

## APPENDIX 4

### IMMINGHAM EASTERN RO-RO TERMINAL DCO APPLICATION

#### PINS REFERENCE TR030007

#### Simulations 07/11/23 – 08/11/23

#### INTRODUCTION

1. My name is Jonathan Bush. During over 12 years as a Humber Pilot I have piloted numerous vessels of every size around the Immingham area including the berths surrounding the Proposed Development. In 2017 whilst on office duties I was tasked with completing the final edit of the Pilot Handbook which became the 2017 Pilot Handbook. This Handbook was then given to all pilots and Pilot Exemption Certificate Holders (PECS).
2. My last acts of pilotage in the area were a 2<sup>nd</sup> class tanker (the MT Normanna) sailing from Immingham East jetty at high water on 13/01/2023 and the berthing of a 1<sup>st</sup> Class vessel into Immingham Dock at low water on 16/01/23 (the MV Zealand Zaria).
3. I remain employed as a marine pilot in a different district.
4. I attended the above simulations at HR Wallingford for DFDS based on the fact I was formally a Senior Humber Pilot from August 2010 until January 2023. Over the 2 days of simulations, I witnessed the first 14 runs of the proposed 16. HR Wallingford deemed every run successful. Run 2 needed to be repeated and the 2<sup>nd</sup> attempt was successful. I agree all outcomes from the simulations were successful and all manoeuvres were conducted in a controlled safe manner using the very manoeuvrable Stena T class vessel.
5. In my experience, the vessel simulations were realistic on approaching or departing the area North of Immingham Oil Terminal (IOT) and the vessel behaved as I would expect. At this stage of the exercise the tidal model used was as per the widely accepted, and publicised, Admiralty tidal data. In these simulations, the Applicant used a device of applying a vector in a tidal diamond to the simulator to reflect the tidal direction shown in the Pilot Handbook which also reflects my own experience of the tidal direction in that area.
6. However, as the vessel approached or departed the area South of IOT (i.e. the area of the proposed IERRT), the simulation was not as I expected. At this stage of the simulation exercises HR Wallingford's simulated flow model, rather than the Admiralty tide data, was applied to the simulation. As the dredging and infrastructure of the IERRT currently does not exist, we must rely on the data provided by HR Wallingford during the runs.

## EBB TIDE

7. In my experience, on the ebb tide when berthing a vessel on Immingham East Jetty there is a strong set onto the jetty. Watching the simulations in this area, I noted that no such strong set onto the jetty was experienced. The result of this is that it was easier to berth the vessel in the simulation than I would have expected if the tidal direction had been as I have experienced it in that location.
8. When departing Immingham East Jetty on the ebb tide there is a strong set onto the jetty. There have been occasions where vessels could not safely depart the berth due to this strong tidal flow pinning the vessel onto the berth and I have had to wait until the slack tide or even the flood tide in order to depart. This is widely accepted and mentioned in the 2017 Pilot Handbook.
9. The rate of the current does not appreciably reduce as you approach the East Jetty on the ebb tide as simulated in HR Wallingford's model. The direction of the current does occasionally change due to cushioning off the mud bank behind the jetty but this only occurs within the last 5 metres prior to berthing alongside and cannot be relied upon to prevent a heavy landing if the approach is not controlled.
10. Whilst "stemming" the tide approaching the East Jetty in a controlled manner, the vessel's heading would be at approximately 315 degrees. If this were the case in the IERRT simulations the Stena T vessel's bow or stern would be extremely close to an adjacent vessel on Berth 2 or 3 respectively. A larger vessel would exacerbate this further.
11. From my experience I expected departing Berth 3 on the ebb tide to be more challenging than it was in the simulations. The ebb tide on East Jetty would normally "pin" the vessel alongside the berth as well as pushing the vessel downstream (Eastwards).
12. In my experience I would have expected difficulty berthing on Berth 2 during the Ebb tide. On this berth I would expect the vessel to be pushed off the berth (towards Berth 3) which was not the case in the simulated environment.
13. Larger vessels berthing on Immingham East Jetty are tidally restricted to ensure they don't arrive during the stronger tidal flows. Whilst I appreciate that most vessels visiting this area are not powerful modern ferries but the Stena T class is only 1m shorter than the maximum allowable tidal vessel onto the East Jetty (which is further away from the IOT finger piers than the Proposed Development).
14. I have not experienced the Ebb tide in the vicinity of the IOT finger piers as no vessel over 1300dwt (small barges only) can depart or arrive on these berths during the Ebb tide.

## FLOOD TIDE

15. In my experience, on the Flood tide berthing on Immingham East Jetty there is a strong set off the jetty. Watching the simulations in this area, the set off the berth was not present.
16. Departing Immingham East Jetty on the Flood tide there is a strong set off the jetty. I have previously witnessed colleagues leaving the berth without permission to sail due to the force of this tidal flow. The set off the berth was so strong they lost control of the vessel whilst reducing mooring lines (singling up), which is a normal procedure prior to letting go completely, and they had no choice but to join river traffic whether it was safe to do so or not.
17. Berthing on IOT 8 during the Flood tide vessels have to give the Jetty a wide berth as the tide will set the vessel onto the berth. A small compulsory tug can be used to ensure vessels clear the end of the jetty before coming alongside. Berthing onto IOT 6 vessels have to stay close to the jetty because the tide will set vessels off the jetty. The small compulsory tug provided can push vessels alongside as they reduce speed approaching the berth.
18. Departing IOT 8, the recommended manoeuvre to prevent damage to the jetty structure due to the vessel rapidly falling alongside whilst backing down is to “slide down the jetty with or without engines until the wheel fender is usable”. The vessel will then be clear of the berth and able to manoeuvre clear in the space between IOT and Immingham East Jetty. Departing IOT 6 the compulsory tug must be used to keep the vessel alongside whilst singling up prior to departure.
19. These manoeuvres and procedures are accepted and recommended in the Humber Pilot Handbook 2017.
20. Whilst “stemming” the tide approaching Immingham East Jetty or the IOT finger piers in a controlled manner, the vessel’s aspect would be approximately 135. Approaching IERRT the ferries would be stern to tide so would be heading approximately 315 to stabilise the effect of the tide. If this were the case in the simulations the vessel’s bow or stern would be extremely close to an adjacent vessel on Berth 2 or 3 respectively.
21. In my experience I would have expected difficulty berthing on Berth 3. On this berth I would expect the vessel to be pushed off the berth (towards Berth 2) on the flood tide.
22. In my experience I would expect sailing from Berth 2 on the flood tide to be a challenging manoeuvre (as is departure off IOT 8). This was not attempted as HR Wallingford believed Berths 2 and 3 are similar. By comparison, IOT 6 and 8 appear similar however experience (and the pilot Handbook) shows they are different.

## CONCLUSION

1. From the simulations, it was proved using HR Wallingford's flow model and the manoeuvrable Stena T class vessel the IERRT can operate safely. As stated above, from my experience in the area I doubt the validity of the tidal currents used in the simulations.
2. As a pilot I would be able to recreate all manoeuvres I witnessed during the 2 days in the simulator. In reality however, I wouldn't be so confident.
3. The Stena PEC holders are manoeuvring the vessels frequently to the Humber Sea Terminal (HST) at Killingholme rather than the Proposed Development. At HST the tide runs almost true to the jetty on both Ebb and Flood. This is simply not the case at Immingham between IOT and the Immingham East Jetty. When swinging is required to berth at HST on the flood tide, there is sufficient room to turn early to align the vessel with the berth prior to coming alongside. The ebb tide will take the vessel away from the infrastructure into safe water whilst stern to the tide. On HST 3 and 4 the vessel is head to tide when the tide is pushing towards the infrastructure, meaning a vessel has greater control.
4. Every berth or dock on the Humber (with the exception of Humber Sea Terminal) that permits berthing operations during Ebb and Flood tide has a manoeuvre that is very different depending on whether the tide is ebbing or flooding to keep the manoeuvre as safe and controlled as possible. IERRT relies on essentially the same manoeuvre regardless of tidal direction, which around the Immingham area is not safe in my opinion.
5. Whilst working on the Humber I was unaware of any consultation with Pilots or PECS regarding the Proposed Development. I personally became aware of IERRT by piloting a Stena Line vessel from the HST. In discussion with colleagues after finding out about the Proposed Development not one person I have spoken to has endorsed the Proposed Development as a good idea from a navigational point of view. "Dangerous" was the most common adjective used.
6. In my current employment I regularly meet masters on vessels that frequent IOT finger piers. Without exception, all masters have said that the Proposed Development would adversely affect their safe berthing/unberthing operations.
7. Immingham is already a congested complex area, and the area off the East Jetty is regularly used to stem the tide and await a berth or lock. By losing this area I think delays that already occur will increase for other river traffic without taking into account the additional traffic to the new berths.

Jonathan Bush

18.11.2023