

SECTOR 6

BELGIUM AND THE NETHERLANDS—NIEUWPOORT TO WESTKAPELLE (INCLUDING THE SCHELDE)

Plan.—This sector describes the coasts of Belgium and the Netherlands, from the French frontier to Westkapelle, the W extremity of Walcheren. It includes the extensive Flanders Banks and the other detached offshore banks which lie in the W and N approaches to these coasts and the Westerschelde. This sector also describes the Schelde as far SE as the ports of Antwerpen and Bruxelles. The descriptive sequence is NE along the coastal area and then SE into the Schelde and towards its head.

General Remarks

6.1 The S shore of the North Sea described within this sector consists of the coast of Belgium and that part of the Netherlands coast which borders the approaches to the Westerschelde and the Schelde.

The Belgian coast extends for 36 miles between the French frontier and the Netherlands boundary, the latter situated 6 miles W of the mouth of the Westerschelde. The entire area is fronted by an extensive series of shoal banks, both detached and contiguous to the shore.

The shoals lying on the coastal bank are known as Flanders Banks, which in their entirety also encompass the shoals off the French coast between Calais and the Franco-Belgian boundary.

The coast of Belgium is low and formed of sand dunes near the shore. Except for the conspicuous landmarks situated in the vicinity of the harbors and sea resorts, the coast affords few identifiable features.

Nieuwpoort, Oostende, and Zeebrugge are the main ports situated along the Belgian coast. In addition, the port of Brugge is accessible through a canal which is entered within Zeebrugge.

These main ports can be approached through channels, which lie between the various shoals on Flanders Banks, and by a coastal route which leads from Dunkerque. However, the principal approach is through the channel which leads between Flanders Banks and the other off-lying banks.

Westerschelde, the name given to the W part of the Schelde, can be approached through three main channels which lead between the off-lying banks. Schuer, the principal deep-water approach channel, leads E from the Wandelaar Pilot Station; Wielingen, the southernmost channel, leads close to the coast, E of Zeebrugge; and Oostgat, the approach channel from the N, lies close to the SW side of Walcheren. Deurloo, a secondary channel, is available to small vessels and leads over the shoals which lie between the other two channels. It joins Oostgat near the S end of Walcheren.

The Schelde, which forms the approach from the North Sea to the Netherlands ports of Vlissingen (Flushing) and Terneuzen, extends SE to the Belgian ports of Antwerpen and Bruxelles. The W part of the Schelde, which passes through Netherlands territory, is known as the Westerschelde.

Winds—Weather.—Fog may be encountered along this stretch of coast during practically any month of the year, but it shows considerable variations from place to place. August and September are months of comparatively little fog. The maximum density occurs, both offshore and in the coastal areas, during January to June.

At Oostende, fog is most frequent (4 to 7 days per month) from October to February and less frequent (1 day or less per month) from May to July.

At Vlissingen, fog is most frequent (4 to 6 days per month) from October to March and less frequent (2 days per month) from June to August.

Signals.—International traffic signals, which are displayed at the majority of ports described within this sector, are, as follows:

1. Three red lights, vertically disposed—Vessels shall not proceed.
2. Three red flashing lights, vertically disposed—There is an emergency and all vessels must stop or divert according to instructions.
3. Three green lights, vertically disposed—Vessels may proceed in one-way traffic.
4. Three lights, vertically disposed, with the two upper lights being green and the lower one being white—Vessels may proceed in two-way traffic.
5. Three lights, vertically disposed, with the upper and lower lights being green and the center light being white—Vessels may proceed only when they have obtained specific instructions to do so.

Caution.—Ferries, jetfoils, hovercraft, and high-speed catamarans may be encountered within the waters described in this sector.

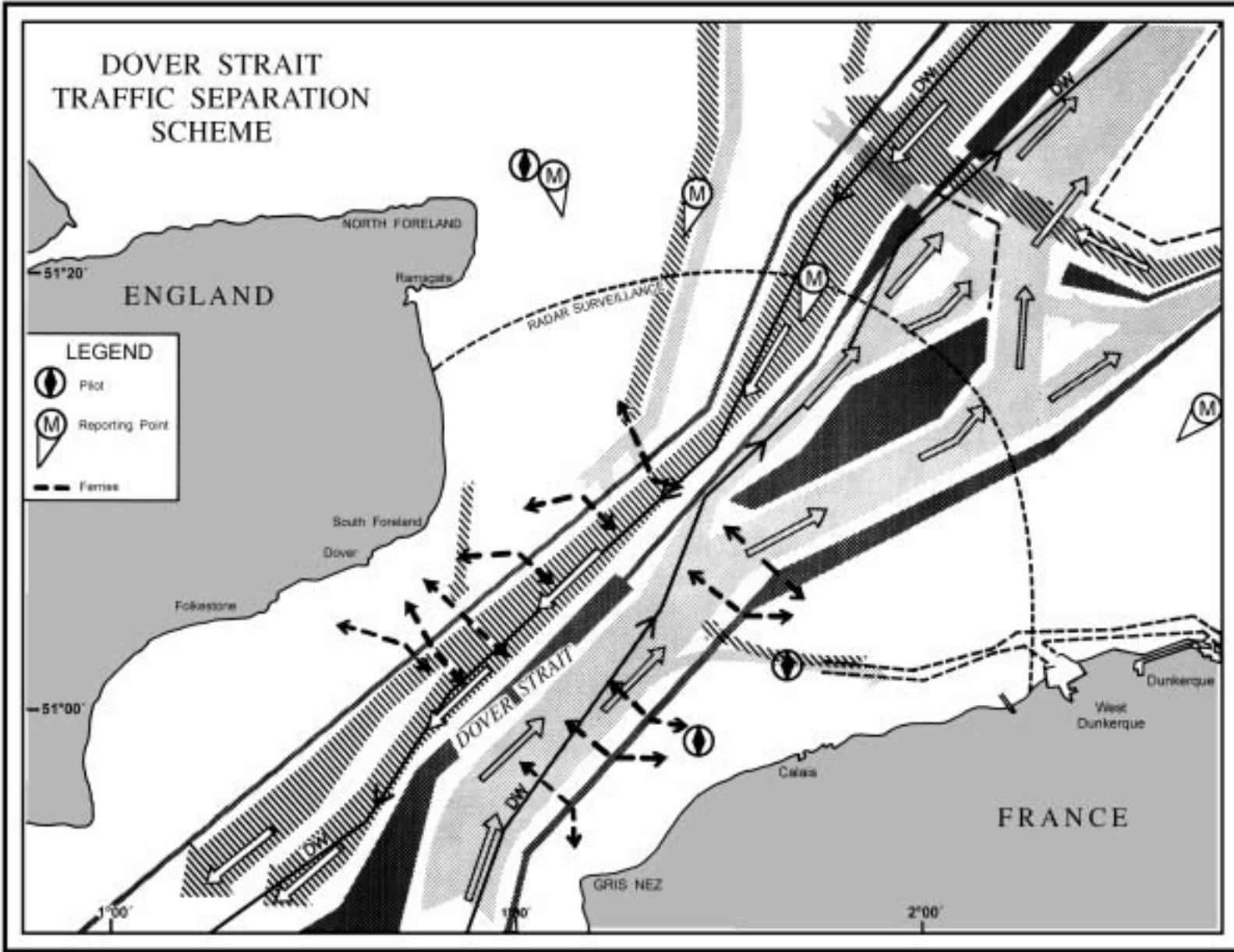
Numerous submarine cables lie in the vicinity of the coast and off-lying banks; they may best be seen on the chart.

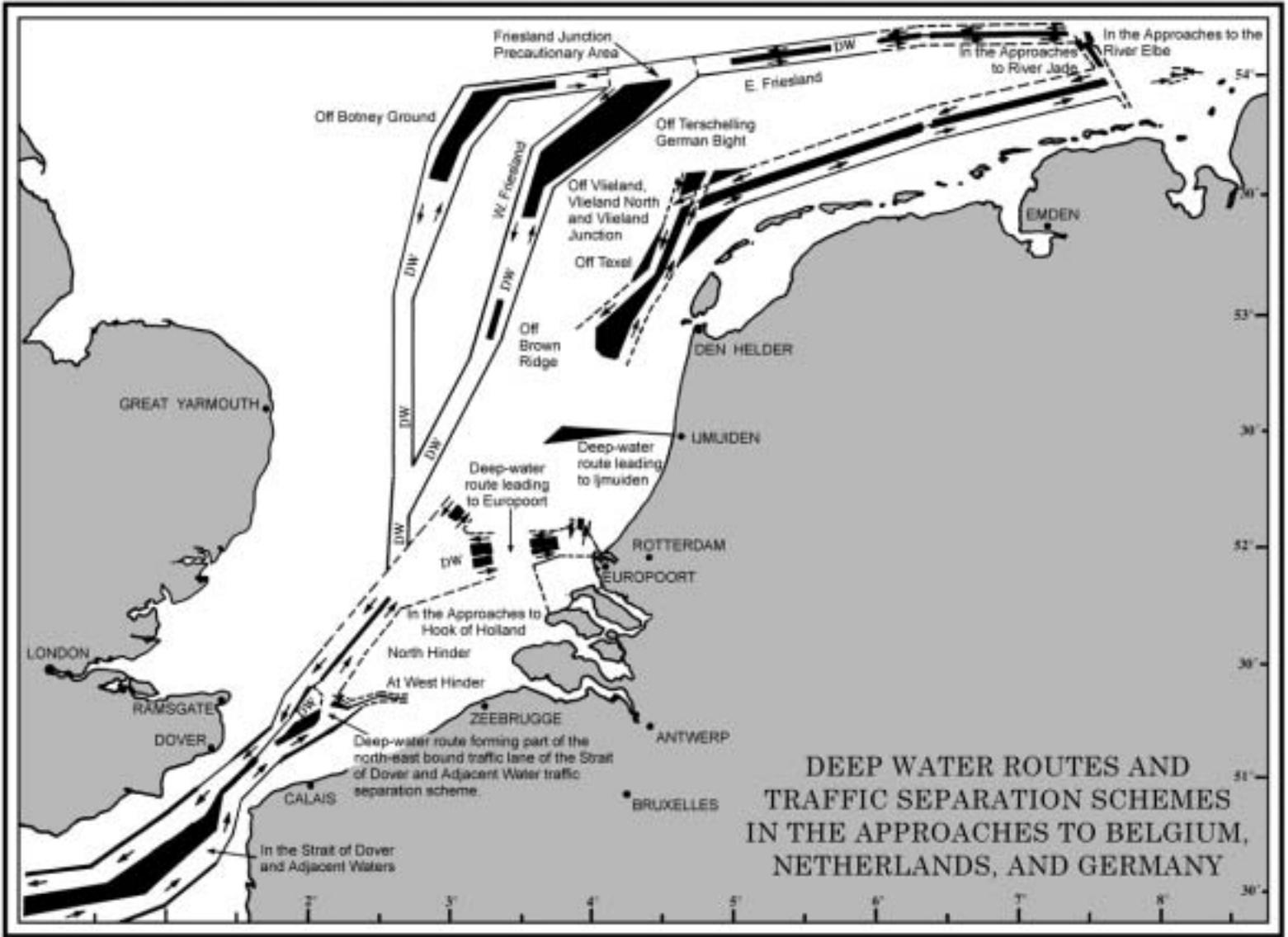
Several gas pipelines lie in the vicinity of the coast and off-lying banks and may best be seen on the chart.

Belgian fishing vessels, when fishing for sprat, make use of a trawl net which is towed between two vessels up to 120m apart. These vessels by day fly International Code Flag D and by night direct searchlights so that the beams cross each other ahead, astern, or between both vessels. In the event of an emergency to warn approaching ships, the light beams may be quickly swept horizontally.

Numerous wrecks, some dangerous, lie off this coast and may best be seen on the chart.

A dangerous wreck (M/V Tricolor) is reported to lie about 1.5 miles NE of Hinder 1 Lighted Buoy (51°21'N., 2°11'E.), in the mouth of the westbound lane of the West Hinder TSS. The wreck, which is the subject of ongoing salvage operations, uncovers at times and is marked by lighted buoys. Vessels should use extreme caution when navigating in this vicinity.





Off-lying Banks and Navigational Aids

6.2 Several detached shoal banks, which are long and narrow, lie offshore and are of concern to vessels bound for ports in the SE part of the North Sea. These include Fairy Bank, West Hinder Bank, East Hinder Bank, North Hinder Bank, Bligh Bank, Thornton Bank, and Rabs Bank. In addition, several unnamed banks lie in this same offshore vicinity. The above banks and the principal passages leading between them are marked by lighted buoys and lighted beacons, which may best be seen on the chart.

For offshore banks and shoals, which form Flanders Banks, lying SW of the above named shoals, see Pub. 191, Sailing Directions (Enroute) English Channel (Sector 6).

Fairy Bank (51°24'N., 2°20'E.) extends NE for 9 miles and has a least depth of 5.5m near its center. A similar bank, with a least depth of 8.5m, lies close N of Fairy Bank and joins it at the NE end. Another bank, with a least depth of 14.3m, lies 5 miles W of the N end of Fairy Bank.

West Hinder Bank (51°27'N., 2°30'E.) lies about 4.5 miles E of the S end of Fairy Bank and extends NE for 14 miles. An isolated patch, with a depth of 13.4m, lies about 1 mile SSW of the S end of this bank. Depths of less than 5m exist on the N part of this bank and it may be discerned by tide rips.

West Hinder Light (51°23'N., 2°26'E.), equipped with a racon, is shown from a platform, 23m high, standing at the S end of the shoal bank. Strong tidal currents are reported to exist in the vicinity of this light platform.

A narrow bank, with a least depth of 11m, lies between the N part of Fairy Bank and the N part of West Hinder Bank. A similar bank, with a least depth of 10m, lies about 3 miles NE of the S end of West Hinder Bank.

North Hinder Bank (51°37'N., 2°34'E.), a dangerous and narrow sand bank, lies with its S end located about 1 mile WNW of the N extremity of West Hinder Bank. It extends NNE for 7.5 miles and is steep-to with a least depth of 8.2m.

East Hinder Bank (51°33'N., 2°39'E.) lies 3 miles E of North Hinder Bank and has a least depth of 7.3m.

Bligh Bank (51°36'N., 2°46'E.), a narrow sand bank, lies about 3 miles E of East Hinder Bank and has a least depth of 8.8m.

6.3 Thornton Banks (51°35'N., 3°00'E.) lie with their SW end 2 miles SE of the S end of Bligh Bank. They extend NE for 13.5 miles and have a least depth of 4.6m. It is reported that, in clear weather, by day, the W end of Walcheren Island can be seen and, at night, Westkapelle Light is visible from a position at the NE end of these banks.

Goote Bank (51°27'N., 2°50'E.), with a least depth of 10m, lies 3 miles S of the SW end of Thornton Banks and extends for 11 miles. A shoal patch, with a least depth of 12.4m, lies about 1.5 miles SW of the SW end of this bank.

Akkaert Bank (51°23'N., 2°50'E.), with a least depth of 9.4m, lies 3 miles SSE of Goote Bank. A detached shoal, with a least depth of 9.4m, lies about 3 miles E of the center of this bank.

Rabs Bank (51°36'N., 3°08'E.), with a least depth of 7.9m, lies 4 miles NE of the shallowest part of Thornton Banks. Two detached banks, with least depths of about 14m, lie in the

central part of the comparatively deep water located between this bank and Bligh Bank.

Schaar (51°41'N., 3°15'E.) lies about 2 miles NNW of Rabs Bank and has a least depth of about 10m.

Buitenbanken (51°49'N., 3°08'E.) lies with its W part located 6 miles N of Schaar and has a least depth of 12.5.

6.4 Buiten Ratel (51°15'N., 2°32'E.), a bank with depths of 2.7 to 8.9m, lies about 10 miles NW of Nieuwpoort. Binnen Ratel, lying 2 miles SW of this bank, has a least depth of 3.6m.

Kwinte Bank (51°16'N., 2°38'E.) lies 1.5 miles E of the N part of Buiten Ratel and has a least depth of 4.4m. Kwinte, a deep and unmarked passage, leads between this shoal bank and Buiten Ratel.

Middle Kerkebank (51°18'N., 2°44'E.), with a least depth of 4.1m, lies 1.5 to 2 miles E of Kwinte Bank.

Negenvaam (North Channel) (51°16'N., 2°40'E.), a deep passage, lies between Kwinte Bank and Middle Kerkebank.

Oostende Bank (51°18'N., 2°48'E.) extends about 8 miles NE from its junction with the S end of Middle Kerkebank and has very irregular depths. A least depth of 4m lies near its SW end. Ravelingen are shoal patches, with depths of 3.8 to 5m, which lie at the S end of Oostende Bank. It is reported that these patches may change position and depth during N gales which form heavy breaking seas in this vicinity.

Uiydiep (51°17'N., 2°44'E.), a channel, leads between Oostende Bank and Middle Kerkebank.

Wenduine Bank (51°19'N., 2°59'E.), a narrow shoal bank, extends 12 miles ENE from a position 3 miles NNW of Oostende and joins the coastal bank off Blankenberge and Zeebrugge.

Stroom Bank (51°14'N., 2°52'E.), a narrow and ridged sand bank, lies 1.5 miles offshore between Nieuwpoort and Oostende and has depths of 2 to 4m.

Smal Bank and Nieuwpoort Bank lie W of Stroom Bank and inshore of the above-described shoal banks. Several roadsteads lie between these three banks and access may be gained through various channels which may best be seen on the chart.

Westdiep (51°10'N., 2°36'E.) has depths of 5.5 to 14.6m and lies S of Smal Bank and the W end of Nieuwpoort Bank. This roadstead is approached from the N through Noordpas (51°12'N., 2°38'E.), which leads between Smal Bank and Nieuwpoort Bank. It may also be approached from the W through Passe de Zuydcoote.

Grote Rede (51°15'N., 2°51'E.), the outer roadstead off Oostende, has general depths of 5.5 to 11.9m, but is obstructed by several wrecks and shoal areas. This roadstead is connected to Westdiep by Noordostpas, which leads between Nieuwpoort Bank and Stroom Bank. Kleine Rede, the inner roadstead, has general depths of 5.5 to 9.8m and lies W of the entrance to Oostende. It has a least charted depth of 5m.

Wandelaar (51°23'N., 3°03'E.) is an area of irregular depths lying between 4 and 6 miles NW of Blankenberge. Numerous dangerous wrecks lie in this general vicinity.

Bol van Heist (51°23'N., 3°13'E.), an area with depths of 5.4 to 9.4m, lies in the middle of Ribzand, 2.5 miles N of the entrance to Zeebrugge.

Lighted tide gauge platforms designated MOW 0 (51°24'N., 3°03'E.), MOW 1 (51°22'N., 3°07'E.), MOW 2 (51°22'N., 3°17'E.), MOW 3 (51°23'N., 3°12'E.), MOW 4 (51°25'N.,

3°18'E.), and MOW 5 (51°25'N., 3°09'E.) stand in the approaches to Zeebrugge. Racons are situated at MOW 0 platform and MOW 3 platform.

Directions

6.5 Traffic Separation Schemes (TSS) and Deep-Water Routes (IMO-adopted) are situated in the waters of the Dover Strait and North Sea, as depicted on [the graphics in paragraph 6.1](#). The positions of the various schemes and routes, including the relevant navigation aids, may best be seen on the charts.

For regulations and restrictions concerning these schemes and routes, see Pub. 191, *Sailing Directions (Enroute) English Channel (Sector 1 and Sector 6)*.

Deep-Draft Tracks have been established within the Traffic Separation Schemes and Deep-Water Routes mentioned above. The tracks are for the use of large vessels and take advantage of the best water available; however, these tracks are not to be considered recommended tracks as certain portions of each track pass through areas which may be subject to change.

The Mariners Routing Guide, British Admiralty Chart 5500, contains Passage Planning Chartlets which indicate the routes through the English Channel, Dover Strait, and the S part of the North Sea. Information concerning regulations, pilotage, and radio reporting systems is also included.

A recommendation has been adopted by the IMO that all vessels navigating in the vicinity of the English Channel, Dover Strait, and North Sea should have on board the latest edition of Chart 5500 (British Admiralty) or other equivalent guide.

For details of waypoints and under keel clearances concerning the Deep Water Routes within the Dover Strait TSS and Noord Hinder South TSS, see Pub. 191, *Sailing Directions (Enroute) English Channel (Sector 6)*.

The West Hinder TSS extends between position 51°20'N, 2°10'E, located 5 miles WSW of the S end of Fairy Bank, and position 51°22'N, 2°43'E, located 3 miles NNW of the N end of Middle Kerkebank.

This TSS is the principal approach to the main channel which leads to Westerschelde ([see paragraph 6.14](#)). At its W end, the TSS joins those of the North Hinder and Dover Strait. The westbound traffic lane lies to the N of the eastbound lane and an anchorage area is situated to the N of the traffic lanes at the E end of the scheme. Westbound vessels leaving the TSS and crossing the northeastbound traffic lane of the Dover Strait TSS should keep to the NE of the Northeast Limit Line of the Deep-Water Route.

For details of traffic regulations and IMO restrictions concerning the Deep Water Routes and TSS leading N through the North Sea and into the German Bight, see [paragraph 8.4](#) and [paragraph 8.5.](#), as well as the directions under individual Belgian ports.

The French Border to Zeebrugge

6.6 The Belgian coast between the French border and Nieuwpoort, 7.5 miles ENE, consists of a wide belt of sand dunes of moderate height. Several resorts with sea walls and promenades stand along this section of the coast.

De Panne, a coastal resort town, is situated 2 miles ENE of the frontier and has numerous large buildings which stand near the beach. In addition, a prominent water tower stands about 1 mile inland from the town. Koksijde Bad, another resort, is situated about 2 miles farther ENE. A conspicuous steep sand dune, used for tobogganing by vacationers, stands between these resorts.

Oostduinkerke Bad, a small resort with a brick-faced promenade, is situated between Koksijde Bad and the entrance to Nieuwpoort.

Pilotage.—It is reported (2002) that all boarding of pilots in the roads of the Belgium ports of Nieuwpoort, Oostende, and Zeebrugge has ceased.

All vessels over 80m in length and 2.2m draft bound for a Belgian coastal port, except those with a pilotage exemption, must embark a pilot at the Wandelaar Pilot Station (51° 22.5'N., 2° 43.0'E.). For details of the Wandelaar Pilot Station, [see Pilotage under the Westerschelde in paragraph 6.14](#)).

6.7 Nieuwpoort (51°08'N., 2°45'E.) ([World Port Index No. 31320](#)) is a small port used by fishing vessels, small coasters, and yachts. It is connected to the inland canal system. The town is situated 2.3 miles within the mouth of the Yzer River.

Tides—Currents.—Tides rise about 5.3m at springs and 4.3m at neaps.

Depths—Limitations.—The entrance channel has a depth of 3m at MLWS. There is a commercial wharf, 1,200m long. In addition, there is a basin for fishing vessels and extensive facilities for yachts. Vessels up to 1,540 dwt, 82m in length, and 5.3m draft can be accommodated at HWS.

Aspect.—The entrance channel leads into the harbor between two pile piers. A resort, with conspicuous tall buildings and blocks of apartments, is situated on the W side of the entrance. A main light is shown from a tower standing on a dune, 0.5 mile ESE of the entrance.

Several large resort buildings, towers, and masts stand near the shore between the harbor and Oostende, 9 miles NE, and are conspicuous from seaward.

Pilotage.—Pilots must be embarked at the Wandelaar Pilot Station ([see paragraph 6.14](#)).

Pilotage through Flanders Banks is advisable for vessels without local knowledge. Pilots for this route are available from Dunkerque.

Regulations.—The Vessel Traffic Service Scheldemond (VTS-SM) system operates in the W approaches to the estuary of the Westerschelde, N of Nieuwpoort. The Wandelaar Pilot Station is situated within the Traffic Area Wandelaar of this system. [For complete details of the VTS-SM procedures, see Regulations \(Traffic Control\) under the Westerschelde in paragraph 6.14.](#)

Vessels over 75m in length, and up to a maximum length of 82m, should request permission to enter from the port authorities 24 hours in advance, stating draft and any special means of maneuvering. Such vessels must arrive in the roads 6 hours prior to HW at the port.

Anchorage.—Vessels may anchor, in depths of 5 to 7m, about 1 mile NW of the port entrance.

Directions.—Approach from the SW can be made through Zuydcoote Pas and Westdiep; the least depth in Zuydcoote Pas

is reported to be 3.3m. There is also a passage from the W, suitable for small craft with local knowledge, over Broers Bank and Den Oever. This passage should only be used in calm weather when the tidal currents are slack as, at other times, dangerous seas break over these banks.

Approach from the N can be made through Negenvaam and Noordpas; the least depth in Noordpas is reported to be 6.5m.

Approach from the NE can be made through the channel which leads between Ravelingen and Wenduine Bank into Grote Rede, 2 miles NW of Oostende. Vessels should then pass to the N of Stroom Bank.

Approach from the E can be made by passing through Kleine Rede, which lies close offshore and has a least reported depth of 5m.

Oostende (51°14'N., 2°55'E.)

World Port Index No. 31310

6.8 Oostende, a resort town, is a commercial port, fishing center, and a terminus for cross-channel ferries. It is also a Belgian Navy base and is connected to the inland canal system.

Tides—Currents.—Tides at Oostende rise about 5.1m at springs and 4.2m at neaps.

The tidal currents generally set along the coast, except near the end of the E and the beginning of the W currents, when they tend to set away from the coast. The E tidal current has a spring rate of about 2.5 knots and the W current a rate of 1 knot.

Winds—Weather.—Southwesterly and W winds predominate throughout the year. During the winter, fog occurs about 7 days per month; during the summer, fog occurs 1 day per month.

Depths—Limitations.—The harbor consists of a narrow dredged channel, wet docks, and basins. It is entered between piers, which are for most of their length 120m apart. The entrance fairway from Grote Rede has a dredged depth of about 6m on the range line.

Montgomery Basin, situated on the NW side of the harbor, leads to Handels Dokken (Mercator Dock), a wet dock used by yachts. The entrance lock is 38m long and 12m wide; a depth of 2.5m is maintained in the dock. Visserhaven, a wet dock, is situated on the NE side of the harbor and used by fishing vessels. The entrance lock is 91m long, 16.5m wide, and has a depth of 4.2m on the sill; a depth of 3.7m is maintained in the dock. Tidok, a tidal basin, and the Naval Basin, which is entered through a turn lock, are also situated on the NE side of the harbor.

Voorhaven is situated on the SE side of the harbor. A deep-water quay, 360m long, is situated on its S side and has a depth of 7.7m alongside. Government and naval berths are situated along its N side. A complex of three wet docks is situated in the SW corner of the harbor and entered through a lock, 130m long and 17.2m wide, which has a depth of 4.2m on the sill. The main wharves within the complex include West Quay, 696m long; East Quay, 668m long; and Timber and Sway Dock Quay, 582m long. Generally, vessels up to 124m in length and 7.3m draft can be accommodated in the port at HW. There are facilities for ro-ro, container, and tanker vessels. In addition,

there are two-level disembarkation services for ferries discharging passengers and vehicles.

The Oostende-Ghent Canal is navigable throughout the year, by vessels up to 3.8m draft in summer and 3.3m draft in winter, from Oostende to Brugge; then to Ghent, it is navigable by vessels up to 2m draft.

The Oostende-Brugge Canal, part of the Oostende-Ghent Canal, is navigable by vessels up to 6m draft in summer and 5.5m draft in winter to Zandvoorde (51°12'N., 3°00'E.).

Aspect.—A main light is shown from a prominent tower, 58m high, standing on the E side of the harbor. A lighted range indicates the entrance fairway and may best be seen on the chart. A conspicuous tower block, 116m high, stands 0.4 mile SSW of the harbor entrance. A conspicuous radar tower is situated near the root of the E pier. Numerous prominent buildings stand near the shore, on the W side of the harbor entrance.



Oostende Main Light

Pilotage.—Pilots must be embarked at the Wandelaar Pilot Station (see paragraph 6.14).

Pilotage through Flanders Banks is advisable for vessels without local knowledge. Pilots for this route are available from Dunkerque.

Regulations.—The Vessel Traffic Service Scheldemond (VTS-SM) system operates in the W approaches to the estuary of the Westerschelde, N of Oostende. The Wandelaar Pilot Station is situated within the Traffic Area Wandelaar of this system. For complete details of the VTS-SM procedures, see Regulations (Traffic Control) under the Westerschelde in paragraph 6.14.

Vessels must request permission to enter the port from Oostende Port Control on VHF channel 9 or by telephone.

Signals.—When it is necessary to keep the channel between the entrance and the locks clear for large ferries, an orange quick flashing light is shown, by day or at night, in addition to traffic signals from the head of the E pier and at the pilot station on the S side of the entrance to Montgomery Basin.

Two black cones, points together, shown by day or a blue flashing light shown at night from the pilot station indicate that all craft under oars and all pleasure craft under 6m in length are prohibited from leaving the harbor when there is an onshore wind of force 3 or more, or an offshore wind of force 4 or more.

Anchorage.—Grote Rede affords ample anchorage, with good holding ground, mud and sand, in depths of 8 to 10m. Kleine Rede affords only temporary anchorage, in depths of 6 to 7.5m, as the holding ground is poor, particularly near the harbor entrance.

Directions.—The deepest route leading to Grote Rede, 2 miles NW of the harbor entrance, is through Negenvaam and then between Nieuwpoort Bank and Oostende Bank. Vessels from the N may also pass between Oostende Bank and Wenduine Bank and then proceed through the passage lying between Wenduine Bank and Ravelingen. Vessels from the W may approach through Grote Rede or Kleine Rede.

Vessels from the E may approach through East Pass, which leads over the coastal bank, ENE of the entrance. However, this route should only be used by vessels with local knowledge.

Caution.—Vessels are advised not to enter the harbor with strong winds from NW through N to NE. Northwesterly winds send in a heavy swell into the harbor.

Under normal conditions, vessels enter or leave the harbor between 2 hours before and until HW. During this time, the tidal current generally sets E and vessels are advised to favor the W side of the entrance fairway to avoid being swept onto the E pier.

The lock entrance to the Oostende-Brugge Canal is opened at intervals to maintain a constant water level. This may result in a strong discharge of water and currents up to 1 knot in the inner part of the harbor. An orange light shown from the bridge at the entrance to the canal indicates that the discharge is to be expected; a red light indicates that the discharge is in progress.

Numerous wrecks, some dangerous, lie in the approach channels and may best be seen on the chart.

6.9 The coast between Oostende and Blankenberge, 8.5 miles NE, is marked by several steep sand dunes. De Haan, situated 4.7 miles NE of Oostende, and Wenduine, situated 2.3 miles farther NE, are coastal resorts. A church and two water towers stand in the vicinity of Wenduine and are conspicuous from seaward.

Blankenberge (51°19'N., 3°08'E.), a large coastal resort, has a small harbor which is mainly used by yachts. It dries and is entered between two stone piers by a channel with depths of about 1m. There is a yacht basin at the head of the harbor and facilities for fishing boats at the W side. The harbor may be approached from either Grote Rede or the main channel which leads S of Wandelaar.

A main light is shown from a prominent tower, 30m high, standing on the NE side of the harbor. The entrance fairway is indicated by a lighted range which may best be seen on the chart. Several large buildings stand near the beach on the W side of the harbor entrance. A promenade pier, with a conspicuous cupola, fronts the town, 1 mile ENE of the harbor entrance.

Tides—Currents.—Between Oostende and Zeebrugge, the tidal currents set in about the direction of the coast. Off Blankenberge, the E current begins about 3 hours 30 minutes before HW at Vlissingen, and the W current begins about 2 hours 45 minutes after HW at Vlissingen. At a position about 1 mile offshore, the E current attains a rate of 2 knots at springs and the W current about 1.5 knots.



Blankenberge Main Light

Caution.—A submarine gas pipeline, which may best be seen on the chart, extends seaward from a point on the shore 1.7 miles ENE of Blankenberge, about 0.4 mile W of the W breakwater of Zeebrugge.

Zeebrugge (51°20'N., 3°12'E.)

World Port Index No. 31280

6.10 Zeebrugge is a cross-channel and North Sea ferry terminal, a major commercial port, and the sea terminus of the Baudouin Canal (Brugge-Zeebrugge).

Tides—Currents.—Tides rise about 4.8m at springs and 3.9m at neaps.

Off the breakwaters, the E tidal current begins to set about 3 hours 40 minutes before HW at Vlissingen. East of the breakwaters, the current is reported to set more towards the shore. At first the current is weak but, at springs, it increases to a maximum rate of 4 knots, about 1 hour before HW. At neaps, the maximum rate is about 2 knots.

The W tidal current begins to set about 2 hours 40 minutes after HW at Vlissingen. The maximum rate of the W current is about 3 knots at springs and 2 knots at neaps.

Depths—Limitations.—The approach channel is 500m wide and dredged to a depth of 13.5m over a width of 300m. The port consists of two parts; Outer Harbor, a tidal area, which is protected by two breakwaters and Inner Harbor, a controlled level area, entered through locks.

The following main wharves are situated within the Outer Harbor:

1. An LNG terminal is situated at the E side. It has a berth, 320m long, with a depth of 13m alongside. Vessels up to 280m in length and 11.8m draft can be accommodated.

2. The Leopold II Dam extends from the W side and has 1,571m of total berthage on its S side, with depths of 7.2 to 10.5m alongside. There are facilities for ferries and ro-ro vessels.

3. A car ferry terminal, with facilities for ro-ro vessels, is situated near the root of Leopold II Dam and has a depth of 7m alongside.

4. Ocean Container Terminal Hessenatie Zeebrugge, situated at the NW side, provides 2,230m of quayage. There are five berths with depths of 15m alongside.

5. Flanders Container Terminal, situated close S of Ocean Terminal, provides 900m of quayage. There are two berths with depths of 12m alongside.

6. The Western Peninsula, situated at the SW side, is a container and ro-ro terminal. It provides 1,770m of quayage. There are seven main berths with depths of 15m alongside.

7. Brittaniadok, a tidal basin, is situated at the SE side and has pontoon ro-ro berths, with depths of 5 to 8m alongside.

8. Zweedse Kaai (Swedish Quay), close W of Brittaniadok, has 825m of berthage with a depth of 18m alongside.

Vessels up to 350m in length, 55m beam, and 14m draft can be handled in the Outer Harbor.

The Inner Harbor may be entered from the Outer Harbor through two locks.

The Pierre Vandammelock, the E lock, is 500m long, 57m wide, and has a depth of 15m on the sill at LWS. It leads into Connection Dock which has depths of 18.5m and connects with the Baudouin Canal. North Inlet Basin, entered from the N side of Connection Dock, has about 2,000m of quayage with depths of 14m alongside. South Inlet Basin, entered from the S side of Connection Dock, has 810m of quayage with a depth of 18.5m alongside. There are facilities for container, ro-ro, bulk, reefer, and general cargo vessels.

The Old Sea Lock, the W lock, is 210m long, 19.7m wide, and has a depth of 5.5m on the sill at LWS. It leads to a turning basin and two docks with depths of 8m.

Vessels up to 400m in length, 48m beam, and 15.9m draft can enter the Inner Harbor.



Zeebrugge

Aspect.—The entrance channel is indicated by a lighted range and marked by lighted buoys. A main light is shown from a prominent tower, 20m high, standing at the outer end of the Leopold II Dam. A conspicuous radar tower is situated about 0.3 mile WSW of the light.

The container gantry cranes, standing on the W side of the harbor, are conspicuous. Several tanks standing at the LNG

terminal are prominent. Several prominent wind generators stand along the E breakwater.

Pilotage.—Pilots must be embarked at the Wandelaar Pilot Station (see paragraph 6.14).

LNG vessels embark pilots about 1 mile E of the A-Zuid Lighted Buoy (51°21'N., 2°37'E.).

Pilotage through Flanders Banks is advisable for vessels without local knowledge.

Regulations.—The Vessel Traffic Service Scheldemond (VTS-SM) system operates in the W approaches to the estuary of the Westerschelde, N of Zeebrugge. The Wandelaar Pilot Station is situated within the Traffic Area Wandelaar and the port is located within Traffic Area Zeebrugge of this system.

For complete details of the VTS-SM procedures, see Regulations (Traffic Control) under the Westerschelde in paragraph 6.14.

Special rules are in force concerning the movement of LNG vessels in the approaches and within the port.

The port may be contacted by E-mail, as follows:

mbz@unicall.be

Signals.—International port traffic signals, which control entry and departure, are displayed from the head of the W breakwater and from the tower at the head of the Leopold II Dam (see paragraph 6.1).

Directions.—The main approach from NW is through a passage, marked by lighted buoys, known as Pas van Het Zand. It starts in the vicinity of the Wandelaar Pilot Station, about 12 miles W of the entrance, and leads through the Scheur Channel to the roadstead. An approach channel, marked by lighted buoys and indicated by a lighted range, leads into the entrance between the outer breakwaters.

Caution.—Depths in the approach and the harbor are subject to change due to silting; dredging is frequently in progress. The authorities should be contacted for the latest depths in the entrance channel.

Submarine gas pipelines, which may best be seen on the chart, extends seaward from a point on the shore near the root of the E breakwater and from a point on the shore about 0.4 mile W of the W breakwater.

It is reported (2000) that the inner lighted ranges within the harbor may be obstructed, at times, by stacks of shipping containers.

6.11 Brugge (Bruges) (51°14'N., 3°13'E.) (**World Port Index No. 31290**), a small port, is situated 5 miles S of Zeebrugge. It is connected to the Inner Harbor by the Baudouin Canal (Boudewijnkanaal), which has a minimum width of 70m and a depth of 6.3m (2000).

The port consists of three basins, which provide about 1,600m of commercial berthage, with depths of 6.1 to 8m alongside.

The canal is spanned by two lifting rail bridges, about 3 miles S of Zeebrugge, which have navigable passage widths of 40m and 30m. The canal is available to vessels up to 2,000 tons and 6m draft.

A lock connects the port with the Oostende-Ghent Canal and the whole of the international inland waterway system. It is 115m long and 11.9m wide, with a depth of 4m on the sill.

The Westerschelde

6.12 The approaches to the Westerschelde lie between the Belgian/Netherlands coast, E of Zeebrugge, and the SW coast of Walcheren. The outer sea area is known to the Dutch as Zeegat van Vlissingen (Flushing Channel). The Westerschelde is the name given to that part of the Schelde River which passes through Netherlands territory.

An extensive shoal bank encumbers the greater part of these approaches and is an extension the Flanders Banks. The main parts of this bank are Raan, Rassen, and Kaloo, named in that order from S to N.

South Side.—The coastal resorts of Heist, Duinbergen, and Knokke-Zoute are situated 1, 2, and 3.5 miles, respectively, ENE of Zeebrugge. Prominent tall buildings stand near the beach at each of these places. A conspicuous water tower stands in the vicinity of Duinbergen.

Paardenmarkt, a narrow shoal ridge, extends about 4 miles E from Zeebrugge. It projects up to 1.5 miles from the shore and has depths of less than 5m.

Wielingen Sluis (51°22'N., 3°23'E.), located 3 miles ENE of Knokke-Zoute, is a gap in the coastal dike caused by the discharge of sluice into Wielingen. A conspicuous hotel building is reported to stand in this vicinity.

The Belgian/Netherlands Border reaches the coast at a small indentation, called Sluissche Gat, 0.7 mile WSW of Wielingen Sluis. The land to the E of the boundary is known as Land van Kadzand. It is low and protected by a coastal dike.

Kruishoofd (51°24'N., 3°28'E.), situated 3.5 miles ENE of Wielingen Sluis, is a prominent part of the coastal dike. A disused light tower, 6m high, stands near the shore here.

Nieuwe Sluis Light (51°25'N., 3°31'E.), a main light, is shown from a prominent tower, 22m high, standing 2 miles ENE of Kruishoofd.



Nieuwe Sluis Light

6.13 North Side.—**Westkapelle** (51°32'N., 3°26'E.), the W end of Walcheren, is the N entrance point of the approaches. A main light is shown from a conspicuous tower, 52m high, standing about 0.5 mile inshore.

The W end of Walcheren is protected by a large dike known as Westapelsche Dijk.



Westkapelle Light

Noorderhoofd Light (51°32'N., 3°26'E.) is shown from a tower, 16m high, standing on the N part of the dike, 0.7 mile NW of Westkapelle Light.



Noorderhoofd Light

Molenhoofd Light is shown from a mast, 7m high, standing on the dike, 0.5 mile WSW of Westkapelle Light.

Zoutelande Light (51°30'N., 3°29'E.) is shown from a tower, 13m high, standing 1.7 miles SSE of Westkapelle Light. A tower, with a short spire visible above the sand dunes, stands 0.4 mile SE of this light. Several villas and a windmill stand in this vicinity.

Numerous stone dams and wooden groins extend from the shore along the W coast of Walcheren.

Middelburg (51°30'N., 3°37'E.) is situated in the center of Walcheren. A conspicuous tall steeple stands in the town and is visible from the seaward approaches.

Fort de Nolle (51°27'N., 3°33'E.), a prominent point, is located 4 miles SE of Zouttelande. A light is shown from a column, 6m high, standing on the point. Range lights are shown from Kaapduinen, 2 miles NW.

6.14 The Estuary.—The extensive shoal bank which occupies the greater part of the sea area extends up to about 17 miles W from the S coast of Walcheren and about 4.5 miles W and NW from Westkapelle.

Various parts of this shoal bank are identified by name. The more important ones are Raan, which forms the S part of the bank; Kaloo and Botkil, which form the N part of the bank; Rassen, which forms the central part of the bank; and Droogte van Schooneveld, which forms the W part of the bank.

Bol van Knokke, Carolusbankje, and Sluissche Hompels are dangerous shoals which lie to the S of the large shoal bank and on the N side of Wielingen.

Vlakte van de Raan (51°27'N., 3°13'E.), along with Droogte van Schooneveld at its SW end, forms the W part of Raan and has depths of 3.3 to 5.5m. Schooneveld, an extension W of these banks, has a least depth of 6.1m and general depths of 11 to 18m.

Bol van Knokke (51°25'N., 3°18'E.) and Carolusbankje form a shoal bank which is 3 miles long. Bol van Knokke, the W part of the bank, has a least depth of 3.2m and Carolusbankje has a least depth of 3.8m.

Sluissche Hompels (51°26'N., 3°26'E.), lying E of Carolusbankje, has a least depth of 3.4m. Walvischstaart and Elleboog, two narrow ridges, lie near the E end of Raan and have depths of less than 1.8m.

Nolleplaat, with a least depth of 0.3m, lies at the E extremity of Raan. Spleet, a shallow and narrow channel, leads W of Elleboog and Nolleplaat.

Kaloo (51°34'N., 3°21'E.), a shoal bank, lies with its N end located 4.5 miles NW of Noorderhoofd and has depths of less than 5m. Botkil, which has a least depth of 1.9m, lies SE of Kaloo and forms the W side of the N approach to Oostgat.

Kueerens (Domburger Rassen) (51°36'N., 3°26'E.), a shoal bank, extends 4 miles N from the vicinity of Noorderhoofd and has a least depth of 3.3m. During periods of continuous W winds, there is a heavy swell over this bank and W gales cause the sea to break heavily in places on it.

Schouwenbank Lighted Buoy (51°45'N., 3°14'E.), equipped with a racon, is moored 15 miles NW of Westkapelle and marks the N outer approach to the estuary.

A1 Lighted Buoy (51°22'N., 2°53'E.) is moored in the W approaches, about 8 miles N of Oostende.

West Hinder TSS (51°23'N., 2°30'E.), which may best be seen on the chart, leads from the North Hinder TSS and the Dover Strait TSS, at its W end, to the Westerschelde approaches, at its E end.

A Precautionary Area, which may best be seen on the chart, is situated at the E end of the West Hinder TSS, about 6 miles W of A1 Lighted Buoy, in the vicinity of the Wandelaar Pilot Station.

KB Lighted Buoy (51°21'N., 2°43'E.), equipped with a racon, is moored near the S part of the Precautionary Area at the N end of Kwinte Bank.

Oostende Bank N Lighted Buoy (51°21'N., 2°53'E.) is moored 1.2 miles SSW of A1 Lighted Buoy.

Kaloo (K) Lighted Buoy (51°35'N., 3°23'E.) is moored about 4 miles NNW of Westkapelle, in the NE approaches.

Caution.—Numerous wrecks lie in the approaches to the Westerschelde estuary and may best be seen on the chart. Those wrecks situated in the vicinity of the fairways are generally marked by lighted or unlighted buoys.

Several spoil ground areas lie in the approaches to the Westerschelde estuary and may best be seen on the chart.

A Mine Laying Practice Area, the limits of which may best be seen on the chart, lies centered 7 miles NNW of A1 Lighted Buoy (51°22'N., 2°53'E.). It is reported (2002) that additional Mine Laying Practice Areas extend W and SW of this circular area.

Pilotage.—Pilotage is compulsory in the open sea estuary of the Westerschelde for the following vessels:

1. All ocean-going vessels with a Belgian destination except the following:
 - a. Vessels of less than 80m in length.
 - b. Vessels with a draft of less than 2.2m.
 - c. Tugs, fishing vessels, and military vessels.
 - d. Dredges, vessels on an estuary maritime trade, and vessels carrying pilot exemptions.
2. Vessels with a Netherlands destination, as follows:
 - a. Vessels over 75m in length and 5.5m draft in the fairway between Schouwenbank Lighted Buoy (51°45'N., 3°14'E.) and Vissingen Oost.
 - b. Vessels over 75m in length in all other fairways.
 - c. All vessels carrying oil, gas, or chemicals (fully loaded, partially loaded, or empty but not gas-free).

Pilots are available at the following stations:

1. Wandelaar Pilot (51°22'N., 2°52'E.), a Belgian pilot vessel, is stationed about 1 mile WSW of A1 Lighted Buoy (51°22'N., 2°53'E.). Pilots board inbound vessels in a position about 6.5 miles W of A1 Lighted Buoy, in the Precautionary Area. All inbound vessels should contact the pilot station (or Wandelaar Traffic Center) on VHF channel 65 at least 1 hour before ETA at the boarding position. This station also provides pilots for Nieuwpoort, Oostende, and Zeebrugge.

2. Steenbank Pilot (51°45'N., 3°12'E.), a Netherlands pilot vessel, is stationed about 1 mile W of Schouwenbank Lighted Buoy (51°45'N., 3°14'E.). Pilots board inbound vessels in the vicinity of this buoy. All inbound vessels should contact the Steenbank Traffic Center on VHF channel 64 at least 30 minutes before ETA at the pilot boarding position. This station also provides pilots for the Oosterschelde.

The pilot vessels have aboard Belgian and Netherlands pilots who cooperate closely. Generally, Belgian pilots will take vessels through Wielingen to Belgian ports on the Schelde or to any of the Belgian coastal ports. Netherlands pilots will take vessels through Wielingen to Netherlands ports on the Westerschelde. Vessels bound for Antwerp exchange sea pilots for river pilots off Vlissingen.

All vessels should send a request for pilotage and an ETA to the appropriate pilot station through Oostende (OST) or

Scheveningen (PCH) at least 6 hours in advance. If the original ETA is delayed by more than 2 hours, a revised message must be sent. Messages may be sent by telex to Pilot VTS Wandelaar through Zeebrugge Traffic Center and to Pilot VTS Steenbank also addressed to Loodswezen Vlissingen (Flushing).

All request for pilotage messages must include the following:

Designator	Information Required
A	Name, call sign, and flag.
I	Port of destination and time (GMT) of ETA at Wandelaar Pilot Station or Steenbank Pilot Station.
O	Draft (meters and centimeters).
P	Cargo product(s) carried. Technical name of any dangerous cargo.
T	Agent.
U	Grt and length.
X	Additional remarks concerning damage, injury, navigability, equipment, or list.

Towed vessels over 100m in length, or over 30m wide, or over 8m draft must send an ETA and request for pilotage, in writing, at least 24 hours in advance with tow details.

Vessels intending to anchor in the designated area lying 3.5 miles NE of Schouwenbank Lighted Buoy (51°45'N., 3°14'E.) should inform the Steenbank Traffic Center and, when anchored, keep a listening watch on VHF channel 64.

Vessels with a Belgian destination carrying dangerous cargo, gas products, or which last carried gas products and are not gas free, are required to send the following additional information:

1. Name and call sign.
2. Date and time (GMT) of report.
3. Nationality.
4. Length.
5. GRT.
6. Destination.
7. Product—UN number.
8. Product—total quantity.
9. Name of agent/owner.
10. Carriage, or not, of a valid Compliance Certificate issued or recognized by the flag country and statement that the ship is loaded in conformity to it.

All vessels requesting a pilot by helicopter should also state in their ETA message that a pilot by helicopter is required and their direction of approach. VHF channel 9 is reserved for ship to helicopter communication. Pilots can be transported to and from vessels by helicopter 24 hours.

For vessels (inbound and outbound) using the Wandelaar Pilot station, the helicopter service area is bounded by a circle of 4 miles radius centered on a position situated 3.5 miles NNW of A1 Lighted Buoy (51°22.4'N., 2°53.4'E.).

Inbound vessels using this helicopter service are requested, in order to be identified on radar, to report on VHF channel 65 to Wandelaar Traffic Center, as follows:

1. Two hours prior to arrival at KB Lighted Buoy (51°21.1'N., 2°42.9'E.).
2. Eastbound vessels—when passing East Dyck Lighted Buoy (51°21.4'N., 2°31.2'E.).
3. Southbound vessels—when passing Westpit Lighted Buoy (51°33.7'N., 3°10.0'E.).

For vessels (inbound and outbound) using the Steenbank Pilot station, the helicopter service area is bounded by a circle of 4 miles radius centered on a position situated 2 miles NW of Schouwenbank Lighted Buoy (51°45'N., 3°14'E.).

A remote radar-controlled shore-based pilotage service (SBP) is available from the Wandelaar and Steenbank pilot boarding positions for vessels bound to and from Belgium and Netherlands ports, as follows:

1. Wandelaar approaches (Scheur/Willinger Fairway)—Vessels not exceeding the following maximum dimensions may obtain shore-based pilotage:
 - a. Vessels carrying dangerous cargo—less than 125m in length, with a draft of less than 6m.
 - b. Vessels not carrying dangerous cargo, bound for Zeebrugge—less than 169m in length, with a draft of less than 8m.
 - c. Vessels not carrying dangerous cargo, bound for other Belgian and Netherlands ports—less than 200m in length, with a draft of less than 10m.

Vessels should contact Traffic Center Wandelaar 30 minutes before entering the VTS-SM area, on VHF channel 65, for advice on the possibility of obtaining shore-based pilotage. Vessels will then be requested to transfer to Radar Control Zeebrugge on VHF channel 4 to receive procedural information.

2. Steenbank approaches (Oostgat Fairway)—Vessels not exceeding the following maximum dimensions may obtain shore-based pilotage:

- a. Vessels carrying dangerous cargo—less than 85m in length with a draft of less than 4.5m.
- b. Vessels not carrying dangerous cargo—less than 115m in length with a draft of less than 6.4m.

Vessels should contact Traffic Center Steenbank 30 minutes before entering the VTS-SM area, on VHF channel 64, for advice on the possibility of obtaining shore-based pilotage.

Regulations—Traffic Control.—The Vessel Traffic Service Scheldemond (VTS-SM) system operates in the approaches to the estuary of the Westerschelde and within the Schelde. It consists of several Traffic Areas (Sectors) and is mandatory for all inbound and outbound ocean-going vessels.

Reporting must be in Dutch or English languages only.

All vessels, including vessels at anchor, must maintain a continuous listening watch on the appropriate VHF channel for their Traffic Area (Sector).

Vessels should send an ETA at least 6 hours in advance of arrival at the appropriate pilot boarding place, with amendments if it differs by more than 2 hours.

Vessels approaching from the N and bound for ports in Belgium should send their ETA message to Pilot/VTS Steenbank through Scheveningen (PCH).

Vessels approaching from the W and bound for ports in Belgium should send their ETA message to Pilot/VTS Wandelaar through Oostende (OST).

The ETA messages of vessels bound for Belgian ports must include the following:

Designator	Information Required
A	Name, call sign, and flag.
I	Port of destination and time (GMT) of ETA at Wandelaar or Steenbank Pilot Station.
O	Draft (meters and centimeters).
P	Cargo and IMO category.
T	Agent.
U	Grt, length, and beam.
X	Additional remarks concerning damage, injury, navigability, equipment, list, and general particulars.

Vessels carrying dangerous cargoes, gas products, or which last carried gas products and are not gas free are required to send the following additional details:

1. Carriage, or not, of a valid Compliance Certificate issued or recognized by the flag country and statement that the ship is loaded in conformity to it.
2. Any deficiencies which may affect the ability to maneuver or the safety of navigation or any events affecting or putting in danger the marine environment or connected zones.

Vessels approaching from the N or W and bound for ports in the Netherlands should send their ETA message to Pilotage Vlissingen (Flushing) through Scheveningen (PCH) and state the name of the appropriate pilot boarding station.

The ETA messages of vessels bound for Netherlands ports must include the following:

Designator	Information Required
A	Name, call sign, and flag.
B	Date and time (GMT) of report.
I	Port of destination.
J	ETA at Wandelaar or Steenbank Pilot Station.
O	Draft (meters and centimeters).
P	Cargo and IMO category.
T	Agent.
U	Grt, length, and beam.
X	Any special particulars.

All inbound vessels must report, as follows:

1. 30 minutes before entering the VTS-SM operational area to the appropriate Traffic Area Center (Wandelaar on VHF channel 65 or Steenbank on VHF channel 64). The report must include name, position, draft, and destination. Vessels will then receive voyage instructions.
2. When entering the VTS-SM operational area (the outer Traffic Areas). The report must include name, position, destination, and ETA.
3. When entering a new Traffic Area (Sector).

4. When passing the call-in reporting points, which are indicated on the chart (see below).

All inbound vessels must maintain a VHF listening watch on the appropriate channel.

The VTS-SM operational area is divided into the following Traffic Areas (Sectors):

1. Traffic Area Wandelaar.—The limits of this area are formed by a line joining:
 - a. Position 51°18'N, 2°58'E.
 - b. Middelkerkebank Lighted Buoy (51°18'N., 2°43'E.).
 - c. A-Zuid Lighted Buoy (51°22'N., 2°37'E.).
 - d. AN Lighted Buoy (51°24'N., 2°37'E.).
 - e. Akkaert NE Lighted Buoy (51°27'N., 2°59'E.).
 - f. Scheur 2 Lighted Buoy (51°23'N., 2°58'E.).
 - g. A1 bis Lighted Buoy (51°22'N., 2°58'E.).

Vessels should report to the Traffic Center Wandelaar on VHF channel 65. The call-in reporting point is A1bis/S2 Lighted Buoys (51°22.6'N., 2°58.1'E.).

2. Traffic Area Zeebrugge.—The limits of this area are formed by:

- a. The coast (51°18'N., 3°05'E.).
- b. Position 51°18'N, 2°58'E.
- c. A1 bis Lighted Buoy (51°22'N., 2°58'E.).
- d. Scheur 2 Lighted Buoy (51°23'N., 2°58'E.).
- e. Akkaert NE Lighted Buoy (51°27'N., 2°59'E.).
- f. Westpit Lighted Buoy (51°34'N., 3°10'E.).
- g. W 4 Lighted Buoy (51°25'N., 3°25'E.).
- h. W 5 Lighted Buoy (51°24'N., 3°25'E.).
- i. The coast (51°23'N., 3°25'E.).

Vessels should report to the Traffic Center Zeebrugge on VHF channel 69. The call-in reporting points are Akkaert NE Lighted Buoy (51°27'N., 2°59'E.), Westpit Lighted Buoy (51°34'N., 3°10'E.), and when entering Zeebrugge Roads.

3. Traffic Area Steenbank.—The limits of this area are formed by a line joining:

- a. The coast (51°30'N., 3°30'E.).
- b. OG 13 Lighted Buoy (51°29'N., 3°30'E.).
- c. W 4 Lighted Buoy (51°25'N., 3°25'E.).
- d. Westpit Lighted Buoy (51°34'N., 3°10'E.).
- e. Position 51°50'N, 3°10'E.
- f. SBO Lighted Buoy (51°50'N., 3°30'E.).
- g. The coast (51°04'N., 3°30'E.).

Vessels should report to the Traffic Center Steenbank on VHF channel 64. The call-in reporting point is Schouwenbank Lighted Buoy (51°45'N., 3°14'E.).

4. Traffic Area Vlissingen.—The limits of this area are formed by:

- a. The E limits of Traffic Areas (Sectors) Steenbank and Zeebrugge.
- b. A line extending between the N and S shores of the river and passing through E3A Lighted Buoy and No. 8 Lighted Buoy.

Vessels should report to the Traffic Center Vlissingen on VHF channel 14, when within this area and W of E3A Lighted Buoy (51°24'N., 3°44'E.) or No. 8 Lighted Buoy (51°23'N., 3°44'E.).

5. Traffic Area Terneuzen.—The limits of this area are formed by:

- a. The E limit of Traffic Area Vlissingen.

b. A line extending between the N and S shores of the river and passing through Buoys 32 and 35 (51°23'N., 3°57'E.).

Vessels should report to the Radar Center Terneuzen on VHF channel 3, when within this area and E of E3A Lighted Buoy (51°24'N., 3°44'E.) or No. 8 Lighted Buoy (51°23'N., 3°44'E.).

Vessels transiting the Terneuzen-Ghent Canal should report to the Havendienst Terneuzen Traffic Center on VHF channel 11, when N of the Zelgate Bridge, and to Havendienst Ghent Traffic Center on VHF channel 11, when S of the bridge.

6. Traffic Area Hansweert.—The limits of this area are formed by:

a. The E limit of Traffic Area Terneuzen.

b. A line extending between the N and S shores of the river and passing through Buoy 46 and Buoy 55 (51°24'N., 4°02'E.).

Vessels should report to Centrale Hansweert Center on VHF channel 65.

7. Traffic Area Antwerpen.—The limits of this area are formed by:

a. The E limit of Traffic Area Hansweert.

b. A line extending between the N and S shores of the river at No. 116 Lighted Buoy (51°14'N., 4°22'E.).

Vessels should report to Centrale Zandvliet on VHF channel 12.

LNG vessels proceeding to Zeebrugge (Belgium) must report, as follows:

1. An ETA should be sent to VTS-SM 48 hours, 24 hours, 6 hours, and 1 hour prior to arrival at the boarding position, about 1 mile E of A-Zuid Lighted Buoy (51°21'N., 2°37'E.). Vessels must also report 24 hours before arrival that they have no suspected defects. Any change to the ETA must be reported immediately.

2. Vessels should report to Traffic Center Vlissingen (Flushing) on VHF channel 14, Traffic Center Wandelaar on VHF channel 65, Traffic Center Zeebrugge on VHF channel 69, and Port Control Zeebrugge on VHF channel 71, as follows:

- a. Immediately after embarking the pilot.
- b. On passing A1 Lighted Buoy (51°22'N., 2°53'E.).
- c. On passing SZ Lighted Buoy (51°24'N., 3°07'E.).
- d. On passing Z Lighted Buoy (51°23'N., 3°10'E.).
- e. On passing Zeebrugge harbor breakwater.

Regulations—General for the Estuary.—Westerschelde Shipping Regulations apply within both Netherlands and Belgian waters in the channels leading to the roadstead at Vlissingen (Flushing) and in the river to Antwerpen. These regulations are based on the International Rules of the Road (72 COLREGS), with some differences. The following are extracts from the regulations:

1. Vessels are considered to be constrained by their draft and should exhibit the appropriate lights and signals, as follows:

a. When in the channel from Wielingen to Oudendijk, front range light (51°21'N., 4°16'E.), with a length greater than 200m and a draft greater than 10m.

b. From Oudendijk front range light to Antwerpen, with a length greater than 170m and a draft greater than 8m.

c. In Oostgat, with a length greater than 170m and a draft greater than 7.5m.

2. The “main channel” in these waters consists of the fairways, which lead through Wielingen and Oostgat and meet in Vlissingen (Flushing) Roadstead, and the fairway which leads E from there along the river to Antwerp. All other channels are considered to be “tributary channels”.

3. Vessels crossing or leaving the main channel shall give way to through traffic.

4. Vessels constrained by their draft have preference over other vessels and small vessels shall give way to larger vessels.

5. In Oostgat and upstream of Walsoorden (51°23'N., 4°02'E.), vessels less than 12m in length shall not use the main channel.

6. Overtaking shall be along the port side of the vessel being overtaken, if practicable.

7. A vessel being towed shall exhibit a masthead light in addition to those required by Rule 24 of the International Rules of the Road (72 COLREGS).

8. A sailing vessel of 20m or more in length shall exhibit at the masthead a red all-around light above a green all-around light.

9. A vessel at anchor shall exhibit both fore and aft riding lights.

10. A vessel at anchor, moored, or aground, which may risk damage from the wash of a passing vessel, shall exhibit a red light above a white light or display a red and white flag.

11. A vessel proceeding to sea shall, when in Vlissingen (Flushing) Roadstead, exhibit the following:

a. If using Wielingen, two green lights, vertically disposed, or the International flag signal WN.

b. If using Oostgat, one green light or the International flag signal O.

12. A vessel carrying out compass adjustment or calibration of radio direction finding equipment in Vlissingen (Flushing) Roadstead shall exhibit one or more green flashing lights or the International flag signal OQ.

13. Loaded tankers, or those which are not gas free, shall not proceed above Kallosluis (51°16'N., 4°17'E.) at night.

14. Gas tankers will be escorted by patrol craft. They must display flag B by day, or a red light at night, and their radar must be serviceable. If the visibility is less than 2,000m, gas tankers should not commence passage up river. Those over 170m in length will also be escorted by a tug above Saeftinge (51°22'N., 4°13'E.).

Directions.—There are three main buoyed approach channels leading into Westerschelde; Wielingen, Scheur, and Oostgat. In addition, Deurloo leads across the banks, which lie between Wielingen and Oostgat, but is seldom used except by fishing boats.

Scheur (51°24'N., 3°10'E.), the main deep-water approach channel, leads in an E direction for about 20 miles from N of the MOW 0 (51°24'N., 3°03'E.) lighted tide gauge platform to Vlissingen (Flushing) Roads. It is marked by lighted buoys and separated on the S side from the outer part of Wielingen by

Ribzand and Bol van Heit. The fairway has a dredged depth of 12.5m (2000).

Two routes, which are marked by lighted buoys, lead from the Wandelaar Pilot Station (51°22'N., 2°52'E.), at the E end of the West Hinder TSS, to the outer entrance of the Scheur. The route, known as Vaargeul 1, leads 5 miles NE and 9 miles ESE. It is entered between GZ Lighted Buoy (51°24.2'N., 2°44.6'E.) and VG Lighted Buoy, moored 1.7 miles SE, and passes N of Akkaert Bank.

The other route leads 13 miles ENE and passes S of Akkaert Bank. It is entered between SWA Lighted Buoy (51°22.3'N., 2°46.4'E.) and MBN Lighted Buoy, moored 1.5 miles S. This route passes between A1 Lighted Buoy (51°22'N., 2°53'E.) and Oostendebank N Lighted Buoy (51°21'N., 2°53'E.).

A main route, known as the West Circuit, extends from the Steenbank Pilot Station (51°45'N., 3°12'E.), situated about 1 mile W of Schouwenbank Lighted Buoy (51°45'N., 3°14'E.), to the vicinity of the outer entrance of Scheur. It leads 9 miles SSW and 14 miles SW. This route passes between Schaar and Schouwenbank, between Rabs Bank and Middelbank, and through Westpit (51°32'N., 3°10'E.). Depending on the precise route, depths in excess of 15m can be maintained on the West Circuit.

For directions within Rede van Vlissingen (Flushing Road), see paragraph 6.16.

Wielingen (51°23'N., 3°13'E.), the southernmost channel, leads along the coast from the vicinity of Zeebrugge. Bol van Knokke, Carolusbankje, and Sluissche Hompels lie on its N side. This channel may be used by vessels with drafts of less than 8m. It joins Scheur in the vicinity of SW Lighted Buoy (51°24'N., 3°18'E.).

Oostgat (51°23'N., 3°13'E.), the northernmost channel, leads along the W coast of Walcheren between Kaloo, on its W side, and Kueerens, on its E side. Galgeput and Sardijngeul are continuations of Oostgat, which lead along the SW coast of Walcheren and into the roadstead off Vlissingen (Flushing). A least depth of 8.8m was reported (1985) to lie in mid-channel in Galgeput. A least depth of 7m was reported (1985) to lie in the fairway of Sardijngeul, which narrows to a width of only 90m.

Oostgat may be entered by a route which leads over Steenbanken and has a least depth of 6.3m. It is marked by Kaloo Lighted Buoy (51°35'N., 3°23'E.) and indicated by a lighted range (Noordehoofd Westkapelle).

Oostgat may also be entered by a route which avoids Steenbanken. Vessels should proceed S from the vicinity of the Steenbank Pilot Station and pass E of Rabsbank Lighted Buoy (51°38'N., 3°10'E.). Vessels should then steer SE and E to pass S of ZSB Lighted Buoy (51°37'N., 3°15'E.) and N of OG1 Lighted Buoy (51°36'N., 3°20'E.). Vessels may then shape a SE course for Kaloo Lighted Buoy and the channel entrance.

Deurloo (51°30'N., 3°24'E.), a secondary channel lying between Rassen and Raan, leads ESE and SE into Galgeput. It is mainly used by fishing vessels and has a least depth of 2.5m. Geul van Rassen, an alternate route, leads 2 miles S into Deurloo and passes close E of Rassen.

Caution.—Vessels are advised to ascertain the latest channel depth information from Vlissingen (Flushing) Radio Station or the pilot stations.

With a falling tide, the ebb current is reported to set across the S entrance of Sardijngeul. Vessels are advised to take precautions against being set onto the lighted buoys in this vicinity.

Large vessels, which are navigating with a favorable current, should wait to allow those vessels stemming the current to pass through Sardijngeul.

A rough sea is raised in the outer approaches off Westkapelle when the current is in opposition to a strong wind.

The positions of navigational aids in the approaches are continually adjusted due to the frequent changes of the shoals and depths.

Extensive crossing traffic may be encountered within the Scheur near Scheur 3 Lighted Buoy (51°24'N., 3°03'E.) due to ferries entering and leaving the fairway in this vicinity.

The Schelde

6.15 The Schelde (51°26'N., 3°35'E.) rises in N France, crosses Belgium, and enters the Netherlands about 12 miles below Antwerpen. It then flows in a general W direction between Zeeuwsch Vlaanderen, on the S side, and Zuid Beveland and Walcheren, on the N side, to enter the North Sea off Vlissingen (Flushing). That part of the river between Vlissingen and Antwerpen, which passes through Netherlands territory, is known as the Westerschelde.

Extensive drying banks and shoals occupy a large part of the river from its mouth to Antwerpen and both banks are lined by dikes. The main channel follows a winding course and is very narrow in places. There are several tributary (secondary) channels which can be used during daylight; however, vessels must have a suitable draft and local knowledge. The depths, limits, and directions of both the main and tributary channels are subject to frequent changes and constant surveying and dredging are necessary. Critical depths in the main channel are found in the NW part of Zuidergat, in Overloop van Valkenisse, in Nauw van Bat, and in several places between Bat and the main locks at Antwerpen.

Because of frequent changes in the channel depths and shoals, no directions for the navigation of the river can be given. Critical parts of the fairways in the main channel are marked by lights and lighted beacons and indicated by directional sector lights and lighted ranges. Changes to these aids and the channel buoys are frequently carried out at very short notice and local knowledge is required.

The principal ports described below are Vlissingen, Terneuzen, Gent, and Antwerpen. In addition, minor ports described include Breskens, Braakmanhaven, Hansweert, and Bruxelles, which is connected with the Schelde above Antwerpen by the River Rupel and the Brussels Maritime Canal.

Depths—Limitations.—A continual dredging program is carried out along the river. The maximum size of vessel allowed to enter is dependent on tidal conditions.

The distance from Wandelaar pilot station through Wielingen or Scheur to Vlissingen (Flushing) is about 33 miles. From Flushing to Antwerp, the distance through the main channels is about 45 miles. At present, the main fairway to Antwerp passes through Honte, Pas van Terneuzen, Gat van Ossenisse, and Zuidergat.

It is reported (1999) that a least depth of 12m exists between the river entrance and the main locks at Antwerp. Between the locks and the city river berths, a dredged depth of 8.6m is maintained.

Vessels with drafts up to 15.2m can reach Antwerp on two tides and those with drafts up to 14.6m on one tide. Vessels with drafts up to 11.6m can usually reach the port independent of the tide.

Overhead power cables, with a vertical clearance of 69m, span the channel close W of Antwerp.

Caution.—Several submarine pipelines cross the river at various places and may best be seen on the chart.

Several submarine cables cross the river and may best be seen on the chart.

Because of the heavy traffic on the river at Antwerpen, which includes numerous crossing barges, it is advisable to take a tug. Tugs may also be required by larger vessels for the bend at Nauw van Bat (51°24'N., 4°12'E.).

Rede Van Vlissingen (Flushing Road)

6.16 Rede van Vlissingen (51°26'N., 3°35'E.), the outermost part of the Schelde, is bounded on the S side by Hoogeplaten (51°24'N., 3°40'E.), an extensive drying bank which is separated from the S shore of the river by a narrow channel. The W end of this bank is known as Plaat van Breskens and the E part as Hooge Springer. Spijkerplaat, portions of which dry, lies in the middle of the river, N and NNW of Hooge Springer. Hompels, a series of ridges, extends WNW from the N part of Spijkerplaat to the E side of Rede van Vlissingen.

Tides—Currents.—The flood current begins about 5 hours before HW Vlissingen and has a mean rate of 1.5 knots. The ebb current begins about 1 hour after HW Vlissingen and has a mean rate of 2.5 knots. The flood current is strongest during its fourth and fifth hour and is known locally as “De Run”. There are tide rips off the W part of Vlissingen (Flushing) during the last of the ebb, when the outgoing current meets the incoming current from Sardijngeul.

Regulations.—The following rules apply within the Precautionary Area (see Directions):

1. The area shall be considered a “main channel” within which crossing vessels shall give way, fishing vessels shall not hinder other vessels, and small vessels shall give way to larger vessels.

2. Anchoring is prohibited except in the designated anchorage areas.

3. Outgoing vessels requiring a change of pilot shall maintain the order in which they passed Schone Waardin Light (51°27'N., 3°38'E.) and no attempt should be made to alter this order by overtaking another vessel.

4. A yellow flashing light is exhibited from the Netherlands pilot station lookout tower (51°26'N., 3°34'E.) whenever incoming vessels are in Sardijngeul between Fort de Nolle Light and SG-W Lighted Buoy. An outgoing vessel wishing to turn while the yellow flashing light is exhibited must avoid going W of Roeiershoofd during the turning maneuver.

Directions.—A Precautionary Area is situated within Rede van Vlissingen (Flushing Road) and comprises the main channel and its approaches. Scheur, the main deep-water approach

channel, leads into the W side of this area and Oostgat, the NW leads into its N part.

A Traffic Separation Scheme (TSS) is situated within the Precautionary Area and may best be seen on the chart. This scheme has not been adopted by the IMO.

The TSS separation zone is centered about 0.7 mile SSE of Vlissingen (Flushing) main light (51°26.3'N., 3°34.5'E.). The westbound traffic lane is situated to the N of the separation zone and the eastbound lane is situated to the S of it.

Anchorage.—Wielingen North Anchorage Area is situated N of the fairway, about 3.6 miles WSW of Vlissingen. It is about 1.5 miles wide, marked by buoys, and may best be seen on the chart. This area is generally used by vessels carrying dangerous goods.

Wielingen South Anchorage Area is situated S of the fairway and centered about 3 miles SW of Vlissingen. It is marked by buoys and the limits may best be seen on the chart.

Flushing Road (Vlissingen) Anchorage Area is situated on the S side of the fairway, S of Vlissingen. It is marked by buoys and the limits may best be seen on the chart. This area is reported to be not safe during strong winds.

Generally, anchorage berths are assigned by the pilot service. During strong W winds, which make these berths unsafe, vessels can obtain good anchorage off Terneuzen.

Caution.—Large double-ended ferries ply between Breskens, on the S side of the river, and Vlissingen (Flushing).

Vlissingen (Flushing) (51°27'N., 3°36'E.)

World Port Index No. 31210

6.17 Vlissingen is a commercial port and the terminal of the Kanaal door Walcheren. The harbor consists of three main parts; Outer Harbor (Buitenhaven), a large tidal basin; Inner Harbor (Binnenhaven), a wet dock; and Vlissingen Oost (East Harbor), which is entered 3 miles E of the town and is also known as Sloehaven. Koopmanshaven, a small basin used by the pilot vessels, fronts the town. In addition, a riverside tanker terminal is situated at Borssele, 3 miles SE of the entrance to Vlissingen Oost (East Harbor).

Winds—Weather.—The prevailing winds are from the SW and W. Winds from the E occur most often during the spring. Fog occurs on an average of about 32 days per year and is most prevalent during the winter. Ice does not hinder navigation in the port or in its sea approaches.

Tides—Currents.—Tides at Vlissingen rise about 4.7m at springs and 3.8m at neaps.

Depths—Limitations.—Outer Harbor (Buitenhaven), a large tidal basin, is entered between two breakwaters, 274m apart. The quay on the W side is 350m long with a depth of 11.5m alongside. An oil jetty, with a depth of 9.5m alongside, is situated on the E side. A ro-ro terminal, with depths of 6 to 8m alongside, is situated at the N end.

Inner Harbor (Binnenhaven), comprised of two wet basins, can be entered by two locks and a sluice gate. These basins have about 390m of berthage, with depths of 6.4 to 7.3m alongside. The largest lock is 140m long, 22m wide, and has a depth of 5.4m on the sill at LW. Vessels up to 140m in length can be handled in the basins. A marina and a shipyard are situated at the E end of the Inner Harbor.

East Harbor (Sloehaven), a large complex, is entered through a channel which leads between two moles. The fairway is about 200m wide and dredged to a depth of 12.5m.

Quarleshaven, a basin, extends NE for 2 miles from the harbor entrance. The main container quay, with facilities for ro-ro vessels, is 900m long and has depths of 12.5 to 13m alongside. Pechiney Quay, at the S side of the entrance, is 130m long and has a depth of 12.5m alongside.

An LPG terminal, with four jetties, is situated at the NE end of Quarleshaven. Vessels up to 295m in length, 44m beam, and 13.5m draft can be accommodated.

Bijleveldhaven is located at the NW end of Quarleshaven. This basin has 1,200m of total berthage, with a depth of 10.5m alongside.

Cittershaven, a narrow basin, extends SE for 1.5 miles from the E side of Quarleshaven. Kaloothaven, a coal facility, is situated on the S side. The wharf is 650m long and has a depth of 17.5m alongside. In addition, there are several private ore and chemical quays, with depths of 5.5 to 11.5m alongside.

Vessels up to 150,000 dwt, 310m in length, and 15.2m draft can be handled in the harbor.

Borssele Tanker Terminal (Total) is situated 3 miles SE of East Harbor. It consists of a T-headed jetty and several mooring dolphins. Vessels up to 100,000 dwt, 280m in length, and 15m draft can be accommodated, but are subject to the HW depth limits in the approach channels.

A repair yard in the NW part of Vlissingen Oost provides two dry docks and a floating dock. The largest dry dock can handle vessels up to 45,000 dwt. It is 215m long and 29.7m wide. The floating dock can handle vessels up to 90,000 dwt.



Vlissingen Oost (Sloehaven)

Vlissingen (Flushing) main light is shown from a prominent framework tower, 11m high, standing on the inner end of the W pier at Koopmanshaven (51°26'N., 3°35'E.).

At East Harbor, the entrance and fairways through the basins are indicated by lighted ranges. Several gantry cranes, standing at the container berths, are conspicuous and 13 wind generators, standing on the E side of the entrance, are prominent. Two prominent chimneys stand at the head of Cittershaven, 2 miles E of the entrance. In addition, two conspicuous chimneys stand at the nuclear power station building, 2 miles ESE of the entrance. The buildings of several chemical works situated in the vicinity of Cittershaven are also prominent.

Pilotage.—Harbor pilotage is compulsory for merchant vessels. Pilots are available 24 hours and may be contacted on VHF channel 9. [See Pilotage and Traffic Control for Westerschelde](#) (paragraph 6.14).

Signals.—Sluicing signals are shown at the harbor locks when sluicing is taking place, as follows:

1. By day—A blue flag bearing the word “Spuien.”
2. At night—Three red lights in the form of a triangle, point up.

6.18 Kanaal door Walcheren (51°27'N., 3°35'E.), about 7 miles long, is entered through a lock in the Inner Harbor at Vlissingen (Flushing). It extends to Veere (51°33'N., 3°40'E.), a small harbor on the NE coast, and connects the Westerschelde with Veerse Meer and the Oosterschelde. The lock, in the Inner Harbor, is 35m wide and has a depth of 4.8m on the sill. There are two locks at Veere; the larger lock is 135m long, 19.3m wide, and has a depth of 7.2m on the sill. The canal is maintained at a least depth of 6.3m, and vessels up to 130m in length, 18m wide, and 5.5m draft may enter. Pilotage is compulsory.

Middelburg (51°30'N., 3°37'E.), a small port, is located on the canal, 3.5 miles NNE of Vlissingen. There is 1,330m of total quayage with depths of 2.7 to 5.4m alongside. There are five bridges situated between Vlissingen and Middelburg, with a maximum clearance of 19m.

6.19 Breskens (51°24'N., 3°34'E.), a small port, is located on the S side of the river, 2.5 miles WSW of Vlissingen. It consists of a commercial harbor and a ferry basin. The ferry



Vlissingen (Flushing)

Aspect.—Old fortifications line the sea front of the port. Prominent objects in the town include the tall spire of St. Jacob's Church, standing at the W end; a windmill standing 0.3 mile ESE of the church; and a water tower standing 0.4 mile NW of the church. Conspicuous objects include the tall cranes of the shipyard in the old section of the port and two chimneys, 125m high, standing 1 mile NE of the church.

basin has a depth of 6.5m and is entered between two breakwaters, 150m apart.

The commercial harbor is entered between two breakwaters, 99m apart, and formed by two tidal basins. A channel, 15m wide, leads from the entrance into the W basin and has a depth of 4.4m. A wharf on the W side of the basin has 200m of berthage with a depth of 4.4m alongside. A prominent grain silo stands between the basins. The E basin has depths of 2.5 to 4.5m and is used by fishing vessels and yachts.

The basins are liable to silt and depths may be less than charted.

Braakmanhaven (51°21'N., 3°46'E.), a large tidal basin, is located on the S side of the river and the W side of Nieuw Neuzenpolder. The entrance channel is 225m wide and dredged to a depth of 12.4m.

Braakman Wharf, consisting of a T-headed jetty, is situated on the NE side of the basin and can accommodate vessels up to 140m in length.

Ocean Dock, 350m long, is situated on the SE side of the basin and has a depth of 14.5m alongside at LLW. Vessels, including LPG tankers, up to 100,000 dwt, 280m in length, and 15.2m draft can be accommodated at HW.

Pilotage into the basin is compulsory. The entrance and the approaches are indicated by lighted ranges, which may best be seen on the chart. Numerous prominent chimneys and flares are situated close E of the basin in the vicinity of a chemical works complex.

Anchorage.—Springergeul Anchorage Area is situated on the S side of Pas van Terneuzen, 1.5 miles NW of the entrance to Braakmanhaven. It is marked by buoys and the limits may best be seen on the chart. In addition, five designated anchorage berths (A through E) are situated in Everingen, 2.2 miles N of the entrance to Braakmanhaven.

Terneuzen (51°21'N., 3°49'E.)

World Port Index No. 31220

6.20 The port of Terneuzen derives its importance mainly from its position at the entrance to the canal (Kanaal Terneuzen-Ghent), which leads to the Belgian port of Ghent. The harbor consists of three basins, namely West Harbour, East Harbour, and Veerhaven, and a riverside jetty.

Tides—Currents.—Tides rise about 4.9m at springs and 4.2m at neaps.

Off Terneuzen, the tidal currents attain velocities of 2.2 to 2.7 knots and are strongest on the S side of the fairway.

Depths—Limitations.—Veerhaven, the outer and former ferry harbor, is now used by fishing vessels and yachts.

East Harbor provides access to the canal through a lock; it is mainly used by inland waterway traffic (tugs and barges).

West Harbor, the largest basin, is used by ocean-going vessels. It provides access to the inner harbor and the canal through two locks.

Vessels up to 256m in length, 34m beam, and 12.3m fresh water draft can enter the canal through Westsluis, a lock at the S end of the basin. Vessels up to 115m in length, 16m beam, and 7.3m fresh water draft can enter the canal through Midden-sluis, a lock at the E side of the basin.



Terneuzen from S

Four basins are located on the E side of the canal at Terneuzen, about 1 mile S of the locks, and form an inner harbor. They provide facilities for general cargo, bulk, ro-ro, and container vessels. There is about 3,700m of total quayage with depths of 5 to 13.5m alongside. Vessels up to 87,000 dwt and 12.3m draft can be accommodated.

Schelde Jetty (Dow Chemical) is situated on the S side of the main channel, about 1 mile WNW of the entrance to West Harbor. Vessels up to 22,500 dwt and 200m in length can be accommodated alongside. Drafts are only limited by the depths in the main channel.

Pilotage.—Pilotage in the harbor and canal is compulsory. See [Pilotage and Traffic Control for Westerschelde](#) in paragraph 6.14.

Signals.—When one or more ocean-going vessels are about to proceed into the river from West Harbor or East Harbor, a flashing orange light is shown from the breakwater of West Harbor to warn other traffic.

Vessels with a draft of 8m or more are considered to be constrained by their draft and should exhibit the appropriate lights and signals when in the basins, locks, and canal.

Anchorage.—Two designated deep-water anchorage berths are situated on the S side of the main channel, about 1.2 miles E of the entrance to West Harbor.

Directions.—The principal route leads from Vlissingen (Flushing) through the main channels of Honte, on the N side of the river, and Pas van Terneuzen, on the S side.

Schaar van Spijkerplaat, Everingen, and Zuid Everingen are tributary (secondary) channels in this part of the river. Schaar van Spijkerplaat leads S of Honte into Pas van Terneuzen and is used by pleasure craft and small vessels. Everingen lies on the N side of the river and is used by medium-sized vessels, inland vessels, and pleasure craft. Designated anchorage berths and a naval exercise area lie in this channel and may best be seen on the chart. Zuid Everingen leads from the E part of Everingen into Pas van Terneuzen and is used mostly by inland vessels and pleasure craft.

Caution.—It is reported that vessels are not passed through Westsluis lock if the river water level is more than 2m above the MHW level.

It is reported that ocean-going vessels entering West Harbor usually require a tug because of the strong tidal currents on the S side of the channel.

6.21 Kanaal Terneuzen-Ghent (51°20'N., 3°49'E.) provides access for ocean-vessels to the port of Ghent. In addition, it gives Ghent and the inland waterways of Belgium and France access to the waterway systems of the Rhine and the Maas by way of the Westerschelde, Kanaal door Zuid Beveland, and the Oosterschelde.

Vessels up to 265m in length, 34m beam, and 12.25m draft can transit the canal by day and at night. These maximum permitted dimensions are the same as for the Westsluis at Terneuzen. Vessels up to 80,000 dwt have made the transit.

The canal, between Terneuzen and Ghent, is 17 miles long and has a depth of 13.5m; about half is in the Netherlands and the remainder in Belgium. The Netherlands section is 150m wide, with a bottom width of 62m. The Belgian section is 200m wide, with a bottom width of 100m. The passage for ocean-going vessels generally takes about 2 hours 30 minutes.

The canal is spanned by three swing bridges, which provide navigable passages 60m wide. Due to heavy road traffic, the bridges are closed to shipping between certain rush hour periods on weekdays. They are reported not to open until a vessel approaches within 500m.

A power cable, with a vertical clearance of 48m, spans the canal about 5.5 miles S of Zelzate.

No vessel may enter the canal unless equipped with VHF. See [Traffic Control for Westerschelde in paragraph 6.14](#). Speed restrictions are in force along the canal.

Draft restrictions of 3.5 to 5m are in force for vessels entering the branch canals at Sluiskil, Driekwart, and Sas van Ghent.

Sluiskil is situated 3 miles S of the lock at Terneuzen. There is a quay, with facilities for coal, which is 395m long and has a depth of 10m alongside.

Sas van Ghent is situated 3 miles S of Sluiskil. There is a quay 210m long with a depth of 7.2m alongside.

Zelzate is situated 2.5 miles S of Sas van Ghent. There is a quay, fronting the steel works, which is 1,050m long and has a depth of 13.5m alongside. It can accommodate the largest vessels permitted to enter the canal. A turning basin is situated close S of this quay; at this point the canal is 400m wide.

Ghent (Gent) (51°04'N., 3°44'E.)

[World Port Index No. 31270](#)

6.22 This inland port is connected with the Westerschelde by Kanaal Terneuzen-Ghent, through which ocean-going vessels transit. It is also connected to the Belgian canal system and the whole of the European inland waterway system.

The harbor consists of several basins and also includes a section of the Kanaal Terneuzen-Ghent.

Depths—Limitations.—Vessels up to 265m in length, 34m beam, and 12.25m draft can be accommodated.

That section of the canal, which extends S of Zelzate, lies within the port limits. Petroleum refineries, storage depots, factories, and other industrial establishments stand along the sides of this stretch. Private wharves, with about 1,900m of total berthage, are situated on the sides of the canal and have depths of 7.5 to 13.5m alongside.

The principal basins, of which there are seven, are located at the S end of the canal on the NE outskirts of the city. Four older basins, with depths of 3.5 to 7.5m, lie to the S of these basins and are used mainly by canal barges.

Sifferdok, a basin 300m wide, branches SSE from the canal. It has 4,440m of total quayage, with depths of 13.5m alongside, and facilities for ro-ro and bulk vessels. A conspicuous grain silo building, known as the Euro Silo, stands at the head of this basin.

Grootdok, a basin 2,124m long and 165m wide, opens S from the canal, 0.7 mile SSW of the entrance into Sifferdok. Three parallel basins known as Noorddok, Middendok, and Zuiddok indent the E side of Grootdok. These basins have depths of 8.8 to 13.5m and facilities for ro-ro and bulk vessels.

Petroleumdock, entered close NE of Sifferdok, has depths up to 13.5m alongside. This basin is reported (1993) to be closed to tanker vessels and to have new facilities for general cargo and reefer vessels.

Rodenuizedok, entered 2 miles NE of Petroleumdock, has 790m of total quayage with depths of 12.3 to 13.5m alongside. This basin has facilities for tanker and grain vessels.

Vessels up to 80,000 dwt can be accommodated within the port.

The Schelde (Terneuzen to Antwerpen)

6.23 The Schelde above Terneuzen is 1.5 to 3.2 miles wide as far as Bath. The river then narrows gradually to Antwerpen, where it is less than 0.3 mile wide in places.

Although the main channels of the river are well-marked, the numerous shifting banks, which partially dry, the critical channel depths, the strong tidal currents, and the heavy shipping traffic make navigation difficult in this part of the river. In addition, the navigational aids are subject to quick and frequent changes.

The main channel between Terneuzen and Bath (51°24'N., 4°12'E.) comprises the E part of Pas van Terneuzen, Overloop van Hansweert, Zuidergat, Overloop van Valkenisse, and Nauw van Bath. Tributary (secondary) channels branching from the main fairway include Schaar van Waarde, Schaar van Valkenisse, and Schaar van de Noord.

Middlegat, the former and now alternate main channel, lies NW of Overloop van Hansweert. It is still marked by buoys, but is little used due to silting at the S entrance.

Vessels of suitable draft, with local knowledge, should use the tributary (secondary) channels, which are marked, during daylight only. Such vessels, when entering the main channel, must give way to other vessels.

Numerous small harbors and piers are situated along both sides of the river and are used by small local vessels, ferries, and pleasure craft.

Between Bath and Antwerpen, only one area of middle ground lies in the river, but shallow and drying banks extend

from both shores and occupy more than half the width of the river.

Pas van Rilland is entered close above Bath and runs SSE towards Antwerpen. A partly drying middle ground, known as *Plaat van Doel*, lies from 3 to 4.5 miles above Bath. The main channel passes NE and E of this middle ground. *Schaar van Ouden Doel*, a tributary channel, passes SW of the middle ground and is only suitable for small craft with local knowledge.

The N entrance to the Port of Antwerpen is situated E of *Plaat van Doel*. The buildings and cooling towers of a nuclear power station stand on the W side of the river, 1.5 miles SSW of the port entrance, and are very conspicuous from down river.

The boundary between the Netherlands and Belgium is situated 2 miles above Bath on the E side of the river, and 3 miles above Bath on the W side.

Caution.—The bend in the main channel off Bath is reported to be difficult for long and deep-draft vessels, especially if traffic is proceeding in the opposite direction.

Ferries ply between the small harbors of *Kruiningen*, located 1 mile ESE of *Hansweert*, and *Perkpolder*, located 2.5 mile SSE of *Hansweert*.

It has been reported that vessels have experienced difficulty in steering when passing Bath and *Hansweert* at the change of the tide due to shallow water and tide rips. Passage down the river should be planned against the flood, adjusting the sailing time to give adequate clearance in the higher reaches.

An overhead cable spans the main channel and the N entrance to the port. It has vertical clearances of 68m over the channel and 74m over the entrance.

6.24 Hansweert (51°26'N., 4°01'E.), a small port, is situated on the N side of the river, about midway along the main channel between *Terneuzen* and *Bath*. It is the S terminus of *Kanaal door Zuid Beveland*, which connects with the inland waterway system giving access to *Oosterschelde* and *Rotterdam*.

Tides—Currents.—Tides at *Hansweert* rise about 5.2m at springs and 4.4m at neaps.

The tidal currents off the entrance are strong, but there are no eddies.

Depths—Limitations.—The entrance fairway leads between two breakwaters, 79m apart. Two locks provide access to the canal, which has a depth of 6.5m, and both are 180m long and 24m wide. A quay, 220m long, is situated on the W side of the canal at *Hansweert*.

Vessels up to 140m in length, 14.5m beam, and 4.8m draft can enter and transit the canal as far as *Wemeldinge*, 4 miles N.

At *Wemeldinge*, there are three locks giving access to the harbor. The largest is 152m long and 16m wide.

The canal is crossed by several bridges, all of which have drawspans, and by an overhead cable with a vertical clearance of 33m.

Pilotage.—Pilotage through the canal is compulsory. Vessels approaching or leaving the port should report to *Radar Hansweert* on VHF channel 65. See [Traffic Control for the Westerschelde](#) in paragraph 6.14.

Antwerpen (Antwerp) (51°13'N., 4°24'E.)

World Port Index No. 31250

6.25 Antwerpen, also known as *Anvers*, is the most important port in Belgium and one of the principal ports in Europe. It is located along the E bank of the *Schelde*, 48 miles above *Vlissingen* (*Flushing*).

The port is connected to the Belgian inland waterways system which provides access to most of the principal inland waterways of the Netherlands, France, Switzerland, and Germany.

The harbor consists of river quays which border the city, at the E side of the river; a complex of wet docks situated on the E bank of the river and entered through several locks; and a new extensive industrial dock area, entered through a lock, on the W bank of the river.

Winds—Weather.—The prevailing winds are SW and W. Fog occurs frequently on the river, but does not generally affect the movement of vessels or working of cargo.

During very severe winters, ice may impede traffic to some extent, but icebreakers keep the port open.

Tides—Currents.—Tides rise about 5.8m at springs and 4.8m at neaps.

Depths—Limitations.—The riverside quays fronting the city are divided into two sections, known as the *Old River Quays* and the *New River Quays*. They are used mainly by vessels which maintain regular service to and from the port.

The *Old River Quays* extend for almost 2 miles above the entrance to *Kattendijk Lock*. The *New River Quays* extend for 1 mile above the upper end of the *Old River Quays*. These quays have depths of 5 to 12m alongside.

Several large petroleum installations are situated along the W side of the river above the upper end of the *New River Quays*. The main berthing facilities for ocean-going tankers at these installations are formed by an offshore wharf, which is 305m long and has depths of 7.5 to 9m alongside.

Europa Container Terminal is situated along the E side of the river, close S of *Berendrecht Lock*. The quay is 1,500m long and has depths of 13.1 to 13.5m alongside.

The extensive wet dock complex on the E bank of the river can be entered through the following locks, listed from N to S, as follows:

1. *Zandvliet Lock*, 500m long and 57m wide, has a depth on the sill of 13.1m (17.8m at HW).
2. *Berendrecht Lock*, 500m long and 68m wide, has a depth on the sill of 13.5m (17.8m at HW).
3. *Boudewijn Lock*, 360m long, 45m wide, has a depth on the sill of 9.9m (14.5m at HW).
4. *Van Cauwelaert Lock*, 270m long and 35m wide, has a depth on the sill of 9.4m (14m at HW).
5. *Royers Lock*, 180m long and 22m wide, has a depth on the sill of 5.9m (10.6m at HW).
6. *Kattendijk Lock*, 110m long and 24.8m wide, has a depth on the sill of 3m (7.6m at HW). This lock is reported (2000) to be no longer used.



Zandvliet Lock



Boudewijn Lock

This wet dock complex includes the following main basins, which are used by ocean-going vessels:

Basin	Quayage	Depths
Kanaaldok B1	3,249m	16.7m
Kanaaldok B2	800m	16.7m
Kanaaldok B3	2,549m	15.2m
Delwaidedok	4,660m	16.7m
Churchilldok	5,037m	15.2m
Grain Dock	1,213m	6.2 to 10.2m
Hansadok	5,243m	12.0 to 15.2m
Hansadok 2	1,680m	10.7m
Havendok 3	2,110m	11.6 to 14.7m
Havendok 4	2,350m	12.0 to 13.2m
Havendok 5	4,495m	12.0m
Havendok 6	3,785m	15.2m
Leopoldok	1,000m	11.3m
Industriedok	1,640m	12.0m
Albertdok	5,124m	9.5 to 12.0m

Basin	Quayage	Depths
Amerikadok	2,355m	7.5 to 14.6m
Marshalldok	3,656m	12.0m

The extensive wet dock complex on the W bank of the river serves a large industrial area. It can be entered through the Kallo Lock, which is 360m long, 50m wide, and has a depth on the sill of 11.4m (16m at HW).

This wet dock complex includes the following main basins, which all have projected depths of 18m, as follows:

Basin	Quayage
Waaslandkanaal	2,680m
Zuidelijk Insteekdok	1,500m
Noordelijk Insteekdok	2,020m
Vrasenedok	4,400m
Doeldok	1,200m

Other docks within this complex are under construction.

An extensive marina for yachts is situated on the W side of the river, 0.4 mile SW of Kattendijk Lock.

There are also several drydocks within the port. The largest is 313m long and 50m wide. It can handle vessels up to 200,000 dwt.

The port has extensive facilities for passenger, automobile ferries, bulk, container, ro-ro, chemical, tanker, and LPG vessels.

It is reported (2000) that a vessel of 275,000 dwt, 335m in length, 52m beam, and 15m draft was able to enter the port, partly loaded. However, drafts are limited by the depths in the river and the maximum draft allowed is 15.2m (2000).

Pilotage.—Pilotage is compulsory within the harbor. Vessels should report to the Centrale Zandvliet Traffic Center on VHF channel 12, when approaching or leaving the port.

Vessels should also maintain a VHF listening watch on VHF channel 74 when in the docks. See Pilotage and Traffic Control for the Westerschelde (Schelde). Deep-sea pilots for the English Channel and the North Sea may be ordered from Antwerpen.

Regulations.—The pilotage building and river navigation offices are situated about 0.3 mile S of Kattendijk Lock. The War Memorial to Seamen stands in front of these buildings and it is customary for vessels to dip their ensigns when passing it.

Anchorage.—Anchorage berths in the vicinity of the port are subject to regulation by the maritime police who communicate instructions and information to the river pilots.

If it is necessary for a vessel to anchor before passing through the locks, a berth along the W side of the river, below No. 99 Lighted Buoy, will be designated.

Special anchorage areas, reserved for government vessels and pleasure craft, border the W bank of the river.

6.26 Bruxelles (Brussels) (50°52'N., 4°21'E.) ([World Port Index No. 31260](#)) can be reached by way of the Schelde, above Antwerpen. Vessels enter the Rupel River, 5.5 miles above the upper river quays at Antwerpen, and then proceed for 1.5 miles

to Wintham, at the entrance to the Brussels Maritime Canal. This canal extends for 16 miles to the port.

Depths—Limitations.—The canal has a depth of 6.5m and is 60 to 100m wide. It is divided into three sections which are connected by locks. The largest lock for each section is 114.1m long and 16m wide.

Several lift and swing bridges span the canal and have a minimum vertical clearance of 30.5m.

The harbor is comprised of three basins; Avant Port, Beco Dock, and Vergote Dock. These have 5,000m of total quayside, with depths of 3.5 to 6.5m alongside. Vessels up to 106m in length, 14.8m beam, and 5.8m draft can enter the canal and reach the port.

Aspect.—The fairway of the Schelde above Antwerpen is not marked, but lies roughly in the center of the river. The entrance to the River Rupel is indicated by a lighted range and its fairway, as far as the canal entrance, is marked by beacons.

Pilotage.—River pilots are available at Antwerpen and canal pilots board at Wintham. See Pilotage for the Westerschelde (Schelde). It is reported that passage time, due to locks and bridges, is between 5 and 9 hours. Ocean-going vessels have priority over barges and northbound ocean-going vessels have priority over southbound ocean-going vessels.

Caution.—Numerous barges are generally encountered. Vessels are normally accompanied by tugs which hold them in mid-channel when waiting for the locks and bridges.