

# Immingham Dock

<b>OPERATOR</b>	ABP	01469-570506	
<b>CHARTS</b>	Stallingborough to Skitter Haven - Annual Survey		
<b>VHF</b>	19 & 68 ,71,73, 17 (with B.S.C.) 69 (with A.P.T.)		
<b>MAX. VESSEL</b>	<b>Length</b>	<b>Beam</b>	<b>Draft</b>
1/2 Lock (N)	79 m	26.8 m	10.36 m
1/2 Lock (S)	136 m	26.8 m	10.36 m
Full Lock	223 m	26.8 m	10.36 m
<b>LOCK</b>	<b>Length</b>	<b>Breadth</b>	<b>Hdg.</b>
	256m	27.2m	036/216
	<b>Outer Sill 7.6m</b>		
	Level: HOT 7.0m up to HW -10mins.		
	Pens: 24hrs, closes 14.8m on sill, HOT 7.2m		
<b>DOCKING SIGNALS</b>	3 Red lights in a vertical line prohibit entry from Sea. 3 lights: Green, White, Green in a vertical line show entry into Immingham Dock permitted.		
<b>ARRIVAL</b>	<b>Flood</b>	HW - 5hrs to HW  Swing to port once lock open & stem off W. jetty (O.1c). Do not swing too early as vessels turn readily to port on the flood tide! Be aware of traffic and Clay Huts and the set onto No 11 buoy. Have a spring ready to land on W. jetty if necessary. From a position stopped over the ground, with WJ knuckle abeam & EJ knuckle/light fine to Stbd., gather min. headway. As WJ open, keep bow close to EJ and work into the Bellmouth. Watch approach speed and do not enter until lined up. Note tidal eddy may push bow to port at the entrance. Beware when first of flood (LW to HW -2.5hrs.) as mud behind jetties may be exposed and vessel may be set to port and then to Stbd. in bell mouth.	
	<b>Ebb</b>	Watch set onto "A1" dolphin. Put tide on Stbd. bow and crab down to the E. Jetty. Stem tide approx. 1 ship length off (heading 310 deg) and get vessel stopped in water. Organise BM to stand by for a spring on EJ approach if landing on. Gather min. headway and crab into Bellmouth. Watch port quarter on knuckle, alter too	

soon and you may get set onto it. Wait until vessel is inside of the line of the E/W jetties and then come hard round to head for the east knuckle on the port side. Keep vessels turning to port as they may straighten up and end up stemming with WJ. Reduce speed, which will increase as you get back into the slack water. Aim to land on the east side of the lock entrance, as it is better fendered. You are less likely to be pinned alongside by the current rather than further north on the approach jetty. As there is a counter current, which may push the bow to Stbd. and make it difficult to land on. Do not use Stbd. helm but a kick astern if needed to land on flat. Get a spring out ASAP.

**REMINDER:**

If it is ascertained during the pilot/master exchange that the master will have the con during the approach to the lock, the pilot must make time during the passage up river to fully discuss the intended manoeuvre and ensure that the master’s understanding and proposed actions are consistent with the guidelines for safe entry. During the manoeuvre the pilot should continue to play an active role within the bridge team, offering advice and corrective action as necessary.

**Ebb from up river**

Slow down off clay huts & swing to Stbd off WJ. Allow plenty of sea room bearing in mind the strength of the tide. *[GNTP 16/2008]* Let vessel swing until parallel to EJ & stem tide. Then proceed as for normal approach.

**NOTE:**

**If there is a vessel leaving the lock, then it will be safer to stem uptide of the lock entrance. Tidal flow charts are available for reference at Port House, Immingham Dock Master and in Spurn and Grimsby lobbies.**

---

**DEPARTURE**

**Ebb**

Plenty of power ASAP & A/C to port if necessary to allow for set. Do not A/C to Stbd. until face of IOT is open. On spring tides, no tugs fast fwd, and do not back out on standby boats.

**Notes**

Tide ebbs until approx. LW Hull that is approx. 1 hour after LW Immingham.

East side of lock is fendered.

Leading lights at No. 5 Quay in the dock - W (2) 10 secs - to assist in lining up for the lock when outbound.

The bollards on the east side of the lock are numbered from the lockhead.

Fixed fenders over the side of a vessel are not permitted.

## LOCK ENTRY TRAFFIC SIGNALS

Recently a large ferry was stemming the ebb tide for Immingham Lock entrance waiting for outbound traffic to clear the lock prior to making her final approach and entry. A misunderstanding on the part of the PEC holder on the ferry led him to believe that only one vessel was waiting to leave the lock when, in fact, there were two vessels. A and B. Once Vessel A had left the lock, the ferry commenced her final approach into the Bellmouth. Vessel B was not visible from the ferry bridge at this time as the lock was run down and it was approaching low water. At this time, Vessel B was making her way out of the lock. Both the PEC holder on the ferry and the master of Vessel B were very surprised to see each other and both vessels had to take immediate evasive action to avoid a collision. Unfortunately, during these manoeuvres, Vessel B made contact with fendering on the outer end of the eastern jetty causing substantial damage to that structure and a small amount of damage to herself.

The traffic signals at Immingham were set at three reds, prohibiting entry from the sea and they remained on red throughout this incident. The PEC holder on the ferry who was on the helm, engine controls, bowthruster and VHF had not observed these signals. It should also be noted that the second vessel leaving the lock, contrary to the Humber Navigation Byelaws 1990, had failed to sound her whistle signal.

The lessons to be learned are:

- During critical stages of a ship's passage, in this case manoeuvring for Immingham Lock, the workload needs to be shared amongst the full bridge team. It is not acceptable that the PEC holder or pilot take responsibility for almost the full workload, resulting in overload and, in this case, a near miss which could have been much worse.
- Members of the bridge team should be tasked to take an active part in the pilotage passage, a challenge and response culture is the proven way for safe and efficient bridge operations.
- Checklists should be used on board vessels to help make sure all procedures have been carried out correctly and, in this case, that the green/white/green signal for entry into Immingham are indeed showing and specific orders for entry have been received from the Dock Master.
- Visual lookout should be maintained until the vessel is safely in the lock.
- Outward bound vessels are reminded that the use of a whistle signal as per the Humber Navigational Byelaws 1990 (23) will alert the other craft of your imminent departure from the lock, even when not visible to them *[GNTP 04/06]*

## **TURNING SHORT ROUND OFF THE I.O.T.**

In a recent incident a vessel from up river bound for Immingham Dock on the ebb tide was swung to stbd in the vicinity of No. 11 buoy. She was overcome by the tide and set quickly down towards the IOT. Unfortunately her port quarter made contact with the bulbous bow of a moored tanker on IOT No. 1. Prior to the swing the pilot had made VHF contact with a ferry inwards bound for the IOH and agreed a green to green passing, expecting to pass in the vicinity of No. 11 buoy. This was a flawed plan especially given the direction and strength of the tide.

Turning short round towards the IOT, especially on the ebb, except for the purposes of berthing or to avoid collision, should be avoided. Pilots are advised to carefully plan the swing for Immingham when approaching from up river on the ebb. If, due to traffic, it is not considered prudent to swing above the bell mouth, then vessels should continue past the IOT and swing when clear to do so downstream of the jetties. *[GNTP 16/08]*

# Port Operations - Immingham

## 1 ENCLOSED DOCK

1.1 The dock depth and depths in the approaches to the lock are maintained by dredging. The water level in the dock is generally maintained by pumping water from the lock, and from the river via the lock. This is known as impounding. There are three points during a vessels transit from river to dock and vice versa, at which under keel clearance can be considered to be critical. These are: -

### A The Bellmouth Approach

This area being tidal is an area of active siltation and is regularly surveyed and dredged. To ensure an adequate under keel clearance in the bellmouth (which takes into account such siltation) reference is made to the outer sill. A vessels draft must be such that clearance over the outer sill is at least 1.5m on a rising tide and 2.0m on a falling tide. The latter increment being to allow for any fall in tide height whilst the vessel is manoeuvring prior to lock entry. For regularly visiting, powerful and manoeuvrable Ro-Ro ferries, these clearances may be reduced to 1.0m and 1.5m respectively.

### B The Inner Lock Gate Sill

The maximum height of water that can be retained in dock by the lock gates is 14.8m when measured at the outer sill.

This equates to 11.13m (36'6") at the inner sill. The specified maximum draft for a vessel entering or leaving the dock is 10.36m (34'0") when the dock is full. Dock water is used to re-fill the lock during penning operations, thus each time the lock is filled, the level of the dock water decreases. The amount of this decrease varies depending on the height difference between the dock level and the tidal river. To minimise the reduction in height of the dock water and the subsequent reduction in under keel clearance, impounding operations take place to maintain the dock level.

### C The Inner Dock and Berths

As mentioned previously, the depth of the dock is maintained by dredging, a procedure necessary to remove the silt deposited from the water which accompanies a vessel penning inwards and the water pumped into the dock during impounding operations. There are recognised depths specified for different berths in the dock. These are the depths that the dredging programme is designed to achieve. Siltation which occurs between dredging campaigns and between subsequent surveys of the dock, added to the variation in dock water height due to penning operations will vary the under keel clearance on the berths. The recognised depths of the berths in dock

are 9.0m for No.8 Quay and the Terminal berth, both in the North West Arm and 11.0m for all other berths except Henderson's dry Dock where a depth of 7.2m is generally specified, dependent upon the current siltation deposits.

With the variation in height of the dock water there will be occasions when the height of the rising tide outside the lock gates matches the height of the water in dock. When this occurs both inner and outer gates may be opened simultaneously allowing a vessel to pass through the lock **'on the level'** without being penned with the proviso that at least one set of gates, either inner or outer, is closed at least ten minutes before high water.

During periods of spring high waters, there will be occasions when the height of tide in the river equals or exceeds the height of water, which can be retained in dock. For example, a spring high water of 15.3m (measured at the outer sill) regularly occurs, exceeding the maximum retained height of 14.8m by 0.5m. When this occurs, the tide is said be **'over the top'** of the gates, both sets of gates can be opened and vessels passed through the lock on the level. The height of the dock water is obviously simultaneously increased by the tide flowing in. With the increase in dock water height comes an identical increase in under keel clearance. This would allow a vessel into the dock with a draft greater than the permitted maximum; however, retention of this height of dock water is not physically possible. As the tide in the river falls, the excess water in dock escapes over the top of the gates and through the sluices until normal maximum dock water height is achieved, approximately 1.25 hours after high water. Any vessel in dock with a greater draft than the 10.36m permitted maximum may well take the bottom as the water level in dock falls to the maximum retained level.

When the tide is sufficiently high to go over the top of the gates, it is a requirement that at least two sets of gates out of the inner middle and outer sets be closed at least 10 minutes before high water. Once the gates have been closed, the sluices are lifted and as the tide turns and falls the water escaping from the dock through the sluices, along with the water escaping over the top of the gates to the river causes the dock level to fall.

Due to engineering constraints the lock gates are not allowed to be moved during the ebb, with more than 0.1m of water over the top of them. Thus no vessel movements can take place through the lock from 10 minutes before high water until the dock level falls to 11.23m (36.9"), which may take up to 1.25 hours. This period of inactivity is known as the **'run off'**.

### Ordering Procedures

Once a vessel has been nominated for a particular berth by the Port commercial section, the ship's agent must contact the duty Assistant Dock Master (ADM) to

arrange a time for entering the lock. Prioritisation may take place and numerous factors will influence this decision making process including, but not limited to: -

### Safety

The safety of vessels, the Port and its equipment will take precedence over all other factors.

### Draft

Any vessel of approximately 7.5m draft or more can be considered to be a deep drafted vessel and as such would require to be docked at or near to high water, on the flood tide, and would be given priority at that time. (See Draft / Length / Tide matrix).

### Length and Beam

The middle gates of the lock can divide the lock into two parts approximately 1/3 and 2/3 of the overall length. The smaller part at the northern end is able to accept vessels up to 75m in length, and is known as the Small Lock. The larger part to the south is able to accept vessels up to 130m in length and is known as the Big Lock.

When combined the total length of what is now known as the Full Lock is 232.5m. The maximum length of vessel acceptable in this lock is dependent upon several factors: -

- i Length of vessel
- ii Tugs, numbers used, their position and size
- iii Beam of vessel
- iv The lines of the vessel, whether fine lined or of a more bluff construction.
- v Manoeuvrability of vessel, type and power of auxiliary machinery such as bow and stern thrusters.

Differing combinations of factors will produce different acceptable lengths. For example, a vessel using two tugs, if it has fine lines and is only of average beam, would be able to overlap the tugs by a greater extent, especially if one of the tugs is of a smaller class. The maximum acceptable length of such a vessel would be in the order of 197m. If the beam and the lines of the vessel were such that little or no overlap of the tugs was possible, the acceptable length would be reduced.

Longer than normal vessels can be accepted by bringing the vessel into the lock using the head and stern tugs then releasing the stern tug once the vessel is moored in the lock. The stern tug leaves the lock; the outer gates are closed and the vessel runs up to dock level. The vessel is then moved forward into the dock until the stern is to the south of the middle gates. The vessel is held in this position by the head tug and by mooring lines whilst the small lock is used to bring in the stern tug, which is then reunited with the vessel before proceeding to the berth. There is an obvious time penalty in carrying out this operation.

Even longer vessels can be accepted such as specialist 'Great Lakes' vessels equipped

with powerful bow thrust units which use pushing tugs forward and a stern tug to ease the vessel into the lock. The vessel is then run up to dock level alone in the lock where it is met by additional tugs that assist it to the berth.

The maximum acceptable beam in the lock is 26.8m but vessels over 26.2 will only be accepted with the Dock Master's approval.

A vessel exceeding 120m combined with a beam which approximates to the maximum beam acceptable would be considered to be a tidally restricted vessel and would thus require to be docked within the slack water period, either high or low water depending upon the draft. Large, deep drafted arriving vessels would normally be ordered so as to be off the lock one hour before high water. Should there be two such vessels to dock on the same tide, the first and generally the least hampered vessel would be requested to present itself off the lock two hours before high water. Similarly, large deep drafted vessels sailing from the dock would be ordered off the berth approximately one hour before high water so as to be leaving the lock at high water. Occasionally the period of slack water is specifically targeted to ease the docking of especially sensitive vessels. (See Draft/Length/Tide matrix)

### **Working Vessel**

A working vessel, that is a vessel working on arrival, would be given priority over a non working vessel, however, there may be times when priority is given to sailing a non working vessel in order to free a berth for the next working vessel.

### **Special Known Characteristics**

Vessels with known characteristics, for example hull protrusions, overhanging equipment such as safety craft, sonar equipment or heli-decks which could only safely dock at high water to prevent contact between said equipment and the lock side would be given priority at high water. Similarly, a vessels known lack of power, poor speed or poor handling characteristics would generate different priorities to a vessel known to be powerful, fast and manoeuvrable.

### **Tug Requirements**

A vessels tug requirements along with tug availability can alter a vessels priority. A vessel may displace a vessel that has to wait for a tug or tugs, which is happy to move without tug assistance. In cases where there is a shortage of tugs, the tug service provider will decide upon priority of tug allocation.

### **Dredging Craft**

Dredging craft can generate a degree of priority due to the high cost of hiring such vessels and the need to make such operations cost effective.

### **Tugs**

Tugs themselves can claim some degree of priority. Tugs servicing passage plan



vessels bound for the deep-water riverside berths have a responsibility to be at their correct station in accordance with the passage plan schedule. The port authority has a responsibility to ensure properly ordered tug movements through the lock are carried out.

### **Bunker Barges**

Whilst generally a fairly low priority such vessels can command a much greater degree should their services be required by a vessel waiting to sail, especially if such vessel is tidally restricted and has numerous tugs ordered to assist.

### **Commercial Vessels**

These will invariably be given priority over non-commercial vessels.

### **Seniority**

All other things being equal, priority will be given to the senior vessel, that is the vessel, which arrives at the stemming or designated arrival point first.

### **Scheduled Ferry Movements**

These will be prioritised, especially at the peak ferry arrival and departure periods, but not to the exclusion of tidally restricted vessels, passage plan tugs and other commercially sensitive arrivals.

Arrangements for the sailing of vessels from the dock are broadly similar to the above. At all times the ADM will endeavour to be commercially sensitive to customer needs whilst making best use of the restriction on traffic flow imposed by the lock. The safety of vessels will be paramount.

Vessels moored in the lock on the east side making use of the self-lubricating polypropylene fenders, which are only fitted to that side. It is possible under special circumstances to moor on the west side. This is discouraged due to the lack of bollards at the south end of the lock in the region of the impounding pump house and the poorer energy absorption of the steel plate fenders on the west side. Port authority staff carries out all mooring in the lock.

ABP lockside staff will advise on which bollard Spring lines are to be placed prior to vessel entering the lock to allow vessels to be correctly positioned.

## **2 EAST AND WEST JETTIES**

### **2.1 Under Keel Clearance**

Lying within the complex tidal streams of the River Humber, the berths on the East and West jetties are subject to varying degrees of siltation. Scouring by the current is greater on the East jetty than on the West, requiring more attention to be paid

by the dredger to the West jetty berths than to those on the East. Deposition of silt is greater at the ends of the jetties. Regular dredging campaigns are carried out along with regular surveys.

Due speed of silt deposition especially at the western end of the West Jetty, the latest sounding charts and the dates of these charts must be consulted along with the draft tables. In this way trends may be deduced to give a more accurate picture of the current state of the berths.

## 2.2 Ordering Procedures

Once a vessel is nominated for a particular berth on the jetties the agent will contact the duty ADM for a berthing time. Operational priorities will have already been decided by the berth operators and incorporated in their nomination of the berth.

### **Manifold Position and Tidal Stream at the Time of Arrival**

As vessels almost always stem the tide when berthing, the stream direction will indicate the heading of the vessel on berthing.

There may be occasions when a vessel has an offset manifold i.e. not amidships that the vessel can only fit on the berth one way round. This could mean the vessel having to wait for the tide to turn in order that it may make its approach from the desired direction.

Large or deep drafted vessels will only be berthed and sailed near the slack water periods at high or low water, dependant on draft and for vessels sailing upon their heading. The proximity of the Immingham Oil Terminal and the large vessels which occupy those berths require care to be taken when considering any movement of large vessels on or off the jetties during any period of ebb tide. Care must also be taken when considering a relatively long vessel berthing on the extreme, which takes place in that region.

On no account should a vessel on either the east or west jetties extend towards the bellmouth past lines which run parallel to the east and west lead in jetties measured 30m behind the fender line of the lead in jetties. This is to prevent such vessels fouling the bellmouth and interfering with the navigation of vessels making for, and leaving the lock.

## 2.3 Restricted Vessels at Immingham Dock

### **Definitions**

Tidally Restricted Vessel = A standard equipped ship i.e. single fixed pitch propeller, conventional rudder, no thrusters units and a LOA of 140 meters or more.

Time of HW and LW = Tide table times at Immingham (for the parameter stated over).

“Arrival Off Dock” = Vessel stemming tide with tugs made fast.

“Sailing Time” = Run down ready to leave the lock.

“Ordered Time” = Time to commence singling up, tugs in attendance. (Pilot is expected to be on board in time to complete Passage Plan with Master and allow gangway to be lifted). [Ordered time to be at least sailing time - 1 hour.]

“Dock Master” = means the Dock Master appointed by ABP and includes his authorised deputies, assistants and any other person authorised by the Authority to act in that capacity.

## **ARRIVAL AND SAILING PARAMETERS FOR TIDALLY RESTRICTED VESSELS AT IMMINGHAM DOCK AND E/W JETTIES**

### **High Water Arrivals**

Tidally Restricted Vessels up to 180m LOA and/or less than 10m draft can, when the tidal range is 4.8m or less, be docked in the period *HW - 2 hours up to HW*.

Tidally Restricted Vessels up to 180m LOA and/or less than 10m draft can, when the tidal range is more than 4.8m, be docked in the period *HW - 1.5 hours up to HW*.

### **Low Water Arrivals**

Tidally Restricted Vessels up to 180m LOA are to be ordered for flood tide entry only and to be ordered to be off dock at *LW + 1 hour*.

If a second vessel is to be docked on the same tide, the tide range must be 4.8m or less and the second vessel is to be ordered off dock for *LW + 1.5 hours*. Vessel is to be landed on West Jetty approach as soon as first vessel is in the lock and docked no later than *LW + 2 hours*.

### **High Water Departures**

Tidally Restricted Vessel of 140m to 145m LOA and/or less than 10m draft can, when the tidal range is 4.8m or less, sail in the period *LW + 0.5 hours up to HW*.

Tidally Restricted Vessel up to 180m LOA and/or less than 10m draft can, when the tidal range is 4.8m or less, sail in the period *HW - 2 hours up to HW*.

Tidally Restricted Vessel up to 180m LOA and/or less than 10m draft can, when the tidal range is more than 4.8m, sail in the period *HW - 1.5 2 hours up to HW*.

### **Low Water Departures**

Tidally Restricted Vessel of 140m to 145m LOA and/or less than 10m draft (draft permitting) can, when the tidal range is 4.8m or less, sail in the period *LW + 0.5 hours up to HW*.

Tidally Restricted Vessel up to 180m LOA and/or less than 10m draft can, when the tidal range is 4.8m or less, sail in the period *LW + 0.5 hours to LW + 2 hours*.

Tidally Restricted Vessel up to 180m LOA and/or less than 10m draft can, when the tidal range is more than 4.8m, can sail in the period *LW + 0.5 hours to LW + 1.5 hours*.

### **Vessel LOA > 180m and/or more than 10m Draft**

Tidally Restricted Vessel greater than 180m LOA and/or less than 10m draft may only dock or sail within the period *HW -1 hour up to HW* or sail within the period *LW +0.5 hours to LW +1.5 hours* (draft permitting).

At the discretion and full agreement of both the pilot on board and the Dock Master, the sailing time may be extended by 30 mins.

### **Low Water Sailings**

**Head West.** Tidally Restricted Vessel can be sailed in the period *LW -05. hours up to LW +1.5 hours*.

**Head East.** Tidally Restricted Vessel can be sailed in the period *LW up to LW +1.5 hours*.

## **TUG REQUIREMENTS**

Tug provision for the Port of Immingham is by several private companies.

Tugs should normally be ordered by the master through the ship's agent. Immingham Dock or pilots will assist with the ordering if required. The master must state which towage company is preferred. Details of towage companies and tugs can be found on the following link:-

**<http://www.humber.com/Estuary-Information/Navigating-the-Estuary/Towage-Tugs>**

or in the General Notice to Pilots/PEC's No 2 of each year.

Tidally Restricted Vessels up to 160m LOA and/or 8m draft will be recommended to use 2 tugs when entering the lock.

Tidally Restricted Vessels over 160m LOA and/or 8m draft will be required to take a pusher tug in dock. One of the wire tugs should be a class 'A' tug.

Inward vessels should be met by tugs below the IOT and outward at least one tug should accompany the vessel until clear of IOT.

### *Tug Classification*

Class A .....	50t bollard pull and above
Class B .....	40 - 50t
Class C .....	30 - 40t
Class D .....	25 - 30t

All vessels inward that require a tug or tugs to berth at IMMINGHAM DOCK must reduce their speed and complete making tugs fast before the vessel passes No. 10

Upper Burcom Buoy - SH 34 - 2011.

A fire tug is on immediate notice, external to the Dock, to assist any vessel in unforeseen difficulties in the Immingham area; this is generally limited to a machinery failure.

The above tug requirements may be varied following declaration of suitable additional manoeuvring equipment such as multiple propellers, rudders, and thrusters units. Pilotage assessments will be used to make informed decision on varying tug requirements.

Masters and pilots are reminded that tug requirements vary greatly depending on the weather and tidal pattern. The Duty Assistant Dock Masters may recommend tug usage and masters and pilots should heed the advice provided.

In the event of the possibility of a serious incident, the Duty Assistant Dock Master can require a vessel to take tugs as a special direction.

### **Towage Operations on Vessels not equipped with centre leads when transiting locks**

In a recent incident a tug was badly damaged when assisting a large modern RoRo ferry that was being manoeuvred bow first through King George Lock from the river. See report on page xxx.

### **STANDARD BERTHING INFORMATION**

Vessels moor in the lock on the east side making use of the self-lubricating propylene fenders, which are only fitted to that side. It is possible under special circumstances to moor on the west side. This is discouraged due to the lack of bollards at the south end of the lock in the region of the impounding pump house and the poorer energy absorption of the steel plate fenders on the west side. Port authority trained marine staff carries out all mooring in the lock and dock.