



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.  
**SECTOR 8 — CHART INFORMATION**

# SECTOR 8

## SWEDEN—EAST COAST—LANDSORT TO ARHOLMA

**Plan.**—This sector describes the Swedish coast, the approaches, and the off-lying dangers between Landsort and Arholma, 79 miles NNE. The descriptive sequence is S to N.

### General Remarks

**8.1** The irregular, rocky, and wooded coast between Landsort and Bjorko, 80 miles NNE, is fronted by Stockholm Skargard, an archipelago interspersed by innumerable dangers, which extends up to about 30 miles offshore in places. There are few prominent landmarks, although several islands in the S part of the archipelago are high enough to be identified. Conspicuous light structures mark the seaward side of the Skargard. Depths in the approaches to the archipelago are very irregular. Soundings are of little help in approach fairways, as depths near the outer shoals are often greater than those lying a few miles seaward. Numerous branch fairways and inner passages lead between the various dangers. Much of the archipelago consists of uncharted dangers and strict adherence to the prescribed fairways is advocated. The 40m curve closely contains the majority of dangers lying off this coast. The major port of Stockholm and the lesser ports of Nynashamn and Norrtälje lie along this stretch of coast. A number of small harbors are situated within the archipelago but are used only by small craft, local ferries, and pleasure boats.

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

1. Category 1—Vessels carrying or with uncleaned tanks which last carried:
  - a. Liquefied gas.
  - b. Liquid chemicals defined in 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.

**Directions—Offshore route.**—The offshore route leading from the S to the Gulf of Bothnia passes through the Ahvenameren 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 (59°49'N., 19°47'E.). It can be used by all vessels.

The channel can be entered W of Bogskar Light (59°49'N., 19°47'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.).

See Pub. 195, Sailing Directions (Enroute) Gulf of Finland and Gulf of Bothnia for dangers lying E and N of this section of the route.

### Stockholm Skargard—Entrances

**8.2** There are four principal entrances leading into Stockholm Skargard. The designated routes through them are shown on the chart.

The entrances and the distances to Stockholm are, as follows:

1. Landsort Entrance (58°42'N., 17°52'E.)—80 miles.
2. Sandhamn Entrance (59°15'N., 19°02'E.)—40 miles. This entrance provides the shortest and most direct route.
3. Soderarm Entrance (59°46'N., 19°22'E.)—55 miles.
4. Arholma Entrance (59°54'N., 19°05'E.)—55 miles.

Channels that may be used by foreign merchant vessels when navigating in Stockholm Skargard are, as follows:

1. Landsort to Sodertälje (see paragraph 7.17).
2. Landsort to Dalaro (59°08'N., 18°25'E.).
3. Dalaro to Stockholm, through Kanholmsfjarden (59°20'N., 18°48'E.) or Vindostrom (59°18'N., 18°40'E.).
4. Jungfrufjarden (59°09'N., 18°23'E.) to Baggensfjarden (59°18'N., 18°20'E.).
5. Sandhamn to Stockholm, known as Sandhamnsleden.
6. Furusund (59°40'N., 18°55'E.) to Kanholmsfjarden, through Ostra Saxarfjarden (59°27'N., 18°30'E.).
7. Kanholmsfjarden to Granhamnsfjarden (59°43'N., 19°08'E.), known as Rodlogaleden.
8. Alands Sea to Furusund, through Soderarm Entrance or through Arholma Entrance, known as Arholmasleden.
9. Furusund to Stockholm, known as Furusundsleden.

**Ice.**—Stockholm Skargard is usually frozen over from December to March. Seaward of the archipelago, the sea is generally ice-free, but with onshore winds, drift ice may be troublesome. Icebreakers keep the principal entrances and channels through the archipelago open to shipping. Compressed air tubes to prevent ice formations are laid across the fairways and approach channels. Notice boards and lights mark the landing places of tubes, submarine cables, and pipelines. Ice Reporting and Advice Services and Instructions for Mariners in Fairways with Ice, are contained in Special Regulations promulgated for shipping in the Stockholm Skargard during the ice season. Vessels should consult the Stockholm Harbor Administration and Pilot Authority for the latest ice information.

**Tides—Currents.**—The current from Simpnasklubb Light (59°54'N., 19°05'E.) usually sets SW throughout Stockholm Skargard. It passes Landsort and may attain a rate of 2 knots at times. Currents close offshore and in the approach channels through the archipelago may run in different directions and are opposed to the current farther offshore. In the outer approaches to the archipelago there is usually a current setting W.

**Pilotage.**—Pilotage within the area described in this sector is controlled by two pilot stations. Pilots for the Landsort Entrance area are controlled by the Malaren/Landsort Traffic Area station situated at Sodertälje. All ordering of pilots within the traffic area must be made through the Traffic Information Center of Sodertälje VTS. Pilots generally board about 2 miles S of Landsort Light or (for large vessels) near Nynashamn Approach Lighted Buoy (58°45'N., 18°11'E.).

For further information concerning pilotage within the Malaren/Landsort Traffic Area, see paragraph 7.17 (Sodertälje).

Pilots for the Sandhamn, Soderarm, and Arholma Entrances are controlled by the station at Stockholm. All ordering of pilots in the area between 59°00'N and 60°00'N, except the Malaren area, must be carried out through the Traffic Information Center of Stockholm VTS. This VTS center can be contacted on VHF channel 73.

Vessels should send an ETA and request for pilotage at least 12 hours in advance of arrival at the boarding place with a confirmation at least 5 hours in advance.

Pilotage is compulsory in this area for the following vessels:

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 70m in length, 14m beam, and 4.5m draft and over.

In certain channels to and from Gustavsberg, pilotage is compulsory for the following vessels:

1. All Category 1 vessels.
2. Category 2 and 3 vessels of 60m in length, 9m beam, and 4m draft and over.

Pilots board, as follows:

1. At the Sandhamn Entrance—About 2 miles (vessels under 35,000 dwt) or 4.5 miles (vessels 35,000 dwt and over) SE of Revenggrundet Light (59°15'N., 19°01'E.).
2. At the Soderarm Entrance—N of Soderarm.
3. At the Arhoma Entrance—N or E of Simpasklubb Light (59°54'N., 19°05'E.).

**Regulations.**—Two Vessel Traffic Service (VTS) systems operate within the area described in this sector. Sodertälje VTS covers the S part, which includes the Malaren/Landsort Traffic Area and the Landsort Entrance. The Traffic Information Center of this VTS may be contacted on VHF channel 68.

For further information concerning Sodertälje VTS and the Malaren/Landsort Traffic Area, see paragraph 7.17 (Sodertälje).

Stockholm VTS operates in the N part of the area described in this sector. It is mandatory for vessels over 300 grt, vessels over 50m in length, and towing vessels where the length including tow is over 50m.

The Stockholm VTS Traffic Area is bounded by the following points:

1. Stora Rotholmen (59°04'N., 18°19'E.).
2. Revenggrundet Light (59°15'N., 19°01'E.).
3. Soderarm Light (59°45'N., 19°24'E.).
4. Simpasklubb Light (59°54'N., 19°05'E.).
5. Svartklubben (60°10'N., 18°50'E.).
6. Djursten (60°22'N., 18°24'E.).
7. Hammarbylussen (59°18'N., 18°05'E.).

The VTS Traffic Information Center will pass navigational and traffic details to vessels as required. Within the VTS area,

all vessels must keep a continuous listening watch on VHF, channel 73, and report, as follows:

1. 30 minutes prior to arrival at the pilot boarding position.
2. When passing the designated calling-in points which are shown on the charts.
3. On arriving at or departing from a berth, when anchoring or weighing anchor, when changing the intended route, and on the occurrence of any incident.
4. On leaving the VTS area.

The initial report must include vessel's name, call sign, position, intended route, destination, draft if over 6m, length if over 150m, and if vessel is a tanker.

**Caution.**—The numerous dangers, lying in the approaches and adjacent to Stockholm Skargard, are described with the off-lying dangers and the entrance channels leading through the archipelago. Several extensive danger areas, within which navigation is prohibited, lie between the approach channels leading to Stockholm and the coast. All of the principal channels leading through the archipelago to Stockholm, and much of the contiguous coast, lie within either Protected or Restricted Areas.

Several areas within which anchorage, navigating, and landing are prohibited exist in the archipelago. They are described if in proximity to the main channels. All areas are marked by aids or by notice boards.

In addition, there are several areas within which gun firing practices are conducted or which are used as torpedo launching ranges.

Defensive minefields are laid in the seaward entrances of the principal approach channels. Anchoring and fishing are prohibited within these fields and vessels passing through them during thunderstorms are also cautioned that they do so at their own risk. See Pub. 140 *Sailing Directions (Planning Guide) North Atlantic Ocean, Baltic Sea, North Sea, and the Mediterranean for regulations concerning vessels entering or departing Swedish waters.*

**Swedish Restricted Areas.**—The government of Sweden proclaims that no foreigner may enter a fortified area, government reserve, establishment, installation, aircraft, vessels, or property that belong to the defense authorities of Sweden.

Frequent gunnery (artillery) exercises are performed by the Swedish Navy within areas in the vicinity of Landsort, Uto and Huvudskar. Warnings of special gunnery exercises are issued by Sveriges Radio, requesting mariners to avoid the areas.

There are three restricted areas, and one semi-restricted area lying in the vicinity of Landsort and their approximate boundaries are described below.

**Huvudskar Restricted Area.**—The area is bounded by a line joining the following positions:

1. The S extremity of Orno (59°00'N., 18°24'E.).
2. Ostra Runmaren (58°59'N., 18°15'E.).
3. The N end of Uto.
4. Nasskar (58°56'N., 18°24'E.).
5. Storskar (58°54'N., 18°24'E.).
6. Skaten (58°57'N., 18°34'E.).
7. Stora Skakobben (58°59'N., 18°38'E.).
8. Skogs-Roken (59°00'N., 18°30'E.).
9. Brantrask (59°01'N., 18°29'E.).

10. Nedergard (59°01'N., 18°27'E.).
11. Orno (59°01'N., 18°25'E.).
12. The S extremity of Orno.

**Morko-Bunsons Restricted Area.**—The area is bounded by a line joining the following positions:

1. The N extremity of an island (59°08'N., 18°36'E.), lying N of Morko Bunso.
2. The E extremity of St. Lokholmen (59°07'N., 18°33'E.).
3. The N extremity of Gjusbot (59°06'N., 18°31'E.).
4. The N extremity of Kvarnon (59°05'N., 18°32'E.).
5. The S extremity of Langholmen (59°05'N., 18°33'E.).
6. The N extremity of the island (59°08'N., 18°36'E.).

**Musko Restricted Area.**—From a position lying 1.3 miles N of Brunsviksholmen Light (58°55'N., 17°59'E.), the area is enclosed by a line joining the following positions:

1. The S extremity of Ostra Slangholm (58°55'N., 18°02'E.).
2. The SE extremity of Kappellon (58°59'N., 18°11'E.).
3. Soderhall (59°01'N., 18°15'E.).
4. Arstahavsbad (59°05'N., 18°10'E.).
5. A position lying 1.3 miles N of Brunsviksholmen.

**Uto Semi-restricted Area.**—This area lies between the three restricted areas described above. Its S boundary extends between a position lying 1 mile NNE of Yttre Garden and Gran; its E boundary extends between Gran and Storskar; its N boundary extends between Orno Huvud and Galon; and its W boundary extends between Ostra Slangholm (58°56'N., 18°02'E.) and a position lying 1 mile NNE of Yttre Garden.

**Uto Artillery Range.**—During firing exercises at this range, navigation is periodically prohibited within an area, with a radius of 13 miles, centered on position 58°56.95'N., 18°15.70'E. This area is patrolled during exercises and the following signals are shown, as follows:

1. A yellow rotating light is displayed from Uto Kvarn windmill.
2. A yellow rotating light and a fixed red light (visible between 278° and 015°) are displayed from the Uto Firing Range Light (58°57'N., 18°16'E.).
3. A red flag by day and a red light at night are displayed from Uto Sakerhetspost No. 1 (safety post) (58°55'N., 18°13'E.), at the SW extremity of the area, and from Uto Sakerhetspost No. 2 (58°57'N., 18°17'E.) at the NE extremity of the area.

## Stockholm Skargard—Approaches

**8.3 Landsort** (58°44'N., 17°52'E.) and Bredgrund (58°43'N., 17°52'E.), located near the S of Oja Island, are described in paragraph 7.20. The S approach channel leading through the archipelago to Stockholm passes E of Landsort.

As there are few natural landmarks on approaching this coast, the light structures and buoys marking the outer dangers are especially valuable aids in establishing positions. Several conspicuous and wooded islands lie long the S part of this rugged coast and include Mallsten (58°51'N., 18°02'E.), Nattaro (58°53'N., 18°07'E.), Alo (58°55'N., 18°13'E.), and Uto (58°57'N., 18°15'E.).

A windmill, standing on top of a high hill on the NW side of Uto, is very conspicuous from offshore. A prominent monu-

ment stands on an islet lying about 4 miles W of the windmill. The island of Nattaro has dark shores, while the island of Uto has several light red, high cliffs which slope seaward. The high and wooded S summit of Mallsten, lying in the narrows W of Uto, is prominent.

**Gunnarstenarna** (58°46'N., 18°03'E.), a group of moderately-high islets, lies about 6 miles E of Landsort Light. A light (Hallorna) is shown from the northeasternmost islet.

Nynashamn Approach Lighted Buoy is moored about 4.5 miles ESE of the light.

**Huvudskar** (58°58'N., 18°34'E.), a group of islands, lies at the outer end of a chain of islands and shoals which extend up to 7 miles E from the NE end of Uto. Shoals and rocks extend up to 1.5 miles E of this group and vessels should not approach them without local knowledge. Lokskar, the northernmost and highest of the islands is surmounted by a prominent cairn.

**8.4 Huvudskar Light** (58°58'N., 18°34'E.), is shown from a prominent tower, 16m high, standing on the southernmost island of the group.



**Huvudskar Light**

The numerous islands lying between Huvudskar and Bullero, 17 miles NNE, are difficult to identify. Vindaban, a group of rocks, lies about 3 miles NE of Huvudskar and a light is shown from the highest rock when required by local fishing vessels.

Norsten, lying about 5 miles NNE of Huvudskar, is bare with a rocky hill of moderate height on it. Demban, with a least depth of 2.2m, lies about 3.8 miles E of Norsten. An area of shoal water extends up to about 1.5 miles E of Demban and is marked at its seaward extremity by a buoy.

**Sjalberget** (59°04'N., 18°48'E.), lying about 5 miles NE of Norsten, consists of two rocks; the N and higher rock is 4m high and gray in color.

**Bullero** (59°12'N., 18°51'E.) is high and bare with a prominent hummock rising at its N end. A tower stands 0.3 mile N of the S end of the island.

**Almagrundet Light** (59°09'N., 19°08'E.), equipped with a racon, is shown from a prominent floodlit tower, 30m high, standing 21 miles NE of Huvudskar. It marks the easternmost

danger lying near the main approach channel of the Sandhamn Entrance. Almasgrund, a large shoal area, has a least depth of 5.8m and extends up to 3 miles WNW of the light.

**Svenska Hogarna** (59°27'N., 19°30'E.) is a group of bare islets lying 20 miles NE of Almagrundet Light. A main light is shown from a prominent tower, 18m high, standing on Storön, the largest islet of the group. Rocky shoals extend up to about 4 miles seaward of this group.

**Kopmansgrund** (59°29'N., 19°40'E.) is a pinnacle rock lying 5 miles NE of Svenska Hogarna. A shoal, marked by a buoy, lies about 1.8 miles NE of Kopmansgrund and has a least depth of 9.5m.

**Svenska Bjorn Light** (59°33'N., 20°01'E.), equipped with a racon, is shown from a prominent tower, 32m high with a helicopter platform, standing on Sodra Klatten, a shoal.

Sodra Klatten, along with Norra Klatten, another shoal lying 1 mile NW, has a least depth of 10m. These shoals lie at the E edge of the dangers extending up to over 30 miles from the Swedish mainland.

**Bogskar** (59°30'N., 20°21'E.), a group of rocks fronted by shoals, is the southernmost danger in the Åland archipelago. A main light is shown from a prominent tower with a building and wind generator, 46m high, standing on the westernmost rock. A racon is situated at the light. On the easternmost and highest rock, lying about 2.5 miles ENE of the light, there is a beacon.

**Armbagen** (59°38'N., 19°58'E.), a shoal, has a least depth of 6.7m and lies about 5 miles NNW of Svenska Bjorn Light. A light is shown from a mast with a helicopter platform, 20m high, standing on this shoal. A racon is situated at the light.

**Troskeln** (59°39'N., 19°50'E.), an extensive shoal, lies about 9 miles NNW of Svenska Bjorn Light and has a least depth of 7.6m.

**8.5 Troskeln Vastra Light** (59°40'N., 19°52'E.) is shown from a mast with a helicopter platform, 20m high, standing about 1.2 miles E of the shallowest part of the shoal, 4.6 miles NW of Armbagen. A racon is situated at the light.

**Troskeln Ostra Light** (59°40'N., 19°55'E.) is shown from a mast with a helicopter platform, 20m high, standing 3 miles N of Armbagen.

**Svenska Stenarna** (59°35'N., 19°35'E.), a group of high and light-colored islets, lies 13.5 miles W of Svenska Bjorn Light. The largest islet is marked by a beacon, 12m high.

**Ice.**—Icebreakers keep the main channels open all year, but branch passages are often closed during severe icing.

**Depths—Limitations.**—The entrances providing access routes to Stockholm are, as follows:

1. Landsort Entrance (58°42'N., 17°52'E.), authorized for a draft of 10m.
2. Sandhamn Entrance (59°15'N., 19°02'E.), authorized for a draft of 11m.
3. Soderarm Entrance (59°46'N., 19°22'E.), authorized for a draft of 8m.
4. Arholma Entrance (59°54'N., 19°05'E.), authorized for a draft of 7m.

**Caution.**—Anchoring is prohibited within the following areas:

1. A minefield lying SE of Nynashamn.

2. A torpedo firing range within Mysingen and covering an area between Musko and Uto.

3. A minefield lying between Uto and Orno.

4. A minefield lying in Horsfjorden, between Galon and Musko.

5. A submarine cable area lying along the N and NW sides of Nattaro (58°53'N., 18°07'E.).

## Stockholm—South Approach (Landsort Entrance)

**8.6 Landsort** (58°44'N., 17°52'E.), previously described in paragraph 7.20, lies on the W side of the entrance to the S approach channel. Between Landsort and Dalaro (59°08'N., 18°25'E.), 29 miles NNE, the coast is fronted by numerous dangers which extend to the E. The principal channel from Landsort leads between these dangers and the off-lying islands.

The S approach channel leading to Stockholm, from E of Landsort, passes through several deep-water bays and joins the E and principal approach channel in Kanholmsfjorden (59°20'N., 18°47'E.), 45 miles NE of Landsort. These bays contain numerous dangers which are marked by lights and buoys. The light sectors indicating the fairways should be strictly followed.

**Skrapan** (58°47'N., 17°59'E.), an islet, lies NE of Landsort. A light is shown from a tower, 11m high, standing on this islet.

**Viksten** (58°47'N., 17°57'E.), a group of islets, lies centered 0.8 mile E of Skrapan. A light (Viksten Nordvastra) is shown from a tower standing on the NW side of the northernmost islet. A prominent beacon is situated on the southernmost islet.

**Mallsten** (58°51'N., 18°02'E.), an island, lies 4.2 miles NE of Viksten.

**Masknuv Light** (58°51'N., 18°01'E.) is shown from a prominent tower, 10m high, standing on an islet located in the S entrance to Dalaro Channel. A conspicuous disused tower is situated close E of the light. This islet lies at the seaward end of a shallow reef which extends about 0.6 mile W from the NW side of Mallsten.

Vastergrund Lighted Buoy (58°50'N., 18°00'E.) is moored about 1.4 miles SW of the S end of Mallsten.

**Ostra Roko** (58°54'N., 18°05'E.), an islet, lies 3.2 miles NNE of the N end of Mallsten and is marked by a light.

**8.7 Mysingeholm** (59°00'N., 18°16'E.) and Soderhall, two islets lying 0.7 mile apart, lie about 8 miles NE of Ostra Roko and are marked by lights.

**Lilla Rotholmen** (59°04'N., 18°20'E.), an islet marked by a light, lies in the constricted fairway, W of Orno (59°04'N., 18°26'E.). Numerous patches, with depths of less than 5m, lie close to the fairway to the N and S of this islet and are marked by buoys. The navigable fairways leading N of Lilla Rotholmen extend as far as Dalaro, but are constricted and encumbered with islands.

Aspo (59°07'N., 18°25'E.), Stenholm (59°08'N., 18°25'E.), and Genbote (59°08'N., 18°27'E.) are islands lying adjacent to the fairways in the narrows to the S of Dalaro.

Piltholm (59°08'N., 18°27'E.), an islet, and Piltholmsknall (59°09'N., 18°28'E.), a rock marked by a light, lie on foul ground adjacent to the fairway.

Fjardhallan (59°09'N., 18°33'E.) and Kofotsgrund (59°13'N., 18°37'E.) are detached patches lying close to the fairway.

**Langholmen** (59°18'N., 18°46'E.), an island, lies in the S approach to Stockholm and is marked by a light.

**8.8 Herrhamra** (58°48'N., 17°50'E.), a harbor of refuge, lies 3 miles N of Landsort and is approached through Herrhamraleden, a channel, which separates the islands from the shoals N of Oja and S of Toro. Narrow and buoyed fairways, available for drafts up to 4.5m, lead E and W of Landsort to the harbor and roadstead anchorage. The inshore coastal fairway leads through this roadstead area and joins the main fairway to the N of Viksten. Anchorage can be taken, in depths up to 12m, clay, close NE of Krokskar Beacon (58°47.2'N., 17°50.7'E.).

**Depths—Limitations.**—The main channel leading to Stockholm from the Landsort Entrance is authorized for drafts up to 10m during daylight.

Vessels should approach Landsort from the S using the white sector of Bredgrund Light. They should pass between the buoys marking Storpallan shoal (58°41.8'N. 17°53.0'E.) and Bonden shoal (58°42.1'N. 17°51.0'E.).

From the pilot boarding position located S of Landsort, the track leads N and NNE to pass about 0.3 mile ESE of Bredgrund Light (58°43'N. 17°52'E.). It continues NE and NNE to pass between Skrapan and the S end of Viksten. The track then leads in a NNE direction and passes close WNW of Vastergrund Lighted Buoy (58°50'N., 18°00'E.) and W of Masnuv Light.

Between the vicinity of Vastergrund Lighted Buoy and Masnuv Light, this main channel merges with the route, authorized for drafts up to 15.3m, leading to Nynashamn (see paragraph 8.9).

An alternate route, authorized for drafts up to 6.6m, leads NNE from the vicinity of Landsort. It passes close WNW of the N end of Viksten and rejoins the main track W of Masnuv Light. Vessels may also proceed through Danziger Gatt (58°51'N. 18°04'E.), which has a least depth of 9.8m, to join the main channel N of Mallsten.

From Masknuv Light, the track leads 15 miles NE to the anchorage roadstead lying S of Langgarn Light (59°04'N. 18°18'E.). It passes close NW of Ostra Roko Light and between the islets of Mysingeholm and Soderhall.

From S of Langgarn Light, the main channel continues for 26 miles NE into Kanholmsfjarden (59°22'N., 18°45'E.). In Kanholmsfjarden, the main channel intersects with the Sandhamn Entrance channel, about 1.2 miles NNW of Yxhammarskobben Light (59°19'N., 18°49'E.), and leads 32 miles NW to Stockholm.

The channels are marked by aids for day and night transits, but the draft limitations at night vary. Information concerning the size and draft requirements for night transits may be requested by contacting the Stockholm VTS Traffic Information Center.

**Pilotage.**—Pilots for the Landsort Entrance area are provided by the Malaren/Landsort Traffic Area station situated at Sodertalje. All ordering of pilots must be made through Sodertalje VTS (see paragraph 8.2).

**Regulations.**—Speed limits are in force within some sections of the fairway channels.

The Landsort Entrance is located within the Malaren/Landsort Traffic Area and is covered by Sodertalje VTS (see paragraph 8.2).

**Anchorage.**—There is an anchorage area for large vessels, with depths of 20 to 70m, lying centered 8 miles SSW of Bredgrund Light. Another anchorage area, with depths of 15 to 40m and good holding ground, lies W of Oja and 0.7 mile from Landsort Light. A protected anchorage area, with depths of 15 to 40m and good holding ground, lies 1 mile NE of Ostra Roco Light. An anchorage area, with depths of 12 to 30m over a thick and loose clay bottom, lies NE of Mysingeholm.

Several anchorage areas, with depths up to 40m over a clay bottom, lie 5 miles SW of Dalaro, between Stora Rotholmen and Galon.

**Caution.**—Most of the anchorage roadsteads lie within protected or controlled areas and special rules apply to foreign vessels.

## Nynashamn (58°54'N., 17°58'E.)

World Port Index No. 25330

**8.9 Nynashamn**, an industrial port, has one of the largest oil refineries in Sweden. The harbor, which also serves as a ferry terminal, is situated 10.5 miles NNE of Landsort. It lies between the island of Bedaron and the town. The oil terminal is situated at the N end of the port, between the mainland and the island of Brunsviksholmen.

**Winds—Weather.**—Continuous winds from the W and NW raise the water level and winds from the E and SE winds lower it. The harbor is usually ice-free.

**Depths—Limitations.**—The main approach route leading from seaward is authorized for drafts up to 15.3m. It leads NW from the vicinity of Nynashamn Approach Lighted Buoy (58°45'N., 18°11'E.) and passes about 0.8 mile NE of Gunnarstenarna (Hallorna) Light. The route then rounds Vastergrund Lighted Buoy (58°50'N., 18°00'E.) to the W and leads NNE to a position close W of Masknuv Light (58°51'N., 18°01'E.). From this light, the route continues in a N direction and passes about 0.3 mile W of Orngrund Light (58°53.9'N., 18°01.4'E.). It then leads NNW, NW, and SW to the harbor entrance.

An alternate approach channel leads WSW and NW from a position located 0.4 mile W of Ostra Roko Light (58°54'N., 18°05'E.). It passes N of Orngrund Light (58°53.9'N., 18°01.4'E.) and merges with the main channel.

A secondary approach channel, authorized for drafts up to 4m, leads into the S part of the harbor. It leads in a N direction from a position located about 0.5 mile NNE of Viksten Nordvasta Light (58°47'N., 17°57'E.).

The harbor has general depths of 9 to 28m. A detached shoal, with a least depth of 5.4m, lies in the middle of the harbor and is marked by lighted and unlighted buoys.

The ferry terminal provides three berths with ro-ro facilities. The largest is 210m long and has a depth of 8m alongside. Ro-ro ferries with drafts up to 7.5m can be handled.

The oil terminal has six berths. East Quay consists of No. 1 Berth, which is 100m long and has a depth of 17.5m alongside. West Quay consists of Nos. 2, 3, and 4 Berths, which have a combined length of 155m and depths of 10 to

12.9m alongside. No. 5 Berth, a detached berth, is 75m long and has a depth of 5.2m alongside

Vessels up to 200,000 dwt, 300m in length, and 15.3m draft can be accommodated.

**Aspect.**—Several conspicuous tanks and chimneys stand in the vicinity of the oil terminal.



Nynashamn

**Pilotage.**—Pilots for the port are provided by the Malaren/Landsort Traffic Area station situated at Sodertalje. All ordering of pilots must be made through Sodertalje VTS (see paragraph 8.2).

**Regulations.**—The approaches to the port are situated within the Malaren/Landsort Traffic Area and are covered by Sodertalje VTS (see paragraph 8.2).

Vessels should send an ETA to the oil terminal at least 24 hours in advance.

**Anchorage.**—Anchorage can be taken, in depths of 8 to 10m, clay and stones, abreast the wharves in the SW part of the harbor. Anchorage can also be taken farther N, in depths of 13 to 31m, clear of Ankargrundet.

A designated anchorage area for large vessels (VLCCs) lies centered 6 miles SE of Gunnarstenarna (Hallorna) Light.

**Caution.**—The fairway leading to the oil berths is closed to shipping when tankers are berthed alongside.

Mooring lines are laid in an E direction across the channel to Brunsviksholmen and to several floodlit mooring buoys which are situated S and SW of the S end of the island. The landing places are marked by warning notices, illuminated at night, and flashing red lights.

Several submarine cables lie across the fairways and may best be seen on the chart.

**8.10** The irregular coast extending between Nynashamn and Dalaro, 19 miles NE, is fronted by Musko Island (59°00'N., 18°07'E.) and Galon Island (59°05'N., 18°16'E.). Both of these islands are fringed by rocks, reefs, and shoals which extend up to 0.5 mile from the edge of the S approach fairway leading to Stockholm.

Most of the coastal waters and offshore islands lie within restricted or semi-restricted areas and vessels must navigate within the designated fairways. The limits of these restricted areas are shown on local coastal charts. See Pub. 140, *Sailing Directions (Planning Guide) North Atlantic Ocean, Baltic Sea, North Sea, and the Mediterranean* for details.

**8.11 Dalaro** (59°08'N., 18°25'E.) (*World Port Index No. 25340*), lying at the E extremity of the coast extending from Nynashamn, is situated across the narrows from and NW of Orno (59°04'N., 18°25'E.). This harbor is reported (2002) to be only used by small craft and pleasure boats.

A shallow canal, spanned by bridges, separates Dalaro from the mainland. It provides access, via Granofjarden (59°11'N., 18°26'E.) to Stockholm for small craft. The main S approach channel, which leads between several islands and numerous shoals, is marked by lights and buoys. Anchorage can be taken, in depths of 13 to 27m, sand, in a bay lying off the SW end of Dalaro. Local knowledge is required.

The coast extending NW from Dalaro to Stockholm is fronted by numerous islands and islets which are encircled by rocky shoals. Several branch fairways, marked by buoys, lead between these obstructions to Stockholm.

**Saltsjobaden** (59°17'N., 18°19'E.) (*World Port Index No. 25350*), a resort fronted by a small harbor, is situated 9 miles NNW of Dalaro. It can be approached via a channel which is authorized for drafts up to of 4.2m. This harbor is reported (2002) to be only used by small craft and pleasure boats.

Anchorage can be taken, in depths of 9 to 12m, clay, off a small bay fronting the SE part of the town.

**Gustavsberg** (59°19'N., 18°23'E.) (*World Port Index No. 25360*), a small harbor, lies at the head of a constricted inlet, 4 miles NE of Saltsjobaden. It is approached through a narrow channel, which is marked by buoys and spanned by a road bridge with a vertical clearance of 22m over a width of 30m.

There are extensive facilities for pleasure craft. The commercial quay is 74m long and has a depth of 4.8m alongside. Small vessels with drafts up to 4.2m can be accommodated. Anchorage can be taken, in depths of 10 to 25m, clay, off the entrance to the approach channel.

### Stockholm—East Approach (Sandhamn Entrance)

**8.12** The Sandhamn Entrance is fronted by several islands, a number of groups of islets, and numerous shoal patches, which may best be seen on the chart. The intricate part of the approach channel leading to Stockholm extends generally NW and SW through several bays and sounds. Several islands and islets, lying within these bays, are prominent.

When approaching this entrance from seaward, a group of radio towers standing at Stavsnaas (59°17'N., 18°43'E.) are reported to be conspicuous. A tall radio mast, situated about 1 mile NW of the group of towers, is also reported to be conspicuous.

**Sandon** (59°17'N., 18°56'E.) is the largest and southwesternmost of a group of islands lying in the E approaches to Stockholm. Its S part is fringed by a shallow bank.

**Sandhamn** (59°17'N., 18°55'E.) (*World Port Index No. 25370*), a resort village, is situated on the NE side of Sandon. It is fronted by a small harbor which is protected by two breakwaters. This harbor is used only by small craft, local ferries, and pleasure boats.

Utkiken Tower (59°17.2'N., 18°54.7'E.), equipped with a racon, stands close SW of Sandhamn.

Conspicuous towers stand on the islands of Gronskar (59°17'N., 19°02'E.), Korso (59°17'N., 18°57'E.), and Lokholm (59°18'N., 18°56'E.).

**Svängen Light** (59°16'N., 18°59'E.) is shown from a prominent floodlit tower, 15m high, standing on a detached rock lying 1.4 miles ESE of the S end of Sandon.

Sodraskargarden, an extensive group of islets, lies centered on an area of foul ground 1.5 miles SW of Svängen Light. Brandskargarden, a group of barren islets, lies centered 1.3 miles SW of Sodraskargarden. The islets appear as brown hills and are conspicuous from seaward.

**Revengegrundet Light** (59°15'N., 19°01'E.), equipped with a racon, is shown from a prominent floodlit tower, 21m high, standing on a detached shoal, 1.6 miles SE of Svängen Light.

**8.13 Sodergrundan** (59°15'N., 19°03'E.), a shoal area with parts awash, lies 1.2 miles E of Revengegrundet Light and is marked by a lighted buoy moored on its S side.

**Prejaren** (59°13'N., 19°07'E.), a detached shoal patch, lies 4.1 miles SE of Revengegrundet Light. It has a least depth of 9.3m and is marked by a lighted buoy moored close E.

Almagrundet Light (59°09'N., 19°08'E.), [previously described in paragraph 8.4](#), is situated 6.7 miles SSE of Revengegrundet Light in the outer approaches.

**Depths—Limitations.**—The main channel leading to Stockholm from the Sandhamn Entrance is authorized for drafts up to 11m.

The main route (Sandhamn Passage) is 36 miles long. It joins the main channel leading from the Landsort Entrance, in Kanholmsfjarden (59°20'N., 18°47'E.).

From a position located about 5 miles E of Almagrundet Light (59°09'N., 19°08'E.), the route leads NW for 10 miles. It passes 0.3 mile NE of Prejaren Lighted Buoy (59°13'N., 19°07'E.), 0.3 mile SW of Sodergrundet Lighted Buoy (59°15'N., 19°03'E.), and 0.3 mile NE of Revengegrundet Light (59°15'N., 19°01'E.). The track then leads NW, WNW, and WSW to round Svängen Light (59°16'N., 18°59'E.). It continues NW and N along the W side of Sandon.

An alternate route, with a least depth of 21m, leads in a N direction for about 6 miles from a position located 4 miles W of Almagrundet Light and joins the main channel close SE of Revengegrundet Light.

Sandhamnssundet, a narrow passage, leads along the NE side of Sandon and joins the main channel close NNW of the N end of the island. This passage is only 30m wide and is limited to small vessels up to 300 grt and 5m draft.

From close N of the N end of Sandon, the main route leads NW into the S part of Kanholmsfjarden (59°20'N., 18°47'E.). It passes close SW of Getholmen Light (59°18.1'N., 18°52.5'E.), close NE of Yxhammarskobben Light (59°18.8'N., 18°48.6'E.), and close SW of Gastholmsgrundet Light (59°19.1'N., 18°48.6'E.). The channel leading NE from the Landsort Entrance merges into this main route at a position located about 1.2 miles NNW of Yxhammarskobben Light.

A secondary channel, with a least depth of 9m, leads NW and W from a position located 0.6 mile NE of Svängen Light. It passes NE of Korso and N of Bjorko and joins the main route close ESE of Getholmen Light.

The main route continues NW through Kanholmsfjarden and then leads W along the N side of Vindo (59°21'N., 18°42'E.) to a position located close S of Kalvon (59°22.5'N., 18°36.5'E.). From the island of Kalvon, the route trends NW, passing close NE of Sando Sugga Light (59°23'N., 18°34'E.) and Nyvarp Light (59°24'N., 18°31'E.), to a position located 1.3 miles SE of Valoarna Light (59°26'N., 18°30'E.). From this position, the main route continues NW and passes 0.2 mile W of Valoarna Light. It then trends WNW to a position located close S of Ostra Algogrundet Light (59°26.7'N., 18°24.8'E.).

From close S of Ostra Algogrundet Light, the route leads WSW and SSW, passing through the southbound lane of the TSS, to a position located 0.2 mile W of Tisterogrundet Light (59°25.9'N., 18°23.5'E.). It then leads SE and S, through the Oxdjupet narrows, to a position located close W of Sodernas Light (59°21.7'N., 18°27.1'E.), in the N part of Torsbyfjarden.

From close W of Sodernas Light, the main route leads SW for about 0.5 mile, in the southbound lane of the TSS, and then trends WNW to pass close N of Lagnogrundet Light (59°21.5'N., 18°24.9'E.). It continues WNW through Langholmfjarden, passing between Tynningo Light (59°22.3'N., 18°23.3'E.) and the N side of Bergholmen island, to a position located close SW of Bogesund Light (59°22.9'N., 18°18.2'E.).

The route then leads SW, passing close NW of Granholmen Light (59°22.7'N., 18°17.7'E.) and SE of Alvviksgrundet Light (59°21.8'N., 18°15.5'E.), to a position located close NW of Kungshamn Light (59°20.1'N., 18°12.6'E.). It then continues W and NW, passing N of Libertus Light (59°19.9'N., 18°10.6'E.), into the port of Stockholm.

The fairway channels are marked by aids for day and night transits, but the draft limitations at night vary. Information concerning the size and draft requirements for night transits may be requested by contacting the Stockholm VTS Traffic Information Center.

Several secondary routes lead through the archipelago and may best be seen on the chart. Two inner channels lead N from Kanholmsfjarden (59°20'N., 18°47'E.) to join the main Soderarm Entrance route. Rodlogaleden, also known as Majaleden, is authorized for drafts up to 7m. This channel leads NNE for 28 miles to join the main route in Granhamnsfjarden (59°43'N., 19°08'E.). Husaroleden, a secondary channel, is authorized for drafts up to 4.2m. It leads N for 22 miles to join the main route at a position located 2 miles NE of Furusund (59°40'N., 18°55'E.).

**Pilotage.**—Pilots for the Sandhamn Entrance area are controlled by the station at Stockholm. All ordering of pilots in the area must be carried out through the Traffic Information Center of Stockholm VTS ([see paragraph 8.2](#)).

**Regulations.**—The Sandhamn Entrance is situated within the Stockholm VTS Traffic Area ([see paragraph 8.2](#)).

The channels leading through this entrance lie within a restricted area and all vessels must keep strictly to the designated fairways when enroute to Stockholm.

Speed limits are in force within some sections of the fairway channels.

Vessels over 800 grt are not allowed to meet in the sections of the main route situated within Oxdjupet Narrows and N of Bergholmen Island.

A ferry crosses the channel in the vicinity of Oxdjupet narrows.

In the Stockholm VTS Traffic Area, vessels are allowed to anchor only by special permission.

**Anchorage.**—A designated outer anchorage area lies centered 1.5 miles SE of Revengegrundet Light and has depths of 28 to 51m.

**Caution.**—Anchoring is prohibited within an explosives dumping ground area lying centered 0.5 mile E of Stora Fjardholmen (59°21'N., 18°50'E.).

A defensive minefield lies within Oxdjupet Narrows and fairways leading through it are marked by beacons and buoys. Vessels are cautioned not to anchor or fish in the field and they should also avoid passing through it during a thunderstorm.

Two extensive areas, within which surveys are incomplete, lie on each side of the Sandhamn Entrance and may best be seen on the chart.

Two restricted areas lie in the vicinity of the E approach and are listed below.

**Sandhamn Channel West Restricted Area.**—This area is bounded by a line joining the following positions:

1. The NW extremity of Sandon (59°17'N., 18°54'E.).
2. Ljusharan (Gjusharan) (59°18'N., 18°55'E.).
3. Ingboskar (Ingboskaret) (59°19'N., 18°54'E.).
4. Sommaro (59°19'N., 18°52'E.).
5. Yxhammarskubben Light (59°19'N., 18°49'E.).
6. Torskobben (59°19'N., 18°48'E.).
7. The N extremity of Rumaro (59°18'N., 18°47'E.).
8. The NE extremity of Rumaro.
9. Lilla Hastskar (59°15'N., 18°53'E.).
10. The E extremity of Stora Hastskar (59°15'N., 18°54'E.).
11. The NW extremity of Sandon (59°17'N., 18°53'E.).

**Sandhamn Channel East Restricted Area.**—This area is bounded by a line joining the following positions:

1. The W extremity of Krokso (59°18'N., 18°56'E.).
2. An islet (59°17'N., 18°57'E.).
3. Ronnskar (59°18'N., 19°00'E.).
4. The W extremity of Krokso.

### Stockholm—North Approach (Soderarm and Arholma Entrances)

**8.14** Soderarm Entrance is fronted by several groups of islets and a number of detached shoal patches, which may best be seen on the chart.

**Soderarm** (59°45'N., 19°24'E.) is the northernmost and largest of a group of islets and rocks lying centered 19 miles N of Svenska Hogarna Light (59°27'N., 19°30'E.). A main light is shown from a prominent floodlit tower, 21m high, standing on this islet.

Hummelgrund, a shoal patch, lies 1.6 miles ENE of Soderarm Light. It has a least depth of 7.2m and is marked by a buoy.

**Tjarven Light** (59°48'N., 19°22'E.) is shown from a prominent building standing on an islet lying on a foul area, 2.6 miles NW of Soderarm.

**Remmargrund Light** (59°46'N., 19°19'E.), equipped with a racon, is shown from a prominent floodlit tower, 20m high, standing on a rock, 2.5 miles SW of Tjarven Light.



**Tjarven Light**

A detached shoal patch, with a depth of 7.7m, lies 0.2 mile N of the light and is marked by a buoy.

**Caution.**—An area in which anchoring, diving, and fishing are prohibited lies centered about 6 miles NE of Tjarven Light and may best be seen on the chart. A wreck, with unexploded ammunition, lies in this area.

**8.15** Arholma Entrance, situated between the islands of Arholma and Bjorko, is encumbered with a number of islets and shoals, which may best be seen on the chart.

**Arholma** (59°51'N., 19°08'E.), an island, lies in the N part of the archipelago and is fronted on its E side by numerous islets and shoals. A conspicuous beacon, 16m high, is situated on the W and tallest part of this island.

**Note.**—For a description of the waters lying N and E of Arholma, see Pub. 195, Sailing Directions (Enroute) Gulf of Finland and Gulf of Bothnia.

**Simpnasklubb Light** (59°54'N., 19°05'E.), equipped with a racon, is shown from a prominent floodlit tower, 16m high, standing on a rock, 2.3 miles NW of the N extremity of Arholma. Norrbadan, a shoal with rocks awash, lies centered 0.4 mile ENE of the light and is marked by a buoy.

Vaddo Kasberg, an isolated hill, stands 8.5 miles NW of Simpnsklubb Light and is conspicuous from seaward.

**Bjorko** (59°51'N., 19°02'E.), an island, lies contiguous to the mainland coast close W of Arholma. Several lights are shown from salient points along the E side of this island. Two conspicuous radio masts stand in the S part of the island, 3.4 miles SSW of Simpnsklubb Light.

**Hogskar** (59°52'N., 19°06'E.), an off-lying islet, lies 1.6 miles SSE of Simpnsklubb Light and a conspicuous beacon, 6m high, stands on its W side. Skrivaren, an islet, lies close NE of Hogskar and a prominent beacon, consisting of a former light tower 9m high, is situated on its NW side.

**Granhamnsljarden** (59°43'N., 19°07'E.), a bay, lies 10 miles S of Simpnsklubb Light. From a broad peninsula

located close W of this bay, the coast extends SW to Stockholm and is fronted by numerous dangers.

A few major inlets lie within the archipelago fronting Stockholm and separate the northernmost islands of Arholma, Bjorko, and Vato (59°20.1'N., 18°12.6'E.).

Norrtaljeviken (59°47'N., 18°53'E.), an inlet leading to the port of Norrtalje, extends W and indents the coast S of Vato (59°48'N., 18°58'E.).

**Depths—Limitations.**—The main channel leading to Stockholm from the Soderarm Entrance is authorized for drafts up to 8m.

The main channel leading to Stockholm from the Arholma Entrance is authorized for drafts up to 7m.

From a position located 3 miles E of Tjaven Light (59°48'N., 19°22'E.), the Soderarm Entrance main route leads WSW and passes about midway between this light and Soderarm Light (59°45'N., 19°24'E.). It continues WSW and passes close SSE of Remmargrund Light (59°46'N., 19°19'E.). A secondary channel, which is very narrow, detours from the main route and passes on the N side of this light.

An alternate entrance channel, authorized for drafts up to 8m, leads SSW from a position located 2 miles NNW of Tjaven Light and joins the main route close W of Remmargrund Light.

A secondary entrance route (winter channel), with no authorized draft, is entered about 3 miles ESE of Soderarm Light. It initially leads SW and W to round the S end of the Soderarm shoal area. The route then leads in a NW direction through Idskarsfjarden (59°43'N., 19°20'E.) to join the main route WSW of Remmargrund Light. This channel, which is marked by unlighted beacons, may only be used by day.

After passing Remmargrund Light, the main Soderarm Entrance route continues WSW through Granhamnsfjarden (59°43'N., 19°08'E.) to a position located 0.3 mile SE of Kapellskar Light (59°43.1'N., 19°04.7'E.). This route passes either close NNW or SSE of Lerskarsgrund Light (59°44.3'N., 19°13.4'E.).

From a position located 1.5 miles NNW of Simpasklubb Light (59°54'N., 19°05'E.), the Arholma Entrance main route leads SSE and S between Bjorko and Arholma. This route initially passes close WSW of Simpasklubb Light and leads between the E side of Bjorko and the off-lying dangers. It is extremely narrow in places.

An alternate entrance channel, authorized for drafts up to 7m, leads in a SW direction through the off-lying dangers from a position located 2.5 miles E of Simpasklubb Light. This channel passes close NW of the beacons standing on Skrivaren and Hogskar and then merges into the main route.

From W of the S end of Arholma, this main route leads SSE and SSW to join the main Soderarm Entrance route at a position located 0.3 mile SE of Kapellskar Light. It passes close W of Tyvo Light (59°46.5'N., 19°07.4'E.) and Tjocko Light (59°45.3'N., 19°06.2'E.).

From Kapellskar Light, the main Soderarm Entrance route, which is known as Furusundleden in this vicinity, leads SW to a position located 0.2 mile S of Vaxlet Sodra Light (59°35.1'N., 18°43.9'E.). This route passes close NW of Furusund Light (59°39.8'N., 18°56.0'E.) and SE of Hakholmarna, a group of islets and rocks, lying in the middle of the channel, 1.8 miles NE of Vaxlet Sodra Light.

A secondary branch track, with no authorized draft, leads SW and passes NW of Hakholmarna. It then rejoins the main route in the vicinity of Vaxlet Sodra Light.

From Vaxlet Sodra Light, the main route leads SW and SSW for 13 miles to join the main route, authorized for drafts up to 11m, leading to Stockholm from the Sandhamn Entrance (see paragraph 8.12). This route passes 0.2 mile NW of Lunsen Light (59°34.5'N., 18°41.0'E.), close NW of Ryssmasterna Light (59°31.9'N., 18°32.8'E.), and close SE of Gullholmen Light (59°31.4'N., 18°31.2'E.).

From Gullholmen Light, the route leads in a SW direction to join the Sandhamn Entrance route at a position located close S of Ostra Algogrundet Light (59°26.7'N., 18°24.8'E.). It passes 0.2 mile SE of Vällersvik Light (59°29.9'N., 18°27.5'E.) and then leads between the islet of Stora Blotholmen (59°29.2'N., 18°27.5'E.) and the mainland to the W. The route continues SSW, passing close E of Mjolkko Light (59°27.4'N., 18°25.7'E.), and rounds Ostra Algogrundet Light to the SE to merge with the main Sandhamn Entrance channel.

An alternative channel, authorized for drafts up to 8m, leads in a S direction from close SE of Gullholmen Light to join the main Sandhamn Entrance channel. It rounds the islet of Ostra Strangarma (59°26.5'N., 18°29.8'E.) to the SE and merges into the main route at a position located of 0.3 mile WNW of Valoarna Light (59°26.0'N., 18°29.9'E.) (see paragraph 8.13).

An alternative branch channel, authorized for drafts up to 6m, leads in a SW direction from close W of the islet of Stora Blotholmen. It trends SW and then SSE to join the main route at a position located about 0.3 mile W of Tisterogrundet Light (59°25.9'N., 18°23.7'E.) (see paragraph 8.13).

The fairway channels are marked by aids for day and night transits, but the draft limitations at night vary. Information concerning the size and draft requirements for night transits may be requested by contacting the Stockholm VTS Traffic Information Center.

**Pilotage.**—Pilots for the Soderarm and Arholma Entrances are controlled by the station at Stockholm. All ordering of pilots in the area must be carried out through the Traffic Information Center of Stockholm VTS (see paragraph 8.2).

**Regulations.**—The Soderarm and Arholma Entrances are situated within the Stockholm VTS Traffic Area (see paragraph 8.2).

Most of the coastal waters and off-lying islands and islets lie within restricted or semi-restricted areas and vessels must navigate only within the designated fairways.

**Caution.**—Numerous submarine cables are laid across the main approach channels and may best be seen on the chart.

Extensive areas, within which surveys are incomplete, border the inner channels and may best be seen on the chart.

**8.16 Fejan** (59°44'N., 19°10'E.), an island, has a small sheltered harbor located at its NE side. There are two small piers with a depth of 3.7m alongside. An anchorage roadstead, with depths of 16 to 22m, clay and stones, lies SE of the island.

**Norrtalje** (59°46'N., 18°43'E.) (*World Port Index No. 25420*), a small commercial harbor, lies at the head of Norrtaljeviken (59°47'N., 18°53'E.) and is approached from Tjockofjarden (59°46'N., 19°06'E.). The fairway channel, which is marked by buoys and lights, leads through the inlet to the harbor and is authorized for drafts up to 6m. A dredged

entrance channel, indicated by a lighted range, leads into the harbor. Several prominent silos stand in the vicinity of the harbor.

The main commercial quay is 320m long and has depths of 3.1 to 5.6m alongside. A ferry terminal, in the NE part of the harbor has two berths with depths of 5.6 to 6.6m alongside. There are facilities for general cargo, bulk, ro-ro, and ferry vessels. Vessels with drafts up to 6m can be handled. Anchorage is available, in a depth of 6m, clay, off the harbor.

**8.17 Vaxholm** (59°24'N., 18°20'E.) ([World Port Index No. 25390](#)), an island, has a small commercial harbor at its E end. The harbor, which is mostly used by pleasure craft and yachts, can be approached through a channel, marked by buoys, which leads S of Rindo (59°24'N., 18°25'E.). It can accommodate small vessels with drafts up to 6m. There are several quays with depths of 4.5 to 7.8m alongside. Anchorage can be taken, in depths of 20 to 25m, clay, in bays lying S and N of Vaxholm.

**Telegrafberget** (59°21'N., 18°14'E.), an oil terminal, is situated on the SE shore of Halvkakssundet, about 4 miles E of Stockholm. A quay with mooring dolphins provides a berth, 95m long, with a depth of 12m alongside. Tankers up to 125m in length and 11m draft can be accommodated.

**Stora Hoggarn** (59°22'N., 18°18'E.), a small island, lies E of Lidingon, 6 miles NE of Stockholm. An oil terminal is situated at the NE side of the island. It consists of an offshore jetty, 120m long, with depths of 11.7 to 12.2m alongside. It is reported (1998) that this terminal is not operational.

**Bergs** (59°19'N., 18°10'E.), an oil terminal, lies E of Stockholm at the SE end of Lilla Vartan. It can be reached directly from the main approach route. The main quay is 90m long and has a depth of 13m alongside. Tankers up to 200m in length and 11m draft can be accommodated.

**Lidingo** (59°22'N., 18°12'E.), an island, fronts Stockholm and is encircled by navigable channels. An oil terminal pier (Rasta) is situated at the E side of this island and can be used by tankers up to 180m in length and 11m draft.

## Stockholm (59°20'N., 18°05'E.)

[World Port Index No. 25380](#)

**8.18 Stockholm**, a major port of Sweden, lies in the lee of the archipelago and 30 miles from the sea. Several channels lead from the Baltic Sea to the port. The commercial harbor area extends for 6 miles and consists of at least twenty separate installations situated on the mainland and adjacent islands, connected by a series of about thirty-five bridges. The harbor is connected to the inland waterway system via Lake Malaren. There are also several small craft basins and marinas.

**Ice.**—Ice is prevalent in the archipelago fronting Stockholm during the ice season, December through March. The harbor and approaches, including the seaward entrances, are kept open by icebreakers.

During the winter, ice-bridges are periodically established within some sections of the approach channels.

**Tides—Currents.**—There are no tidal changes of the water level in the harbor. However, the normal range of the water level in the port is from 0.6m above to 0.4m below the mean level. The only current occurs in the inner part of the harbor

when Lake Malaren discharges through the open lock gates. An upstream current prevails occasionally in the channel.



## Stockholm—Varthammen

**Depths—Limitations.**—The main approach route (Sandhamn Entrance) is authorized for drafts up to 11m.

Lilla Vartan, a passage, extends NW from the vicinity of Libertus Light (59°19.9'N., 18°10.6'E.) and contains the principal commercial basins of Loudden, Frihamnen, Vartahammen, and Gasverkshammen. Strommen, another passage, extends W along the SE side of the city and contains general cargo basins and passenger facilities.

Two bridges span the N part of Lilla Vartan and connect Lidingo Island with Stockholm. Gamla Lidingobron, the old bridge, has a bascule section with a navigable width of 18.7m. This bridge has a vertical clearance of 5.3m and the bascule section has a vertical clearance of 4.3m when closed.

Nya Lidingobron, the new bridge, is situated close SE of the old bridge. This bridge is a fixed bridge with nine pillars. It has a vertical clearance of 11.5m over a navigable width of 22m in line with the bascule section of the old bridge.

Loudden, the oil terminal, is situated at the SW end of Lilla Vartan. A pier extends ENE from the shore and has depths of 11.9m alongside. Jetties extend N and S from the root of the pier and have depths of 8.9 to 10.4m alongside.

Frihamnen, which includes a container terminal, is situated close NW of the oil terminal. It consists of a pier and an enclosed basin. The basin provides 1.160m of quayage with depths of 8.5 to 10.1m alongside. A quay, situated on the outer side of the pier, is 530m long and has depths of 7.1 to 8.1m alongside.

Vartahammen, situated close NW of Frihamnen, consists of three sections. The S section has an oil jetty and a bulk

terminal. The oil jetty is 32m long and has a depth of 10.9m alongside. The bulk terminal provides 430m of quayage with a depth of 7.5m alongside. The N section provides 800m of quayage, including a combined bulk coal and oil jetty, with depths of 3.5 to 11.9m alongside. In addition, there is a train ferry berth, 160m long, with a depth of 9m alongside.

The central section, a basin, provides 680m of quayage, including two ro-ro ferry berths, with depths of 8.1 to 9.1m alongside.

Gasverkshamnen, situated in the vicinity of the W end of the bridges, has a main quay, 160m long, with a depth of 9.2m alongside and another quay, 75m long, with a depth of 5.7m alongside.

Stadsgardshamnen, situated on the S side of Strommen, provides 1,920m of quayage, including a ferry terminal, with depths of 4.7 to 9.5m alongside.

The port, which provides about 17,700m of total berthage, also includes many private terminals and a number of repair yards. There are facilities for ro-ro, passenger, bulk, ferry, tanker, container, chemical, and general cargo vessels.

Cargo vessels up to 245m in length and 35m beam, and tankers up to 250m in length and 32m beam, can be accommodated with drafts up to 11m.

**Pilotage.**—Pilots for the harbor facilities are controlled by the main station at the port. All ordering of pilots in the area must be carried out through the Traffic Information Center of Stockholm VTS ([see paragraph 8.2](#)).

**Regulations.**—The port and approach channels are situated within the Stockholm VTS Traffic Area ([see paragraph 8.2](#)).

Vessels bound for the port must send an ETA 3 hours in advance of arrival.

Traffic Separation Schemes (TSS) exist in some sections of the approach channels.

Speed regulations are in effect within the approach channels.

Anchorage is prohibited throughout the harbor area except within the authorized and designated areas. Vessels can anchor only by special permission and in places directed by the harbor authorities.

**Anchorage.**—An anchorage area, designated for tankers, lies at the SE end of Lilla Vartan. It has depths of 16 to 23m and is located 0.4 mile W of Libertus Light (59°19.9'N., 18°10.6'E.).