indenting the mainland, about 4.7 miles N of the seaward entrance. Local knowledge is required.

Stora Inlopp (62°39'N., 18°00'E.), the principal N approach route to Harnosand, lies between Harnon and Lungon. This channel also provides access to Angermanalven by way of Sannasundet and Abordssundet. The fairway has depths of 46 to 82m and is clear of dangers, except on its NE side.

Alandsfjarden (62°40'N., 17°56'E.), leading in a WNW direction, is a continuation of Stora Inlopp. This inlet may be entered via a channel, which is authorized for drafts up to 10m. Local knowledge is advised.

Lungosundet (62°40'N., 18°03'E.) leads between Lungon and Hemson. Vessels from the N, with local knowledge, sometimes use this passage when bound for Harnosand or Alandsfjarden. The channel is authorized for drafts up to 9.9m.

Bonskaret is a low, gray, and barren islet lying on the N side of the entrance, close off the SE side of Hemson.

Sannasundet (62°42'N., 18°00'E.) lies between the W side of Hemson and the mainland. This passage leads N for 4.5 miles from the W end of Lungosundet and is narrow in places.

Valon (62°44.2'N., 17°59.5'E.), an island marked by a light at its NE end, lies at the N end of this passage. The main route passes E of this island.

Abordssundet (62°46'N., 17°58'E.), the continuation of Sannasundet, lies between the W side of Abordson and the mainland. This passage leads NNW for about 3.5 miles and narrows at its N end.

The main route from S leading into Angermanalven (see paragraph 6.43) passes through Sannasundet and Abordssundet. It is authorized for drafts up to 10m.

Snattsundet, a narrow channel, leads between the S end of Abordson and the N end of Hemson. It is used only by small craft and local knowledge is required.

Anchorage.—A designated anchorage area, which may best be seen on the chart, lies in Alandsfjarden and is centered about 1.6 miles NW of the NW end of Harnon.

Good anchorage can be obtained in the inner part of Alandsfjarden, in depths of 10 to 20m, mud. Anchorage can be also taken, in depths of 12 to 14m, off Alandsbro, a village situated at the head of the inlet, and off Nasslandssund, a village standing close N of Alandsbro. Vessels at these anchorages may secure their sterns to dolphins.

Caution.—A submarine cable extends across Alandsfjarden, about 0.7 mile NW of the NW end of Harnon.

A ferry runs between Hemson and the mainland in Sannasundet.

6.40 **Ulvvik** (62°40'N., 17°52'E.) (World Port Index No. 26280), a small harbor, is situated on the N side of Alandsfjarden, about 2.2 miles NW of the NW end of Harnon. The main quay is 80m long and has depths of 6.5 to 10m alongside. Minor repairs can be effected. Provisions and water are obtainable.

Utansjo (62°46'N., 17°56'E.) (World Port Index No. 26290) is situated on the mainland W of the island of Abordson. The entrance channel leading to the harbor is authorized for drafts up to 8.2m. This small port imports oil and exports timber products.

The pulp factory quay is 120m long and has a depth of 9m alongside. A concrete quay is situated close S of the pulp quay. It is 113m long and has a depth of 8.5m alongside. A small basin lying between these two quays provides a quay, 50m long, with depths of 4 to 6m alongside.

Harnosand (62°38'N., 17°56'E.)

World Port Index No. 26240

6.41 Harnosand (Hernosand) stands on the NW side of Harnon. The port facilities are situated along both sides of the narrow channel separating the NW side of the island from the mainland. Forest products and iron oxide are exported; oil, asphalt, sulfuric acid, and general cargo are imported.

Winds—Weather.—The harbor is considered to be one of the best in the N part of Sweden, being easy of access, spacious, and well-protected from all winds.

Ice.—Ice obstruction normally occurs from January until early or mid-April. However, the port is usually kept open by icebreakers.

Tides—Currents.—Higher water levels normally occur in the fall with S and SE winds; lower water levels occur in the spring with N and NW winds. On the average, the annual maximum and minimum water levels differ by about 0.8m from the mean water level. The current in the harbor is not very troublesome.

Harnosand—Berth Information

Berth	Length	Depth	Remarks
Harnosand Terminal (East Side)			
Norra Skepppsbron No. 1	70m	5.0m	Coastguard.
Norra Skepppsbron No. 2	50m	5.0m	Coastguard.
Norra Skepppsbron No. 3	80m	5.0m	Training vessel.
Utsprangskajen No. 4	50m	9.0m	—
Utsprangskajen No. 5	60m	9.0m	—
Utsprangskajen No. 6	55m	9.0m	—

Harnosand—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Sodra Skepppsbron No. 7	85m	5.0m	—
Sodra Skepppsbron No. 8	85m	5.0m	—
Sodra Skepppsbron No. 9	45m	2.8m	Small craft.
Harnosand Terminal (West Side)			
Djuphamnen No. 10	65m	8.0m	Dry bulk and timber products.
Djuphamnen No. 11	70m	8.0m	Dry bulk and timber products.
Djuphamnen No. 12	70m	8.0m	Dry bulk and timber products.
Djuphamnen No. 13	70m	8.2m	Dry bulk, ro-ro, and timber products.
Oljehamnen No. 14	62m	11.2m	Oil, asphalt, and phosphoric acid. Maximum draft of 10.5m. Maximum size of 45,000 dwt.
Norrahamn Boat Harbor			
Old N Harnosand Harbor	270m	2.5-4.4m	Boat harbor.
S of Sodra Skeppsbron	140m	4.0m	Boat harbor.
Sodrahamn Boat Harbor			
T Shape Pier	—	3.0m	Boat harbor.

Depths—Limitations.—The N and S harbors of the port are connected by two canals, which can be used by small craft. Vessels bound for the S harbor must enter through Sodrasundet. The main commercial facilities are situated in the N harbor. Vessels bound for the N harbor must enter through Stora Inlopp.

The approach channel, via Stora Inlopp, is authorized for drafts up to 10.5m.

The maximum draft allowed at the liquid bulk port is 10.5m. The largest vessel reported being accommodated in the port is 10.5m draft and 45,000 dwt. For more berthing information see the table titled **Harnosand—Berth Information**.

Aspect.—Harnosands Hamn Light (62°38.7'N., 17°57.5'E.), a directional sector light, is shown from a prominent tower, 6m high, standing on the NW end of Harnon at the E side of the entrance to the harbor.

Pilotage.—Pilotage is compulsory. Pilots are provided by the Sundsvall pilot station (see paragraph 6.33). All requests for pilotage must be made through the VTS station at Gavle (see paragraph 6.7). Pilots can be contacted by VHF and board in Sundsvallsbukten, about 2.5 miles E of Gubben Light (62°21'N., 17°35'E.).

It is reported that pilots can also be obtained from the Ornskoldsvik pilot station (see paragraph 6.52). Requests for pilotage must be made through the VTS station at Lulea. Pilots can be contacted by VHF and board about 2 miles S of the outermost shoal near Skagsudde (63°11'N., 19°01'E.).

Regulations.—A mandatory Reporting and Information System has been established in the Gulf of Bothnia and is operated by Vessel Traffic Services (VTS) at Gavle and Lulea. For further information, see Gavle (paragraph 6.7).

Vessels must not exceed a speed of 5 knots in the harbor.

Anchorage.—The roadstead lying close N of the N harbor provides anchorage, in depths of 14 to 45m, clay.

Caution.—Two submarine cables extend across the N harbor and may best be seen on the chart.

It is reported that a bridge is being constructed across the fjord about 2 miles NW of Harnosand.

Angermanalven

6.42 Angermanalven (62°48'N., 17°58'E.), with its tributaries, forms one of the largest river systems in Sweden. The river is navigable by ocean-going vessels as far as Nyland (63°00'N., 17°46'E.), about 20 miles above the mouth. However, it is reported that commercial vessels no longer use this port.

The principal inlets branching from Angermanalven are Norafjarden (62°50'N., 18°02'E.), Lugnviksfjarden (62°55'N., 17°55'E.), and Strinnefjarden (62°58'N., 17°53'E.), on the E side; and Bollstafjarden (62°59'N., 17°44'E.), on the W side.

Norafjarden, the entrance of which is spanned by a bridge with a vertical clearance of 18m, and Strinnefjarden are used only by small craft.

Numerous small harbors are situated along the river, where both anchorage and berthing are available. However, many of these loading places are no longer open to commercial shipping and are used only by small craft and pleasure boats.

Tides—Currents.—The water level varies between 0.5 and 0.7m above or below mean level. Higher water levels occur in autumn, during freshets, and with S, SE, and E winds. Lower water levels occur in early summer, and with N, NW, and W winds.

Ice.—Ice obstruction usually occurs from mid-January to early or mid-April.

In addition to the route via Stora Inlopp and Sannasundet, it can also be entered through channels leading N or S of Storon and N or S of a group of islets lying N of the NE end of Hemson Sannasundet and Abordssunde

The routes leading through Sannasundet and N or S of Sto-

ron are authorized for drafts up to 10m.

Depths—Limitations.—The river can be entered from the S via Stora Inlopp or Lungosundet and then through Sannasundet and Aborsundet (see paragraph 6.40).

The river can also be entered from the N through the channels leading N and S of Storon (see paragraph 6.39).

The northernmost route leads in a W direction and passes N of the N end of Storon and N of the islet of Gronviksgrundet. It continues SW and passes N of a group of islets lying off the NE end of Hemson. This route then joins the southernmost route.

The southernmost route leads in a NW direction and passes S of the S end of Storon. It continues W and NW, passing between the N coast of Hemson and Hyndan, the dome-shaped and southernmost islet of the group. This route then leads NW for 5 miles.

All these routes leading from seaward converge close off the NW extremity of Abordson in the vicinity of Veda (62°48'N., 17°56'E.) and the Hogakustenbron Bridge. From the bridge, the route leads NW and N for about 5 miles to the vicinity of Sando (62°53'N., 17°54'E.).

The entrance route leading through Sannasundet and those leading N and S of Storon are authorized for drafts up to 10m as far as Sando.

Draghallan Light from SW

The **Hogakustenbron Bridge**, a suspension bridge, spans the fairway channel in the vicinity of Veda (62°48'N., 17°56'E.) and has a vertical clearance of 40m.

The main channel (Svanosund) leads W of the island of Sando and W of the island of Svanon, lying close N. A secondary channel leads E of these islands. The two channels rejoin close N of Svanon and continue N and NW for about 6 miles.

The Sandobron Bridge, a high level bridge, spans the main channel between the mainland and the W side of Sando. It has a vertical clearance of 40m over a navigable width of 50m.

An overhead power cable, with a vertical clearance of 40m, extends across the main channel at the N end of Svanon.

A bridge spans the secondary channel between the mainland and the E side of Sando. It has a vertical clearance of 12m over a navigable width of 62m.

The main channel leading W of Sando and Svanon is authorized for drafts up to 8.5m as far as Vaja, which is situated close N of Dynas (62°58'N., 17°46'E.).

The secondary channel, passing E of the islands, is authorized for drafts up to 5m. However, it is reported that less water exists in this passage.

From the vicinity of Vaja, the main channel leading into Bollstafjarden (62°59'N., 17°43'E.) is authorized for drafts up to 7.7m.

Aspect.—Racons are situated at the Hogakustenbron Bridge and the Sandobron Bridge.

Pilotage.—Pilotage is compulsory. Pilots are provided by the Sundsvall pilot station (see paragraph 6.33). All requests for pilotage must be made through the VTS station at Gavle (see paragraph 6.7). Pilots can be contacted by VHF and board in Sundsvallsbukten, about 2.5 miles E of Gubben Light (62°21'N., 17°35'E.).

It is reported that pilots can also be obtained from the Ornskoldsvik pilot station (see paragraph 6.52). Requests for pilotage must be made through the VTS station at Lulea. Pilots can be contacted by VHF and board about 2 miles S of the outermost shoal near Skagsudde (63°11'N., 19°01'E.).

Regulations.—Tankers with drafts over 7m are required to transit Svanosund, the main channel passing W of Sando, during daylight and accept the assistance of a tug.

Vessels must not exceed a speed of 7 knots when proceeding between the S end of Sando and Svanon; when proceeding through the narrow passage between the mainland and the NW end of the island of Abordson; and when in the vicinity of the ferry, which crosses Sannasundet, about 2 miles N of Stromskaten Light (62°40'N., 18°00'E.).

During the period when Angermanalven can be crossed on the ice between Frano (62°55'N., 17°51'E.) and Kinnmargen, about 1 mile N of Svanon, vessels must adhere to the same ice lead, which must not be make wider than 24m. On each side of the ice lead in the vicinity of the crossing is a red post, surmounted by a triangle, 2m high. Traffic signals are displayed from a flagstaff standing at the W side of the ice lead, By day a black ball, or at night a red light, indicates that the lead is closed. A red light over a white light indicates that the lead is open for traffic. A vessel about to pass the crossing must reduce to the slowest possible speed in good time and sound three blasts (short-long-short).

Similar regulations are enforced for the ice lead situated in the vicinity of Utansjo (62°46'N., 17°56'E.). By day brooms, sufficiently tall to avoid being snowed under, and at night white illuminated boards are set up on each side of the ice lead near the crossing. In addition, a red light is exhibited, at an elevation of 2m, on either side of the crossing. Vessels must reduce speed to 5 knots while passing through this lead.

When the ice in the alternate channel leading E of Sando is available for crossing, the passage is closed to marine traffic.

6.43 Gustavsvik (62°50'N., 17°53'E.) (World Port Index No. 26310) is situated on the W side of the river, 2.5 miles above the Hogakustenbron suspension bridge. This small harbor provides a drydock, with a depth of 8m over the sill. Vessels up to 18,000 dwt, 165m in length, and 21m beam can be handled.

A concrete quay, 100m long, is situated at the E side of the drydock and has depths of 4 to 8m alongside. Another quay, 40m long, is situated at the W side of the drydock and has a

depth of 4m alongside.

Lunde (62°53'N., 17°53'E.) (World Port Index No. 26340), the site of a former shipyard, is a small harbor located on the W side of the river, close S of Sando. There is a quay, 90m long, with a depth of 4.8m alongside.

Lugnvik (62°56'N., 17°55'E.), a small harbor, is situated on the E side of Lugnviksfjarden and exports timber products. The entrance channel leading to the harbor is authorized for drafts up to 8.5m. Vessels should pass E of a shoal, with a least depth of 7.9m and marked by a buoy, which lies in the center of the entrance to the fjord.

The main quay is 42m long and has a depth of 8.8m alongside. Vessels up to 114m in length can be handled, with the assistance of a tug. There is also a wooden quay, 120m long, with a depth of 4.5m alongside. However, this quay is reported to be in poor condition and no longer used. A large prominent shed stands in the vicinity of the quay.

6.44 Kramfors (62°56'N., 17°48'E.) (World Port Index No. 26380), a small harbor, is situated about 4.5 miles NW of the island of Sando and exports timber products. The entrance channel leading to the berth is authorized for drafts up to 6.3m. The concrete quay is 150m long and has depths of 6.4 to 8m alongside.

Vaja (62°59'N., 17°43'E.) (World Port Index No. 26420), a small harbor, is situated on the SW side of Bollstafjarden, close N of Dynas. Fuel oil is imported and timber products are exported. Several prominent buildings, chimneys, and tanks stand in the vicinity of the berths.

The entrance channel leading to the berths is authorized for drafts up to 8.5m. The pulp and paper factory quay is 170m long and has depths of 8 to 9.2m alongside. There are facilities for discharging oil at the N end of this quay. The ro-ro quay is 120m long and has a depth of 8m alongside. A quay, fronting the former sawmill, is 136m long and has depths of 4.3 to 5.9m alongside.

Bollsta (62°59'N., 17°42'E.) (World Port Index No. 26430), a small harbor, is situated near the head of Bollstafjarden and exports timber products. The entrance channel leading to the berth is authorized for drafts up to 7.7m. The loading quay is 135m long and has depths of 6 to 8m alongside.

Caution.—Several unsurveyed areas extend up to about 200m from the shore between Kramfors and Dynas (62°58'N., 17°46'E.). These areas, which should be avoided, may contain the remains of mooring dolphins and ruined quays.

Angermanalven to Ornskoldsviksfjarden

6.45 Gaviksfjarden (62°52'N., 18°16'E.), a large indented bay, is entered about 3.5 miles NNE of Storon. Its shores are mostly steep-to. Ringkallen, a hill, rises on the E side of this bay. It is 280m high, reddish in color, precipitous on the S side, and has a wooded summit. A prominent radio mast stands about 0.5 mile SSW of this hill. The bay is used only by small craft, pleasure boats, and fishing vessels, with local knowledge.

Barstahamn (62°52'N., 18°24'E.), a small harbor of refuge, lies about 7 miles NE of Storon and is fronted by five islets. Barstaon, the largest of these islets, is 85m high, wooded at the summit, and appears reddish from the S. Three approach channels lead between the islets to the harbor. The S and E approach channels are authorized for drafts up to 5m; and the N channel is authorized for drafts up to 3m. Local knowledge is advised.

Alggrund, a rock awash, lies in the center of the S approach channel and is marked by a buoy. Vessels should pass W of this rock. The harbor affords anchorage, in depths of 11 to 18m, clay and sand, about 0.2 mile E of the village. There is a small jetty with a depth of 3m alongside. The harbor is usually clear of ice, but during a hard winter it may be icebound during February and March.

6.46 Hogbonden Light (62°52'N., 18°29'E.) is shown from a prominent tower, 14m high, standing on the NE part of an island of the same name lying 0.8 mile offshore. A conspicuous red dwelling is situated near the light tower.

Hogbonden Light

The island is dome-shaped and partly wooded. It has steep sides and may be easily identified from N or S. Dangers, including a group of above-water rocks, extend up to about 0.5 mile SSW, S, and SSE of the S end of the island.

Hoglosmen, a partly wooded island, lies close N of Hogbonden but is lower than the latter. From SW, a conspicuous mountain knob is visible rising from about the middle of the island.

Furan, an islet, lies close W of the N end of Hoglosmen and is fronted on its E and S sides by foul ground.

6.47 Edsatterfjarden (62°54'N., 18°27'E.), NW of Hoglosmen, is a narrow inlet 2.5 miles long, with steep-to shores. There are no dangers in the entrance, but a shoal with a depth of 9.5m lies in mid-channel 1 mile inside the entrance. Anchorage is available within the bays on the N side of its outer part, in depths of 20 to 29m, clay and sand. The inner part of the inlet provides anchorage to vessels, with local knowledge, in depths of 11 to 26m, but a bar, with a least depth of 4.5m, has to be crossed.

Algsjoberget, a conspicuous hill, stands on the S side of Edsatterfjarden, 1.1 miles WNW Hoglosmen. It is 196m high and flat-topped.

Omnefjarden (62°57'N., 18°28'E.), entered 3.5 miles NNE of Edsatterfjarden, provides several good anchorages, which can be used by vessels with drafts up to 10m.

Skotbadan, a shoal bank with a least depth of 7m, lies centered about 3.2 miles NNE of Hogbonden Light, in the S approach to this inlet. Laskaren, consisting of two islets located

on a shoal bank, lies in the entrance, about 0.8 mile NE of the S entrance point. Orana, a group of islets connected by foul ground and shoals, lies within 1 mile of the head of the inlet.

Small vessels, with local knowledge, may obtain anchorage, in depths of 10 to 11m, clay, off the village of Omne, near the head of the inlet that trends S from the head. Anchorage is also available, in depths of 14 to 18m, clay, off Maviken, a small craft harbor located on the N side of the inlet. Vessels entering may pass either N or S of Laskaren and Orana.

Caution.—Several islands along this stretch of coast, including Hogbonden, Hoglosmen, Furan, and Gnaggen have been designated as nature reserves.

6.48 Gnaggen Light (62°57'N., 18°37'E.) is shown from a structure standing on the N part of a small island of the same name lying 6 miles NE of Hogbonden Light. A detached shoal, with a least depth of 11.5m, lies about 1 mile E of the light.

Storgrund, with rocks awash at its SW end, lies between 0.5 mile and 1.5 miles SW of Gnaggen Light. This shoal bank is marked at the SW end by a buoy.

The mainland coast between Gnaggen Light and Skagsudde, about 18 miles NE, is mostly high and wooded. The shore is fronted by a chain of large islands and numerous rocky shoals through which several channels pass. A number of small craft harbors, fishing boat harbors, and marinas are situated among these islands. Only the outer islands and dangers are described below.

Ulvoama (63°01'N., 18°38'E.) consists of Norra Ulvon and Sodra Ulvon, two large wooded islands, which are separated from each other by Ulvosundet, a narrow strait. The S end of Sodra Ulvon is situated 1.5 miles N of Gnaggen Light.

Norra Ulvo Kasberg, a flat-topped hill, rises near the N end of Norra Ulvon, the N island. It is 141m high and conspicuous from seaward.

Askaret, a bare light-colored island, lies across the NE entrance of Ulvosundet and is marked by a light at the N side. This narrow strait can be entered by small vessels with local knowledge. Entrance channels pass N and S of Askaret and are authorized for drafts up to 6m and 4m, respectively. Anchorage can be obtained, in depths of 18 to 25m, clay, off **Ulvohamn** (63°01'N., 18°39'E.), a small fishing harbor situated on the N side of the strait. The entrance channel at the SW end of the strait is authorized for drafts up to 2.5m.

Ytternasan Light (62°58'N., 18°33'E.) is shown from a prominent tower, 8m high, standing on the N entrance point of Omnefjarden, 2 miles WNW of Gnaggen Light.

Ullangersfjarden (63°01'N., 18°25'E.), a large inlet entered 2.5 miles N of Ytternasan Light, is deep and clear of dangers. Norrfjarden and Dockstafjarden indent the N side of this inlet.

Mjallomberget, 282m high, rises on the S shore of the inlet, 4.7 miles WNW of Ytternasan Light. This hill is prominent from seaward and its summit is surmounted by a conspicuous mast.

Valaberget, 151m high, rises on the S part of the peninsula situated between Norrfjarden and Dockstafjarden, 5.7 miles NW of Ytternasan Light. Varnsberget, 265m high, stands 0.7 mile NNW of Valaberget. These two hills are visible from seaward but are reported to be not easy to identify at a distance.

Skuleberget, 296m high, stands about 1.3 miles N of the head of Dockstafjarden, 2.7 miles NNW of Varnsberget. This hill, with a flat top and steep sides, is easy to identify, but it is hidden by other hills when bearing more than NW.

Ice usually obstructs navigation from January to April within the inlet.

Askja (63°01'N., 18°13'E.), a small harbor, lies at the head of the inlet. There is a quay, 45m long, with depths of 3 to 4m alongside. Vessels may anchor off the harbor, in depths of 9 to 15m, clay.

Docksta (63°03'N., 18°20'E.), a former loading place, lies at the head of Dockstafjarden and contains a small shipyard. Anchorage can be taken by large vessels, in depths of 10 to 16m, clay, secured to stern moorings.

The channels leading to Askja and Docksta are authorized for drafts up to 10m.

Caution.—Two submarine power cables, which may best be seen on the chart, extend WSW between the SW side of Sodra Ulvon and the mainland.

6.49 Flasan Light (63°01'N., 18°41'E.) is shown from a prominent tower, 7m high, standing on an islet of the same name lying 0.7 mile E of the N end of Sodra Ulvon, 4.6 miles NNE of Gnaggen Light.

Storgrunden, a large shoal with a least depth of 6.5m, lies centered about 1.5 miles off the E side of Sodra Ulvon, 2.3 miles S of Flasan Light.

Varnsinsklubbarna, fringed by foul ground, lies about 2.1 miles NE of the N extremity of Norra Ulvon and at the NE end of a chain of islets and shoals, which extends between 1.2 miles and 5 miles NNE of Flasan Light.

Skagsudde Light (63°11'N., 19°01'E.) is shown from a prominent tower, 26m high, standing on a point at the S end of a small relatively low peninsula. The peninsula may be identified by its dark trees and, on nearer approach, by Skag Beacon, which consists of a stack of poles in the form of a cairn. This beacon stands on a barren hill, which rises about 1 mile NNW of the point. An area of foul ground, with two islets, extends up to about 2 miles WNW of the point.

Skagsudde Light

Skaghallan Light (63°11'N., 19°00'E.), equipped with a racon, is shown from a prominent tower, 6m high, standing on the westernmost rock of Sjalbadarna, an area of above-water rocks and foul ground lying centered 0.5 mile SSW of Skagsudde Light.

Skommarskaten Light (63°12'N., 18°53'E.), marking the

W side of the entrance to Ornskoldsvikfjarden, is shown from a prominent tower, 7m high, standing on the SE end of a mainland peninsula, 3.7 miles WNW of Skagsudde Light.

It is reported that two conspicuous wind generators stand close WNW of Skommarskaten Light.

Raskarson (63°12'N., 18°53'E.), lying 0.5 mile SSE of Skommarskaten Light, is marked by a light on its NE side and by a floodlit beacon on its NW side.This small island is the northernmost of a chain of islands, islets, and foul ground, which extends SSW for about 6 miles. Skrubban, the southernmost island of the chain, lies 3.5 miles NE of the N extremity of Norra Ulvon. Some of the islands and islets in this chain are prominent from seaward due to their dark color.

Directions.—An inshore passage, authorized for drafts up to 10m, leads along this part of the coast. The route leads N and passes W of Hogbonden, Hoglosmen, and Furan. It continues NNE and passes W of Skotbadan and between Ytternasan Light and the SW end of Sodra Ulvon. The route then leads NNE and passes close W of Norra Ulvon. It continues NE across the outer approach to Natrafjarden and passes W of the chain of islands extending SSW from the vicinity of Skommarskaten Light. The route then leads through a narrow passage lying between Skommarskaten Light and the NW side of Raskarson. Local knowledge is advised.

6.50 **Kopmanholmen** (63°10'N., 18°35'E.) (World Port Index No. 26710) is situated at the NW end of Natrafjarden, about 6 miles NNW of the N extremity of Norra Ulvon. This small port exports timber products and imports salt and fertilizer.

Ice.—Ice usually obstructs navigation from the middle of January to the middle of April.

Depths—Limitations.—Vessels from seaward should pass between Skrubban and Varnsinsklubbarna. Algon, 156m high, is an island lying in the approach, 2.5 miles SE of the port. The entrance channels leading W and N of this island are authorized, respectively, for drafts up to 10m and 9m.

The factory pier in the S part of the harbor provides two berths, an inner and outer berth. Vessels up to 152m in length can be accommodated.

Aspect.—Balesudden, 116m high, rises at the S end of a peninsula, about 3.5 miles E of the port. This hill is easily identified by its reddish color and by its shape which, in certain lights, resembles the gable of a house.

Regulations.—A mandatory Reporting and Information System has been established in the Gulf of Bothnia and is operated by Vessel Traffic Services (VTS) at Gavle and Lulea. For further information, see Lulea (paragraph 9.19).

Kopmanholmen—Contact Information	
Pilot	
Call sign	North Coast Pilot
VHF	VHF channel 11
Telephone	46-771-630620
Facsimile	46-26-99469
E-mail	northcoastpilot@sjofartsverket.se
Web site	https://www.sjofartsverket.se

Contact Information.—See the table titled **Kopmanholmen—Contact Information**.

Anchorage.—Vessels can anchor within the inner part of the fjord, in a depth of 30m, clay and sand, but the roadstead is exposed to SE winds.

Caution.—Submarine pipelines associated with a fish farm, which may be best seen on the chart, extend across the inner part of Natrafjarden.

Ornskoldsvik (63°17'N., 18°43'E.)

World Port Index No. 26730

6.51 Ornskoldsvik is situated at the NW end of Ornskoldsvikfjarden, about 9 miles NW of Skagsudde Light. This sheltered port exports timber products and engineering goods and imports oil, chemicals, and general cargo.

The port also includes the loading places situated at Domsjo (63°15.8'N., 18°44.0'E.), Alfredshem (63°15.9'N., 18°42.9'E.), Horneborg (63°16.6'N., 18°43.0'E.), and Jarved (63°16.7'N., 18°44.8'E.).

Winds—Weather.—Strong SE winds raise the water level up to 0.5m above normal and N winds lower it a similar amount.

Ice.—The port is usually kept open all year round except during extreme ice conditions, which may occur from January to March.

Depths—Limitations.—Ornskoldsvikfjarden is entered between the E side of Raskarson and the S end of the island of Malmon, lying about 0.5 mile NE. Vessels from seaward approaching this entrance should head in a NW direction and pass about 1 mile SW of Skaghallan Light.

The route through the fjord leads N for about 2.3 miles and then in a WNW direction for 5.5 miles. The fairway channel leading to Ornskoldsvik and the other loading places is authorized for drafts up to 10m.

There are two main quays at Ornskoldsvik. Stenkajen is with a ro-ro ramp at the N end. Two timber-product quays are located at Domsjo. Export Quay.

Two piers are located at Alfredshem. The North Pier is used for handling chemicals and the South Pier is used for handling oil.

There are five main quays, with a ro-ro ramp, at Horneborg. There is also an oil terminal jetty, with berthing dolphins.

A T-shaped oil jetty at Jarved is 100m long and has a depth of 9.9m alongside.

Ornskoldsvik—Berthing Information			
Berth	**Length**	**Depth**	**Remarks**
Domsjo			
Export	130m	7.2m	Timber.
FS	100m	4.8m	Timber.
Framnas			
Cement	210m	10.0m	Cement.
Horneborg			
Cargo	180m	10.0m	Breakbulk.

Ornskoldsvik—Berthing Information			
Berth	**Length**	**Depth**	**Remarks**
Metsa Board's Husum Mill			
South	90m	10.2m	General cargo.
Ravarukajen	260m	9.0m	General cargo.
Utlastningskajen	300m	7.0m	General cargo.
Alfredshems			
No. 2	135m	8.0m	Chemicals.
Javed Oil Terminal			
Javed Oil	100m	10.0m	Oil products and chemicals.
Shell Terminal			
Products	70m	10.0m	Oil products.

Vessels up to 213m in length, 30.5m beam, and 10m draft can be accommodated within the port.For more berthing information see table titled **Ornskoldsvik—Berthing Information**.

Aspect.—Faleberget (63°13'N., 18°40'E.), rising about 6 miles W of Skommarskaten Light, is 233m high and has steep sides. This hill is visible from a considerable distance to seaward, but is not easily distinguished from the other hills in the vicinity.

Asberget (63°18'N., 18°40'E.) stands 5 miles N of Faleberget. This hill is 217m high and a radio mast is situated on the summit. It is the westernmost of three large hills which, though visible from seaward, are not easily distinguished.

Hornoberget (63°16'N., 18°50'E.), rising 4.2 miles NNW of Skommarskaten Light, is 131m high. This hill, which has a flat top, falls steeply on its E side to a somewhat lower and long plateau. Because of its peculiar form, the hill can easily be identified when approaching Ornskoldsvik.

A conspicuous radio mast stands on a hill, on the S side of the narrows at Bonassund, about 2.6 miles SW of Hornoberget.

Pilotage.—The main pilot station at Ornskoldsvik provides pilotage for the area between latitude 62°50'N (not including Gaviksfjarden and Angermanalven) and a line bearing 140° through Norrbyskar (63°33'N., 19°52'E.). All requests for pilotage must be made through the VTS station at Lulea (see paragraph 9.19).

Pilotage is compulsory for vessels, as follows:

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 for Angermanalven, pilotage is compulsory, as follows:

1. All Category 1 vessels.
2. Category 2 vessels of 80m length, 15m beam, and 5m draft and over.
3. Category 3 vessels of 90m length, 16m beam, and 5.5m draft and over.

Pilots can be contacted by VHF and board about 2 miles S of the outermost shoal near Skagsudde (63°11'N., 19°01'E.).

Regulations.—A mandatory Reporting and Information System has been established in the Gulf of Bothnia and is operated by Vessel Traffic Services (VTS) at Gavle and Lulea. For further information, see Lulea (paragraph 9.19).

Vessels must not exceed a speed of 7 knots when passing through the narrows at Bonassund (63°15.5'N., 18°46.1'E.).

Contact Information.—See the table titled **Ornskoldsvik—Contact Information**.

Ornskoldsvik—Contact Information	
Pilot	
Call sign	North Coast Pilot
VHF	VHF channel 11
Telephone	46-771-630620
Facsimile	46-26-99469
E-mail	northcoastpilot@sjofartsverket.se
Web site	https://www.sjofartsverket.se

Anchorage.—Vessels can anchor, in depths of 26m, clay and mud, in N of Malmon, clear of the pipelines. Vessels can also anchor, in a depth of 20m, clay, off Domsjo, with their sterns moored to dolphins.

Two designated anchorage areas, with depths from 22 to 32m and best seen on the chart, are located in the approaches to Ornskoldsvi. Anchorage A (63°10.3'N., 18°55.5'E.) and Anchorage B (63°08.2'N., 18°58.0'E.), each with a radius of 0.5 mile, lie approximately 2.1 miles WSW and 2.8 miles S of Skagshallan Light.

Caution.—Two submarine power cables, which may best be seen on the chart, extend NNW between the NW side of Raskarson island and the mainland.

A submarine pipeline extends across the channel in the vicinity of the narrows at Bonassund (63°15.5'N., 18°46.1'E.).

A spoil ground area, which may best be seen on the chart, lies close E of Alfredshem.

Numerous mooring buoys are situated adjacent to the shore in the vicinity of Alfredshem.

A submarine cable and two pipelines, which may best be seen on the chart, extend across the fjord close S of Alfredshem (63°15.9'N., 18°42.9'E).

A submarine pipeline extends 0.3 mile S from the shore in the vicinity of Ornskoldsvik and may best be seen on the chart.

Ornskoldsviksfjarden to Jarnasudde

6.52 Sjalnoudde (63°20'N., 19°15'E.), a wooded point with steep light-colored sides, is located 10 miles NNE of Skagsudde Light. The coast between is wooded and fronted by numerous islets, rocks, and shoals.

Sjalnoudde, with the hills rising N of it, appears to be higher than Skagsudde. It is reported that several prominent wind generators stand in the vicinity of the point.

Mosjobergen rises 6.5 miles W of Sjalnoudde. The SE part has a round bare yellowish summit, 97m high. The NW part is formed by a wooded plateau, 155m high, which falls on its S side nearly perpendicularly from the summit for some distance

and then slopes more gradually. This hill is visible from seaward and forms the best landmark along this stretch of coast.

Skags Flaser Light (63°12.4'N., 19°05.2'E.) is shown from a structure, 6m high, standing on the N part of an islet, 2.3 miles NE of Skagsudde Light.

Storgrund (63°12'N., 19°07'E.), a shoal with a least depth of 3.9m, lies about 1 mile SE of Skags Flaser Light and is marked by a buoy. Klinten, a shoal with a depth of 6.9m, lies 1 mile E of Skags Flasor Light and is marked by a buoy.

Nygrund, a shoal with a least depth of 1.4m, lies about 1.2 miles NNE of Klinten and is marked by a buoy.

Sjalbadan Beacon (63°15'N., 19°12'E.), 8m high and equipped with a racon, stands on an islet lying 4 miles NE of Skags Flasor Light. Finngrundet, a shoal area with rocks, awash, extends up to about 1.5 miles ENE of the beacon and is marked by two buoys.

Skagshamn (63°13'N., 19°02'E.), a well-protected fishing harbor, lies 1.3 miles W of Skags Flasor Light. The channel leading through the coastal dangers is authorized for drafts up to 6m as far as the anchorage and up to 3m as far as the berths. Local knowledge is required. Ice usually obstructs navigation in the channel from February to April.

Anchorage may be obtained in the roadstead, in a depth of 30m, clay, and within the inner harbor, in a depth of 7m, clay.

Bergofjarden (63°15'N., 19°02'E.), entered 1.5 miles N of Skags Flasor Light, provides excellent shelter to small vessels.

Skedet (63°15'N., 19°01'E.), a small harbor, is situated on the W side of this inlet. The entrance channel is authorized for drafts up to 4m. Local knowledge is required. The inlet can be obstructed by ice from the middle of November to May. Anchorage may be obtained, in a depth of 10m, mud, off Skedet.

Fanbyviken (63°20'N., 19°13'E.), a narrow inlet, is entered 1 mile W of Sjalnoudde. It provides anchorage to small vessels with local knowledge, in depths of 12 to 18m, clay. The entrance channel is authorized for drafts up to 6m. The inlet is only 300m wide and does not afford much swinging room.

Caution.—Local magnetic anomalies exist between Skagsudde Light and Sjalnoudde.

6.53 **Husum** (63°20'N., 19°09'E.) (World Port Index No. 26790) is situated 2.5 miles W of Sjalnoudde and 4.5 miles NNW of Sjalbadan Beacon. This small port imports limestone, sodium sulfate, and cement and exports timber products and turpentine.

Ice.—The harbor is often obstructed by ice from January to April. It is kept open except in extreme ice conditions.

Tides—Currents.—Higher water levels occur with protracted SE winds; and lower water levels occur with N winds. The current caused by the outflow of the rivers at the head of the inlet can be somewhat troublesome when mooring, especially in the spring.

Depths—Limitations.—From seaward, vessels should approach the harbor by heading W and passing about 1.2 miles S of Sjalnoudde. The main entrance channel is authorized for drafts up to 10.5m.

An inshore route, which leads NE and inside the outer dangers, is authorized for drafts up to 6m. Local knowledge is required.

In the S part of the harbor a pontoon jetty provides a berth, 90m long, with a depth of 10.2m alongside. It is connected to the shore by a bridge, 130m long.

Ravarukajen, a concrete quay, is situated close N of the pontoon jetty. The outer berth is 180m long and has a depth of 10.8m alongside. The inner berth has a fixed ro-ro ramp at the N end. It is 65m long and has a depth of 9m alongside.

Utlastningskajen, situated close N of Ravarukajen, is another concrete quay, with a ro-ro ramp at the S end. It is 300m long and has depths of 7 to 9m alongside.

Aspect.—The woodpulp factory and chimney standing on the E side of the harbor are conspicuous from seaward. A number of prominent tanks are located in the vicinity of the quays.

Pilotage.—Pilots are provided by the station at Ornskoldsvik (see paragraph 6.52). All requests for pilotage must be made through the VTS station at Lulea (see paragraph 9.19).

Anchorage.—Anchorage may be obtained in position (63°19.0'N., 19°17.5'E.), 1.5 miles E of Kvistholm (63°19.3'N., 19°13.8'E.) in depths of 7 to 17m, mud, in the harbor roadstead, but it is open to SE winds.

6.54 Between Sjalnoudde (63°20'N., 19°15'E.) and the SW approaches to Norra Kvarken (63°35'N., 20°52'E.), 30 miles E, a number of shoals and banks lie between 5 and 15 miles off the coast. These dangers are mostly steep-to and great care is necessary when navigating in their vicinity. Only the outermost are described below.

Vallinsgrundet Light (63°19'N., 19°25'E.) is shown from a prominent tower, 20m high, standing on a pinnacle rock lying about 5 miles E of Sjalnoudde.

It is reported that a designated anchorage area, with a diameter of 0.5 mile, lies centered about 3.5 miles W of Vallinsgrundet Light.

Norra Langrogrunden (63°19'N., 19°41'E.) and Sodra Langrogrunden, 1 mile S, are located 7 miles E of Vallinsgrundet Light. These shoals and the waters lying E of them are described beginning in paragraph 8.2.

Degerfjarden (63°24'N., 19°20'E.) is a large bay entered between Sjalnoudde and Langroudden, 8 miles NE. Anchorage may be obtained by vessels with local knowledge, in a depth of 18m, sand, close NNW of an islet lying on the E side near the head of the bay. The entrance channel, which passes close E of Sjalnoudde, is authorized for drafts up to 6m. With S winds, a swell sets into the anchorage and the holding ground cannot be depended on.

Langroudden (63°24'N., 19°30'E.) is a low and wooded point but, in clear weather, it is very prominent from seaward.

6.55 **Nordmalingsfjarden** (63°28'N., 19°33'E.) is entered between Langroudden and **Jarnasudde** (63°24'N., 19°39'E.), a low wooded point located 4 miles ENE. This inlet is encumbered with numerous shoals in the S part, but there is an extensive clear area in the N part. Ice usually obstructs navigation in the inlet from December to April.

Storbadan Light (63°25'N., 19°35'E.) is shown from a prominent tower, 16m high, standing on an islet of the same name lying in the center of the entrance, 1.8 miles WSW of Jarnasudde.

The main channel leading N into Nordmalingsfjarden passes E of Storbadan Light. The fairway is authorized for drafts up to 7m as far as Rundvik and up to 3.7m as far as Notholmen. Local knowledge is required.

Vessels with local knowledge may obtain anchorage, in

depths of 4 to 13m, mud, N of Flasarna, a group of three islets lying about 6 miles NNW of Jarnasudde.

6.56 Rundvik (63°32'N., 19°27'E.) (World Port Index No. 26800) IS located in Vasterbotten, Gulf of Bothnia on the NE coast of Sweden.

Depths—Limitations.—Rundvik has a permanently-moored barge at the head of the pier situated on the W side of Nordmalingsfjarden. For more berthing information see the table titled **Rundvik—Berthing Information**.

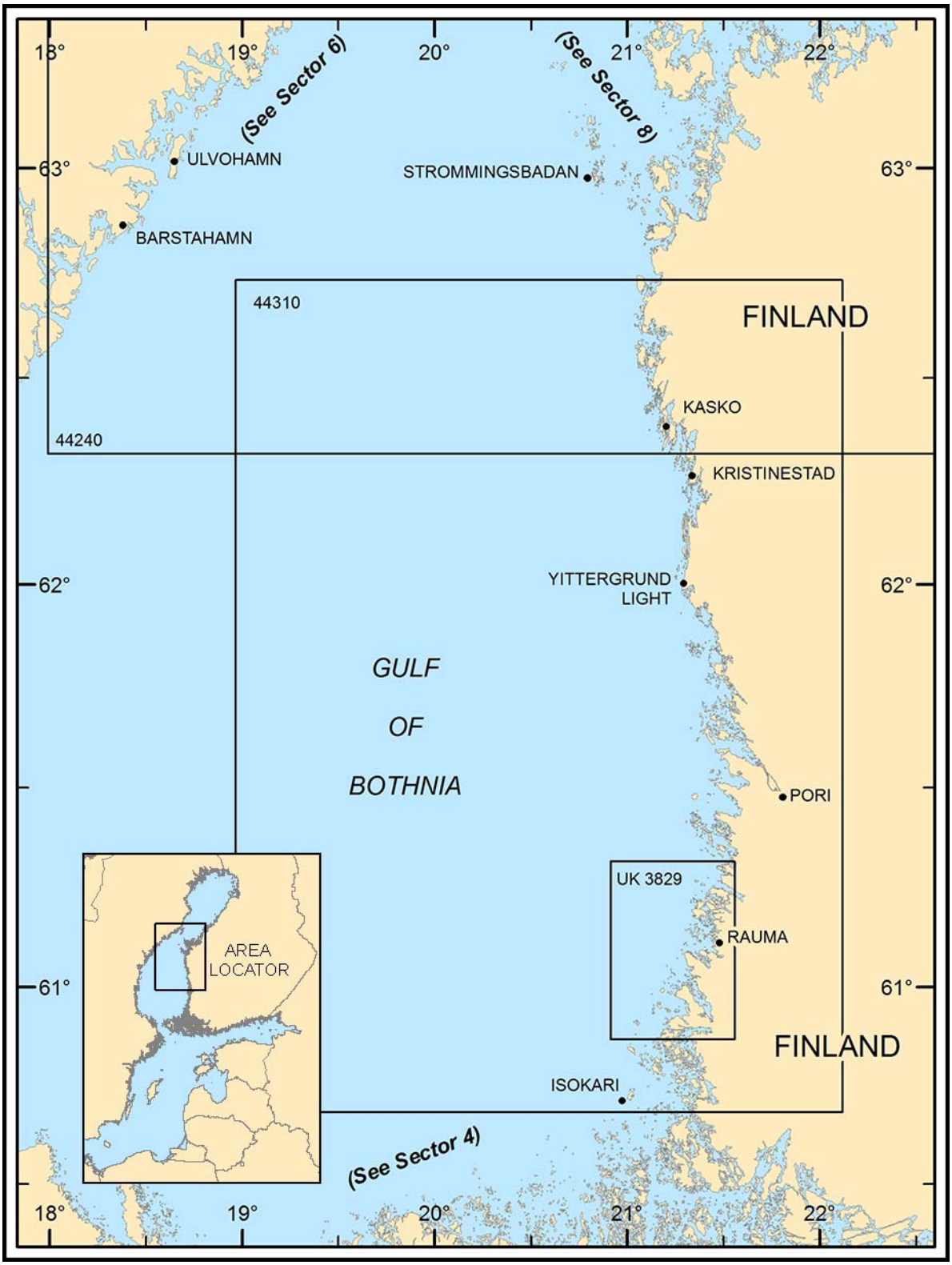
A concrete pier provides berths on both sides. A mooring dolphin, marked by a light, is situated close off the pier head. Several large sheds and a prominent chimney stand in the vicinity of the pier. Vessels up to 21,359 dwt, 173.9m in length, 22m beam, and 7.1m draft can be accommodated.

Anchorage.—Vessels can anchor, in depths of 4.5 to 6m, clay and sand, off the harbor.

Notholmen (Nordmaling) (63°34'N., 19°29'E.) (World Port Index No. 26810), a small harbor, lies at the head of the inlet. Vessels with local knowledge may anchor, with stern moorings, in depths of 4 to 12m, close S of the harbor. There is a concrete quay, 127m long, with depths of 4 to 4.5m alongside.

Rundvik—Berthing Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Timber Terminal							
North	101m	3.2-8.0m.	—	—	—	—	Berth used by tugs.
South	120m	3.2-8.0m	173.9m	7.1m	22.0m	21,359 dwt	Berthing length of: 205m (including dolphins). Breakbulk. Vessels berth alongside the permanently moored transportshipment pontoon located on the S side of the pier. Can be visited by research survey and buoy tender vessels. 16,037 gt.



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

SECTOR **7** — CHART INFORMATION

SECTOR 7

FINLAND—WEST COAST—ISOKARI TO STROMMINGSBADAN

Plan.—This sector describes the W coast of Finland and the contiguous off-lying area in the Gulf of Bothnia between Isokari (60°43'N., 21°01'E.), at the N side of the Aland Islands, and Strommingsbadan, in the vicinity of the S approach to Norra Kvarken. The descriptive sequence is N.

General Remarks

7.1 The Finnish coast is low and difficult to make out from seaward. It is fronted by numerous islands, rocks, and shoals extending as far as 12 miles offshore. It should be noted that this coast has not been completely surveyed, and that dangers in addition to those shown on the chart may exist. Vessels lacking local knowledge should exercise the appropriate caution.

Winds—Weather.—The great volume of water entering the Gulf of Bothnia from many rivers causes a uniform S surface movement during calm weather. This prevailing current in the gulf usually causes vessels from Sodra Kvarken to Norra Kvarken to be set E of their course towards the dangers off the Finnish coast.

Along the Finnish coast, there is a current setting to the N and during the autumn a branch of the N current sets W of the Aland Islands and then toward the Finnish shore. Under normal conditions the current has a velocity of not more than 1 to 2 knots. The currents in the Gulf of Bothnia have seldom been observed to exceed 1.5 knots.

A dominant factor in the movements of the current is the wind direction, which can cause great irregularities in the pattern of the currents in these waters. The currents are not only affected by the local winds, but also from those of other localities. A change in the current often precedes the striking of a storm by several hours. During gales the current generally sets with the wind, from 1 to 2 knots in the open sea and from 3 to 4 knots near shore.

The tidal range in these waters is of little consequence, but considerable change in the water level may be caused by strong winds, atmospheric pressure, and the seasonal amount of water released by the rivers. A combination of these factors raises or lowers the water in the Gulf of Bothnia, from the mean water level, by as much as 0.1m, although at the heads of the inlets it may be much more under exceptional circumstances. For example, at Haparanda, located at the head of the gulf, the level may change by up to 1.5m.

Ice.—See General Remarks in paragraph 1.1 and paragraph 4.1.

For information pertaining to winter navigation, ice, and Finnish icebreaking services, including internet web sites, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Depths—Limitations.—The coast between Isokari (60°43'N., 21°01'E.) and Sappi (61°29'N., 21°21'E.), about 45 miles NNE, is almost entirely fronted by foul ground, small islands, islets, rocks, and shoals. The depths are uneven and vessels operating within the 40m curve risk the possibility of encountering unsurveyed dangers in some localities. This curve lies as far as 15 miles offshore in places.

The low coast between Sappi and Kasko (62°23'N., 21°14'E.), about 54 miles N, has foul ground extending as far as 10 miles from the mainland. Numerous islands and islets also front the shore. The depths are uneven and vessels operating between Sappi and Kasko are also advised to stay, as nearly as possible, in depths of not less than 40m.

Between Kasko and Strommingsbadan (62°59'N., 20°45'E.), the groups of islets and shoals fronting the coast become wider, with the outermost lying as far as 18 miles from the mainland. The coast of the mainland is low, wooded, and appears to passing vessels to be farther away than it really is. The depths are irregular off this part of the coast and the charted soundings too scattered to be relied upon during periods of low visibility. In this area, vessels are advised to stay outside the 40m curve for safe navigation.

Several inshore routes lead between the dangers fronting the mainland coast. However, these channels, which are mostly narrow and tortuous, are used only by shallow draft vessels with local knowledge.

Pilotage.—See paragraph 1.1 and paragraph 4.1 for information concerning pilotage and VTS systems in the vicinity of Isokari, the Aland Islands, and the Saaristomeri area, including the approaches to Uusikaupunki.

Regulations.—See paragraph 7.12 for information concerning the West Coast Vessel Traffic Service (VTS) system, which operates off the SW coast of Finland between Rauman Mjakka Light (61°09'N., 21°10'E.) and Kaijakari (61°37'N., 21°22'E.).

See paragraph 10.1 for information concerning the Bothnia Vessel Traffic Service (VTS) system, which operates off the NW coast of Finland. This system is mandatory and includes the routes leading to Kasko (Kaskinen) and Kristinestad (Kristiinankaupunki).

See paragraph 1.1 for regulations regarding restricted areas and semi-restricted areas in Finnish waters.

FinTraffic VTS — Master's Guide
https://www.fintraffic.fi/en/vts/masters-guide

Caution.—During the winter, many buoys are removed while others may be damaged or break adrift.

Numerous logs may be found adrift at all times of the year in the coastal waters described within this sector.

Areas dangerous due to mines laid during World War II exist within these waters. There is little risk for surface navigation but risk of danger in these areas still exists when anchoring or carrying out any seabed activities.

Due to various circumstances, including the discovery of obstructions, depths within the channels leading through the off-

shore dangers along this stretch of coast may change frequently. Therefore, vessels are advised to contact the local authorities in order to ascertain the latest information, including the maximum authorized drafts.

Isokari to Uusikaupunki and Rauma

7.2 **Isokari** (60°43'N., 21°01'E.) is an island lying about 12 miles W of Uusikaupunki. The pilot station, a yellow one-story building, is situated on the E side of the island.

A reef extends about 0.5 mile S from the S side of the island. Santkari, an islet, is located on this reef and is marked by a beacon. Foul ground, on which several above-water rocks lie, extends between 0.3 mile and 2.5 miles NW from the NW side of the island.

A light is shown from a prominent tower, 37m high, standing on the island.

Sandback (60°46'N., 20°45'E.), a rock awash, is the outermost danger in this vicinity. It lies on a bank about 8.5 miles WNW of Isokari. A light, equipped with a racon, is shown from a tower, 8m high and surmounted by a helicopter platform, standing on the rock.

A shoal bank, with a least depth of 6.8m, extends 1.5 miles NW from the light and is marked by a buoy.

Numerous dangers, which extend up to about 10 miles seaward, front the mainland coast in vicinity of the approaches to Uusikaupunki and Rauma. Only the outermost are described below.

Merikivi, a detached shoal with a least depth of 7.8m, lies about 2.5 miles S of Sandback Light. Etela Sandback, a rock 0.6m high, lies about 1 mile N of this rock and is fringed by shoal water.

Melanderinmatala, a rocky shoal with a least depth of 6.8m, lies about 4 miles SE of Sandback. Between the two are several shoals with depths of 2.5 to 8.8m.

Ljungberginkivi, with a depth of 6.5m, lies 2.3 miles W of Isokari. A light is shown from a structure standing on the N side of this shoal.

Ahlstedtinmatala, with a depth of 7.8m, lies 4 miles ENE of Sandback Light and is marked by a buoy.

An isolated shoal, with a depth of 9.6m, lies 4.5 miles NE of Sandback Light.

7.3 **Vekara** (60°51'N., 21°01'E.), an island surrounded by shoals, lies 7.5 miles N of Isokari. A beacon stands on this island but it is reported to be totally obscured by trees.

Sammo (60°51'N., 21°06'E.), an islet fronted by shoals, lies 2.3 miles E of Vekara. A light is shown from a framework structure, 8m high, standing on this islet.

Kajakulma Light (61°00'N., 21°11'E.), equipped with a racon, is shown from a tower, red rectangle with a yellow stripe, 8m high, standing on an islet lying close N of a small island, about 10 miles NNE of Vekara. Approximately 1.5 miles NW of From Kajakulma Light, an offshore channel leads N to the entrance of Rauma with an authorized draft of 5.5m.

A chain of islets, rocks, and shoals, which may best be seen on the chart, extends between Vekara and this Kajakulma Light.

Hylkkari Light (60°57'N., 21°10'E.) is shown from a tower, 6m high, standing on the NW side of a small island, 2.7 miles SSW of Kajakulma Light. The island is fronted by shoal banks on its NW,

Lyokki Tower

7.4 **Lyokki Tower** (60°56'N., 21°08'E.), a prominent conical structure 16m high, stands on one of a group of small islets lying 1.4 miles SSW of Hylkkari Light.

Harmaatietot (Harmaatletot), consisting of a number of islets lying on an extensive area of rocks and shoals, is centered 2.3 miles SSW of Lyokki Tower.

Aukkomatala, an isolated shoal with a depth of 6.5m, lies about 3.2 miles NW of Lyokki Tower.

Suomenkari, one of the outermost dangers in this area, has a depth of 7.8m. This isloated shoal lies about 6 miles WNW of Lyokki Tower and 3 miles W Aukkomata.

Karlssoninmatala, the northwesternmost of a group of three shoals, is one of the outermost dangers in this area. This shoal has a depth of 9m and lies about 5.5 miles W of Kajakulma Light. Karlinmatala, with a depth of 5.3, and Jonssoninmatala, with a depth of 1m, lie 0.4 mile S and 1 mile ESE, respectively, of Karlssoninmatala.

A detached shoal, with a depth of 7.8m, lies about 1 mile NNW of Kajakulma Light and is marked by a buoy. It is located at the W end of Vanhanpudanmatala, a chain of dangers which extends about 3 miles WNW from the mainland.

A detached shoal, with a depth of 8.5m, lies about 1.9 miles NW of Kajakulma Light and is marked by a buoy. It is located at the N end of a chain of dangers extending about 2 miles S.

7.5 **Laitakari Light** (61°03'N., 21°13'E.), a fishing light, is occasionally shown from a framework structure, 8m high, standing on the E side of an islet. A framework beacon, 5m high, is situated close W of the light.

A detached shoal, with a depth of 7.1m, lies about 3.5 miles NW of Kajakulma Light and is marked by a buoy. This shoal is located at the outer end of a group of dangers extending about 3 miles W from Laitakari Light. A beacon stands on an above-water rock lying in this group, about 1.2 miles W of Laitakari Light.

A detached shoal, with a depth of 5m, lies about 1.8 miles WNW of Laitakari Light and is marked by a buoy. Another detached shoal, with a depth of 9.3m, lies about 2.7 miles NW of Laitakari Light.

Rihtniemi Light (61°05'N., 21°18'E.), a rear range light, is shown from a rectangular structure standing on the NW side of a mainland peninsula, 3.4 miles NE of Laitakari Light.

Rauman Majakka Light (61°09'N., 21°10'E.), equipped with a racon, is shown from a tower, surmounted by a helicopter platform, standing on Outomatala, an isolated shoal lying

5.5 miles NW of Rihtniemi Light.

Reilander, with a depth of 6.5m, lies 2.4 miles SSW of Rauman Majakka Light, near the W end of a chain of shoals extending about 5.5 miles WNW from the vicinity of Rihtniemi Light.

Sextantinmatala (61°07'N., 21°05'E.), a rocky patch with a depth of 8.5m, lies 3.2 miles SW of Rauman Majakka Light and 1.4 miles WSW of Reilander. This detached shoal is the outermost danger in this area.

7.6 **Kylmapihlaja Light** (61°09'N., 21°18'E.) is shown from a prominent tower on a dwelling, 32m high, standing on a small island, about 4.2 miles E of Rauman Majakka Light.

Kylmapihlaja Light

Santakari Tower (61°07'N., 21°17'E.), situated on an islet about 1.4 miles NNW of Rihtniemi Light, is 19m high and prominent. It consists of a red wooden hexagonal tower with a pointed roof topped by a vane.

Nurmes Light (61°12'N., 21°20'E.) is shown from a prominent framework tower, 12m high, standing at the W side of a large island, about 3 miles NNE of Kylmapihlaja Light.

Nurmeksen Matala, an extensive shoal with shallow rocks, extends 3 miles WNW and 3.2 miles NW from the vicinity of Nurmes Light. The outer edges of this shoal are marked by buoys.

Caution.—An ammunition dumping ground area, the limits of which may best be seen on the chart, lies centered 21 miles NW of Sandback Light.

A submarine cable, which may best be seen on the chart, extends seaward from the mainland in the vicinity of Rihtniemi Light.

Approaches to Uusikaupunki and Rauma

7.7 The coastal route leads 23 miles NNE from N of Sandback Light (60°46'N., 20°45'E.) to WNW of Rauman Majakka Light (61°09'N., 21°10'E.).

The main approach route from W to Uusikaupunki, which is authorized for drafts up to 10m, leads SE from seaward and passes NE of Sandback (60°46'N., 20°45'E.) and SW of Isokari (60°43'N., 21°01'E.). From a position about 1 mile SSE of Isokari rear range light, the route continues in a NE direction for 6.5 miles to a position close SW of Hylkiletto (60°46'N., 21°13'E.). It then leads 1.2 miles N, 0.8 mile NE, 2 miles ENE, and about 1 mile SE through a buoyed channel to the harbor entrance fairways.

An alternate approach route from W leads about 10 miles E from a position 3.7 miles SSW of Sandback Light. It passes S of Sandback and Isokari. This route is authorized for drafts up to 8m and joins the main Uusikaupunki approach channel.

The main approach route from N to Uusikaupunki, which is authorized for drafts up to 9m, leads SE from seaward to a position about 0.4 mile NW of Kajakulma Light (61°00'N., 21°11'E.). It then continues for about 20 miles in a S direction, passing between the numerous offshore islets and shoals, to join the main Uusikaupunki approach channel close NE of Pohjamatala (60°45'N., 21°11'E.).

There are two main approach routes leading from seaward to Rauma. The S route, which is known as the Rauma Channel, is authorized for drafts up to 12m. It leads ESE and passes about 1.2 miles WSW of Rauman Majakka Light (61°09'N., 21°10'E.) and NE of Reilander. At a position located about 1.7 miles NW of Rihtniemi Light (61°05'N., 21°18'E.), the route enters a buoyed channel and then leads about 1.5 miles ESE, 3 miles ENE, and 0.7 mile NE to the harbor basins.

The N route, which is known as the Valkeakari Channel, is authorized for drafts up to 7.5m. From a position located about 2.7 miles NE of Rauman Majakka Light (61°09'N., 21°10'E.), this route leads about 3.8 miles ESE and passes 1.5 miles NNE of Kylmapihlaja Light (61°09'N., 21°18'E.). It then leads 0.5 mile SSE through a narrow, buoyed fairway and passes close E of the island of Valkeakari. The route continues SE for about 1.8 miles to the harbor basins.

An offshore track, which is authorized for drafts up to 5.5m, connects the main N approach route to Uusikaupunki with the two main approach routes for Rauma. From a position 1.6 miles NW of Kajakulma Light, the track leads 2.3 miles N and passes 2 miles W of Laitakari Fishing Light (61°03'N., 21°13'E.). It then continues 4.5 miles NNE and joins the two main routes in the vicinity of Rauman Majakka Light.

Several secondary channels, which are available for vessels with light drafts and local knowledge, branch off the main approach routes and may best be seen on the charts.

Uusikaupunki (60°48'N., 21°24'E.)

World Port Index No. 27790

7.8 Uusikaupunki lies about 12 miles ENE of Isokari. The port area is composed of the island of Hanko and the shore fronting the W side of the town. The island is joined to the town by a causeway.

Ice.—The harbor is kept open all year with icebreaker assistance.

During the winter, if the ice situation is difficult in the Gulf of Bothnia, the traffic proceeds through Sararistomeri and via Uto.

Depths—Limitations.—The main approach route from sea-

ward is authorized for drafts up to 10m (see paragraph 7.7).

The inner harbor has three quays. Hepokari Quay, with a ro-ro berth is on the S side. Telakka Quay and Saunasilta Quay are used by coasters.

The buoyed channel leading to the inner harbor is authorized for drafts up to 7m.

The Esso Harbor Quay is 40m long and has a depth of 5m alongside. The buoyed channel leading to this harbor is authorized for drafts up to 5m.

The harbor channel leading to Kemira Harbor Quay is authorized for drafts up to 10m. For more berthing information see table titled **Uusikaupunki—Berth Information**.

There are facilities for passenger, general cargo, LPG, bulk, chemical, timber, and ro-ro vessels. Vessels up to 64,663 dwt, 225.9m in length, 32.2m beam and 10m draft can be accommodated in the port.

Aspect.—The main approach channels are indicated by directional sector lights and lighted ranges, and are marked by buoys and beacons. A conspicuous television mast stands in the vicinity of the town.

Pilotage.—Pilotage is compulsory. Pilots are ordered from and provided by the Finnpilot order center; see paragraph 1.1 for details. Vessels should send a request for pilotage and an ETA at least 12 hours in advance. Pilots may be contacted by VHF and will board in the following positions:

1. Isokari NW—60° 44.5'N,. 20° 54.5'E
2. Isokari SE—60° 42.1'N,. 20° 59.9'E

Regulations.—Vessels with drafts greater than 8m must not exceed a speed of 7 knots in certain parts of the main approach route.

See paragraph 4.1 for information concerning VTS systems in the vicinity of Isokari, the Aland Islands, and the Saaristomeri area, including the approaches to Uusikaupunki.

Anchorage.—Good sheltered anchorage is available, in a depth of 7m, clay, close SW of Hepokari Quay.

Caution.—During N and E winds, the water level can fall about 0.4m below normal, which may sometimes delay deeply-loaded vessels reaching the port.

It is reported that submarine pipelines lie in the vicinity of the channel leading to Esso Harbor Quay.

The approach channels are well-marked, but care should be exercised as they are fringed by dangers, and are tortuous in places.

Rauma (61°08'N., 21°30'E.)

World Port Index No. 27780

7.9 Rauma, situated 20 miles NNE of Uusikaupunki, lies at the head of a bight, which is encumbered by islets and reefs. The port exports paper products and imports oil, coal, and grains.

Ice.—The port is kept open all year with the assistance of an icebreaker service. Since the adjacent sea area is wide and the archipelago protects the harbor from pack ice belts, it is not too difficult to keep the port open.

Tides—Currents.—The tidal range is about 0.5m.

Depths—Limitations.—Rauma Channel, authorized for drafts up to 10m (see paragraph 7.7), is the main approach route from seaward.

The port consists of inlets lying on the N and S sides of the Iso-Hakuni Peninsula. The N inlet provides access to a shipyard and a small craft harbor.

The principal commercial berths are situated along the S side of the peninsula, within a basin at its W end, and within a basin at its SE end.

Suoja Coal Quay is at the S side of the SE basin. Chemical Berth K1 and Chemical Berth K2 are on the N side.

Oil Quay is at the SW end of the SE basin. Laitsaari Quay is at the S side of the peninsula. Central Quay, close W of Laitsaari and six ro-ro berths are situated alongside the S side of the peninsula.

Uusikaupunki—Berth Information

Berth	Length	Maximum Vessel				Remarks
		LOA	Draft	Beam	Size	
Hepokari Terminal						
No. 1	—	180m	6.0m	15.2m	5,398 dwt	Breakbulk and bunkers. Berthing length of 131m (including dolphins). 3,739 gt.
No. 2	—	180m	7.0m	15.4m	7,350 dwt	Breakbulk and bunkers. Berthing length of 131m (including dolphins). 4,695 gt.
No. 3	—	180m	8.5m	25.0m	8,100 dwt	PCC and bunkers. Berthing length of 140m (including dolphins). 23,498 gt.
No. 4	155m	217m	8.5m	26.1m	14,509 dwt	Ro-ro freight and bunkers. Berthing length of 250m (including dolphins). 33,816 gt. 630 teu.
Yara Termainal						
Yara	340m	225m	10.0m	32.2m	64,663 dwt	Chemicals, LPG, fertilizer, breakbulk, bunkers, and multipurpose. Berthing length of 357m (including dolphins). Displacement of 76,603t. 36,781 gt.

Rauma—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Iso-Hakuni							
Ro-Ro 1	160m	8.2m	168.6m	—	25.2m	20,170 dwt	Ro-ro freight, breakbulk, and bunkers.
Ro-Ro 2	252m	7.0m	153.4m	—	22.0m	7,291 dwt	
Ro-Ro 3	127m	8.3m	134m	—	22.0m	6,494 dwt	
Ro-Ro 4	223m	10.0m	205m	—	32.2m	62,041 dwt	
Ro-Ro 5	185m	10.0m	205m	—	25.5m	23,688 dwt	
Ro-Ro 6	192m	10.0m	185.4m	—	25.3m	23,688 dwt	
Ro-Ro 7	205m	12.0m	186m	—	30.4m	45,251 dwt	
Konttilaituri Container Terminal							
No.1	160m	10.0m	178.5m	—	27.6m	22,267 dwt	Containers and bunkers.
Petakas							
P1	148m	10.2m	172m	—	25.3m	21,250 dwt	Grain and bunkers. Continuous berthing length of 445m.
P2	148m	12.0m	229m	—	32.2m	81,810 dwt	
P3	149m	12.0m	216.2m	—	32.2m	58,000 dwt	
Rauma-Laitsaari							
Laitsaari	347m	8.5m	166.1m	—	23.0m	19,359 dwt	Wood chips, breakbulk, and bunkers.
Baltic Tank Terminal							
Oil	73m	8.5m	161.6m	—	24.1m	21,176 dwt	Chemicals, dirty products, and bunkers.
Baltic Tanker Terminal (N)							
K-1	52m	4.9m	90m	4.6m	14.0m	—	Chemicals and bunkers.
K-2	—	6.9m	150m	6.6m	22.0m	12,004 dwt	Chemicals, dirty products, and bunkers. Berthing length of 78m (including dolphins).

Petajas Bulk Quay is at the N side of the W basin. Container Quay, at the S side and it is reported that the Container Quay is being extended and two additional ro-ro berths are under construction at the W end of the peninsula. For more berthing information see table titled **Rauma—Berth Information**.

There are facilities for container, ro-ro, general cargo, bulk, chemical, oil, and timber product vessels. Vessels up to 81,810 dwt, 229m in length and 32.2m beam can be handled.

Aspect.—The main approach channels are indicated by directional sector lights and lighted ranges, and are marked by buoys, beacons and virtual aids to navigation. A conspicuous silo stands in the NW part of the harbor. In the Rauma 12m fairway the brightness of aids to navigation can be adjusted by the West Coast VTS upon request.

Pilotage.—Vessels should send a request for pilotage and an ETA at least 12 hours in advance of arrival. For information required to be included in the message, see Pilotage under Mantyluoto (paragraph 1.1).

Pilots can be contacted on VHF channel 13 and board at Valkeakari (61°10.6'N., 21°15.1'E.) and Rauma S (61°07.3'N., 21°10.8’E.).

Regulations.—A designated restricted area, which may best be seen on the chart, covers the approaches to the port. Vessels must remain within the authorized route channel in this area.

Vessel Traffic Service.—The West Coast Vessel Traffic Service (VTS) extends along the W coast of Finland through the Sea of Bothnia from Hylkkari Light to Valassaaret Light and E to Ritgrund Light and E to Vassa. This includes the merchant shipping lanes, with the exception of the areas administered by the ports. For details of this VTS, see paragraph 7.12 and the graphic titled **West Coast Finland VTS**.

Contact Information.—See the table titled **Rauma—Con-**

Courtesy of the Port of Rauma

Rauma Harbor

tact Information.

Rauma—Contact Information	
Port	
Telephone	358-2-83711
Facsimile	358-2-8226369
E-mail	office@portofrauma.com
Web site	https://www.portofrauma.com
Harbor Traffic Control	
VHF	VHF channel 10
Telephone	358-500-597579
E-mail	portcontrol@portofrauma.com

Caution.—A submarine pipeline and a submarine cable, which may best be seen on the chart, extend across the channel from the NW end of the Iso-Hakuni Peninsula.

A designated nature reserve area, within which numerous restrictions apply, surrounds the island of Hylkikarta (61°07'N., 21°21'E.) in the S approach to the port.

Rauma to Mantyluoto

7.10 The coast between Rauma and Mantyluoto, about 29 miles N, is fronted by numerous islands, rocks, and shoals, which may best be seen on the chart. These dangers extend up to about 8 miles seaward in places. Only the outer dangers and significant landmarks are described below.

Kalla Light (61°16'N., 21°21'E.) is shown from a framework tower, 10m high, standing on the NW side of an islet lying 4.5 miles N of Nurmes Light (61°12'N., 21°20'E.).

Olkiluoto—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
EcoPorts Finland Olkiluoto Port						
East	88m	—	130m	6.0m	16.0m	Gypsum, scrap metal, pig iron, coke, lathe chips, feed materials, blowing slag, crushed stone, wood chips, bunker, and breakbulk.

Olkiluoto—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
West	86m	6.0m	130m	6.0m	16.0m	Gypsum, scrap metal, pig iron, coke, lathe chips, feed materials, blowing slag, crushed stone, wood chips, bunker, and breakbulk.

Ulko-Royska, with a least depth of 5m, lies about 1.8 miles W of Kalla Light. This detached shoal is marked by a buoy and is the outermost danger in this vicinity.

Olkiluoto (61°14'N., 21°27'E.), a small craft harbor, is situated on the S side of the W part of a peninsula.

Depths—Limitations.—Vessels with a draft up to 130m in length, 16m beam, and 6m can be accommodated in the harbor. An approach route, authorized for drafts up to 5m, leads from a position about 4 miles SW of Kalla Light. This route, which is marked by buoys and range beacons, leads ENE and ESE for about 6.5 miles to the harbor. Local knowledge is required. For more berthing information see table titled **Olkiluoto—Berth Information**

Eurajoki (61°15'N., 21°30'E.), a small craft harbor, is situated on the N side of a peninsula. An approach route, authorized for drafts up to 6m, leads from a position about 2 miles NW of Kalla Light. This route, which is marked by buoys and range beacons, leads SE and ESE for about 5.5 miles to the harbor. Local knowledge is required.

Pietari (61°21'N., 21°23'E.), a small islet, lies 4.5 mile N of Kalla Light. A conspicuous beacon, consisting of poles with red and white supports forming a pyramid 18m high, stands on this islet.

Caution.—A submarine cable, which may best be seen on the chart, extends seaward from the vicinity of Kalla Light.

7.11 **Sappi Light** (61°29'N., 21°21'E.) is shown from a prominent tower, 31m high, standing on the NW side of an island lying in the S approaches to Mantyluoto, about 12.5 miles N of Kalla Light.

An extensive shoal area, with depths of less 10m, extends up to about 3.5 miles W and 5.5 miles SW of Sappi Light. The outer edge of this shoal area is marked by a buoy. An area, with depths less than 20m, extends up to about 5 miles WNW of the light and is also marked by a buoy.

Kaijakari Light (61°37'N., 21°22'E.) is shown from a framework tower, 16m high, standing on an islet in the N approaches to Mantyluoto, 8.5 miles N of Sappi Light.

Kupeli Light (61°38'N., 21°20'E.), equipped with a racon, is shown from a mast, 7m high, standing 1.3 miles NNW of Kaijakari Light. Shoals extend between these lights and are marked on the seaward side by buoys.

Sumparbadar, a group of shoals with depths of less than 10m, extends up to about 4 miles NW of Kupeli Light.

Morris Lighted Beacon (61°35'N., 21°25'E.) is shown from a mast, 10m high, standing in the S approach to Mantyluoto, 2.6 miles SSE of Kaijakari Light. It is equipped with a racon.

Porin Majakka Light (61°42'N., 21°14'E.), equipped with a racon, is shown from a prominent structure with a wind generator, 18m high, standing 5.2 miles NW of Kupeli Light.

Mantyluoto (61°36'N., 21°29'E.)

World Port Index No. 27750

7.12 Mantyluoto (Pori), lying 55 miles NNE of Isokari, fronts the N side of an island of the same name. It is the outer port for Pori, which is situated 10 miles SE along the shallow estuary of the Kokemaenjoki. A fishing harbor fronts the SE end of Reposaari, an island lying close NW of Mantyluoto. Tahkoluoto, the deep-water terminal for Pori, lies 3 miles NW of Mantyluoto, at the NW extremity of Reposaari.

Mantyluoto

Winds—Weather.—The prevailing winds are from the SW.

Ice.—The harbor is closed by ice for only a short time in winter, and in very favorable winters it is never closed. This is because of the area of open sea on one side and the currents setting up in the inner side by the discharge of the Kokemaenjoki (River Kumo) at the head of the bight. Icebreakers are available if required.

Depths—Limitations.—Kallo, an islet, lies close off the NW extremity of the island of Mantyluoto to which it is connected by a causeway. Kolmikulma, a shoal bank with a least depth of 0.8m, lies in the approach, about 0.5 mile W of the N end of Kallo. The harbor entrance lies between the heads of two breakwaters, which extend about 400m N from Kallo and about 500m S from the S end of Reposaari.

The main approach channel, which is authorized for drafts up to 10m, leads ENE for 3.5 miles and NE for 2 miles from the pilot boarding place. It passes close SE of Morris Lighted Beacon and close SE of Kolmikulma shoal bank. An entrance fairway then continues NE between the breakwaters and into the harbor.

An alternate approach channel, which is authorized for drafts up to 6.5m, leads E and SE from a position 1.8 miles SW of Kaijakari Light. It passes NE of Kolmikulma shoal bank and

then joins the main approach channel.

The river has a depth of 2m; Pori is only used by recreational craft. The harbor at Reposaari is used by fishing vessels.

The harbor at Mantyluoto provides the main quayage. There are facilities for general cargo, ro-ro, container, bulk, and timber vessels. Vessels up to 110,861 dwt, 254.6m in length, 11.1m draft, and 43m beam can be handled. For more berthing information for Mantyluoto and Tahkoluoto, see the tabled titled **Mantyluoto (Pori)—Berth Information**.

Tahkoluoto(61°38'N., 21°24'E.) (World Port Index No. 27755), the deep-water terminal, can be approached by two channels. The N channel, which is authorized for drafts up to 15.3m, leads SE for 7 miles from a position about 1.5 miles NW of Porin Majakka Light. It passes close NE of the latter light and leads to the turning basin at the N side of the harbor.

The S channel, which is authorized for drafts up to 10m, leads 2 miles in a NE direction from a position about 1.5 miles SW of Kupeli Light. It passes close SE of the latter light and leads to the turning basin.

There are two berthing complexes at Tahkoluoto. The Oil Terminal, with an L-shaped pier, is situated at the NE side of the harbor. The Coal Terminal is situated at the W side of the harbor.

Mantyluoto (Pori)—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Mantyluoto							
No. 1	250m	12.0m	188.8m	—	32.0m	38,792 dwt	Project/heavy, breakbulk, and bunkers.
No. 3	100m	6.1-6.4m	—	—	—	—	Breakbulk and bunkers.
No. 4	100m	6.1-6.4m	104.8m	—	16.0m	4,535 dwt	Breakbulk and bunkers.
No. 5	100m	6.1-6.4m	104.8m	—	16.0m	4,535 dwt	Breakbulk and bunkers.
No. 6	80m	7.5m	110.7m	—	18.8m	6,000 dwt	Breakbulk, project/heavy cargo, and bunkers.
No. 7	80m	7.5m	145.6m	—	18.2m	10,649 dwt	Breakbulk nd bunkers.
No. 14	104m	7.5m	179.9m	—	30.0m	34,205 dwt	Cement, containers, breakbulk, and bunkers.
No. 15	104m	7.5m	123m	—	18.2m	10,600 dwt	Cement, containers, breakbulk, and bunkers.
No. 16	104m	7.5m	142.6m	—	16.5m	11,850 dwt	Cement, containers, breakbulk, and bunkers.
No. 17	104m	7.5m	122.3m	—	15.2m	7,350 dwt	Breakbulk and bunkers.
No. 18	104m	7.5m	143m	—	21.5m	17,407 dwt	Breakbulk nd bunkers.
No. 19	170m	7.5m	—	—	—	—	Breakbulk, ro-ro/lo-lo, and bunkers.
No. 20	100m	10.0m	188.8m	—	28.0m	31,754 dwt	Containers, project/heavy cargo, breakbulk, and bunkers.
No. 21	100m	10.0m	189.9m	—	30.0m	37,019 dwt	Coal, containers, breakbulk, and bunkers.
No. 22	100m	10.0m	199.9m	—	32.2m	58,755 dwt	Project/heavy cargo, steel products, breakbulk, and bunkers.
No. 23	100m	10.0m	199.8m	—	30.0m	37,372 dwt	Project/heavy cargo, breakbulk and bunkers.
No. 24	100m	10.0m	189.9m	—	32.2m	56,604 dwt	—
No. 25	100m	10.0m	179.9m	—	28.4m	32,688 dwt	Steel products, breakbulk, and bunkers.
Tahkoluoto							
No. 26	225m	15.3m	254.6m	11.1m	43.0m	110,861 dwt	Coal, breakbulk, and bunkers.
No. 27	225m	15.3m	254.6m	—	43.0m	110,861 dwt	Coal, breakbulk, and bunkers.
No. 28	140m	10.0m	177m	—	28.4m	32,834 dwt	Coal, project/heavy cargo, breakbulk, and bunkers.
No. 29	—	10.0m	220m	—	32.0m	39,067dwt	Chemicals, clean products, dirty products, and bunkers. Berthing length of 105m (including dolphins).
No. 30	94m	10.0m	220m	10.0m	32.0m	35,435 dwt	Clean products, dirty products, and LNG.

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

A prominent chimney stands on the NE side of Reposaari, about 1 mile NNW of the root of the breakwater. A prominent radio mast stands on the S side of Reposaari, about 0.2 mile NW of the root of the breakwater. A conspicuous water tower, 64m high, is situated about 2 miles SE of Mantyluoto. A shipyard, which is used for the construction of offshore platforms, is situated at the NE side of Mantyluoto harbor.

Two bridges span the river 1.5 miles E of the breakwaters.

A conspicuous chimney stands on the W side of the harbor at Tahkoluoto.

Pilotage.—Pilotage is compulsory. Vessels should send a request for pilotage and an ETA 24 hours prior to arrival. Pilots are ordered from and provided by the Finnpilot order center; see paragraph 1.1 for details.

Pilots can be contacted on VHF channel 13 and board at two positions. The Pori S boarding area is located in position 61°34.0'N, 21°22.1'E about 3.25 miles WSW of Morris Lighted Beacon. Vessels bound for Tahkoluoto use the Pori N boarding area which is located in position 61°36.8'N, 21°17.0'E about 4 miles SW of Kupeli Light.

Vessel Traffic Service.—The West Coast Vessel Traffic Service (VTS) extends along the W coast of Finland through the Sea of Bothnia from Hylkkari Light to Vassa. This includes the merchant shipping lanes, with the exception of the areas administered by the ports. See the graphic titled **West Coast Finland VTS**.

The boundary line of the West Coast VTS Area runs between the following positions:

1. Hylkkari Light (60°57.2'N., 21°09.5'E.).
2. West to position 60°57.2'N 20°46.5'E.
3. To the limit of the territorial sea limit (61°07.6'N., 20°46.5'E.).
4. Observing the limit of the territorial waters to position 62°36.5'N, 20°30.0'E.
5. Position 63°21.5'N, 20°30.0'E.
6. Valassaaret Light (63°25.3'N 21°04.1'E).
7. Ritgrund Light (63°25.5'N 21°30.5'E).

The West Coast VTS provides the following types of services:

1. Information service.
2. Traffic organization service.
3. Navigational assistance service.

Mandatory participation and other requirements in the VTS are listed below:

1. Vessels of 24m loa or longer.
2. When navigating in the VTS area, vessels are required to maintain a continuous listening watch on VHF Channel 9.
3. Vessels navigating in the VTS area, those who are not obliged to participate in the VTS, are recommended to maintain a listening watch on VHF channel 9.

Participating vessels are required to make reports as follows:

1. Upon entry into the VTS area.
2. Before anchoring.
3. Before leaving an anchorage.
4. After berthing.
5. Before leaving port.
6. At the reporting points in the area:
   a. Southbound vessels shall report 20 minutes before passing Hylkkari Light to Archipelago VTS on VHF Channel 71.
   b. Northbound vessels shall report 20 minutes before passing Hylkkari Light to West Coast VTS on VHF channel 9.

Reports should include the following information:

1. Vessel's name.
2. Name of reporting point.
3. Destination.
4. Intended route. If an alternative route is selected, this must be reported.

FinTraffic VTS—Master's Guide
https://www.fintraffic.fi/en/vts/masters-guide

Before departing from the ports of Pori and Vaasa, vessels must submit a departure report in order to obtain permission to depart. Once permission is granted by the VTS, vessels have 20 minutes to depart their berths. A new permission request must be submitted after departure delays exceeding 20 minutes. Vessels are required to give a report once underway.

Meeting and overtaking is permanently prohibited in the following areas covered by the West Coast VTS:

1. Vaasa—Nygrundin portti—Port of Vaasa between longitude 21°18.1'E and longitude 21°32.1'E in the 9m fairway.
2. Kaskinen—In the fairway section Rasken—Port of Kaskinen between latitude 62°19.3'N and latitude 62°20.8'E in the 9m fairway.
3. Kristiinankaupunkië—Kristiinankaupunki Lighthouse—Port of Kristiinankaupunki between longitude 21°10.2'E and longitude 21°18.5'E in the 12m fairway.
4. Rauma—Rauma S fairway between the longitude 21°15.5'E and longitude 21°23.8'E in the 12m fairway.

These prohibitions do not apply to meeting and overtaking situations in which at least one of the vessels is a tug or a vessel the size of which is comparable to a tug.

Contact Information.—See the table titled **Mantyluoto—Contact Information**.

Mantyluoto—Contact Information	
Port Authority	
Telephone	358-2-621-2600
Facsimile	358-2-634-9498
E-mail	info@portofpori.fi
Web site	http://www.portofpori.fi
Port Control	
VHF	VHF channels 11, 12, and 16
Telephone	358-44-7012623 (24 hours)
E-mail	valvojat.satama@portofpori.fi
West Coast VTS	
Call sign	West Coast VTS
VHF	VHF channel 9

Mantyluoto—Contact Information	
Telephone	358-20-448-6645 (West Coast VTS)
	358-20-448-6522 (Supervisor)
E-mail	westcoast.vts@fintraffic.fi
	supervisors.west@fintraffic.fi
Web site	https://www.fintraffic.fi/en/masters-guide

Anchorage.—Anchorage may taken, in a depth of 7m, mud, in an area lying 0.3 mile E of the SE end of Reposaari. However, strong winds from SW to W cause heavy seas in this roadstead.

Caution.—Anchorage is prohibited within an area, which may best be seen on the chart, lying close E of the breakwater heads due to the existence of submarine pipelines and cables.

A spoil ground area, which may best be seen on the chart, lies close NW of Tahkoluoto.

A dangerous wreck is reported to lie close SE of the main approach channel in the vicinity of Morris Lighted Beacon.

Mantyluoto to Kristinestad

7.13 The coast between Mantyluoto (Pori) and Kristinestad, about 40 miles N, is fronted by numerous islands, rocks, and shoals, which may best be seen on the chart. These dangers extend up to about 9 miles seaward in places. Only the outer dangers and significant landmarks are described below.

Fadikari (61°44'N., 21°18'E.), a shoal patch, lies near the outer edge of the coastal bank, 2.3 miles ENE of Porin Majakka Light. It has a depth of 4.8m and is marked by a buoy.

Karviankivi, a pinnacle rock with a depth of 6.3m, lies 5.5 miles NNW of Fadikari. It is located near the outer edge of the coastal bank and marked by a buoy.

Stakki (61°51'N., 21°18'E.) is the westernmost of a group of islets lying centered from 2 to 5 miles offshore, 8.5 miles NE of Porin Majakka Light. Shoals, with depths of less than 5m, extend up to about 2.5 miles WSW and 1.5 miles W of this islet. A prominent pyramid beacon, 14m high, stands on an islet lying at the S end of the group.

Hiidensilta, an extensive area of shallow shoals, lies centered 2.5 mile NW of Stakki. A patch, with a depth of 4.5m, is located at the seaward edge of this area. It lies about 4.3 miles WNW of Stakki and is marked by a buoy.

An isolated shoal patch, with a depth of 9.4m, lies about 6 miles WNW of Stakki and is the outermost danger in this vicinity.

Merikarvian Majakka Light (61°56'N., 21°17'E.), which is equipped with a racon, is shown from a mast standing on the N part of Hiidensilta, 5.6 miles NNW of Stakki.

Yttergrund Light (61°59'N., 21°18'E.) is shown from a prominent tower, 41m high, standing on an island lying close off the mainland, 3 miles NNE of Merikarvian Majakka Light.

Silverbergsgrund, a shoal with a depth of 3.9m, lies about 2 miles WSW of Yttergrund Light.

Rakaren, a large shoal, lies centered 5.5 miles NW of Yttergrund Light, near the edge of the shallow coastal bank. It has a least depth of 0.8m and is marked by two buoys.

7.14 **Merikarvia** (61°51'N., 21°29'E.), a small mainland harbor, is situated 5 miles E of Stakki and sheltered by Brando, an island lying close offshore. It is used by coasters and recreational craft. There is a quay, which fronts a sawmill.

Depths—Limitations.—A main approach route, which is authorized for drafts up to 4.0m, leads E for about 3.5 miles from a position located 3 miles WNW of Merikarvian Majakka Light. The route passes N of the light and then leads SE for about 8 miles to the harbor. The channel is indicated by lighted ranges and marked by buoys. Local knowledge is required.

There are facilities for LPG, tanker, general cargo, bulk, and ro-ro vessels. There are no restrictions for length or beam. Vessels up to 114m in length, 20m beam, and 4.5m draft can be accommodated. Merikarvia Sawmill Terminal has a main berth 80m in length and handles general cargo, raw wood, and stones.

Anchorage.—Small vessels can anchor, in a depth of 10m, within an outer roadstead lying about 2.5 miles NW of Brando.

Kassala (61°57'N., 21°21'E.), a small fishing harbor, lies 6.5 miles NNW of Merikarvia. It can be entered through a partly buoyed channel, which is authorized for drafts up to 3.3m. This channel branches NNE from the main route leading to Merikarvia at a position about 1.2 miles SE of Merikarvian Majakka Light. A buoyed channel close SW of Kassala, best seen on the chart, has a maximum authorized draft of 4.0m.

Sideby (Siipyy) (62°02'N., 21°20'E.), a small town, is situated about 3.5 miles NNE of Yttergrund Light. It may be identified by a conspicuous yellow church, with a black roof and steeple, standing at an elevation of 61m.

7.15 **Kristiinankaupungin Majakka Light** (62°12'N., 21°10'E.), equipped with a racon, is shown from a prominent tower with a helicopter platform, 20m high, standing in the approach to Kristinestad, about 14 miles NNW of Yttergrund Light.

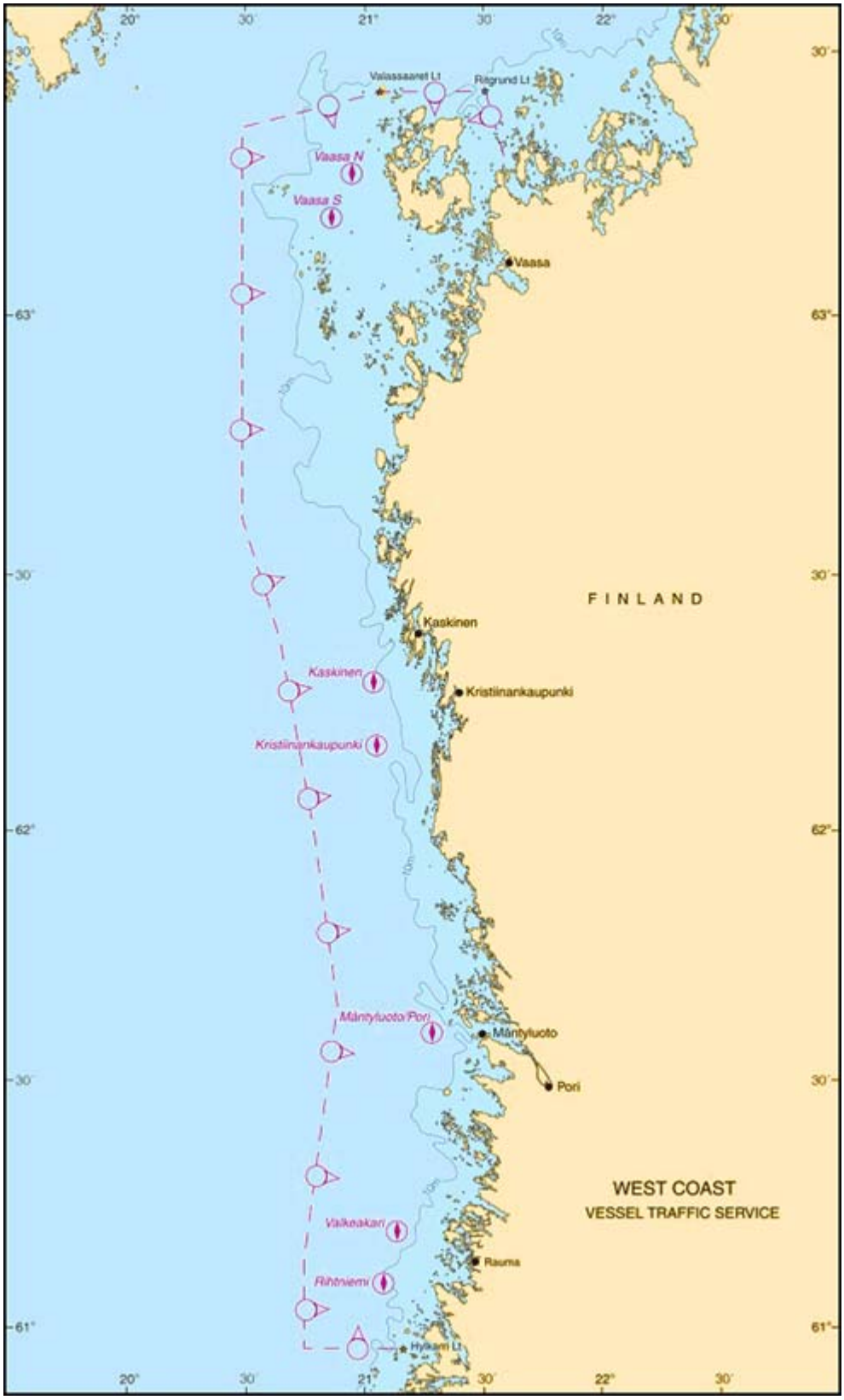
Hoijers, a shoal with a least depth of 3.9m, lies centered 5.5 miles SSW of Kristiinankaupungin Majakka Light. It is located about 5 miles offshore and marked by two buoys.

Mossbada, a large shoal area with a least depth of 2.3m, lies centered 3 miles N of Kristiinankaupungin Majakka Light. It is located 5 miles offshore, at the outer edge of the coastal bank, and is marked by buoys.

Harkmeri (62°12'N., 21°20'E.) is an islet lying 4.3 miles ESE of Kristiinankaupungin Majakka Light, in the approach to Kristinestad. A conspicuous pyramid beacon, 19m high with a ball topmark, stands on the N end of this islet.

Norra Storbadan (62°12'N., 21°20'E.), a rocky and shallow shoal, lies 2.5 miles ENE of Kristiinankaupungin Majakka Light and is marked by a prominent lighted beacon. Its N end is marked by a buoy.

Phavuori (Botomsberg) (62°17'N., 21°39'E.), a hill 130m high, stands 7.5 miles E of Kristinestad and is a conspicuous landmark. It is the only high land in this vicinity and appears as three separate hills from a distance of about 20 miles. An aeronautical light is shown from a mast standing on the SE side of the middle hill.



West Coast Finland VTS

Merikarvia

Kristinestad (Kristiinankaupunki) (62°17'N., 21°24'E.)

World Port Index No. 27680

7.16 Kristinestad is situated at the head of Stads Fjard, a small and narrow inlet. It is fronted by numerous small islets and rocks. The inner harbor lies within the inlet at the E side of the Bjornon Peninsula. The outer harbor lies at the W side of the peninsula, about 1.8 miles SW of the town center.

Winds—Weather.—The outer roadstead is protected from winds from all directions except those from SSW; however, these winds do not raise a heavy sea. The inner harbor is well-protected from all directions.

Ice.—Depending on the ice, the port usually closes at the end of December and reopens during April. The outer harbor may be kept open for a longer period.

Depths—Limitations.—The main approach route leading to the inner harbor from seaward is authorized for drafts up to 5m. This route leads in an ENE direction for 4.7 miles from a position located 2.3 miles S of Kristiinankaupungin Majakka Light (62°12'N., 21°10'E.). It then continues NNE for 1.5 miles and N for 2.3 miles to the harbor entrance. This route passes close N of the islet of Harkmeri.

An alternate route, which is authorized for drafts up to 5m, may only be used by day. This route leads SE for 3.5 miles from a position located 2.5 miles NNW of Kristiinankaupungin Majakka Light. It passes close S of Mossbada shoal and close NE of Norra Storbadan Lighted Beacon. The route then continues SSE to join the main channel.

The inner harbor has a wooden quay and a stone quay. The main approach route leading to the outer harbor from seaward is authorized for drafts up to 12m. This route leads in a NE direction for 6 miles from a position located 2 miles SW of Kristiinankaupungin Majakka Light. It passes close NW of the latter light and close NW of Norra Storbadan Lighted Beacon.

The outer harbor has a T-shaped coal pier and a T-shaped oil jetty. Vessels up to 240m in length and 12m draft can be handled.For berthing information see the table titled **Kristinestad—Berth Information**.

Aspect.—The approach routes are indicated by lighted ranges and beacons. The inner channels are marked by buoys and beacons.

Pilotage.—Pilotage is compulsory. Pilots are ordered via the Finnpilot Order Center, Southern Pilotage Zone but may be contacted by VHF. Pilots board in position 60°11.5'N, 21°06.8'E.

Regulations.—The approach route leading to Kristinestad (Kristiinankaupunki) is situated within Sector A of the Bothnia Vessel Traffic Service (VTS) system. This system operates off the NW coast of Finland and is mandatory. For further details of the VTS system, including reporting procedures, see paragraph 10.1.

Contact Information.—The port can be contacted on VHF channel 24.

Anchorage.—Anchorage, with good shelter and good holding ground, is available, in a depth of 9m, mud, about 1.5 miles S of the inner harbor entrance.

Kristinestad to Strommingsbadan

7.17 The coast between Kristinestad and Strommingsbadan (62°59'N., 20°45'E.), about 42 miles N, is fronted by numerous islands, rocks, and shoals, which may best be seen on the chart.

These dangers extend up to about 17 miles seaward in places. Only the outer dangers and significant landmarks are described below.

Salgrund Light (62°20'N., 21°12'E.) is shown from a prominent tower, 25m high, standing at the SW end of an island of the same name.

Storremmargrund Light (62°20'N., 21°13'E.), equipped with a racon, is shown from a floodlit tower, 7m high, standing 0.7 mile E of Salgrund Light.

Yttergrund, another of the outermost dangers in this vicinity, lies about 5 miles offshore, 6.5 miles NW of Salgrund Light. This rocky shoal has a least depth of 4.9m and is marked by a buoy.

Storgrund (62°19'N., 21°05'E.), one of the outermost dangers in this vicinity, lies 3.5 miles WSW of Salgrund Light. This shoal has a least depth of 3.4m and is marked by two buoys. A detached patch, with a least depth of 7.2m, lies about 1.6 miles WNW of Storgrund.

Caution.—A local magnetic anomaly exists within the area extending 2 miles W and 4 miles SW of Strommingsbadan.

7.18 **Kasko (Kaskinen)** (62°23'N., 21°14'E.) (World Port Index No. 27670) is situated on the W side of the island of Kasko, about 8 miles NW of Kristinestad. This small port consists of a natural harbor lying between the islands of Kasko and Esko (Eskilso), close W of the town.

Kristinestad—Berth Information

Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Size	
Inner Harbor						
Stone	250m	5.6m	130m	5.0m	—	General cargo and bulk berth.

Kristinestad—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Size	
Wooden	75m	4.6m	75m	4.5m	—	General cargo and bulk berth.
Outer Harbor						
No. 1	135m	12.0m	240m	12.0m	—	Coal.
Kristiiankaupunki						
Oil (outer)	50m	10.0m	170m	10.0m	23,000 dwt	—

Kasko (Kaskinen) Home Page
https://kaskinen.fi

Salgrund Light

Winds—Weather.—The harbor is well-sheltered from all winds.

Ice.—During the winter this port is usually the northernmost within the Gulf of Bothnia to be kept open by icebreakers.

Depths—Limitations.—The main approach route leads NE for about 4 miles from a position located 5 miles SW of Salgrund Light. The entrance channel then leads in a N direction between Salgrund Light and Storremmargrund Light. The route is authorized for drafts up to 9m as far as the Deep Water Quay and then for drafts up to 6m as far as the Inner Harbor Quay.

Vessels up to 45,000 dwt, 166m in length, 25m beam, and 9m draft can be handled. For more berthing information see table titled **Kasko (Kaskinen)—Berth Information**.

Aspect.—The approach and entrance channels are indicated by lighted ranges and marked by buoys.

Pilotage.—Pilotage is compulsory. Pilots can be contacted by VHF and board about 5.5 miles SW of Salgrund Light, in position 62°15.5'N, 21°05.1'E.

Vessel Traffic Service.—The approach route leading to Kasko (Kaskinen) is situated within Sector A of the Bothnia Vessel Traffic Service (VTS). This system operates off the NW coast of Finland and is mandatory. For further details of this VTS including reporting procedures, see paragraph 10.1.

Contact Information.—See the table titled **Kasko—Contact Information**.

Anchorage.—Anchorage is available, in depths of 15 to 20m, within an area lying about 3 miles WSW of Salgrund. Anchorage may also be obtained, in a depth of 5m, clay, within the harbor, off the middle of the town.

Kasko (Kaskinen)—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Port of Kaskinen							
Bulk	100m	7.2m	104.2m	—	15.2m	5,233 dwt	Breakbulk and bunkers.
No. 1	100m	9.0m	166m	—	22.6m	17,294 dwt	Breakbulk and bunkers. Continuous berthing length of 500m.
No. 2	100m	9.0m	166m	—	22.6m	17,294 dwt	
No. 3	100m	9.0m	166m	—	22.6m	17,294 dwt	
No. 4	100m	9.0m	166m	—	22.6m	17,294 dwt	
No. 5	100m	9.0m	166m	—	22.6m	17,294 dwt	
No. 6	160m	9.0m	166m	—	25.0m	13,777 dwt	Ro-ro/lo-lo and bunkers.
No. 7	165m	9.0m	119.1m	—	18.1m	7,750 dwt	Breakbulk and bunkers.
No. 8	125m	9.0m	129.4m	7.2m	19.6m	10,543 dwt	Chemicals, clean products, vegetable oils, grain, wood chips, ro-ro/lo-lo, multipurpose, and bunkers.

Kasko—Contact Information	
Port Authority	
Telephone	358-6-220-7283
Facsimile	358-6-220-7300
E-mail	portofkaskinen@portofkaskinen.fi
Web site	https://www.portofkaskinen.fi
Port Services	
Telephone	358-400-868783
E-mail	satamapalvelu@portofkaskinen.fi

7.19 **Gashallan** (62°35'N., 21°03'E.) is the westernmost of a group of islets lying about 3 miles offshore, 15 miles NNW of Salgrund Light. A red and white two-story former pilot watch house stands on this islet. It is 11m high and conspicuous from seaward.

Shoals, with depths of less than 5m, extend up to about 2.5 miles SW, W, and NW of Gashallan. A detached patch, with a depth of 9.8m, lies about 3.5 miles W of Gashallan.

Skomakarsgrund, with a depth of 3.7m, and Rosengrund, with a depth of 4m, lie, respectively, about 5.5 and 4.2 miles S of Gashallan. These shoals lie about 3 miles offshore and are marked by buoys.

Judasternarne (62°40'N., 20°45'E.), with a least depth of 2.5m, lies 9 miles offshore, about 10 miles NW of Gashallan, and is marked by a buoy. A lighted buoy is moored about 1.3 miles NW of this shoal.

Eriksson, a large shoal area, lies centered 2.5 miles E of Judasternarne. It has a least depth of 1.9m and is marked by three buoys. A shoal area, with depths of 8.3 to 9.8m, lies centered 1.7 miles SE of Judasternarne.

7.20 **Sjogrund** (62°47'N., 20°32'E.), with a least depth of 8.2m, lies 9 miles NW of Judasternarne and is marked by a buoy. This shoal is located 16.5 miles W of the mainland and is the outermost danger in along this stretch of coast.

Storkallegrund, an extensive shoal flat, lies with its outer part located 9 miles N of Judastenarne, about halfway between Sjogrund and the mainland.

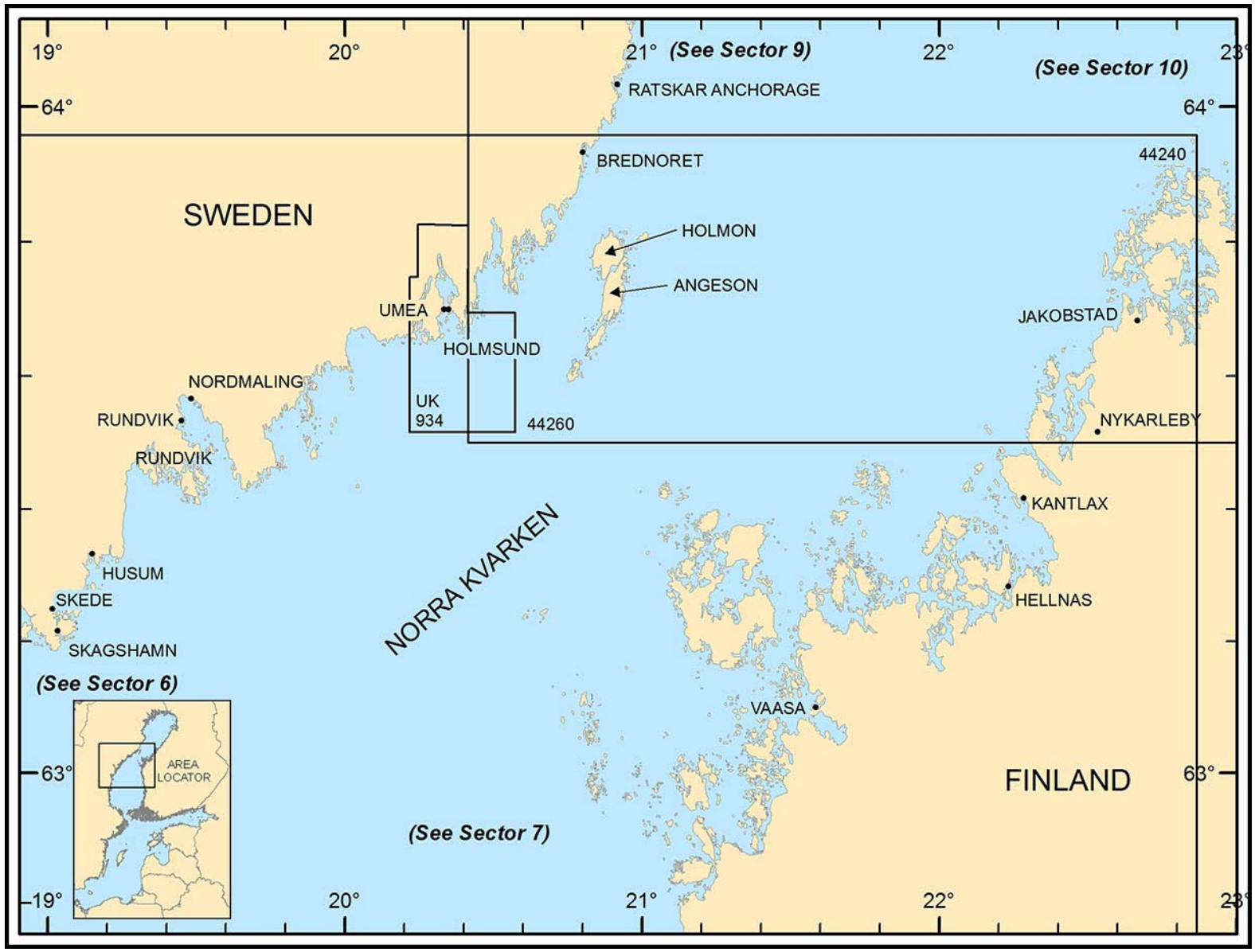
Strommingsbadan (62°59'N., 20°45'E.) is a small islet lying 18.5 miles N of Judasternarne. Above-water rocks lie 1 mile S and 1.2 miles SSE of this islet. A light is shown from a prominent tower, 13m high, standing on this islet.

Vesterhallan, a rock, lies about 0.5 mile WSW of the light. It has a least depth of 5.5m and is marked by a buoy. Karpoff, a shoal, lies about 1.5 miles SSW of the light. It has a least depth of 2.3m and is marked by a buoy.

Strommingsbadan lies near the NW edge of a shoal, with a least depth of 2.5m, which extends for about 2.3 miles in a general N-S direction and is nearly joined to another shoal, with a least depth of about 2.4m, which extends N for an additional 1.5 miles.

Strommingsbadan Light

A description of the waters lying N of Strommingsbadan, begins in paragraph 8.13.



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

SECTOR **8** — CHART INFORMATION

SECTOR 8

NORRA KVARKEN AND THE ADJACENT SWEDISH AND FINNISH COASTS

Plan.—This sector describes Norra Kvarken and the parts of the E coast of Sweden and the W coast of Finland bordering on that passage. The descriptive sequence is NE from Jarnasudde, on the Swedish side, then N from Strommingsbadan, on the Finnish side. The routes through Norra Kvarken are then described.

General Remarks

8.1 Norra Kvarken, the narrowest part of the Gulf of Bothnia, connects Bottenhavet (Selkameri), the S part of the gulf, with Bottenviken (Perameri), the N part. This passage comprises the waters on either side of Holmoarne, a group of islands lying between 4 and 10 miles off the Swedish mainland. These islands divide Norra Kvarken into two main channels, Vastra Kvarken and Ostra Kvarken. Norra Kvarken extends about 40 miles NE from Bonden (63°26'N., 20°03'E.) and Norrskar Light (63°14'N., 20°36'E.), and is encumbered with numerous islands, rocks, and shoals.

The Swedish coast, between Jarnasudde (63°26'N., 19°39'E.) and Ratan (64°24'N., 20°54'E.), about 48 miles NE, is indented by numerous fjords, bays, and coves into which several rivers flow. Many detached dangers front the coast.

On the Finnish side of Norra Kvarken, to the SE, an extensive area, containing numerous islands, rocks, and shoals, extends about 60 miles NE between Strommingsbadan (62°59'N., 20°45'E.) and Hallgrund (63°39'N., 22°25'E.). The coast here is also indented by many fjords, bays, and coves. A few streams discharge along this coast.

Several commercially-important ports and loading places are situated in the inlets on both coasts. The principal ports are Umea, in Sweden, and Vaasa, in Finland.

The channels leading to the ports are marked by aids. Lights and buoys mark some of the dangers adjacent to the main channels of Norra Kvarken both coasts are comparatively low and heavily wooded.

Winds—Weather.—Winds from the S to SW prevail over the Gulf of Bothnia in the summer months, but N winds are quite common in June. The winds show a tendency to flow parallel to the coasts in either direction in the Gulf of Bothnia.

There is a tendency for cloud coverage to be greater with onshore winds than with offshore winds; this, combined with the fact that the predominant winds are from a W quarter, explains the more cloudy conditions on the Finnish coast, compared with the Swedish coast of the Gulf of Bothnia.

Fog is most frequent in April and least frequent in August. Good or very good visibility is common over this sector. Records show that about 80 per cent of observations show visibility greater than 10 miles during summer.

Snowfall is a common cause of poor visibility, especially from December to April.

The region is very cold during winter and the average air temperature is below freezing from late October to the middle of April.

Humidity is usually high in the winter and comparatively low in spring and summer.

Ice.—For Finland, see General Remarks in paragraph 1.1 and paragraph 4.1.

For Sweden, see General Remarks in paragraph 5.1.

For information pertaining to winter navigation, ice, and Finnish icebreaking services, including internet web sites, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Pilotage.—See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for general information on pilotage within Finnish and Swedish waters. See also paragraph 1.1 and paragraph 5.1.

Deep-sea pilots for the Baltic Sea should be ordered through the Malmo, Lulea, or Stockholm pilot stations at least 24 hours in advance.

The main pilot stations along the Swedish part of the coast are situated at Umea and Ornskoldsvik (63°17'N., 18°44'E.). All requests for pilotage must be made through the VTS station at Lulea.

The pilotage area for Ornskoldsvik lies between a line bearing 140° through Norrbyskar (63°33'N., 19°52'E.) and latitude 62°50'N (see paragraph 6.52).

The pilotage area for Umea lies between a line bearing 140° through Norrbyskar (63°33'N., 19°52'E.) and latitude 64°03'N (see paragraph 8.9).

The main pilot station along the Finnish part of the coast is situated at Vaasa (see paragraph 8.18 and paragraph 10.1).

It should be noted that ordering of pilots in the Swedish waters described within this sector is presently carried out through the main VTS systems. However, it is reported that procedures for the initial ordering of pilots via the internet will be introduced in the near future. For additional information concerning these procedures, see the following web site:

Swedish Maritime Administration Home Page
https://www.sjofartsverket.se/en

FinTraffic VTS—Master's Guide
https://www.fintraffic.fi/en/vts/masters-guide

Regulations.—See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for regulations pertaining to vessels within the waters of Sweden and Finland.

See paragraph 10.1 for information concerning the Bothnia Vessel Traffic Service (VTS) system, which operates off the NW coast of Finland. This system is mandatory and includes the routes leading to Vaasa and the main shipping routes situated in the S part of Norra Kvarken.

See paragraph 1.1 for details of restricted areas and semi-restricted areas in these waters.

Several offshore islands, islets, and rocky shoals within these waters have been designated as nature reserves. Landing is prohibited and many restrictions apply.

Caution.—The coast of Finland, bordering on the Gulf of Bothnia, has not been thoroughly surveyed. Dangers may exist outside the charted and described off-lying dangers. Vessels should proceed with care when approaching this coast.

During the winter, many buoys are removed while others may be damaged or break adrift.

In the coastal waters within this sector, numerous logs may be found adrift at all times of the year.

Areas dangerous due to mines laid during World War II exist within these waters. There is still a risk of danger in these areas when anchoring or carrying out any seabed activities.

Due to various circumstances, including the discovery of obstructions, depths within the channels leading through the offshore dangers along this stretch of coast may change frequently. Therefore, vessels are advised to contact the local authorities in order to ascertain the latest information, including the maximum authorized drafts.

Sweden—Jarnasudde to Umea

8.2 The depths lying between Jarnasudde and Ratan are very irregular. The depths surrounding the detached offshore dangers may vary between 11m and 90m.

Foul ground fringes the coast, and numerous shoals and rocky patches, lying close together in some places, extend up to 8 miles offshore. Other detached rocks and shoals lie up to 13 miles offshore.

The dangers fronting the coast may best be seen on the chart and only the outermost are described below. Most of these offlying dangers are steep-to and great care is necessary when navigating in their vicinity.

Jarnasudde (63°26'N., 19°39'E.), the E entrance point of Nordmalingsfjarden, is low and wooded.

Jarnashamn (63°26'N., 19°41'E.), a small harbor, lies in an inlet on the E side of Jarnasudde. Small vessels, with drafts up to 4.5m, can use the narrow entrance channel. Ice obstructs navigation in the fairway from the middle of December to May. Local pilots may be obtained through the pilotage area of Ornskoldsvik. Anchoring is restricted within the harbor, in depths of 4 to 7m, clay and mud. Local knowledge is advised.

Norra Langrogrundet (63°19'N., 19°41'E.), a bank with shallow ledges and rocks awash at its N end, lies 6.5 miles S of Jarnasudde. A light, equipped with a racon, is shown from a prominent tower, 21m high, standing at the N end of this bank.

Sodra Langrogrundet, a rocky bank with a least depth of 4.9m, lies 2 miles S of Norra Langrogrundet and is marked by a buoy at its W end.

Elinsgrund (63°18'N., 19°53'E.), an isolated shoal, has a depth of 5.9m and lies about 5.5 miles E of Norra Langrogrundet Light.

8.3 **Bonden** (63°26'N., 20°03'E.) is a moderately-high red rock resembling, from a distance, the ruins of an old castle. This rock lies 10.5 miles E of Jarnasudde and is fronted by a reef on its S side. A light is shown from a prominent tower, 20m high, standing on the rock.

A detached shoal patch, with a depth of 8m, lies about 3 miles NE of Bonden.

Bonden Light

The area surrounding Bonden is a designated nature reserve and numerous restrictions apply. Landing is prohibited without permission.

Sydvastbrotten (63°25'N., 20°02'E.), consisting of two light-colored rocks lying close together, is located about 1.5 miles SSW of Bonden Light and fronted by foul ground on its N side. A shoal, with a depth of 7.9m, lies 0.4 mile S of these rocks.

Tjaruskarssund (63°28'N., 19°46'E.) is the SW entrance point of Orefjarden. The coast extending between this point and Jarnasudde is thickly wooded. The shore is fronted by several islets and numerous rocks and shoals.

Efesgrund (63°23'N., 19°47'E.), a detached shoal with a depth of 6.4m, lies about 5 miles S of Tjaruskarssund and is marked by a buoy.

Lordagshallan (63°26'N., 19°54'E.), a rocky shoal area, lies centered about 3.5 miles W of Bonden. It dries in places and is marked by a beacon.

Bondensgrund (63°28'N., 19°46'E.), a detached shoal patch, lies 4 miles ESE of Bonden Light and has a least depth of 2.4m.

Sydostbrotten Light (63°21'N., 20°11'E.), equipped with a racon, is situated 7 miles SE of Bonden Light. It is shown from a prominent tower, 34m high, standing on Vernersgrundet, a detached shoal patch.

Sydostbrotten (63°23'N., 20°07'E.), an extensive chain of shoals, lies with its NE end located about 4.3 miles NNW of Sydostbrotten Light. It extends SW for about 5 miles and is awash in places.

8.4 The coast between Tjaruskarssund and Blagrundsudde (63°36'N., 20°00'E.), about 10 miles NE, is indented by many shallow inlets. The shore is fronted by small islands, islets, and numerous shoals, which extend up to about 8 miles seaward and may best be seen on the chart.

Orefjarden (63°30'N., 19°48'E.), a fjord, lies between the mainland, on the W side, and a chain of islands and islets extending S, on the E side.

Snoan (63°29'N., 19°54'E.) lies 5 miles NW of Bonden Light and is the most easily-recognized island of the chain. It is 1.3 miles long, moderate high, and has a flat top with light-colored slopes. A chapel is situated near the S end; a light is shown from the SE side of the island.

Orefjarden may be approached from the S by a buoyed channel, which is authorized for drafts up to 4m. Local knowledge is required. There are also a number of shallow alternate passages,

which lead through the offshore dangers. This fjord is usually closed by ice from the middle of December to the middle of April.

Kylorn (63°32'N., 19°46'E.), a former timber-loading place, is situated on the NW side of Orefjarden and provides an anchorage, in depths of 5 to 10m, mud and sand.

8.5 **Norrbyskar** (63°33'N., 19°52'E.), a former timber-loading place, is situated in the NE part of the fjord. It is now only used by small craft, including a ferries and recreational boats. There is a quay, 53m long, with depths of 3.7 to 4.3m alongside. The anchorage has depths of 7 to 13m, clay, mud, and stones. Local knowledge is required.

Hornefors (63°37'N., 19°54'E.), a former timber and pulp-loading place, is situated in Vasterfjarden, an inlet indenting the mainland about 3 miles NNE of Norrbyskar. The main quay provides 170m of berthage at its outer end, with a depth of 6.9m alongside. Vessels up to 105m in length and 6.3m draft can be handled. The main approach channel, authorized for drafts up to 6.3m, leads NW from a position 5.5 miles NE of Bonden Light. Ice usually obstructs the harbor from January to April. Local knowledge is required.

An outer anchorage lies N of Ronnskar, an island located close S of the harbor entrance, in a depth of 8m, clay and mud.

Prominent radio masts, 60 to 75m high, stand 4.5 miles SW, 1.5 miles NNE, and 7 miles ENE of Hornefors.

It is reported that commercial traffic ceased. Hornefors is now completely disused.

Approach to Umea

8.6 The coast between Blagrundsudde and the SW entrance point of Umeafjarden, about 6.5 miles NE, is very irregular. The shore is fronted by numerous dangers, which may best be seen on the chart.

Norrmjole, a small fishing harbor, lies about 3 miles W of the SW entrance point of Umeafjarden.

Umea (63°49'N., 20°16'E.), a moderate-sized town, stands at the head of Umeafjarden, about 10 miles above the entrance.

This fjord is divided near the mouth into Osterfjarden and Vasterfjarden by Obbolaon, the largest of several islands lying within it. Both of these fjords are encumbered by numerous islets, rocks, and shoals.

The commercial port facilities, which are described in paragraph 8.9, are situated within Osterfjarden, the easternmost fjord. Vasterfjarden, the westernmost fjord, is only navigable in Strombacksfjarden, its S part.

Simphamn (63°40'N., 20°14'E.), a pleasure craft harbor, is situated on the W side of Vasterfjarden, near the S end of Strombacksfjarden. An approach channel, which is authorized for drafts up to 4m, leads N from seaward to the harbor. Small vessels may anchor, in depths of 4 to 5.5m, mud, off the harbor. Local knowledge is advised.

8.7 **Gunvorsgrund Light** (63°29'N., 20°27'E.), equipped with a racon, is shown from a prominent tower, 23m high, standing on a shoal lying 11.5 miles ENE of Bonden Light.

Vaktaren Light (63°37'N., 20°25'E.), equipped with a racon, is shown from a prominent tower, 21m high, standing on a shoal 7.5 miles N of Gunvorsgrund Light and 4 miles SE of the S end of Obbolaon.

Numerous dangers lie in the approach to Umeafjarden. They extend up to about 5 miles seaward and may best be seen on the chart.

Bredskar (63°39.6'N., 20°19.3'E.), a moderately-high and mostly bare island, lies close off the SE end of Obbolaon. Range lights and range beacons are situated on this island.

Storbranningen Light (63°38.3'N., 20°22.0'E.) is shown from a prominent tower, 8m high, standing 2 miles NW of Vaktaren Light.

Lillbadan Light (63°38.9'N., 20°20.5'E.) is shown from a prominent white hut, with a radar reflector, standing on an above-water rock 0.9 mile NW of Storbranningen Light.

Petlandskar (63°39.3'N., 20°23.9'E.), a small island, lies 1.3 miles NE of Storbranningen Light. Range lights are situated on this island.

Revet Light (63°39.3'N., 20°20.4'E.) is shown from a prominent floodlit tower, 11m high, standing 0.4 mile N of Lillbadan Light.

Fjardgrund Light (63°40.1'N., 20°20.5'E.) is shown from a prominent floodlit tower, 21m high and adjoining a house, standing 0.8 mile N of Revet Light.

Fjardgrund Light

8.8 **Directions.—**There are three channels leading into Umeafjarden, all of which join at a position W of Fjardgrund Light (63°40.1'N., 20°20.5'E.).

The main deep-water channel leads NNW from SE of Vaktaren Light (63°37'N., 20°25'E.).

The main coastal passage leads to the vicinity of Vaktaren Light. Vessels should steer in a NE direction to pass SE of the S end of Lordagshallan Shoal and NW of Bonden Light. They should then steer in an ENE direction for a position about 1.5 miles N of Gunvorsgrund Light. From this position vessels should steer in a NE direction for about 4.5 miles, using the white sector of Bergudden Light (63°47.5'N., 20°50.5'E.), situated on the NW side of Holmen, until they reach a position about 5 miles SE of Vaktaren Light.

Vessels should then head in a NNW direction and pass 0.3 mile WSW of Vaktaren Light. They should continue NNW, using the white sector of Fjardgrund Light or the Hillskar Lighted Range (63°40.8'N., 20°20.7'E.), until the alignment of Bredskar Lighted Range (63°39.7'N., 20°19.9'E.), is reached.

Vessels proceeding to the ferry terminal should remain on

the Hillskar Lighted Range and continue in a NNW direction for about 3 miles.

Other vessels should steer in a NW direction, using Bredskar Lighted Range, and pass close NE of Storbranningen Light (63°38.3'N., 20°22.0'E.) and close SW of Revet Light (63°39.3'N., 20°20.4'E.). When within about 0.3 mile of Bredskar Island, vessels should change course and steer in a N direction in order to pass about 0.3 mile W of Fjardgrund Light. They should then continue to follow the buoyed fairway into the port.

A secondary channel leads in a N direction from a position about 6 miles SSW of Vaktaren Light. Vessels should use the Bredskarssund Lighted Range (63°39.8'N., 20°18.8'E.) until they reach a position about 2.8 miles W of Vaktaren Light. They should then continue in a N direction through the buoyed fairway, using the range beacons situated on the W end of Bredskar Island. When within about 0.3 mile of Bredskar Island, vessels should change course as necessary to pass W of it. After passing between the NW side of the island and the SE end of Obbolaon, vessels should steer NE and join the main channel at a position about 0.3 mile W of Fjardgrund Light.

Another secondary channel leads in a W direction from a position about 6 miles E of Petlandskar Island. Vessels should approach, using the Petlandskar South and East Range Lights, and pass close N of the island. They should then steer in a WNW direction, using the Petlandskar South and East Range Lights, astern, and pass close SSW of Fjardgrund Light. Vessels should then join the main channel at a position about 0.3 mile W of Fjardgrund Light.

Vessels may also approach the port via the recommended track (Deep-Water Route) that is used for passing through Ostra Kvarken (see paragraph 8.24). Such vessels should depart the recommended track when about 2.5 miles SW of Nordvalen Light. They should head NNW and then in a NW direction using the white approach sector of Vaktaren Light.

Umea (63°42'N., 20°21'E.)

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8.9 The commercial facilities of **Umea** are situated at the S end of Osterfjarden. The town of Holmsund stands at the E side and is fronted by the harbor of Umea Hamn. Hillskar ferry terminal is situated at the E side of a narrow peninsula, which extends SSW from Holmsund. The town of Obbola stands at the W side. Timber products are exported; and cement, grain, and petroleum products are imported.

Ice.—Generally, the port is kept open year round. During severe ice conditions, the harbor may be closed for short periods.

Tides—Currents.—There is a range of about 0.6m between mean and ordinary low water. Strong S and SE winds cause higher water levels; N and NW winds cause lower water levels. The greatest range occurs in the spring and fall.

Within the harbor entrance channels, there is always a strong outgoing current. At the beginning of June, during the spring flood, this current attains a velocity of 4 knots.

Depths—Limitations.—The main approach channel is authorized for drafts up to 11m as far as a position W of Fjardgrund Light. The secondary channel leading from S through Bredskarssund is authorized for drafts up to 4m. The secondary channel leading from E via Petlandskar is authorized for drafts up to 4.3m.

There are three main berths, with ro-ro ramps, at Umea Hamn (Holmsund). Pirkajen Quay, North Quay, and South Quay. The fairway leading to these berths is authorized for drafts up to 10.2m.

Stormskar Oil Terminal is in the S part of Umea Hamn. The fairway leading to this terminal is authorized for drafts up to 10.2m.

At Obbola, there is a T-shaped oil terminal jetty. The fairway leading to this jetty berth is authorized for drafts up to 10.2m.

There is also a chemical quay. The fairway leading to this quay is authorized for drafts up to 4.7m. The ferry terminal at Hillskar has four berths.

Holmen road bridge spans the port at the N end of Holmsund. The W section has a vertical clearance of 10m; the E section has a vertical clearance of 7m. The channel leading N of the bridge is used only by small craft.

Patholmensviken, a small craft harbor, lies 1 mile NNE of Hillskar ferry terminal. It is protected by a breakwater and has depths of 2 to 4m. Bredvik, a yacht harbor, lies close S of Obbola. For berthing information see the table titled **Umea—Berth Information**.

There are facilities for general cargo, bulk, ferry, tanker, and ro-ro vessels in the port. Vessels up to 45,000 dwt, 215m in length, 33m beam, and 10m draft have been accommodated.

Umea—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Kvarken Ports Office and Port Control							
Northern No.1-4	—	7-8m	—	5.0-6.0m	—	—	General cargo, grain, and cement. Continuous berthing length of 240m.
Northern No. 5/6	—	7.3m	—	6.0m	—	—	General cargo. Continuous berthing length of 110m. Ro-ro ramp width of 20m.
Pier No. 7/8	—	8.8m	—	8.8m	—	—	General cargo. Continuous berthing length of 168m. Ro-ro ramp.

Umea—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Southern No. 9/10	—	10m	—	10.0m	—	—	General cargo. Continuous berthing length of 155m. Ro-ro ramp width of 30m.
Container Terminal							
Gustafs Udde	145m	10m	—	—	—	—	Containers and general cargo.
Wasaline Ferry Terminal							
No. 1	160m	7.5m	—	7.0m	—	—	Passengers and ro-ro.
No. 2	160m	7.5m	—	7.0m	—	—	Passengers and ro-ro.
Fodercentralen							
No. 3	80m	5.5m	—	—	—	—	Grain, ro-ro, and aggregates.
Coastguard							
Coastguard	78m	—	—	—	—	—	Coastguard.
Obbola Oil Terminal							
Oil	70m	11.0m	185m	10.0m	—	45,000 dwt	Chemicals and dirty products. The loa can be increased to 200m if maximum draft is reduced to 7.6m during the day only. There bunkering available to vessel berth port side alongside. Night berthing if vessels have drafts less than 9m. At night the maximum loa is 185m and the maximum size is 17,000 dwt.
Stena Oil Terminal							
Oil Quay	80m	11.0m	215m	10.0m	33.0m	30,000 dwt	Petroleum products and aviation fuel. Bunkering and fresh water available. Night berthing permitted if maximum draft is 9m and maximum size is17,000 dwt.

Aspect.—Djaknebolsklinten, 132m high, stands 5 miles SW of Umea. This wooded hill has three peaks, of which the westernmost is the tallest. It is conspicuous from seaward, particularly from the S.

A water tower and a factory building standing in Obbola are conspicuous from seaward. A water tower surmounted by a structure resembling a beacon, a radio mast, and a watch tower stand in the N part of Holmsund and are all prominent.

A conspicuous wind generator, 53m high, stands on a breakwater, which extends S from the vicinity of Hillskar ferry terminal.

The approach channels are marked by lighted ranges, buoys, and beacons (see paragraph 8.8).

Pilotage.—The pilotage area for Umea lies between a line bearing 140° through Norrbyskar (63°33'N., 19°52'E.) and latitude 64°03'N. All requests for pilotage must be made through the VTS station at Lulea (see paragraph 9.19).

Pilotage is compulsory, as follows:

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

In certain channels between Vaktaren and Skagsudde/Rundvik, pilotage is compulsory, as follows:

1. All Category 1 vessels.
2. Category 2 vessels of 80m in length, 15m beam, and 5m draft and over.
3. Category 3 vessels of 90m in length, 15m beam, and 5.5m draft and over.

The pilot can be contacted by VHF and boards in the vicinity of Vaktaren Light (63°37'N., 20°25'E.). In bad weather, the pilot generally boards in the entrance fairway.

Regulations.—A mandatory Reporting and Information System has been established in the Gulf of Bothnia and is operated by Vessel Traffic Services (VTS) at Lulea and Gavle. For further information, see Lulea (paragraph 9.19).

It is reported that tankers over 13,000 dwt and 7.6m draft bound for Stormskar Oil Terminal and cargo vessels over 8.5m draft bound for Umea Hamn are restricted to daylight move-

ments.

Contact Information.—See the table titled **Umea—Contact Information**.

Umea—Contact Information	
Port	
Call sign	Umea Hamnradio
	Umea Harbour Radio
VHF	VHF channels 12 and 16
Telephone	46-90-63280
Facsimile	46-90-24306
Web site	http://www.kvarkenports.com/about/umea.html
Pilot	
Call sign	North Coast Pilot
VHF	VHF channel 11
Telephone	46-771-630620
Facsimile	46-26-99469
E-mail	northcoastpilot@sjofartsverket.se
Web site	https://www.sjofartsverket.se

Anchorage.—Vessels waiting for the pilot may anchor, in depths of 18 to 25m, about 1.5 miles SE of Vaktaren Light.

Anchorage can be taken, in depths of 14 to 18m, close N of Bredskar Island. Anchorage can also be taken, in depths of 15 to 16m, clay and mud, close E of Obbola, about 0.8 mile below the Holmen road bridge.

Directions.—Three entrance channels, which may best be seen on the chart, lead into the port (see paragraph 8.8).

Caution.—Several submarine cables, which may best be seen on the chart, lie across the channel close S of the Holmen road bridge.

A submarine outfall pipeline, which may best be seen on the chart, extends SE into the fairway from the S part of Obbola. Anchorage is prohibited within 150m above and 100m below this pipeline.

A mined area, which may best be seen on the chart, lies across the main fairway about 0.7 mile N of Bredskar Island. Navigation is permitted, but anchorage and fishing are prohibited due to the possible presence of sub-surface mines. Passage through the area during thunderstorms may also be dangerous.

Sweden—Umea to Ratan

8.10 **Norrfjarden** (63°52'N., 20°45'E.), a small local ferry harbor, is situated about 15 miles NE of Osterfjarden. The coast between, which forms the W side of Vastra Kvarken, is indented by several other fjords and is mostly low and thickly wooded. The shore is fronted by numerous small islands, rocks, and shoals. Norrfjarden is protected by a curved breakwater, 100m long, and has depths up to 4m.

Taftelandet (63°47'N., 20°33'E.) is an irregularly-shaped peninsula, which separates Taftefjarden, on the W side, from Safvarfjarden, on the E side. A lighted range, for the use of fishing vessels, is shown from Rovogern (63°44'N., 20°32'E.), one of several islets lying close off the SW side of the peninsula.

Bjuren (63°45'N., 20°36'E.), an island, lies in the SW part of Safvarfjarden. Anchorage can be taken by small vessels between this island and the Taftelandet, in a depth of 5m, mud. Local knowledge is required as the channel is narrow and intricate. It can be used by small vessels with drafts up to 3.9m. Several pairs of range beacons mark the fairway.

Tarngrunden (63°48'N., 20°47'E.) lies 2.5 miles offshore, 6.2 miles NE of Bjuren. This shoal lies at the edge of the coastal bank and is marked by a buoy.

Karingskar (63°54'N., 20°51'E.), a high and almost bare islet, lies about 1 mile offshore, 3.3 miles NE of Norrfjarden. A rocky shoal extends about 1 mile E from this islet and is marked by a buoy.

8.11 **Brednoret** (63°56'N., 20°48'E.), a small loading place, is situated on the W side of Nyhamnsfjard, 2 miles NW of Karingskar. Ice usually obstructs this fjord from December to the middle of May. Anchorage can be taken, in a depth of 6m, sand and clay, close SW of Farskaren, two islets lying about 0.5 mile SE of the village. Two entrance channels, available to small vessels with drafts up to 5m, lead to the anchorage. Vessels may approach from E and pass N of Karingskar or from S and pass W of this islet. Numerous dangers lie in the approaches and local knowledge is required.

Ratan (64°24'N., 20°54'E.), a small natural harbor, is situated about 5 miles NNE of Karingskar and is described in paragraph 9.2.

For Vastra Kvarken and Ostra Kvarken, see paragraph 8.23 and paragraph 8.24, respectively.

Finland—Strommingsbadan to Vaasa

8.12 The Finnish coast, from a point on the mainland 15 miles SE of Strommingsbadan, trends very irregularly NE for about 60 miles to a point on the mainland located 2.5 miles E of Hallgrund (63°39'N., 22°25'E.), which is described in paragraph 10.2.

Many fjords, bays, and coves, which may best be seen on the chart, indent this entire stretch of coast. Hundreds of islands, islets, rocks, and other dangers encumber these inlets, fringe the shore, and extend up to about 30 miles seaward. Several large areas lying among these dangers have not been fully surveyed.

Only the outermost dangers are described below. These dangers form the SE side of Ostra Kvarken, which is the E part of Norra Kvarken. Most of the outermost dangers, islands, and islets fronting this coast are located near the entrances to several channels leading to the port of Vaasa.

Vaasa is the only place of commercial importance along this coast. Several small loading places are situated in the fjords NE of Vaasa. A description of the coast extending N of Hallgrund begins in paragraph 10.2.

Caution.—This part of the Finnish coast is low and wooded, and lacks good natural landmarks; it appears to passing vessels to be farther away than it actually is.

8.13 **Strommingsbadan** (62°59'N., 20°45'E.), an outer

danger, lies about 25 miles WSW of the port of Vaasa and is described in paragraph 7.20.

Depths among the maze of islands and dangers extending between Strommingsbadan and Hallgrund are very irregular.

Ronnskaret (63°05'N., 20°48'E.), a large group of islets and rocks, lies centered about 6 miles NNE of Strommingsbadan. Storsanden, the outermost islet is located 5.8 miles N of Strommingsbadan.

Falliskar Beacon (63°04'N., 20°48'E.), a prominent landmark, stands on an islet of the same name within the group, 5.3 miles NNE of Strommingsbadan.

Norrskar (63°14'N., 20°39'E.), lying 16 miles NNW of Strommingsbadan, consists of two islands and several rocky islets, which are located on a reef about 3.5 miles in diameter.

Norrskar Light (63°14'N., 20°36'E.) is shown from a prominent tower, 21m high, standing on the westernmost island.

Norrkallan Light is shown from a tower, 9m high, standing on a rock, awash, about 0.6 mile W of Norrskar Light, at the outer edge of the reef.

Vasterkallan, with a depth of 8m, lies about 2 miles WNW of Norrskar Light. This isolated shoal is marked by a buoy. A detached shoal patch, with a least depths of 8.9m, lies about 4 miles NW of Norrskar Light.

Nygrund, with a depth of 2.9m, lies 1.5 miles S of Norrskar Light. This outer shoal is marked by a buoy.

8.14 Lotsgrund Light (63°11'N., 20°43'E.) is shown from a beacon structure standing 4 miles SE of Norrskar Light.

Skvattan Beacon (63°07.8'N., 20°41.9'E.), equipped with a racon, stands on a small islet lying about 3.2 miles S of Lotsgrund Light.

Vaasa Light (63°14'N., 20°55'E.), equipped with a racon, is shown from a prominent tower, 20m high, standing 8.5 miles E of Norrskar Light.

Utgrynnan Light (63°21'N., 20°46'E.), equipped with a racon, is shown from a prominent tower, 23m high, standing on an outer reef 8.1 miles NNE of Norrskar Light.

Rabergskallan, a detached shoal with a least depth of 0.7m, lies about 2.5 miles SSE of Utgrynnan Light and is marked by a buoy.

8.15 Valassaaret (63°25'N., 21°05'E.), a group of islands and islets, lies centered about 10 miles NE of Utgrynnan Light and is surrounded by reefs.

Valassaaret Light (63°25'N., 21°04'E.) is shown from a prominent framework tower, 36m high, standing on the S part of Storskar, the largest island.

Reefs, with above-water rocks, extend up to about 3.5 miles NE of Storskar and are marked by two buoys.

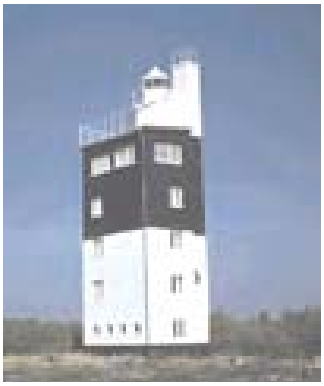
An area of foul ground and shallow rocks extends up to about 8.5 miles W of Valassaaret Light and may best be seen on the chart. Medelkallen, a group of above-water rocks, lies in this area, 6 miles WSW of the light.

Ritgrund Light (63°26'N., 21°30'E.) is shown from a prominent pyramidal tower, 18m high, standing on an islet 12 miles E of Valassaaret Light. The islet is fronted by shoals and foul ground, which may best be seen on the chart.

Detached shoal patches, with depths of 9.7m, lie about 4 miles NNE and 9.5 miles NW of Ritgrund Light.

Mickelsorar (63°26'N., 21°46'E.) is a large group of islands, islets, rocks, and shoals lying centered about 7 miles E of Ritgrund Light. Detached shoal patches, with depths of less than 10m, extend up to 4 miles N of this group. They lie about 11 miles NE of Ritgrund Light and may best be seen on the chart.

Stubben (63°31'N., 22°10'E.), located about 18 miles ENE of Ritgrund Light, consists of Lillskar and Storskar, two small islands; a small islet; and several rocks. A shoal, with a depth of 9m, lies about 1 mile N of Lillskar and is marked by a buoy.



Stubben Light (Lillskar)

A light is shown from a prominent square tower, 14m high, standing on Lillskar, the westernmost island. A conspicuous wooden tower, 17m high, is situated on the middle of Storskar, the easternmost island.

Helsingkallan (63°36'N., 21°50'E.), a group of rocky shoals with a least depth of 2.2m, lies about 9 miles NW of Stubben Light and 13 miles offshore. This group is marked near the center by two buoys and at the NW side by a lighted buoy.

Caution.—Numerous uncharted dangers may lie between Helsingkallan and the Mickelsorar group.

A nature reserve area, within which numerous restrictions apply, surrounds the Valassaaret group.

8.16 Kantlax (63°25'N., 22°17'E.), a village, stands on the mainland and is fronted by a loading roadstead. Good sheltered anchorage can be taken, in a depth of 11m, sand and clay, close off the NE extremity of Storon, an island lying close offshore. Local knowledge is required and pilots are available from Vaasa. The anchorage can be reached by using a branch channel, which is authorized for drafts up to 3m. It leads from the NE approach route to Vaasa at a position about 1.7 miles SSW of Stubben Light and is marked by buoys and beacons.

Munsalan (63°23'N., 22°18'E.), situated 1.5 miles S of Kantlax, consists of an oil jetty, 30m long, and two mooring buoys. It is approached via a buoyed fairway, authorized for drafts up to 7m, which branches off from the outer part of the channel leading to Hellnas.

Hellnas (63°17'N., 22°14'E.), a village situated on the mainland about 20 miles NE of Vaasa, is the loading place for the sawmills in the vicinity. The protected roadstead lies about 0.7 mile N of the village. A branch channel leads from the NE approach route to Vaasa. Vessels with drafts up to 7m can be taken to within 3.2 miles NNE of the roadstead; vessels with drafts up to 3.8m can be taken to the anchorage area in the roadstead.

Monassundet (63°29'N., 22°19'E.), an inlet extending about 4 miles SE, is entered 4 miles SE of Stubben Light. An anchorage, with depths of 9 to 11m, lies about 1 mile within the entrance near the village of Monas. An approach channel, suitable for vessels with drafts up to 4m, leads 3 miles SE to the narrow entrance. The inlet is only used by small craft and recreational boats.

Hallgrund (63°39'N., 22°25'E.), a small islet, lies about 10 miles NE of Stubben Light and is described in paragraph 10.2.

Approaches to Vaasa

8.17 Several approach routes lead toward Vaasa through the many islands, islets, and dangers lying off the coast. The two main channels and the two secondary channels are described below. The other inshore passages are only used by small craft with local knowledge.

Two main routes leading from the NW are each about 27 miles in length. Norrskar South passes S of Norrskar Light and is authorized for drafts up to 8.5m. Norrskar North passes N of of Norrskar Light and is authorized for drafts up to 9m.

Norrskar South, the first main route, leads from a position about 4 miles S of Norrskar Light (63°14'N., 20°36'E.). It leads 6 miles NE, using the white sector of Vaasa Light (63°14'N., 20°55'E.), and passes close NW of Lotsgrund Light (63°11'N., 20°43'E.). The route then leads about 5 miles ESE, using Norrskar Lighted Range astern, until a position 3 miles SE of Vaasa Light is reached. It continues for 6.3 miles in a SE direction through a partly-buoyed channel. The route then leads 1 mile ESE and passes close NNE of Glasrund Front Light (63°06'N., 21°11'E.), which is equipped with a racon. It continues 3.7 miles ENE, 1 mile SE, and 5.5 miles ESE through a narrow channel to the port.

Norrskar North, the second main route, leads from a position about 4.3 miles SW of Utgrynnan Light (63°21'N., 20°46'E.) and 4.4 miles NNE of Norrskar Light. It leads in a SE direction for about 9 miles to a position close NE of Vaasa Light. The route then continues in a SE direction for about 3 miles and joins the first main channel.

An alternate fairway, which is authorized for drafts up to 4.5m, leads SE for 11 miles from a position 0.7 mile SE of Vaasa Light. It passes close SW of Korso Light (63°11'N., 21°09'E.) and joins the main channel about 4 miles ENE of Glasrund Front Light.

Ronnska, a secondary route, which is authorized for drafts up to 4m, leads from a position 6 miles WSW of Faliskaret Beacon (63°04'N., 20°48'E.). It is mostly used by small vessels with local knowledge. The route leads in a general ENE direction for about 17 miles and passes through the Ronnskaret group of islets. It then joins the first main channel close NNE of Glasrund Front Light.

Ritgrund, another secondary route, which is authorized for drafts up to 4.8m, leads from a position 5 miles NNW of Ritgrund Light (63°26'N., 21°30'E.). The route leads in a general S direction for about 25 miles, passing between the island of Vallgrund and the mainland, to join the main channel. A road bridge, with a vertical clearance of 24m and an opening 60m wide, spans the channel. It connects the SE end of the island of Vallgrund to a causeway extending W from the mainland.

Stubben, an inshore route, used in daylight only, leads from a position about 2 miles N of Stubben Light (63°31'N., 22°10'E.). It leads S and SW for 26 miles, passing S of the Mickelsorar group (63°26'N., 21°46'E.), and then joins the secondary channel leading S from Ritgrind Light. This inshore route is authorized for drafts up to 7m as far as Stor Ljusen (63°26.0'N., 22°05.5'E.) and then for drafts up to 3.6m.

Regulations.—The approach route leading to Kristinestad (Kristiinankaupunki) is situated within Sector A of the Bothnia Vessel Traffic Service (VTS) system. This system operates off the NW coast of Finland and is mandatory. For further details of the VTS system, including reporting procedures, see paragraph 10.1.

Caution.—It is reported that, due to more frequent surveys, the Finnish Board of Navigation advises deep-draft vessels approaching from the NW to use the route leading N of Norrskar in preference to the one passing to the S.

A designated restricted area surrounds the island of Norrskar (63°14'N., 20°36'E.).

Vaasa (63°06'N., 21°35'E.)

World Port Index No. 27650

8.18 Vaasa, formerly known as Nikolaistad, is situated on the Finnish coast bordering on Norra Kvarken. The port area comprises the facilities at the outer harbor of Vaskiluoto, those at Palosaari to the N, and those at the inner or town harbor.

Ice.—The harbors have been closed to navigation because of ice on dates varying between December 25 and January 25, and were reopened on dates ranging from March 31 to May 16. Icebreaker service is furnished at the beginning and end of the ice season.

Tides—Currents.—The water level in the harbors rises with S winds and falls with N winds.

Depths—Limitations.—The main approach channel is authorized for drafts up to 9m (see paragraph 8.17).

The island of Vaskiluoto lies close W of the town of Vaasa and is connected to it by a causeway. A road bridge links the island to the town and also to the mainland on the S side. This bridge (63°04.8'N., 21°34.6'E.) has a vertical clearance of 2.5m.

Vaasa—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Central Quays							
Northern	160m	6.4m	190.7m	7.3m	26.0m	15,960 dwt	Ro/pax, ro-ro/lo-lo, and bunkers. 23,128 gt and 608 teu.

Vaasa—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Southern	180m	5-9m	—	8.6m	—	—	Closed.
Lasse's Quay							
No. 1	107m	—	179.5m	9.0m	28.0m	29,881 dwt	Continous berthing length of 214m. Animal feeds, containers, project/heavy cargo, breakbulk, and bunkers. 22,566 to 26,787 gt and 1,134 to 1,517 teu.
No. 2	107m	—	189.9m	9.0m	28.5m	38,122 dwt	
North Port Area							
Coal	145m	—	160m	9.0m	26.0m	25,532 dwt	Coal and bunkers. 19,955 gt.
Rein's	145m	7.5m	132.2m	7.0m	16.5m	9,600 dwt	Cement, container, breakbulk, and bunkers. 6,378 gt and 552 teu.
Passenger Terminal							
Passenger N	154m	6.8m	—	—	—	—	Ro-ro/lo-lo and fast ferries. Under construction.
Passenger S	145m	6.8m	—	—	—	—	Ro-ro/lo-lo and fast ferries. Under construction.
Oil Harbor							
Oil	105m	—	169.5m	9.0m	23.7m	25,117 dwt	Clean products, dirty products, and bunkers. Berthing length of 217m (including dolphins). Displacement 33,000t.

Palosaari Harbor lies close NW of the N part of the town. It provides a quay, 65m long, with a depth of 3.7m alongside. The main fairway leading to this harbor from Vaskiluoto is authorized for drafts up to 4.2m.

A power cable (63°06.0'N., 21°35.3'E.) spans the 4.2m approach to Vaassa Town Harbor close NW of the quays.The vertical clearance W of the central support pylon is 32m; E of the pylon the vertical clearance is 30m.

Town Harbor fronts Vaasa. Vaskiluoto Harbor is situated on the SW side of the island and is the site of the main commercial facilities. It is protected by a detached breakwater lying on the N side of the entrance channel.

There are facilities for ro-ro, passenger, automobile ferry, bulk, tanker, and general cargo vessels. Vessels up to 200m in length, 35m beam, and 9m draft can be accommodated. For more berthing information see the table titled **Vaasa—Berth Information**.

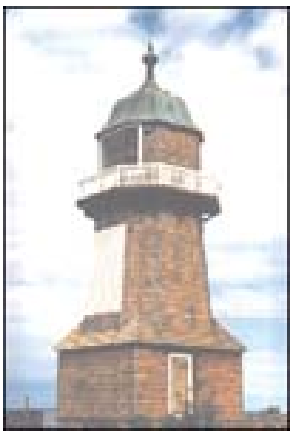
Aspect.—The approach channels are marked by directional sector lights, lighted ranges, buoys, and beacons (see paragraph 8.17).

Pilotage.—Pilotage is ordered via the Finnpilot Order Center, Western Pilotage Zone (see paragraph 10.1). Pilotage is compulsory.

Vessels must send a request for pilotage 24 hours prior to arrival at the boarding place. A confirmation must be sent 6 hours in advance and any changes after this time must be forwarded not later than 3 hours before arrival. In the Gulf of Bothnia, the binding order for a pilot must be made by telephone to the appropriate pilot station 3 hours before arrival.

Pilots can be contacted by VHF, and board in the following positions:

1. Vaasa N—(63°15.8'N., 20°51.2'E.)
2. Vaasa S—(63°12.1'N., 20°45.4'E.)



Bergudden Light

Vessels approaching from the NE may request a pilot from the station at Tankar (63°57'N., 22°51'E.) (see paragraph 10.1). Such requests must be made 24 hours in advance and arrangements may be made to embark the pilot in the vicinity of Stubben Light (63°31'N., 22°10'E.). Vessels approaching from the S may arrange to embark the pilot about 5.5 miles SW of Salgrund Light (62°20'N., 21°12'E.).

Regulations.—A speed limit of 10 knots is in effect for the section of the channel between Nygrund (63°07.6'N., 21°

20.2'E.) and the port. It is reported that a speed limit of 8 knots applies to vessels with drafts over 8m.

At night, tankers carrying more than 4,000 tons of oil are prohibited in the section of the channel between Nygrund (63°07.6'N., 21°20.2'E.) and Vaasa.

Vessels shall submit a departure report in order to be given permission to depart. The permission to depart issued by the VTS is valid for 20 minutes.

Vessel Traffic Service.—The approach route leading to Vassa is situated within Sector B of the Bothnia Vessel Traffic Service (VTS) system. This system operates off the NW coast of Finland and is mandatory. For further details of the VTS, including reporting procedures, see paragraph 10.1.

Contact Information.—See the table titled **Vaasa—Contact Information**.

Vaasa—Contact Information	
Port	
VHF	VHF channels 12, 13, and 16
Telephone	358-400-479163
Facsimile	358-6-3254511
E-mail	vaasaport@kvarkenports.com
Web site	http://www.kvarkenports.com/about/vaasa.html
Harbormaster/Port Manager	
Telephone	358-400-479163

Anchorage.—Anchorage may be taken as directed by the pilot.

Caution.—A submarine track guide cable has been established in the fairway between Nygrund (63°07.6'N., 21°20.2'E.) and Nagelprick, 3.5 miles ESE, to assist navigation. The use of this guide system is only possible with a special receiver. Anchoring and fishing are prohibited in this part of the channel.

Norra Kvarken

8.19 Norra Kvarken, the narrowest part of the Gulf of Bothnia, includes the waters extending about 40 miles NE from a line joining Bonden (63°26'N., 20°03'E.), Sydostbrotten (63°21'N., 20°11'E.), and Norrskar (63°14'N., 20°36'E.). It is encumbered with numerous islands, islets, rocks, and shoals.

A traffic separation scheme exists in the Norra Kvarken. It includes two-way routes for each segment, as best seen on the chart. The least depth in the new Traffic Separation Scheme and two-way routes is reported (2019) to be16.7m.

The part of the Gulf of Bothnia situated S of Norra Kvarken is known in Swedish as Bottenhavet and in Finnish as Selkameri. The part of the gulf situated N of Norra Kvarken is known in Swedish as Bottenviken and in Finnish as Perameri.

Holmoarne (63°40'N., 20°52'E.), a group of islands and rocks, divides Norra Kvarken into two channels or passages. Vastra Kvarken, on the W side, leads between the group and the dangers fronting the coast of Sweden; Ostra Kvarken, on the E side, leads between the group and the dangers fronting the coast of Finland.

Great care is necessary when navigating within both Vastra Kvarken or Ostra Kvarken, particularly during foggy weather, which is not infrequent. Mariners should bear in mind that the currents are uncertain and their movements sometimes precede the wind.

8.20 **Holmon** (63°47'N., 20°54'E.), the northernmost and largest island of the Holmoarne group, lies about 4 miles off the Swedish coast. The summit of this island is situated in the N part. It is 24m high and consists of a bare ridge surrounded by woods. Several houses, a lookout tower, and a church, with a high pointed tower, stand on this ridge and are prominent from seaward.

A chain of small islets, rocks, and shoals extends about 5 miles NE from the N end of the island and is marked at its outer edge by a buoy.

Byviken (63°48'N., 20°52'E.), a small harbor protected by breakwaters, lies within a narrow bay at the NW end of the island. It has a depth of 4m and is used by fishing vessels and pleasure craft. The bay is exposed to winds and heavy seas from the N and NE. Vessels with local knowledge can anchor, in a depth of 20m, sand, close off the W shore of the bay. It is reported that a submarine pipeline lies along the W shore and lands at the root of the E breakwater.

A conspicuous radio mast stands close E of Byviken.

Bergudden Light (63°47.5'N., 20°50.5'E.) is shown from a prominent wooden tower, 18m high, standing on the NW side of Holmon.

Lillhallansgrund (63°49'N., 20°52'E.), a shoal with a least depth of 5.9m, lies about 1 mile N of Byviken and is marked on its SW side by a buoy.

Falkgrund (63°51'N., 20°53'E.), a shoal with a least depth of 9.9m, lies 2.3 miles NNW of the N extremity of Holmon and is marked by a buoy. Shoal patches, with depths of 7.6m and 9.4m, lie about 0.6 mile ESE and 0.7 mile SSW of Falkgrund.

Stora Fjaderagg (63°48'N., 21°00'E.), a mostly barren island, lies 1.5 miles NE of the NE extremity of Holmon. A chapel, some fishing huts, and a beacon, 7m high, are situated on the S side of the island. A prominent tower, formerly a lighthouse, 13m high, stands on the summit of the island.

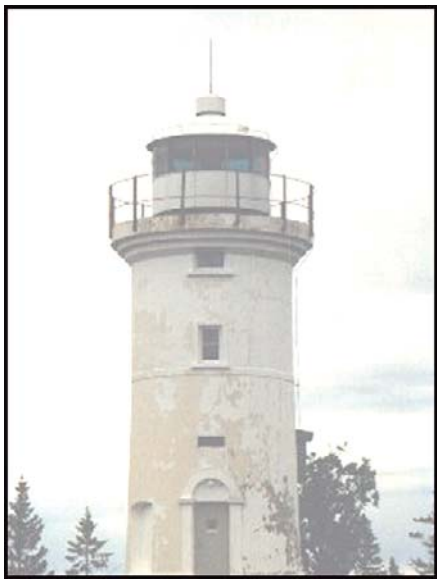
An extensive shoal bank fronts the N and E sides of Stora Fjaderagg. Lillgrund, an above-water rock, and Osterbadan, a shoal with a depth of 6.9m, lie about 1 mile N and 1 mile E, respectively, of the island.

Vessels can take anchorage, in depths of 9 to 16m, sand, about 0.3 mile S of the S end of Stora Fjaderagg. They must approach from the E and take care to avoid the reef extending up to about 1.5 miles from the E side of the island.

Angeson (63°44'N., 20°54'E.), low and wooded, lies close S of Holmon Island. Rocks and shoals extend up to about 1.8 seaward of the W side of this island and up to 4 miles seaward of the E side. These dangers are marked by buoys and may best be seen on the chart.

Grossgrunden (63°39'N., 20°51'E.), low and wooded, lies close S of Angeson and is fronted by shoals on each side. A beacon, with a radar reflector, stands on a group of above-water rocks about 1.5 miles WSW of the N end of this island.

Jagaroren (63°41'N., 20°55'E.), a shoal, lies about 1.6 miles ENE of the N end of Grossgrunden. A disused light tower, 12m



Stora Fjaderagg Tower

high, stands on this shoal and is equipped with a racon.

8.21 Holmogadd (Gadden) (63°36'N., 20°47'E.), the southernmost island of the group, is bare except for a few clusters of low trees and bushes. It is separated from the S end of Grossgrunden by Gaddstrommen. A conspicuous tower, 8m high, stands on the N part of the island.

A light is shown from a prominent granite tower, 20m high, standing on the S end of the island. Some dwellings are situated close to the light tower and a cairn stands on the beach close S of them.

Gaddstrommen, a narrow passage leading between reefs, is the only navigable channel through the island group. It is marked by beacons and only used by small craft with local knowledge.

A rocky coastal bank extends about 2 miles S and 2.5 miles SE from the S end of Holmogadd. It is marked by buoys and may best be seen on the chart.

Huginsgrund (63°34'N., 20°46'E.), a shoal with a depth of 5.9m, lies 2 miles S of Holmogadd Light, at the edge of the bank, and is marked by a buoy.

Regulations.—The main shipping route in the S part of Norra Kvarken is situated within Sector B of the Bothnia Vessel Traffic Service (VTS) system. This system operates off the NW coast of Finland and is mandatory. Northbound vessels entering Norra Kvarken, with destinations of Tornio, Rahja, Raahe, Pietarsaari, Oulu, Kokkola, or Kemi, are requested to make an advance report when 20 miles S of Nordvalen Light (63°32'N., 20°47'E.). For further details of the VTS system, including reporting procedures, see paragraph 10.1.

Caution.—Submarine cables, which may best be seen on the chart, extend between the NE side of Holmon and Stora Fjaderagg, and between the SE side of Holmogadd and Nordvalen Light.

A restricted area, within which entry is prohibited without permission, surrounds the island of Holmogadd and the S part of Grossgrunden.

A designated nature area, within which numerous restrictions apply, has been established around the E part of Holmon, most of Angeson, Grossgrunden, Holmogadd, and a large number of the adjacent skerries and rocks.

Due to the numerous off-lying dangers, vessels proceeding N in the gulf are advised to keep at least 4 miles from the E side of the Holmoarne group.

8.22 Nordvalen Light (63°32'N., 20°47'E.), equipped with a racon, is shown from a prominent floodlit tower, 26m high, standing 3.5 miles S of Holmogadd Light and 11 miles N of Utgrynnan Light.

A chain of rocks and shallow shoals extend up to about 7 miles S of Nordvalen Light. The outer shoals are marked by buoys and may best be seen on the chart.

Gerdasgrundet lies 1.5 miles SSW of Norvaken Light. This shoal has a least depth of 4.8m and is marked by a buoy.

Vastra Snipansgrundet, with a least depth of 2.3m, lies 6.2 miles SSW of Nordvalen Light. This shoal, which is the southeasternmost danger lying in the entrance to Ostra Kvarken, is marked by two buoys.

Odelgrund (63°25.5'N., 20°34.0'E.), with a depth of 11.9m, lies about 7 miles NW of Utgrynnan Light (63°21'N., 20°46'E.) and 8.5 miles SW of Nordvalen Light. This shoal lies at the outer edge of a bank extending SE from the vicinity of Gunvorsgrund Light (63°29'N., 20°27'E.) and is marked by a lighted buoy.

Waldersgrund, a detached shoal with a depth of 11.9m, lies about 1 mile ESE of Odelgrund and is marked by a buoy.

8.23 Vastra Kvarken (63°42'N., 20°43'E.) is bordered on the W side by the dangers fronting the Swedish coast and on the E side by the Holmoarne group (see paragraph 8.19). This passage leads in a general NNE direction for 23 miles from a position 5 miles SE of Vaktaren Light (63°37'N., 20°25'E.) to the vicinity of Karingskar (63°54'N., 20°51'E.).

A coastal passage leads to the vicinity of Vaktaren Light (see paragraph 8.8).

The recommended route, which may best be seen on the chart, leads NNE using the white sector of Bergudden Light (63°47.5'N., 20°50.5'E.). When about 2 miles from the light tower, vessels should steer more to the N and adjust their course in order to pass WNW of the light and ESE of Tarngrunden.

The route then leads in a NNE direction and passes close WNW of Lillhallansgrund and Falkgrund. After passing Falkgrund, vessels should steer more to the NE and head for a position 2.3 miles ESE of Karingskar. They should then head NNE using the white sector of Bergudden Light, astern.

Vessels entering from the N should head in a SSW direction using the white sector of Bergudden Light. When about 7 miles from the light structure and E of Karingskar, they should head SW to pass close W of Falkgrund shoal. The route then leads SSW and passes close WNW of Lillhallansgrund and about 0.4 mile WNW of Bergudden Light. When about 1.5 miles SSW of the light, vessels should adjust course and steer in a SSW direction using the white sector of Bergudden Light, astern.

Pilotage.—The pilotage area for Umea lies between a line bearing 140° through Norrbyskar (63°33'N., 19°52'E.) and latitude 64°03'N. The main boarding station is in the vicinity of

Vaktaren Light. All requests for pilotage through Vastra Kvarken must be made through the VTS station at Lulea (see paragraph 9.19).

Caution.—Submarine cables, which may best be seen on the chart, lie across the N part of the passage. They extend NW between the NE side of Holmon, in the vicinity of Byviken harbor, and the mainland coast of Sweden.

A submarine cable, which may best be seen on the chart, lies across the S part of the passage. It extends WNW between the W side of Holmogadd and the mainland coast in the vicinity of Umea.

Buoys moored within Vastra Kvarken are sometimes displaced by drift ice in the early part of the navigation season, and may also be fouled by timber rafts.

An area, within which anchoring, fishing, and diving are prohibited, extends across Vastra Kvarken in the vicinity of Bergudden Light and may best be seen on the chart.

8.24 Ostra Kvarken (63°33'N., 20°51'E.), the main offshore passage in Norra Kvarken, is bordered on the NW side by the dangers fronting the S and E sides of the Holmoarne group and on the SE side by the dangers fronting the coast of Finland.

Depths—Limitations.—A Deep-Water Route, which is marked by buoys, has been established through Ostra Kvarken. It extends for about 8 miles SW and 7 miles ENE of Nordvalen Light (63°32'N., 20°47'E.) and has a least depth of 16.2m.

The recommended track passing through Ostra Kvarken is authorized for drafts up to 13m.

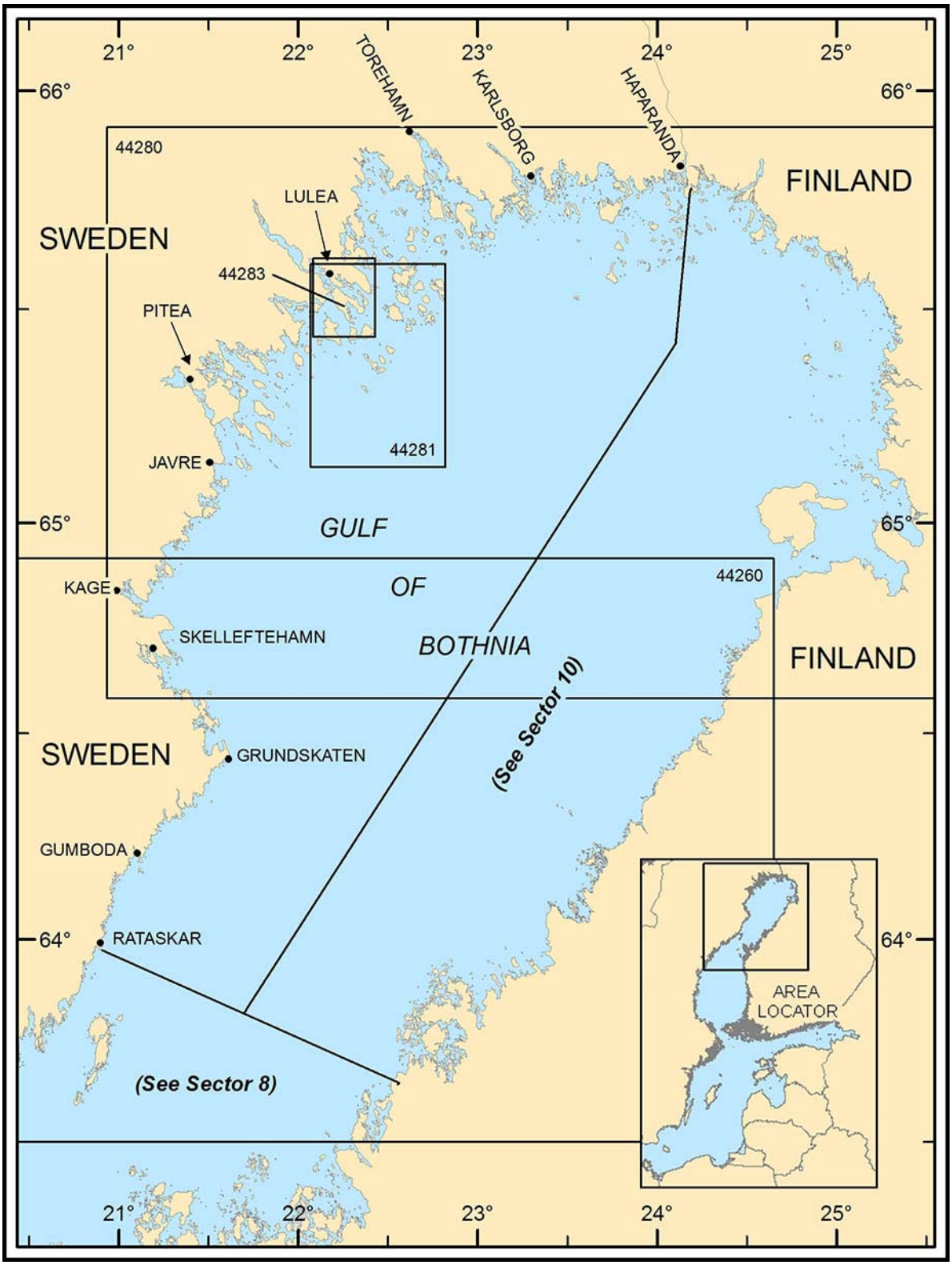
Directions—Vessels should proceed in a N direction up the gulf to a position located about 8 miles WNW of Norrskar Light (63°24'N., 20°36'E.). The recommended track then leads NE from this position to the S entrance of the Deep-Water Route. It passes about 6 miles SE of Sydostbrotten Light (63°21'N., 20°11'E.), close SE of Odelgrund (63°25.5'N., 20°34.0'E.), and close NW of Waldersgrund, using the white sector of Nordvalen Light (63°32'N., 20°47'E.).

From a position about 5 miles SW of Nordvalen Light, the recommended track (Deep-Water Route) leads in a NE direction to pass close WNW of the shoals lying SW of the light. It then rounds the light, at a distance between 0.2 mile and 0.6 mile, and leads ENE toward a position located 11.7 miles NNE of Valassaaret Light (63°25'N., 21°04'E.), using the white sector of Nordvalen Light, astern.

Vessels bound for Umea or intending to use the coastal route through Vastra Kvarken should depart the recommended track (Deep-Water Route) in a NW direction when about 2.5 miles SW of Nordvalen Light.

Caution.—A submarine cable, which may best be seen on the chart, lies across the passage. It extends NNW from the vicinity of Ritgrund Light (63°26'N., 21°30'E.), rounds the island of Stora Fjaderagg, and extends W to the mainland coast of Sweden.

Care should be taken when approaching the S part of the passage as the Swedish side, being high, may tend to appear closer than the low Finnish side.



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

SECTOR **9** — CHART INFORMATION

SECTOR 9

SWEDEN—EAST COAST—RATAN TO THE FINNISH BORDER

Plan.—This sector describes the E coast of Sweden up to the N part of the Gulf of Bothnia. The descriptive sequence is NNE from Ratan to Ranefjarden, then E to the Finnish border.

General Remarks

9.1 The water in the N part of the Gulf of Bothnia is discolored and almost fresh because of the numerous rivers discharging into it.

The coast of Sweden between Ratan and Tomsvarten (64°58'N., 21°23'E.), about 67 miles NNE, is fronted by numerous islands, rocks, and shoals. Although soundings off this part of the coast are very irregular, vessels should remain in depths of not less than 50m to ensure that they stay a safe distance from all off-lying dangers.

Between Pitea (65°19'N., 21°29'E.) and the Finnish border, shoals lie as far as 20 miles seaward of the outermost islets. Consequently, when vessels are in the vicinity of these dangers, the coast will be visible only in very clear weather. The depths are irregular. In a few places soundings give good warning of approach to dangers. However, for the most part, the shoals are steep-to.

In thick weather, the greatest care should be taken when approaching the land. Off this coast, the water is very muddy, especially during and just after freshets in the rivers, making it impossible to detect dangers by discoloration.

Ice.—See General Remarks in paragraph 5.1.

Pilotage.—See paragraph 1.1, paragraph 5.1, and Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for general information on pilotage.

The main pilot stations along this part of the coast are situated at Skelleftehamn and Lulea. All requests for pilotage must be made through the VTS station at Lulea.

The pilotage area for Skelleftehamn lies between a line bearing 152° from position 65°24'N, 21°49'E and latitude 64°03'N. The pilotage area for Lulea lies between a line extending 152° from position 65°24'N, 21°49'E and the Finnish border. For further information, see paragraph 9.10 and paragraph 9.19.

It should be noted that ordering of pilots in the Swedish waters described within this sector is presently carried out through the main VTS systems. However, it is reported (2007) that procedures for the initial ordering of pilots via the internet will be introduced in the near future. For additional information concerning these procedures, see the following web site:

Swedish Maritime Administration Home Page
https://www.sjofartsverket.se/en

Regulations.—See paragraph 1.1 and Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for regulations pertaining to vessels in Swedish waters, including restricted areas and semi-restricted areas.

Caution.—Parts of the coast and some areas off the coast are incompletely surveyed.

Special marks and buoys are occasionally placed temporarily on and off the coast, during the summer season, for the purpose of making surveys. Vessels are warned not to mistake these special marks for the navigational aids.

During the winter, many buoys in these waters are removed, while others may be damaged or break adrift.

In the coastal waters within this sector, numerous logs may be found adrift at all times of the year.

Areas dangerous due to mines laid during World War II exist within these waters described in this sector. There is still a risk of danger in these areas when anchoring or carrying out any seabed activities.

Due to various circumstances, including the discovery of obstructions, depths within the channels leading through the offshore dangers along this stretch of coast may change frequently. Therefore, vessels are advised to contact the local authorities in order to ascertain the latest information, including the maximum authorized drafts.

Ratan to Skelleftehamn

9.2 **Rata Storgrund** (63°59'N., 21°07'E.), with a least depth of 2.7m, lies about 6 miles E of the mainland coast. This shoal area consists of rock and shingle, and is marked on its W side by a buoy. A light is shown from a prominent tower, 17m high, standing on the S and shallowest part of the shoal.

Rickleagrunden, a group of shoals, lies centered about 5.5 miles N of Rata Storgrund Light. The group has a least depth of 2.9m and is marked by a buoy moored on its W side.

Rataskar Light (64°00'N., 20°54'E.) is shown from a tower on a building, 8m high, standing on the W side of a wooded island of the same name lying close off the coast, 5.5 miles W of Rata Storgrund Light.

Ratan Sodra Light is shown from a tower standing on the mainland 0.2 mile W of the S extremity of Rataskar.

Ratan (64°24'N., 20°54'E.) is a small natural harbor situated on the mainland. It lies abreast the middle of the sound between the coast and the island of Rataskar, close E.

The harbor can be approached from the SSE or the NE via channels, which are available to vessels with drafts up to 2m. The main quay is 95m long and has a depth of 4.5m alongside.

It is reported that the harbor is no longer open to commercial shipping and is used only by recreational craft.

Rataskar Beacon, octagonal shaped with a high pointed roof, is conspicuous. The prominent yellow lookout tower of the former pilot station is situated close S of this beacon. A number of knobby mountain tops are visible in clear weather behind the beacon; however, at close range, these mountain tops are obscured by the coastal land.

A large white spot on Norrklubb, the N part of Rataskar, is conspicuous. It is painted on a cliff and partially obscured by bushes. Norrklubb Beacon, a round-topped cairn, 4m high, stands on the N extremity of Rataskar and is prominent.

Rataskar Light

Dodmanskar, an islet overgrown with brush, lies about 1 mile NNE of Norrklubb. A conspicuous large and dark rock, with a flat top, is located at the E side of this islet.

Soderklubb Beacon, a round-topped cairn, 4m high, stands on an islet lying close S of Rataskar.

Vessels with local knowledge can anchor in the N roadstead between the mainland and Norrklubb, the N part of Rataskar. This anchorage has depths of 10 to 13m, clay, but is exposed to N winds.

Anchorage may also be obtained in the harbor, between Rataskar and the mainland, in a depth of 4m, clay.

9.3 **Rataskar Anchorage** (64°02'N., 20°55'E.) lies about 2 miles NNE of Rataskar. It is the loading place for Dalkarlsa, which stands 3 miles NW. The roadstead has a depth of 7m, sand, and is suitable for vessels with drafts up to 5m. It is exposed to SE and E winds. The anchorage can be approached from the SE, but local knowledge is required.

Sikea (64°09'N., 20°59'E.), a very small natural harbor, is situated near the head of Sikeafjarden, about 10 miles N of Ratan. The fairway leading to the harbor passes N of Ricklea-grunden and is authorized for vessels with drafts up to 4.6m. There is a pier, 93m long, with a depth of 3m alongside. The harbor is no longer open to commercial shipping and is only used by recreational craft.

Vannskaren Light (64°10'N., 21°08'E.) is shown from a tower, 11m high, standing on the outermost of a group of treeless islets situated about 4 miles E of Sikea.

9.4 **Gumboda** (64°14'N., 21°06'E.) is a small natural harbor situated within Gumbodafjarden, 3.5 miles NNW of Vannskaren Light. Approach channels lead from the S, passing W of Vannskaren Light, and from the E, passing N of the light. The S fairway is available to vessels with drafts up to 6.5m. The E fairway is available to vessels with drafts up to 4.9m. Local knowledge is required.

The harbor is closed to commercial shipping and used only by recreational craft. It is reported that tugs towing timber occasionally find refuge here.

Gumbodahamn affords anchorage to vessels with local knowledge inside Sparren, in depths of 6 to 10m, sand and clay. Vessels can also anchor, in depths of 16 to 24m, clay, about 0.2 mile W of Lilla Vannskar, which lies 0.6 mile WNW of Vannskaren Light.

Bodbergen, 58m high, stands 1 mile NNE of the head of Gumbodafjarden. This hill has two rocky summits, the westernmost of which is the higher and conspicuous from seaward.

Vardstuteberg and Markberget, 95m and 104m high, stand about 3 and 4 miles NE, respectively, of the head of Gumbodafjarden. Both of these rocky crests are conspicuous from seaward.

9.5 **Lovsele** (64°18'N., 21°15'E.) is a loading place within Lovselefjarden, which is entered about 8 miles NNE of Vannskaren Light.

Knavringen, with a least depth of 7.9m, lies about 2 miles S of Blekeudden, the E entrance point of the fjord. Kallan, a rock awash, lies close N of Knavringen. A main channel leads from S and passes W of Kallan. Local knowledge is required. The fairway is available to vessels with drafts up to 4.9m. There is a quay, 150m long, with a depth of 4.8m alongside, but only 50m of berthage along the central part is available.

The harbor is closed to commercial shipping and used only by recreational craft.

Lovselefjarden is usually ice bound from the middle of December to the middle of May.

Anchorage can be obtained by vessels with local knowledge within the fjord, in depths of 5 to 8m, mud, but the roadstead is exposed from S.

Varberget is a bare, conspicuous summit, 46m high, rising close to the shore, 2.7 miles NE of the W entrance point. Storklubben, an islet, lies about 0.2 mile SSE of the W entrance point and can be easily recognized.

9.6 **Sorkallen** (64°14'N., 21°28'E.), with a least depth of 6.2m, lies about 5 miles offshore, 10 miles NE of Vannskaren Light.

Trindkallen (64°16'N., 21°31'E.), with a least depth of 4.3m, lies about 2.5 miles NNE of Sorkallen. These shoals form the outermost dangers in this vicinity.

Kallviken (64°20'N., 21°22'E.) a loading place, is entered 3.5 miles NE of Lovsele. The main approach route to the roadstead leads from S. Vessels can use the fairways passing either E of Kallviksklubben (64°18'N., 21°23'E.) or W of Laskar (64°18.2'N., 21°21.4'E.). The least depth in these entrance channels is 3.9m.

The roadstead has depths of 3 to 4.5m, clay and sand. It is very confined and can only accommodate a few small vessels. Vessels can also anchor, in a depth of 9m, near the mouth of the fjord.

Viksberget (64°21'N., 21°22'E.), a narrow rocky ridge with two prominent summits, is 60m high.

Bredberget, 71m high, rises about 1 mile NNE of Viksberget. This prominent hill is steep on its N side but slopes to the S.

Oxberget, 33m high, is steep on its SW side and surmounted by a white cairn beacon. This hill stands on the E side of the entrance to Kallviken. Kallviksskar, an islet, lies close inshore on the W side of the entrance. It is also marked by a white cairn beacon.

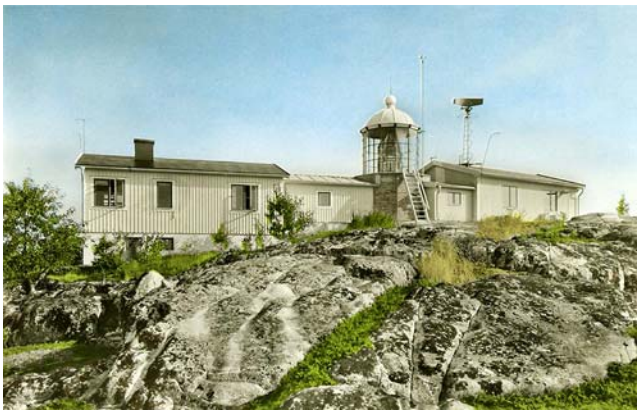
9.7 The coast between Kallviken and Bjuroklubb, 11 miles NNE, is wooded and fronted by numerous shoals, which extend up to 3 miles offshore in places.

Blackkallen Light (64°20'N., 21°31'E.) stands on a rock

fronted by shoals about 1.5 miles offshore, 3.5 miles ENE of Kallviken. Blackkallen Light is marked by a beacon.

Grundskaten (64°26'N., 21°37'E.), the SE extremity of Bjuron, a wooded peninsula, is located 6.5 miles NNE of Blackkallen Light. This point is fronted by a reef, which extends 0.5 mile seaward and is marked by a buoy. Shoals with depths of less than 10m front the coast between the light and Grundskaten and extend up to about 3 miles offshore in places.

Bjuroklubb (64°29'N., 21°35'E.) is a steep point, 43m high, which forms the end of a narrow promontory extending 1.5 miles NNW from the N side of Bjuron. A light is shown from a prominent yellow stone tower, 8m high, standing on the point, with a yellow house situated very near it. A light is also shown from a structure situated on the NE extremity of the point.



Bjuroklubb Light

An area of shoals lies centered about 1.5 miles E of Bjuroklubb Light and is marked on its W side by a buoy.

Hokmarksberget, located 8 miles WSW of Bjuroklubb Light, consists of two hills, which lie in a N and S direction. The W side is steep and shows up well from seaward, especially when N of Bjuroklubb.

Kulberget, standing about 4 miles SW of the N extremity of Bjuroklubb, has several summits. The southwesternmost summit, 65m high, is the tallest and a prominent radio mast is situated 1 mile E of it.

9.8 Gardfjarden (64°28'N., 21°43'E.), an inlet, lies on the N side of Bjuron, about 0.7 mile SSW of Bjuroklubb Light. Vessels can anchor, in depths of 9 to 14m, clay and sand, within this inlet, but winds between N and NNE raise some sea.

The roadstead within the inlet can be approached through two channels. Local knowledge is required. An inshore fairway leading from SE passes between the E side of Bjuron and the off-lying shoals. Another fairway leads from NE. Vessels with drafts up to 6.8m can reach the anchorage.

Bjuroklubb Harbor, a small oil depot, is situated at the SE end of Gardfjarden. There is a quay, 70m long, with depths of 5 to 6.2m alongside. The channel leading to the quay is available to vessels with drafts up to 4.8m.

Ice is an obstruction to navigation in this area from the end of November to the beginning of May.

Anchorage may also be obtained by vessels with local knowledge, in depths of 7 to 12m, clay and sand, within Brattasfjarden, an inlet lying close W of Gardfjarden. The fairway leading to this anchorage is available to vessels with drafts up to 6.1m.

Caution.—A magnetic anomaly is reported to exist off Bjuroklubb.

9.9 Vanoren (64°32'N., 21°33'E.), the E extremity of a low wooded peninsula, lies on the N side of Gardfjarden, 2.5 miles NNW of Bjuroklubb Light. It is fronted on the NE side by shoals, which extend about 1 mile seaward and are marked by a buoy.

Skotgronnan (64°36'N., 21°30'E.), fronted by shoals, is a low, sandy island with a knoll on its SW end lying about 7.5 miles NNW of Bjuroklubb Light and 1.3 miles off the coast. A beacon, fitted with a radar reflector, stands near its N end.

Skelleftebukten (64°41'N., 21°15'E.), a bay 5 miles long, lies at the mouth of the Skellefteälv, the principal river along this part of the coast. It is encumbered by numerous islets, rocks, and shoals, which may best be seen on the chart.

The bay is entered between Korsoren, a small peninsula lying 3 miles W of Skotgonnan, and Skelleftenaset, a large peninsula located about 5 miles NNW.

Burea (64°37'N., 21°14'E.), a former small port, is situated in the SW part of Skelleftenbukten. A conspicuous church, with a red roof and black spire, stands in the town. The harbor is now only used by recreational craft.

Skelleftehamn (64°41'N., 21°14'E.)

World Port Index No. 27080

9.10 Skelleftehamn (Skelleftea), a large industrial harbor, is situated on the N side of Skelleftebukten. This harbor is the port for Skelleftea, a town standing on the N bank of the river, 8 miles NW.

Ice.—The port is usually closed by ice from the beginning of December to the middle of May.

Shelleftea—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Domsjo							
North	400m	13.4m	200m	12.0m	35.0m	40,000 dwt	Copper concentrate, breakbulk, and bunkers.

Shelleftea—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
South	20m	9.0m	—	—	—	—	Copper concentrate, breakbulk and bunkers. Berthing length of 130m (including dolphins).
Framnas							
Cement	47m	5.8m	—	5.5m	—	—	Cement.
Jubilee	230m	8.2-8.9m	190m	8.2m	33.0m	—	Wood chips, ro-ro/lo-lo, and breakbulk.
Trade	300m	8.2-8.9m	190m	8.2m	33.0m	—	Wood chips, ro-ro/lo-lo, and breakbulk. Continuous berthing length of 375m.
Skelleftehamn Oil Harbor							
Oil	70m	10.2m	180m	9.3m	35.0m	30,481 dwt	Chemicals and crude products.

Tides—Currents.—Ordinary HW and LW are about 0.5m above and below mean water level, respectively. The water level usually rises in the autumn with SE and SW winds, and falls with prolonged N and NE winds. Lower water levels usually occur in the spring and early summer. The average annual maximum and minimum water levels deviate 0.6m from the mean level.

With the breaking up of ice in the spring, the outgoing river current runs strongly for about 4 to 6 weeks and may attain a velocity of 1.5 to 2 knots.

Depths—Limitations.—Most of the port facilities are situated on the shores of Kallholmsfjarden. This inlet lies between Nasdden, on the NE side, and a narrow peninsula formed by a line of connected former islands on the S side. The narrow peninsula projects 1.5 miles SE from the head of the bay and ends at Ronnskar.

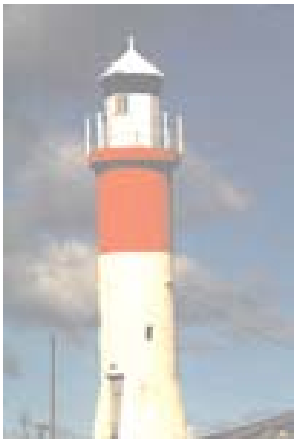
The port may be approached from either E or SE through routes, which are shown on the chart. The approach from E, which is suitable for vessels with drafts up to 11m, is recommended, especially in poor visibility. The approach from SE can be used by vessels with drafts up to 7m. For Skelleftehamn inner harbor the maximum draft allowed is 8.2m.

The channel leading from E passes at least 1 mile clear of the fronting dangers. The channel leading from SE passes between Skotgronnan and the mainland. Vessels up to 40,000 dwt, 200m in length, 35m beam, and 12m draft have been handled at this port.

The principal facilities at Skelleftehamn, on the N and W sides of Kallholmsfjarden. The oil quay has significant land reclamation, was ongoing adjacent to the oil quay (2021).Siporexkajen is a cement berth. The channel leading to this berth is available to vessels with drafts up to 5.5m. The general cargo quay is 375m long and has depths of 8.2 to 8.9m alongside. Two ro-ro berths have depths up to 8.2m alongside.

The principal facilities at Ronnskar, at the S end of Kallholmsfjarden. The pier at Orviken, is in poor condition and no longer used by commercial vessels. For more berthing information see the table titled **Shelleftea—Berth Information**.

Aspect.—Gasoren Light (64°40'N., 21°19'E.) is shown from a prominent tower, 13m high, standing about 0.8 mile E of Ronnskar. A prominent dwelling, with a red roof, is located near the light.



Gasoren Light

Sor-Olsgrundet Light, equipped with a racon, is shown from a structure, 12m high, standing about 1 mile S of Ronnskar.

Bureberget, a dark wooded hill, stands on the SW side of the bay, 4.5 miles SSW of Gasoren Light. It is 99m high and prominent from seaward. This hill slopes gradually on the S side and a radio mast, 32m high, is situated close SE of the summit.

Noppelberget rises 1.2 miles NNE of Skelleftea. This hill is bare, light gray, and rocky. It is 140m high and easily identified from the SE.

A conspicuous chimney, 145m high, and a prominent warehouse, 300m long, are situated on Ronnskar and may be seen from a considerable distance to seaward.

A conspicuous radio mast, 60m high, stands near Orviken about 3 miles W of Gasoren Light.

A church, a water tower, and a radio mast, which are all prominent, are situated at Skelleftehamn.

Pilotage.—A main pilot station is situated at Skelleftehamn. Pilots can be contacted on VHF channel 13 with boarding locations located approximately 2.5 and 4.5 miles E of Gasoren Light. Requests for pilotage must be made through the VTS station at Lulea.

Pilotage is compulsory within this area for the following:

1. All Category 1 vessels.

2. Category 2 vessels of 80m in length, 15m beam, and 5m draft and over.
3. Category 3 vessels of 90m in length, 16m beam, and 5.5m draft and over.

In certain channels between Nygran and Pitea, pilotage is compulsory for the following:

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 70m in length, 14m beam, and 4.5m draft and over.

Pilots for Pitea are also provided by this station and board about 5 miles E of Gasoren Light.

Regulations.—A mandatory Reporting and Information System has been established in the Gulf of Bothnia and is operated by Vessel Traffic Services (VTS) at Gavle and Lulea. For further information, see Lulea (paragraph 9.19).

Contact Information.—See the table titled **Skelleftehamn—Contact Information**.

Skelleftehamn—Contact Information	
Port	
Call sign	Skelleftehamn Radio
	Skelleftehamn Harbor Radio
VHF	VHF channels 13 and 16
Port Authority	
Telephone	46-910-33130
Facsimile	46-910-34438
E-mail	portof.skelleftea@skelleftea.se
Web site	http://www.skellefteahamn.se/
Harbormaster	
Telephone	46-910-736338
E-mail	lars.widelund@skelleftea.se
Pilots	
Call sign	North Coast Pilot
VHF	VHF channel 11
Telephone	46-771-630620
Facsimile	46-26-99469
E-mail	northcoastpilot@sjofartsverket.se
Web site	https://www.sjofartsverket.se
Skelleftea Pilot Station	
Call sign	Skelleftea Pilots
VHF	VHF channel 11

Anchorage.—The outer anchorage lies in position 64°40'N, 21°19'E and has depths of 11 to 26m.

Skelleftehamn to Pitea

9.11 The coast between the entrance to Skelleftehamn and Nygran (65°01'N., 21°42'E.), about 22 miles NNE, is well-wooded and fronted by numerous small islands, islets, rocks, and shoals.

Kagnashallan Light (64°45'N., 21°18'E.) is shown from a structure standing on the E extremity of Kagnaset. Kagnaset is an area that appears from E as a chain of sloping hills, high to the S, but steeper at the N end.

Finnhallan (64°47'N., 21°15'E.), standing on the N side of Kagnaset, rises above the cliffs and is wooded. Two above-water rocks lie at the foot of this prominent hill.

Armbagen (64°41'N., 21°26'E.), with a least depth of 8.5m, lies about 3 miles ENE of Gasoren Light and is marked by a buoy on the SE side. Villan, with a depth of 9.7m, lies about 1.7 miles N of Armbagen. Fordarvet, with a depth of 6m, lies about 4.5 miles Nof Armbagen. It lies 3.2 miles offshore at the E end of the foul ground fronting Kagnashallan Light and is marked by a buoy. Utiken, with a depth of 10m, lies 3.5 miles NNE of Fordarvet and about 6 miles offshore.

The above four shoals form the outermost dangers along this part of the coast. Numerous shoal patches lie inside of these dangers and may best be seen on the chart.

Kagefjarden (64°49'N., 21°07'E.), an inlet situated SW of Ostnaset, is entered 5 miles NW of Kagnashallan Light.

Bergskaret (64°48'N., 21°07'E.), a partly-wooded islet, lies on the S side of the entrance to Kagefjarden, 6 miles NW of Kagnashallan Light. A sector light, which indicates the entrance route, is shown from a tower, 7m high, standing on this islet.

9.12 Kagehamn (Storkage) (64°50'N., 21°02'E.) (World Port Index No. 27090), a small port used for exporting timber, is situated on the S side of Kagefjarden.

Ice.—The port is usually closed by ice from November to the middle of May.

Tides—Currents.—Strong S winds cause higher water levels and N winds cause lower water levels. The current in the entrance channel is not troublesome.

Depths—Limitations.—Kagefjarden can be entered from the NE or ESE. A marina is situated at the former W quay at Kagehamm. The main E quay is 200m long and has a depth of 7.2m alongside. Two cross quays, 30m and 40m long, are situated at the ends of the main quay and have depths of 3.5 to 7.2m alongside. Vessels up to 8,000 dwt, 110m in length, and 6.7m draft can reach the harbor and berth alongside.

Pilotage.—Pilots are available from the station at Gasoren (Skelleftehamn) and must be ordered through VTS Lulea. Local knowledge is required.

Anchorage.—Vessels may anchor, in depths of 9 to 18m, clay, off the NW point of Bergskaret or, in depths of 16 to 24m, sand, close NE of the islet.

9.13 Romelso (64°53'N., 21°17'E.), lying 6.3 miles NE of Bergskaret Light, is a high wooded island of dark appearance. It is tallest in the center and drops off toward the N end. The land behind this island has several mountain hillocks.

Hamnskaret, a small islet, lies about 0.5 mile off the middle of the E side of Romelso. A few trees and a white hut with a black roof stand on this islet.

A firing practice area, best seen on the chart, extends E of Romelso and S of Nygran.

Utkiken, with a least depth of 10m, lies about 6 miles SE of Romelso and is the outermost shoal in this vicinity.

Furuogrund (64°55'N., 21°14'E.), a former timber-loading place, is situated 0.5 mile NW of Romelso. The small natural harbor is now only used by recreational craft. The channel leading to the harbor from SE is available to small craft with drafts up to 5.5m. Local knowledge is required.

Byske (64°57'N., 21°14'E.), a small craft harbor, is situated at the head of Byskefjarden, 2 miles N of Furuogrund. Vessels may obtain anchorage, in a depth of 7m, off the entrance to Byskefjardento. Local knowledge is required because of the shoals in the approaches.

A prominent church, with a white tower surmounted by a spire, stands in the town at Byske. A large warehouse and a conspicuous red sawmill, with a chimney, are situated at Ytterstfors, on the W side of Byskefjarden.

Norra Degerberget, standing 9.5 miles NW of Byske, is 217m high and has a bare rocky crest. This hill is steep on the S side and sloping on the N. It can be easily identified from SE and, because of the shape, it is often referred to as "Likkistan" or "The Coffin."

Sidra Degerberget, rising about 2 miles SW of Norra Degerberget, is the tallest of the two hills. This hill is 229m high, but it is rounded, wooded, and not so easily distinguished from seaward.

9.14 Brannfors (65°01'N., 21°24'E.), a small craft harbor, is situated at the head of Abyfjarden, 6 miles NE of Byske. A channel, which is available to vessels with drafts up to 7.3m, leads through the numerous shoals lying in the approach. Local knowledge is required. There is a quay, 180m long, with depths of 2.7 to 4.6m alongside, but most of the wharves are derelict.

Selaxgrundet, with a depth of 8.8m, lies about 4.2 miles SE of the entrance to Abyfjarden and is the outermost shoal in this vicinity.

It is reported that a prominent radio mast, 60 high, stands about 3 miles NNE of Brannfors.

Ronnskar (65°02'N., 21°33'E.), an island lying 4 miles ENE of Brannfors, is wooded except at its SE end. A chapel, some buildings, and a beacon, 17m high, are situated on the SE part of this island.

Kinnbacksfjarden (65°03'N., 21°28'E.) is a good harbor of refuge lying close WNW of Ronnskar. Local knowledge is essential. A channel, available to vessels with draft up to 3.5m, leads from seaward to an anchorage, with depths of 5 to 12m, mud and sand.

9.15 The approaches to the ports of Pitea and Lulea are encumbered by numerous islands, islets, rocks, and shoals, which may best be seen on the chart. Only the outermost dangers are described below.

Nygran Light (65°01'N., 21°42'E.), equipped with a racon, is shown from a prominent tower, 21m high, standing on a shoal about 7.5 miles E of Brannfors. The light tower has a helicopter landing platform and is floodlit.

Norstromsgrund Light (65°07'N., 22°19'E.), equipped with a racon, is shown from a prominent tower, 29m high with a helicopter platform, standing about 16.8 miles ENE of Nygran Light.

Norstromsgrund (65°10'N., 22°25'E.), an extensive shoal with a least known depth of 1.5m, lies with its shallowest part located about 4 miles NE of Norstromsgrund Light. Grytet, a detached shoal patch with a least depth of 6.4m, lies 2.3 miles

Norstromsgrund Light

Rodkallen Disused Light Tower

Rodkallen (65°19'N., 22°22'E.), one of the outermost islets in the approaches, lies 12.5 miles NNE of Norstromsgrund Light. It is mostly barren and fronted by foul ground.

Rodkallen Sodra Light (65°19'N., 22°22'E.) is shown from a yellow and red building, 18m high, standing on the S part of the islet. The metal framework tower of a former light is situated 0.4 mile NW of Rodkallen Sodra Light. It is 21m high and prominent. A number of huts and a chapel stand between the two structures.

Borussiagrund Light (65°21'N., 22°16'E.), equipped with a racon, is shown from a prominent floodlit tower, 17m high, standing 3.5 miles NW of Rodkallen Light.

Simpgrund (64°58'N., 22°04'E.), an isolated shoal patch, lies about 10 miles ESE of Nygran Light. It has a least depth of 7m and is marked by buoys.

9.16 Falkensgrund (65°01'N., 22°41'E.), a detached shoal patch, lies about 11 miles SE of Norstromsgrund Light. It has a least depth of 9.4m and is marked by a buoy.

Svalansgrund (65°05'N., 22°38'E.), a detached shoal patch, lies about 5 miles NNW of Falkensgrund. It has a least depth of 7.9m and is marked by a buoy.

Edvardsklack (65°15'N., 22°34'E.), a shoal with a least depth of 4.6m, lies about 6.5 miles SE of Rodkallen Light.

Edvardsgrundet, a shoal with a least depth of 2.4m, and Marakallen, a shoal with rocks awash, lie about 2.5 miles NW and NE, respectively, of Edvardsklack.

Farstugrundet Light (Farstugrunden) (65°20'N., 22°45'E.), equipped with a racon, is shown from a tower, 25m high, standing 9.5 miles E of Rodkallen Light.

Grillklippan (65°23'N., 22°31'E.), a small islet, lies about 6.5 miles WNW of Farstugrundet Light. A racon is situated on this islet.

Larsgrundet Light (65°28'N., 22°28'E.) is shown from a prominent tower, 18m high, standing on a small islet, 11 miles NW of Farstugrundet Light.

Kadetten (65°23'N., 22°41'E.), an isolated shoal with a least depth of 7.8m, lies about 4 miles NNW of Farstugrundet Light and is marked by a buoy.

Smaskaren (65°29'N., 22°44'E.), a small island, lies 9 miles N of Farstugrundet Light; a chapel stands on its SE end.

Kallen (65°28'N., 22°43'E.) is a moderately-high barren rock lying close S of Smaskaren. It can be easily identified up to a distance of 4 miles by vessels approaching from E.

Manshallorna and Bjasshallen are two small above-water rocks lying, respectively, 0.6 mile E and 1.3 miles NE of Kallen.

Jacksgrundet, with a depth of 6.8m, and Vasterbotten, with a depth of 9.8m, are two isolated shoal patches lying, respectively, about 0.9 mile SE and 1.7 miles ESE of Kallen.

Uddskaret lies about 5 miles NNE of Kallen. A prominent chapel stands near the S end of this island.

Hollorsgrundet, an extensive shoal, lies 3.5 miles E of Uddskaret and has a least depth of 6.4m.

Caution.—Several areas, within which surveys are not complete and uncharted shoals may exist, lie in the inner approaches to Pitea and Lulea, and may be seen on the chart.

Restricted areas, which may best be seen on the chart, lie within the inner approaches to Pitea and Lulea. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for information and regulations pertaining to restricted areas and semi-restricted areas in Swedish waters.

Pitea (65°19'N., 21°29'E.)

World Port Index No. 27190

9.17 **Pitea** is situated about 18 miles NNW of Nygran Light and on the NE side of Inrefjarden. The port consists of Pitea Sodra Hamn, the inner harbor; Skuthamn, a harbor situated on the NE side of Yttrefjarden; and Haraholmen, a deep-water harbor, lying 6 miles SE of Pitea at the NW end of Bondon, a low wooded peninsula.

Port of Pitea
https://www.piteaportandhub.se/en

Ice.—The harbors and loading places in the approach to Pitea are normally blocked by ice from the middle of December to early May; however, Haraholmen is kept free of ice.

Tides—Currents.—The water level may vary from 0.9m below mean level to 0.9m above. Winds from the N cause lower water levels and winds from the S cause higher water levels. The variations in level are greatest in the spring and fall. Deviations up to 1.2m have been observed.

The current from the Pitealv River sets through the inner fjords, attaining at times, in the spring and fall, a velocity of 2 to 3 knots.

Depths—Limitations.—Pitea Sodra Hamn, the inner harbor, has depths of 5.2 to 5.8m, but is closed to commercial shipping. A channel, which is authorized for vessels with drafts up to 4.8m, leads through Munksundet to this harbor. Vessels up to 250m in length, with a maximum draft of 11.5m and a maximum beam of 35m, can be accommodated.

Skuthamn provides berthage, but the quays are in poor condition. This harbor is only used as a reserve waiting area for small vessels. A channel, which is authorized for vessels with drafts up to 5.3m during daylight, leads through Pitsundet to this harbor.

Haraholmen is the main commercial harbor for Pitea. Berths. A ro-ro ramp projects from the center of the quay between Berths No. 3 and No. 4, with propellers installed below it used to keep the berths free of ice in the winter.

Harsholmen Oil Quay, Designated as Berth No. 1, accommodates tankers. For more berthing information see the table titled **Pitea (Haraholmen)—Berth Information.**

Four approach channels lead from seaward to Bondofjarden on the NE side of which lies Haraholmen (65°14'N., 21°38'E.).

The main channel leading from seaward to Haraholmen passes about 1 mile E of Nygran Light (65°01'N., 21°42'E.). It continues NNW for about 11.5 miles and then leads NE for about 2.5 miles across the fjord. This route is available to vessels with drafts up to 11.5m.

A secondary channel passes about 5 miles E of Nygran Light. It continues N for 6 miles and then NW for about 7 miles along the NE part of the fjord before joining the main channel. This route is available to vessels with drafts up to 10m.

Two side channels, available to vessels with drafts up to 6m, lead W of Nygran Light and join the main channel at Leskar Light (65°08'N., 21°38'E.).

Pitea (Haraholmen)—Berth Information

Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Pitea Terminal						
2	153m	—	—	—	—	Dry bulk, containers, ro-ro, and breakbulk. Continuous berthing length of 580m.
3	153m	—	—	—	—	
4	114m	—	—	—	—	
5	114m	—	—	—	—	
Pitea Oil Terminal Haraholmen						
Oil No.1	60m	12.5m	250m	11.5m	3.05m	Heavy fuel oil, diesel, petrol, and chemicals.

Aspect.—Kalen, a wooded hill with gradual slopes, is one of the most conspicuous features along this part of the coast. It is 130m high and rises about 9.5 miles NW of Nygran Light.

Hogberget, standing 2 miles NE of Kalen, is 85m high. This hill is considerably smaller and more thinly wooded than Kalen. It appears from some directions to have several summits.

Degerberget, standing about 10 miles NNE of Hogberget, rises on the E part of Pitholm. It is 80m high with two summits. This hill slopes toward the S and is steeper toward the N. From the S, to the W of Nygran Light, a notch is visible on the E side of the southernmost summit.

Leskar Light is shown from a prominent tower, 9m high, standing on the easternmost of two wooded islets lying close together, 7.5 miles NNW of Nygran Light. The westernmost islet is considerably the larger and more densely wooded.

Renoragrundet Light, equipped with a radar reflector, is shown from a tower standing 3.8 miles NNW of Leskar Light.

The approach routes and entrance fairways are indicated by lighted ranges and marked by buoys and beacons.

Pilotage.—The main pilot station at Skelleftehamn provides pilot coverage for Pitea. Pilot services are arranged through the Swedish Maritime Administration eServices web site at least 24 hours in advance. In exceptional circumstances pilots may be ordered via VHF, telephone, or e-mail.

Pilots, who may be contacted on VHF channel 11, will board vessels at the following pilot boarding locations that are best seen on the chart:

1. Approximately 4.5 miles E of Gasoren Light in position 64°39.9'N, 21°29.8'E.
2. Seasonally, in the channel just N of Laskar Light in position 65°09.1'N, 21°37.5'E.
3. Approximately 2 miles SE of Laskar Light in position 65°06.4'N, 21°39.6'E.

Regulations.—A mandatory Reporting and Information System has been established in the Gulf of Bothnia and is operated by Vessel Traffic Services (VTS) at Gavle and Lulea. For further information, see Lulea (paragraph 9.19).

Contact Information.—See the table titled **Pitea—Contact Information**.

Pitea—Contact Information	
Pilots	
Call sign	North Coast Pilot
VHF	VHF channel 11
Telephone	46-771-630620
Facsimile	46-26-99469
E-mail	northcoastpilot@sjofartsverket.se
Web site	https://www.sjofartsverket.se

Anchorage.—Javrefjarden affords anchorage, in a depth of 10.1m, mud, about 2 miles WSW of Leskar Light, but it is exposed to E and S winds.

Anchorage may also be obtained, in depths of 9 to 11m, mud, W of Huvan (65°13.8'N., 21°34.5'E.), an island lying at the N end of Bondofjaren, but S winds raise some sea.

Vessels can anchor off Skuthamn, on the E side of Yttrefjarden, in depths of 7 to 9m, mud.

Caution.—A submarine cable, which may best be seen on the chart, lies in the outer approaches and extends between Ronnskar and Nygran Light.

Pitea to Lulea

9.18 An inshore channel, suitable for vessels with drafts up to 3.3m, leads between Pitea and Lulea. Local knowledge and large scale Swedish charts are required for this route. The fairway leads for about 26 miles in a NE direction from Bondofjarden through the numerous islands and shoals fronting the mainland. It approaches Lulea via Germandofjarden and the narrow passage of Tjuvholmsundet (65°32.5'N., 22°11.1'E.). It is reported (2001) that the latter narrow passage has a depth of only 3m. The latter passage also has a speed limit of 9 knots.

Caution.—Vessels over 15m in length or 4m beam must report on VHF channel 14 to the Vessel Traffic Service (VTS) system Traffic Information Center at Lulea (see paragraph 9.19) before attempting to transit the narrow passage of Tjuvholmsund.

In Tjuvholmsund, the current may at times be extremely swift and unpredictable, attaining a velocity of 3 knots during spring freshets.

It is reported (2002) that less depths than charted exist within the entrance channels leading to Pitea and the local authorities should be contacted for the latest information concerning maximum authorized drafts.

Lulea (65°35'N., 22°10'E.)

World Port Index No. 27220

9.19 Lulea, the northernmost port in Sweden, stands on a peninsula at the SE end of Lulefjarden. It is one of the principal ports in the country. The harbor serves as the S outlet for one of the largest iron ore mines in the world situated at Kiruna 146 miles NNW. The N outlet is at Narvik in Norway.

Lulea Home Page
https://www.lulea.se/hamnen

Ice.—The approaches to the port are usually closed to navigation by ice from the beginning of January to the end of April. In unusually warm winters, the harbor can be kept open during the entire winter. An icebreaker is available.

Tides—Currents.—Water level normally varies between 0.8m below mean level with N winds and 0.9m above mean level with S winds, but in strong wind conditions the level can vary by up to 1.4m above or below mean level.

Within Sandoleden the current is unpredictable but may attain a velocity of 3 knots during the flood tide at springs.

Depths—Limitations.—The Southeast Approach Channel, which forms the main deep-water entrance route, is known locally as Sandoleden. However, strictly speaking, the name applies only to that part of the route located NW of Vitfagelrannan Light.

From seaward, this channel leads in a NW direction for 20 miles to the port. The fairway passes about 1 mile NE of Farst-

ugrundet Light (65°20'N., 22°45'E.), close NE of Larsgrundet Light (65°28'N., 22°28'E.), and close NE of Vitfagelrannan Light (65°29.2'N., 22°25.5'E.). It then continues via a channel, which is dredged to a depth of 12.2m, through the narrow cut at Klubbnaset (65°30'N., 22°22'E.) and across Sandofjarden to the port.

This route is authorized for vessels with drafts up to 11.1m. Vessels larger than 45,000 dwt and all tankers are limited to a maximum draft of 11.1m.

The South Approach Channel, the secondary entrance route, is known locally as Sandgronnleden. From seaward the fairway passes about 1.5 miles W of Norstromsgrund Light (65°10'N., 22°25'E.) and leads NNE for 7.5 miles. It then leads N for about 5 miles and passes 1.5 miles W of Rodkallen Sodra Light (65°19'N., 22°22'E.). The fairway continues NNE for about 5 miles passing, 1.5 miles E of Borussiagrund Light (65°21'N., 22°16'E.) and through a narrow cut, dredged to a depth of 10m, lying between the shoals fronting the SE end of Grasjalgrundet (65°24'N., 22°17'E.) and the NW end of Sandgronnorna (65°23'N., 22°23'E.). It then leads NE for 3 miles and N for 2.5 miles, passing SE and E of Junkon, to join the main deep-water route (Southeast Approach Channel) close SE of Vitfagelrannan Light (65°29.2'N., 22°25.5'E.). This route is authorized for vessels with drafts up to 8.7m.

The principal facilities of the port are situated along the NE and E sides of Grasjalfjarden, to the S of the town, and along the NW side of Sandofjarden, to the SE of the town.

Lulefjarden, with depths of 7 to 9m, lies N of Grasjalfjarden. The passage connecting these two parts of the harbor is spanned by a bascule bridge (Bergnasbron). The Bergnasbron Bridge (65°34.7'N 22°07.4'E) opening has a navigable width of 30m. The vertical clearance, when the bridge is closed, is 7.3m. It is reported that Lulefjarden is now only used by recreational craft.

The Bergnasbron Bridge is opened twice per day (0900-1000 and 1900-2000) on weekdays except for Saturdays and holidays. Vessels requiring the bridge to be opened should give at least 3 hours notice by telephone (46-702-561051).

There is a fixed bridge over Lulea Alv, in Gaddviksund, 2.5 miles W of Lulea. The vertical clearance is 7.3m under the 5th span from S.

The bridge opening shall be ordered at least 2 hours before passage. Vessels requesting bridge opening shall order by telephone (46-771-24-2424). See chart for opening signals.

The main facilities in Sandofjarden are, as follows:

1. Victoriahamnen is,tuated at the easternmost end of the peninsula of Svarton.
2. Malmhamn (Sandskar), an ore quay, situated 0.7 mile E of Victoriahamnen.
3. Stromoren, lying between Victoriahamnen and Uddebo Hamn, contains a pier and a small craft harbor. The quay at the S side of the pier is equipped with a ro-ro ramp.
4. Uddebo Hamn, situated at the SE end of the peninsula of Svarton,. about 0.6 mile WNW of Victoriahamnen.
5. The Old Oil Quay can accommodate tankers.

The main facilities in Grasjalfjarden consist of six quays on its NE and E sides. as follows:

1. Jarnverket Quays (SSAB Quay).
2. Malmka Quayj (LKAB Quay).
3. Cement Quay.
4. SJ-Kolkaj Quay.
5. Djupkajen Quay.
6. Hamnoiren Quay.

There are facilities for tanker, ro-ro, bulk, general cargo, and timber vessels. Vessels up to 299m in length and 11.2m draft have been accommodated in the port. For more berthing information see the table titled **Lulea—Berth Information**.

Lulea—Berth Information

Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Size	
Bogserbatspir						
Bogserbatspir	120m	9.0m	—	—	—	Ro-ro/lo-lo, breakbulk, and bunkers.
Cementa						
Cementa	60m	9.0m	—	8.0m	—	Cement and bunkers.
Sandaskar ore Harbor						
LKAB Ore	250m	12.1m	—	10.9m	—	Iron ore and bunkers.
Svarto						
Svarto	415m	13.0m	—	—	—	Cement, cruise vessels, breakbulk, and bunkers.
Victoria Harbor						
Eastern (Main)	520m	9.0-12.3m	—	11.0m	—	Coal, limestone, scrap metal, transshipment, steel products, breakbulk, and bunkers. Continuous berthing length of 770m.
Eastern (Pier)	250m	9.0-12.3m	—	11.0m	—	
Inner	220m	7.8m	—	—	—	Coal, transshipment, and bunkers.

Lulea—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Size	
Uddebo Oil Harbor						
No. 1	20m	7.8m	215m	7.4m	—	Chemical, bitumen, benzene, and dirty products. Berthing length of 80m (including dolphins).
No. 2	60m	12.2m	299m	11.2m	45,000 dwt	Petroleum products.

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Lulea—Victoriahamnen

Aspect.—Mattsundberget (65°33'N., 21°56'E.) rises about 5.2 miles WSW of Lulea and is best seen from the ESE. This hill is 143m high, with a long slope on its S side. A prominent radio mast stands 0.8 mile SW of the summit.

Hertsoberget (65°36'N., 22°12'E), 77m high, rises about 1 mile NNE of Lulea. This hill slopes gradually S, but is steeper on the N side, and is best seen from SE.

Vitfagelrannan Light (65°29.2'N., 22°25.5'E.) is shown from a prominent tower, 15m high, standing 1.5 miles NW of Larsgrundet Light.

A conspicuous water tower, 61m high, is situated about 1 mile SW of Lulea, at Bergnaset. A radio mast, 41m high, stands close to the tower.

The main channels are indicated by lighted ranges, sector lights, and beacons, which may best be seen on the chart. The dredged fairway is marked by lighted buoys and cairns.

Pilotage.—The station at Lulea provides pilotage for the area between a line extending 152° from position 65°24'N, 21°49'E and the Finnish border.

Pilotage is compulsory in the area for vessels, as follows:

1. All Category 1 (see paragraph 5.1 for definition of vessels categories) vessels.
2. Category 2 vessels of 80m in length and over or 15m beam and over.
3. Category 3 vessels of 90m in length and over or 16m beam and over.

In certain channels between the Finnish border and a line extending 148° from position 65°45'N, 22°41'E, pilotage is compulsory for the following vessels:

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 70m in length and over, 14m beam and over, and 4.5m draft and over.

Pilot ordering should normally take place via the Swedish Vessel Reporting System (FRS) on the Swedish Maritime Administration web site (https://www.sjofartsverket.se).

In exceptional cases, the pilot may be ordered via e-mail, telephone or VHF. A preliminary request for a pilot should be made at least 24 hours in advance. The pilot must be confirmed via the FRS at least 5 hours in advance.

Pilot boards in the following positions:

a. 65°20.0'N 22°46.2'E—Farstugrunden.
b. 65°18.1'N 22°19.1'E—Rodkallen.

The station also provides deep-sea pilots for the Baltic Sea.

Regulations.—Sandoleden is considered to be that part of the fairway leading from Vitfagelrannan Light through the dredged narrow cut at Klubbnaset and across Sandofjarden.

Vessels with drafts exceeding 3.5m are not permitted to pass each other within Sandofjarden. Likewise, there is a strict meeting ban in the Sandoleden fairway for vessels greater than 300 tons or greater that 45m in length. Exceptions are made for work vessels. The ban applies to vessels with reporting obligations to the Lulea VTS area.

In order to assist in steering through Sandoleden, vessels over 150m in length must show a blue light at night on the forestay in the vicinity of the jackstaff.

Large vessels must not attempt to transit Sandoleden during winds of Force 8 and above.

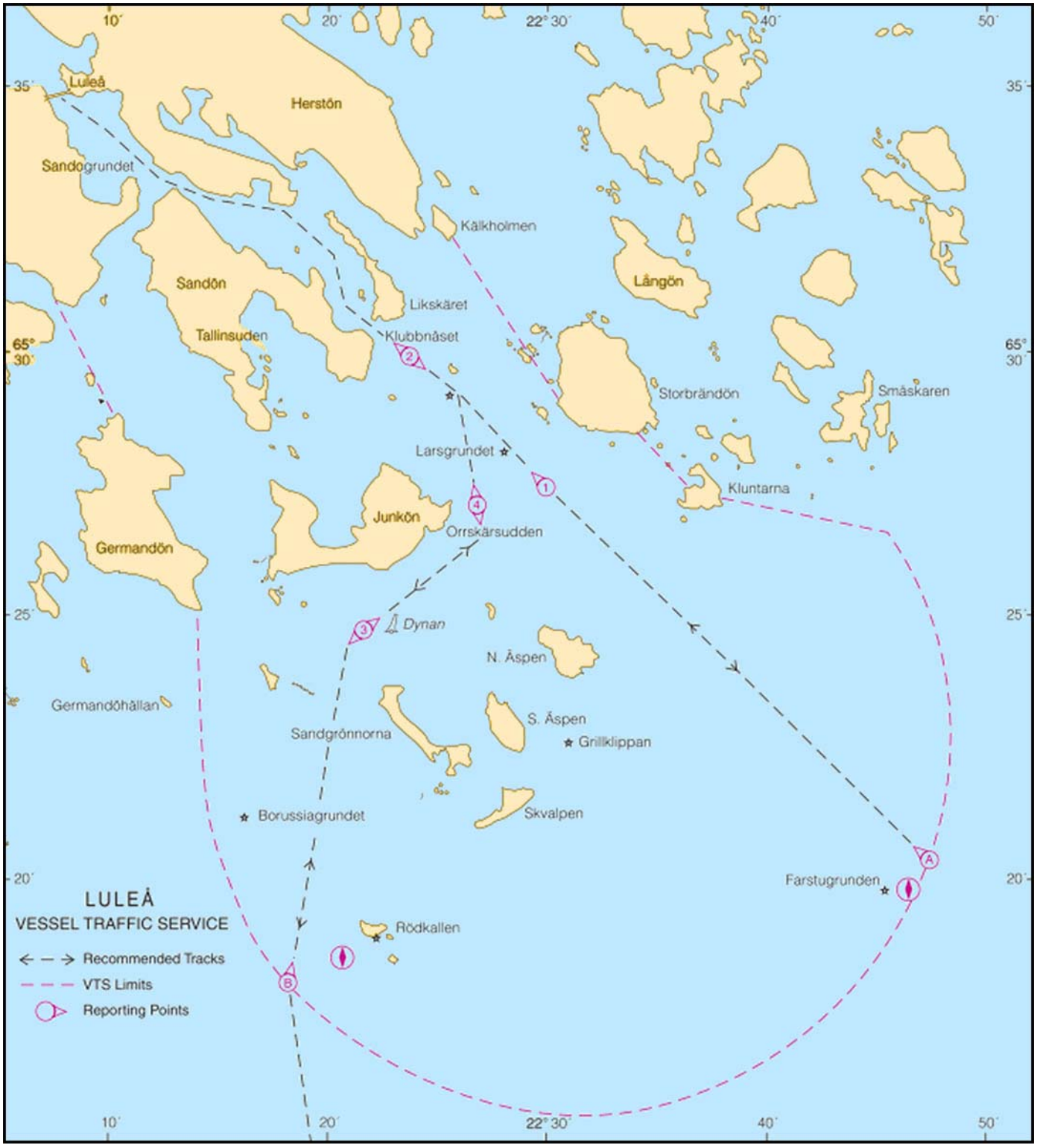
Vessel Traffic Service.—A Reporting and Information System has been established in the Gulf of Bothnia and is operated by Vessel Traffic Services (VTS) at Lulea and Gavle.

The system is mandatory for vessels over 300 gt; and vessels, including tows, of over 45m in length.

All vessels of 20 gt and over or of 15m loa and over, or smaller registered fishing vessels should participate in the reporting system if their passage or activity is considered to affect the safe passage of other vessels.

The VTS area is bound by lines joining the following positions:

1. Kalkholmen (65°32.1'N., 22°25.3'E.).
2. Storbrandon SW (65°29.1'N., 22°30.2'E.).
3. Storbrandon S (65°28.5'N., 22°33.4'E.).
4. Kluntama W (65°27.4'N., 22°36.0'E.).
5. Kluntama SE (65°27.2'N., 22°37.8'E.).
6. Position 65°26.6'N, 22°45.0'E. (8 miles N of Farstugrunden Light.)
7. The arc of a circle with a radius of 7 miles centered on Grillklippan Light (65°22.7'N., 22°30.9'E.) and joining position (6) and position (8).
8. Position 65°22.7'N, 22°14.2'E.



Lulea VTS Zones and Pilots

9. Liljeudden (65°25.1'N., 22°14.1'E.).
10. Germandon (65°28.8'N., 22°10.3'E.).
11. Lulnaset (65°30.5'N., 22°08.1'E.).

All vessels should maintain a continuous radio watch on VHF channels 14 and 16.

Vessels must report to the VTS, as follows:

1. Before entering the VTS area and immediately prior to departure from a berth or anchorage:

ID	Information Required
A	Name and call sign or IMO identification, or MMSI.
C or D	Name of nearest Reporting Line or geographical position.
L	Planned route
I	Destination.
O	Actual draft.

2. When passing the reporting point in the VTS area:

ID	Information Required
A	Name and call sign or IMO identification, or MMSI.
C	Reporting Point.
I	Destination.

3. When deviating from the planned route:

ID	Information Required
A	Name and call sign or IMO identification, or MMSI.
C or D	Position.
L	New planned route.
I	Destination.

4. When arriving at a berth or anchorage:

ID	Information Required
A	Name and call sign or IMO identification, or MMSI.
C or D	Position.

5. When damage has occurred to machinery, engine or navigational equipment which may significantly affect the vessel's safe navigation and maneuverability:

ID	Information Required
A	Name and call sign or IMO identification, or MMSI.
C or D	Position.
I	Destination.
O	The defect or damage causing the vessel to report.

6. At the request of the VTS, vessels shall also give information at other times and shall give supplementary information if it is considered necessary for the safety and efficiency of the vessel traffic in the VTS area.

A Reporting System is in effect in the Bay of Bothnia, as follows:

1. 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:
   a. When passing a Reporting Point (inbound).
   b. When departing from a quay or anchorage.
2. The following information should be included in the general call:
   a. Ship's call sign and VHF channel.
   b. Vessel name and type.
   c. Name and location of Reporting Point or place of departure.
   d. Intended route.
   e. Destination
3. Smaller vessels fitted with VHF should report if circumstances permit.

Special tug regulations apply at Uddebo Oil Port (65°33.1'N., 22°14.0'E.), Victoria Harbor (65°32.9'N 22°16.0'E) and the Ore Quay (65°34.5'N., 22°10.7'E.).

Tugboat assistance can be ordered through VTS Lulea or on VHF channel 16.

Local Vessel Traffic Service.—A local mandatory Vessel Traffic Service (VTS) system is operated from a Traffic Information Center at the combined harbor office and pilot station at Lulea. The area covered extends inward to Lulea from Rodkallen (65°19'N., 22°22'E.), in the S approach, and from Farstugrunden Light (65°20'N., 22°45'E.), in the SE approach. There is radar coverage of the area.

The system is mandatory for vessels over 300 gt and vessels, including tows, of over 45m in length.

Vessels are required to maintain a constant listening watch on VHF channel 14 while in the area and to report, as follows:

1. Thirty (30) minutes before arrival at the first Reporting Point (see list below). Vessels equipped with an Automated Identification System (AIS) are exempt from this report.
2. On entering or leaving the VTS area.
3. On passing certain Reporting Points (see list below).
4. On arrival at or departure from a berth or anchorage.
5. In the occurrence of any defect affecting the vessel's safe navigation or maneuverability.

The VTS Traffic Information Center will, on request, maintain a watch on VHF channel 16 for those vessels unable to operate watches on dual VHF channels.

Vessels over 15m in length or 4m beam must contact the VTS Traffic Information Center prior to attempting the passage through Tjuvholmsundet (see paragraph 9.18).

The VTS Traffic Information Center will provide, on re-

quest, information concerning ice conditions, traffic, and navigational aids.

For information on the Reporting Points, see the table titled **Lulea Local VTS—Reporting Points**.

Contact Information.—See the table titled **Lula—Contact Information**.

Lulea—Contact Information	
Pilot Ordering Center	
Call sign	North Coast Pilot
VHF	VHF channel 11
Telephone	46-771-630620
Facsimile	46-26-99469
E-mail	northcoastpilot@sjofartsverket.se
Web site	https://www.sjofartsverket.se
Lulea Pilot Area	
Call sign	Lulea Pilot
VHF	VHF channel 11
Telephone	46-920-258393
Facsimile	46-920-258392
E-mail	lulea@sjofartsverket.se
Vessel Traffic Service	
Call sign	VTS Lulea
VHF	VHF channels 14 and 16

Lulea—Contact Information	
Telephone	46-771-630675
Facsimile	46-31-647779
E-mail	vtsec@sjofartsverket.se
Port	
Call sign	Lulea Hamnradio
	Lulea Harbour Radio
VHF	VHF channels 10, 11, 12, 13, 14, and 16
Telephone	46-920-453000
Facsimile	46-920-454027
E-mail	lulea.hamn@portlulea.se
Web site	http://www.portlulea.com
Lulea Signal Station	
Telephone	46-920-258390
Tugs	
VHF	VHF channel 16

Anchorage.—Vessels waiting to enter the port may anchor, in a depth of 24m, clay, about 2 miles N of Farstugrunden Light (65°20'N., 22°45'E.).

Large vessels may anchor, in depths of 21 to 33m, about 1 mile SE of Larsgrundet Light (65°28'N., 22°28'E.), on the N side of the main channel.

Anchoring is prohibited in Sandofjarden from a line just N of Klubbnaset to a line just W of Uddebo Hamn.

Lulea Local VTS—Reporting Points			
ID	**Position**	**Name**	**Remarks**
A	65°20.4'N, 22°46.6'E	Farstugrunden	Inbound only
B	65°18.0'N, 22°18.4'E	Rodkallen Sodra	Inbound only
1	65°27.5'N, 22°30.0'E	Larsgrundet	Inbound only
2	65°30.0'N, 22°22.9'E	Klubbnaset	—
3	65°24.7'N, 22°21.8'E	Dynan	—
4	65°27.4'N, 22°26.3'E	Persgrundet	—

Bay of Bothnia Reporting System—Reporting Points			
No.	**Position**	**Location**	**Destination**
7	65°31.6'N, 23°29.1'E	Maloren	Axelvik, Karlsborg, and Tore
8	65°01.0'N, 21°46.0'E	Nygran	Pitea
9	65°40.0'N, 21°30.0'E	Gasoren	Skelleftehmn
10	65°33.0'N, 20°30.0'E	Vaktaren	Umea and Holmsund
12	63°21.0'N, 19°35.0'E	Storbadan	Rundvik
13	63°18.0'N, 19°20.0'E	Vallinsgrund	Husum
14	63°10.0'N, 19°00.0'E	Skaghallan	Ornskoldvik

Bay of Bothnia Reporting System—Reporting Points			
No.	Position	Location	Destination
15	63°10.0'N, 18°48.0'E	Trysunda	Kopmanholmen

Caution.—Local magnetic anomalies exist in the vicinity of the South Approach Channel.

Lulea to the Finnish Border

9.20 The coast between Lulea and the Finnish border, about 50 miles ENE, is fronted by numerous islands, rocks, and shoals. These dangers, which may best be seen on the chart, extend up to 20 miles offshore. The islands are wooded and not easily distinguished from seaward. Only the outermost dangers are described below.

Maloren (65°32'N., 23°34'E.), located 23.5 miles ENE of Farstugrunden Light (65°20'N., 22°45'E.), is the southernmost of the islands lying off the coast between Lulea and the Finnish border. This island is composed of sand and fronted by foul ground. It lies near the W end of an extensive shoal area.

Maloren Light

Maloren Light (65°32'N., 23°34'E.), equipped with a racon, is shown from a prominent tower, 17m high, standing on the NE side of the island.

A light is also shown from a structure situated on the W side of the island. A conspicuous chapel, with a spire and a belfry, stands on the island, along with numerous houses and huts.

9.21 **Lutskarsgrund Light** (65°40'N., 23°20'E.) is shown from a prominent red tower with a white top, 8m high, standing on a rock, 10 miles NNW of Maloren Light.

Storo Light (65°42'N., 23°06'E.) is shown from a prominent tower, 10m high, standing at the S extremity of a peninsula, 6 miles WNW of Lutskarsgrund Light.

Halsoklippor Light (65°43.1'N., 23°27'E.), equipped with a racon, is shown from a prominent red tower with a white top, 6m high, standing on a rock, 4.5 miles NE of Lutskarsgrund Light.

Trutskarsbaden Light (65°44'N., 23°23'E.) is shown from a prominent tower, 7m high, standing on a rock, 4.5 miles NNE of Lutskarsgrund Light.

Vippgrund Light (65°45'N., 23°28'E.), equipped with a racon, is shown from a framework tower standing on a small island, 1.6 miles N of Halsoklippor Light.

Anchorage.—Anchorage may be obtained, during good weather, in a depth of 20m, about 3.5 miles SW of Maloren.

Caution.—Vessels should not attempt to approach the coast from seaward between Farstugrundet Light (65°20'N., 22°45'E.) and Maloren, except by the authorized channels and routes. No authorized channels or routes exist between Maloren and Kemi 1 Light (65°23'N., 24°06'E.) (Finnish), 16 miles SSE.

9.22 **Sandskar** (65°35'N., 22°45'E.), lying 5 miles NE of Maloren, may be identified by its light-colored sand hills, 21m high. This island is partly wooded and a narrow tongue of land with a few trees extends 1.5 miles N from its main body. The isthmus by which this tongue is joined to the N side is bare and light-colored. The S extremity of the island is also mostly bare, with a chapel and some huts standing close to the edge of the woodland.

Sjoasen (65°32'N., 23°21'E.), with a least depth of 7.6m, is an isolated shoal lying about 5 miles W of Maloren Light.

Launaja, with a least depth of 4.2m, and Kanningen, with a least depth of 7.7m, lie, respectively, about 3 miles and 7 miles SE of Maloren Light.

Flatbotten, with a least depth of 7.7m, lies 3 miles NNW of Maloren Light. Torget, with a least depth of 7.4m, lies 1 mile NW of Flatbotten. Nordvastgrundet, with a least depth 4.4m, lies centered 1.5 miles W of Torget and is marked by a buoy at its SE end.

Utbredan, with a least depth of 6.7m, lies about 7.3 miles WNW of Maloren Light. Karten, with a least depth of 5.8m, lies 1.1 miles W of the N end of Utbredan.

Dynan, with a depth of 6.8m, lies 1.3 miles WNW of Karten. Another detached shoal patch, with a depth of 7.8m, lies 1 mile NW of Karten.

Stolpgrundet, with a least depth of 7.4m, lies about 5 miles W of Utbrendan. A detached patch, with a depth of 7.8m, lies 1 mile NNE of this shoal.

The above shoal patches form the outermost dangers in this vicinity.

Caution.—Restricted areas, which may best be seen on the chart, lie within the inner approaches to Torehamn and Kalix. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for information and regulations pertaining to restricted areas and semi-restricted areas in Swedish waters.

Magnetic anomalies exist in the vicinity of the islands fronting Torehamn and Kalix.

9.23 **Torehamn** (65°54'N., 22°39'E.) (World Port Index No. 27250) is a loading place at the head of Torefjarden, which is entered about 5 miles E of Ranefjarden. There is a small natural harbor which handles lumber, cement, fertilizer, flour, and general cargo.

Ice.—Ice usually obstructs navigation in Torefjarden from the beginning of November to the middle of May.

Tides—Currents.—Winds from N lower the water level by as much as 1.8m and S winds raise water levels as much as 1.7m.

Depths—Limitations.—The recommended track, which may best be seen on the chart, leads 34 miles in a NW direction from a position 1.5 miles SW of Maloren Light. It passes between Torget and Nordvastgrundet Shoals, 1.5 miles SW of Lutskarsgrund Light, and close SW of Storo Light. The route leads through Gunnarsfjarden (65°37'N., 23°26'E.), Storofjarden (65°44'N., 23°00'E.), and Ranofjarden (65°45'N., 22°57'E.) before finally turning NNW along the E side of Torefjarden to the port.

The fairway channel is authorized for drafts up to 8m as far as the anchorage located in the bight NW of Skagsudden (65°42'N., 23°06'E.). From this anchorage to the port the fairway is authorized for drafts up to 6m.

The main quay is 186m long, with depths of 6.5 to 8m alongside. There is also a small craft harbor with a depth of 2m.

Aspect.—Palangeberget (65°48'N., 22°57'E.) is a prominent flat-topped hill, 106m high. Rormyrberget, 78m high, is the prominent summit of the island of Ranon (65°43'N., 22°55'E.).

The approach channel is indicated by lighted ranges and sector lights. The fairway is marked, in places, by buoys and beacons.

Pilotage.—Pilotage is compulsory. Pilots must be requested through the Lulea VTS station and will board vessels about 1 mile E of Farstugrunden Light (65°20'N., 22°45'E.) (see paragraph 9.19).

Anchorage.—Anchorage may be obtained by vessels with local knowledge in the bight NW of Skagsudden (65°42'N., 23°06'E.), where there is good shelter, in depths of 14 to 22m, mud.

Anchorage may be obtained by vessels with local knowledge, in a depth of 9m, mud, about 0.5 mile N of Stora Faron (65°42'N., 22°44'E.), an island lying in the S part of Torefjarden. The fairway leading to this anchorage has a least depth of 6.4m.

9.24 Karlsborg (65°48'N., 23°17'E.) (World Port Index No. 27280), an important timber-exporting center, is the port for Kalix, which stands on the E side of Kalix Alv, 5 miles NW.

Ice.—Ice usually obstructs navigation from the beginning of November to the end of May.

Tides—Currents.—The maximum observed range of water level is 1.5m above and below mean water level. The greatest variation occurs in September and October. A rise of the water level is caused by strong S and SW winds, and a fall is caused by strong N and NW winds.

During freshets and in mid-summer a strong current setting out of Kalix Alv may be experienced in the approach to the river entrance, but it is not sufficiently strong enough to hinder navigation.

Depths—Limitations.—The recommended track, which may best be seen on the chart, leads 7.5 miles NNW from a position 1 mile NNW of Maloren Light to a position NE of Vikstromsgrundet Shoal. It then leads N for about 2.5 miles to a position about 1 mile S of Halsoklippor Light (65°43'N., 23°27'E.). The route continues in a NW direction for 4.5 miles, passing close SW of Trutskarsbaden Light (65°44'N., 23°23'E.), into Repskarsfjarden. The facilities at Karlsborg, at the NW end of Repskarsfjarden, and Axelsvik, at the NE side, can then be easily entered.

The main approach channel leading from seaward (Maloren) to Gunnarsfjarden is authorized for drafts up to 8.8m. The channel from Gunnarsfjarden to Repskarsfjarden is authorized for drafts up to 6.6m. The main fairway leading to Karlsborg from Repskarsfjarden is authorized for drafts up to 8.5m. A buoyed channel, which is authorized for drafts up to 1.5m, leads up the river to a small craft harbor at Kalix. The bridge just N of Kalixalven has a vertical clearance of 6.9m. Vessels up to 11,048 dwt, with a maximum length of 133.4m, a maximum beam of 19.7m, and a maximum draft of 7.3m, can be accommodated.

The main facilities at Karlsborg consist of Massakajen, a wood pulp quay fronting the sulphate factory and Trakajen, a stone and concrete quay.

The main facilities at Axelsvik (65°46'N., 23°22'E.) consist of an oil quay. Tankers up to 25,000 dwt and 6.6m draft can be handled, but the berth is very exposed. For more berthing information see the table titled **Karlsborg—Berth Information**.

Aspect.—Golihatten, a wooded hill, 69m high, stands 2 miles N of Axelsvik and is prominent.

Two chimneys stand in the SW part of Karlsborg and are prominent from seaward. The pulp mill chimney is red and 52m high and the sawmill chimney is yellow and 42m high.

The approach channel is indicated by lighted ranges and sector lights. The fairway is marked, in places, by buoys and beacons.

Pilotage.—Pilotage is compulsory. Pilots must be requested through the Lulea VTS station and will board vessels about 1 mile E of Farstugrunden Light (65°20'N., 22°45'E.) (see paragraph 9.19).

Karlsborg—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Karlsborg							
Massakajen	140m	6.1m	133.4m	7.3m	19.7m	11,048 dwt	Breakbulk, bunkers, and general cargo.
Trakajen	280m	6.6m	54.9m	—	12.0m	350 dwt	Wood chips, breakbulk, and bunkers.
Akelsvik Oil Terminal							
No. 1	60m	10.0m	78m	8.8m	14.0m	1,791 dwt	Clean products.

Anchorage.—Anchorage may be obtained, in depths of 13 to 14m, mud, in the S part of Repskarsfjardean, about 0.9 mile W of Trutskarsbaden Light (65°44'N., 23°23'E.).

Anchorage may be obtained by small vessels, in depths of 8 to 10m, mud, within Rossorsundet, about 1.8 miles SSW of Karlsborg.

9.25 Inshore route.—An inshore route, well marked by buoys, leads from Lulea to Harparanda (65°50'N., 24°08'E.), about 50 miles ENE. It is used by small vessels, with local knowledge, and is authorized for drafts up to 3.2m.

Several shallow entrance channels branch off from this inshore route and lead to numerous small craft harbors. Most of these small harbors were former timber-loading places that are now used only by local fishing vessels and recreational craft.

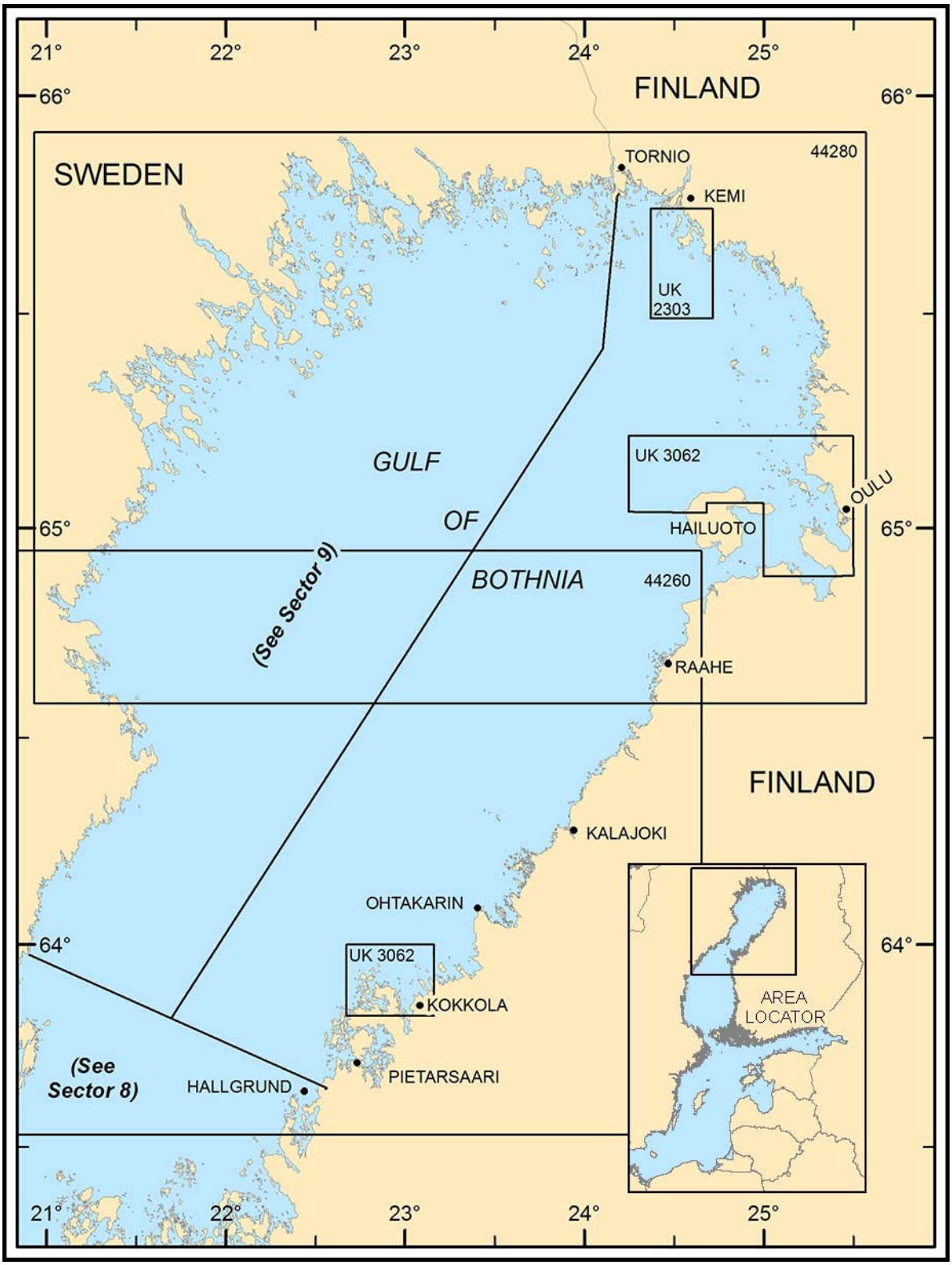
9.26 Sandvik (65°44'N., 23°46'E.) (World Port Index No. 27330), a small timber-loading place, is situated on the N side of the island of Seskaro, at the head of Sanviken. A concrete quay, 150m long, fronts a sawmill and has depths of 5.4 to 5.7m alongside. The entrance channel, which is authorized for drafts up to 3.2m, leads off the inshore route.

Anchorage can be taken, in depths of 8 to 11m, mud, on the SE side of Sandviken, close to the quay.

Granviken Anchorage, with depths of 6 to 9m, consists of an area lying N and on either side of Koijuluoto, an islet located 0.6 mile NNW of the quay at Sandvik.

Haparanda (65°50'N., 24°08'E.), a small Swedish frontier town, is situated on the W bank of the Tornealven River, 1.2 miles above the mouth. The depth in the river and the small harbor is only 1.5m. This town is connected by bridges to Tornio, a Finnish town standing on the E bank.

The border between Finnish and Swedish waters in this vicinity extends S, close to the meridian of 24°10'E.



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

SECTOR **10** — CHART INFORMATION

SECTOR 10

FINLAND—WEST COAST—HALLGRUND TO THE SWEDISH BORDER

Plan.—This sector describes the Finnish coast bordering on the Gulf of Bothnia between Norra Kvarken and the Swedish border, at the head of the gulf. The descriptive sequence is N from Hallgrund, an islet lying near the coast in the NE part of Norra Kvarken.

General Remarks

10.1 This section of the coast of Finland forms the E shore of Bottenviken, the N part of the Gulf of Bothnia. Like the coast to the S, it is low and has few natural landmarks. Vessels must rely almost exclusively on lighthouses, beacons, and other aids to navigation.

Ice.—See General Remarks in paragraph 1.1 and paragraph 4.1.

For information pertaining to winter navigation, ice, and Finnish icebreaking services, including internet web sites, see Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Pilotage.—The Baltic Pilotage Authorities Commission, a regional organization, recommends that vessels constrained by their draft, or vessels not registered in one of the Baltic States and infrequently sailing the area, take a deep-sea pilot.

See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for information on deep-sea pilotage.

Vessels desiring deep-sea pilotage to any coastal pilot station in Finland should send a request at least 12 hours and 3 hours in advance to the local agents.

Pilotage procedures are, as follows:

1. Pilotage is generally compulsory.
2. Vessels requiring a licensed Deep Sea Pilot in the Baltic Sea area should send a request at least 12 hours in advance to the local agents.
3. Pilots should be ordered by one of the following methods:
   a. Web site, using the Pilot Order Form.
   b. Telephone.
   c. Facsimile.
   d. E-mail.
4. All pilot stations and pilot vessels are equipped with the usual maritime VHF channels.
5. The Finnpilot Order Center will confirm receipt of the preliminary information or pilot order using the same method as used to make the order. An order placed using a form on the internet can also be confirmed via e-mail if requested by the customer, providing an e-mail address is included in the order information or is otherwise known by Finnpilot. (An order placed by telephone is not confirmed separately after the telephone call)
6. There is no pilot ordering service via VHF radio.
7. Inbound vessels:
   a. Vessels must provide a 12-hour and 3-hour advance notification of ETA at the pilot boarding position to the Pilot Order Center.
   b. Vessels must place a binding pilotage order to the Pilot Order Center 3 hours prior to arrival at the pilot boarding position
8. Outbound vessels:
   a. The vessel's agent or the vessel must provide a 12-hour and 2-hour advance notification of departure to the Pilot Order Center.
   b. The vessel's agent or the vessel must provide a binding pilotage order 2 hours before departure to the Pilot Order Center.
9. Vessels shifting berth must provide 2 hour advance notice to the Pilot Order Center with 2 hours confirmation.
10. During the winter months, pilot boarding positions may be subject to alteration according to the prevailing weather conditions.

Pilotage is ordered via the Finnpilot Order Center, Western Pilotage Zone. Pilot stations are located, as follows:

1. Kemi and Tornio:
   a. Kemi N—position 65°33.1'N, 24°26.9'E.
   b. Kemi S—position 65°29.3'N, 24°19.0'E.
2. Oulu:
   a. Oulu N (for vessels with drafts between 8 and 10m)—position 65°10.9'N, 24°18.0'E.
   b. Oulu S (for vessels with drafts of 8m or less—position 65°07.1'N, 24°16.6'E.
3. Raahe—position 64°38.8'N, 24°12.3'E.
4. Pietarsaari—position 63°44.5'N, 22°28.5'E.
5. Kokkola—position 64°00.5'N, 22°49.1'E.
6. Kalajoki—position 64°15.5'N, 23°30.0'E.
7. Kaskinen, Kristiinankaupunki, and Vaasa:
   a. Vaasa N (for the NW approach)—position 63°15.8'N, 20°51.2'E.
   b. Vaasa S (for Vaskiluoto)—position 63°12.1'N, 20°45.4'E.
   c. Kaskinen—position 62°15.5'N, 21°05.1'E.
   d. Kristiinankaupunki—position 62°11.5'N, 21°06.1'E.

All vessels must send a request for pilotage 12 hours prior to arrival at the appropriate boarding place. A confirmation must be sent 6 hours in advance and any changes after this time must be forwarded not later than 3 hours before arrival. In the Gulf of Bothnia, the binding order for a pilot must be made by telephone to the appropriate pilot station 3 hours before arrival.

Finnpilot Order Center—Contact Information	
Southern Pilotage Zone (Helsinki Pilotage Area and Hanko)	
Telephone	358-400-907977
Facsimile	358-29-525310
E-mail	pilotorder.south@finnpilot.fi

Finnpilot Order Center—Contact Information	
Web site	https://pilotorder.fi
Eastern Pilotage Zone (Kotka Pilotage Area)	
Telephone	358-400-907978
Facsimile	358-29-525311
E-mail	pilotorder.east@finnpilot.fi
Web site	https://pilotorder.fi
Eastern Pilotage Zone (Saimaa Canal and Lake Saimaa)	
Telephone	358-400-4873133
Facsimile	358-29-525311
E-mail	pilotorder.east@finnpilot.fi
Web site	https://pilotorder.fi
Western Pilotage Zone (Gulf of Bothnia Pilotage Area)	
Telephone	358-400-907979
Facsimile	358-29-525312
E-mail	pilotorder.west@finnpilot.fi
Web site	https://pilotorder.fi
Head Office	
Telephone	358-29-5253000
Facsimile	358-29 5253001
E-mail	info@finnpilot.fi
Web site	https://pilotorder.fi

Vessel Traffic Service.—Gulf of Bothnia VTS covers the coast along the Bay of Bothnia from Ritgrund Light to Tornio including the merchant shipping lanes (with the exception of the areas administered by the ports). The VTS Area also covers the area administered by the Port of Pietarsaari and the Port of Oulu. The boundary line of the Bothnia VTS area runs between the following positions:

1. Ritgrund Light (63°25'50"N., 21°30'50"E.).
2. The territorial sea limit in position 63°40'00"N, 21°31'00"E.
3. Observing the territorial limit to Tornio.

FinTraffic VTS—Master's Guide
https://www.fintraffic.fi/en/vts/masters-guide

Gulf of Bothnia VTS provides the following types of service:

1. Information service.
2. Traffic organization service.
3. Navigation assistance service.

The boundary line of the Bothnia VTS area runs between Ritgrund Light (63°25.5'N, 21°30.5'E) to the territorial sea limit in position, 63°40'N, 21°31'E and the observing territorial sea limit to Tornio.

Vessels of 24m in length overall or more are obliged to participate in the vessel traffic services.

When navigating in the VTS area, vessels are required to maintain a continuous listening watch on the working channel used in the area. Furthermore, vessels are obliged to obey the rules relevant to the traffic in the VTS area. More detailed instructions about the required reports and working channels can be found in the regional VTS mater's guide.

Vessels navigating in the VTS area, which are not obliged to participate in the vessel traffic services, are recommended to maintain a listening watch on the working channel in the VTS area or sector in question.

Vessel traffic services are provided as required in Finnish, Swedish, and English. However, English is the primary communication language in the VTS areas along the Finnish coast.

Vessels shall report, as follows:

1. Upon entry into the VTS Area.
2. Before anchoring.
3. Before leaving anchorage.
4. After berthing.
5. Before leaving port.

Vessels bound for Finnish ports in the Gulf of Bothnia via the Quark are required to submit an advance report 20 nautical miles before the Nordvalen Lighthouse (63°32'09"N 020°46'36"E).

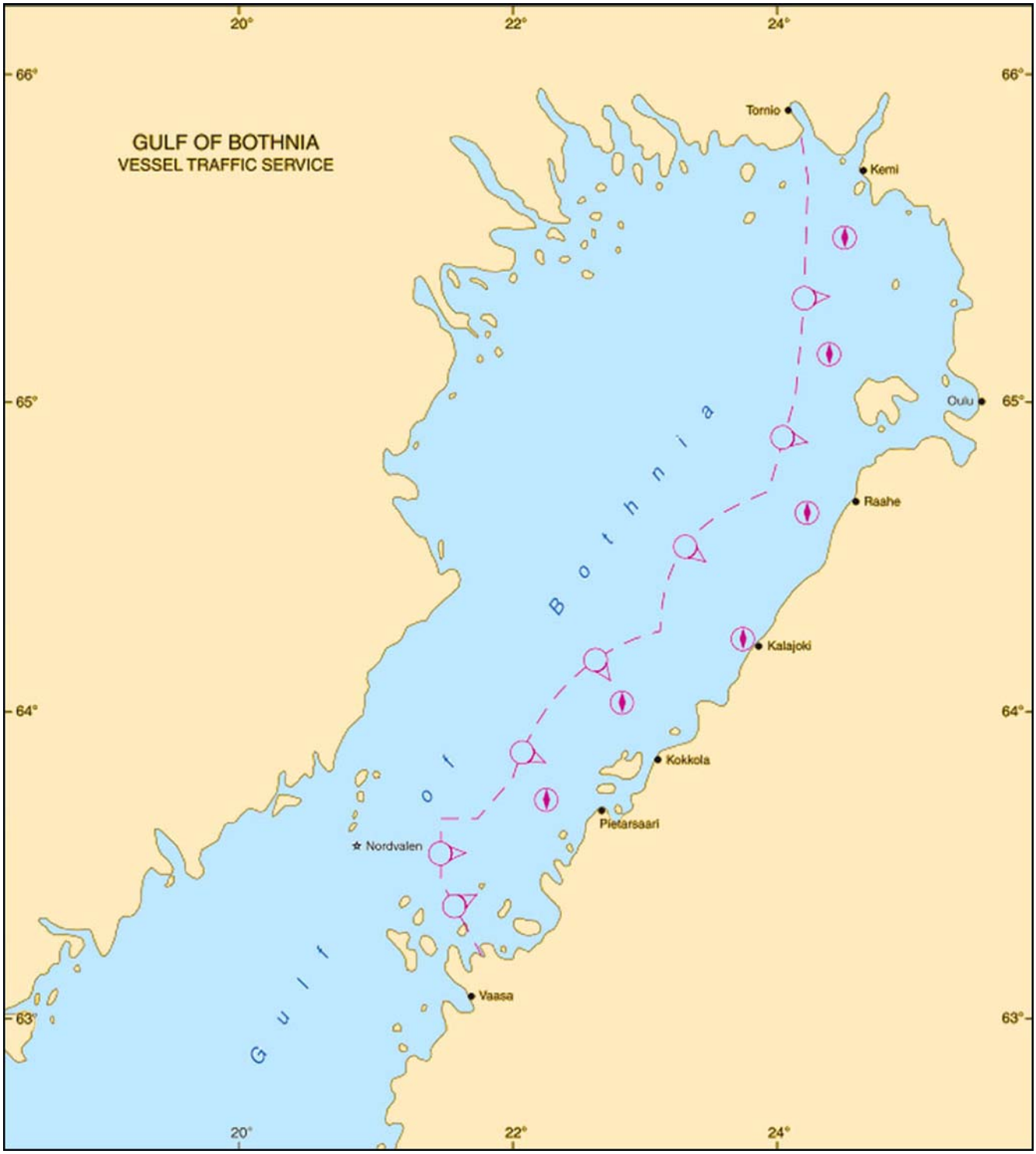
All reports to the VTS Center, including the Advance Report, should include the following information:

1. Vessel's name.
2. Name of reporting point.
3. Destination.
4. Intended route. If an alternative route is selected, this must be reported.

See paragraph 1.1 for details concerning restricted areas and semi-restricted areas within Finnish waters.

Meeting and overtaking is permanently prohibited in the following areas covered by Bothnia VTS:

1. Tornio: Harbor basin—buoy pair T27 and T28 between latitude 65°44.8'N and latitude 65°43.2'N in the 9.0m fairway.
2. Tornio—Narrow passage at Keila between Buoy T5 and Buoy T7 between longitude 24°20.8'E and longitude 24°18.9'E in the 9.0m fairway.
3. Tornio—Europa bend, in the area between Buoy Europa and Buoy T18 between latitude 65°39.8'N and latitude 65°40.4'N in the 9.0m fairway.
4. Kemi—Ajos Harbor buoy pair Inakari 1 and Inakari 2 between latitude 65°39.5'N and latitude 65°38.9'N in the 10.0m fairway.
5. Kemi: Veitsiluoto fairway—Veitsiluoto Harbor W of Ajoskrunni between latitude 65°40.9'N and latitude 65°37.8'N in the 6.8m fairway.
6. Oulu—Suumatala in the area between Buoy Oulu 5 and Hammasmatala between longitude 24°50.5'E and longitude 2'4°53.1'E in the 10.0m fairway.
7. Oulu—Löyhänmutka fairway area between Hookana and Löyhänmutka edge mark between latitude 65°07.3'N and latitude 65°06.8'N in the 10.0m fairway.
8. Oulu port entrance—Kyrönkari–Port of Oulu between longitude 25°20.8'E and longitude 25°23.5'E in the 12.5m fairway.
9. Raahe—Elkonredi–Johan edge mark between longi-



Gulf of Bothnia VTS Zones

tude 24°22.3'E and longitude 24°16.9'E in the 10.0m fairway.

10. Kokkola—Vessels of 200m or more in length when operating between latitude 63°53.5'N and latitude 63°59.2'N in the 13.0m fairway.

11. Pietarsaari: Port of Pietarsaari–Ado island between longitude 22°41.0'E and longitude 22°37.9'E in the 11.0m fairway.

These prohibitions do not apply to meeting and overtaking situations in which at least one of the parties is a tug or a vessel, the size of which is comparable to a tug.

Contact Information.—See the table titled **Gulf of Bothnia—Contact Information**.

Gulf of Bothnia—Contact Information	
Vessel Traffic Service	
Call sign	Gulf of Bothnia VTS
VHF	VHF channel 67
Telephone	358-20-448-7356 (Bothnia VTS)
	358-20-448-6522 (supervisor)
E-mail	bothnia.vts@fintraffic.fi
	supervisors.west@fintraffic.fi
Web site	https://www.fintraffic.fi/en/masters-guide

Caution.—The area has not been thoroughly surveyed. Offlying dangers may exist to seaward of those charted. Most of the coast is fringed by close-lying islands, islets, rocks, and shoals. The recommended routes leading to the ports and loading places are described and should be strictly followed. Vessels without local knowledge should proceed with caution when approaching this coast.

Due to various circumstances, including the discovery of obstructions, depths within the channels leading through the offshore dangers along this stretch of coast may change frequently. Therefore, vessels are advised to contact the local authorities in order to ascertain the latest information, including the maximum authorized drafts. All depths are to be considered as in fresh water.

Hallgrund to Pietarsaari

10.2 Hallgrund (63°39'N., 22°25'E.) is a small and low islet lying about 2.5 miles offshore on the W side of the approach to Uusikaarlepyy. It is fronted by shoals on the N and E sides.

Socklothallan, a large islet with several small islets lying close off its S end, is located close to and extends about 0.3 mile S from Hallgrund. Tuvan, a small islet, lies about 0.2 mile NE of Hallgrund. Torson, a wooded island, lies 2 miles SSW of Hallgrund.

Hallgrund Light is shown from a framework tower standing on Socklothallan. Hallgrund Beacon, a conspicuous pyramid-shaped tower, 21m high, is situated 0.2 mile S of the light.

A partly-buoyed approach channel, authorized for drafts up to 4m, leads in a S direction and passes E of Hallgrund and Torson. This channel leads to the anchorage for Uusikaarlepyy. Vessels, with local knowledge, may anchor, in depths of 12 to 14m, clay, about 0.7 mile E of the S end of Torson.

Uusikaarlepyy (63°31'N., 22°32'E.) (World Port Index No. 27580), a small town, is situated 3 miles from the mouth of a shallow river estuary and cannot be reached by ocean-going vessels.

Kallan Light (63°45.2'N., 22°31.5'E.) is shown from a prominent tower, 19m high, standing on Kallan, an above-water rock lying about 0.5 mile off the S end of an extensive area of foul and rocky ground. A racon is situated on this light.

Hellstenen, another above-water rock, lies on the foul ground about 0.8 mile NNE of Kallan. Storviken, an isolated rock that covers 0.7m, lies 0.5 mile N of Hellstenen.

Nygrundet Light (Pietarsaaren Majakka) (63°44'N., 22°32'E.) is shown from a prominent yellow tower standing on a rocky shoal, awash, about 0.7 mile SSE of Kallan Light. A racon is situated at this light.

Alholmsfjarden, within which the port of Pietarsaari is situated, lies about 8 miles NE of Hallgrund and 4 miles SE of Kallan Light. It is part of a large bay filled with numerous wooded islands, rocks, and shoals.

Masskar Tower (63°44'N., 22°35'E.), a red structure with a gray pointed roof, stands on Masskar Island, about 2 miles SE of Kallan Light. It is 21m high and prominent from seaward.

The main entrance into Alholmsfjarden leads between Kallan Light and Nygrundet Light. The outermost danger on the N side of the approach is an isolated shoal, lying about 1.3 miles NNW of Kallan Light. It has a least depth of 7.5m and is marked by a buoy.

Masskar Tower

Storgrundet, a detached shoal bank, lies about 3 miles SW of Kallan Light and is the outermost danger on the S side of the approach. It has a least depth of 3.2m and is marked by buoys.

Gammalgrundet, with depths of less than 2m, is an extensive shoal lying on the S side of the entrance. It is situated on a large shallow bank, which extends about 3.5 miles N from the mainland.

Pietarsaari (63°41'N., 22°40'E.)

World Port Index No. 27570

10.3 Pietarsaari, formerly known as Jakobstad, is situated within Alholmsfjarden, about 8 miles NE of Hallgrund. This sheltered harbor lies on the NW side of Adholme and E of

Adon, a peninsula located 1 mile W.

Pietarsaari Home Page
https://www.portofpietarsaari.fi

Depths—Limitations.—The main approach channel from seaward leads between Kallan Light and Nygrundet Light. The entrance fairway, which is authorized for drafts up to 11m passes between numerous islets and shoals fronting the harbor. The principal facilities are described below.

Vessels with a maximum length of 200m and a maximum draft of 11m draft can be accommodated in the harbor. For more berthing information see table titled **Pietarsaari (Jakobstad)—Berth Information**.

Aspect.—The main entrance fairway leading to the harbor is indicated by lighted ranges and marked by lights, buoys, and beacons.

The commercial harbor is situated on the NW side of Leppaluoto, a peninsula extending 2 miles N of the town.

The spire of a church and a water tower situated in the S part of the town are conspicuous from seaward. A prominent chimney stands 2.5 miles N of the church spire.

Pilotage.—Pilotage is ordered via the Finnpilot Order Centre, Western Pilotage Zone (see Sector 10.1 for details).

During inclement weather, vessels may be directed to a more sheltered area by VHF.

Regulations.—The main routes leading to Pietarsaari are situated within Sector C of the Gulf of Bothnia Vessel Traffic Service (VTS) system. This system operates off the NW coast of Finland and is mandatory. For further details of the VTS system, including reporting procedures, see paragraph 10.1.

At night tankers carrying more than 4,000 tons of oil are prohibited from navigating in the channel between the oil berth and the sea.

Vessels shall submit a departure report in order to be given permission to depart. The permission to depart issued by the VTS is valid for 20 minutes. If the vessel's departure is delayed, it will have to request a new permission to depart.

Contact Information.—See the table titled **Pietarsaari—Contact Information**.

Anchorage.—Vessels with local knowledge may anchor N of Masskar, in a depth of 16m, mud. Anchorage may also be taken in the roadstead about 1.5 miles E of Masskar, in depths of 11 to 12m.

Pietarsaari—Contact Information	
Port Authority	
Telephone	358-6-7236128
E-mail	office@portofpietarsaari.fi
Web site	https://www.portofpietarsaari.fi
Port Control	
VHF	VHF channels 13 and 16
Telephone	358-6-7231388
E-mail	satamavalvojat@portofpietarsaari.fi

Pietarsaari to Kokkola (Ykspihlaja)

10.4 Kokkola Majakka (64°00'N., 22°52'E.), is located miles NNE of Kallen Light. It is shown from a prominent tower, 23m high, standing on the W side of Kredens Shoal. The coast between is fronted by numerous small islands, islets, rocks, and patches of foul ground extending up to about 11 miles offshore.

Orgrundet Beacon (63°47'N., 22°33'E.), 12m high, stands on the N extremity of Orgrundet Island, about 2.2 miles NNE of Kallan Light.

Lillgrundet (63°51'N., 22°37'E.), marked by range beacons, is situated about 6.4 miles NNE of Kallan Light and surrounded by foul ground.

An inshore channel leading from sea to Ykspihlaja, which is authorized for drafts up to 3m, passes S and E of Lillgrundet. It is suitable only for small vessels during daylight.

Koppargrundet Beacon (63°55.7'N., 22°43.1'E.), consisting of a prominent steel mast, stands in an islet about 5.8 miles SW of Kokkola Light.

Tankar (63°57'N., 22°51'E.) lies about 3 miles SSW of Kokkola Light and is fronted by shoals extending up to about 1.7 miles seaward. A main pilot station (Bothnia Pilot) is situated on this island. A harbor used by small craft is located at the E side.

Tankar Light is shown from a prominent metal tower, 29m high, standing near the center of the island.

Pietarsaari (Jakobstad)—Berth Information

Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
Jakobstad Terminal					
Busko	160m	8.2m	—	7.4m	Ro-ro/lo-lo, breakbulk, and bunkers.
Cement	16m	8.2m	—	7.4m	Cement and bunkers. Berthing length of 100m (including dolphins).
Laukko I	152m	12.3m	—	11.0m	Chemicals, wood chips, ro-ro freight, multipurpose, breakbulk, and bunkers. Continuous berthing length of 502m. An loa increase is permitted if small or no vessels are on adjacent berths.
Laukko II	150m	12.3m	200m	11.0m	
Laukko III	200m	12.3m	—	11.0m	

Pietarsaari (Jakobstad)—Berth Information					
Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
South	165m	8.2m	—	7.4m	Breakbulk and bunkers.

Tankar Light

A secondary passage leading from sea to Ykspihlaja, which is authorized for vessels with drafts up to 5.2m, is entered about 2 miles NW of Tankar. It passes NE of the island and joins the primary channel close NE of Repskaret, 3.5 miles SE. The fairway is indicated by a lighted range, buoys, and beacons.

Trullevin (63°57'N., 23°03'E.), marked by range beacons, is a small island lying about 5.8 miles SE of Kokkola Light.

An inshore channel leading from sea to Ykspihlaja, which is authorized for drafts up to 2.5m, passes close W of this island. It is indicated by range beacons and is partly buoyed.

Caution.—An explosives dumping area, which may best be seen on the chart, lies centered 13 miles NW of Kokkola Light.

Kokkola (Ykspihlaja) (63°51'N., 23°06'E.)

World Port Index No. 27560

10.5 The harbor of Kokkola (Ykspihlaja), formerly known as Karleby, is situated 2.5 miles W of the town and 20 miles NE of Hallgrund. It lies between the mainland and an island, and is divided into two parts by a breakwater.

The principal imports handled are oil, liquid chemicals, and zinc concentrates. Timber products and zinc are exported.

Port of Kokkola
https://portofkokkola.fi/en/port-of-kokkola/

Winds—Weather.—Winds, from NW through N to NE, sometimes cause a heavy sea in the harbor.

Ice.—Ice obstructions exist from December through April; however, efforts are made to keep the harbor open by means of icebreakers. Ice class restrictions apply in winter.

Tides—Currents.—The water level may vary as much as 0.6m, depending on the wind.

Depths—Limitations.—The main approach channel, which is authorized for drafts up to 14m, leads from the NW and passes close SW of Kokkola Light. Local knowledge is required to enter the harbor. For the secondary entrance channels, see paragraph 10.4. The principal facilities are described below. Depths are to be considered as in fresh water.

Kemira Quay, a liquid chemical and gas berth. Oil Quay, at the S side of the breakwater. Shore Quay, Ro-Ro Qua, and the Stone Quay are in the S part of the harbor.

There are facilities for LPG, tanker, general cargo, bulk, and ro-ro vessels. There are no restrictions for length or beam. Vessels with up to 180,000 dwt, 300m in length, 50m beam, and 13.2m draft can be accommodated. For more berthing information see the table titled **Kokkola—Berth Information**.

Aspect.—The main fairway channel is entered from NW of Kokkola Light. It is indicated by lighted ranges and marked by lighted buoys and beacons.

Bergbadan Beacon, equipped with a racon, stands on an islet at the S side of the main channel, about 2 miles SSE of Kokkola Light.

A water tower and several prominent tanks and chimneys stand in the vicinity of the harbor area.

Kokkola—Berth Information					
Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
Deep Port					
Boliden 8	100m	10.5m	—	9.5m	Bunkers, general cargo, bulk cargo, and raw material for the steel industry.
Deep Quay 9	180m	12.1m	—	11.0m	Bunkers, general cargo, bulk cargo, and raw material for the steel industry.

Kokkola—Berth Information					
Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
Deep Quay 10	—	14.8m	—	13.0m	General cargo, others, bulk cargo, bunkers, and raw material for the steel industry.Continuous berthing length of 620m.
Deep Quay 11	—	14.8m	—	13.0m	
Deep Quay 12	—	13.0m	—	13.0m	
Oil 7	140m	10.5m	180m	9.5m	Chemicals, clean products, dirty products, and bunkers.
General Port					
All Weather Terminal (ATW) No. 4	124m	9.3m	130m	8.3m	Containers, breakbulk, and bunkers. Maximum vessel beam of 20m,. Maximum vessel size of 9,500 dwt.
Chemical 5	83m	10.5m	180m	9.5m	Chemicals and bunkers.
Packhouse 3	128m	4.0m	—	—	Limestone and breakbulk.
Shore Quay 1	162m	10.5m	—	9.5m	Cement, fertilizer, limestone, alumina clay, breakbulk, and bunkers.
Shore Quay 2	161m	10.5m	—	9.5m	Cement, fertilizer, limestone, alumina clay, breakbulk, and bunkers.
Silverstone Port					
Silverstone 1	160m	—	130m	9.5m	Chemicals, limestone, multipurpose, and bunkers, raw material for fertilizer, general cargo, phosphoric acid, and ammonia.
Silverstone 2	157m	—	—	9.5m	Chemicals, limestone, multipurpose, and bunkers, raw material for fertilizer, general cargo, phosphoric acid, and ammonia.

Kokkola—Deep Quay

Kokkola

Pilotage.—Pilotage is compulsory. Pilotage is ordered via the Finnpilot Order Centre, Western Pilotage Zone. Finnpilot Pilot order service is divided into three Pilotage Zones, Southern, Eastern, and Western. For details on the specific coverage as well as contact information for each of these pilotage zones, see Sector 1.1.

Pilot boards in position 64°00.5'N 22°49.1'E.

Arrangements may be made to embark the pilot in the vicinity of Kokkola Light.

Vessel Traffic Service.—The main routes leading to Kokkola are situated within Sector C of the Gulf of Bothnia Vessel Traffic Service (VTS). This system operates off the NW coast of Finland and is mandatory. For further details of the VTS system, including reporting procedures, see paragraph 10.1.

Regulations.—Inbound tankers carrying more than 4,000 tons of oil are prohibited from entering any of the approach channels at night. Tankers departing the port are permitted to use the main channel at night. Vessels over 200m in length are prohibited from passing or overtaking in the main channel between latitude 63°53.5'N and latitude 63°59.2'N.

Contact Information.—See the table titled **Kokkola—Contact Information**.

Kokkola (General Port)

Anchorage.—Anchorage may be taken by large vessels close W of the main deepwater channel, about 1.75 miles NW of the Deep Quay, in depths of 14 to 15m.

Kokkola—Contact Information	
Port	
Call sign	Kokkola Port
VHF	VHF channels 12, 13, and 16
Telephone	358-6-8242400
Facsimile	358-6-8242444
E-mail	satama@portofkokkola.fi
Web site	https://portofkokkola.fi

Caution.—Vessels may experience difficulties while berthing alongside the quays during strong N winds. A entry prohibited area is exists E of the harbor.

Kokkola (Ykspihlaja) to Raahe

10.6 Ykskivi Shoal (64°13'N., 23°11'E.), lying about 15 miles NNE of Kokkola Light, has a least depth of 4.2m.

Ohtakari (64°05'N., 23°24'E.), a small island lying close offshore, is located 15 miles ENE of Kokkola Light. A fishing light is occasionally shown from the E side of this island.

A line of shoals, with depths of less than 10m, extends SE between Ykskivi Shoal and Ohtakari.

Himanka (64°04'N., 23°39'E.), lying 6.5 miles ESE Ohtakari, is a loading place situated near the mouth of a river. It lies in the E part of the head of a bay, which is fronted by a chain of small islands, islets, and rocks. There is a wharf with a depth of 1.8m alongside. Anchorages are available in the immediate approach. A fairway channel, authorized for drafts up to 4.2m, leads from seaward as far as the anchorages. Pilotage is compulsory and pilots may be obtained from the station at Tankar.

The intervening coast between Himanka and Rahja, 10 miles NNE, is low and much indented by small bays and inlets. The shore is fronted by numerous small islands and rocks. The 10m curve lies up to 5 miles off this part of the coast.

Ulkokalla (64°20'N., 23°27'E.), 6m high, lies 10 miles NE of Ykskivi Shoal and about 10 miles offshore. A light is shown from a prominent tower, 14m high, standing near the N side of this islet. A house with a red roof is situated close to the light.

Ulkokalla Light

Caution.—Firing practice areas extend up to 12 miles seaward between Kokkola Majakka and Ulkokalla islet. A transshipment area exists SW of the Ulkokalla Light.

10.7 Hevoskari (64°12'N., 23°34'E.), lying about 7.5 miles NE of Ohtakari, is the outermost of the islands fronting this part of the coast.

Maakalla, 6m high, lies 2 miles SE of Ulkokalla. A light is occasionally shown from this barren islet.

Both of these islets are fronted by foul ground and surrounded by shoals and rocky patches, with depths of less than 10m, lying up to about 3 miles seaward.

Only vessels with local knowledge should pass between Ulkokalla and the mainland shore.

Rahja (64°12'N., 23°44'E.) is a small timber-loading place situated about 28 miles NE of Kokkola.

Depths—Limitations.—Vessels up to 175m in length, 8.5m draft, and 30m beam can be accommodated. Two quays on the SW side of the harbor provide commercial berthage for vessels. For more berthing information see the table titled **Rahja—Berth Information**.

Rahja—Berth Information		
Berth	**Length**	**Remarks**
Kalajoki		
No. 1	156m	Animal feeds, grain, wood chips, ro-ro freight, steel products, and breakbulk.
No. 2	132m	Animal feeds, grain, wood chips, steel products, and breakbulk. Berthing length of 264m (including dolphins).
No. 3	132m	

Pilotage.—Pilotage is compulsory. Pilots can be obtained from the Tankar pilot station.

Anchorage.—Three anchorages, with depths of 6 to 11m,

lie within an inlet W of Rahja but are suitable only for small vessels.

Lepanen (64°14'N., 23°39'E.), marked by a light, is the northernmost of a chain of small islands extending from the shore. Aijankallio Beacon, equipped with a racon, is located about 1 mile W of Lepanen. Roima Lighted Beacon, is located about 1 mile ENE of Lepanen. The main channel leading from sea to Rahja, which is authorized for drafts up to 8.5m, passes close SW of the island and is indicated by lighted ranges.

Kalajoki (64°16'N., 23°56'E.), a small craft harbor, is situated about 7 miles NE of Rahja, at the head of a bay. The coast in this vicinity is fronted by a flat which has depths of less than 5m and extends up to about 4 miles seaward. Above and below-water rocks extend up to about 1.5 miles NNW from Lehtoniemi, the W entrance point of the bay. Local knowledge is required for entry.

Pertunmatala (64°21'N., 23°54'E.), lying 4.5 miles NNE of Lehtoniemi, is a small group of above and below-water rocks located about 1.2 miles offshore.

10.8 **Nahkiainen Light** (64°37'N., 23°54'E.) is shown from a prominent tower with a helicopter platform, 24m high, standing on Ulkonahkiainen, a rocky shoal area. Detached shoal patches, with depths of less than 10m, extend up to about 2 miles seaward of the light. They are marked by buoys and may best be seen on the chart.

An isolated shoal patch, with a depth of 7.3m, lies 4.5 miles SSE of the light.

Raahe Light (64°39.1'N., 24°13.4'E.), equipped with a racon, is shown from a prominent tower, 24m high, standing 9 miles ENE of Nahkiainen Light.

Maanahkiainen, a detached shoal, has a least depth of 3.5m and lies about 3 miles SSW of the light.

Caution.—A local magnetic anomaly exists within a small area located 9 miles SSW of Nahkiainen Light.

A local magnetic anomaly exists in the area lying between Nahkiainen Light and Raahe Light.

Raahe (64°41'N., 24°25'E.)

World Port Index No. 27530

10.9 Raahe is situated 15 miles ENE of Nahkiainen Light. The coast in this vicinity is fronted by many small islands, islets, and shoals. Rautaruukki, the outer harbor, is protected by detached breakwaters which have been formed by causeways joining several islets. Lapaluoto, the inner harbor, is protected by a number of small islands. The town stands 2.5 miles NE of the port.

Port of Raahe
https://www.raahensatama.fi

Winds—Weather.—The harbors are, to a great extent, protected against N, E, and S winds and to some degree against W winds.

Ice.—The harbor is kept open year round with icebreaker assistance.

Tides—Currents.—There are no regular tides or currents.

Raahe—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Lapaluto							
No. 1	100m	8.0m	158m	—	24.0m	19,625 dwt	Cement, containers, steel products, and bunkers.
No. 2	—	8.0m	200m	—	28.0m	29,902 dwt	Cement, containers, steel products, and bunkers. Continuous berthing length of 230m. Rail link.
No. 3	—	—	200m	—	28.0m	29,902 dwt	
Helmi	83m	—	—	—	—	—	Mineral ore, ro-ro freight, and bunkers.
Tug Boat	—	—	—	—	—	—	Project/heavy cargo and bunkers.
Raahe Deep Water Quay							
Lower	—	—	197m	10.0m	32.2m	56,438 dwt	Iron ore and steel products. Continous berthing length of 355m.
Upper	—	—	169.7m	10.0m	—	—	
SSAB-Rautaruukki							
No. 1	—	8.0m	122.1m	—	18.2m	9,270 dwt	Steel products, breakbulk, and bunkers. Continuous berthing length of 370m. Rail link.
No. 2	—	8.0m	155.4m	—	25.5m	20,499 dwt	
No. 3	—	8.0m	122.3m	—	15.2m	7,350 dwt	
No. 4	—	8.0m	154.6m	—	18.2m	13,850 dwt	Steel products, breakbulk, and bunkers. Continuous berthing length of 270m. Rail link.
No. 5	—	8.0m	154.6m	—	21.5m	17,294 dwt	

Raahe—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
No. 6	184m	8.0m	154.6m	—	18.2m	14,603 dwt	Steel products, breakbulk, and bunkers. Rail link.
Ruukki Metals Oy							
Petroleum No. 6	207m	8.0m	154.6m	7.8m	17.2m	20,000 dwt	Clean products, dirty products, steel products, breakbulk, multipurpose, and bunkers.

Courtesy of Port of Raahe

Port of Raahe

Depths—Limitations.—The main approach channel leading from seaward, which is authorized for drafts up to 7.5m, passes N of Nahkiainen Light and close S of Raahe Light.

The principal wharves include Lapaluoto Quay, Import Quay, Export Quay, and Oil Quay. There are facilities for tanker, bulk, ro-ro, and general cargo vessels. Vessels up to 56,348 dwt, 200m in length, 32.2m beam, and 10m draft can be accommodated in the port. For more berthing information see the table titled **Raahe—Berth Information**.

Aspect.—On approaching the coast, a range of hills, 100 to 120m high, can be seen rising about 7 miles inland, 10 miles SSE of the town.

The main entrance channel is indicated by lighted ranges, lighted buoys, and beacons. Heikinkari Light, the front range light, is situated 3.4 miles E of Raahe Light and is equipped with a racon.

A church, with a conspicuous tower, stands in the town and a square water tower is situated 0.3 mile SW of it. A prominent chimney, 110m high, stands 2.5 miles SW of the church in the vicinity of the harbor.

Pilotage.—Pilotage is compulsory. Pilots are provided by the Perameri Pilot Station (Bothnia Pilot) located at Hailuoto (see paragraph 10.10). For further information concerning pilotage in the approaches, see paragraph 10.1.

Vessel Traffic Service.—The main routes leading to Raahe are situated within Sector D of the Gulf of Bothnia Vessel Traffic Service (VTS). This system operates off the NW coast of Finland and is mandatory. For further details of the VTS, in-

cluding reporting procedures, see paragraph 10.1.

Raahe—Contact Information	
Harbor Office	
Telephone	358-8-2277555 (0800-1530)
	358-40-1356794 (ISPS, 24 hours)
E-mail	port@raahe.fi
Web site	http://www.portofraahe.fi.com
Ruukki Metals OY Harbor	
VHF	VHF channels 9, 12, 13, and 16
Telephone	358-20-5923890 (Agents)
	358-20-5922335
	358-20-5938963 (2200-0600)
Facsimile	358-20-5923043

Oulu 1 Light

Contact Information.—See the table titled **Raahe—Contact Information**.

Anchorage.—Anchorage may be taken seaward of Raahe Light, in depths of 15 to 20m. Vessels, with local knowledge, may also obtain sheltered anchorage S of the fairway, in a depth of 11m, about 0.6 mile NE of Heikinkari Light.

Raahe to Oulu

10.10 The coast extends in a general NE direction from Raahe to Oulu, a distance of 32 miles. The intervening coast is indented by several bays and a number of rivers flow into the sea in this area. The 10m curve lies up to 9 miles offshore.

Tauvo (64°49'N., 24°33'E.), a peninsula, projects from the mainland about 8 miles NNE of Raahe. It is fronted by rocks extending up to about 1 mile seaward. A light is shown from a prominent framework structure, 30m high, standing near the NW extremity of this peninsula.

Hailuoto (65°03'N., 24°46'E.), a low and wooded island, lies with its S extremity located 8.5 miles N of Tauvo.

Marjaniemi Light (65°02'N., 24°34'E.) is shown from a prominent tower, 25m high, standing on the W extremity of Hailuoto.

Pilotage.—Pilotage is provided by Bothnia Pilot from the main pilot station situated near the W point of Hailuoto island and close by Marjaniemi Light (65°02'N., 24°34'E.). This station provides pilots for Raahe, Rahja, Oulu, Kemi, and the Tornio/Roytta Channels (see paragraph 10.1).

Merikallat (65°02'N., 24°05'E.), a shoal area of sand and stones, lies between 10 and 14 miles W of Hailuoto. It has a least depth of 6.7m and is marked by buoys.

Artunmatala (65°15'N., 24°07'E.), with a least depth of 8m, lies about 17 miles NNW of Marjaniemi Light. This shoal, which is marked by a buoy, is the outermost patch with a depth of less than 10m lying off this stretch of coast.

Oulu 1 Light (65°11'N., 24°30'E.), equipped with a racon, is shown from a prominent tower, 24m high, standing about 9 miles N of Marjaniemi Light.

Oulun Portti Lighted Beacon is situated 3.4 miles W of this light. An isolated shoal patch, with a depth of 8.2m, lies about 0.6 mile S of the lighted beacon and is marked by a buoy.

Oulu 2 Light (65°10'N., 24°35'E.) is shown from a prominent tower, 24m high, standing 2.3 miles ESE of Oulu 1 Light.

Oulu 3 Light (65°09'N., 24°40'E.) is shown from a prominent tower, 24m high, standing 2.5 miles SE of Oulu 2 Light.

Luodematala Light (65°10'N., 25°00'E.), equipped with a racon, is shown from a structure, 29m high, standing 10.3 miles E of Oulu 2 Light.

Directions.—The waters fronting Oulu are encumbered by numerous islets, rocks, and shoal areas. Recommended routes (channels), which may best be seen on the chart, lead through these dangers and obstructions to the port.

The fairways are indicated by lighted ranges and marked by buoys and beacons.

The main approach channel from seaward, which is authorized for drafts up to 10m, is entered about 24 miles WNW of Marjaniemi Light. This route leads E for about 20 miles and passes close S of Oulun Portti Lighted Beacon and 0.5 mile S of Oulu 1 Light. It then leads in a SE direction for about 24 miles, passing NE of Hailuoto, to the port. The fairway passes close NE of Oulu 2 Light and close SW of Oulu 3 Light.

Two alternate channels, which are authorized for drafts up to 8m, lead N or E of Merikallat shoal and merge together. This route then leads NE for about 7 miles and joins the main channel 1.5 miles SW of Oulu 1 Light.

Another alternate channel, which is authorized for drafts up to 6.1m, leads about 6 miles SE. This route passes close N of Oulu 1 Light and joins the main channel about 0.5 mile NW of Oulu 2 Light.

A secondary channel, which is authorized for drafts up to 4.2m, is entered about 6 miles SW of Marjaniemi Light. This route leads N and NE for about 14 miles. It passes 1.6 miles W of Marjaniemi Light and joins the main channel in the vicinity of Oulu 3 Light.

Another secondary channel, which is authorized for drafts up to 3.5m, is entered about 8 miles NW of Marjaniemi Light. It leads 6 miles ESE and joins the first secondary channel 3.2 miles NNW of Marjaniemi Light. The secondary channels are used only in daylight.

A shallow inshore channel, for small craft with local knowledge, leads from Raahe to Oulu. It passes between the S side of Hailuoto and the mainland.

A main coastal route, which is authorized for drafts up to 10m, leads between the approaches to Oulu and the approaches to Kemi. This channel leaves the main approach route about 4.3 miles SE of Luodematala Light and leads NE and E for 3 miles through a narrow passage. It then leads about 27 miles in a NW direction to a position 4.5 miles W of Harkaletto Light (65°30'N., 24°50'E.). From this position the channel leads 7 miles W to join the main approach route for Kemi (see paragraph 10.14).

Caution.—Local magnetic anomalies exist within an area, the limits of which are shown on the chart, centered 9 miles W of Tauvo Light.

Oulu (65°01'N., 25°28'E.)

World Port Index No. 27520

10.11 Oulu, formerly known as Uleaborg, lies on the S side of the Oulujoki River (Ulea River), about 10 miles E of Hailuoto. It is an important harbor and industrial city.

Port Oulu
https://ouluport.com

Ice.—The port is normally closed for almost half the year by ice, but icebreakers are available.

Depths—Limitations.—The main channel leading from seaward to the port is authorized for drafts up to 10m (see paragraph 10.10).

The port consists of five harbor areas, which provide facilities for general cargo, ro-ro, bulk, tanker, chemical, and timber-product vessels. Vessels up to 38,898dwt, 241.7m in length, 35.2m beam, and 10m in draft can be accommodated.

Pateniemi lies 5 miles NNW of the town. A channel, which is authorized for drafts up to 6.3m, leads N to this harbor. It is reported that this harbor is no longer open to commercial shipping.

Toppila lies 1.5 miles NW of the town. It is reported that this harbor is used only for the discharge of cement. Toppila Quay is situated on the N side of this harbor. Hietasaari Quay is situated on the S side. The channel in the vicinity of these two quays has a maximum authorized draft of 5.0m.

Courtesy of Port of Oulu

Oulu

An overhead power cable, with a vertical clearance of 50m, spans the entrance to Toppila harbor.

Vihreasaari lies at the SW extremity of the southernmost islet fronting the town. Oil Quay is T-shaped and situated on the N side of this harbor. Bulk Quay situated on the S side.

Oritkari lies 1 mile SW of the town on the S bank of the river. Main Quay, situated at the S side and North Quay, situated at the N side. There are also three ro-ro berths.

Nuottasaari lies 0.5 mile WSW of the town on the S bank of the river. Nuottasaari Quay. Two chemical quays, situated close W. For more berthing information see the table titled **Oulu—Berth Information**.

Aspect.—The recommended entrance channels are indicated by lighted ranges and marked by lighted buoys and beacons. Several chimneys and silos standing in the vicinity of the harbor at Oritkari are prominent from seaward.

Oulu—Berth Information

Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Oritkari Harbor							
Main	343m	9.0m	241.7m	—	35.2m	27,000 dwt	Ro-ro/lo-lo, containers, breakbulk, and bunkers. 58,821 gt and 1,638teu.
North	170m	10.0m	193m	—	26.5m	18,972 dwt	Ro-ro/lo-lo, breakbulk, and bunkers. Berthing length of 223m (including dolphins). 25,609 gt.
West	330m	12.5m	185.1m	10.0m	30.0m	38,898 dwt	Breakbulk, others, and bunkers. 24,991 gt.
Vihreasaari Harbor							
Bulk No. 1	75m	—	153.2	10.0m	23.6m	20,406 dwt	Cement, grain, breakbulk, and bunkers. Continuous berthing length of 150m. 5,257 to 13,066 gt.
Bulk No. 2	75m	—	119.9m	10.0m	16.5m	7,750 dwt	

Oulu—Berth Information							
Berth	Length	Depth	Maximum Vessel				Remarks
			LOA	Draft	Beam	Size	
Oil	71m	—	184m	10.0m	32.2m	37,873 dwt	Chemicals, petroleum products, and bunkers. Berthing length of 210m (including dolphins). Displacement: 49,348t.
Nuottasaari Harbor							
Main	336m	6.4m	142.6m	—	16.5m	11,850 dwt	Salt, breakbulk, and bunkers. Berthing length of 365m (incl. dolphins). 7,367 gt.
Chemical No. 1	126m	—	—	7.5m	—	—	Bunkers. Closed. No vessel visits in one year (2022).
Chemical No. 2	75m	10.0m	164.3m	9.5m	23.7m	19,971 dwt	Chemicals and bunkers. Berthing length of 136m (including dolphins). Displacement: 27,067t. Mooring capstan 44m NE.

Pilotage.—Pilotage is compulsory deep-sea pilots are provided by the Perameri Pilot Station, Bothnia Pilot (see paragraph 10.10). For further information concerning pilotage, see also paragraph 10.1.

Pilotage is ordered via the Finnpilot Order Centre, Western Pilotage Zone. See paragraph 1.1 for details.

Pilot will boards in the following position for vessels proceeding to Oulu:

1. Oulu N—65°10'57.0"N, 24°18'00.0"E.
2. Oulu S—65°07'00.0"N, 24°16'56.4"E.

Vessel Traffic Service.—The main routes leading to Oulu are situated within Sector D of the Gulf of Bothnia Vessel Traffic Service (VTS). This system operates off the NW coast of Finland and is mandatory. Vessels shall submit a departure report in order to be given permission to depart. The permission to depart issued by the VTS is valid for 20 minutes. Vessels are required to give a report underway and if a vessels departures is delayed, they will need to submit a new request. For further details of the VTS, including reporting procedures, see paragraph 10.1.

Contact Information.—See the table titled **Oulu—Contact Information**.

Oulu—Contact Information	
Port	
VHF	VHF channels 12 and 13
Telephone	358-44-703-2753
Facsimile	358-8-557-2040
E-mail	oulunsatama@ouluport.com
Web site	http://www.ouluport.com

Anchorage.—The roadstead between Oulu and Pateniemi, 5.5 miles N, affords anchorage, in depths of 7 to 8m, mud.

Anchorage may also be taken, in depths of 10 to 14m, clay and sand, about 3 miles WNW of Oulu.

Caution.—Numerous quantities of timber may be found lying in the vicinity of the harbor at Pateniemi. Depth in the port of Oulu may be less than charted. The pilots or port authorities should be contacted for the lastest information.

Oulu to Kemi

10.12 The coast between Oulu and Kemi, 49 miles NNW, is low, wooded, and fronted by numerous islands, islets, rocks, and shoals. Some of these dangers lie up to 30 miles seaward of the E shore of the gulf.

Other than the direct approach from seaward, there are two routes leading from Oulu to Kemi. The principal coastal approach route is authorized for drafts up to 10m (see paragraph 10.10). The secondary inshore route, which detours via Martinniemi and Iin Roytta, is authorized for drafts up to 5.5m.

Martinniemi (65°13'N., 25°17'E.), a loading place with a small harbor, lies about 11 miles N of Oulu and is approached from the Oulu to Kemi inshore route. The entrance channel is authorized for drafts up to 4.2m. Anchorage may be taken, in a depth of 8m, good holding ground, about 0.4 mile off the harbor breakwaters or, in a depth of 16m, about 1.3 miles WSW of the breakwaters. Local knowledge is required.

It was reported that the harbor is only used by small craft and is no longer open to commercial traffic.

Iin Roytta (65°16'N., 25°12'E.), a small craft harbor, lies at the SE end of an island of the same name. It is protected by breakwaters, which extend from the E and S ends of the island, and has depths of 2 to 3m.

An outer anchorage lies about 0.5 mile W of the island and has a depth of 16m. An inner anchorage lies about 0.2 mile E of the S extremity of the island and has a depths of 7 to 9m. The anchorages are approached from the Oulu to Kemi inshore route. The entrance channel is authorized for drafts up to 5.5m. Local knowledge is required.

Kemi 1 Light (65°23'N., 24°06'E.) is shown from a prominent tower, 21m high with a helicopter platform, standing in the SW approach to Kemi. A racon is situated at this light.

Rajamatalat, an isolated shoal patch with a least depth of 6.6m, lies about 4 miles N of Kemi 1 Light. Mutkamatala, with a least depth of 5.7m, is a shoal patch lying on the E side of the main approach channel, 8.5 miles NE of Kemi 1 Light.

Kemi 2 Light (65°30'N., 24°22'E.) is shown from a mast, with a wind generator, standing 10 miles NE of Kemi 1 Light.

Source: Port of Kemi, https://www.portofkemi.fi/portofkemi/media/

Kemi—Ajos

Lallin Moyly, an isolated shoal patch with a depth of 3.5m, lies about 2 miles NNW of Kemi 2 Light.

Kemi 1 Light

10.13 Keminkraaseli Light (65°36.6'N., 24°33.8'E.) is shown from a prominent concrete tower, 25m high, standing 8 miles NE of Kemi 2 Light. A racon is situated at this light.

Pohjantahti Beacon (65°37.6'N., 24°22.4'E.), equipped with a racon, is situated about 7 miles N of Kemi 2 Light.

Directions.—The approach to this section of the Finnish coast is difficult due to the wide belt of islands, islets, shoals, and rocks fronting the coast at the N end of the Gulf of Bothnia. These dangers may best be seen on the chart.

Recommended routes (channels), which may best be seen on the chart, lead through these dangers and obstructions to the ports. The inner fairways are indicated by lighted ranges and marked by buoys and beacons.

From seaward, the land in the approach to Kemi is uniformly low and cannot be distinguished from the offshore islands. However, good references are provided by the lighthouses, both Finnish and Swedish, and by the off-lying islands of Maloren (65°31'N., 23°34'E.) and Sandskar (65°35'N., 23°45'E.).

The main approach route leading to Kemi, which is authorized for drafts up to 10m, begins in the vicinity of Kemi 1 Light and leads NE and NNE for about 20 miles. It passes close NW of Kemi 2 Light and about 2 miles W of Keminkraaseli Light.

The principal coastal route from Oulu, which is authorized for drafts up to 10m, joins the main channel about 1 mile NNE of Kemi 2 Light (see paragraph 10.12).

Caution.—Local magnetic anomalies exist within an area lying between about 1.2 miles and 6 miles W of Harkaletto Light (65°30'N., 24°50'E.).

Kemi (65°44'N., 24°34'E.)

World Port Index No. 27410

10.14 The port of Kemi is situated at the mouth of a river that flows into the head of the Gulf of Bothnia. The town, which is fronted by a small craft harbor, is served by two commercial harbors. Ajos, the outer harbor, lies at the SW end of a peninsula, about 4.5 miles SSW of the town. Veitsiluoto, the inner harbor, lies at the SW side of an island, 3 miles SSE of the town.

The principal imports are oil and chemicals. Steel and timber products are exported.

Kemi Home Page
https://www.portofkemi.fi/en

Ice.—The harbor is normally frozen over from the beginning of December to the end of May. Attempts are made to keep the harbor open with the assistance of icebreakers. The Finnish Board of Navigation determines the restrictions and requirements for vessels allowed to enter the harbor at this time.

Tides—Currents.—The tides are negligible, but winds will cause the water level to vary. During S winds, the water level may rise up to 1.5m above normal. During N winds, the level may fall as much as 0.8m.

Depths—Limitations.—The principal entrance channel leading from seaward to the harbor at Ajos is authorized for drafts up to 8.7m.

The installations at Ajos are protected by a detached breakwater, which lies at the W side of the harbor.

Quay No. 2 has berths along the SE side and Quay No. 3 has berths along the NW side. Quay No. 4 has a berth along the SE side.

The oil jetty, located at the SE side of the harbor. The main branch channel leading to Veitsiluoto is authorized for drafts up to 7m.The harbor at Veitsiluoto is centered around a pier which extends SSW from the island. Berth No. 1 extends W from the root of the pier; Berth No. 2 and Berth No. 3, situated along the W side of the pier; Berth No. 4 and Berth No. 5, situated along the E side of the pier; and Berth No. 6 is situated close E of the pier. A ro-ro ramp is located at the E side of the pier root.

For more berthing information see the table titled **Kemi—Berth Information**. Vessels up to 38,200 dwt, 190.7m in length, 30.6m beam, and 9.8m draft can be accommodated.

Aspect.—The inner entrance fairways are indicated by lighted ranges and marked by buoys and beacons.

A church with a tower and the town hall situated at Kemi are prominent from seaward. Several conspicuous chimneys stand in the vicinity of the harbor at Veitsiluoto.

Three conspicuous wind generators, 35m high, stand on the S side of Ajos.

Pilotage.—Pilotage is compulsory. Pilots board in either Kemi N: (65°33.1'N., 24°26.9'E.) or Kemi S: (65°29.3'N., 24°19.0'E.).

Pilotage is ordered via Finnpilot Order Center, Western Pilotage Zone.

Vessel Traffic Service.—The main routes leading to Kemi are situated within Sector D of the Gulf of Bothnia Vessel Traffic Service (VTS). This system operates off the NW coast of Finland and is mandatory. For further details of the VTS, including reporting procedures, see paragraph 10.1.

Contact Information.—See the table titled **Kemi—Contact Information**.

Kemi—Berth Information

Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Beam	Size	
Veitsiluoto Harbor						
No. 1	135m	—	134.5m	17.4m	9,851 dwt	Breakbulk, others, and bunkers.
No. 2	104m	—	132.3m	15.8m	8,733 dwt	Breakbulk and bunkers.
No. 3	104m	—	132.3m	15.8m	8,733 dwt	Breakbulk and bunkers.
No. 4	115m	7.9m	133.4m	16.5m	8,867 dwt	Breakbulk and bunkers.
No. 5	115m	7.9m	133.4m	16.5m	8,867 dwt	Breakbulk, fast ferries, and bunkers.
No. 6	120m	—	134.5m	18.2m	10,546 dwt	Breakbulk, others, fast ferries, and bunkers.
No. 7	120m	—	118.1m	16.5m	8,137 dwt	Breakbulk, others, and bunkers.
Ajos Harbor						
No. 1	80m	10.8m	190.7m	30.6m	38,200 dwt	Continuous berthing length:160m. Mineral ore, scrap metal, ro/pax, ro-ro/lo-lo, containers, steel products, breakbulk, and bunkers
No. 2	80m	10.8m	190.7m	30.6m	38,200 dwt	
No. 3	95m	8.7m	185.4m	25.3m	23,660 dwt	Ro/pax, ro-ro/lo-lo, containers, steel products, breakbulk, and bunkers.
No. 4	95m	8.7m	185.4m	25.3m	23,660 dwt	Ro/pax, ro-ro/lo-lo, steel products, breakbulk, and bunkers.

Kemi—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Beam	Size	
No. 5	94m	8.7m	190.7m	26.0m	15,960 dwt	Ro/pax, ro-ro/lo-lo, container, project/heavy cargo, steel products, breakbulk, and bunkers.
No. 6	94m	8.7m	190.7m	26.0m	15,960 dwt	Ro/pax, ro-ro/lo-lo, container, project/heavy cargo, steel products, breakbulk, and bunkers.
No. 7	94m	8.7m	190.7m	26.0m	15,960 dwt	Ro/pax, ro-ro/lo-lo, containers, steel products, breakbulk, and bunkers.
No. 8	—	11.4m	190.7m	28.0m	21,402 dwt	Ro/pax, ro-ro/lo-lo, containers, project/heavy cargo, steel products, breakbulk, and bunkers. Continuous berthing length of 177m.
No. 9	—	11.4m	190.7m	28.0m	21,402 dwt	
No. 10	—	11.4m	210.7m	30.6m	38,200 dwt	
No. 11	—	11.4m	210.7m	30.6m	38,200 dwt	
Oil	—	10.8m	180m	23.7m	25,117 dwt	Chemicals, asphalt/bitumen, clean and dirty products. Berthing length of 82m (including dolphins).
Sampo	40m	0.5m	74.6m	17.3m	3,597 dwt	Ro/pax and bunkers.

Kemi—Contact Information	
Port Control	
VHF	VHF channels 12 and 13
Telephone	358-16-258108
	358-40-5482065
Port Authority	
Telephone	356-16-258100
Web site	https://www.portofkemi.fi

Anchorage.—Anchorage can be taken, in a depth of 16m, about 0.9 mile SSW of the oil jetty head, close W of the main entrance channel.

Kemi to the Swedish Border

10.15 Tornio (Roytta) (65°50'N., 24°09'E.), which is situated about 1.5 miles above the mouth of the Torniojoki River, can only be reached by small craft. Roytta, the commercial harbor for this industrial town, lies about 5 miles S and is situated close to the border between Sweden and Finland, on the SW side of the island of Sellei.

The border between Finnish and Swedish waters in this vicinity extends S, close to the meridian of 24°10'E.

Ice.—From the middle of January to the beginning of May, the harbor is generally frozen over.

Depths—Limitations.—The main entrance channel leading to Roytta is authorized for drafts up to 8m. It initially follows the main route leading from seaward to Kemi to a position about 6 miles NNE of Kemi 2 Light. The channel then leads in a general NW direction for about 11 miles to the harbor.

There are three main berths. Vessels up to 22,780 dwt, 169m in length, 27.2m beam, and 8m draft can be handled. There are facilities for timber, general cargo, bulk, LPG, and LNG vessels. For more berthing information see the table titled **Tornio—Berth Information**.

Aspect.—The main entrance fairway is indicated by lighted ranges and marked by buoys. A conspicuous chimney stands in the vicinity of the harbor.

Tornio—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Beam	Size	
Outokumpu Terminal						
Lower	250m	8.0m	151.7m	23.4m	13,200 dwt	Containers, project/heavy cargo, steel products, breakbulk, and bunkers.
North	295m	—	147m	22.8m	12,692 dwt	Project/heavy cargo, steel products, breakbulk, and bunkers.
North Head	150m	—	126.1m	16.3m	8,334 dwt	Steel products, breakbulk, and bunkers.

Tornio—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Beam	Size	
Quay Head	190m	8.0m	169m	27.2m	20,145 dwt	Containers, steel products, breakbulk, and bunkers.
Upper	200m	8.0m	154.6m	25.6m	17,294 dwt	Containers, steel products, breakbulk, and bunkers.
Tornio LNG Termainal						
LNG	144m	9.2m	169m	25.6m	22,780 dwt	LNG and bunkers.

Pilotage.—Pilotage is compulsory. Pilots are provided by the Perameri Pilot Station (Bothnia Pilot) located at Hailuoto (see paragraph 10.10). Pilots board in the following positions:

1. Kemi N—65°33.1'N, 24°26.9'E.
2. Kemi S—65°29.3'N, 24°19.0'E.
3. Oulu N—65°10.9'N, 24°18.0'E.

For further information concerning pilotage, see paragraph 10.1.

Vessel Traffic Service.—The main routes leading to Tornio are situated within Sector D of the Gulf of Bothnia Vessel Traffic Service (VTS). This system operates off the NW coast of Finland and is mandatory. For further details of the VTS, including reporting procedures, see paragraph 10.1.

Contact Information.—See the table titled **Tornio—Contact Information**.

Tornio—Contact Information	
Port	
Telephone	358-16-4521 (Switchboard)
	358-16-454500 (Shipping)
Facsimile	358-16-454522
Web site	https://www.outokumpu.com

Anchorage.—Anchorage can be obtained, by vessels with local knowledge, in a depth of 8m, close E of the fairway, about 1.2 miles SSE of the front range light.

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
by	town
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, fjarden	fjord, bay, inlet, lake, sound, channel, strait
fjord, fjorden	fjord
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

SWEDISH	English
I	
inlopp	entrance
innerst	innermost
inre	inner
insegling	entrance
insjo	lake
is	ice
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

SWEDISH	English
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
skans	fort, redoubt
skar	above-water rock, rocky islet
skargard	fringing rocks, islets, and shoals
skog	woods
skogbevaxt	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

SWEDISH	English
syd, sodre	south
sydost	southeast
sydvast, sydvest	southwest

T

tavla	board daymark
tidssignal	time signal
tidvatten	tide
tidvattensdocka	wet dock
tippningsplats	spoil ground
topp	summit
tidssignal	time signal
tidvatten	tide
torn	tower
torrdocka	drydock
trianglepunkt	triangulation point
tullkammare	custom office
tunga	tongue

U

udde	cape, point, headland
undervattenskabel	submarine cable
undre	lower
utkikstorn	lookout tower

V

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 buoy

Y

ytstrom	surface current
ytterest	outermost
yttre, ytter	outer

Russian—Estonian—Latvian—Lithuanian

RUSSIAN (r)
ESTONIAN (e)
LATVIAN (la)
LITHUANIAN (li) 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-oy,-aya,-oye (r) ..... great, large
bryuaga (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 free
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

RUSSIAN (r)
ESTONIAN (e)
LATVIAN (la)
LITHUANIAN (li) English

E

edela (e) ..... southwest
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
guba ..... arm, recess, bay

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
jogi (e) ..... river
joom (e) ..... reef, sand bank

K

kaevand (e) ..... channel
kagu (e) ..... southeast
kai (e) ..... quay

RUSSIAN (r)
ESTONIAN (e)
LATVIAN (la)
LITHUANIAN (li) English

kalasadam (r) ..... fishing harbor
kalda (e) ..... coast
kalju (e) ..... rock
kallas (e) ..... shore
kallutus (e) ..... tide
kalnas (li) ..... hill
kamen' (r) ..... rock, stone
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
kare (e) ..... grassy islet
kari (e) ..... reef, shallow, shoal
karestik ..... rapids, cataract
karestiku (e) ..... waterfalls
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
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

RUSSIAN (r)
ESTONIAN (e)
LATVIAN (la)
LITHUANIAN (li) English

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
lyuna (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

RUSSIAN (r)
ESTONIAN (e)
LATVIAN (la)
LITHUANIAN (li) English

meresopp (e) ..... creek
merevool (e) ..... stream
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
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, 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
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

RUSSIAN (r)
ESTONIAN (e)
LATVIAN (la)
LITHUANIAN (li) English

peastepaat (e) ..... lifeboat
peen (e) ..... fine
pehme (e) ..... soft
perebor, perekat (r) ..... bar, ledge, shoals
peredn -iy, -yaya, -eye (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
poi (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

RUSSIAN (r)
ESTONIAN (e)
LATVIAN (la)
LITHUANIAN (li) English

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
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

RUSSIAN (r)
ESTONIAN (e)
LATVIAN (la)
LITHUANIAN (li) English

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
vodorosl' 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
vyerkhn -u, -yaya, -eye (r) ..... upper
vyssh -iy, -aya, -eye (r) ..... higher

Y

yakornoye mesto (r) ..... anchorage

RUSSIAN (r)
ESTONIAN (e)
LATVIAN (la)
LITHUANIAN (li) English

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
znak (r) ..... beacon, mark
zona (r) ..... zone
zvelav'ye (r) ..... cape, point

Finnish

FINNISH	English
A	
alempi	lower
ankkuripaikka	roadstead
ankkuripohja	anchorage
aukko	strait, channel
E	
etela	south
etelainen	southern
H	
hieta, hiekka	sand
I	
iso	great, large
ita	east
itainen	eastern
J	
jaa	ice
jarvi	lake
joki	river
jyrkka	bluff
K	
kallio	rock, cliff, mountain
kanaali	channel
kannas	isthmus
kanava	channel
kari	reef, shoal, island
kaupunki	city, town
kello	bell
keltainen	yellow
kirkko	church
kivi	rock, stone
kumpeli	beacon
kyla	village
kynnys	bar
L	
lahti	bay, gulf, cove, inlet
laituri	pier, quay, jetty
laivaranta	wharf, quay
lansi	west
lantinen	western
lieju	mud
linna	fort, castle
linnotus	fort
loisto	light
luoto	island, shoal, peninsula, rocky islet
luotsi	pilots

FINNISH	English
M	
majakka	lighthouse, beacon
maki	hill, mountain
matala	shallow, shoal bank
matalikko	bank, shoal
meri	sea, ocean
merimerkki	beacon, seamark
merkki	mark, sign
metsa	forest
musta	black
muta	mud
N	
niemeke	point (of land)
niemi	peninsula, point, cape, island
P	
pieni	small
pikku	small, little
pohja	north, bottom, ground
pohjoinen	northern
poiju	buoy
pookin	tower
punainen	red
purjehdusmerkki	beacon, mark
puro	stream
R	
rannikko	coast
ranta	shore, beach, bank
reimari	spar buoy
reitti	strait, course, channel
reivi	reef
riutta	reef
S	
saari	island, section of island, peninsula
salmi	strait, channel, bay
satama	harbor
savi	clay
selka	body of water
silta	bridge, pier
sininen	blue
sisa	inside, inner
sisamainen	inner
sora	gravel
suomi	finland
suu	mouth, entrance, inlet
suuri	big, great
T	
taipale	isthmus
talo	house, building
tie	road, course

FINNISH	English
torni	tower, steeple
tulli	customs
tumma	dark

U

ulkomainen	outer

V

vaalea	light (color)
vaara	hill, mountain
valkoinen	white
vayla	channel, fairway
vesi	body of water
viheria, vihrea	green
viitta	spar buoy
vuori	mountain

Y

ylempi	upper

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 Boundaries diagram for the Sector. Plot the approximate position of the feature on this diagram.

To use as an Index of features described in the text note the Sector-Paragraph number at the right. The Sector-Paragraph number is then used to manually locate the feature. Each Index entry is also hot-linked to its location in the text.

Index—Gazetteer

	Position				Sec. Para
	°	'	°	'	
L					
LAGSKAR	59	50 N	19	55 E	4.5
LAHEPERE LAHT	59	22 N	24	12 E	1.8
LAITAKARI LIGHT	61	03 N	21	13 E	7.5
LALATTA LIGHT	60	17 N	26	33 E	2.14
LANGDEN	59	47 N	23	15 E	2.4
LANGHAREN	60	41 N	17	17 E	6.9
LANGROUDDEN	63	24 N	19	31 E	6.54
LAPPOHJA	59	54 N	23	16 E	2.5
LARSGRUNDET LIGHT	65	28 N	22	28 E	9.16
LASKER	64	18 N	21	21 E	9.6
LELLERINSAARET	60	24 N	26	58 E	2.17
LEPANEN	64	14 N	23	39 E	10.7
LETIPEA NEEM	59	33 N	26	37 E	1.15
LILLA TARNSKAR	59	45 N	22	58 E	2.2
LILLBADAN LIGHT	63	39 N	20	21 E	8.7
LILLGRUND	62	03 N	17	40 E	6.29
LILLGRUNDET	63	51 N	22	37 E	10.4
LILLHALLANSGRUND	63	49 N	20	52 E	8.20
LILLHARUN	59	44 N	21	24 E	4.3
LIMO LIGHT	60	43 N	17	22 E	6.5
LJUSNE	61	12 N	17	08 E	6.16
LJUSNEFJARDEN	61	13 N	17	12 E	6.14
LOKSA SADAM	59	35 N	25	42 E	1.13
LOMONOSOV	59	55 N	29	46 E	3.5
LONDONSKAYA OTMEL	59	59 N	29	30 E	3.3
LORDAGSHALLAN	63	26 N	19	54 E	8.3
LORUDDEN	62	14 N	17	40 E	6.29
LOTSGRUND LIGHT	63	11 N	20	43 E	8.14
LOVIISA	60	27 N	26	14 E	2.15
LOVISA	60	27 N	26	14 E	2.15
LOVSELE	64	18 N	21	15 E	9.5
LOVSTABUKTEN	60	38 N	17	45 E	6.2
LUGNVIK	62	56 N	17	55 E	6.43
LULEA	65	35 N	22	10 E	9.19
LUNDE	62	53 N	17	53 E	6.43
LUNGON	62	39 N	18	04 E	6.37
LUNGOSUNDET	62	40 N	18	03 E	6.39
LUODEMATALA LIGHT	65	10 N	25	00 E	10.10
LUPPI	60	14 N	27	02 E	2.17
LUTSKARSGRUND LIGHT	65	40 N	23	20 E	9.21
LUZHSKAYA GUBA	59	44 N	28	19 E	1.20
LYOKKI TOWER	60	56 N	21	08 E	7.4
M					
MAARIANHAMINA	60	06 N	19	55 E	4.8
MAJAKARTTI	60	19 N	27	35 E	2.20
MAKIHUOTO	59	55 N	24	20 E	2.8
MALOREN	65	32 N	23	34 E	9.20
MALOREN LIGHT	65	32 N	23	34 E	9.20
MANTYLUOTO	61	36 N	21	29 E	7.12
MARHALLAN	60	02 N	19	52 E	4.7
MARIEHAMN	60	06 N	19	55 E	4.8
MARJANIEMI LIGHT	65	02 N	24	34 E	10.10
MARKET	60	18 N	19	08 E	5.9
MARKETSKALLEN	60	19 N	19	02 E	5.9
MARTINNIEMI	65	13 N	25	17 E	10.12
MASSKAR TOWER	63	44 N	22	35 E	10.2
MATTSUNDBERGET	65	33 N	21	56 E	9.19
MEERUSE	59	27 N	24	40 E	1.9
MERIKALLAT	65	02 N	24	05 E	10.10
MERIKARI	60	21 N	27	06 E	2.17
MERIKARVIA	61	51 N	21	29 E	7.14
MERIKARVIAN MAJAKKA LIGHT	61	56 N	21	17 E	7.13
MICKELSORAR	63	26 N	21	46 E	8.15
MO	63	33 N	19	52 E	8.5
MOHNI SAAR	59	41 N	25	48 E	1.13
MOHNISAAR	59	41 N	25	48 E	1.3
MOLDOVA	59	26 N	27	03 E	1.16
MONASSUNDET	63	29 N	22	19 E	8.16
MORGONLANDET	59	46 N	22	42 E	4.2
MORRIS LT BEACON	61	35 N	21	25 E	7.11
MUNSALAN	63	23 N	22	18 E	8.16
MUUGA	59	30 N	24	56 E	1.11
MYRAN	61	36 N	17	28 E	6.23
MYS KRESTOVYY	60	31 N	28	14 E	2.23
MYS KURGAL'SKIY	59	47 N	28	06 E	1.19
MYS KYURENNIYEMI	60	16 N	28	55 E	2.30
MYS LOUNATRIVI	60	01 N	27	00 E	1.5
MYS STIRSUDDEN	60	11 N	29	01 E	2.30
MYS USTINSKIY	59	55 N	28	59 E	1.22
N					
NAANTALI	60	28 N	22	02 E	4.16
NAHKIAINEN LIGHT	64	37 N	23	54 E	10.8
NAISSAAR	59	34 N	24	31 E	1.8
NAISSAAR SADAM	59	33 N	24	33 E	1.8
NARVA JOESUU	59	28 N	28	03 E	1.18
NARVA LAHT	59	33 N	27	30 E	1.16
NARVA LIGHT	59	28 N	28	03 E	1.18
NORDMALINGSFJARDEN	63	28 N	19	33 E	6.55
NORDVALEN LIGHT	63	32 N	20	47 E	8.22
NORRA KVARKEN	63	40 N	20	53 E	8.19
NORRA LANGROGRUNDET	63	19 N	19	41 E	8.2
NORRA STORBADAN	62	12 N	21	20 E	7.15
NORRBYSKAR	63	33 N	19	52 E	8.5
NORRFJARDEN	63	52 N	20	45 E	8.10
NORRSKAR	63	14 N	20	39 E	8.13
NORRSKAR LIGHT	63	14 N	20	36 E	8.13
NORRSUNDET	60	56 N	17	10 E	6.12
NORRUTHARET LIGHT	61	16 N	17	18 E	6.19
NORSTROMSGRUND	65	10 N	22	25 E	9.15
NORSTROMSGRUND LIGHT	65	07 N	22	19 E	9.15
NORTHOLMEN	63	34 N	19	29 E	6.56
NOTHOLMEN	63	34 N	19	29 E	6.56
NURMES LIGHT	61	12 N	21	20 E	7.6
NYGRAN LIGHT	65	01 N	21	42 E	9.15
NYGRUNDET LIGHT	63	44 N	22	32 E	10.2
NYHAMN LIGHT	59	58 N	19	57 E	4.5
O					
ODELGRUND	63	25 N	20	34 E	8.22
OHTAKARI	64	05 N	23	24 E	10.6
OLEG	59	35 N	21	58 E	4.2
OLKILUOTO	61	14 N	21	27 E	7.10
OLOFSGRUND	61	34 N	17	28 E	6.23
OMNEFJARDEN	62	57 N	18	28 E	6.47
OREFJARDEN	63	30 N	19	48 E	8.4
OREGRUND	60	20 N	18	27 E	5.7
OREGRUNDS SKARGARD	60	16 N	18	36 E	5.4
ORGRUNDET BEACON	63	47 N	22	33 E	10.4
ORNSKOLDSVIK	63	17 N	18	43 E	6.51
ORO	59	49 N	22	20 E	4.2
ORRENGRUND	60	16 N	26	27 E	2.14
ORRSKARSHAMMEN	61	13 N	17	10 E	6.17
ORSKAR LIGHT	60	32 N	18	23 E	5.11
OSMUSSAAR ISLAND	59	18 N	23	22 E	1.2
OSTRA KVARKEN	63	33 N	20	51 E	8.24
OSTROV DOLGIY KAMEN	60	28 N	27	52 E	2.23
OSTROV GOGLAND	60	03 N	26	59 E	1.5
OSTROV IGRIVVY	60	36 N	28	28 E	2.24
OSTROV KOPYTIN	60	26 N	27	42 E	2.22
OSTROV KOTLIN	60	00 N	29	46 E	3.3
OSTROV KOZLINYY	60	27 N	27	47 E	2.22
OSTROV KREPYSH	60	38 N	28	32 E	2.25
OSTROV MAYACHNYY	60	34 N	28	26 E	2.24
OSTROV MOSHCHNNY	60	00 N	27	50 E	1.5
OSTROV NERVA	60	15 N	27	57 E	2.21
OSTROV RODSHER	59	58 N	26	41 E	1.4
OSTROV RONDO	60	27 N	28	22 E	2.23
OSTROV SESKAR	60	02 N	28	23 E	1.5
OSTROV SOMMERS	60	12 N	27	39 E	2.21
OSTROV SYARKKYALUOTO	60	18 N	28	48 E	2.30
OSTROV VIKHREVOY	60	34 N	28	26 E	2.24
OTROV BOLSHOY TYUTERS	59	51 N	27	11 E	1.4
OTTERHALLAN LIGHT	61	16 N	17	18 E	6.19
OULU	65	01 N	25	28 E	10.11
P					
PAKLISKI LAHT	59	20 N	24	00 E	1.6
PAKRI NEEM	59	23 N	24	02 E	1.6
PALDISKI	59	21 N	24	02 E	1.7
PARRIO	60	28 N	27	42 E	2.21
PELLINGE	60	13 N	25	50 E	2.14
PERNAJA	60	26 N	26	03 E	2.14