

## SECTOR 3

### ENGLAND—FLAMBOROUGH HEAD TO THE THAMES ESTUARY

**Plan.**—This sector describes the E coast of England between Flamborough Head and Orford Ness, at the N entrance of the Thames estuary. Included within this sector are the off-lying banks and dangers which are located in the approaches to the River Humber. The general descriptive sequence is from N to S.

#### General Remarks

**3.1 Tides—Currents.**—The offshore tidal currents between Flamborough Head and Oxford Ness change rapidly and begin 3 hours 15 minutes later off Winterton Ness than off Flamborough. Farther S, the rate of change decreases and eventually ceases; the currents begin 30 minutes earlier in the entrance to The Wash than off Flamborough.

The currents run in the same direction in the whole area for brief periods, but meet or separate at other times.

In the S part of the area, over and between the shoals off the N coast of Norfolk, the currents are more or less rotatory counterclockwise, but when strongest, run in about the directions of the channels. The times at which the currents are weakest and strongest vary considerably with the position.

Between the banks and shoals extending NE from the NE coast of Norfolk, the tidal currents follow the directions of the coast. In the outer channels, the current is more or less rotatory and, though when strongest it follows the direction of the channels, when changing from running SE to NW it sets SW. When changing from running NW to SW it sets NE across the shoals.

The currents gradually lose strength NE from Haisborough Sand, and in the channel between Leman and Ower Banks the spring velocity is about 2 knots, decreasing to 1.5 knots outside the outer bank. When strong currents run across the shoals or inequalities of the bottom, overfalls or ripples may be formed.

**Caution.**—In the vicinity of the off-lying banks and dangers, fleets of fishing vessels are constantly encountered and a careful lookout for them should be maintained.

Caution, especially in low visibility, is also required in this offshore area because of the presence of gas production platforms and drilling rigs which often move. It should also be noted that radar responses from these rigs appear similar to those from ships.

The positions of the permanent production platforms and accompanying submarine pipelines are shown on the charts. Adjacent platforms may be connected by catwalk bridges.

In the offshore areas, seismic survey vessels, rig supply vessels, and maintenance vessels with divers may be encountered.

High speed craft may be encountered within the waters described in this sector.

Numerous wellheads are situated in the vicinity of the offshore oil and gas fields and are shown on the chart; those which are a possible hazard to surface navigation are marked by lighted buoys.

Adjacent to the oil and gas fields, designated development areas may exist and are shown on the chart. Within these areas, various maintenance craft may be working and vessels are advised to keep outside of the limits.

Incinerator vessels burning chemical waste may be observed in the offshore areas; flames and smoke may be emitted, giving the appearance of a ship on fire.

Vessels are strongly advised not to anchor or trawl near the pipelines in this area, because damaging a pipeline could create an immediate fire hazard. The natural gas in these pipelines is light, flows under high pressure, and is highly flammable.

Numerous dangerous wrecks lie within the area described by this sector and are best seen on the charts.

Numerous production platforms, wells, and gas and oil pipelines lie in the waters off the E coast of England and may best be seen on the charts. Extreme caution is advised when navigating in the vicinity of such facilities. Some of the production platforms are equipped with racons.

The principal oil and gas fields in the area are listed below:

1. Tyne Gas Field (54°27'N., 2°29'E.).
2. Trent Gas Field (54°18'N., 1°40'E.).
3. Boulton Gas Field (54°15'N., 2°09'E.).
4. Murdoch Gas Field (54°16'N., 2°19'E.).
5. Caister Gas Field (54°12'N., 2°27'E.).
6. Ketch Gas Field (54°03'N., 2°29'E.).
7. Schooner Gas Field (54°04'N., 2°05'E.).
8. Windermere Gas Field (53°50'N., 2°46'E.).
9. Ravenspurn N Gas Field (54°02'N., 1°06'E.).
10. Ravenspurn S Gas Field (54°03'N., 0°54'E.).
11. Cleeton Gas Field (54°02'N., 0°44'E.).
12. Neptune Gas Field (53°59'N., 0°47'E.).
13. Rough Gas Field (53°50'N., 0°28'E.).
14. Hyde Gas Field (53°48'N., 1°43'E.).
15. West Sole Gas Field (53°43'N., 1°08'E.).
16. Amethyst Gas Field (53°37'N., 0°44'E.) Dev Area.
17. Barque Gas Field (53°37'N., 1°32'E.).
18. Sole Pit Gas Field (53°34'N., 1°38'E.).
19. Ann Gas Field (53°43'N., 2°04'E.).
20. Audrey Gas Field (53°34'N., 2°00'E.).
21. Pickerill Gas Field (53°33'N., 1°08'E.).
22. Malory Gas Field (53°33'N., 1°15'E.).
23. Galahad Gas Field (53°33'N., 1°22'E.).
24. Excalibur Gas Field (53°28'N., 1°21'E.).
25. Guinevere Gas Field (53°25'N., 1°16'E.).
26. Lancelot Gas Field (53°25'N., 1°19'E.).
27. Waveney Gas Field (53°21'N., 1°18'E.).
28. Clipper Gas Field (53°28'N., 1°44'E.).
29. Alison Gas Field (53°31'N., 2°09'E.).
30. Galleon Gas Field (53°28'N., 1°55'E.).
31. Viking Gas Field (53°27'N., 2°20'E.).
32. Valiant N Gas Field (53°23'N., 2°00'E.).
33. Valiant S Gas Field (53°19'N., 2°06'E.).
34. Vanguard Gas Field (53°23'N., 2°07'E.).
35. Ganymede Gas Field (53°19'N., 2°14'E.).

36. Victor Gas Field (53°20'N., 2°22'E.).
37. Indefatigable Gas Field (53°20'N., 2°35'E.).
38. Corvette Gas Field (53°14'N., 2°37'E.).
39. Bessemer Gas Field (53°12'N., 2°29'E.).
40. Bure Gas Field (53°07'N., 2°25'E.).
41. Vulcan Gas Field (53°15'N., 2°01'E.).
42. Anglia Gas Field (53°22'N., 1°43'E.).
43. North Hewett Gas Field (53°06'N., 1°46'E.).
44. Della Gas Field (53°05'N., 1°54'E.).
45. Hewett Gas Field (53°02'N., 1°45'E.).
46. Lemn Gas Field (53°05'N., 2°11'E.).
47. Camelot Gas Field (52°57'N., 2°09'E.).
48. Norpipe 37-4-A Pump Station (55°54'N., 1°36'E.).
49. Norpipe 36-22-A Pump Station (55°18'N., 0°13'E.).

For oil and gas fields located E and SE of the above fields, in the vicinity of the North Sea Deep Water Routes, see paragraph 8.6.

### Flamborough Head to the River Humber

**3.2 Flamborough Head** (54°07'N., 0°05'W.) is formed by a perpendicular cliff of white chalk, 37 to 40m high. It is very bold and a common landfall point for vessels passing N and S along this coast, as well as those sailing between the River Humber and the Baltic Sea.

A main light is shown from a conspicuous tower, 27m high, standing on the headland. A prominent disused light tower stands 0.2 mile WNW of the main light.



Flamborough Head Light

Flamborough Steel, the rocky ledge extending about 0.3 mile SE of the headland, can be avoided by keeping the upper part of the light structure in sight above the cliff, or by giving the cliff a berth of 0.5 mile.

**Tides—Currents.**—The tidal currents are stronger closer inshore than from 5 to 10 miles off Flamborough Head, but they appear to be affected by eddies.

At a position 1.5 miles ENE of the headland, the currents begin nearly 2 hours earlier than the corresponding currents near the coast NW of the headland and 1 hour 30 minutes earlier than those near the coast S of the headland.

**Caution.**—Within a distance of 8 miles N of Flamborough Head and within about 1.5 miles of the coast, Flamborough

Head Light may be obscured by the cliffs. It may also be obscured within the N part of Bridlington Bay.

Submarines frequently exercise in the waters off Flamborough Head.

**3.3 Off-lying banks and dangers—Dogger Bank** (54°40'N., 2°20'E.) lies mostly between the parallels of 54°05'N and 55°20'N, and the meridians of 1°10'E and 5°00'E.

Southwest Patch, with depths of 13 to 18m, lies at the SW end of Dogger Bank and the sea breaks heavily over it during gales. This bank is a favorite resort of the fishermen, but should be avoided in bad weather. The brownish color of the water in the North Sea is largely due to the stirred-up deposits of this bank which are held in suspension.

Outer Well Bank (54°10'N., 2°00'E.), with a least depth of 19m, lies near the S end of Dogger Bank.

**Outer Silver Pit** (54°05'N., 2°10'E.), with depths of 36 to 82m, separates Dogger Bank from a large bank lying to the SW which extends off the English coast. Numerous foul shoal patches lie on this latter bank.

**Caution.**—Submarine pipelines, which may best be seen on the chart, extend SW from Cleeton Gas Field (54°02'N., 0°44'E.), SW from Rough Gas Field (53°50'N., 0°28'E.), and in a W direction from Amethyst Gas Field (53°37'N., 0°44'E.). These pipelines connect the various platforms situated within the fields to a mainland terminal located at Easington (53°39'N., 0°07'E.), about 5 miles N of Spurn Head.

Numerous dangerous wrecks and submerged wellheads are situated in the vicinity of Dogger Bank and may best be seen on the chart.

A mine exercise area lies near the E end of Outer Silver Pit. Vessels are cautioned against anchoring or fishing in this area, due to the risk from explosives lying on the bottom.

An exercise range used by aircraft is centered on a radio tower (53°45'N., 2°34'E.), marked by a light, standing offshore, about 85 miles E of Spurn Head. Five other towers are situated in a circle, with a radius of 15 miles, around the central tower. The towers are connected by submarine power cables. The range, which may best be seen on the chart, is not used for weapons firing.

A submarine exercise area, which is indicated on the chart, lies about 20 miles N of the above central aircraft range tower.

**3.4 Sewerby** (54°06'N., 0°09'W.), a village, is situated 3.5 miles WSW of Flamborough Head. The coast between is composed of rocky cliffs fronted by a flat rocky foreshore. Then to Kilnsea, 31 miles farther SSE, the coast is composed of dark clay cliffs, 6 to 24m high. Inland, the country is low and there are not many features by which one part of the coast may be distinguished from another. A prominent building stands amid the trees at Sewerby.

**North Smithic** (54°05'N., 0°05'W.), a shoal with a least depth of 3.2m, lies centered about 1.3 miles S of Flamborough Head and is marked by a lighted buoy. South Smithic, a shoal with a least depth of 2.6m, lies centered about 3.7 miles SSW of Flamborough Head and is marked by a lighted buoy. These two shoals lie in the approaches to Bridlington Bay and extend into one another.

**Bridlington** (54°05'N., 0°11'W.) (*World Port Index No. 31680*), a resort town, stands at the head of Bridlington Bay,

which lies between Flamborough Head and Bromston Sands, 7.5 miles SW. The harbor, which is formed by two piers, is used only by fishing vessels and pleasure craft. Tides rise about 6.1m at springs and 4.7m at neaps. The entrance faces S and is 27m wide. A sand spit, which dries, fringes the S side of the head of the N pier. Both the harbor and the near approach dries and vessels should be capable of taking the ground at LW. There is a depth of 4.3m alongside the inner side of the S pier at HWS. Vessels up to 45m in length and 3.9m draft have entered the harbor.

Several churches, with prominent spires, are situated in the town and a conspicuous block of apartments stands close W of the harbor. The harbor may be contacted by VHF and local fishermen will act as pilots for vessels without local knowledge. Vessels approaching from NE should pass NNW of North Smithic Lighted Buoy and vessels approaching from SE should pass WSW of South Smithic Lighted Buoy.

**Anchorage.**—Anchorage may be obtained in any part of Bridlington Bay between South Smithic and the coast. The best anchorage berth lies, in a depth of 10m, about 1.7 miles SW of Flamborough Head Light.

**Caution.**—A spoil ground area lies centered about 1.5 miles SE of Bridlington harbor entrance.

During N gales, a heavy and steep sea may be experienced over North Smithic and well into the lee of Flamborough Head.

An outfall pipeline extends 1 mile seaward from a point located on the shore about 0.6 mile SW of Bridlington harbor entrance and is marked by a lighted buoy.

**3.5 Hornsea** (53°55'N., 0°10'W.), a small resort town, stands on low ground and is surrounded by trees, 10 miles S of Bridlington. A prominent church spire stands close to the cliffs at Mappleton, 2.3 miles S of Hornsea. Prominent church towers stand 1 mile apart in the villages of Ulrome and Skipsea, about 5 miles NNW of Hornsea.

Withernsea is located 13 miles SSE of Hornsea. A conspicuous disused light tower, 39m high, stands close NW of the church in this village.

The high land at Dimlington, 4.5 miles SE of Withernsea, consists of a cliff of clay and pebbles, 40m high, and is a very conspicuous landmark from seaward.

Easington, with a prominent church tower and windmill, is located about 1.3 miles SSE of Dimlington. A conspicuous radio mast stands 0.7 mile W of the church tower.

Kilnsea, with a prominent church tower, is located 2 miles SSE of Easington. A tongue of land extends 3 miles S from Kilnsea to Spurn Point and forms the N entrance to the River Humber.

**Caution.**—A target firing area, marked by lighted buoys, is situated off the coast between Hornsea and Withernsea.

Five submarine gas pipelines extend seaward from a point on the shore about 2 miles N of Kilnsea.

## The River Humber (Humberside)

**3.6 The River Humber** (Humberside) (53°33'N., 0°01'E.) is a common outlet for the numerous streams which drain the greater part of Yorkshire and the Midlands. It is formed by the junction of the River Ouse and the River Trent, about 15 miles above Hull, and 34 miles from the sea. Here the River Humber

is 0.5 mile wide and, after an irregular course, nearly triples its width as it reaches Hull. About 2 miles farther down river, it turns abruptly and runs SSE for 6 miles; it then bends to the E and joins the sea as a stream about 4 miles wide at high water.

The Humber is confined for nearly the whole of its course between low embanked lands, from which the water has been progressively excluded by the process of silting or "warping," as it is locally called. The river is entered between Spurn Head and Donna Nook, 6 miles SSE.

Both sides of the estuary are skirted by extensive flats, which in some places dry up to 2 miles from the coastline.

Owing to the tortuous course of the river and the amount of matter with which its waters are charged, the navigable tract is narrowed by numerous shoals and extensive flats, and depths within the fairway channels are constantly changing.

Above Hull, the changes are so frequent that it has not been considered necessary to publish either charts or sailing directions, as local knowledge is indispensable.

Ports on the Humber include Grimsby, Immingham, Hull (Kingston upon Hull), and Goole. A tanker terminal monobuoy is moored at Tetney.

**Tides—Currents.**—Tides at Goole rise about 5.7m at springs and 3.7m at neaps.

Tides at Hull rise about 7.5m at springs and 5.8m at neaps.

Both the duration and the velocity of the outgoing tidal current is increased during and after periods of heavy rain; the incoming current is correspondingly reduced. These changes are very small in the river entrance, but increase farther upriver; off Immingham, the outgoing current may continue to run up to almost 1 hour after the time at which the incoming current normally begins.

In the river entrance, the tidal currents run in the direction of the channel across Chequer Shoal, around Spurn Head, in Hawke Channel, and in Sunk Road; across Chequer Shoal, the currents are very strong and in Hawke Channel, they are subject to sudden changes of direction. The currents are generally stronger in the channels of the river than over the banks on both sides.

Between Grimsby and Immingham, the tidal currents run generally in the direction of the channel, but the incoming current on the NE side of the river sets strongly across Holme Ridge to the channel W of Foul Holme Spit.

Off Immingham, the spring velocities of the flood and ebb are about 3 knots and 5 knots, respectively; however, they may reach 4 knots and 7 knots, respectively, under exceptional circumstances. The dividing line between the strength of the current in the river and the comparatively slack water between the piers varies slightly in position, but is normally on a line joining the elbows of the piers, bending slightly in the center towards the lock entrance. It is somewhat nearer the lock entrance at HW than at LW. The dividing line can frequently be seen on the surface. The division between the weak currents at the piers and the slack water at the lock entrance occurs on a line between the outer ends of the masonry piers, where they join the pile piers.

In the river above Hull and in the lower reaches of the River Ouse and the River Trent, tidal currents normally run at velocities of 3 to 4 knots, but may exceed 6 knots at times. A bore occurs in the River Trent at equinoctial spring tides.

The quantity of fresh water increases as the river is ascended and on the surface, the outgoing current is observed to be stronger and of longer duration than the incoming current.

**Depths—Limitations.**—In the approach to the River Humber, the depths are singular and therefore useful in making this river in thick weather. The special feature, New Sand Hole, is a narrow and deep depression which has depths of 18 to 44m within it and depths of 9 to 16m on each side. At its NE end, this depression expands into an irregular basin with depths of 18 to 31m, sand.

With the exception of New Sand Hole, the depths off the River Humber, S of Dimlington, though somewhat irregular, nowhere exceed 23m, except in another depression which extends W from the SW end of New Sand Hole to about 2 miles S of Spurn Head; the bottom consists of sand and stones over an hardened brown clay. The Binks and Outer Binks shoals extend up to about 4 miles E of Spurn Head. Chequer Shoal, with depths of less than 4.6m, lies SE of The Binks and forms the N side of the channel between New Sand Hole and Spurn Head.

Haile Sand Flat, on the S side of the approach to the Humber, extends about 3.8 miles NNE from Donna Nook. Depths of 1 to 4.2m lie within 0.8 mile of the N edge of this shoal. Depths of less than 11m extend NE from Donna Nook to a position off the SE side of New Sand Hole.

Bull Sand shoal lies in mid-channel, 1.5 miles SW of Spurn Head. Haile Channel is located on the S side of Bull Sand and Bull Channel is located on the N side. The Middle, an extensive shoal, lies about 4 miles WNW of Spurn Head. Both of these shoals are subject to great changes in depths and configuration.

Hawke Channel, leading to the dredged passage through Sunk Road, is located N of The Middle. The Sunk Dredged Channel is about 215m wide and maintained at or near its designed depth of 8.8m.

Grimsby Middle Channel is located to the S side of The Middle. When navigating in this channel, vessels inbound should keep to the N side of the channel and vessels outbound should keep to the S side of the channel; all vessels should comply with the navigation aids which mark shoal patches within the fairway.

Between the W end of the Sunk Dredged Channel and Immingham, the channel fairway is indicated by a range.

Above Immingham, the channel configuration is subject to frequent change and the fairways are well-marked by lighted buoys and light floats, which are moved as necessary; the least depth in the channel as far as Hull Roads was reported (1999) to be 6.2m.

Limitations for entry to the various ports on the Humber are governed by the state of the tide together with the physical dimensions of the vessel. See Depths and Limitations for the individual ports.

**Aspect.**—**Humber Light Float** (53°39'N., 0°20'E.), equipped with a racon, is moored about 9 miles NE of Spurn Head and about 2 miles N of the NE end of New Sand Hole.

**Spurn Light Float** (53°33.5'N., 0°14.2'E.), equipped with a racon, is moored about 4.6 miles E of Spurn Head.

**Outer Sand Lighted Buoy** (53°36.4'N., 0°29.5'E.), equipped with a racon, is moored about 14 miles ENE of Spurn Head.

**South Sand Lighted Buoy** (53°35.6'N., 0°25.3'E.) is moored about 12.5 miles ENE of Spurn Head and 1.8 miles SW of Outer Sand Lighted Buoy.

**Spurn Head** (53°35'N., 0°07'E.), the N entrance of the river, is the S extremity of a tongue of land. A pilot control and radar station is situated here. A conspicuous disused light structure, 39m high, stands on the tongue, about 0.5 mile NE of the head and another disused light structure stands on the foreshore close W of it.

Rough Gas Field (53°50'N., 0°28'E.), with a prominent lighted platform complex, is located about 20 miles NE of Spurn Head.

The S side of the entrance between Donna Nook and Grimsby, 9 miles NW, is low, as are all the shores of river, and fronted by extensive sands.

Bull Sand Fort stands 1.5 miles SW of Spurn Head and is marked by two lighted buoys. Bull Lightfloat is moored about 0.4 mile ESE of the fort.

Haile Sand Fort, marked by a light, stands about 3.5 miles SW of Spurn Head and is surmounted by a mast, 6m high.



**Spurn Head Lighthouse (disused)**

The **Humber Bridge** (53°42'N., 0°27'W.), with a main span of 1,410m, is one of the longest single span suspension bridges in the world and crosses the river about 5 miles above Hull Roads; the two conspicuous towers, 161m high, can be seen for a considerable distance. The bridge has a vertical clearance of 30m.

Numerous small havens are situated on both banks of the river and are shown on the chart; the approach channels are marked by buoys and beacons. They are used by small craft, generally dry, and have depths of about 1.5m at HW.

**Pilotage.**—Humber Pilotage Control and Vessel Traffic Service (VTS) are combined in a single center located at Spurn Point. Pilot orders for inbound and outbound passages must be sent to the VTS center by fax, telephone, telex, or VHF channel 14 or 12 as appropriate. In the approaches to the Humber, VHF channel 13 is used as an intership channel and for communication between pilot boats and vessels embarking pilots.

Pilotage is compulsory for vessels over 60m in length and all vessels carrying dangerous substances in bulk. Vessels requiring pilotage, or their agent, should send an ETA message to the VTS center at least 12 hours in advance of arriving at the



**The Humber Bridge**

seaward limit of the pilotage area. The message must state the following:

1. Name and call sign.
2. Length.
3. Grt and nrt.
4. Air draft.
5. Draft and dwt (actual).
6. Summer draft and dwt.
7. Destination.
8. ETA at destination and at Spurn Light Float.
9. Last port of call and original port of call.
10. Berthing orders.
11. Details of cargo.
12. Pilotage requirements and pilot boarding position.
13. Pilot Exemption Certificate number.
14. Report (Schedule II) for vessels carrying dangerous goods.
15. Defects and any other information.

Inbound vessels must confirm their ETA, as follows:

- a. 4 hours prior to arriving at Alpha Lighted Buoy (53°32.8'N., 0°13.3'E.) on VHF channel 14.
- b. 2 hours 30 minutes prior to arriving at Alpha Lighted Buoy (53°32.8'N., 0°13.3'E.) on VHF channel 14.

The ETA confirmation at 2 hours 30 minutes is required under all circumstances and is not dependent on the availability of a berth or berthing time.

Vessels claiming exemption from compulsory pilotage should inform the VTS center of their intentions. Pilotage is recommended for those vessels exempted but without local knowledge.

All pilotage requirements by inbound vessels should be made through VTS Humber on VHF channel 14 up to the meridian of No. 4A Clee Ness Lightfloat (53°35'N., 0°02'E.). Above this meridian (upriver) vessels should use VHF channel 12.

The pilotage control and VTS center at Spurn Head has radar coverage from seaward of Humber Lightfloat to Immingham. Pilot launches operate from a small pier on the W side of the head.

Pilots board vessels over 40,000 dwt, over 20,000 cubic meters (gas carriers), or with drafts over 11m about 1.5 miles NE of Humber Light Float. Such vessels, while awaiting a pilot, should anchor in the deep-water anchorage centered about 3.5 miles SE of Humber Lightfloat.

Vessels should be aware that tidal currents in this area have, on occasion, exceeded the predicted rate and anchored vessels have dragged their anchor N, at rates of up to 2 knots, towards the gas pipelines situated 4 miles N. Due to these strong tidal currents, it is inadvisable for deep-draft vessels to embark the pilot closer to the shore. In addition, there is no certainty that suitable anchorages can be found if for any reason these vessels cannot proceed directly to their final berths.

Pilots board other vessels about 1 mile SE of Spurn Lightfloat (53°33.5'N., 0°14.3'E.), in the Precautionary Area.

During bad weather, pilots may advise vessels of the boarding position.

Pilotage service for Goole is in two stages; the first stage is to Hull Roads and the second stage is from Hull to Goole. Vessels must agree to a boarding time in Hull Roads (off Riverside Quay at Albert Dock) prior to proceeding upriver from the entrance.

Pilotage in the river above Goole is not compulsory, but is advisable. A local river pilot is available.

Berthing instructions are given by VHF at the individual ports and river terminals.

**Regulations—Traffic Control.**—The Vessel Traffic Service Humber (VTS Humber) is divided into two operational areas, as follows:

1. Area 1 extends from the sea to the meridian of No. 4A Clee Ness Light Float (53°35'N., 0°02'E.).

2. Area 2 extends upriver from the meridian of No. 4A Clee Ness Light Float to Gainsborough, on the River Trent, and Goole, on the River Ouse.

General information including visibility, weather, tidal information, aids, navigational warnings, and traffic is broadcast for the River Humber, the River Ouse, and the River Trent.

The VTS procedures are mandatory for all vessels over 50 grt and those vessels carrying dangerous cargoes.

Vessels within Area 1 should contact VTS Humber on VHF channel 14. Vessels within Area 2 should contact VTS Humber on VHF channel 12. All vessels should keep a continuous watch on the appropriate channel.

Inbound vessels should send a report to VTS Humber at least 24 hours in advance or within 1 hour of leaving a previous port of call where such port is not situated within the River Humber. The report should include an ETA and the same information as listed above in the request for pilotage message.

Vessels fitted with the appropriate VHF RT equipment should, after giving the initial notice on VHF channel 14 when 4 hours from Alpha Lighted Buoy, maintain a continuous listening watch VHF channels 14 and 16.

To avoid congestion on VHF channel 12, vessels upriver of No. 4A Clee Ness Light Float wishing to communicate with each other (intership) for the purpose of navigation should use VHF channel 12 and then move to VHF channel 10. (Vessels are not required to keep a listening watch on VHF channel 10).

Inbound vessels are required to report to VTS Humber on VHF, as follows:

1. When entering the TSS and passing either Outer Binks Lighted Buoy (53°37.2'N., 0°20.2'E.) or Outer Sea Reach Lighted Buoy (53°32.7'N., 0°23.0'E.) or Outer Rosse Reach Lighted Buoy (53°29.8'N., 0°20.9'E.).
2. When the pilot is embarked.
3. When passing Alpha Lighted Buoy (53°32.8'N., 0°13.3'E.).
4. When anchoring or not proceeding to a port.
5. When passing No. 4A Clee Ness Light Float (Change from VHF channel 14 to VHF channel 12).
6. When passing Sunk Split Lighted Buoy (53°37.1'N., 0°04.6'W.).
7. When passing No. 19 Paull Sand Lighted Buoy (53°42.0'N., 0°13.7'W.).
8. When passing Trent Falls (53°42.0'N., 0°41'W.).
9. When securely moored at a final berth within the ports and docks of the River Humber, the River Ouse, or the River Trent.

Inbound and outbound vessels intending to navigate the Sunk Dredged Channel should obtain clearance from VTS Humber prior to passing Spurn Point (53°34.0'N., 0°6.6'W.).

The Sunk Dredged Channel is now dredged continuously; the least available depth is announced by VTS Humber on VHF channel 12 during regular river broadcasts. This information is also available on request from VTS Humber.

Prior to entering the river, all vessels carrying dangerous cargo should request anchoring or berthing instructions from VTS Humber.

The Humber Serious Marine Emergency Plan (HSMEP) is a contingency plan developed to deal with any marine accident or emergency including oil pollution within the river. Details of this plan and the emergency will be broadcast by VTS Humber on VHF channels 12, 14, and 16.

**Regulations—General.**—Vessels must not cross a fairway in such a manner as to cause inconvenience or danger to other vessels.

Vessels not confined to a fairway by reason of draft shall not impede other vessels confined to the fairway.

Vessels turning shall give four short blasts on the whistle followed by one short blast if turning to starboard and two short blasts if turning to port.

Vessels are cautioned to prevent their wash causing damage to other vessels moored alongside.

Special passage procedures for vessels of 40,000 dwt and over, vessels with a draft of 11 m and over, and gas carriers with a capacity of 20,000 cu.m. and over are in effect when bound to and from the following facilities:

1. Tetney Monobuoy (see paragraph 3.7).
2. Immingham Oil Terminal (see paragraph 3.9).
3. Immingham Gas Terminal (see paragraph 3.9).
4. Immingham Bulk Terminal (see paragraph 3.9).
5. Salt End Oil Terminal (see paragraph 3.10).

**Signals.**—The following signals are shown from the entrances to the locks at the individual ports within the river:

1. Three vertical red lights—Vessels should not enter.
2. A white light with a green light vertically above and below it—Vessels may enter when specific orders to do so have been received.

**Anchorage.**—Bull Anchorage, centered about 1.8 miles S of Spurn Head, should be used by outbound vessels and vessels waiting for a berth. Haile Anchorage, which adjoins Bull Anchorage to the SW, is for the use of vessels carrying explosives. The limits of these anchorage areas may best be seen on the chart.

**Directions.**—An IMO-adopted Traffic Separation Scheme (TSS), which may best be seen on the chart, has been established in the approaches to the River Humber.

This TSS includes two small Precautionary Areas lying centered 0.6 mile S and 2.8 miles SE of Spurn Point and a large Precautionary Area lying centered 1.5 miles SE of Spurn Light Float.

A Separation Zone extends 3.2 miles SW through New Sand Hole and connects to the NE side of the large Precautionary Area at a position about 2 miles ENE of Spurn Light Float. Inbound and outbound traffic lanes, used by vessels from the NE, are situated on the NW side and SE side, respectively, of this zone. The outer limits of these traffic lanes are marked by lighted buoys.

A Separation Zone extends 3 miles W and connects to the E side of the large Precautionary Area at Inner Sea Reach Lighted Buoy (53°32.7'N., 0°18.4'E.). Inbound and outbound traffic lanes, used by vessels from the E, are situated on the N side and S side, respectively, of this zone.

A Separation Zone extends 2.5 miles NW and connects to the SE side of the large Precautionary Area at Inner Rosse Reach Lighted Buoy (53°31.2'N., 0°17.6'E.). Inbound and outbound traffic lanes, used by vessels from the SE, are situated on the NE side and SW side, respectively, of this zone.

A Separation Zone, connecting the E side of the outer small Precautionary Area to the W side of the large Precautionary Areas, extends W between Alpha Lighted Buoy (53°32.8'N., 0°13.3'E.) and Bravo Lighted Buoy (53°32.6'N., 0°11.2'E.). An inbound traffic lane is situated on the N side of this zone and an outbound lane is situated on the S side.

A Separation Zone, connecting the two smaller Precautionary Areas, extends NW between Charlie Lighted Buoy (53°32.7'N., 0°09.7'E.) and Delta Lighted Buoy (53°33.5'N., 0°07.2'E.). An inbound traffic lane is situated on the NE side of this zone and an outbound lane is situated on the SW side.

**Caution.**—The dredged channel through Sunk Road is subject to silting, so the charted depth and full width of the channel is rarely available.

Due to the changing configuration of the shoals and fairways within the river, navigation aids are frequently moved and may not be at the positions indicated on the chart. Only those channels which are buoyed should be used.

Numerous dangerous wrecks lie in the approaches to the river and may best be seen on the chart.

A measured distance course is situated adjacent to the N bank of the river in the vicinity of the W end of the Sunk Dredged Channel. Beacons marking the distance are situated on the shore and can best be seen on the chart.

Three submarine gas pipelines, which may best be seen on the chart, cross the river about 1 mile below the Salt End Oil Terminal.

Outfall pipelines extend 1.5 miles seaward from points located on the S bank of the river, 0.7 mile and 1.2 miles W of Royal Dock, Grimsby. Their outer ends are marked by lighted buoys.

Several unlit mooring buoys are situated in the river about 1.5 miles N of Grimsby and may best be seen on the chart.

Several spoil ground areas are located in the river and the approach and may best be seen on the chart.

Deep-draft vessels approaching from the E and SE should not attempt to transit the E and SE traffic lane routes. Such vessels should proceed N and utilize the NE traffic lane route (see Directions above).

It is reported (2001) that outbound deep-draft vessels, which are constrained by their draft, may occasionally navigate against the traffic flow in that part of the TSS lying between Spurn Point and Spurn Light Float. Vessels intending to carry out this maneuver must first obtain permission from VTS Humber, which then broadcasts appropriate warnings.

**3.7 Tetney Monobuoy** (53°32'N., 0°07'E.), a tanker mooring buoy, is situated off the S shore of the entrance to the River Humber, about 2 miles S of Spurn Head. A submarine pipeline extends for about 3 miles in a SW direction from the monobuoy to the shore. When not in use, a floating hose pipe, marked by lights, may extend up to 290m from the monobuoy. Vessels up to 150,000 dwt (and up to 280,000 dwt, if only partly laden), with drafts up to 15.5m, can be accommodated.

Tetney Oil Terminal can be contacted by VHF and provides berthing instructions.

Other vessels should keep a safe distance from tankers secured to the monobuoy or maneuvering in the vicinity.

### Grimsby (53°35'N., 0°04'W.)

World Port Index No. 31640

**3.8 Grimsby** stands on the SW shore of the River Humber, 6 miles W of Spurn Head and 14 miles below Hull. It is a large fishing and commercial port.

**Tides—Currents.**—Tides rise about 7m at springs and 5.6m at neaps.

Both the flood and ebb tidal currents are reported to circulate around the tidal basin and, except at HWN, are reported to run SE across the lock entrance. Winds from the NNE cause the highest tides and those from NNW the most sea, but the swell very seldom prevents the dock gates being opened.



### Grimsby

**Depths—Limitations.**—The fairway has a least charted depth of 1.7m, but a charted depth of 1.2m lies close N of the centerline.

The W dock complex consists of Royal Dock, Union Dock, and Alexandra Dock. The entrance lock is approached through the tidal basin, which is 76m wide. The lock is 90m long, 21.4m wide, and has depths on the sill of 8.2m at HWS and 6.8m at HWN. It normally operates from 1 hour 30 minutes to 30 minutes before HW, depending upon draft.

Vessels up to 145m in length and 20.6m beam can enter with drafts up to 6.4m at springs and 5.8m at neaps; vessels of over 81.7m in length have to canal through the lock at HW. An underkeel clearance of 0.9m is required.

Alexandra Dock is entered through Union Dock, 28m wide, entered from Royal Dock. A small craft marina is situated in the S part of Alexandra Dock; it can accommodate craft up to 23m in length and 4.5m draft.

Within the W dock complex, there is 1,595m of total berthage, with extensive facilities for ro-ro, bulk, container, and automobile ferry vessels.

The E dock complex has extensive facilities for fishing vessels and supports one of the largest fishing fleets in the United Kingdom. The entrance lock is 21m long and 13m wide, with depths on the sill of 8.2m at HWS and 5.8m at HWN. Vessels up to 73m in length, 12.2m beam, and 5.5m draft can enter; the larger fishing vessels have to canal through the lock at HW.

**Aspect.**—The port is approached through Bull Channel and a fairway which is marked by light floats and lighted buoys. The harbor consists of a tidal basin and two wet dock complexes. The easternmost complex is used by fishing vessels while the westernmost complex forms the commercial part of the port.

A conspicuous water tower stands at Cleethorpes, 1.5 miles SE of the harbor entrance. A hydraulic tower, 94m high, stands at the entrance to Royal Dock and is also conspicuous. A large prominent factory, with three chimneys, is situated 1.3 miles W of the harbor entrance; the northernmost chimney is distinguishable by a spiral wind baffle.

**Pilotage.**—See pilotage for the River Humber in paragraph 3.6.

**Anchorage.**—Small, light-draft vessels can anchor in Grimsby Roads; however, vessels are prohibited from anchoring in the fairway leading to the harbor entrance and within the prohibited anchorage area indicated on the chart.

Hawke Anchorage, situated on the N side of Grimsby Middle Channel, has depths of 4.4 to 8.8m. It is a general anchorage area for small vessels and the limits may best be seen on the chart.

### Immingham (53°38'N., 0°12'W.)

World Port Index No. 31650

**3.9** Immingham stands on the SW shore of the River Humber, 5.5 miles above Grimsby. The port consists of a wet dock and several terminal berths which extend for about 2 miles along the river side.



**Immingham Oil Terminal**

**Depths—Limitations.**—The entrance lock of Immingham Dock is 256m long and 27.4m wide. It is fitted with three pairs of gates and divided into two sections, 160m and 96m long. There are depths over the inner sill of 11.3m at HWS and 9.9m at HWN. A depth of about 10.8m is maintained in the dock; however, depths alongside the berths are subject to change. Vessels up to 37,000 dwt, 198m in length, 26.2m beam, and 10.4m draft have been accommodated. The dock has 1,700m of total quayage, with facilities for ro-ro, bulk, and container vessels.

Eastern Jetty and Western Jetty, which are situated on either side of the approach to the lock, provide berths for coasters and tankers. Vessels up to 30,000 dwt, 213m in length, and 10.3m draft can be handled alongside.

Immingham Oil Terminal, situated below the entrance to the lock, consists of three T-headed berths with associated mooring dolphins. A jetty, 0.5 mile long, extends NE and connects the berths to the shore. Tankers up to 290,000 dwt, partly laden, 366m in length, and 13.1m draft can be accommodated.

Immingham Bulk Terminal, 525m long, is situated 0.6 mile above the entrance to the lock. It has a berth for loading coal or coke and a berth for discharging iron ore. Vessels up to 200,000 dwt, partly laden, 303m in length, and 14m draft can be handled.

Humber International Terminal lies adjacent to the N side of Immingham Bulk Terminal. The terminal is 300m long and has a depth of 14.7m alongside. Vessels up to 100,000 dwt, 265m in length, and 14.2m draft can be handled.

Immingham Gas Terminal, situated close above Humber International Terminal, consists of an L-shaped jetty. The berth

has a seaward face, 80m long, with associated mooring dolphins and is dredged to a depth of 12m alongside. Vessels up to 80,000m<sup>3</sup> capacity, 280m in length, and 11m draft can be accommodated.

South Killingholme Oil Terminal, situated close above Immingham Gas Terminal, consists of an L-shaped jetty. The berth has an outer face, 85m long, with associated mooring dolphins. It has a depth of 10m alongside and can handle vessels up to 213m in length.

North Killingholme Oil Terminal, situated 2.7 miles above the entrance to Immingham lock, consists of a T-shaped jetty with dolphins. The berth has a depth of 10.1m alongside and vessels up to 177m in length can be handled.

North Killingholme Haven, situated close S of the root of North Killingholme Oil Terminal, is a cargo terminal which provides three berths. Vessels up to 5,000 dwt, 140m in length, and 6.5m draft can be handled.

Humber Sea Terminal, consisting of an L-shaped jetty, lies close E of North Killingholme Oil Terminal. This jetty provides two ro-ro berths, with a depth of 9.3m alongside. The approach channel is reported (2000) to be dredged to a depth of 7.2m.

**Aspect.**—Immingham may be approached by way of Hawke Channel and the Sunk Dredged Channel.

Two conspicuous chimneys stand 0.5 mile SSE of the dock entrance. A chimney and a flare stand in the vicinity of a prominent oil refinery, 2.3 miles WNW of the dock entrance.

A lighted range, situated at Killingholme, indicates the approach fairway to Immingham and may best be seen on the chart.

**Pilotage.**—See pilotage for the River Humber in paragraph 3.6.

**Regulations.**—Inbound vessels should not enter the river past Bull Light Float without obtaining permission from VTS Humber.

**Signals.**—Synchronized traffic lights are shown by day and at night from the top of the signal tower (Tower A) at the entrance to Immingham Dock and on the signal mast (Tower B) at Immingham Oil Terminal Jetty, as follows:

1. A white group flashing light giving two flashes, each of 2 seconds duration, every 10 seconds—A vessel is arriving or leaving Immingham Dock, East Jetty or West Jetty, or is maneuvering at the Bulk Terminal.
2. A white light giving one flash of 6 seconds duration every 15 seconds—A vessel is maneuvering off Immingham Oil Terminal Jetty.

**Anchorage.**—Whitebooth Roads, 2 miles NW of the dock entrance, affords anchorage, in depths of 5.8 to 9m.

**Caution.**—When entering or leaving the dock, allowance for the tidal currents must be made and sufficient speed for good steerage way maintained. When entering with a strong current, vessels are advised to proceed at low speed close in to the Western Jetty on the flood and close in to the Eastern Jetty on the ebb.

Due to siltation, depths in the entrance to the dock are continually changing. The channel above Immingham is subject to change and the buoys are moved accordingly.

**Hull (Kingston Upon Hull) (53°45'N., 0°17'W.)**

World Port Index No. 31660

**3.10** Hull stands on the N shore of the River Humber at its junction with the River Hull, 20 miles above Spurn Head. A tidal surge barrier crosses the River Hull near its mouth. The port, which extends for about 6 miles along the shore, consists of wet docks, river berths, and an oil terminal. It handles passenger and cargo vessels, and supports a large fishing fleet.

**Tides—Currents.**—See the River Humber in paragraph 3.6.

**Depths—Limitations.**—The lock at the entrance to King George Dock is 228m long and 25.7m wide. It has depths over the sill of 13.1m at HWS and 11.5m at HWN. King George Dock has 3,423m of total quayside and Queen Elizabeth Dock, an extension of King George Dock, has 1,646m of total quayside. Both docks are usually maintained at a depth of 11m. Vessels entering the docks at HWS are generally limited to a length of 196m, a beam of 25.5m, and a draft of 10.4m. It is reported that vessels up to 222m in length have entered by special arrangement. Vessels up to 5.8m draft generally have access to the docks over the full 24-hour period on neap tides and over an 18-hour period on spring tides. These enclosed docks have facilities for ro-ro, bulk, ferry, container, and passenger vessels. A covered steel berth is situated at the SE end of King George Dock on the site of a former drydock. It can handle vessels up to 127m in length, 20.1m beam, 7m draft, and 13.5m aircraft.

Riverside Terminal 1, a ro-ro jetty, is situated 0.3 mile W of the entrance to King George Dock. It provides a berth for vessels up to 180m in length and 6.5m draft.

It is reported (2001) that two additional ro-ro ferry berths are to be constructed close E of the entrance to King George Dock.

Alexandra Dock, situated W of King George Dock, is entered through a lock 167.8m long and 25.7m wide, with a depth on the sill of 10.4m at HWS. The dock has 4,082m of total quayside and has been dredged to a depth of 8.3m. Vessels up to 153m in length, 23.7m beam, and 7.9m draft can enter at HWS. There are extensive facilities for bulk vessels.

Alexandra River Quay, situated at the W side of the entrance to Alexandra Dock, is 325m long and can handle vessels with drafts up to 6.7m at HWS.

Old Harbor, situated 1 mile W of Alexandra River Quay, extends about 0.5 mile upstream from the mouth of the River Hull. It is the original harbor and is still used by coasters and small craft up to 500 grt. A tidal surge barrier crosses the river, about 200m above the mouth.

Albert Dock, situated 0.5 mile W of Old Harbor, and William Wright Dock, an extension, provide 3,453m of total quayside and have depths of 6.5m. These enclosed docks are mostly used by fishing vessels and are entered through a lock, 97m long and 24.3m wide, which has depths on the sill of 8.5m at HWS and 7m at HWN.

Hull Marina, situated close E of Albert Dock, is entered through basin and a lock. It can accommodate small craft up to 22.8m in length. The depth in the marina is normally maintained at 2.5m and access is limited to 3 hours either side of HW.

Salt End Oil Terminal, at the SE end of the port, consists of a T-shaped jetty with two berths and associated dolphins. Tankers up to 40,000 dwt and 214m in length can be accommodated with drafts up to 10.4m at HWS.

**Hull—King George Dock and Queen Elizabeth Dock****Hull— Alexandra Dock**

**Aspect.**—Thorngumbald Clough is a rather prominent point on the NE shore of the river, 2.5 miles below the entrance to King George Dock. A lighted reverse range is shown from this point and marks the fairway adjacent to the Salt End Oil Terminal. A disused light structure, standing 0.7 mile NNW of the point, is prominent and two cooling towers, standing 0.8 mile NE of the oil terminal, are conspicuous. Lighted ranges, which may best be seen on the chart, indicate the limits of the deep water in the approach to the oil terminal; they are only shown when a vessel is berthing.

Conspicuous landmarks in the vicinity of the city include a large grain silo standing at the W side of King George Dock, the towers of the tidal surge barrier at the mouth of the River Hull, and the tower of Holy Trinity Church standing close NNW of the tidal barrier.

**Pilotage.**—See pilotage for the River Humber in paragraph 3.6.

**Signals.**—Tidal surge barrier signals, consisting of two pairs of yellow quick flashing lights, are shown from each side of the entrance to the River Hull when the river is closed to traffic.

A high intensity quick flashing light is shown from the entrance to Albert Dock to warn other traffic that vessels are leaving the lock.

**Anchorage.**—Hull Road affords anchorage, in depths of 6 to 9m, mud and sand, but the upper part of the roadstead is too shallow for large vessels.

**Caution.**—Vessels of large size must not remain at anchor in the roadstead during low water springs, as the depths are liable to vary from those charted and grounding is possible.

Anchorage is prohibited within the areas, the limits of which are shown on the chart, situated SW of Thorngumbald Clough, in the approaches to the oil terminal, and in the approaches to Albert Dock.

**3.11 Upper Humber.**—No directions can be given for the River Humber above Hull due to the constant changes in the channels. Lighted buoys, light floats, and beacons which mark the channel fairways are moved as required.

**New Holland** (53°42'N., 0°21'W.) is situated on the S side of the river, 2 miles SW of the mouth of the River Hull. A T-shaped pier, formerly used by ferries, provides four berths with depths alongside of 7m at HWS and 5.5m at HWN. Vessels up to 6,180 dwt and 114m in length can be handled. A small tidal dock has two berths, with depths up to 6.2m at HWS and 4.5m at HWN. Vessels of up to 5,000 dwt and 105m in length can enter.

**Goole** (53°42'N., 0°50'W.) ([World Port Index No. 31670](#)) stands on the W bank of the River Ouse, about 24 miles above Hull. The port provides an outlet for the inland waterway system and consists of an extensive wet dock complex.

**Depths—Limitations.**—The port is approached by a tortuous channel which is navigable by vessels with drafts up to 5.5m at springs and 4.6m at neaps. It consists of eight interconnected docks which may be entered through two locks.

Ocean Lock is 104m long and 24.4m wide. It has depths on the sill of 8m at HWS and 6.1m at HWN. Victoria Lock, constructed in two sections, is 145m long and 14.2m wide. It has depths on the sill of 7.8m at HWS and 6m at HWN.

Vessels up to 100m in length, 24m beam, and 5.5m draft have been accommodated. The dock complex has about 3 miles of total quaysage, which provides 30 berths with facilities for container, ro-ro, and bulk vessels.

**Aspect.**—Lights are shown from a shipyard at Hessle Haven on the N side of the river, about 5 miles above Hull Roads. A church, with a prominent spire, stands 0.5 mile N of the shipyard. A prominent silo stands close E of a chemical plant on the S shore of the river, about 5.5 miles above Hull Roads. A conspicuous chimney stands 0.4 mile E of the silo. The Humber Bridge, [previously described in paragraph 3.6](#), spans the river close W of the chemical plant. A prominent chimney stands at Ferriby Sluice on the S side of the river, 3 miles above the bridge.

The junction of the River Ouse and the River Trent is located about 16 miles above Hull Roads; Goole is situated on the River Ouse, about 8 miles above the junction. The channel leading to Goole above the junction is marked by shore lights and beacons.

**Pilotage.**—Pilotage from Hull to Goole is compulsory for vessels over 60m in length and all vessels carrying dangerous substances. Local knowledge of the channels is absolutely necessary and all vessels are advised to obtain the services of a pilot. [For further information, see pilotage for the River Humber in paragraph 3.6.](#)



Goole

**Caution.**—A submarine cable area lies about 4 miles W of Hull Roads and may best be seen on the chart.

Overhead power cables, with vertical clearances of 43 and 34m, span the River Ouse, about 3 miles above the junction.

Several swing bridges span the River Ouse between Goole and Selby.

**3.12 Howden Dyke** (53°45'N., 0°52'W.), situated 2.5 miles above Goole, has four jetty berths with 230m of total quaysage. Vessels up to 3,300 dwt, 88m in length, and 14m beam can be handled with drafts up to 5m at HWS and 3m at HWN. Vessels take the ground on soft mud at LW.

**Selby** (53°47'N., 1°04'W.), situated about 16 miles above Goole, has a quay 75m long. Vessels up to 1,800 dwt, 75m in length, and 4m draft have been accommodated alongside; however, vessels over 61m in length may only be handled at certain states of the tide.

Several small private wharves are situated within the River Trent as far as Keadby, 7 miles above the junction with the River Ouse. They can handle vessels between 90m and 100m in length, with drafts up to 5.5m at HWS and 3.1m at HWN.

Small vessels up to 1,000 dwt and about 4m draft, depending on the tide, can reach Gainsborough, which is situated on the River Trent, 62 miles from the sea. However, they have to pass under the bridge at Keadby which has a vertical clearance of only 5m. In addition, vessels are limited to about 58m in length because of the sharp bends in the river.

**Pilotage.**—Pilotage above the port of Goole is not compulsory, but is recommended for all vessels without local knowledge.

## The River Humber to The Wash

**3.13 Off-lying banks and dangers.—Sole Pit** (53°40'N., 1°32'E.), located about 50 miles E of the entrance of the River Humber, is a submarine valley with depths of 36 to 91m. Barque Gas Field (53°37'N., 1°32'E.) and Sole Pit Gas Field (53°34'N., 1°38'E.) are located in the vicinity of this valley.

**Well Hole** (53°43'N., 1°51'E.), a narrow submarine valley, lies 11 miles ENE of Sole Pit and has depths of 37 to 80m.

**Coal Pit** (53°30'N., 1°45'E.), another submarine valley, lies about 7 miles SE of the S end of Sole Pit and has depths of 31

to 73m. Clipper Gas Field (53°28'N., 1°44'E.) lies in the vicinity of this valley.

**Silver Pit** (53°30'N., 0°40'E.) is a deep submarine valley which lies directly across the approach to the River Humber and about 20 miles from the entrance. It has depths of 32 to 98m. In the central area, the increase in depths is very rapid on both sides; in some cases from 22 to 73m within a very short distance. At the N and S ends of the valley, the transition is not so abrupt. The edge of this deep valley is usually marked by tide ripples, and in thick weather they are a very useful position guide.

Amethyst Gas Field (53°37'N., 0°43'E.) lies near the N end of Silver Pit, about 20 miles E of Spurn Head.

**Indefatigable Banks** (53°32'N., 2°21'E.), lying about 75 miles E of the entrance to the River Humber, are the outermost of a series of narrow, parallel banks which are located in the approach to the river. These banks consist of two narrow ridges with a least depth of 12.6m.

**Swarte Bank** (53°24'N., 2°10'E.), about 20 miles long, lies 5 miles SW of the SW part of Indefatigable Banks and is another narrow ridge. Patches and smaller ridges, with depths of less than 18m, lie between Indefatigable Bank and Swarte Bank and within 20 miles NW of Swarte Bank. A sand wave formation, with depths of less than 18m in places, lies about 3 miles SW of the NW end of Swarte Bank.

Broken Bank (53°21'N., 2°05'E.), Well Bank (53°16'N., 2°00'E.), and Inner Bank (53°12'N., 2°02'E.) lie to the SW, within 13 miles, and parallel to Swarte Bank. These dangers have depths of less than 10m and are entirely unmarked. Every precaution should be taken when approaching them. Crossing these banks, especially in heavy weather, should not be attempted unless the vessel's position is accurately known.

A sand wave formation, with depths of less than 18m in places, lies midway between Well Bank and the S extremity of Broken Bank.

**Ower Bank** (53°11'N., 1°56'E.) lies about 1.5 miles SW of Inner Bank and runs nearly parallel to the other ridges in this area. The shallowest areas of this bank are indicated by smooth ripples during the strength of the tidal current. In rough weather, the sea breaks over this bank. Several patches, with depths of less than 5m, lie near its SE end and a wreck, with a depth of 1.5m, lies on the SW side of the NW patch.

**Caution.**—Numerous gas fields and submarine pipelines lie in the vicinity of Indefatigable Bank, Swarte Bank, Broken Bank, Well Bank, Inner Bank, and Ower Bank and may best be seen on the chart (see paragraph 3.1).

**3.14 Leman Bank** (53°06'N., 1°59'E.) lies about 3 miles SW of Ower Bank and runs parallel to it. This bank is about 23 miles long NW and has a least depth of 3.4m. Haddock Bank, with depths of 5 to 20m, lies close NW of the NW end of Leman Bank.

Leman Gas Field (53°04'N., 2°12'E.), an extensive platform complex, lies E of the S end of Leman Bank.

**Smiths Knoll** (52°53'N., 2°12'E.) is a narrow shoal ridge lying parallel with the coast between Cromer and Yarmouth, about 20 miles offshore. The E side of this shoal ridge is steep-to and a least depth of 4.6m lies near the middle of the ridge, about 8.5 mile S of the SE end of Leman Bank.

**Smiths Knoll Lighted Buoy** (52°44'N., 2°18'E.), equipped with a racon, is moored in the vicinity of the S end of this shoal ridge.

**Hewett Ridges** (52°59'N., 2°00'E.) consists of two shoal banks lying W of the N part of Smiths Knoll. The N bank is steep-to on its NE side and has a least depth of 7.9m. The S bank lies 5 miles W of the middle of Smiths Knoll and has depths of 9 to 18m. Numerous wrecks, some dangerous to navigation, lie S of Hewett Ridges and W of Smiths Knoll.

**Outer Dowsing Shoal** (53°27'N., 1°07'E.), with a least depth of 3.9m, lies with its NW end located 33 miles E of the entrance to the River Humber. It extends for about 13 miles SE and is marked at the N extremity and W side by lighted buoys. Vessels should avoid the area lying close NE of the shoal, especially during heavy weather, as it has irregular bottom soundings.

**Cromer Knoll Shoal** (53°18'N., 1°18'E.) lies about 6 miles SE of the S extremity of Outer Dowsing Shoal and has a least depth of 5.5m. Inner Cromer Knoll, with detached patches, lies 5.5 miles SE of Cromer Knoll Shoal and has a least depth of 9.2m.

**3.15 Triton Knoll** (53°24'N., 0°53'E.) lies about 27 miles ESE of the entrance to the River Humber and about 10 miles SSW of the N extremity of Outer Dowsing Shoal. It consists of many detached patches with a least depth of 6.1m. Tide rips indicate the position of this shoal.

A small group of shoals, with a least depth of 7.9m, lies within 6 miles SE of Triton Knoll and is marked by tide rips at LW.

**Dudgeon Shoal** (53°16'N., 0°57'E.) lies about 13 miles W of Cromer Knoll and has a least depth of 4.3m. East Dudgeon Shoals, with a least depth of 4.2m, extend 4 miles N from the SE end of Dudgeon Shoal and are marked by a lighted buoy. North Ridge, with a least depth of 5.5m, is practically an extension to the WNW of Dudgeon Shoal. The overfalls on North Ridge are very conspicuous at LW, when there is a strong tidal current running across it.

Additional shoals, with depths of less than 11m, lie up to 3.5 miles N of North Ridge.

**Race Bank** (53°11'N., 0°54'E.), lying 5 miles SW of Dudgeon Shoal, has a least depth of 1.8m. It is about 10 miles long and is marked at the NW and SE ends by lighted buoys. An extension to this bank, with depths of less than 11m, connects the NE side to the W extremity of North Ridge and is marked by a lighted buoy.

The remaining off-lying shoal banks and dangers, which are located inshore of those above, are described along with the coastal features.

**Caution.**—Numerous oil and gas fields, in addition to those mentioned, lie in the vicinity of the above shoal banks and may best be seen on the chart (see paragraph 3.1.).

Numerous dangerous wrecks lie within the vicinity of the above shoal banks and may best be seen on the chart.

**3.16 Directions.**—The off-lying banks and dangers in the approach to the River Humber lie within 90 miles E through SE of the River Humber entrance. Between these banks and dangers, there are several available passages for vessels leaving or approaching the coast. For vessels from the N, the channel

between Dogger Bank (54°40'N., 2°20'E.) and the coast is broad and open. For vessels to or from the E, the channel through Outer Silver Pit (54°05'N., 2°10'E.) is wide and free from danger, with due regard being paid to the depths over the wrecks.

**Outer Dowsing Channel** (53°25'N., 1°00'E.) leads between Outer Dowsing Shoal and Cromer Knoll, on its E side, and Triton Knoll and East Dudgeon Shoals, on its W side. It is about 7 miles wide and marked on the E side by lighted buoys, which are moored on the W side of Outer Dowsing Shoal.

A narrow deep-water fairway, with depths over 18m, lies within the channel, close W of Outer Dowsing Shoal. The remainder of the channel has depths of 10 to 18m, except for the small group of shoal patches, previously mentioned, which lie within 6 miles SE of Triton Knoll (53°24'N., 0°53'E.).

**BID Dowsing Platform** (53°34'N., 0°53'E.), equipped with a racon, stands 4.5 miles W of the N end of Outer Dowsing Shoal and a main light is shown from it. This platform marks the NW end of Outer Dowsing Channel.

**Dudgeon Lighted Buoy** (53°17'N., 1°16'E.), equipped with a racon, is moored close W of Cromer Knoll and marks the SE end of Outer Dowsing Channel.



**BID Dowsing Lighted Platform**

**3.17 Offshore route.**—The main coastal route, for vessels proceeding S into the S part of the North Sea, leads S and SSE to the vicinity of Humber Light Float (53°39'N., 0°20'E.). It passes E of Flamborough Head and clear of Rough Gas Field (53°50'N., 0°28'E.).

The route then leads SE to the N end of Outer Dowsing Channel (53°25'N., 1°00'E.). Vessels should pass S of Amethyst Gas Field (53°37'N., 0°44'E.) and clear of BID Lighted Platform (53°34'N., 0°53'E.).

The route continues in a general SE direction though Outer Dowsing Channel and passes SW of Dudgeon Lighted Buoy (53°17'N., 1°16'E.) and SW of Inner Cromer Knoll (53°17'N., 1°16'E.).

From a position located about 5 miles SW of Inner Cromer Knoll, the route leads ESE between Leman Bank and Hewett Ridges to a position E of the N end of Smiths Knoll (52°53'N., 2°12'E.). Vessels must stay clear of the North Hewett Gas Field (53°06'N., 1°46'E.).

From E of Smiths Knoll, the route leads SSE and passes E of Smiths Knoll Lighted Buoy (52°44'N., 2°18'E.). It then continues S and SSW into the S part of the North Sea.

The above channel is reduced to a width of about 3 miles at its SE end, between Leman Bank and Smiths Knoll, and vessels must exercise caution in the vicinity of the adjacent gas fields.

The outer channels lying between Swarte Bank, Broken Bank, Well Bank, and Inner Bank are straight and about 4 miles wide, except for the latter, which is 2 miles wide. These channels, which have moderate depths, should not be used except in good weather and when vessels are certain of their positions, as no aids are visible on the shore and the channels are not buoyed.

Large vessels transiting S from the vicinity of the River Humber may initially proceed ESE and join the main North Sea Deep Water Routes (see paragraph 6.5).

**3.18 Inshore routes.**—From the River Humber, an inner route leads outside of Protector Overfalls and Inner Dowsing, and between Docking Shoal and Race Bank. It then leads N of Sheringham Shoals and between Leman Bank and Hewett Ridges.

This route, which leads towards Cromer (52°56'N., 1°18'E.), should only be used by vessels with local knowledge.

Vessels proceeding N may pass either N or S of Sheringham Shoal (53°03'N., 1°10'E.) or Race Bank. However, the vessel's draft, in addition to the tidal conditions, must be taken into account in the selection of these passages.

For light-draft vessels, which can pass W of Protector Overfalls, the channel towards Cromer, leading between Docking Shoal and Burnham Flats, is suitable.

The Would (52°52'N., 1°40'E.), a channel 7 miles wide lying between Haisborough Sand and the coast, leads SE from abreast Cromer to Haisborough Gat (52°48'N., 1°56'E.) (see paragraph 3.33).

Vessels may pass between Sheringham Shoal and Blakeney Overfalls, and then between Docking Shoal and Burnham Flat. However, deep-draft vessels should proceed through the channels passing N of Docking Shoal.

Light-draft vessels bound for The Wash, after passing Cromer, may proceed, with a suitable condition of tide, along the coastal route passing N of Bridgirdle and through The Bays (52°59'N., 0°32'E.) or Sledway (53°02'N., 0°34'E.). Local knowledge is required.

**Caution.**—See caution under General Remarks in paragraph 3.1 for information concerning production platforms.

Numerous dangerous wrecks lie in the vicinity of the above routes and may be seen on the chart.

**3.19 Skegness** (53°09'N., 0°20'E.), at the NW side of the entrance to The Wash, is situated 21 miles SSE of Donna Nook, the S entrance point of the River Humber. The coast between is composed of sand hills. The flat, which fronts this stretch of coast, shelves gradually from the shore to a depth of over 10m, about 10 miles offshore abreast Saltfleet (53°25'N., 0°10'E.) and 5 miles offshore abreast Ingoldmells Point. Here, it merges into the shoals which form the bar at the N end of Boston Deep, on the W side of the entrance to The Wash. A narrow channel leads into Saltfleet and can be used by small vessels with drafts up to 1.5m within 3 hours of HW.

The most conspicuous landmarks along this coast include a tower, 8m high, standing on the foreshore, 2 miles SSE of Salt-

fleet; the extensive convalescent home building at Mablethorpe (53°20'N., 0°15'E.); and the windmill at Ingoldmells, 2.5 miles N of Skegness. In very clear weather, the tall spire of the church at Louth, 7 miles WSW of Saltfleet, may be seen from seaward. In addition, the Lincolnshire Downs may be seen in the background.

Saltfleet can be identified by the numerous trees in its vicinity and the conspicuous tower of a church, which stands about 1 mile S of the village. This church tower is the most conspicuous of several which stand along this part of the coast.

Within Ingoldmells Point, two churches can be seen from seaward. Another prominent church stands about midway between the point and Skegness.

**Caution.**—Saltfleet Overfalls, Theddlethorpe Overfalls, and Trusthorpe Overfalls, with depths of less than 10m, lie about 2 to 4 miles offshore abreast the respective places from which they take their names, S of the River Humber. These patches lie so close together that they are practically one bank.

Protector Overfalls (53°25'N., 0°25'E.), with a least depth of 3.9m, lies about 8 miles E of Saltfleet and is marked by a lighted buoy. Several detached patches, with depths of less than 11m, lie up to 4.5 miles E and 5 miles S of this shoal bank.

A firing area, marked by buoys, is situated between Donna Nook and Saltfleet and extends about 6 miles seaward.

Submarine gas pipelines, which may best be seen on the chart, extend seaward from the vicinity of Theddlethorpe (53°22'N., 0°13'E.) to the offshore gas fields.

## The Wash

**3.20 The Wash** (53°00'N., 0°20'E.) is a deep bight lying 33 miles S of the River Humber. It is, for the most part, occupied by numerous and dangerous sands, some of which skirt the coast, while others lie a considerable distance offshore. Through these sands, several rivers, which have their outlets in The Wash, find their way at LW. The rapidity of the tides in this deep bight, the low character of its shores, and the mist, which almost constantly prevails, make navigation difficult and caution necessary. In addition, the greater part of its sea area is occupied by shoals.

The principal rivers emptying into The Wash are the Witham, Welland, Nene, and Ouse.

The entrance to The Wash, between Skegness and Gore Point, is about 12 miles wide. The shores are low and marshy and protected by embankments; the only exception is in the vicinity of Hunstanton, 2 miles SW of Gore Point.

The ports of Boston, Wisbech, and King's Lynn are situated within The Wash.

The main channel leading into The Wash lies between Inner Dowsing and Lynn Knock Shoals, on the W side, and Docking Shoal, Burnham Flats, and Burnham Ridge, on the E side. It is about 1 mile wide at the narrowest part and leads into The Well and Lynn Deeps. In thick weather, The Well, with its depths of over 36m, can be a useful guide.

**Inner Dowsing Lightship** (53°20'N., 0°34'E.), equipped with a racon, is moored close NE of the N end of the Inner Dowsing Shoal.

The Well and Lynn Deeps are marked by a lighted buoy, equipped with a racon, moored about 7 miles SE of Skegness.

Vessels approaching from the E may enter the main channel from the passage which leads between Race Bank and Docking Shoal. It has depths of 13 to 18m in the fairway and a least width of 1 mile, at the NW end.

The channel between Inner Dowsing Shoal and the coast has a least depth of 7.9m, for a width of about 2 miles. Vessels using this passage should pass E of Protector Overfalls, and W of Inner Dowsing Overfalls. The latter shoal is formed by a cluster of detached patches, with a least depth of 6.1m, lying between 1 and 2 miles W of the N end of Inner Dowsing Shoal.

The channel between Docking Shoal and Burnham Flats has a least depth of 5.4m in the fairway at its W entrance. Several patches of sand waves, which are liable to change their configuration, lie in this channel.

Vessels without local knowledge are advised not to use the channel which leads through Wainfleet Road, SE of Skegness, and Wainfleet Swatchway, which leads into Boston Deep. The banks in this vicinity are constantly changing and the buoys do not necessarily mark the deep-water fairway. In addition, it is not easy to identify marks ashore from this area.

**Tides—Currents.**—The tidal currents run regularly in and out of the estuary, with a spring velocity in each direction of about 2 knots. The incoming current is usually a little stronger than the outgoing, but its duration is shorter. The currents set in the directions of the principal channels, but across the subsidiary channels on the W side of the head of the estuary, where their directions differ appreciably from those of the principal channels. In Boston Deep, the currents run with a spring velocity in each direction of about 2.5 knots. In Freeman Channel, the currents run SSW or NNE across the fairway when the banks on either side are covered. Otherwise, the currents in this channel are weak, but run their direction may be irregular.

Strong NE winds of a long duration cause an incoming current which increases both the velocity and duration of the flood tidal current in the estuary and the rivers. The winds may also increase the sea level height at the head of the estuary by up to 0.6m. Strong SW winds of a long duration have the opposite effects; however, these changes are not constant.

The tidal currents in the rivers are affected by meteorological and astronomical conditions, but little reliable information is available. Generally, the outgoing currents in the rivers begin soon after local HW. Heavy rain increases the outgoing currents and freshets have resulted in rates of 6 to 8 knots in the rivers.

**Caution.**—When navigating in The Wash, caution should be exercised as the tidal currents are strong, the rise and fall of the tide considerable, and the weather frequently misty.

Due to the frequent bottom changes occurring in the vicinity of the channels and sandbanks, the positions of the navigation aids may be altered accordingly.

Several dangerous wrecks lie close E of Lynn Knock and may best be seen on the chart.

**3.21 Off-lying dangers.**—Inner Dowsing, lying 10 miles NE of Skegness, is a very narrow shoal ridge of sand with a least depth of 1.5m. Scott Patch, with a least depth of 5.2m, lies about 1.8 miles SE of the S end of Inner Dowsing. Both of these shoals are marked by lighted buoys at their S ends.

Docking Shoal, with a least depth of 3.6m, is centered about 13 miles NNE of Gore Point and is marked at its N end and E side by lighted buoys.

Burnham Flats extends about 10 miles NNE of Gore Point and is marked by a lighted buoy on its W side which is steep-to. Depths over the shallowest parts of this shoal vary between 1.8m and awash. Woolpack is the SW part of Burnham Flats; its S edge forms the N side of the narrow passage known as Sledway. Middle Bank, which dries 1.5m, lies on the S side of this passage.

Burnham Ridge, located 8 miles N of Gore Point, lies parallel to the W edge of Burnham Flats and has a least charted depth of 2.7m. However, less water may exist over this shoal as it consists of several large sand waves which are liable to move both horizontally and vertically. An obstruction lies in the channel about 1.5 miles W of the shallowest part of Burnham Ridge.

Three detached shoal patches, with depths of 6.9, 6.8, and 8.3m, lie in the channel W of the entrance to Sledways and close NW of Middle Bank. They are formed of sand waves and are liable to change.

Lynn Knock, located 5 miles SE of Skegness, lies on the NW side of the approach to The Wash. It has a least depth of 3.6m and is marked by a lighted buoy. This shoal also consists of several sand waves which are liable to move both horizontally and vertically and change the position of their least depth. There are frequently heavy overfalls over Lynn Knock during spring tides. A dangerous wreck and a detached shoal patch, with a depth of 7.2m, lie in the channel close to the E edge of this shoal.

**3.22 West coast.—Skegness** (53°09'N., 0°20'E.), at the NW entrance of The Wash, is a small resort town. A conspicuous water tower stands in its N part and numerous houses extend along the coast for 1.5 miles S of the town.

The coast between Skegness and Gibraltar Point, a low projection 3 miles S, consists of low sand hills fringed by a flat which extends up to 0.4 mile offshore; then to New Cut at the mouth of the River Witham, 14 miles SW, the coast is marshy with an embanked outline. It is fronted by extensive flats which extend from 2 to 3 miles offshore.

**Caution.**—Wainfleet Sand and Friskney Flat front the shore up to 6 miles SW of Gibraltar Point and form an extensive live bombing range. It is marked by several buoys and beacons. The range control tower stands 4 miles SSW of Skegness and displays a red flag by day and red lights at night when the range is operational. Vessels should avoid the range area and, in an emergency, call Boston Dock on VHF channel 12.

**3.23 Boston Deep** (53°04'N., 0°21'E.), a passage leading to the River Witham and Boston, extends 16 miles SE from Skegness Middle (53°08'N., 0°24'E.). It is bounded on the NW side by extensive flats, which front the coast, and Scullridge, a drying shoal lying close SE of Friskney Flat. Inner Dogs Head, Long Sand, The Ants and Bar, Roger Sands, Toft Sands, and Black Buoy Sands lie on its SE side. The fairway is marked by buoys which are very small, difficult to see, and should not be relied upon. Boston Deep is entered at its N end through Wainfleet Road and Wainfleet Swatchway, which is only 0.2 mile wide. The banks along these channels are constantly

changing and this passage should only be used by small vessels with local knowledge. Parlour Channel, lying between Inner Dogs Head and Long Sand, leads from The Well into Boston Deep. However, depths within this narrow channel may be less than charted and it is generally no longer used.

**Freeman Channel** (52°58'N., 0°15'E.), lying between The Ants and Roger Sands, is the main route into Boston Deep and should be approached through The Well and Lynn Deep. It leads into the S end of Boston Deep and is about 230m wide at the narrowest part.

Gat Channel, which passes S of Roger Sand, is only used by local fishing vessels.

The S end of Boston Deep leads into Lower Road, which extends SW for about 2 miles. Lower Road then leads into New Cut, a narrow fairway, which leads up the river to Boston.

Roaring Middle Light Float (52°58'N., 0°21'E.) is moored near the N end of a narrow shoal, at the S end of Lynn Deep. The E entrance to Freeman Channel is located 3.5 miles WSW of it.

**3.24 Boston** (52°58'N., 0°01'W.) ([World Port Index No. 31630](#)) stands on both banks of the River Witham in the SW part of The Wash. The port, approached through New Cut, is situated 2.5 miles above the river mouth. It consists of a wet dock and several river berths.

**Tides—Currents.**—Tides rise about 6.8m at springs and 4.8m at neaps.

The tidal currents are fairly strong. Off Boston, the flood current is reported to attain a spring velocity of about 4 knots during its first half, after which the velocity decreases. The tides in Boston Deep are strongly influenced by the wind. A continuance of NW gales, during springs, can cause a tidal rise of up to 0.6m higher than normal. Gales from SW can lower the height of the tide by the same amount.

**Depths—Limitations.**—The river channel dries in places and has depths of 7.9m at HWS and 5.8m at HWN.

A power cable, with a vertical clearance of 45m, spans the river close below the entrance to the dock.

The wet dock is entered by a lock 91m long and 13.7m wide. It has depths on the sill of 7.5m at springs and 5.4m at neaps. An underkeel clearance of 1.5m is normally required. The dock has 730m of total quayage and can handle vessels up to 95m in length, 13m beam, and 5.5m draft at HWS.

Eight river berths, which dry, are situated along both banks, upstream of the dock entrance. Generally, vessels up to 107m in length can be accommodated with drafts up to 5.5m at springs and 4.3m at neaps. As there are considerably greater depths in the channel, on exceptional tides, the harbormaster can allow vessels with drafts up to 6.1m to reach Boston.

**Aspect.**—The river is spanned at the town, situated close above the dock, by two fixed bridges and a sluice. The sluice barrier prevents the ingress of tidal waters into the upper portion of the river and converts the lower portion into a mere inlet which silts during dry seasons. The silt is then removed again by the first long continued flood.

Entry to the inland waterway system can be gained through a lock at Boston. The river fairway is marked by lighted beacons and indicated by lighted ranges. The town can be identified by its very conspicuous church tower, known to seamen as Boston Stump. A large grain silo stands adjacent to the wet dock.

**Pilotage.**—Pilotage is compulsory for vessels over 50 grt. Pilots may be contacted by VHF or radiotelephone and should be arranged through the agent or Humber (GKZ). Pilots generally board near No. 9 Lighted Buoy in Lower Road or, on request, at the E entrance to Freeman Channel. Vessels without local knowledge are recommended to embark a pilot at this position.

Vessels should send an ETA to the port at least 12 hours in advance. Vessels carrying dangerous goods or who are not gas-free are required to send full details at least 24 hours in advance. Vessels must report to the port when entering Lower Road and before entering the river.

**Anchorage.**—In good weather, anchorage can be obtained anywhere in the entrance of The Wash. The best berth is in a depth of 20m, at the S end of Lynn Deep.

Good anchorage can also be found, in a depth of 9m, within Lower Road.

**Caution.**—The navigational aids at the entrance to Lower Road and New Cut are liable to frequent alteration as the channels are constantly shifting.

**3.25 The Fosdyke Bridge** (52°52'N., 0°02'W.) is situated 3 miles above the entrance to the River Welland, at the SW corner of The Wash. It is approached through Welland Cut which leads SW from abreast New Cut. The channel is embanked in places and marked by beacons. An overhead cable, with a vertical clearance of 24m, spans the river, about 1 mile below the Fosdyke Bridge.

A wharf, 69m long, is situated on the N side of the river and can generally accommodate vessels up to 58m in length and 5m draft at springs; vessels up to 52m in length and 2.8m draft can be accommodated at neaps. Pilotage is compulsory and available in conjunction with Boston.

**3.26 East coast.—Gore Point** (52°58'N., 0°33'E.), the SE entrance point of The Wash, is composed of small sand hills with marshland behind them. These hills continue to Hunstanton Point, 2.3 miles SW. The E shore of The Wash is sandy and cliffy in its N part, but is marshy and embanked in its S part. However, inland the contused is elevated.

**Saint Edmund's Point** (Hunstanton Point) (52°57'N., 0°30'E.), located 2.4 miles SW of Gore Point, is formed by a cliff which is composed of marl, and red and grey chalk. It is remarkable both for the variety of its coloring and because it is the only cliff in the vicinity. A prominent disused light structure stands on the point and the town of Hunstanton is situated close S of it.

The most conspicuous landmarks along this stretch of coast are the church at Holme, standing 1 mile S of Gore Point; the disused windmill, 55m high, standing 1.8 miles S of Gore Point; a tower standing about 1.3 miles S of Saint Edmund's Point; and the spire of the church at Snettisham, 3 miles S of Hunstanton. However, all of these marks are often difficult to identify when the sun is shining from behind them.

The Bays, a narrow, shallow, and uneven passage, lies between the shoals which front the shore in the vicinity of Gore Point and Gore Middle, Middle Bank, and Sunk Sand on its N and W sides. Another narrow passage leads between the coast and Sunk Sand. These passages are shallow and are only used by small craft with local knowledge.

**3.27 King's Lynn** (52°45'N., 0°24'E.) ([World Port Index No. 31610](#)) stands 2 miles within the entrance of the River Ouse, at the S end of The Wash. The harbor consists of two wet docks and several river berths. Entry to the inland waterway system may be gained at King's Lynn.

**Tides—Currents.**—Tides rise about 6.8m at springs and 5m at neaps.

**Depths—Limitations.**—The channel through Lynn Cut is 161m wide at HW and 111m wide at LW at its outer end. It has a width of 148m at HW and 97m at LW at the inner end. There are depths of 1m in the river channel and vessels cannot enter at LW. Lynn Cut is the artificially-straightened mouth of the river and has embankments up to 3.5m high. An overhead cable, with a vertical clearance of 46m, spans the fairway in Lynn Cut.

Alexandra Dock is entered through a lock 15.2m wide, which has depths on the sill of 7.6m at HWS and 5.4m at HWN. Bentinck Dock is entered from Alexandra Dock through a passage 96m long and 15.2m wide, which is spanned by two swing bridges. A minimum depth of 5.3m is generally maintained in the wet docks, which have 1,600m of total quayage. Vessels up to 3,000 dwt, 119m in length, 13.8m beam, and 5.5m draft have been accommodated at HWS.

Riverside Quay is 220m long and South Quay is 365m long. Vessels up to 5,000 dwt, 140m in length, 20m beam, and 5.5m draft can be accommodated alongside these river berths, but take the ground at LW. There are facilities for container, ro-ro, tanker, general cargo, and bulk vessels.

**Aspect.**—The fairway in Coke Hole Channel is marked by lighted buoys and lighted beacons. The S end of the channel is bordered by drying training walls. The fairway in Lynn Cut is indicated by a lighted range.

The town stands on low, flat ground. The two towers of St. Margaret's church, the spire of St. Nicholas church, and several tall chimneys are all prominent and visible from seaward. The two pylons of the overhead cable, which spans Lynn Cut, and a silo, standing on the E bank of the river, are conspicuous.

**Pilotage.**—Pilotage is compulsory for vessels over 35m in length. Pilots can be contacted by VHF and, unless prevented by weather, board close W of Sunk Lighted Buoy (52°56'N., 0°24'E.). The pilot vessel generally remains on station from 2.5 hours before HW until such time as it is too late for a vessel to transit the approach channel on that tide. Vessels should send an ETA and request for pilotage at least 24 hours in advance, with amendments up to 6 hours in advance. Inbound vessels should report to the harbormaster on VHF channel 14.

All vessels over 80m in length or close to the upper limits of beam or draft should contact the authorities prior to entry for the latest information. The harbormaster can be contacted by E-mail, as follows:

[harbourmaster@portauthoritykingslynn.fsnet.co.uk](mailto:harbourmaster@portauthoritykingslynn.fsnet.co.uk)

Generally, vessels over 100m in length transit the approach channel only on daylight tides. The attendance of a tug is compulsory for all tankers over 73m in length and all other vessels over that length not fitted with bow thrusters.

**Anchorage.**—Vessels can anchor in The Wash, SE of the Roaring Middle Light Float.

**Directions.**—It is reported (2002) that Cork Hole Channel, entered about 4 miles SSE of Roaring Middle Light Float (52°58'N., 0°21'E.), is the main approach channel. It leads S and SSW for 6 miles between sand banks to the entrance of Lynn Cut. A fairway then leads through Lynn Cut and up the river to the port.

There are several alternative shallow approach channels. Teetotal Channel, lying 3 miles W of Cork Hole Channel, and Bull Dog Channel, lying 1 mile W of Cork Hole Channel, are former entrance channels, which are now only suitable for small craft, with local knowledge.

**Caution.**—The positions of the aids in the approach channels are subject to frequent change.

A small ferry boat crosses the river close S of the entrance to the lock.

Vessels constrained by their draft keep to the deepest water. As a result, vessels may be encountered on either side of the channel, especially when rounding bends.

**3.28 Wisbech** (Sutton Bridge) (52°40'N., 0°07'E.) stands on both banks of the River Nene, at the S end of The Wash. Entrance to the inland waterway system can be gained at this small port.

**Tides—Currents.**—The tidal currents are reported to be strong at springs; however, at neaps with freshets in the river, the flood current sometimes does not reach Wisbech.

**Depths—Limitations.**—The channel through Wisbech Cut has a width of 37m. A bridge, with an opening 18m wide, is situated at Sutton Bridge. Three overhead cables, with vertical clearances of 36m, span the river between the bridge and Wisbech.

There is 1,600m of riverside quaysage at Wisbech, with depths alongside of 4.6 to 6.1m at HWS. Generally, vessels up to 2,000 dwt, 83m in length, and 11.5m beam can be handled, with drafts up to 4.9m at HWS and 3.3m at HWN. Vessels take the ground, which is soft mud, at LW. It was reported (1993) that a vessel of 3,000 dwt had been handled at the port.

There is 350m of riverside quaysage at Sutton Bridge, with depths alongside of 9.3m at HWS and 5.2m at HWN. Generally, vessels up to 5,000 dwt, 120m in length, and 6.3m draft can be handled.

**Aspect.**—Wisbech Channel, approached through Lynn Deep, is entered W of Roaring Middle Shoal and about 3 miles SSW of the Roaring Middle Light Float. It passes between the E edge of Old South Shoal and the W side of Outer Westmark Knock, and is tortuous and liable to frequent changes. Wisbech Cut is entered from Wisbech Channel and leads to the river and the port. The fairway within the channels is marked by lighted buoys and beacons. Sutton Bridge and Wisbech are situated 3 miles and 12 miles, respectively, above the river entrance.

**Pilotage.**—Pilotage is compulsory. The pilot vessel can be contacted on VHF and, unless prevented by weather, cruises in a position about 4 miles SSW of the Roaring Middle Light Float; when vessels are expected, it remains on station from 3 hours before HW until such time as it is too late for a vessel to transit the approach channel on that tide.

**Caution.**—A firing exercise area lies close W of Wisbech Channel and is marked by beacons and buoys.

## The Wash to Cromer

**3.29 Scolt Head** (52°59'N., 0°41'E.), located 5.2 miles ENE of Gore Point, is the N point on the coast between The Wash and Cromer. It is formed by a remarkable long sand hill, but is often difficult to identify when the sun is shining from behind it. The coast between Gore Point and Scolt Head consists of sand hills backed by a range of moderately wooded hills. It is broken only by several very small and shallow harbors which stand along this stretch of shore.

Distinguishable from seaward are the church, with its ruined tower, at Thornham, 1.7 miles SE of Gore Point; the church, with a slender spire, at Titchwell, 1.5 miles E of Thornham; the tower of a church among the trees at Brancaster, 0.5 mile E of Titchwell; and a lifeboat house, with a large red building close W, on the coast N of Brancaster.

Anchorage can be obtained, in depths of 5 to 7m, stiff clay and sand, in Brancaster Roads, about 1 mile N of Scolt Head. Anchorage is also available, in a depth of 6m, 1.3 miles NW of Scolt Head. Caution is advised as the sea, in onshore gales, breaks over the whole of the outer part of this anchorage.

The coast between Burnham Harbour, 2.2 miles E of Scolt Head, and High Cape, 3 miles E, is lined with sand hills, 6 to 9m high and covered with coarse grass.

Brancaster Harbour, entered close W of Scolt Head, and Burnham Harbour should only be used by small craft with local knowledge as the entrance channels are constantly changing.

**Wells** (52°58'N., 0°51'E.), a small port, is situated 1 mile SE of High Cape. A prominent lifeboat house stands at the W entrance of the harbor and a conspicuous church stands in the town. A fairway lighted buoy is moored 0.8 mile NNW of the entrance to the approach channel. The entrance fairway, which leads between the banks fronting the coast, is indicated by a range and is marked by buoys and beacons. Vessels should not attempt to enter without local knowledge.

The harbor, which dries, has a quay, 196m long, with depths alongside up to 3.2m at HWS and 2.1m at HWN. Coasters up to 275 nrt can be handled, but take the ground at LW. Vessels waiting to enter can obtain anchorage, in a depth of 8m, clay, N of the entrance channel.

**Blakeney** (52°57'N., 1°02'E.), situated 6 miles E of Wells, is approached through a shallow channel. The small harbor is formed by a creek. Small craft can enter but must take the ground at LW. The entrance fairway is marked by buoys and range beacons; these aids are frequently moved due to changes in the channel. A conspicuous church, 33m high, stands in the village and can be seen from every part of the coast between Hunstanton and Cromer; in clear weather, it has been reported visible from the vicinity of Dudgeon Shoal (53°16'N., 0°57'E.). A prominent windmill stands at Cley, 0.7 mile E of Blakeney.

**3.30 Off-lying dangers.**—Blakeney Knock and Blakeney Overfalls (53°03'N., 0°57'E.) are the outermost of several shoal ridges which project E from the E end of Burnham Flats. They lie parallel with the coast about 5 miles offshore and have least depths of 2.1 to 2.7m.

Stiffkey Overfalls, lying about 3.8 miles NNW of High Cape, is a shallow tongue of shoal water connected to the

coastal bank by Bridgirdle. Sheringham Shoal, with a least depth of 3.7m, lies about 8 miles NE of Blakeney. Pollard, with a least depth of 5.2m, lies 1.5 miles offshore, about 3.5 miles NE of Blakeney.

Blakeney Overfalls, Bridgirdle, and Sheringham Shoal are marked by buoys.

**Tides—Currents.**—Near Scolt Head, the currents are reported to be weak, but increase gradually to the E attaining a spring velocity of 2 to 3 knots off Cromer. There may be ripples or overfalls in the vicinity of the above-mentioned shoals.

**Caution.**—Several wrecks, some dangerous, lie in the vicinity of the off-lying shoals and may best be seen on the chart.

**3.31 Weybourne** (52°57'N., 1°08'E.) is situated 5.5 miles ESE of the entrance to Blakeney. The coast between is low and sandy and fringed by a shingle beach. The coast then begins to rise and consists, for the most part, of moderately high cliffs.

Conspicuous marks include the tower of the church at Weybourne and three water tanks standing close W of it. Prominent marks include a church standing 2 miles WNW of Weybourne and a long, low, building, with a mast, standing near the beach, 1 mile NW of Weybourne.

**Sheringham** (52°57'N., 1°13'E.), situated 2.5 miles E of Weybourne, stands in a hollow between two prominent hills. A large hotel building stands on the cliff and is conspicuous. Prominent churches stand 0.5 mile and 0.7 mile ESE of the town.

Four high radio masts, marked by obstruction lights, stand 2.8 miles SSW of Sheringham. These lights are reported to be visible for at least 5 miles in clear visibility, but are obscured by the land when within 1.5 miles of the coast.

**Cromer** (52°56'N., 1°18'E.) stands on the edge of a cliff, 4 miles ESE of Sheringham. A main light is shown from a conspicuous tower, 18m high, standing close SE of the town. A racon is situated at the light. In addition, a searchlight, which exhibits a narrow beam for 10 minutes every hour to illuminate the cloudbase, is situated near the light tower.



**Cromer Light**

A church, with its embattled tower, stands 0.7 mile NW of the light. Two prominent radio masts stand 1.2 miles SE of the light.

Foulness, a shoal with depths of less than 5.5m, extends up to 1 mile offshore in the vicinity of Cromer and is marked by a lighted buoy. This shoal flat is very uneven and can cause a high sea during gales.

**Caution.**—Submarine cables extend seaward from the shore in the vicinity of Weybourne and may best be seen on the chart.

## Cromer to Great Yarmouth

**3.32 The Would** (52°52'N., 1°40'E.), a channel, leads 18 miles SE from abreast Cromer to a position NE of Winterton Ness. It leads into Haisborough Gat and Cockle Gateway, the former being the only channel suitable for vessels of deep draft at all times.

**North Haisboro Lighted Buoy** (53°00'N., 1°32'E.), equipped with a racon, is moored close NW of the N end of Haisborough Sand and marks the N entrance to The Would. The E limit of the channel is marked by lighted buoys moored at the W side and the S end of Haisborough Sand. There is a least depth of 16m in the channel, at its N end.

The coast between Cromer and Happisburgh, 10 miles SE, consists of cliffs, which are subject to extensive landslips, and is fronted by a submarine forest. To the S of Happisburgh, the coast changes to sand hills.

**Mundesley** (52°53'N., 1°26'E.) is situated 5 miles SE of Cromer. A prominent water tower stands in the NW part of this village.

A conspicuous white radar dome, 68m high, is situated at Trimmingham, 1.2 miles NW of Mundesley.

**Bacton** (52°51'N., 1°29'E.) is situated 2.4 miles SE of Mundesley. A prominent church stands in the village. Two conspicuous radio masts and the conspicuous buildings of the gas terminal stand on the coast, close NW of the church. The gas terminal buildings are brightly illuminated at night.

**Caution.**—Several submarine gas pipelines extend seaward from the shore adjacent to the gas terminal buildings at Bacton and cross The Would, passing to the NW and SE of Haisborough Sand.

Numerous wrecks, some dangerous, lie within The Would and off Cromer and may best be seen on the chart.

**3.33 Happisburgh** (52°49'N., 1°32'E.) is situated on a rounded hillock close to the coast, 2.4 miles SE of Bacton. A conspicuous church, with an embattled tower, stands on the NW side of the village. A prominent water tower stands 0.7 mile SW of the village.

A main light is shown from a prominent tower, 26m high, standing close SE of the church.

Between Happisburgh and Winterton Ness, 7.5 miles SE, several churches stand along the coast and can be seen from seaward.

**Haisborough Sand** (52°57'N., 1°40'E.), marked by lighted buoys, lies parallel with the coast and about 8 miles offshore. It has least depths of awash to 0.3m and is steep-to, especially on its NE side. The position of this shoal is indicated, except at slack water, by tidal eddies and even a moderate sea or slight swell breaks over its shallowest part. Haisborough Tail, with a least depth of 4.2m, lies parallel with and about 2.5 miles E of the S part of Haisborough Sand.



**Happisburgh Light**

**Haisborough Gat** ( $52^{\circ}49'N.$ ,  $1^{\circ}56'E.$ ), with depths of 18 to 40m, is the passage which continues SE of The Would. This channel lies with Haisborough Sand, Haisborough Tail, and Hammond Knoll on its N side; Winterton Ridge and Hearty Knoll on its E side; and Newarp Banks and Winterton Shoal on its SW side.

**Newarp Lightship** ( $52^{\circ}48'N.$ ,  $1^{\circ}56'E.$ ), equipped with a racon, is moored about 5 miles SE of the SE end of Haisborough Sand and marks the channel through Haisborough Gat.

Generally, vessels proceeding S pass SW of the lightship and those proceeding N pass NE of it.

**Hammond Knoll** ( $52^{\circ}52'N.$ ,  $1^{\circ}55'E.$ ), with a least depth of 1.6m, lies about 2 miles E of Haisborough Tail and is marked by a lighted buoy on its E side and at its S end.

**Winterton Ridge** ( $52^{\circ}50'N.$ ,  $2^{\circ}01'E.$ ), marked by a lighted buoy at the S end, lies with its N end located about 2 miles E of Hammond Knoll. It has a least depth of 5.6m; however, less water than charted was reported to lie over this shoal ridge. Hearty Knoll lies with its N end located about 1.5 miles NE of the S end of Winterton Ridge. It extends SSE for about 6 miles and has a least depth of 9.8m.

The area lying between Winterton Ridge and Smiths Knoll to the E is known as Middle Ground.

**Winterton Ness** ( $52^{\circ}44'N.$ ,  $1^{\circ}41'E.$ ) is situated 7.5 miles SE of Happisburgh. The village of Winterton stands behind the sand hills, 1.2 miles S of Winterton Ness. A church, with a conspicuous high tower, stands in the village and a prominent disused light tower, 21m high and surmounting a building, is situated on an eminence, 0.3 mile SE of it. A racon is situated at the church tower.

**Caution.**—Several submarine cables, some disused, extend seaward from the shore in the vicinity of Winterton Ness and may best be seen on the chart.

**3.34 Caister Point** ( $52^{\circ}39'N.$ ,  $1^{\circ}43'E.$ ) is located 5.7 miles SSE of Winterton Ness. A very conspicuous water tower stands 1 mile NNW of the point and a prominent radio mast stands close N of it.

**Newarp Banks** ( $52^{\circ}46'N.$ ,  $1^{\circ}54'E.$ ), two detached shoals over which the sea breaks in stormy weather, lies about 8 miles ENE of Winterton Ness. The W shoal has a least depth of 9.4m

and the E shoal a least depth of 7.6m. Depths of less than 11m also extend up to about 2 miles SSE from the E shoal.

Winterton Shoal, with a least depth of 10.7m, lies about 5 miles NE of Winterton Ness. Eddies form over this shoal in any strength of tidal current.

During offshore winds, vessels can obtain anchorage in The Would, off the coast between Bacton and Winterton Ness. Even during E winds, this roadstead is somewhat protected by Haisborough Sand; however, N and NW winds cause the greatest sea in this area.

**Cross Sands Lighted Buoy** ( $52^{\circ}37'N.$ ,  $1^{\circ}59'E.$ ), equipped with a racon, is moored to the E of the off-lying shoals, about 9.3 miles ENE of Great Yarmouth Haven and 11.5 miles SSE of Newarp Lightship.

For the off-lying coastal shoals, see Great Yarmouth below.

**Directions.**—Vessels proceeding through The Would and Haisborough Gat may then steer SE and then S, staying to seaward of the coastal shoals, into the S part of the North Sea. Alternatively, vessels leaving Haisborough Gat may steer SSW to a position E of Holm Channel, the principal approach fairway leading to Great Yarmouth and Lowestoft.

## Great Yarmouth ( $52^{\circ}37'N.$ , $1^{\circ}44'E.$ )

World Port Index No. 31580

**3.35** Great Yarmouth stands on a low narrow strip of land between the E bank of the River Yare and the sea. Gorleston, a suburb, is situated on the W bank of the river. Great Yarmouth Haven, the port, is formed in the lower reaches of the river, between its mouth and the entrance to Breydon Water, 2.5 miles N. This port provides access to over 120 miles of the inland waterway system.

An extensive series of shoals, with approach channels between them, form the roadstead for the port. These shoals, which front the entire coast from nearly abreast Winterton Ness to Benacre Ness, 20 miles S, consist of numerous sand banks lying from 0.5 to 5 miles offshore. This series of shoals forms a barrier and acts as a breakwater against the heavy seas which, during gales from the E, would otherwise reach the low coast. The depths on this natural barrier vary, but are subject to frequent changes; during some years, the shoals of previous years disappear, while the deeper parts become shallower.



**Entrance to the River Yare (Great Yarmouth)**

**Tides—Currents.**—Tides rise about 2.4m at springs and 2.1m at neaps.

The tidal currents in the river are affected by the large expanse of Breydon Water, which is tidal. They tend to run inward when the sea level is higher than the water in Breydon Water and outward when the sea level is lower. The ebb current may attain a velocity up to 4 knots, but the flood current does not normally exceed a velocity of 1.5 knots, except in the vicinity of Haven Bridge, where it attains a rate of 2.5 knots.

Both the duration and velocity of the ebb current are increased during and after heavy rain; the flood current is correspondingly reduced. Under these circumstances, the flood current may attain a velocity of 6 knots off Brush Quay, close within the S side of the river entrance.

Off the entrance, the flood current corresponds approximately with the S current and the ebb current with the N current. The S current flows past the N breakwater and forms an eddy close S of it which sets into the harbor. The ebb current flows past the N breakwater and turns N with the N current.

During the flood, great care is necessary when passing the head of South Pier. An eddy sets almost directly from South Pier to North Pier. A vessel may experience this set on the port bow when her stern is still affected by the S tidal current and be deflected towards the North Pier. During the ebb, the tidal current flows out between the piers and, on this account, the N current does not set as squarely across the entrance as the eddy on the flood. Hence, entry during the flood is made more difficult. During both currents, the sharp bend at the river entrance requires caution and tugs are commonly used.

**Depths—Limitations.**—In the entrance to the port, which is 61m wide between the breakwaters, there is a minimum depth of 4.3m at LWS and 6.1m at HWS. The river has a generally uniform width of about 80m with a least depth of 4.3m. Haven Bridge is situated 2.2 miles above the entrance and has a lifting portion 26.8m wide. Overhead cables, with a vertical clearance of 47m, span the river.

Numerous berths, with 7,131m of total quaysage, are situated along both banks of the river. The main quays have depths of 2.5 to 5m alongside and include Atlas Terminal, 315m long; Bollard Quay, 228m long; East Quay, 209m long; Ocean Terminal, 80m long; South Quay, 554m long; Southtown Wharf, 100m long; Bunns Quay, 123m long; Warehouse Quay, 153m long; Palgrave Wharf, 94m long; Ventureforth Base Wharf, 240m long; Wood Offshore Base Wharf, 370m long; and Yeoman Wharf, 176m long.

Generally, vessels up to 123m in length and 5.7m draft can be accommodated at HWS. However, it is reported that vessels up to 138m in length have entered the port. There are terminals for ro-ro, container, bulk, and tanker vessels. In addition, there are extensive facilities for offshore gas and oil service vessels.

It is reported that construction is to start on an outer harbor situated close N of the entrance to the river.

Deep-draft vessels are advised to obtain the latest depth information in the channels from the pilot.

**Aspect.**—To the S of the river entrance, the coast consists of cliffs, up to 17m high, which are composed of sand, gravel, and red loam. They stretch as far as the village of Corton, 3.5 miles S. Then to Lowestoft, the coast is low and fringed with a sandy beach. The conspicuous tower of a church stands at Corton.

Conspicuous landmarks at Great Yarmouth include a tower, 39m high, standing 2 miles N of the entrance; the two framework pylons, 75m high, of the overhead cable standing 1.2

miles above the river entrance; the chimney, 112m high, of a power station standing 0.5 mile S of the E pylon; and Nelson's Monument, standing close N of the chimney.

Cross Sands Lighted Buoy (52°37'N., 1°59'E.), equipped with a racon, is moored to the E of the off-lying shoals, about 9.3 miles ENE of Great Yarmouth Haven.

**Pilotage.**—Pilotage is compulsory for all vessels of 40m and over in length, with certain exceptions. Pilots can be contacted by VHF and board within 1 mile of Corton Lighted Buoy (52°31.1'N., 1°51.5'E.), off the entrance to Holm Channel, or not less than 0.5 mile from the harbor entrance.

Vessels should send an ETA and a request for pilotage 8 hours in advance. The message should include length, draft, grt, last port of call, cargo, and berth. Vessels leaving a port within 8 hours voyage time should send their ETA on departure. Amendments to the ETA should be sent as necessary.

Vessels should then contact the pilot station and confirm their ETA 2 hours prior to arrival or when within VHF range.

**Regulations.**—Great Yarmouth Vessel Traffic Service (VTS) system operates in the approaches to the port.

All inbound vessels should report their ETA off the port entrance to the VTS Control at least 1 hour prior to arrival. This report should include draft, length, grt, agent, last port of call, details of cargo, and designated berth.

When 1 mile from the entrance, vessels should contact the Great Yarmouth VTS on VHF channel 12 in order to obtain a clearance before proceeding into the port. In addition, all vessels should report when passing the calling-in points within the river, which may best be seen on the chart.

All vessels outbound or moving berth should inform Great Yarmouth VTS within 15 minutes of ETD in order to obtain a clearance to proceed.

**Signals.**—When the incoming tidal current is running between the pier heads, a quick flashing amber light, visible only from seaward, is shown from a building at the E end of the S pier.

**Anchorage.**—Yarmouth and Caister Roads form one continuous anchorage area between Scroby Sand and the coast. This area has depths of 9 to 24m, fine sand, gravel, and pebbles. However, several foul areas and numerous wrecks lie in this vicinity and may best be seen on the chart.

The roads are exposed to E winds, which cause a short and choppy sea. During these conditions, vessels should, if possible, endeavor to anchor off the shallowest parts of the off-lying sand banks. These shift, but are always indicated in bad weather by the heaviest breakers. Gorleston Road, SE of the entrance, provides good sheltered berths, in depths of 10 to 20m, sand. At night, vessels anchor off the coast between the entrance and Britannia Pier, 2 miles N.

**Directions.**—From the N, the approach may be made through Cockle Gatway, Barley Picle, and Hemsby Hole. From the E and S, the approach may be made through Holm Channel or Lowestoft North Road and Corton Road. Vessels from the N may also proceed through the main route in Haisborough Gat and then steer accordingly in order to pass through Holm Channel.

Barley Picle, the outermost of the N approach channels, lies between Cross Sand and Scroby Sand. There are depths of over 40m at its N end and less than 10m at the S end. This channel is not buoyed and due to the changing sands should not be used.

Hemsby Hole, which narrows to a width of 0.2 mile at its S end, lies between Cockle Shoal and Caister Shoal, on its E side, and the coast, on its W side. This channel leads into Caister Road and passes over a spur with a least depth of 2.1m. Vessels without local knowledge are recommended not to enter this channel.

**Cockle Gatway** (52°43'N., 1°45'E.) lies between Winterton Overfalls and Scroby Shoals, on its E side, and Caister Shoal, on its W side. This channel passes over Cockle Shoal and leads into Caister Roads and Yarmouth Roads. The fairway is about 0.4 mile wide and has least depths of 4 to 5m. It is indicated by the lighted buoys which mark the adjacent shoals.

In Cockle Gatway, it is necessary to watch the tidal currents, as although they appear to run through the channel near the NE side of Cockle Shoal, elsewhere they set across the channel. The S current generally sets on to Scroby Sand and the N current sets on to Cockle and Caister Shoals.

The passage through Lowestoft North Road and Corton Road provides a shorter and more sheltered route for coastal vessels, but requires local knowledge. (See Lowestoft.)

**Holm Channel** (52°33'N., 1°48'E.), main approach channel to Great Yarmouth, lies between the N side of Holm Sand (See Lowestoft.) and the S side of Corton Sand. It extends 3 miles NW from the outer entrance which is marked by Corton Lighted Buoy, moored 5.4 miles SE of Great Yarmouth Haven. The fairway is marked by lighted buoys which are frequently moved to indicate the changing depths and shoals.

After passing through Holm Channel into Gorleston Road, a lighted range indicates the approach fairway through the river entrance.

Hewett Channel, lying between Middle Scroby and Corton Sand, and Corton Channel, located on the S side of Corton Sand, are former entrance channels which are no longer marked by aids.

**Caution.**—Vessels, especially those of deep draft, are cautioned that changes in the banks and the passages between them are frequent and no channel should be used unless buoyed, even though the charted depths appear sufficient. Experience has shown that the changes in the unbuoyed channels are more frequent than elsewhere.

Because of these frequent changes it is often necessary to place or move buoys prior to the publication of a Notice to Mariners.

Numerous wrecks, some of which are marked by buoys, lie in the approaches to the port and may best be seen on the chart.

Numerous vessels in transit to and from the gas fields and production platforms in the North Sea may be encountered within the channels leading to the port, which is a base for such craft.

Cross Sand and Scroby Sand are continually altering, both in shape and position, and should not be approached on their unmarked sides without local knowledge.

Temporary shoaling is liable to occur in the vicinity of the harbor entrance during strong E winds, when depths of 0.9m less than those charted may be expected.

A submarine gas pipeline crosses the river, about 0.3 mile above the entrance.

Several submarine power cables cross the river, 1.2 miles above the entrance.

A ferry crosses the river, 1.3 miles above the entrance.

Due to silting, depths alongside the river berths are subject to frequent change.

Light-draft vessels can enter at any time, but high or low slack water is recommended. Entry should be delayed when there is a heavy sea in the entrance, particularly during strong SE winds and an ebb current.

## Lowestoft (52°29'N., 1°45'E.)

[World Port Index No. 31570](#)

**3.36** Lowestoft stands on the summit and slopes of a steep bank with many trees on it. The town extends both N and S of the harbor entrance and is prominent from seaward. The port, which is entirely artificial, is divided into Outer Harbor and Inner Harbor. It is approached through the extensive series of shoal banks which front this entire coast as far S as Benacre Ness. These shoals form a natural breakwater and afford protection to the roadstead and the harbor.



**Lowestoft**

**Winds—Weather.**—At Lowestoft, the sea level is greatly affected by winds. Strong N winds can raise the level by up to 0.9m; strong S winds have the opposite effect. At neaps, the sea level may rise continuously during the period of falling tide and at springs, the normal flood and ebb currents may be nearly canceled.

The sea level is depressed with winds from the ENE, through S, to SW; winds from other directions have the opposite effect. With force 3 to 4 ESE winds, the level can be depressed by up to 0.1m; with force 3 to 4 NW winds, the level can be raised by the same height. It is reported that strong winds and gales can depress or raise the level by up to 1.2m. Similar changes possibly occur at other places on this coast.

The sea level is also affected by seiches of considerable range. During strong N gales, the rising tide may be interrupted, at frequent intervals, by periods of fall; the falling tide may also be interrupted by periods of rise. The tidal currents in the entrance and harbor, under these circumstances, are similarly affected; they may change from flood to ebb and from ebb to flood at frequent intervals, attaining velocities up to 4 knots at the bridge.

**Tides—Currents.**—Tides rise about 2.4m at springs and 2.1m at neaps.

In Newcome Channel, the tidal currents appear to be deflected to the E by the shoals in the vicinity; in Corton Road

and Lowestoft North Road, the currents generally set in the direction of the coast.

In the narrow channel lying between the NW side of Lowestoft Bank and the harbor entrance, the currents attain a velocity of 4 knots at springs.

In the entrance of the harbor, the tidal currents are strong and complex.

After HW at Lowestoft, the N current produces a strong N set across the entrance which is met by the ebb current from the harbor. These two currents then run together in a NE direction along the North Pier extension. A vessel entering the harbor under these conditions will have the ebb current on its starboard bow, while the outside N current will be on the port quarter. This will result in the vessel tending to sheer towards the South Pier as the entrance is approached.

When a S current runs outside the harbor during the flood, the resulting current will flow SW along the North Pier extension and into the harbor or across South Pier. Under these conditions, a vessel will tend to be swept onto South Pier as the entrance is approached.

**Depths—Limitations.**—The entrance to the harbor, between North Pier and South Pier, is 46m wide and has depths of 7.1m at HWS and 5.2m at LWS. The Outer Harbor consists of Hamilton Dock, Waveney Dock, and Trawl Dock, on the N side, and Yacht Basin, on the S side. The docks on the N side have depths alongside of up to 5.5m at HWS and 3.6m at LWS and are mainly used by fishing vessels and vessels connected with the North Sea oil and gas fields. In addition, oil platform module construction is carried out in Waveney Dock.

The Outer Harbor and the Inner Harbor are connected by a channel, 22.7m wide, which is spanned by a bascule bridge. This channel is maintained by dredging and has depths of 7.1m at HWS and 5.2m at LWS.

Inner Harbor has 1,982m of total quayage, with depths alongside of up to 7.1m at HWS and 5.2m at LWS. There are extensive cargo berths including terminals for container, bulk, tanker, and ro-ro vessels. In addition, there are facilities for large offshore supply vessels.

Vessels up to 8,420 dwt, 125m in length, and 6.4m draft have been accommodated at HWS.

**Aspect.**—Lowestoft Ness, located 0.6 mile N of the harbor entrance, is the easternmost point of England. It is low, rounded, and sandy.

A main light is shown from a prominent tower, 16m high, standing 1 mile N of the harbor entrance.

Prominent landmarks to the N of the entrance include the tower of the church at Corton, 2.1 miles NNW of the light, and the narrow spire of the church standing 0.5 mile W of the light. Conspicuous landmarks include a large building standing 0.4 mile S of the light and a silo, 49m high, standing on the N side of the Inner Harbor.

Conspicuous landmarks to the S of the entrance include the S of two water towers standing 1.7 miles SSW of the harbor entrance; the tower of the church at Kessingland, 2 miles S of the water tower; and Claremont Pier, now partly derelict, 0.5 mile SSW of the harbor entrance.

**Pilotage.**—Pilotage is compulsory for vessels over 60m in length and all vessels carrying dangerous cargo. Vessels should send an ETA at least 24 hours in advance to Lowestoft Port Control. This ETA should be confirmed 3 hours and 1 hour



**Lowestoft Light**

prior to arrival on VHF channel 14. Vessels should state their preferred pilot boarding position.

Pilots may be contacted by VHF and board, as follows:

1. For vessels intending to use Holm Channel—Lowestoft (Outer Station) ( $52^{\circ}30.8'N.$ ,  $1^{\circ}50.8'E.$ ).
2. For vessels intending to use Stanford Channel, especially those approaching from the S and E—Lowestoft (South Station) ( $52^{\circ}26.6'N.$ ,  $1^{\circ}48.3'E.$ ).
3. For any vessel entering the port—Lowestoft (Inner Station) ( $52^{\circ}29.8'N.$ ,  $1^{\circ}47.0'E.$ ). This station will be used in all cases when conditions do not permit safe boarding at the Outer Station or the South Station.

**Regulations.**—Inbound vessels should request instructions from the Vessel Traffic Service (VTS) system before approaching the harbor entrance. Outbound vessels should request instructions before leaving the berth and before approaching the bridge.

Vessels departing the port have very limited vision until they are clear of the piers. Therefore, vessels on coastal passage proceeding close to the harbor entrance are advised to contact the VTS system on VHF channel 14 for traffic information.

The maximum speed for vessels within the harbor is 4 knots.

**Signals.**—The harbor control light, a white quick flashing light, is shown below the main light at the head of South Pier. When the light is flashing, vessels may proceed to sea but shall not enter. At all other times, vessels may enter the harbor but shall not proceed to sea.

Vessels shall not approach to within 137m of the bascule bridge, at the entrance to the Inner Harbor, until a green light is shown on the N wall of the entrance. When this light is shown, vessels may enter or leave the Inner Harbor.

**Directions.**—Holm Sand lies with its N end located about 3.5 miles SE of the entrance to Great Yarmouth Haven. This shoal forms the S side of Holm Channel and extends about 3 miles S to join the E arm of Newcome Sand. Part of Holm Sand dries and the sea breaks over it in all but the calmest weather.

Newcome Sand is a Y-shaped shallow shoal. From a position 3 miles SSE of the entrance to Lowestoft, its W arm extends N to a position about 0.7 mile E of the entrance; the thinner E arm extends NNE to a position about 1.8 miles ENE of the entrance and joins the S end of Holm Sand. The Ridge, with a least depth of 4.2m, extends ESE for about 0.3 mile from a point on

the coast, 0.5 mile NNE of the harbor entrance. Lowestoft Bank, with a least depth of 1m, extends S from The Ridge and joins the W arm of Newcome Sand. The inner edge of this bank connects with the coastal bank, about 1 mile SSW of the harbor entrance. Barnard, an irregular-shaped shoal with a least depth of 2.1m, extends up to 1.3 miles offshore in the vicinity of Benacre Ness, 4 miles S of the harbor entrance.

From the N, the port can be approached either through Holm Channel (see paragraph 3.35) or Yarmouth Road, then through Corton and Lowestoft North Roads. This approach is marked by lighted buoys.

From the S, a buoyed channel, which is entered between Barnard Shoal and the S end of Newcome Sand, leads to Pakefield Road, 1.5 miles S of the harbor entrance. From Pakefield Road, an approach channel leads W of Lowestoft Bank and through Lowestoft South Road to the entrance. This approach necessitates a tight turn into the harbor entrance; therefore, large vessels are recommended to pass the harbor entrance, turn in Lowestoft North Roads, and make their entry from the N.

Vessels can also approach the port from the E by using Stanford Channel. This channel, which leads between Holm Sand and Newcome Sand, is marked by lighted buoys. It is entered about 1.7 miles SE of the harbor and leads 1.5 miles NNW to join the route from the N in the vicinity of the S part of Lowestoft North Roads.

Vessels are advised to enter the harbor on the flood and leave on the ebb tide. When approaching from N or S, vessels are advised to proceed as slowly as possible until about 100m off the entrance when speed should be increased for entry into the harbor.

**Anchorage.**—Corton Road affords good but confined anchorage, in depths of 8 to 13m, blue clay and mud.

Lowestoft North Road affords anchorage, in depths of 6 to 16m, sand and gravel; however, this anchorage is exposed to E winds which cause an exceptionally short and choppy sea. Lowestoft South Road is not used as an anchorage due to shoaling.

**Caution.**—Due to the continually changing nature of the shoals and channels in the approaches to the port, local knowledge is essential and pilotage is recommended for all vessels.

A spoil ground area is centered about 1 mile E of the harbor entrance and may best be seen on the chart.

A measured distance, marked by beacons, is situated on the W side of Lowestoft North Roads and may best be seen on the chart.

An outfall pipeline, which may best be seen on the chart, extends about 0.6 mile seaward from Lowestoft Ness.

A submarine cable, which may best be seen on the chart, extends E from the shore, about 0.7 mile N of the harbor entrance, in the vicinity of Lowestoft Ness.

Numerous wrecks and obstructions lie within the approaches to the port and may best be seen on the chart.

Numerous groins, some marked by beacons, extend from the shores in the vicinity of the port and are a danger to small craft navigating inshore.

Numerous vessels in transit to and from the gas fields and production platforms in the North Sea may be encountered within the channels leading to the port, which is a base for such craft.

A submarine power cable crosses the harbor channel close E of the bascule bridge.

It has been reported that when the bascule bridge is opened on demand from the pilot, it is only opened when the vessel is quite close to the bridge.

Due to silting, depths within the harbor may be less than charted.

## Lowestoft to Orford Ness

**3.37 Benacre Ness** (52°24'N., 1°44'E.), a low and indefinite point, is located 5 miles S of Lowestoft. There are no conspicuous objects in this vicinity, except for a thick, compact grove of trees standing close to the coast, SW of the point. To the N of this point the offshore shoals merge with the coastal bank. The coast to the S of Benacre Ness consists of low cliffs fringed by a shingle beach. In places, the coast is eroding and after HWS or storms, debris such as tree trunks may be encountered offshore.

**Southwold** (52°20'N., 1°41'E.), a small resort town, stands on a hill of moderate elevation, 4.6 miles SSW of Benacre Ness. A church standing on the NW side of the town and a water tower standing close W of it are conspicuous. A main light is shown from a prominent tower, 31m high, standing in the middle of the town.



**Southwold Light**

The harbor, located 0.5 mile S of the town, lies in the lower reaches of the River Blyth and is used by small fishing boats and pleasure craft. There are depths up to 2.1m in the entrance, 1.1 to 1.3m over the bar, and 1.7 to 2.8m alongside the berths. Most craft berth alongside pontoons moored upstream. Vessels should keep to the N side of the river as shoal water extends N from the S pier. The depths and extent of the sand over the bar change frequently. Pilotage is unavailable, but instructions for entering the harbor are given by VHF on request.

**Caution.**—Several submarine cables, some disused, extend seaward from the coast in the vicinity of Benacre Ness and may best be seen on the chart.

**3.38 Dunwich Cliffs** (52°16'N., 1°38'E.), 17m high, are located 4 miles SSW of Southwold Light. They rise abruptly and are a prominent light color. A conspicuous church stands in the

town of Walberswick, 0.7 mile W of the entrance to Southwold.

**Thorpe Ness** (52°11'N., 1°37'E.), a rounded and low point, is located 4.7 mile S of Dunwich Cliff. Several white cottages, prominent in the morning light, stand on the cliffs in the vicinity of Minsmere Sluice, 4 miles N of Thorpe Ness.

The village of Thorpeness stands on the coast, 0.5 mile SSW of Thorpe Ness. A conspicuous water tower stands in the village. Another water tower, which has the appearance of a dovecot, stands near a windmill, about 0.2 mile WNW of the village. A prominent radio mast, 91m high, stands 1 mile W of the village and a prominent television mast stands 1.8 miles inland.

**Sizewell** (52°13'N., 1°37'E.), located 1.4 miles N of Thorpe Ness, is the site of a nuclear power station. The power station consists of conspicuous large building, 71m high, with another building surmounted by a dome, 75m high, standing close N of it.

**Aldeburgh** (52°09'N., 1°36'E.), a small resort town, stands behind a low shingle beach, 2.2 miles SSW of Thorpe Ness. The tower of the church standing in the town is conspicuous, but the water tower situated close SW of it is usually hidden by trees. A low shingle beach extends S between the town and Orford Ness. The River Alde approaches close to the sea at a position about 0.8 mile S of the town and a conspicuous martello tower stands in this vicinity.

**Orford Ness** (52°05'N., 1°35'E.), located 4.4 miles SSW of Aldeburgh, is described in paragraph 4.12.

**3.39 Off-lying dangers.**—Dunwich Bank and Sizewell Bank, with least depths of 3.3m, lie parallel with the coast 1 to 1.5 miles offshore, adjacent to Dunwich Cliffs and Sizewell.

Aldeburgh Napes, with a least depth of 10.1m, is a detached shoal which lies about 4 miles E of Aldeburgh.

Aldeburgh Ridge, with a least depth of 1.3m, lies about 0.7 mile off the coast, 1.5 miles NE of Orford Ness; the S and shallowest part of this shoal is named Onion.

**Caution.**—Submarine pipelines extend up to 0.4 mile seaward from the shore in the vicinity of the nuclear power station at Sizewell.

Several submarine cables, some disused, extend seaward from the coast in the vicinity of Aldeburgh and may best be seen on the chart.

An outfall pipeline, which may best be seen on the chart, extends about 0.8 mile SE from the S part of Aldeburgh and is marked by a buoy.

It is reported that transfer of liquid cargo between tankers takes place, occasionally, in a position about 11 miles ESE of Southwold. Vessels engaged in this task may be at anchor or otherwise unable to maneuver.

A disused explosives dumping ground area, the limits of which are shown on the chart, lies centered about 12 miles E of Orford Ness.

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

Numerous lobster pots are laid, in the summer, off the coastal banks on this area.

Careful attention must be paid to the tidal currents in the vicinity of Orford Ness.