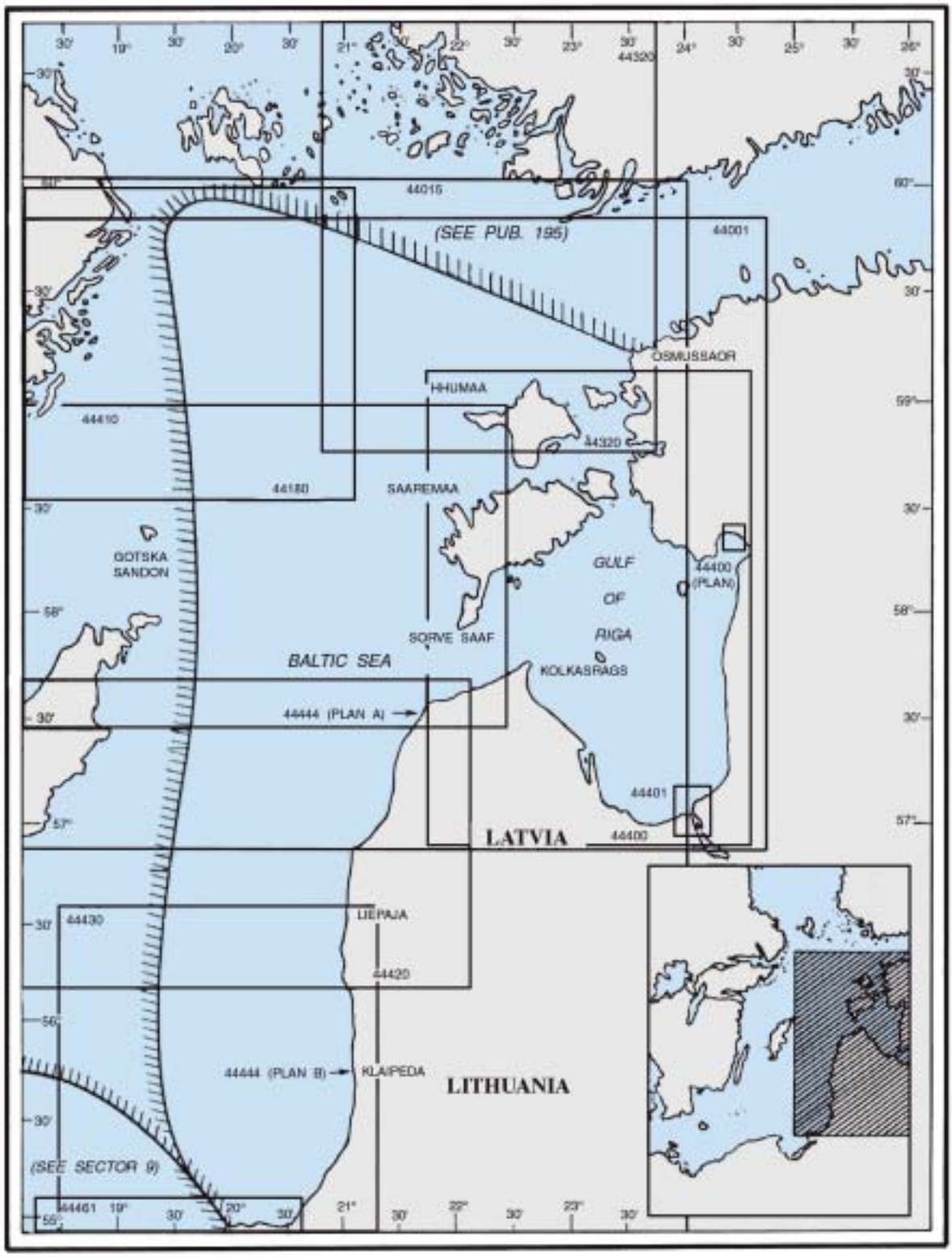
Click on "See Sector" to be hotlinked to that Sector.



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

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SECTOR 10

LITHUANIA AND LATVIA—MYS TARAN TO OVISI AND THE GULF OF RIGA AND APPROACHES

Plan.—This sector first describes the coast, the approaches, and the off-lying dangers between Mys Taran and Ovisi, 170 miles NNE. It then describes the coast between Ovisi, on the S side of the entrance to Irbeni Vain, and Osmussaar Island (59˚18'N., 23˚22'E.), lying on the S side of the entrance to the Gulf of Finland. A description of the Gulf of Riga then follows.

General Remarks

10.1 The section of the coast extending from Mys Taran to Ovisi has few indentations. To the NE of Ovisi, Irbeni Vain leads to the Gulf of Riga. The 20m curve lies up to 12 miles offshore in the S part of this section of coast and to the N of Ovisi it extends across the entrance to Irbeni Vain. Numerous off-lying dangers and foul ground areas lie off the coast and may best be seen the chart.

Caution.—It has been reported that all navigational aids in the SE part of the Baltic Sea, including the Gulf of Riga, may be unreliable. Vessels should exercise extreme caution when identifying these aids.

For information concerning mine danger areas and regulated areas lying off this part of the coast, see Pub. 140 Sailing Directions (Planning Guide) North Atlantic Ocean, Baltic Sea, North Sea, and the Mediterranean Sea.

Mys Taran to Ovisi

10.2 From Mys Taran to Klaipeda, 60 miles NNE, the coast is indented by a large arc which extends to the SE.

Mys Taran (54˚58'N., 19˚59'E.), the E extremity of the Gulf of Gdansk (Gulf of Danzig), is a bold and cliffy point, 33m high. A main light is shown from a prominent tower, 30m high, standing on this point. A radiobeacon is situated at the light.

A reef, with depths of less than 5m and steep-to on its seaward side, extends up to 0.3 mile offshore, about 1.3 miles SW of Mys Taran. Another reef extends up to about 1 mile N of the point and is marked by a lighted buoy.

Vessels proceeding toward Mys Taran in low visibility are advised to keep to seaward of the 30m curve and to not approach within 2.5 miles of the light.

The partly wooded coast extending between Mys Taran and Zelenogradsk, 17 miles E, decreases gradually in steepness and height. The most conspicuous landmarks along this stretch include the church standing at Primor'ye (Gross Kuren) 2.3 miles ESE of Mys Taran; the hig, water towers standing 2.5 miles and 4 miles E of the church, and the fishing harbor of Pionerskiy lying 8 miles E of Mys Taran.

Pionerskiy, protected by two breakwaters, has an entrance, 70m wide, and depths of 5 to 10m. The approach channel has a least depth (1997) of 8.5m, but is subject to silting.

Mys Gvardejskiy (54˚58'N., 20˚16'E.) is located 2 miles E of Pionerskiy. A main light is shown from a prominent framework tower, 40m high, standing on this headland.

Anchorage Area No. 65, which may best be seen on the chart, lies centered about 4 miles NNE of the light.

10.3 Zelenogradsk (54˚58'N., 20˚29'E.), a resort, is situated 7 miles E of Mys Gvardejskiy. The town is conspicuous from seaward with its houses, church, and water tower. A prominent tower stands about 1.7 miles ENE of this resort.

Between Zelenogradsk and Klaipeda, a narrow and sandy peninsula, known as Kurskaya Kosa, extends NE and then N for 52 miles. This peninsula separates Kurskiy Zaliv from the sea. It consists of a series of white sand dunes and, for the greater part, is covered by trees. The dunes attain heights of up to 61m and are visible from a considerable distance.

Lesnoy Light (55˚01'N., 20˚37'E.) is shown from a prominent framework tower, 40m high, standing near the shore 5 mile NE of Zelenogradsk.

Rybachiy Light (55˚10'N., 20˚51'E.) is shown from a prominent framework tower, 24m high, standing on a dune 12.7 miles NE of Lesnoy Light.

Nidden Light (55˚18'N., 21˚00'E.) is shown from a prominent tower, 29m high, standing in a fishing village on Kurskiy Zaliv, 10 miles NE of Rybachiy Light. A conspicuous steeple is situated in the village, but is partially hidden by dunes and trees.

The boundary between Russia and Lithuania is situated about 1.7 miles S of Nidden Light.

Yuodkrante Light (55˚33'N., 21˚07'E.) is shown from a prominent framework structure, 20m high, standing 15.5 miles NNE of Nidden Light.

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

A drilling platform is reported to be situated about 14.5 miles W of Nidden Light.

Klaipeda (55˚43'N., 21˚07'E.)

World Port Index No. 28660

10.4 Klaipeda, also known as Memel, is situated in Lithuania and lies on the inner side of the Morskoy Kanal (Kursiu Marios), a narrow strait connecting Kurskiy Zaliv (Kurisches Haff) with the Baltic Sea. The city stands on the N and S sides of the Dange River and is fronted by several iron foundries, shipyards, and chemical works.

Winds—Weather.—From October through March, the prevailing winds are from the SE; from May to September, W and NW winds prevail. It is seldom calm at this port. Storms from the W often cause confused swells near the canal entrance and under such conditions entry is not recommended. Fog occurs more frequently between November and May and is usually dense and prolonged.

Return to paragraph: 9.40

Ice.—Ice begins to appear in the first half of December and is usually gone by the end of March. Drift ice from the N usually stays near the coast, leaving the open sea clear. However, sometimes the reverse may occur. The S part of the port area, the section of the Dange River close above its mouth, and Kurskiy Zaliv are usually covered by ice every winter for an extended period of time. That part of the port area lying close N of the river mouth rarely freezes, although the entrance to the canal may be jammed with ice floes for several days. If this ice remains for a long period, tugs are sent to clear the fairway.

Tides—Currents.—Changes in the water level have a seiche-like character. The vacillation is usually sudden, of short duration, and intensive. The greatest changes in the water level are caused by surging and receding and occur in autumn and winter. Variations in the water level are reported to reach, at times, as much as 0.9m above and below the mean sea level. However, variations of 0.6m or more are a rare occurrence and small variations, of about 0.3m, are reported to be more frequent. An increase of the water level occurs during strong W, N, NW, and sometimes SW winds. A decrease of the level sometimes occurs during S and E winds.

During storms from between WSW and WNW, strong swells often approach the Morskoy Kanal by running along the quays. At such times, vessels moored alongside the quays should, in advance, leave their berths and anchor in the inner or outer roadstead.

The coastal current is, for the most part, directed along the shore to the N and across the canal entrance. It may attain rates of up to 2 knots. The current within the harbor is usually outflowing, but an inflow has been observed when the coastal current is setting to the S. The outgoing current may attain rates of up to 3 knots in the spring. During storms from the W, cross currents occur at the entrance to the canal and may cause steering difficulties.

Entering the canal during these conditions is not recommended.

Depths—Limitations.—The approach and entrance channels leading to the harbor vary in depth, particularly during the floods in spring and also after prolonged N or NW gales. Dredging is frequently carried out in the fairways. The approach channel (2001) is 110m wide and has a depth of 12m. The entrance channel has a dredged depth of 10.5m.

The harbor facilities lie along both sides of the river channel between close inside the entrance and the suburb of Smelte, 4.5 miles SSE.

The port provides about 7,000m of total main quayage with berths, 30 to 228m long. A ro-ro ferry terminal is situated at the N end of the peninsula which forms the W side of the timber basin, in the SE part of the harbor. It consists of a finger pier, 250m long, with depths of 9.5 to 10m alongside. A container terminal, with two berths, is situated at the S end of the peninsula and has a depth of 10.4m alongside.

There are facilities for tanker, ro-ro, container, general cargo, passenger, bulk, and fishing vessels. There are also extensive repair facilities, including six floating dry docks. The largest is 216m long and 41.5m wide. Vessels up to 40,000 dwt, 200m in length, and 10.5m draft can be accommodated in the port.

Aspect.—When approaching the port, the forest located in the vicinity of the city is very conspicuous and visible at a considerable distance to seaward. On closer approach, prominent landmarks include a pilot watch tower standing close NW of the Winter Harbor; several churches situated in the city; a chimney, 50m high, standing at a cellulose factory located 0.7 mile SSE of the New Harbor; several oil tanks standing 0.5 mile NE of the pilot watch tower; a water tank situated 1 mile E of the pilot watch tower; and a radio mast standing 2.7 miles N of the harbor entrance

An outer approach lighted buoy is moored about 3 miles W of the port entrance. The entrance fairway is indicated by a lighted range. The rear range light is shown from a prominent tower, 40m high, standing on the N side of the entrance.

Klaipeda Entrance

Klaipeda Ferry Terminal

Pilotage.—Pilotage is compulsory. Deep sea and local pilots are available from the port except in dense fog or with NW winds of over force 7. Pilots can be contacted by VHF and usually board in the vicinity of the Outer Approach Lighted Buoy No. 1. During bad weather, pilots board at the inner roadstead.

Regulations.—A Vessel Traffic Service (VTS) system operates in the approaches to the port. It is a mandatory system, which applies to all vessels navigating within the zone of operation, and is controlled by the Traffic Control Service (SUDS). The zone of operation consists of the waters lying between Outer Approach Lighted Buoy No. 1 and the harbor entrance. It also includes the anchorage for foreign vessels and the internal port area lying between the entrance and the mouth of the Dange River.

Klaipeda Main Light (rear range)

The Traffic Control Service (SUDS) can be contacted on VHF channel 9. While underway within the zone, all vessels should maintain a continuous listening watch on VHF channel 9. When at anchor, they should maintain a continuous listening watch on VHF channel 16.

All vessels should report to SUDS and request permission to enter the zone. The report should include the following information:

1. Type and name of vessel.
2. Nationality and name of owners.
3. Time of approach into zone of operation.
4. Speed.
5. Nrt.
6. Length and maximum draft.
7. Type and quantity of cargo.

If required, vessels should give their position by bearing and distance from a known object. When SUDS identifies the vessel, permission to enter the zone will be given, including the route to be followed. Details of anchorage and other movements of vessels within the zone will also be given. SUDS will provide navigational and other information as necessary, on request.

All vessels movements within the zone require permission from SUDS. Such permission ceases after 20 minutes when requests should be reinstated. Vessels should repeat all instructions received from SUDS. In the case of radio failure, vessels should leave the traffic lane (approach channel) and anchor or drift while attempting to reestablish contact.

Radar assistance by SUDS is compulsory for ferries, tankers, vessels carrying dangerous cargoes, vessels constrained by their draft, and for all vessels when the visibility is reduced to less than 0.5 mile. However, radar assistance may be provided at any time on request.

Vessels with drafts of 7m or over are considered to be constrained by their draft and should display the appropriate lights or shapes.

Vessels entering the port should not exceed a speed of 6 knots.

Anchorage.—All foreign vessels should anchor within a designated area, which may best be seen on the chart, lying centered 6.5 miles WNW of the harbor entrance. Another designated anchorage area lies centered 6.5 miles WSW of the harbor entrance. These areas have depths of 33 to 39m.

Caution.—Vessels anchored within the designated foreign vessel anchorage area should be prepared to put to sea if strong W winds commence. Similarly, during strong SW and NW winds, strong and dangerous surges occur within the port and vessels should put to sea.

Discolored water, flowing out of Kurskiy Zaliv, is reported to extend up to 5 miles offshore in the vicinity of the port.

A spoil ground area, marked at its center by a buoy, lies 11.5 miles SW of the harbor entrance.

10.5 Kurskiy Zaliv (55˚20'N., 21˚10'E.), also known as Kurisches Haff, is a lagoon or inland sea which extends about 50 miles S of the entrance to Klaipeda. It is separated from the Baltic Sea by Kurskaya Kosa.

This lagoon is closed by ice during the winter season. Local knowledge is necessary for transiting the gulf, but pilots are not available. The gulf has general depths of 1 to 2.5m in its N part and 3 to 5.5m in its S part. A channel, marked by buoys, leads through the N part and passes close W of Sekluma Kiaules Nugara and close to the E side of Kurskaya Kosa. Vessels with drafts of up to 4m and local knowledge can proceed in this channel from Klaipeda to Lesson (55˚01'N., 20˚37'E.), lying 46 miles SSW.

The water level within the gulf usually rises about 0.3m with N winds and falls about 0.2m with S winds. An increase of water level of 1.1m and a decrease of 0.7m have been observed when the gulf was free of ice, but these variations are rare.

Yuodkrante, a resort, is situated 10 miles S of Klaipeda, on the E side of Kurskaya Kosa. Nida, another resort, and Rybachiy, a fishing harbor, lie 14 miles and 24 miles, respectively, SSW of Yuodkrante. Several rivers enter the E side of Kurskiy Zaliv and connect the gulf to an inland waterway system. Several small fishing harbors lie near the mouths of these rivers. The E side of the lagoon is low and mostly wooded.

10.6 Palanga (55˚56'N., 21˚04'E.), a village, is situated 12 miles N of Klaipeda and is fronted by a small boat harbor. A prominent red church, with a tall spire, stands in the village. The intervening coast is hilly and wooded. Gora Biruta, a conspicuous hill, 17m high, rises 1 mile S of Palanga.

From Palanga to Liepaja, 34 miles N, the coast is low, uniform, and backed by sand dunes. Some of these dunes are bare and some of them are wooded. Several villages stand among these dunes and, in places, are fronted by white sandy beaches. The coastal bank lying between Klaipeda and Liepaja extends up to 3 miles offshore in places.

Gora Tyupa (56˚17'N., 21˚00'E.), 34m high, is a chain of low hills rising slightly above the flat, wooded surroundings. Several of these hills are surmounted by a few trees.

Sventoji Light (56˚01'N., 21˚05'E.) is shown from a prominent framework tower, 39m high, standing in the village of Sventoji, 6.5 miles N of Palanga. The village is fronted by a small and shallow fishing boat harbor.

The boundary between Lithuania and Latvia is situated about 2.3 miles N of Sventoji.

Butinge Oil Terminal (56˚03'N., 20˚58'E.), consisting of an SPM, lies 3.7 miles WNW of Sventoji Light, in a depth of 18m. A prohibited area, 0.5 mile wide, extends ENE from the terminal to the shore. A lighted fairway buoy is moored about 6.5 miles WSW of the terminal. An anchorage area, which may best be seen on the chart, lies centered 8 miles SW of the terminal and has a depth of 30m. A channel, within which anchoring and fishing are prohibited, leads from the N side of the anchorage area to the terminal. Vessels up to 100,000 dwt and 16m draft can be handled.

Pape Light (56˚09'N., 21˚01'E.) is shown from a prominent framework tower, 22m high, standing 7.8 miles N of Sventoli. boat harbor.

Bernati Light (56˚23'N., 20˚59'E.) is shown from a prominent framework tower, 21m high, standing 13.8 miles N of Pape Light.

Caution.—Several wrecks and obstructions lie off this section of coast and may best be seen on the chart.

A prohibited area, the limits of which are shown on the chart, lies centered 5 miles N of Pape Light and extends up to 3.5 miles seaward from the coast.

Liepaja (56˚31'N., 21˚01'E.)

World Port Index No. 28640

10.7 Liepaja, formerly known as Libau, is situated within Latvia and lies at the N end of a comparatively low and narrow tongue of land. This tongue separates Liepajas Ezers, a shallow lake, from the sea. The port is a major naval base. It consists of Outer Harbor which is enclosed by breakwaters; Commercial Harbor, with a wide quay on its S side; Town Canal Harbor which separates the old and new sections of Liepaja; Winter Harbor which is used for the handling of oil and timber cargoes; and Naval Harbor which lies on the E side of Outer Harbor.

Winds—Weather.—Strong W and N winds sometimes cause cargo handling within Commercial Harbor to be difficult or impossible.

Ice.—Ice does not impede navigation during normal winter seasons. If necessary, icebreakers keep the harbor open to shipping. The average period of ice lasts from the first week of January to the beginning of March.

Tides—Currents.—The current in the vicinity of the port runs parallel with the coast and sets in a predominantly N direction. With fresh winds, it may attain a rate of up to 2 knots. The water level may fall as much as 0.6m with E winds and rise as much as 0.9m with W winds.

Depths—Limitations.—A coastal bank, with depths of 6 to 10m, extends up to about 3.5 miles W from the vicinity of the port. An approach channel leads ENE through the dangers in the approaches. It is 100m wide and has a dredged depth of 11m (2000). This channel is subject to silting.

The harbor has three entrances. Ziemelu varti, the N entrance, is 265m wide and has a depth of 8.1m. Permission to use this entrance must be received from the naval base. Vidus varti, the middle entrance, is 213m wide and has a depth of 9m. Dienvidu varti, the S entrance, is 235m wide and has a depth of 11m.

The oil terminal has a quay, 100m long, with a depth of 7.5m alongside. Tankers up to 150m in length and 7m draft can be accommodated.

The Commercial Harbor provides about 3,000m of total berthage with depths of 4.5 to 9.5m alongside. There are facilities for ro-ro, bulk, general cargo, timber, container, and passenger vessels. Vessels up to 50,000 dwt, 200m in length, 30m beam, and 8.5m draft can be accommodated.

It is reported (2000) that new berths are being built and extensive construction is being carried out within the port.

Aspect.—Several high buildings stand along this low coastal area and are visible from a considerable distance to seaward. Conspicuous landmarks in the vicinity of the port include the cathedral; a pilot watch tower; a white building, 18m high; and several chimneys.

The main approach channel is marked by buoys and indicated by a lighted range. A main light is shown from a prominent tower, 30m high, standing in the S part of the harbor. Outer Approach Lighted Buoy A is reported to be moored about 6 miles WSW of the main light.

Pilotage.—Pilotage is compulsory for all vessels carrying dangerous goods and all other vessels over 700 grt, unless a valid exemption certificate is held.

Vessels should send a request for pilotage through the Vessel Traffic Service (see Regulations). Pilots can be contacted by VHF and generally board about 6 miles WSW of the main light in the vicinity of Outer Approach Lighted Buoy A.

Regulations.—A mandatory Vessel Traffic Service (VTS) system operates within the port and the outer approaches. All vessels must contact the VTS center through their agent (in writing) at least 48 hours prior to arrival and report their ETA. All vessels must then repeat their initial ETA message through the agent 24 hours in advance. These messages must include the following information:

1. Vessel's name and call sign.
2. Dimensions and draft.
3. ETA.
4. Last port of call.
5. Size and nature of cargo.
6. Consignee of cargo.
7. Vessel's agent.
8. Information about infectious diseases onboard.

All vessels must report 2 hours before arrival, but not less than 1 hour from Outer Approach Lighted Buoy A, to the VTS center on VHF channel 11. All reports and other relevant information will be forwarded to the pilots by the VTS.

All vessels passing through the VTS area but not entering the port must contact the VTS center on VHF channel 11. The VTS area extends up to about 11 miles W from the port.

Anchorage.—Anchorage off the port is tenuous during winds from between SW and NW. Three designated anchorage areas are situated in the roadstead and may best be seen on the chart. Anchorage Area L1 lies centered 3 miles WSW of the main light. It has depths of 8 to 10m and is used by small vessels. Anchorage Area L2 lies centered 5 miles WNW of the main light. It has a depth of 15m and is used by general vessels. Anchorage Area L3 lies centered 8 miles W of the main light. It has a depth of 28m and is used by deep-draft vessels.

Caution.—In reduced visibility, vessels are advised not to approach the port in depths of less than 18m unless their position has been accurately determined.

Several shoals and obstructions lie in the approaches to the port and may best be seen on the chart.

A local magnetic anomaly exists in the vicinity of the port.

Submarine cables, which may best be seen on the chart, extend seaward from a point on the shore located close S of the port.

Due to the influence of the current, which sets at right-angles to the approach fairway, deep-draft vessels should maintain sufficient speed in order to remain accurately on the range line.

The harbor entrances are subject to frequent silting and the authorities should be contacted for information concerning the latest depths in the channels.

It is reported (2001) that the N entrance to the harbor is temporary closed.

10.8 **Akmenrags** (56˚50'N., 21˚03'E.) lies 17.5 miles N of Liepaja and the intervening coast is sandy and bordered by sand dunes. The land located between these dunes and the woods, which stand about 0.5 mile inland, is extensively cultivated. A main light is shown from a prominent stone tower, 37m high, standing at Akmenrags.

Prominent landmarks along this stretch include the village and church of Saraiki, situated 9.5 miles NNE of Liepaja, and the village and church of Ziemupe, situated 4.5 miles N of Saraiki.

Pavilosta (56˚53'N., 21˚11'E.), a small harbor, lies 5 miles NE of Akmenrags. It is formed by two breakwaters which extend seaward from the mouth of the Saka River. The harbor entrance, which is 40m wide, has a depth 3.2m, but is subject to silting. A conspicuous chimney stands at a distillery, 1.7 miles SE of the harbor. The harbor is used by fishing vessels and coasters. Vessels up to 80m in length and 3m draft can enter.

To the N of Pavilosta, the woods standing along the coast approach and border the shoreline. A conspicuous mill stands at Sarnate, 16 miles NE of Pavilosta.

Uzava Light (57˚13'N., 21˚25'E.) is shown from a prominent tower with a dwelling, 19m high, standing on a partly wooded and sandy hill which rises 5 miles N of Sarnate. A racon is situated at the light.

Somnitelania Bank (57˚18'N., 21˚22'E.) lies 1.7 miles offshore, 5.5 miles NNW of Uzava Light. This bank has a least depth of 4.4m and is marked by a lighted buoy.

Caution.—Several dangerous wrecks lie off this stretch of coast and may best be seen on the chart. Vessels are advised to stay at least 4 miles seaward of the shore.

A mine exercise area lies centered about 20 miles W of Akmenrags Light, but its limits are subject to change without notification.

Ventspils (57˚24'N., 21˚32'E.)

World Port Index No. 28620

10.9 Ventspils is situated in Latvia and lies at the mouth of the Venta River. It is protected by two breakwaters and extends in an E direction for about 2 miles between the entrance of the river and a railroad bridge. An oil terminal is located close inside the breakwaters at the N side of the mouth of the river.

Winds—Weather.—The prevailing winds are from the SW. Calms seldom occur in the vicinity of the harbor. Fog, which occurs during weak SE and SW winds, is most frequent between March and June.

Ice.—Ice may be present from the middle of December to the middle of April, but the harbor is never closed. Ice may hinder shipping during January and February and when NW winds carry it into the outer harbor. At such times, icebreakers will assist vessels entering. Winds from the E and an outgoing current clear ice from the river and inner part of the harbor.

Tides—Currents.—The tides are negligible, but the water level fluctuates with wind and ice conditions. The water level rises with strong winds from between NW and SW. It falls with winds from between N and SE. In spring, when the ice is in motion, the water level is generally 1.2 to 1.5m higher than usual; in places, the level may be as much as 2m higher. At other times, a difference of 0.3m above or below the mean level is more frequent.

The current sets N or S along the coast in the approaches to the port depending on the wind. It may attain rates of 3 to 4 knots. Currents in the river set at an average rate of 1 knot, increasing to 2 knots near the entrance. In early spring and during the ice breakup, the current in the river may attain a rate of 4 knots.

Depths—Limitations.—The NW approach channel leads SE from Lighted Buoy B and is swept to a depth of 12.5m. The W approach channel leads ESE from Lighted Buoy A and is swept to a depth of 16.8m. It joins the NW channel about 1 mile NW of the harbor entrance.

The channel leading through the outer harbor is reported (2000) to be 100m wide and dredged to a depth of 15.2m. The river channel is reported to be dredged to a depth of 13.9m for 1 mile.

There are three liquefied gas berths with depths of 8.4 to 15.3m alongside. There are six tanker berths with depths of 11.3 to 15.3m alongside. There are 23 riverside cargo berths with facilities for ro-ro, bulk, general cargo, container, and chemical vessels. Tankers up to 270m in length and 15m draft, and cargo vessels up to 230m in length and 14.2m draft, can be accommodated.

Aspect.—To the N of the port, the coast is low and sandy. To the S, the coast is higher and consists of a chain of sand dunes covered with sparse woods. From a distance of between 6 and 10 miles offshore, this chain appears as a dark line. At a

Ventspils

Ventspils Outer Harbor

distance of about 3 miles, the slopes of the sand dunes become visible and are conspicuous due to their light color.

A light-colored sand dune, backed by woods, rises at Busnieku, 4.5 miles NE of the port entrance and is very conspicuous. It is surmounted by a beacon (former light tower). A prominent railroad runs N and parallel to the coast from the port.

Lighted Buoy B is moored about 5 miles NW of the harbor entrance and marks the seaward entrance of the NW approach channel. Lighted Buoy A is moored about 4 miles WNW of the harbor entrance and marks the seaward entrance of the W approach channel. Both approach channels are marked by lighted buoys and are indicated by lighted ranges. The rear range light of the NW channel is shown from a prominent framework tower, 35m high, standing 1.5 miles SE of the harbor entrance.

The port of Ventspils can be identified from a considerable distance by a conspicuous church, with a tall spire, standing in the center of the town on the S side of the river. A conspicuous pilot watch tower, 20m high, stands close E of the root of the S breakwater. A prominent group of storage tanks is situated near the root of the N breakwater.

Pilotage.—Pilotage is compulsory for all vessels over 70m in length and all vessels carrying dangerous cargo (oil, chemicals, or gas) regardless of length. Pilots must be ordered through the VTS center (see Regulations).

Pilots can be contacted by VHF and usually board in the vicinity of Lighted Buoy B or Lighted Buoy A.

Regulations.—A Vessel Traffic Service (VTS) system operates in the approaches to the port. The system is mandatory and applies to all vessels navigating within the area controlled by the Traffic Control Service (KSD). The area consists of all the waters of the port, including the outer roadstead. It is bounded by a line joining the following positions:

a. 57˚20.9'N, 21˚29.3'E.
b. 57˚25.4'N, 21˚22.6'E.
c. 57˚32.3'N, 21˚30.3'E.
d. 57˚26.3'N, 21˚35.9'E.

Vessels must send their ETA and a request for pilotage through the agent 48 hours in advance. Vessels must then send an ETA 24 hours and 4 hours prior to arrival.

Vessels must contact the VTS traffic control center (Ventspils Radio 17), on VHF channel 16, 2 hours prior to arrival (not later than 1 hour prior to arrival) at either Lighted Buoy A or Lighted Buoy B.

A continuous listening watch must be maintained in the outer roadstead on VHF channel 16, when proceeding to the port on VHF channel 9, and when alongside the berth (if telephone is not available) on VHF channel 16.

Shore-based radar assistance is compulsory for the following vessels arriving and departing the port:

1. All vessels over 150m in length.
2. All vessels over 12,000 grt.
3. All vessels with drafts over 11.5m.
4. All vessels carrying dangerous cargo (oil, chemicals, or gas).

Tugs are compulsory for vessels over 90m in length.

Speed limits are in force within the port.

Anchorage.—Designated anchorage areas, which may best be seen on the chart, lie centered from the port entrance as follows:

1. Area V-1, lying 6 miles N, is for liquid chemical, LNG tankers, and quarantine.
2. Area V-2, lying 8 miles NW, is for large vessels with drafts over 10m.
3. Area V-3, lying 4 miles NW, is for oil tankers and dangerous goods. An obstruction, with a depth of 18m, lies in the W part of this area.
4. Area V-4, lying 2.5 miles N, is for small vessels with drafts less than 5m.
5. Area V-5, lying 3.5 miles NW, is for general cargo (non-dangerous) vessels with drafts of 5 to 10m.

Caution.—Several dangerous wrecks and obstructions, which may best be seen on the chart, lie in the approaches to the harbor entrance.

Several submarine cables, which may best be seen on the chart, extend seaward from a point located on the shore about 1 mile SSW of the port.

The approach channels and harbor are subject to frequent silting, particularly after storms. The authorities should be contacted for information concerning the latest depths.

Anchoring in the outer roadstead areas is dangerous during strong W winds.

The approaches to the port lie within a former mine area and vessels are advised to anchor only within the designated areas.

Spoil ground areas and disused spoil areas, the limits of which may best be seen on the chart, lie close off the coast and extend up to about 6 miles N of the harbor entrance.

A prohibited area, within which measuring instruments are located, lies centered 2.7 miles NW of the harbor entrance. It has a radius of 0.5 mile and is marked by a lighted buoy.

Banks of sand frequently form off the breakwater heads and vessels should not pass close to them.

10.10 Ovisi (57˚34'N., 21˚43'E.), a low and sandy point, is located 12 miles NNE of Ventspils and can be readily identified by its light color. The shore located inland of the point is wooded. A main light is shown from a prominent tower, 37m high, standing on this point.

Ovisi Seklis (57˚36'N., 21˚40'E.), a shoal area which is part of the coastal bank, extends up to about 5 miles NW of Ovisi. This shoal area, which is generally sandy with a few rocks, has a least depth of 2.8m and is marked on the W and N sides by buoys. A number of dangerous wrecks, which can best be seen on the chart, lie within the 20m curve in the vicinity of this shoal bank.

Gulf of Riga and Approaches

10.11 Saaremma (58˚16'N., 22˚36'E.), an Estonian island, is composed chiefly of limestone and is thickly wooded. Its SE coast forms the NW shore of the Gulf of Riga. The coast of Saaremma is very indented with numerous peninsulas projecting seaward between the bays. Two of these peninsulas, Sorve Poolsaar at the S side and Tagamoisa at the NW side, are most worthy of note. Generally, the island is flat and low, but it rises slightly in the middle and at the N end. The summit of the island stands in the NW part where a wooded hill rises above the surrounding plain.

Hiiumaa (Hiumaa) (58˚53'N., 22˚36'E.) is separated from the N side of Saaremma by Soela Vain, a shallow channel. This island is flat and marshy in the interior, but the land rises gradually toward the N end. Several wooded hills, 25m high, rise along the NE coast. The NW side of the island is low and less wooded than the NE. Kopu Poolsar, a densely wooded peninsula, forms the W extremity of Hiiumaa and rises to a height of 68m.

Soela Vain leads E into Vainameri and can be used only by vessels, with local knowledge, up to 40m in length and 3m draft.

Bezymyannaya (57˚43'N., 20˚59'E.), a shoal bank, lies centered 25 miles WNW of Ovisi. It has a least depth of 9.8m and the E and W sides are marked by lighted buoys.

Banka Vinkova (57˚40'N., 21˚20'E.), a shoal bank with a least depth of 7.6m, lies about 11.5 miles NW of Ovisi and is marked on its W side by a lighted buoy. Depths of less than 20m extend up to about 4.5 miles W, 3 miles N, 1.5 miles S, and 2 miles W of the shallowest part of this bank.

Chidova Nova (57˚54'N., 21˚13'E.), a shoal bank with a least depth of 22m, lies about 25.5 miles NW of Ovisi. An isolated shoal patch, with a depth of 11m, lies about 3.7 miles E of this bank.

10.12 Saaremma—West side.—Sorve Poolsar (58˚03'N., 22˚10'E.), a peninsula, projects 16 miles SSW from the S extremity of Saaremma. Sorve Saar (Sorve Ots), a narrow and sandy spit, extends up to about 0.9 mile S from the end of this peninsula. A main light (Sorve Saar) is shown from a prominent round tower, 52m high, standing 0.4 mile NNE of the S extremity of the spit. A racon is situated at the light.

Sorve Saar Light

A shoal flat, with depths of less than 5m, extends up to about 7 miles S and SW from the light and is marked by a buoy.

A ridge of hills extends from Montu, located 3.5 miles NE of Sorve Saar, to Ansekula, located 9.5 miles farther NNE. The W side of this ridge slopes gradually and consists of several

conical hills covered with pine trees. The E side of the ridge is moderately steep.

Loode Neem (57˚59'N., 22˚00'E.) is located on Sorve Poolsar, 4.7 miles NNW of Sorve Saar Light. A light is shown from a tower, 15m high, standing on this point.

Jamaja, a village, is situated 3 miles NE of Loode Neem. It is the site of a church, with a tall tower and a pointed roof, which is a prominent landmark when the sun is bearing W. Kaunispe is situated 1.7 miles NNE of Jamaja. Small vessels, with local knowledge, can obtain good anchorage, sheltered from W and N winds, in depths of 4 to 6m, good holding ground, off this village.

10.13 Lou Laht (58˚05'N., 22˚10'E.) indents the coast about 10 miles N of Sorve Saar. The W entrance point of this bay is conspicuous. The bay affords anchorage to small vessels with local knowledge, in depths of 5 to 7m, mud and sand. The anchorage is sheltered, except from strong NW winds. A low and grassy islet lies close off the W entrance point of Lou Laht and a shallow reef extends up to about 1 mile N of it.

Ariste Laht (58˚09'N., 22˚11'E.) affords good anchorage to small vessels and is entered NNE of Lou Laht. The coasts of this bay are low and sparsely wooded. However, the bay is encumbered with numerous rocks, reefs, and shoals and should not be entered without local knowledge. The entrance channel has a least depth of 4.4m.

Meelaiuneem (58˚19'N., 21˚50'E.) is a point where the nearby land rises to a ridge, 13m high. Laimadal, with a least depth of 2.3m, lies about 5 miles SW of the point. The sea is reported to break on this shoal in fresh winds. Several isolated and shallow shoals lie between Meelaivneen and Laimadal and may best be seen on the chart.

Loonalaid (58˚20'N., 21˚48'E.), a low and inhabited islet, lies near the outer end of the foul ground which extends up to about 3.5 miles NW of Meelaivneen. This islet is covered with grass and bushes and is fringed by gravel, sand, and rocks. Salava, lying 0.5 mile S of Loonalaid, and Noota Maa, lying 0.5 mile NW Loonalaid, are both low islets, also covered with grass and bushes. Foul and rocky ground extends up to about 1.7 miles SSW and 1 mile W of Salava.

Atla Laht (58˚19'N., 21˚53'E.) is entered between Loonalaid and the SW side of Vilsandi Saar, 2.3 miles NE. This bay has depths of 3 to 5m in the middle and its shores, on either side, are low and consist of gravel and numerous large rocks. The village of Atla stands at the head of the bay and is backed by a ridge, 12m high. A prominent windmill is situated at the village. Anchorage, sheltered from all winds, can be obtained by small vessels with local knowledge, in a depth of 4m, sand, near the head of Atla Laht.

The central part of Eeriksaar, a low peninsula, is located on the NE side of Atla Laht and is wooded. A few prominent villages and windmills are situated along this part of the peninsula.

10.14 Vilsandi Saar (58˚23'N., 21˚52'E.), an island, lies 2.5 miles NE of Loonalaid. It consists of two parts joined by an isthmus. The E part is formed by low meadow land and the W part is wooded. A village stands on the S side of the W part.

A main light is shown from a prominent round tower, 37m high, standing on the W extremity of the island. An islet, 4m high, lies close off the N side of the island, 1 mile NE of the light.

Suurkuiv (58˚23'N., 21˚40'E.), a dangerous rocky patch, lies on the outer edge of a shoalbank which extends up to 5 miles W from the W extremity of Vilsandi Saar. It is marked by a buoy, moored off the W side.

Mustpank (58˚22'N., 21˚33'E.), a shoal with a least depth of 7.2m, lies about 9.2 miles W of Vilsandi Saar Light.

Uuskuiv (58˚19'N., 21˚33'E.), a rocky shoal patch, lies about 9.5 miles WSW of Vilsandi Saar and has a least depth of 4.9m.

A shoal, with a depth of 8.8m, lies about 15 miles WSW of Vilsandi Saar Light and an isolated patch, with a depth of 9.4m, lies about 1 mile SW of it.

Pletseva Banks (58˚11'N., 121˚02'E.), with a least depth of 18m, lie about 27 miles WSW of Vilsandi Saar light and form the outermost known dangers in this area. Numerous other dangers lie on these banks and may best be seen on the chart.

Kihelkonna Laht (58˚23'N., 21˚58'E.), a bay, is approached between Vilsandi Saar and the S extremity of Harilaid, a low peninsula located 4.5 miles N. From a distance, Harilaid, which forms the W extremity of the large peninsula of Tagamoisa, appears as an island. The bay, which affords anchorage in depths of 11 to 13m, sand, is open to the NW, but heavy seas do not reach the roadstead as it is protected by shoals. A church, with a high tower, stands in the village of Kihelkonna which is situated near the head of the bay.

Jaagurahu (58˚24'N., 21˚58'E.), a loading place, lies 2 miles E of the NE extremity of Vilsandi Saar. There is a pier, 230m long, with a depth of 4.9m alongside the head. A channel, with a least depth of 4.3m, leads from seaward to the pier, but local knowledge is necessary. Small vessels with local knowledge can obtain anchorage, in a depth of 5m, mud and sand, about 0.5 mile S of the head of the pier.

Kiipsaare Nukk (58˚30'N., 21˚52'E.), the NW extremity of Harilaid, is fronted by dangers which extend up to about 2.5 miles NW of it.

Caution.—Anchoring and fishing are prohibited within an area lying between Panganeem, the NE extremity of Vilsandi Saar, and the mainland coast, 1.5 miles ENE.

10.15 Taga Laht (58˚29'N., 22˚06'E.), a bay, is entered between Undva Nina (Undva Neem), located 2.5 miles ENE of Kiipsaare Nukk, and Ninase Pank, located 9 miles ENE. The coast rises to the E of Undva Nina and forms limestone cliffs which become precipitous at Suuriku Pank (58˚30'N., 22˚12'E.). Several white sand cliffs, known as Veeri Magi, stand at the middle of the W side of Taga Laht.

During the navigation season, a light is shown from Merise Neem (58˚30'N., 22˚09'E.) which is located 3.5 miles SW of Ninase Pank.

Large vessels can obtain anchorage, in depths of 15 to 18m, sand and mud with good holding ground, about 2.5 miles SW of Merise Neem. However, they must remain clear of a dangerous wreck which lies near the W side of the bay. Although the bay is open to the N, vessels can remain here during strong N winds. Small vessels can anchor, in a depth of 5m, sand and mud, about 0.7 mile offshore, at the E side of the head of the bay.

Kudemaa Laht (Kudema Laht) (58˚31'N., 22˚16'E.) is entered between Ninase Pank and Panga Nukk, 3 miles NE.

Both entrance points of this bay are faced with cliffs. A church, white with a dark roof, stands at Mustjala, 1.5 miles S of the SW corner of the bay, and can be seen over the trees. The village of Ninase, situated 1.5 miles SSE of Ninase Pank, can be readily identified by several windmills and a prominent white house. Laidu, a flat islet, is fringed by rocks and lies on the edge of the shorebank which extends from the E side of the bay.

Vessels of considerable size can obtain anchorage, during offshore winds, in depths of 12 to 20m, sand, between Laidu and the village of Ninase. However, they should not remain at anchor with N or NW winds which send heavy seas into the bay.

The coast extends 9.5 miles ENE between Panga Nukk and Pammanina, the N extremity of Saaremaa, and is low and wooded. The shore is bordered by a sandy and rocky beach with several large above-water rocks on it.

10.16 Hiiumaa—West side.—The S extremity of Hiiumaa is located 3 miles N of Pammanina, the N extremity of Saaremaa. The water area lying between these two points is foul, encumbered with numerous rocks, and does not appear to be navigable. The S part of the W coast of Hiiumaa is so low that, at first sight, it appears to be a chain of small islets.

Ristna (58˚56'N., 22˚03'E.) is a point forming the W termination of Kopu Poolsaar, a peninsula, which projects from the W side of Hiiumaa. A light is shown from a prominent round tower, 30m high, standing on this point.

A range of hills extends for the length of the peninsula and rises to a height of 68m at Tornimagi. Andresemagi, a prominent peak, rises 1.2 miles ENE of Tornimagi and is 54m high. A sandy ridge extends up to about 2 miles W from Tornimagi.

Kopu Light (58˚55'N., 22˚12'E.) is shown from a prominent square tower, 36m high, standing on Tornimagi, 4.7 miles ESE of Ristna Light.

The coast extending between the S extremity of Hiiumaa and Ristna Light is fronted by an extensive shore bank, with depths of less than 5m, which extends up to about 5 miles seaward in places. Several dangers lie on this bank and local knowledge is required to approach the coast.

Neupokojevimadalik (58˚55'N., 21˚51'E.), a large detached shoal area, has a least depths of 9m and lies about 7 miles WSW of Ristna Light. It forms the outermost danger in this vicinity. This shoal area should not be confused with an isolated shoal patch of the same name which lies 7.5 miles SE of Ristna Light. This patch has a least depth of 2.9m and is marked by a buoy.

Kaleste (58˚55'N., 22˚08'E.), a village, is situated 3 miles SE of Ristna. Small vessels, with local knowledge, can obtain anchorage, in a depth of 5m, sand, 0.5 mile off the village, but the roadstead is exposed to winds from between W and SW. A range, consisting of a beacon in line with Kopu Light, indicates the approach channel leading to the roadstead which has a least depth of 5m.

10.17 Hiiumaa—Northwest side.—Fog often occurs off the NW coast of Hiiumaa and is most frequent during April when visibility is usually reduced to less than 1 mile.

Kopu Light

From Ristna, the NW coast of the island trends in a NE direction for about 18 miles. It consists of two deep indentations and numerous small coves of no particular significance. Shoals, with depths of less than 3m, lie close within the 20m curve and up to about 8 miles offshore. The sea breaks on many of these shoals with onshore gales and the white stony bottom can be seen from a considerable distance in calm weather.

A detached shoal patch, with a least depth of 11.4m, lies about 10 miles N of Ristna Light.

Vinkovimadalik (59˚11'N., 22˚19'E.), a shoal area with a least depth of 8m, lies about 17 miles NE of Ristna Light and is marked by a lighted buoy at its NW side. This shoal area forms the outermost known danger in this vicinity.

Tahkuna Nina (59˚05'N., 22˚36'E.) is the NW extremity of the broad peninsula which forms the N end of Hiiumaa. It is low and covered with dense pine woods. The shore in this vicinity is sandy with numerous large above-water rocks. A main light is shown from a prominent tower, 43m high, standing on this point.

Serbinimadalik (59˚14'N., 22˚42'E.), a shoal patch with a least depth of 13.2m, lies about 9.7 miles NNE of Tahkuna Nina Light.

Appalomadalik (Apollo) (59˚13'N., 22˚51'E.), a shoal area with a least depth of 6m, lies about 9.8 miles NE of Tahkuna Nina Light and is marked by a buoy.

Directions.—The coastal route along this section leads NNW for about 30 miles from the vicinity of Lighted Buoy No. 1 (57˚51'N., 21˚37'E.), which is moored in the approach to the Irbenskiy Strait, about 15 miles WSW of Sorve Saar Light. After clearing the dangers lying W of the island of Vissandi

Saar, the route then leads NNE for about 45 miles to a position W of Kopu Light (58˚55'N., 22˚12'E.).

Traffic Separation Schemes (TSS) are centered 20 miles NE and 40 miles NNE of Kopu Light and may best be seen on the chart.

Gulf of Riga

10.18 The Gulf of Riga (Rizhskiy Zaliv) (Livi Laht) is bounded by the coast of Latvia, on the S side, by Saaremaa and Muhu, on the N side, and by the coasts of Latvia and Estonia, on the E side. The Latvian side of the gulf is generally low and sandy with occasional cliffs. Low ridges, formed by sandy and wooded hills, back the coast and several large boulders fringe the shore. The Estonian side of the gulf is very irregular and low. It consists of numerous rocky peninsulas and bights which are backed by woods. Many small villages and summer resorts are situated along the coasts of the gulf. Ruhnu, an isolated island, lies in the central part of the gulf. The gulf has very few conspicuous landmarks, but is marked by numerous navigational aids.

Winds—Weather.—In the Gulf of Riga, the prevailing winds are from between S and SW. Fog is prevalent from October until April.

Ice.—In normal winters, pack ice appears in December and fast ice forms along the shores in the latter part of this month. During severe winters, almost the whole gulf may be frozen over. In February, the gulf may be frozen over to almost the middle where heavy pack ice accumulates. The ice generally forms very quickly, especially in the S part of the gulf. Ice pressure may set in without warning and sometimes forms against the direction of the wind.

The ice begins to melt in March and fast ice may have disappeared from the shores by the end of the month. However, pack ice may still be encountered. By the middle of April, ice is usually found only in the N part of the gulf.

As long as the ice within the gulf is not in motion, it is scarcely dangerous to shipping. However, vessels should be prepared at all times to stop the engines quickly in the event that their condensers become clogged with brash ice.

At times, the ice floes begin to push upward so that they become stacked vertically over one another. This action, often lasting only a few minutes, results in the forming of a large structure of ice known as a "Torosse." These structures of ice, according to reports, may stand up to 12m above the water level. When the ice is in motion, the danger becomes very great. If the wind and the current are in the same direction, the ice often moves quickly and can easily attain speeds of up to 8 knots. To resist the great pressure formed by this movement of ice, vessels must be specially constructed.

Tides—Currents.—In the Gulf of Riga, the currents are irregular and set inward from Muhu Vain and through Irbeni Vain. During continued calm weather, the current sets S through Muhu Vain and attains rates of 0.5 to 0.8 knot. With strong W or SW winds, the inward flow from the Baltic Sea may become quite strong and the current, which sets E, may be diverted on striking the E shore of the gulf. This current then sets N and flows into Muhu Vain at rates of 1 to 1.5 knots. In calm weather, the current usually sets N or S along the E shore of the gulf according to the direction of the wind preceding the calm, but its rate does not exceed 0.5 knot.

Variations of the water level in the gulf occur according to the wind direction. Winds from the S and SW cause the highest levels and winds from the NE cause the lowest. These variations seldom exceed 0.5m, but they may reach 1 to 1.2m during autumn and winter.

Regulations.—In Latvian waters, during the ice navigation season, the responsibility for the control and operation of the ice services and icebreaker is divided between the harbormasters of the ports of Liepaja, Ventspils, and Riga. The dates and implementation of any rules imposed are approved by the relevant port authorities. In addition, the harbormaster at Riga has responsibility for winter navigation in the Irbe Strait, the main entrance to the gulf. Certain restrictions on size, engine capacity, and ice class construction apply to vessels intending to pass through the strait and call at ports in the gulf, dependent on prevailing conditions.Vessels with less than Lloyds Ice Class 3, or equivalent, are prohibited from entering the waters in question. Vessels bound for, or leaving the port of Riga, must forward a report, with full details of vessel and cargo, to the harbormaster at Riga at least 24 hours in advance.

It is reported that all vessels bound for Riga or other ports on the coast of Latvia within the gulf are prohibited to enter the Irbe Strait and the gulf or to leave these ports independently without a special permit issued each time by the Captain of the ice-breaker. The permit takes into account the actual ice condition in the area after being approved by the harbormaster at Riga.

In Estonian waters, vessels that have requested icebreaker assistance should await the icebreaker at a position near the E end of the TSS situated off Kopu Poolsaar at Hiiumaa Island (58˚55'N., 22˚30'E.). The Estonian icebreacker service is controlled by Tallinn VTS.

Caution.—Local magnetic anomalies are reported to exist in the SE part of the Gulf of Riga.

Former mine areas lie within the gulf and vessels are advised to anchor only within the designated areas and follow the designated routes.

10.19 Irbeni Vain (Irbenskiy Strait) (Irbe Strait) (57˚40'N., 22˚08'E.), a strait, is the W and main entrance to the Gulf of Riga. It is formed, on the S side, by the section of the mainland extending between Ovisi and Kolkasrags, 31 miles ENE. Sorve Poolsaar, located 23 miles NNE of Ovisi, forms the N side of the strait. The shores of the strait are low with no natural landmarks.

Several shoals, with depths in places of less than 11m, lie between 7 and 11 miles N of Ovisi. For the purpose of buoyage, these dangers are considered to form one extensive shoal area.

Michailova Seklis (57˚44'N., 21˚42'E.), the northernmost and largest shoal in the above area, has a least depth of 5m.

The coast between Ovisi and Kolkasrags, 31 miles ENE, is low and sandy. Several sand hills, of moderate height and covered with trees, rise close inland of the shoreline.

Mikeltornis Light (57˚36'N., 21˚58'E.) is shown from a conspicuous concrete tower, 56m high, standing at Mikelbaka, 8.5 miles ENE of Ovisi Light.

Irbenskiy Light (57˚45'N., 21˚44'E.), equipped with a racon, is shown from a prominent structure, 35m high, standing on the SW side of the main channel, 12.5 miles NW of Mikeltornis Light.

Lighted Buoy No. 1 (57˚51'N., 21˚37'E.) is moored about 7 miles NNW of Irbenskiy Light and marks the seaward entrance of the channel leading through Irbeni Vain.

Zieliekalni, a range of hills, rises about 19 miles E of Ovisi and is 50 to 77m high. A conspicuous church, with a spire, stands 1.5 miles inland at Mazirbe, 20.5 miles ENE of Ovisi. It can be seen from seaward rising above a group of trees.

Sikragciema Light (57˚39'N., 22˚13'E.) is shown from a prominent framework tower, 27m high, standing 8.7 miles ENE of Mikeltornis Light.

Kolkasrags (57˚46'N., 22˚36'E.), located about 14 miles NE of Sikragciema Light, terminates in a sandy point with woods standing close inland. Two prominent churches are situated 0.7 mile SW of this cape. A reef, with depths of less than 5m, extends up to about 3.2 miles NNE of Kolkasrags and is steep-to on its N and E sides.

Kolka Light (57˚48'N., 22˚38'E.) is shown from a prominent tower with dwellings, 21m high, standing on an artificial islet lying near the extremity of the reef.

Kolka Light

Vessels can obtain anchorage, sheltered from W and SW winds, in a depth of 14m, sand, about 2 miles offshore, under the lee of Kolkasrags. However, vessels must be ready to leave this anchorage quickly should the wind shift to the E.

A conspicuous framework beacon (former light tower) stands at Saunagciema, about 5 miles SW of Kolkasrags, and is 21m high.

Winds—Weather.—In the strait, the prevailing winds are from the S, SW, and W and sometimes cause high waves. Fog within the strait occurs most frequently during spring.

Tides—Currents.—Between Ovisi and Kolkasrags, the current varies according to the strength and direction of the wind, attaining, at times, rates of 1 to 1.5 knots. With continued W winds, a current often sets NW around Kolkasrags. It then sets across the direction of the wind and often causes a confused sea in the vicinity of the reef extending from the cape.

Directions.—Navigation through Irbeni Vain (Irbe Strait) is via a channel, which is marked by lighted buoys, and presents few difficulties. However, in low visibility, caution is advised due to the current.

Vessels with drafts of 10m and over should steer for Lighted Buoy No. 1 (57˚51'N., 21˚37'E.). Such vessels approaching from the S, should pass W and clear of Bezymyannaya (57˚43'N., 20˚59'E.) before steering ENE towards Lighted Buoy No. 1.

An alternate route leads 18 miles NNE to the vicinity of Lighted Buoy No. 1 from W of Ovisi Light (57˚34'N., 21˚43'E.). It passes between a dangerous wreck lying 2 miles WSW of Lighted Buoy No. 5 (57˚40'N., 21˚33'E.) and the E side of Banka Vinkova (57˚40'N., 21˚20'E.).

The main channel leads 13.5 miles SE from Lighted Buoy No. 1 to Lighted Buoy No. 4 (57˚40'N., 21˚52'E.), passing NE of Irbenskiy Light. It then leads ENE for about 26 miles to Lighted Buoy No. 8 (57˚51'N., 22˚37'E.), which is moored 3 miles N of Kolka Light. The fairway is about 1 mile wide and has a least depth of 15m on the centerline.

A secondary route for small vessels leads about 9.5 miles E from the vicinity of Lighted Buoy No. 5 (57˚40'N., 21˚33'E.) and joins the main channel at Lighted Buoy No. 4 (57˚40'N., 21˚52'E.).

Recommended routes, which may best be seen on the chart, lead, respectively, SE and ENE from Lighted Buoy No. 8 (57˚51'N., 22˚37'E.) to Riga and Parnu.

Caution.—Several wrecks, with depths of less than 15m, lie at the sides of the main channel and may best be seen on the chart.

10.20 Ruhnu Saar (57˚48'N., 23˚14'E.), an off-lying island, belongs to Estonia and lies in the Gulf of Riga, about 20 miles E of Kolkasrags. The W side of the island is low, but the E side is hilly, wooded, and rises to a height of 30m. The NE and E coasts of the island are low, steep, and formed by reddish cliffs of sand and rock. A village is situated in the middle of the island. A main light is shown from a prominent tower, 40m high, standing, above the tree tops, on the SE side of the summit of the island.

Gretagrund, a shoal bank, lies centered about 2.5 miles off the SE end of the island and has a least depth of 2.2m. A deep passage leads between this shoal bank and the coastal bank fringing the island. The coastal bank, with depths of les than 5m, extends about 2.5 miles NNW from the N end of the island and is marked by a buoy.

Vessels with local knowledge can obtain anchorage, sheltered from W and SW winds, off the SE side of the island. The roadstead has depths of 9 to 18m, sand, and lies between 0.5 mile and 1.2 miles off the S extremity of the island.

Gulf of Riga—West Side

10.21 The coast extending between Kolkasrags and the mouth of the river Daugava, 62 miles SE, is mostly low and sandy. It is backed, in some places, by low and wooded hills. Several villages are situated along this stretch of coast.

Gipka Light (57˚34'N., 22˚39'E.) is from a prominent framework tower, 30m high, standing 11.5 miles SSE of Kolkasrags.

Roja (57˚30'N., 22˚49'E.), a small harbor, is located 6.5 miles SE of Gipka Light. It is protected by two breakwaters which extend about 400m seaward from a river mouth. A detached breakwater, in ruins, lies close offshore, to the S of the harbor. A main directional light is shown from a prominent framework tower, 20m high, standing in the vicinity of the harbor. An outer approach lighted buoy is moored about 1 mile

NNE of the breakwater heads. The harbor has depths of 3 to 5m and is used by coasters, fishing vessels, and pleasure craft. Vessels up to 90m in length, 15m beam, and 4.2m draft can be accommodated. Local knowledge is required.

Mersrags (57˚22'N., 23˚08'E.), a low and sandy point, is located 28 miles SE of Kolkasrags and covered with pine woods. An isolated rocky shoal patch, with a depth of 3.6m, lies 0. 5 mile NNE of the point and is marked by a buoy. A main light is shown from a prominent tower, 19m high, standing on the point.

Mersraga Osta, a small harbor, lies 2 miles SSE of Mersrags Light at the mouth of a river which forms the outlet of an inland lake. The village stands on the N side of the river entrance. An outer approach lighted buoy is moored about 2 mile E of the harbor. The harbor is used by coasters, fishing vessels, and pleasure craft. Vessels up to 80m in length, 12m beam, and 4m can be accommodated.

Engure (57˚10'N., 23˚14'E.), a small and shallow harbor, lies 12.8 miles SSE of Mersrags Light and is used by fishing boats and pleasure craft. A main light is shown from a prominent framework tower, 19m high, standing close N of the harbor.

Ragaciems (57˚02'N., 23˚30'E.) is a low sandy point lying 23 miles SSE of Mersrags Light. Conspicuous churches stand at Sloka and Dubulti which are situated 7 miles SE and 10 miles ESE, respectively, of this point. A main light (Ragaciems) is shown from a prominent framework tower, 30m high, standing on the point.

Daugavgrivas Sala (Ostrov Daugavgriva) (57˚02'N., 24˚00'E.), an island, lies between the mouth of the river Lielupe and the mouth of the river Daugava.

Bulluciems Light (57˚00'N., 23˚53'E.) is shown from a prominent pyramid structure, 28m high, standing close to the shore, 1.7 miles W of the W end of Daugavgrivas Sala.

Tides—Currents.—On the W side of the gulf between Kolkasrags and the mouth of the Daugava, the currents set according to the direction and force of the wind. They usually attain rates of 0.5 to 1 knot.

Anchorage.—Vessels can obtain anchorage, with offshore winds, in depths up to 27m, off any part of the coast extending between Kolkasrags and the mouth of the river Daugava. However, the most used roadstead lies about 2 miles S of Kolkasrags.

Riga (56˚57'N., 24˚06'E.)

World Port Index No. 28610

10.22 Riga is situated on the S coast of the Gulf of Riga and about 7 miles above the mouth of the river Daugava. The city stands on both banks of the river and is the capital of Latvia. The port consists of facilities extending along the banks of the river between the entrance and the city.

Winds—Weather.—Fog is prevalent from September to April.

Ice.—Entry to the port depends almost entirely on when Irbeni Vain becomes icebound, which in turn depends on the direction of the wind. Winds from the N drive the ice into the strait and winds from the S drive it away. Ice conditions usually last from the end of January to the beginning of April. However, in most years, powerful icebreakers keep the port open throughout the winter.

Vessels bound for Riga and requiring icebreaker assistance should inform the harbor authorities at least 48 hours before arrival at the ice limit. Such vessels should state in the message their loading level, draft, ice class, details of any rescue equipment, details of any ice damage, and amounts of fresh water and fuel remaining on reaching the ice limit.

Tides—Currents.—The tides are negligible. The water level varies with the wind direction. Winds from the W may cause a rise in the water level of up to 2m. Winds from the E may cause a fall of up to 1.1m. Spring thaws are reported to sometimes raise the water level by as much as 3m.

The currents in the river Daugava attain rates of 1 to 2 knots. In the spring, a current sets across the bar, in a NW direction, at rates of up to 3 knots. However, this same current is weak in the summer. In the channel leading over the bar, a current, caused by W or NW winds, usually sets SE at a rate of 0.3 knot. Winds from the E may cause this current to set W at a rate of 1 knot.

Depths—Limitations.—The river bar, with depths of less than 10, extends up to about 1.5 miles from the port entrance. A safety fairway and an entrance channel, 100m wide, lead SE over the bar and into the harbor. They were reported (2000) to have a least depth of 13.3m as far as a point lying 2.5 miles inside the harbor entrance.

The main facilities include a container terminal, with 450m of berthage, which can handle vessels up to 10m draft; a passenger terminal, with 217m of berthage, which can handle vessels up to 8m draft; a gas terminal, with 145m of berthage, which can accommodate vessels up to 6.6m draft; and the Eksportosa riverside terminal, with 240m of berthage, which can accommodate vessels up to 10m draft. The shipyard provides 500m of berthage and can accommodate vessels up to 8m draft.

The port provides over 7,000m of commercial quayage along the river with facilities for general cargo, bulk, tanker, chemical, gas, ro-ro, passenger, and container vessels. In addition, there are extensive facilities for repairs, with six floating docks and two slipways. The largest floating dry dock is 225m long and 45m wide. It can accommodate vessels up to 8m draft.

Vessels up to 195m in length can enter the harbor with drafts up to 10.2m. Those vessels not exceeding 185m in length can enter with drafts up to 10.6m. An underkeel clearance of 0.45m is recommended for entry. Vessels up to 240m in length, 35m beam, and 9m draft have been accommodated in the port.

An overhead cable, with a vertical clearance of 52m, spans the harbor channel, 4 miles above the river mouth.

Aspect.—The entrance of the river Daugava lies between two breakwaters. One extends in a NW direction from the NE extremity of the island of Daugavgrivas Sala and the other extends in a NW direction from the W extremity of the island of Mangalsala. The town of Daugavgriva is situated 1.5 miles S of the river mouth. A prominent fort stands close NE of Daugavgriva and the town of Bolderaya is situated close SE of it. The river Daugava flows through a valley which consists of meadows and swamps, interspersed with sand hills. Numerous low islands and sandbanks lie in the river and are partly covered with grass. These islands and banks, along with the

Daugavgriva Main Light

Approaches to Riga

low sides of the river, are usually inundated when the ice melts in the spring.

Several towers, chimneys, and masts are situated in the vicinity of Riga and are conspicuous.

A main light (Daugavgrivas) is shown from a conspicuous tower, 35m high, standing at the root of the S breakwater. A racon is situated at this light.

Outer Approach Lighted Buoy B is moored about 4 miles NW of the main light. The safety fairway and entrance channel are marked by lighted buoys and indicated by lighted ranges.

Pilotage.—Pilotage is compulsory. Vessels should send requests for pilotage 24 hours and 4 hours in advance. Pilots can be contacted by VHF and board in the vicinity of Outer Approach Lighted Buoy B. In adverse weather conditions, vessels should use VTS assistance and proceed to the inner roads where the pilot will board.

Regulations.—A mandatory Vessel Traffic Service (VTS) system operates in the approaches to the port. It covers all waters of the port and all waters lying within a radius of 10 miles (sector 270˚-020˚) of the main harbor light.

All vessels must send an ETA at Outer Approach Lighted Buoy B 24 hours and 4 hours in advance. The message should include the following information:

1. Name of vessel.

2. Type of vessel.
3. Nationality.
4. Length.
5. Beam.
6. Draft and air draft.
7. Tonnage.
8. Agent.
9. ETA.
10. Berth.
11. Purpose of visit.

Tankers must also declare their previous cargo.

Vessels must establish contact with the VTS (Riga Traffic Control) on VHF channel 16 or 9, 4 hours prior to and upon arrival at Reporting Point R (57˚13.7'N., 23˚44.2'E.). Vessels should then maintain a continuous listening watch on VHF channel 9.

The movements of all vessels within the harbor area are controlled by the VTS system. Vessels must receive permission from the Traffic Control Center via VHF before moving within the harbor. This permission must be renewed after 30 minutes if the movement has not taken place.

During the period of December to March when Irbeni Vain and the Gulf of Riga are frozen over, vessels should send a report to arrange ice-breaking service at least 24 hours before passing the meridian of Irbe Strait Light. The report should be sent to the Harbormaster and to the Captain of the ice-breaker "Varma" directly or through the agent. The report should include the following:

1. Name of vessel.
2. Nationality/Flag.
3. Call sign.
4. Ice classification.
5. Length and beam.
6. Draft.
7. Tonnage.
8. Main engine capacity.
9. Type and quantity of cargo.
10. ETA at the meridian of Irbe Strait Light.

Signals.—A signal station tower is situated close to the main light at the root of the S breakwater. A visual time signal is made once daily at this station.

When the entrance of the river is dangerous because of ice, an additional red flashing light is exhibited from the main light structure. If entry becomes impossible, the entrance fairway range lights are extinguished.

Anchorage.—An outer designated anchorage area, which may best be seen on the chart, lies centered 6 miles NW of the main light. It lies SW of the approach route and has a least depth of 27m over a bottom of sand and mud. The roadstead is open to winds from SW through N to NE and, despite its moderate depth and good holding ground, is dangerous during such conditions, especially in the autumn when these winds prevail. During N gales, a heavy sea is usually formed in the roadstead and vessels should leave in good time if a gale is expected from that quarter. The most frequent strong winds are reported to blow from the SW and raise little sea.

Caution.—It is reported that the outer approach lighted buoy is likely to drag from its charted position during or after stormy weather.

A spoil ground area, which may best be seen on the chart, lies about 4 miles NNW of the port entrance.

The approach safety fairway and entrance channel are subject to frequent silting, particularly after storms. The authorities should be contacted for information concerning the latest depths and draft limitations.

Gulf of Riga—East Side

10.23 From the mouth of the river Daugava, the coast extends 16 miles NE and then 56 miles N to Pikla Nina. The shore is low, mainly sandy, and backed by sand dunes which are wooded in places. A few low cliffs stand to the S of the town of Salacgriva (57˚45'N., 24˚21'E.). Several churches stand in the villages, which are situated along this section of the coast, and form good landmarks.

Directions.—From the vicinity of the outer approach lighted buoy, moored about 4 miles NW of Riga, the recommended route, which may best be seen on the chart, leads N for 37 miles to a position located W of Salacgriva (57˚45'N., 24˚21'E.). From this position, one route leads NNE to Parnu and another route leads NNW to the passage of Vainameri.

Caution.—Several dangerous wrecks lie within 5 miles of the coast between Riga and Ladin'i Beacon and may best be seen on the chart.

A triangular-shaped area, within which navigation is temporary prohibited, extends up to about 10 miles NE from the vicinity of Ladin'i Beacon and may best be seen on the chart.

Fishing nets are laid within 3 miles of the coast between the entrance to the river Daugava and Parnu, 80 miles N. Caution should be exercised when navigating in this area.

Buoys moored in the vicinity of any of the off-shore dangers lying along this stretch of coast are liable to drag and no reliance should be placed on them.

10.24 Ladin'i Beacon (57˚12'N., 24˚21'E.), a former light tower, stands near the shore, 13 miles NE of Riga. It consists of a conspicuous framework tower, 23m high.

Skultes Osta, a small harbor, is located 7.5 miles NNE of Ladin'i Beacon and is used by fishing vessels. The entrance is 70m wide and has a depth of 4m.

Laci Light (57˚27'N., 24˚23'E.) is shown from a prominent framework tower, 23m high, standing 15 miles N of Ladin'i Beacon. A conspicuous tall chimney is reported to stand at a brickworks 2.3 miles N of this light.

Grintals Light (57˚38'N., 24˚23'E.) is shown from a prominent framework tower, 21m high, standing 11.7 miles N of Laci Light.

Salacgriva (57˚45'N., 24˚21'E.), a small town, is situated at the mouth of a river, 7.5 miles N of Grintals Light. An Orthodox church, a red structure, and a Lutheran church, white with a green spire, stand in the town and are very conspicuous. A prominent chimney stands at a sawmill in the old part of the town.

A small harbor, with depths of 4 to 5m alongside the piers, fronts the town. The approach channel has a least depth of 5.5m and its entrance is marked by a lighted buoy, moored about 2 miles WSW of the harbor. The fairway is indicated by a lighted range. A prominent beacon, a former light tower,

stands on the N side of the entrance and is 9m high. Vessels up to 115m in length and 4m can be accommodated.

Vessels may obtain anchorage, in depths of 6 to 7m, rock, about 2 miles W or 3 miles SW of the harbor.

Talais Seklis (57˚49'N., 24˚13'E.), a shoal with a least depth of 6.8m, lies about 4.2 miles offshore, 5.7 miles NW of Salacgriva. This shoal is the outermost danger in this vicinity.

Ainazi Light (57˚52'N., 24˚22'E.) is shown from a prominent tower, 18m high, standing near the small coastal town of the same name, 7 miles N of Salacgriva. A prominent church, without a spire, stands in this town and a distinctive white church, with a black roof, is situated in the village of Treimani, 3 miles NNE. A small and shallow harbor fronts the town.

The boundary between Latvia and Estonia lies about 0.6 mile N of this light.

Pikola Seklis, an isolated shoal patch, lies about 4.2 miles NW of Ainazi Light and has a least depth of 6m. It lies outside the 10m curve.

Haademeeste (58˚05'N., 24˚30'E.), a small town, is situated 13 miles NNE of Ainazi Light. Two conspicuous churches stand in this vicinity. One is situated near the coast and is a white building with a black roof and a black cupola. The other is situated 0.5 mile farther NE and is a red building with a green spire. A light is shown from a prominent framework tower, 28m high, standing close SW of the town.

Pihinurme Maed, a group of prominent sandhills, rises to a height of 46m and stands about 3.5 miles N of this town.

Bostri Madalik (Kiire Madal) (58˚01'N., 24˚20'E.), a rocky shoal, lies about 6.5 miles SW of Haademeeste Light and has a least depth of 5m. An isolated shoal patch, with a depth of 9.8m, lies 4 miles N of this rocky shoal.

Pihinurme Madalik, a reef with a least depth of 3.6m, lies about 2 miles offshore, 4.5 miles NNW of Haademeeste Light.

10.25 Parnu Laht (58˚15'N., 24˚23'E.) lies at the NE end of the Gulf of Riga and is entered between Pikla Nina (58˚15'N., 24˚28'E.), located 10.5 miles N of Haademeeste, and Sorgu Saar, a small island lying 8 miles W. The shores at the entrance to the bay are indented and rocky, but become regular and sandy to the N. The entire coastal terrain is low and wooded. There are depths of 9 to 12m in the entrance to the bay and a depth of 7m in the middle; the bottom is mainly sandy. The bay is sheltered from all winds, except those from between S and SW, and provides good anchorage.

The E shore of the bay to the N of Pikla Nina is fronted by shoals and reefs which extend up to 2 miles seaward. Several conspicuous churches stand along the stretch of shore extending between Pikla Nina and Parnu.

Irmgardi Madalik, a detached shoal patch, lies about 4 miles NW of Pikla Nina and has a least depth of 4.6m.

The SSW part of the W shore of the bay is fronted by the islands of Kihnu Saar, Sorgu Saar, and Manilaid.

Kihnu Saar (58˚08'N., 24˚00'E.), the southwesternmost of the islands, lies about 6 miles S of the mainland and 16 miles W of Haademeeste. It is low and wooded. A church, with a dark spire, stands in the middle of the island and is conspicuous from the SW and W. A large house, with a red roof, is situated close S of this church. A main light is shown from a prominent tower, 32m high, standing on Mys Pikkana, the S extremity of the island.

A foul area, with several above and below-water rocks, extends up to about 2 miles ESE from the SE side of the island and is marked close E by a buoy. A dangerous wreck lies about 3.2 miles SE of Kilnu Saar Light. Foul ground areas, marked by buoys, extend about 2.5 miles N and 7.5 miles NW from Pilli Ots, the N extremity of the island.

Kihnu Krunt (Kihnu Madal), an extensive shoal, extends SSW for 3 miles and its N end lies about 2.5 miles SSW of Kihnu Saar Light. This shoal has a least depth of 1.8m and is marked by a lighted buoy, at the S end, and a buoy, at the N end.

A dangerous shallow wreck lies on a shoal area, with a least depth of 8.6m, centered about 9 miles W of Kilnu Saar Light.

Sorgu Saar (58˚11'N., 24˚12'E.), lying 6 miles ENE of the NE end of Kihnu Saar, is a small and low island. It is covered with bushes and fringed by rocks. A foul ground area extends up to about 3 miles S of the island. A light is shown from a prominent tower, 16m high, standing on this island.

A dangerous wreck, marked by a lighted buoy, lies about 3.5 miles SSE of the light.

Manilaid (58˚13'N., 24˚08'E.) is an island, 5m high, lying 3 miles NW of Sorgu Saar. It is covered with grass and bushes. The island is surrounded by foul ground and separated from the mainland to the N by a shallow channel, about 0.5 mile wide. A light is shown from a prominent tower, 8m high, standing on the S extremity.

Kiriku Nina (Kiriku Nukk) (58˚17'N., 24˚17'E.), a salient point, is located on the mainland, 4.5 miles ENE of the N end of Manilaid. A light is shown from a prominent framework tower, 28m high standing on this point.

A shallow reef extends up to about 0.6 mile S and 0.3 mile E of Kirku Light. The shore extending N from this light to the head of the bay is low and marshy. Several rivers flow into Parnu Laht and form flats, with depths of less than 5m, which extend up to 3 miles offshore. Several above and below-water rocks lie on these flats between Manilaid and Kiriku Nina.

Caution.—Fishing areas, which may best be seen on the chart, lie within Parnu Laht and the approaches. Vessels not engaged in fishing are prohibited from navigating in these areas.

10.26 Parnu (54˚23'N., 24˚30'E.) (World Port Index No. 28550) lies at the head of Parnu Laht and at the mouth of the Parnu Jogi river. The town, a resort, stands on the S bank of the river. The harbor is used by commercial vesserls and is a coastal fishing center.

Winds—Weather.—The harbor is well sheltered, except from winds from between S and SW which send in a heavy sea.

Ice.—The harbor is usually closed by ice from November to April. The bay usually becomes closed by ice 7 days and free from ice 11 days later than the river. The later thawing in the bay and roadstead causes blockages in the entrance of the harbor when the ice in the river begins to move. At such times, the water level in the river may be raised by up to 3.7m. In

addition, the low-lying areas in the vicinity of the river are flooded and ice floes may be carried out to sea over the breakwaters. In the autumn, the river often freezes over so quickly that vessels are compelled to depart prematurely.

Tides—Currents.—The numerous bends in the river cause varying currents to set between the low embankments. Winds from the SW usually raise the water level 0.6 to 0.9m above the mean level. Winds from the NE usually lower the level at least 0.3m. During spring thaws, the river may flood part of the port area.

Depths—Limitations.—The recommended approach route leads NNE to the vicinity of the outer fairway buoy. A dredged entrance channel then leads NE over the bar and between the breakwaters. It has a least depth of 5m and a least bottom width of 53m.

The harbor has depths of 3.7 to 6m and the bottom consists of clay, with gravel in places, covered by sand. The quays extending along the SE bank of the river have depths of 4.1 to 5.5m alongside. Vessels up to 122m in length and 4.8m draft can be accommodated.

Aspect.—The approach track and entrance channel are indicated by lighted ranges. An outer fairway lighted buoy is moored about 0.8 mile SW of the breakwater heads.

A large stone mill, conspicuous from seaward, is situated at Pootsi on the W side of the bay, 4.7 miles W of Kiriku Nina. A prominent church stands at Saare, 3.2 miles WNW of Kiriku Nina. A conspicuous chimney and a large light-colored building stand near Kiriku Nina. Another prominent church stands at Audru, 8 miles NNE of Kiriku Nina.

Several conspicuous buildings and churches are situated in Parnu; in particular a white church, with a red roof and a red spire, and a church, with a white spire, situated 0.3 mile E of it.

Pilotage.—Pilotage is compulsory for all foreign vessels. Pilots can be contacted by VHF and usually board in the roadstead about 2.5 miles SW of the breakwater heads.

Pilotage must be requested through the agent in the port. Vessels must send an ETA message and request for pilotage 24 hours and 12 hours in advance. The message should state the vessel’s name, flag, length, and draft. Vessels should then contact the port 1 hour before arrival.

Regulations.—All vessel movements, both in the harbor and in the approaches, are controlled by the harbor authorities. Navigation in the entrance channel is allowed by day and at night, but only in one direction at a time; priority is given to departing vessels.

Anchorage.—A designated anchorage area, which may best be seen on the chart, lies centered 4.5 miles SSW of the breakwater heads, on the E side of the fairway. Large vessels can obtain anchorage, in depths of 5 to 9m, sand and mud with good holding ground, in the middle of the bay, but they should remain clear of the prohibited fishing areas.

Caution.—Erosion of the river banks often leads to a buildup of sand in the entrance and outer fairway, especially during the spring. The entrance channel is subject to frequent silting and the authorities should be contacted for information concerning the latest depths.

Nets are set out in the fishing areas within the approaches to Parnu. Vessels are advised to use care when transiting this area.

Gulf of Riga—Northeast Side

10.27 The NE coast of the gulf between Torila Ots (Munalaid), located 5.3 miles SW of Kiriku Nina, and Someri Poolsar, 13 miles WNW, is low, marshy, and covered by shrubs in a few places. Wooded hills rise parallel to the coast, between 1 and 3 miles inland. An area of elevated ground, 28m high, stands 8.5 miles NW of Torila Ots and is prominent from seaward. At Vaiste, 3.5 miles E of Someri poolsar, the land attains a height of 35m.

Numerous villages stand along this stretch of coast and a church situated at Tostamaa, 7 miles NNW of Torila Ots, is a good landmark.

Someri Poolsar (58˚20'N., 23˚46'E.) is low and covered with grass and several bushes. A light is shown from a prominent tower, 20m high, standing on the NW extremity of this headland. A prominent hill, 40m high, rises 8.7 miles NE of the light.

Several shoals, with depths of 2 to 3m, extend up to about 7 miles SSE of Someri Poolsar Light and are marked by buoys.

The coast extending between Someri Poolsar and Puvarootsi (58˚33'N., 23˚37'E.), 13.5 miles NNW, is rocky with steep bluffs. A ridge, which rises to a height of 35m, runs parallel to the coast in this vicinity, between 1 and 3 miles inland. Woods are located some distance inland and clumps of trees extend to the coast, in places. Numerous villages are situated along this stretch of coast and the shore is fronted by foul ground and several islets.

Larinimadalik (58˚24'N., 23˚38'E.), a reef with a least depth of 3.4m, is one of the outermost dangers lying on the edge of the coastal shoalbank. It lies 2.5 miles offshore, 4.5 miles NW of Someri Poolsar. Afanasjevimadalik, an isolated shoal, lies about 2 miles W of Larinimadalik and has a least depth of 7.6m.

A hill, 31m high, rises 1.5 miles inland, 5 miles N of Someri Poolsar. It is surmounted by the prominent buildings of the estate of Vana-Vargla and a clump of trees. A prominent windmill stands on a hill which rises near Paatsalu, a village, situated 11 miles N of Someri Poolsar.

Selglaid, marked by a light at its W end, lies 7.4 miles NW of Someri Poolsar. It is the largest of a group of islets lying on the coastal bank. The ruins of an old stone mill stand on the mainland about 2 miles E of this islet and are conspicuous from seaward.

Virtsu Light (58˚34'N., 23˚30'E.) is shown from a prominent square tower, 18m high, standing on the SW side of a peninsula, 15 miles NW of Someri Poolsar Light. This light marks the SE entrance point of Vainameri.

Gulf of Riga—Northwest Side

10.28 The NW side of the Gulf of Riga is formed by the E side of Sorve Poolsar and the SE side of Saaremma.

Kaavi Nina Light (57˚59'N., 22˚12'E.) is shown from a prominent square tower, 15m high, standing on a low point, 6.3 miles NE of Sorve Saar Light. A rocky shoal patch, with a least depth of 2.8m, lies about 1.5 miles SSE of the light and is marked by a buoy.

Montu, a small harbor, is located 3 miles SW of Kaavi Nina Light. It is formed by a mole, about 250m long, which extends

E and NE from the coast. Small vessels can berth alongside the seaward side of the mole, which has a depth of 4.6m at the outer end. The approach channel leading to the harbor has a depth of 3.8m. Several conspicuous white buildings stand near the village.

Ansekula (58˚06'N., 22˚14'E.), located 6 miles NE of Kaavi Nina Light, is the N end of a prominent row of densely wooded hills which extend from the vicinity of Montu. A light is shown from a prominent tower, 22m high, standing 1 mile NNW of Ansekula. A detached shoal, with rocks awash, lies about 4 miles SE of the light and is marked by a buoy.

Suur Katel (58˚10'N., 22˚23'E.), a bay, is entered between Ansekula and Vahase Saar, 7 miles ENE. It is used as a loading place by vessels whose drafts do not permit them to enter the harbors at Kuressaare or Roomassaar. The approaches to the bay are fronted by several islets and dangers which may best be seen on the chart. Local knowledge is required.

Kingissepp, the principal town of the area, is situated at the head of this bay. The conspicuous ruins of a medieval castle stand in the middle of this town.

Roomassaar (58˚13'N., 22˚31'E.) lies at the S end of a peninsula in the NE corner of the bay. The approach channel, 85m wide, leads NE and has a depth of 6m. The harbor has two main quays, 125m and 100m long, with a depth of 5.4m alongside. Kuressaare (58˚15'N., 22˚29'E.), a shallow harbor, lies at the NE head of the bay.

It is reported that Suur Katel is usually closed by ice from the end of December to the beginning of March.

Abruka Saar (58˚10'N., 22˚31'E.) is low, sandy, and surrounded by rocks. Its highest and central part is covered with tall trees. This island is surrounded by foul ground and shallow shoals, islets, and rocks extend up to about 4.5 miles SE and E of it. A main light is shown from a prominent tower, 36m high, standing in the NE part of the island.

Veiserahu, an extensive rocky ridge, has a least depth of 1.8m and lies about 7.5 miles SSW of the S extremity of Abruka Saaar. This shoal is marked on its S side by a lighted buoy and on its N side by a buoy.

10.29 Vetela Nina (58˚13'N., 22˚43'E.) is the S extremity of Vatta Poolsaar, a mainland peninsula located 8 miles NE of Abruka Saar. The coast extending between this point and Kubassaar, 23 miles NE, is mostly low and only attains a height of 12m. A few villages and several woods lie along the shore. Prominent churches are situated at Kahtla, 14 miles NE of Vetela Nina, and Poide, 9.5 miles NW of Kubassaar. A conspicuous church, with two domes, stands at Uuemoisa, 2.3 miles E of Poide.

Allirahu (Vetala) (58˚10'N., 22˚48'E.) is a low and barren islet lying 4 miles SE miles of Vetela Nina. A light is shown from a column, 8m high, standing on the NW part of this islet.

Sutu Laht (Vetella Laht) (58˚16'N., 22˚45'E.) is entered between Vetela Nina and Saaretukk, a low and rocky point, 4.5 miles NE. The shores of the bay are fairly steep and sandy. Sheltered anchorage, except with winds from between E and SE, may be obtained, in depths of 5 to 11m, sand, between 1 and 2.5 miles from the head of this bay.

A light is shown from a prominent square tower, 15m high, standing on Saaretukk. A shoal patch, with a least depth of 5m, lies about l.5 miles S of the light.

Allirahu (Koiguste) (58˚18'N., 22˚59'E.), a small islet, lies 1.5 miles offshore, 5.2 miles NE of Saaretukk Light. This islet should not be confused with the islet of the same name located 10 miles SW. It is rocky and covered with grass. A light is shown from a prominent framework tower, 16m high, standing on this islet.

Kubassaar (58˚27'N., 23˚19'E.) is a wooded peninsula. Its shoreline is rugged and covered by reeds in places. The E side is steep, in places, and only 2 to 3m high. A main light is shown from a prominent tower, 17m high, standing on the S part of this peninsula.

From a distance of about 10 miles, the S extremity of this peninsula, which is surmounted by tall trees, appears as an island. An above-water reef lies about 1 mile SSE of Kubassaar. This reef is located on a rocky shoal ridge which extends up to about 3 miles S and 2 miles SE of the light.

Udriku Laid (Udriklaid) (58˚26'N., 23˚17'E.), a low and grassy island, lies close W of the S end of Kubassaar and is surmounted by a few buildings.

Muhu (58˚36'N., 23˚16'E.) lies centered 10 miles N of Kubassaar. This large island is 24m high and partly wooded. Its N side is cliffy. A causeway connects the SW side of the island to the mainland.

Viirelaid Light (58˚33'N., 23˚27'E.) is shown from a prominent tower, 11m high, standing on the E side of an islet of the same name lying close off the SE end of Muhu.

10.30 Vainameri (58˚50'N., 23˚15'E.) is the sound which connects the Gulf of Riga to the Gulf of Finland via Viirekulk and Harikurk. Viirekulk (Suur Vain) is the strait located in the S part of the sound lying between Viirelaid and Virtsu Light. Harikurk is the strait located in the N part of the sound lying between the E side of Hiiumaa and the W side of the island of Vormsi (59˚00'N., 23˚14'E.).

This sound is bounded, on the N side, by a line extending between Tahkuna Nina Light (59˚05'N., 22˚36'E.) and Osmussaar Island (59˚18'N., 23˚22'E.) and, on the S side, by a line extending E from Kubassaar Light (58˚26'N., 23˚19'E.). The N end of the sound is encumbered with numerous dangers which may best be seen on the chart.

Voosikurk, a narrow channel, leads to Haapsulu. It passes between the E side of Vormsi and the W side of Noarootsi, a peninsula located on the mainland. This channel should not be used without local knowledge. An overead cable, with an unknown vertical clearance, is reported to span this channel.

Poosaspea Light (59˚14'N., 23˚31'E.) is shown from a prominent framework tower, 16m high, standing on a densely wooded promontory, 15 miles NNE of Vormsi Island. Several conspicuous windmills are situated on a ridge at the E side of this promomtory.

Osmussaar Island (59˚18'N., 23˚22'E.), marked by a light, lies 6 miles NW of Poosaspea Light.

Depths—Limitations.—Although there are depths of 9 to 14m in Harikurk and 11 to 20m in Viirekulk, the passage from the Gulf of Finland to the Gulf of Riga, and vice versa, is controlled by the depths in the channel leading through the

central part of the sound. This latter part of the channel is narrow and has a least depth of only 4.7m.

Pilotage.—Pilotage is compulsory within the sound. Pilots can be contacted by VHF and generally board vessels, approaching from the N, at Lehima (59˚08'N., 22˚57'E.) and, approaching from the S, at Virtsu (58˚31'N., 23˚30'E.). Pilotage must be requested 48 hours and 24 hours in advance through the radio station at Tallinn. It is reported that pilots will also board vessels about 1.2 miles NW of Poosaspea Light, within the inshore passage lying SE of Osmussaar Island.

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

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