

The Lake Lothing (Lowestoft) Third Crossing Order 201[*]



Lake Lothing
**THIRD
CROSSING**

Impact of the Scheme on the Port of Lowestoft Document SCC/LLTC/EX/59

Planning Act 2008

Infrastructure Planning

The Infrastructure Planning (Examination Procedure) Rules 2010

PINS Reference Number: TR010023

Author: Suffolk County Council

Document Reference: SCC/LLTC/EX/59

Date: January 2019

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Executive Summary

- E.S.1. The purpose of this report is to bring together the Applicant's assessment of the impact of the Scheme on the Port of Lowestoft contained within its application documentation for the Scheme, alongside information that has been made available to the Applicant post-submission by Associated British Ports (ABP) and others, and in doing so to respond to a number of issues raised by ABP in its relevant and written representations on the Scheme.
- E.S.2. It considers the effect of the Scheme in the context of the Port's present situation (alongside potential realistic future growth) and considers whether a serious detriment is caused to it, as is suggested by ABP.
- E.S.3. Considering the effect of peak hour restrictions on Scheme bridge lifts in the AM and PM peak the consequence of the Scheme, based on current levels of activity, is a commercial vessel having to adjust a transit time on average every 8 weekdays. The effect of these restrictions on Scheme bridge lifts based on future levels of port activity is a commercial vessel having to adjust a transit time on average every 2.5 weekdays. This assessment assumes that vessels do not manage their movements to take account of the draft Scheme of Operation, though evidence from the operation of the A47 Bascule Bridge suggests this would be the case. There is an inseparable relationship between the level of vessel activity in the Inner Harbour and the frequency with which, currently, the A47 Bascule Bridge, and in the future, both bridges will need to lift. Consequently, growth in port activity in both cases needs to be considered alongside the associated traffic implications with and without the Scheme. This is discussed further in the accompanying note on the *Justification and Traffic Effects of the draft Scheme of Operation*.
- E.S.4. The Applicant maintains that the length of quay which is no longer usable by ABP is 62m, and it is against this figure that the extent of detriment to the Port should be considered. It believes that ABP's suggestion that the entirety of berths No.4E, No.3 and No.2 totalling 165m should be considered a direct loss is not a reasonable assessment of the impacts of the Scheme. The 103m of additional quay that ABP considers a direct loss will remain usable for port operations. Berth No.4E will have reduced functionality insofar as it can no longer accommodate the full range of vessels for which it was designed, but it can accommodate the vast majority of vessels that frequent the Port, and critically it is large enough for CTVs, which ABP anticipates being increasingly common in the future. As noted above Berth No.2 is unaffected by the Scheme as such its functionality is retained.
- E.S.5. The Applicant has undertaken an initial assessment of risks, using a method in accordance with the Port Marine Safety Code, in consultation with a Navigation Working Group set up to contribute to the process. The inclusion of mitigation measures identified within the outcomes of this pNRA within the Scheme are secured through the DCO. An assessment of the effects of bridge failure has been undertaken using the method for the pNRA, this has determined that the risk level

for vessels would be classed as Low and can therefore be considered as low as reasonably practicable (ALARP).

- E.S.6. The Applicant recognises that there are potential implications for the Port Security Plan as a consequence of the Scheme, and thus potential implications for berthing certain classes of vessel on parts of berth immediately adjacent to the Scheme. The Applicant considers the physical extent of the fenders (which the Applicant has already assessed delineates the permanent direct loss of quay) mitigates the risk, though remains receptive to other security measures that would complement this in addition to CCTV. Notwithstanding the above, given the likely frequency with which the designation of such restricted areas is likely to occur and, as ABP notes, a significant amount of alternative locations to site such restricted areas, the Applicant considers the impact on port security cannot be considered significant.
- E.S.7. The Applicant recognises the Scheme will introduce a head room restriction along Commercial Road, the minimum clearance will be no less than 5.3m, and that this would restrict the ready movement of harbour mobile cranes. It is understood that ABP does not currently utilise any such cranes west of the Scheme and it is unlikely such cranes would be required in association with the proposed CTV facility to the west of the Scheme. This matter remains under discussion with ABP.
- E.S.8. The Applicant considers that the DCO provisions which interact with ABP's statutory undertaking are appropriate and ensure that ABP retains sufficient control of harbour operations to ensure it can carry out its statutory duties.
- E.S.9. The Applicant disagrees with the wide and unprecedented scope of indemnity proposed by ABP. Whilst it has put forward small changes to reflect the asset protection role of protective provisions, the Applicant considers that the indemnity in the DCO, taken alongside ABP's remedies in civil law and the Compensation Code, is appropriate and sufficient.
- E.S.10. The Applicant does not deny that the Scheme will bring change to the Port of Lowestoft, but this is a different question as to whether it causes a serious detriment. Through its design and proposals for operation, having regard to the current and potential future use of the Port, this paper has shown that no such serious detriment is caused; and that therefore the need for large scale mitigation interventions as proposed by ABP does not arise.

1 Introduction

1.1 Purpose of this report

1.1.1 The purpose of this report is to bring together the Applicant's assessment of the impact of the Scheme on the Port of Lowestoft contained within its application documentation for the Scheme, alongside information that has been made available to the Applicant post-submission by Associated British Ports (ABP) and others, and in doing so to respond to a number of issues raised by ABP in its relevant and written representations on the Scheme, demonstrating that the conclusions of the ES, Statement of Reasons ('SoR') and Case for the Scheme in respect of the effects on the Port and the level of detriment to the Port's statutory undertaking, are robust.

1.1.2 The principal issues of discussion between the parties, as reflected in the Statement of Common Ground and in ABP's Written Representation, have been used to inform the structure of this report:

- Scheme of Operation – in particular restrictions on openings in peak traffic hours;
- Impact on berthing – direct and indirect impact on berthing;
- Impact on navigation – including the impact on and assessment of navigation risk, necessity for an 'emergency berth' and the adequacy of vessel simulation undertaken to date;
- Impact on port security – the compatibility of the Scheme with Port security measures;
- Other impacts; and
- Development Consent Order, including indemnity

1.1.3 There is inevitably a degree of overlap between these points so cross referencing is used to avoid repetition wherever possible. The report considers both the current level of activity in the port, and a potential greater level of activity in the future.

1.1.4 The report concludes with a discussion on the necessity and nature of mitigation measures.

2 Serious detriment

- 2.1.1 ABP has, in parts 2, 8, 9 and 10 of its Written Representation, explained that it is concerned that the Scheme will cause a 'serious detriment' to the carrying on of its statutory undertaking as a result of the land take proposals for the Scheme, its operation and the potential inability for ABP to meet the various requirements placed on it by statute.
- 2.1.2 The Applicant does not disagree with the statutory provisions which are referenced by ABP.
- 2.1.3 The Applicant notes the other DCO decisions referenced by ABP, but considers that, as can be seen when the recommendation reports of those decisions are considered in detail, the question of the level of detriment that can be considered 'serious' must turn its own particular facts, having regard to the nature and circumstances of the affected statutory undertaking, and the nature and extent of the particular effects of the scheme in question on that undertaking¹.
- 2.1.4 The Applicant agrees with ABP that there is little or no prospect of replacement land being made available for the purposes of section 127(3) and that the Applicant has not sought to provide any as part of the Scheme (given the conclusions of the Statement of Reasons and the Environmental Statement).
- 2.1.5 It also agrees with ABP's contention that serious detriment should not be considered purely in the light of the value to the undertaking of the land taken, but that attention should also be paid to the functional effect that is caused by compulsory acquisition being taken of that land – noting that the Scheme proposals include acquisition of airspace over the Port to build the new bridge.
- 2.1.6 It also agrees that consideration of this issue must be both based on current Port activities, but also its potential for the future; although it is considered that this future must be proven to be at least reasonably likely (for the Scheme's impacts to therefore be considered in the context of whether it has the potential to constitute 'serious' detriment).
- 2.1.7 This has all been recognised in the Applicant's Statement of Reasons (APP-007), which considered these issues and concluded that no serious detriment is caused by the Scheme.
- 2.1.8 The Statement of Reasons sets out the Applicant's understanding of what ABP's 'statutory undertaking' is (by reference mainly to the Transport Act 1981); and there is nothing in ABP's Written Representation which suggests to the Examining Authority that this is incorrect.

¹ This is also explained in paragraph 6.3.6 of the Statement of Reasons (APP-007).

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- 2.1.9 This 'statutory undertaking' is carried out with the land that is held by ABP for the purposes of this undertaking - i.e. the existing harbour limits as shown on the Harbour Limits Plan (APP-051.7).
- 2.1.10 The question that this paper seeks to answer is therefore whether the Scheme proposals would seriously affect ABP's ability to carry out the powers given to it under the Transport Act 1981, both now and in the future, within the limits of the current port.
- 2.1.11 These limits include the Inner Harbour, Outer Harbour, and, importantly, the existing Bascule Bridge.
- 2.1.12 As such, the impacts of the Scheme must be considered in comparison to the practical ability for ABP to carry out its statutory undertaking at the present time – i.e. as it is constrained by the existing Bascule Bridge, and not on the basis that such a restraint does not exist. The 'detriment' caused must therefore be judged in that context.
- 2.1.13 The same test also applies to the consideration of ABP's duties under the various statutes and policies set out in part 2 of ABP's Written Representation – i.e. does the creation of the new bridge change the existing situation so much that ABP would be unable to comply with its statutory duties and would such failure cause a serious detriment to its undertaking.
- 2.1.14 In considering this latter point, it is the Applicant's position that it is not enough for ABP to say that because they will have to change the way their duties under legislation are managed, a detriment is caused. As ABP themselves set out in their representations, ports are subject to a constant level of development over time, and as such compliance with those duties need to adapt to that development (for example, new berthing) – the same would apply to the development proposed by the Scheme.
- 2.1.15 As such, ABP's representations should be considered to the extent that they demonstrate that the Scheme above and beyond the fact that it will simply exist, and the provisions of the DCO, would impede its statutory duties thus causing a tangible potential detriment sufficient to constitute 'serious detriment'². This is particularly dealt with in chapters 9 and 11 of this paper.
- 2.1.16 Furthermore, the constraints and practical reality of the port must come into play in considering this aspect - for example ABP's open port duty under section 33 of the Harbours, Docks and Piers Clauses Act 1847 already needs to be managed in the

² In particular the Applicant notes that statutes such as the Health and Safety at Work Act 1971 and the Corporate Manslaughter and Corporate Homicide Act 2007 take account of how management of the company involved (in this case the Port) has considered the situation as it exists at the time of the problem concerned. The Port would need to undertake its duties with the bridge in mind once it is constructed.

context of the existing Bascule Bridge; and would continue to be managed post the Scheme's existence.

- 2.1.17 The following chapters of this paper therefore consider the effect of the Scheme in the context of its present situation (alongside potential realistic future growth) and consider whether a serious detriment is caused to it.

3 Port of Lowestoft

3.1 Background

- 3.1.1 Lake Lothing was, historically, an inland lake which connected, via Oulton Broad, to the River Waveney by means of a channel, Oulton Dyke. These watercourses were all navigable rivers.
- 3.1.2 The Norwich & Lowestoft Navigation Act 1827 empowered the Proprietors of the Navigation to install a lock (now Mutford Lock) between Oulton Broad and Lake Lothing and also to make and maintain an “entrance cut from the said lake called Lake Lothing unto and through the seashore into the sea...” The case law suggests that it was these works which led to the creation of “the port called Lowestoft Harbour”.
- 3.1.3 The extent of Lowestoft harbour, which now falls under the control of ABP as harbour authority, is identified in general terms in the list of works specified at paragraph 8 of the Schedule to the Harbour Directions (Designation of Harbour Authorities) (No. 2) Order 2015 (SI 2015/1656)³. The boundary of the operational Port of Lowestoft is shown on Figure 15.1 of the Environmental Statement (document reference APP-154) and the Harbour Limits Plan (document reference APP-051.7) whereas the limit of the SHA is the Mean High Spring Tide (MHST) level.
- 3.1.4 According to ABP’s website, the port handles around 100,000 tonnes each year and has facilities to support the handling of general cargo, dry bulks and the offshore industry in particular. ABP reports that as of August 2018 the Port supports 523 direct, indirect and induced full time equivalent jobs at the local level with a GVA impact of between £30.9m and £37.3m to the local economy.
- 3.1.5 The Port extends to some 97 acres⁴ and includes approximately 3,500m of dock, jetty or quay. The Port is dissected by the A47 Bascule Bridge, marking the division between the Outer and Inner harbours. It acts as a physical and operational constraint to vessel movement within the Port.

³ http://www.legislation.gov.uk/ukxi/2015/1656/pdfs/ukxi_20151656_en.pdf

⁴ http://www.abports.co.uk/Our_Locations/Short_Sea_Ports/Lowestoft

Table 1 - Port of Lowestoft key statistics & berthing information

Dock, Quay or Jetty	Quay length/m	Normal acceptance dimensions of vessels/m			
		Length	Beam	Draught	MHWS MHWN
Outer Harbour – Docks	1,400	125	35	5.5	5.2
Entrance Channel & Inner Harbour	2,100	125	22	6.0	5.7

3.2 Port Activity – current

Vessel Survey

3.2.1 The Applicant undertook a vessel survey for an initial period from the 13 July 2017 to the 3 October 2017 and for a second period from the 2 January 2018 to the 13 April 2018. A third period was monitored from 24 August 2018 to 29 October 2018. The results of the latter survey have been included in an updated Vessel Survey Report, provided to Deadline 3 (Document reference REP3-060). There is a total of 175 business days (i.e. excluding weekends and bank holidays) in this period.

3.2.2 As is explained in the Vessel Survey Report (Appendix B of the Preliminary Navigation Risk Assessment (document reference APP-208)), the objectives of the vessel survey were to establish;

- The typical opening frequency of the existing bascule bridge
- The range of numbers of openings over a 24-hour period
- The size and distribution of vessels navigating within the Port
- The ratio of commercial to recreational vessels
- From this information, derive an estimated frequency of openings for the Scheme bridge.

3.2.3 The above information, supplemented by site visits, has been used to describe an overall level of activity in the Port, and thus provide an assessment of the impact of the Scheme on the Port (as set out in the Environmental Statement, particularly Chapter 15).

3.2.4 In ABP's representation they state that over the 12 months to 30 November 2018 they calculated 1,806 commercial vessel movements passed the location of the scheme, this is lower than the number derived from the vessel survey during the same period, which recorded 1,243 commercial movements over 152 days equating to over 2,900 for the full year. It is also lower than the initial 2017 survey and therefore the movement levels assessed in the Environmental Statement.

3.2.5 ABP's representations should therefore be seen in the context that their estimation of movements potentially affected by the Scheme, upon which they base their concerns more generally, are less than the movements considered in the Applicant's assessment of the impacts.

Variability in vessel movements

3.2.6 However, it is important to note that vessel movements are variable, not only within the year, but potentially over a period of years as a consequence of both local and wider economic/market/structural factors.

3.2.7 In terms of intra-annual variability, comparing the three survey windows undertaken by the Applicant, there are some stark differences in these periods alone:

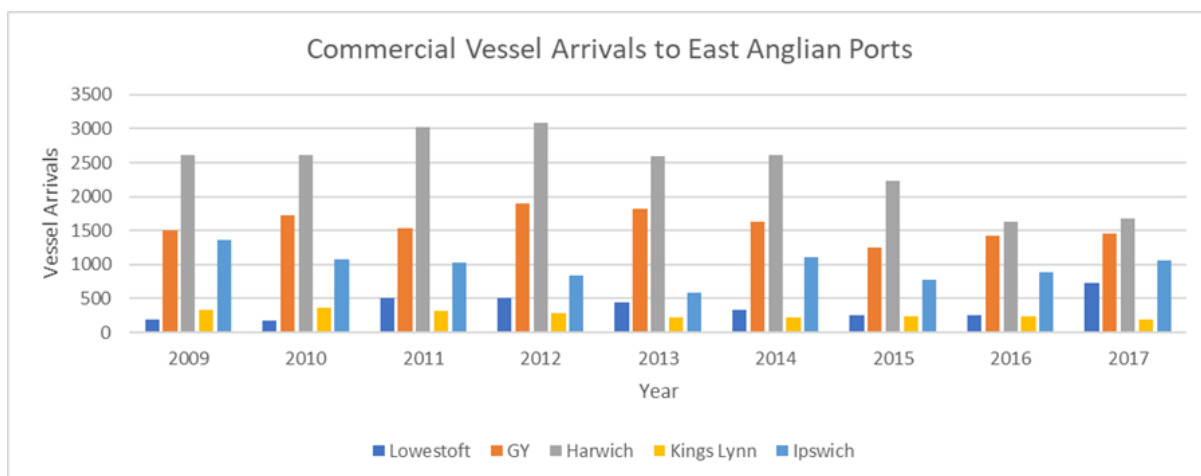
Parameter: Figures stated as average (maximum)	Survey 1 Summer (Jul-Sept) 2017	Survey 2 Spring (Jan-Mar) 2018	Survey 3 Autumn (Aug-Oct) 2018
A47 BB openings	15.5 (23)	9.5 (18)	7.6 (14)
Commercial vessels (including CTVs)	18.8 (34)	12.1 (25)	6.1 (16)
CTVs only	11.8 (17)	7.7 (18)	2.6 (7)
Recreational	11.7 (43)	0.4 (3)	5.9 (23)
Total vessel movements	30.5 (62)	12.5 (27)	12.0 (33)

3.2.8 The variation observed in recreational vessels is as would be expected, with a considerable difference between summer and winter months. Reductions in Crew Transfer Vessels (CTV) movements between summer and winter would also be expected as off-shore weather conditions are typically worse during winter months and therefore less activity is undertaken. The reduction in CTV movements during the 3rd survey is a result of operations transferring away from the Inner Harbour.

3.2.9 As an example of inter-annual variability, data from the Department for Transport Port Freight Annual Statistics⁵ illustrates changes in commercial vessel arrivals across five East Anglian ports. Vessel arrivals are shown to be declining from 2011 to 2016 to Lowestoft, before increasing in 2017.

⁵ <https://www.gov.uk/government/statistics/port-freight-statistics-2017-final-figures>

Figure 1 - Vessel arrivals to east coast ports



3.2.10 The data produced above does not differentiate between vessels using the Inner and Outer Harbour and only covers vessels above a certain size, therefore it is presented as an indication of the longer-term variability in vessel movements and to provide some comparison between Lowestoft and other ports in the East Anglia region.

Berth occupancy

3.2.11 The Applicant recognises that port activity is not just a measure of vessel transits, but also of berth occupancy. While the Applicant has been able to observe to some extent berth occupancy to assist its judgment in reaching conclusions on the significance of effects in the Environmental Statement, it has consistently sought berth occupancy information from ABP to support its assessments and this has not yet been provided. The Applicant notes ABP's response to the Examining Authority's question 3.4(ii) in this regard.

3.2.12 In the absence of data from ABP, the Applicant has made an assumption based on the observations from the vessel survey (including on vessel length and available berthing space) and data obtained via AIS (Automatic Identification System) and sight of North Quays 1 to 5 that average berth occupancy within the Inner Harbour is around 35% with peak utilisation around 80%. These figures have been derived from a summation of the lengths of vessels observed entering the Inner Harbour less the lengths of vessels leaving compared to the overall length of berths available within the Inner Harbour.

3.2.13 It should be reiterated that as this assumption is based on observed vessel movements, vessels that did not move during the survey periods would not have been considered within these statistics.

Summary

3.2.14 In its application, the Applicant has robustly assessed the current level of activity in the Port based on the availability of information at the time of the application and

does not consider any additional information has become available since to cause that to be reviewed.

- 3.2.15 A further review of additional vessel survey information indicates the data collected from the first two vessel surveys was representative, if not indicative of a slightly busier period for the Port.
- 3.2.16 With the exception of a slight uplift in vessel arrivals to the Port in 2017, there has been a downward trend in commercial vessel arrivals at the Port of Lowestoft over the preceding 6 years, according to Department for Transport statistics.

3.3 Port activity – future

Introduction

- 3.3.1 As set out in the Case for the Scheme (document reference APP-091), it is the Applicant's view that the Scheme is not an obstacle to the development of the Port of Lowestoft, but in fact a necessary pre-requisite.
- 3.3.2 Paragraph E.S.5 of the Case for the Scheme reads:
- Lowestoft has a growing role in the energy sector as the Port of Lowestoft is to be used as an operations, management and construction base for offshore windfarm projects. These developments, taken alongside planned future housing growth, are likely to lead to significant future traffic growth and the appropriate infrastructure needs to be in place to support this.
- 3.3.3 It is for this reason that the Direction given by the Secretary of State under section 35 of the Planning Act⁶ recognises the Scheme's role in supporting the 'delivery of the Port of Lowestoft's role in being the hub for the offshore wind farms that are part of the East Anglia Array'.
- 3.3.4 Similarly, this complementarity is reflected in the emerging Waveney District Council Local Plan (which identifies the Scheme as 'Essential infrastructure') in its Vision⁷:
- 3.3.5 Lowestoft, along with nearby Great Yarmouth will be important centres in the construction, operation and maintenance of offshore renewable projects. The Port of Lowestoft will be an offshore renewables centre of excellence supporting the employment of a significant number of people.
- 3.3.6 The town will benefit from improved infrastructure, including a third crossing over Lake Lothing and strategic flood risk protection, both of which are essential to allow the town to continue to grow and thrive.

⁶ Appendix B to the Case for the Scheme

⁷P21 http://consult.waveney.gov.uk/gf2.ti/f/983938/43714277.1/PDF/-/Waveney_Local_Plan_Incorporating_Modifications.pdf [At Main Modifications consultation stage]

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- 3.3.7 Consequently, it should not be perceived that the future success, measured in terms of increased port activity, of the Port is inherently incompatible with the Scheme.
- 3.3.8 Indeed, as outlined in the Case for the Scheme (paragraph E.S.9), the Port, and its customers and supply chain, will benefit from a reduction in congestion, improved journey times and journey time reliability.
- 3.3.9 It is for this reason that the Scheme attracted such support from local businesses in a consultation undertaken to support the development of the Outline Business Case (see document reference APP-110), which concluded at p14:
- The results from this consultation give a clear and strong message in support of a new crossing. Businesses that responded to the survey, or that came along to the consultation event (or both) are able to provide clear descriptions of the problems that they face as a result of traffic congestion in the town and the many ways in which this impacts on their capacity to run businesses effectively and efficiently.
- 3.3.10 It is felt that a new crossing would help to reduce levels of congestion in the town and allow businesses to operate more easily and make the town more attractive for visitors, shoppers and clients of all businesses, and to potential employees and investors. Estimates for the economic impact of a new crossing demonstrate significant potential for development as a result of this project.
- 3.3.11 The Nautilus report (appended to ABP's Written Representation) similarly states at p7:
- The development of the Third River Crossing (TRC) is recognised as a major milestone for the continued growth of Lowestoft's economy and will have an overall positive impact on the mobility of people, goods, and services across the town,
- 3.3.12 And, on p16
- The third crossing over Lake Lothing, planned to be in place by 2022, is referenced as representing a key capital investment project in the town to help alleviate traffic congestion in the town and improve connectivity and helping deliver regeneration sites into the future.
- 3.3.13 At a more general level, in recognition of the importance of robust terrestrial/marine transport interface, the DfT's recent (2018) Study of England's Port Connectivity⁸ argues "*if our ports are to continue to thrive then the national, regional and local infrastructure supporting them has to be effective and efficient*".
- 3.3.14 Finally, it is implicit that if the Inner Harbour were to become busier, additional/longer lifts of the A47 Bascule Bridge would be required, which in the

⁸ Referenced at section 4.5 of the Case for the Scheme

absence of the Scheme would exacerbate the existing issues and strengthen the traffic case for the Scheme. Indeed, as the Economics Report (document reference 7.3) outlines, the adjusted Benefit Cost Ratio for the Scheme increases from 4.11 to 5.69 in a high growth scenario. This is discussed further in the accompanying paper Justification and Traffic Effects of the draft Scheme of Operation (document reference SCC/LLTC/EX/60)

Evidence base

3.3.15 It is understood to be common ground with ABP that:

- the Port of Lowestoft is well positioned to benefit from the development of natural resources and the offshore energy sector in the North Sea;
- the growing offshore wind sector presents an important opportunity likely to drive investment and supply chain growth in Lowestoft;
- that other opportunities exist for the Port in addition to those presented by the off-shore energy sector, for example aggregates handling; but that
- the full extent to which the Port of Lowestoft is successful in securing contracts to support offshore energy sector is currently unknown, and that details of contractual discussions are commercially confidential.

3.3.16 The Applicant also recognises the existence of background reports which complement the above assessment, specifically:

- Nautilus Associated (2018) *An Assessment of Land Requirements to Support Offshore Energy and Engineering in Waveney* (“the Nautilus report”), commissioned by Waveney District Council as part of its Local Plan evidence base and appended to ABP’s Written Representation.

3.3.17 The Applicant notes the report commissioned by ABP from Edge Economics, though it relies on assumptions in a BVG report which has not been published, or provided to the Applicant, despite several requests for this information, as such it is difficult to provide comment on the veracity of information therein currently.

3.3.18 Additional relevant contextual information which serves to highlight potential opportunities for the Port includes:

- Announcement from Crown Estate regarding Round 4 offshore wind leasing, dated 16 November 2018⁹
- Announcement from Crown Estate regarding the assessment of offshore windfarm extensions dated 4 October 2018¹⁰

⁹ <https://www.thecrownestate.co.uk/en-gb/media-and-insights/news/2018-the-crown-estate-shares-further-detail-on-plans-for-round-4-including-proposed-locations-to-be-offered-for-new-seabed-rights/>

- Marketing by Network Rail of freight sidings immediately north of the Port for handling of maritime cargoes¹¹

3.3.19 Currently the Outer Harbour is the operational base for Greater Gabbard and Galloper offshore windfarms as well as East Anglia ONE. Construction is currently underway for that latter facility and its associated pontoons to host its CTVs in the Outer Harbour.

3.3.20 It is understood that on completion of those works, there is limited, if any, capacity in the Outer Harbour for further CTVs, without significant infrastructural investment, owing to the generally harsher marine environment of the Outer Harbour (in terms of wave action and swell) and the accessibility of/need for appropriate landside access to other areas.

Uncertainty

3.3.21 In response to the lack of capacity in the Outer Harbour and existing commitments to customers in the Inner Harbour to the east of the Scheme, the Applicant understands (as the Environmental Statement notes at paragraph 15.5.13) that ABP has particular aspirations around the creation of an 'East of England Energy Hub' based around land to the west of the Scheme, known as Shell Quay, to capitalise on these opportunities.

3.3.22 The Applicant is aware that ABP has completed the first phase of demolition works on the existing buildings to provide more development land, though is not aware that any tenants have been identified.

3.3.23 It is unclear as to whether a 'hub' in this location will be attractive to CTV operators given its distance from the sea. This location is the furthest inland quays within the Port, adding a transit time in the order of 15 minutes per movement (without the Scheme), compared to being located in the Outer Harbour. Therefore at 30 minutes per journey, with a CTV running cost of £1200 per hour¹², multiplied over the lifetime of a windfarm, there are significant financial implications for CTV operators being located this far inland.

3.3.24 Indicative of the uncertainty about the future of the Port of Lowestoft, specifically, to benefit from the growth in the offshore sector, was the announcement from

¹⁰ <https://www.thecrownestate.co.uk/en-gb/media-and-insights/news/2018-the-crown-estate-completes-initial-assessment-of-offshore-wind-extension-applications/>

¹¹ <https://property.networkrail.co.uk/properties/CC753122/>

¹² This figure is derived from secondary analysis of data the following paper: Dalgic, Y., Lazakis, I. & Turan, O (2015). *Investigation of Optimum Crew Transfer Vessel Fleet for Offshore Wind Farm Maintenance Operations*. Wind Engineering volume 39, no. 1, pp 31–52 (Available: <https://pdfs.semanticscholar.org/890d/7676c518649e89ad237a08a9d5efeff84430.pdf>)

Vattenfall (by press release dated 4 October 2018¹³) that it has chosen Great Yarmouth (operated by Peel Ports) as the operational base for its Norfolk Vanguard and Norfolk Boreas projects.

3.3.25 The Applicant understands Network Rail's investment in the freight sidings to the north of, and adjacent to, the Port is speculative, insofar that there is no identified tenant at this time.

3.3.26 An additional area of uncertainty relates to the future of the CTV market, both in terms of their role in servicing windfarms, and in their size, which would evidently be relevant as to whether a Scheme bridge lift would be required, and thus whether the Scheme would impede access to land west of the Scheme during peak traffic hours. This is discussed further below.

Market analysis of Crew Transfer Vessels.

3.3.27 According to ABP, the draft BVG report identifies a range of 30 to 50 CTVs potentially being based at the Port, though in the absence of the report this figure cannot be tested. It is also not clear as to whether this figure includes those vessels already operating (or expecting to operate) from the Port, which ABP describes in its Written Representation (paragraph 14.10) as:

- East Anglia ONE (Scottish Power Renewables) - utilises 6 CTV berths in the Outer Harbour.
- Greater Gabbard (SSE) – uses 14 – 18 CTVs in the Outer Harbour
- Galloper (various partners) – used 8 – 10 CTVs in the Inner Harbour. It is anticipated, however, that further use will be made of that facility during their summer maintenance campaigns, in the region of 2 – 4 CTVs, for vessels that exceed CTV capacity at Harwich.

3.3.28 If the draft BVG report figures already include these figures, that would suggest as many as 24 CTVs would be based in the Outer Harbour, with the Inner Harbour opportunity therefore identified as being 6 to 30 CTVs.

3.3.29 The Applicant is aware that there is some market uncertainty over the ongoing role of CTVs in servicing offshore windfarms. The development of larger offshore windfarm sites, further offshore and with larger capacity turbines has changed the operational model for vessel support. Service Operational Vessels (SOVs) and helicopter support is becoming more common place, reducing the need for CTVs. Additionally, the provision of offshore accommodation units is becoming widespread. As a result, demand is stabilising, despite the increasing offshore wind capacity coming online.

¹³ <https://group.vattenfall.com/uk/newsroom/news-press-releases/pressreleases/stories/offshore-wind-confidence-booster-for-norfolk-as-energy-company-plans-great-yarmouth-home>

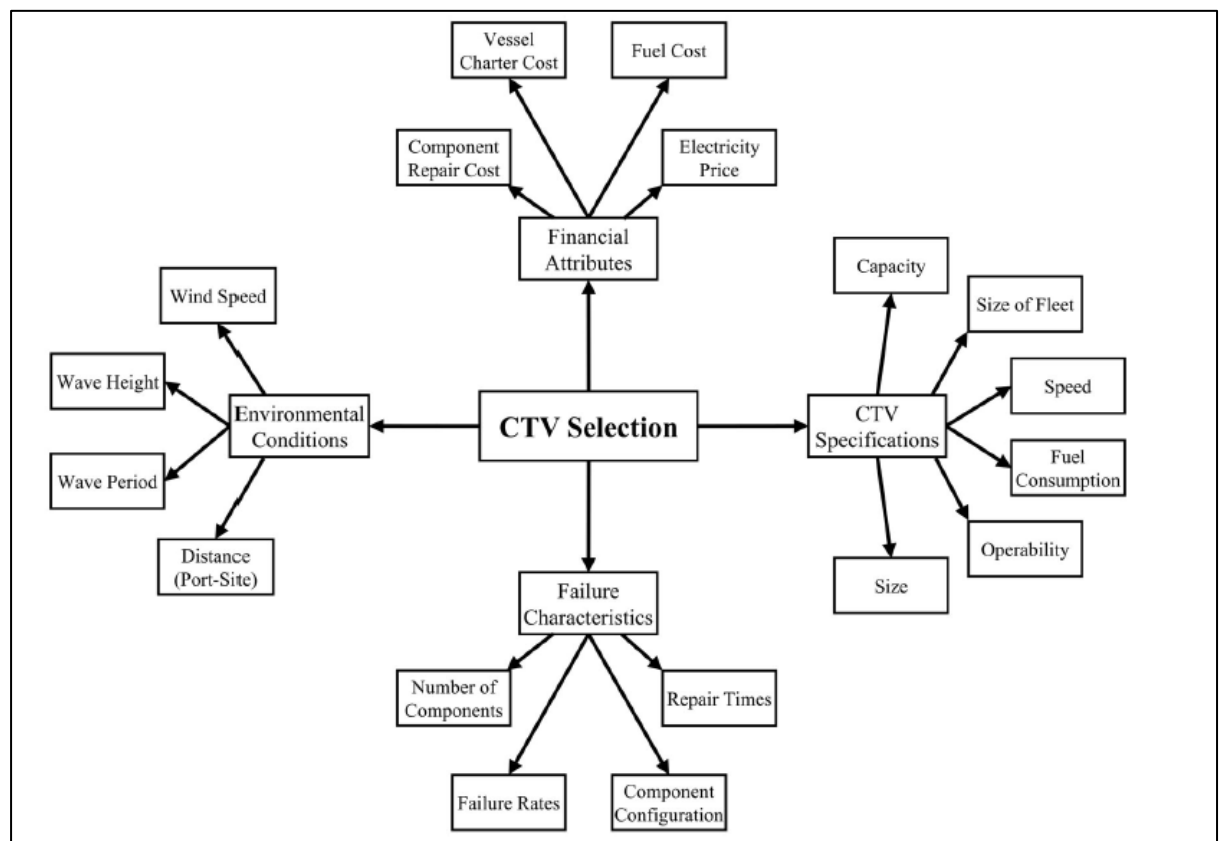
-
- 3.3.30 By way of local evidence, the Environmental Statement for Norfolk Vanguard estimates up to 440 CTV movements per year will be required to service that windfarm, i.e. 1-2 per day for an 1800MW windfarm. This application for development consent is seeking consent for offshore accommodation platforms for personnel, though also states an 'accommodation vessel' may be used instead.
- 3.3.31 East Anglia THREE (development consent granted August 2017) similarly sought consent for offshore accommodation. East Anglia ONE North, in its Scoping Report reaffirms:
- 3.3.32 There are a number of potential maintenance strategies which could be implemented for the windfarm. The windfarm could be maintained from shore using a fleet of Operation and Maintenance (O&M) vessels (e.g. crew transfer vessels, supply vessels) and / or helicopters. A number of different vessel types would be required for O&M activities. ...The windfarm could also be maintained primarily from an offshore base, for example a mother ship or a fixed offshore platform (possibly shared with other infrastructure e.g. the offshore electrical platform or a standalone accommodation platform within the offshore development area) with transfer vessels or helicopters used to transfer personnel to or from wind turbines and platforms.
- 3.3.33 Consequently, it is clear that there is a degree of uncertainty in the extent of the role of CTVs in serving the growing offshore wind sector, the extent to which the Port of Lowestoft will have a role to play, compared to the role of its competitor ports, and the attractiveness to that sector of an 'Energy Hub' at the western end of the Port.
- 3.3.34 Notwithstanding the above, it is instructive to consider the possible impacts of the introduction of the Scheme to CTV movements, should such craft be located to the west of the Scheme.
- 3.3.35 During the vessel survey, 1,783 CTV movements were observed entering the Inner Harbour, of which 1,587 transited past the location of the Scheme, averaging 7.6 and 6.8 per day, respectively. However, the numbers show a considerable reduction in the later survey periods, dropping from a daily average over 11 during the first survey to under 3 during the third entering in to the Inner Harbour, this reduction reflects the movement of operations from the inner harbour to newly built facilities in the outer harbour, confirming the preference for operators to be located in proximity to the port entrance rather than at a remote location.
- 3.3.36 Different classes of CTV vessel were observed during the vessel survey. Of the 50 individual vessels recorded, 45 had an air draft of less than 11.5m and therefore would not have required a Scheme opening. Five vessels had an air draft of greater than 11.5m therefore could have required a Scheme opening. It should however also be noted that of the 214 moves associated with the larger CTVs, over 150 terminated at Town Quay (adjacent to the A47 Bascule Bridge) and therefore did not pass the Scheme location. The use of an 11.5m air draft cut off is discussed in paragraph 6.2.14

3.3.37 While it is accepted that CTV vessel sizes may evolve, it is important to note the factors driving their design, in particular;

- passenger comfort (so technicians feel well before arriving on site)
- running costs – fuel and lubricants are paid for by the charterer outside of the day rate, so fuel efficient vessels are becoming increasingly important
- safety regulations – once passenger numbers exceed 12, currently, more stringent regulations apply to the build, which adds to the overall cost. While the passenger capacity of CTV's may increase as a consequence of deregulation, it does not necessarily follow that the vessel dimensions need increase to accommodate this as current vessel designs are optimised for stability during the transfer operations and are over-sized for the number of personnel carried. A general arrangement drawing the Applicant has observed for a 24-person CTV (the M/V Detector) has an indicated air draft in the region of 11m.

3.3.38 It should also be recognised that an even larger number of attributes contribute to CTV selection process for a particular project. The figure below is republished from Dalgic *et al.* (2015).

Figure 2 - Attributes in the CTV selection process (from Dalgic *et al.* 2015)



3.3.39 Currently CTV's fall into two broad categories, 19m LOA (Length Overall, this is a measure of the total length of a vessel from bow to stern) which have sub-10m air draft, and the 25 to 27m LOA which are generally 10.5 to 11m air draft. The largest CTVs go up to 13m air draft, though these vessels are generally less common, and this was observed to be the case during the Vessel Survey.

3.3.40 While, CTV design will continue to evolve, it is not necessarily the case that such vessels will increase in size, and furthermore CTV requirements will remain project specific. Additionally, the selection of vessels for a particular operation is based on a range of factors, including accessibility, which would include consideration of the presence of the Scheme once constructed, therefore selection of vessels that avoided the need for a bridge lift would likely be considered. Consequently, the Applicant considers that while it will remain the case that some CTVs may require a Scheme opening, the majority will not, and in any event larger vessels would be able to request an opening on demand outside peak traffic hours.

Future growth scenario

3.3.41 The Applicant has considered the information included in the Edge Economics report, commissioned by ABP. The Applicant would note that the assumptions applied in Scenario 2 (With SCC bridge) in the Edge Economics report relies on assumptions of an extreme nature, specifically that no CTV operators would berth west of the crossing at all and that up to 200m of quay which could be used by CTVs would be sterilised. Impact on berthing is considered in Chapter 6.

3.3.42 The Applicant does not consider that the land to the west of the crossing (including at the former Shell Base) is rendered significantly less attractive to CTVs operators by the Scheme. This is because, having regard to the current operating procedures of the A47 Bascule Bridge, the Scheme of Operation does not greatly increase the hours in which vessel movements are restricted.

3.3.43 Furthermore, the Scheme will not pose a constraint to certain classes of CTV which do not require a Scheme opening due to their draft, and finally the effect of any delay associated with the Scheme needs to be considered in the context of the geographic remoteness of this part of the Port from the sea.

3.3.44 The Applicant also notes that ABP has assumed at paragraph 14.5 of its Written Representation that there would be "a five-minute delay caused by the existence of the proposed LLTC" to CTV operators. It is not clear on what this assumption is based as under the draft Scheme of Operation, the Scheme bridge would be opened for commercial vessels on demand, outside of peak hours, and requires a specified pre-notification period, to be determined by ABP, at which point the HM could inform the vessel of any issues with timing. It is considered that any openings would be undertaken in such a way that the vessel would not experience any delay and as such the assumption made by ABP is considered inaccurate and unduly pessimistic.

3.3.45 Notwithstanding, therefore, that both the future growth within the Port and the nature of vessels associated with any such growth is uncertain, the Applicant

recognises that such a growth scenario should be considered, accounting for a range of vessel types, and encompass a significant proportion of that growth to the west of the Scheme.

3.3.46 This scenario therefore has potential implications, in particular for:

- (i) Berth occupancy within the Port, and thus the extent to which the appropriation of berthing space by the Scheme is detrimental.
- (ii) The number of both A47 Bascule Bridge and Scheme bridge openings
- (iii) Associated, cross-cutting implications, notably navigational risk.

3.3.47 In order to consider this matter further, for the purposes of a sensitivity test, the Applicant has applied the following assumptions:

- Additional 50 CTVs, requiring 40 berths¹⁴ west of the bridge (based on draft BVG report) (ignoring the practicalities of how berthing for 40 x 30m (1200m) could be created along a quay of 720m). Air draft of the additional CTVs has been assumed to be either 10.5 or 13m, proportioned in line with observations from the vessel survey (90%/10% respectively).
- Each of the 50 CTV vessels operating 200 sailings per year.
- A 5% uplift in other commercial vessel movements

3.3.48 For the purposes of this test, commercial vessel movements have been apportioned across the day on a pro-rata basis, having regard to the existing distribution across the day (see Table 7, below).

3.3.49 Increased port activity could manifest itself in both a greater number of bridge lifts and/or bridge lifts of a longer duration. In the absence of the Scheme, therefore, the A47 Bascule Bridge would open more often and/or for longer, with commensurate impact on traffic conditions. With the Scheme in place, given the interaction between the bridges, whichever approach the Harbour Master adopted would therefore apply to the Scheme bridge and A47 Bascule Bridge similarly.

3.3.50 Therefore, it is unreasonable to only consider the effect of a busier port, however it manifested itself in terms of bridge openings, on the Scheme bridge as the same impact would also have to be applied to the A47 Bascule Bridge, meaning that one cannot apply a port growth scenario only in the Scheme world, it would have to be applied to the no-scheme world as well.

3.3.51 For simplicity, a busier port is assumed to result in longer individual bridge lifts. This is likely to be preferable from a traffic point of view. Consequently, if instead, or additionally, more bridge lifts were also required, while this would affect journey times reliability associated with the Scheme, such assumptions would also need to

¹⁴ 40 new berths required assuming that 10 vessels would use existing berths west of the bridge.

be applied to the A47 Bascule Bridge, both with and without the Scheme, meaning traffic journey time reliability would commensurately deteriorate.

- 3.3.52 This increased port activity has been assessed in each of the following sections of this report
- 3.3.53 Operational impact of the Scheme on berthing ; and Impact of the Scheme on navigational risk and is also discussed in the accompanying paper Justification and Effects of draft Scheme of Operation in a traffic context.

4 Operating regime of the A47 Bascule Bridge

4.1 Introduction

4.1.1 In order to understand the effect of the introduction of the Scheme bridge on the operation of the Port, it is instructive to understand the history to, and management of the existing A47 Bascule Bridge, which is therefore set out below, with supporting Appendices A to E.

4.2 The London-Great Yarmouth Trunk Road (Lowestoft Inner Harbour Bridge Diversion) (No.2) Order 1969

4.2.1 The London-Great Yarmouth Trunk Road (Lowestoft Inner Harbour Bridge Diversion) (No.2) Order 1969 (“the 1969 Order”, enclosed in Appendix A) provided for the construction of the A47 Bascule Bridge. It replaced a swing bridge in the same location which was no longer adequate for the traffic demand upon it. The Swing Bridge was owned and operated by the British Transport Docks Board, then owner and operator of the Port of Lowestoft.

4.2.2 The regulation of the A47 Bascule Bridge’s operation is set out in Schedule 4 to the Order and interpreted below:

Table 2 Provisions for regulating the operations of the A47 Bascule Bridge as set out in the 1969 Order.

Period	Day	Time	Scheme of Operation
All year	‘Weekdays’*	6am to 10pm	Open to vessels for such reasonable periods as may be required
May to September	Sundays	6am to 6pm	
October to April	Sundays	6am to 2pm	
All year	All other times		Closed to vessels except (i) in case of emergency (ii) after prior arrangement with the Harbour Master to permit a vessel to pass the bridge on a particular tide

4.2.3 * NB, as Saturday is not specifically mentioned, there is a degree of ambiguity as to whether it was considered to be a ‘weekday’ or conversely fell into the category of ‘all other times’. This report for simplicity treats Saturday as a weekday (which would give greater flexibility for vessels).

4.2.4 While the Applicant notes that the Harbour Master can open the bridge at any time, there are certain prerequisites that apply to the period “All Year/All other

times” as noted in the table above. The Applicant therefore does not agree with ABP’s contention at paragraph 4.6 of its Written Representation that the Harbour Master has “total discretion as to when to open the bridge”.

4.2.5 The Applicant believes the 1969 Order to remain extant, without alteration, and it is noted that this has been agreed with Highways England (see Statement of Common Ground, document reference AS-007) and it has noted that ABP has similarly referenced the 1969 Order in its representation.

4.3 British Transport Docks Board – Ministry of Transport Agreement, dated 20 January 1970

4.3.1 In 1970 an Agreement was signed between the British Transport Docks Board (“the Board”) and the Minister of Transport (“the Agreement”, enclosed in Appendix B) which confirmed the transfer of the Swing Bridge and associated approaches to the Ministry of Transport under powers set out in section 100 (1)(c) of the Highways Act 1959.

4.3.2 The Agreement confirms that the Board would become the operator (but not owner) of the A47 Bascule Bridge, and that it should be operated in accordance with Schedule 4 of the 1969 Order.

4.3.3 The Agreement commits the Minister of Transport to maintaining the A47 Bascule Bridge and associated equipment in good working order, though the Board was to provide the staff power to operate the bridge, without payment.

4.3.4 The Board was indemnified from all claims arising from an A47 Bascule Bridge failure, except in the case of wilful negligence of the Board, and thus conversely the Minister of Transport was similarly indemnified against negligent actions of the Board. This is discussed further in section 10.

4.3.5 The Applicant believes this Agreement to remain extant, and it is noted that this has been agreed with Highways England (see document reference AS-007)).

4.4 Port of Lowestoft Bye-laws

4.4.1 Following privatisation in 1982, under the Transport Act 1981, the Board was reconstituted as a newly formed company known as Associated British Ports (“ABP”), which retained the assets of the Board and thus became the owner and operator of the Port of Lowestoft.

4.4.2 In exercise of the powers conferred on it by Section 82 of the Harbours, Docks & Piers Clauses Act 1847 (incorporated by Section 51 of the British Transport Docks Act 1964) and by Section 52 of the British Transport Docks Act 1964 and of all other enabling powers, ABP made the Lowestoft Harbour Bye-Laws 1993 (enclosed at Appendix C).

4.4.3 The Lowestoft Harbour Bye-laws 1993 require vessels to adhere to signals associated with opening bridges, but do not provide any information of the scheme of operation for the Bascule Bridge, which is instead set out in a separate Notice (see below).

- 4.4.4 From the date of these bye-laws coming in to operation (18 May 1994), the previously extant Lowestoft Harbour and Fish Market Byelaws 1958 (included in Appendix D) were revoked. Byelaw 66 of the 1958 Bye-laws, entitled Swing Bridge - times of opening and shutting, provided that:

Table 3 Provisions for regulating the operations of the A47 Bascule Bridge as set out in the 1958 Byelaws

Period	Day	Time	Scheme of Operation
All year	'Any day other than Sunday'	6am to 10pm	Open to vessels for such reasonable periods as may be required
May to September	Sundays	6am to 6pm	
October to April	Sundays	6am to 2pm	
All year	All other times		Closed to vessels except (i) in case of emergency (ii) after prior arrangement with the Harbour Master to permit a vessel to pass the bridge on a particular tide

- 4.4.5 This provision is therefore almost identical to that in the 1969 Order, save for the ambiguity around whether a Saturday is a weekday or 'any other time' did not exist.

4.5 Information for Small Craft and Yachts Using Lowestoft Harbour and the Seaward Approaches to Mutford Lock

- 4.5.1 As noted above, the current 1993 Bye-laws do not set out how the A47 Bascule Bridge should be operated, potentially because at the time of their introduction it was recognised the provisions of the preceding 1958 byelaws were now catered for in the 1969 Order and therefore did not need to be carried over.
- 4.5.2 Nevertheless, it is understood that following engagement by the then operator of the Port with local businesses in the 1970s, and perhaps most significantly the development of the former Shell Base, the Port moved to 24 hour operations, which were not obviously considered in the drafting of Schedule 4 of the 1969 Order.
- 4.5.3 Consequently, a more detailed operational regime came in to being, which was most recently updated by ABP in December 2018, published in the form of a non-

statutory notice on its website entitled *Information for Small Craft And Yachts Using Lowestoft Harbour and the Seaward Approaches to Mutford Lock*, dated 3 December 2018 (“the Notice”¹⁵) (also enclosed as Appendix E).

- 4.5.4 Paragraph 4 of the Notice sets out the points of principle relevance to the operating regime for the A47 Bascule Bridge:

Figure 3 - Extract from 2018 Notice explaining how the A47 Bascule Bridge is operated

4.	The Lowestoft Harbour Bridge (between the Outer and Inner Harbours) will only be opened on demand for commercial shipping over 50 GRT.
4(A)	Commercial shipping is discouraged from passage: 0815 - 0900 hours, 1230 - 1300 hours and 1700 - 1745 hours.
4(B)	Small craft and yachts may use a bridge opening for commercial shipping <u>provided that prior arrangement has been made with Lowestoft Harbour Control</u> - VHF Channel 14, telephone 572286 or personal visit, subject to vessels proceeding in the same direction as the commercial vessel. Other vessels wishing to pass through the bridge from the opposite direction will have to wait for the next advertised small craft opening time.
4(C)	In addition to 4(B) and <u>subject to prior notification</u> of at least twenty minutes, small craft and yachts <u>may</u> be given a bridge opening at the following times: Monday – Friday: - 0300, 0500, 0700, 0945, 1115, 1430, 1600, 1900, 2100, 2400. Sat. Sun. Bank Holidays: - 0300, 0500, 0700, 0945, 1115, 1430, 1600, 1800, 1900, 2100, 2400.

- 4.5.5 It can reasonably be inferred that the purpose of the Notice’s introduction was to seek to mediate between the competing and growing demands of both road and maritime traffic, by managing the timing and numbers of openings to a greater extent than the 1969 Order provides for. For example, the Notice sets out that “*Long bridge openings make it difficult to preserve the facility from pressures of road traffic and in consequence bridge operators are instructed not to wait for stragglers.*”

- 4.5.6 Strictly speaking, the scheduled openings in the 2018 Notice are not wholly compatible with the 1969 Order. Note that it has been assumed that the 1969 Order treats Saturday as a workday (i.e. therefore had the same provisions as the 1958 Bye-laws, and therefore has a more generous window of opening for vessels).

¹⁵ This is the same document which ABP refers to as the 2017 Bridge Operating Protocol in its Written Representation at paragraph 4.7.

Table 4 - Compatibility of the 2018 Notice with the 1969 Order

Day	Opening window in Notice for recreational vessels										
Monday to Friday	03:00	05:00	07:00	09:45	11:15	14:30	16:00	-----	19:00	21:00	24:00
Saturday, Sunday, Bank Holidays	03:00	05:00	07:00	09:45	11:15	14:30	16:00	18:00	19:00	21:00	24:00

4.5.7 Key - Red: Not permitted at any time by 1969 Order: Orange: not permitted on Sundays or Bank Holidays in the 1969 Order. Yellow: not permitted on Sundays or Bank Holidays from October to April by 1969 Order.

4.5.8 It should of course be noted that the provisions in the 1969 Order apply to all vessel types, whereas the comparison above focusses on discrepancies in provisions for recreational craft only.

4.5.9 Further analysis of the Applicant's updated Vessel Survey Report is presented in the next section, but the Applicant can confirm that the vessel movements that occurred outside the 'core' windows in the 1969 Order during the survey periods were:

Table 5 - A47 Bascule Bridge openings outside the identified windows

Day	Number of openings
Openings between 22:00 and 06:00 (Mondays to Saturdays, excluding 00:00 to 06:00 on Sundays)	351
Openings on Sundays and Bank Holidays before 06:00 and after 18:00 (April to October)	65
Openings on Sundays and Bank Holidays before 06:00 after 14:00 (October to April)	64

4.5.10 It is acknowledged that the Harbour Master retains discretion to open the A47 Bascule Bridge to vessels (i) in case of emergency (ii) after prior arrangement with the Harbour Master to permit a vessel to pass the bridge on a particular tide, as such a proportion of the transits above could have been compatible with those provisions.

4.6 Summary

4.6.1 The legal basis for the operation of the A47 Bascule Bridge is the 1969 Order. This Order through Schedule 4 sets out the windows in which a vessel can reasonably expect the A47 Bascule Bridge to be opened by the operator, ABP.

4.6.2 On weekdays, there are no legal obstacles to ABP to opening the A47 Bascule Bridge between the hours of 6am and 10pm.

-
- 4.6.3 In 2018 ABP published a Notice effectively supplanting in practical terms, if not in law, the 1969 Order and this currently guides operations on a day to day basis. There are some conflicts with the 1969 Order and as such there are bridge openings occurring which may be argued to be contrary to the legal and contractual basis on which ABP operates the A47 Bascule Bridge.
- 4.6.4 The Applicant considers that this evidence lends weight to the argument that the Scheme of Operation should be a certified document, and further that changes to it which cannot be agreed between the Applicant with ABP (after consultation with the Navigation Working Group) should be determined by the Secretary of State. It is on this basis that article 40 in the draft DCO (as revised at Deadline 3 – document reference REP3-030) has been drafted.
- 4.6.5 As the operation of the A47 Bascule Bridge is being guided by the Notice, rather than the 1969 Order, the next section examines the impact of the Scheme in that context in more detail.

5 A47 Bascule Bridge and Scheme bridge openings – Effect on Port Operations

5.1 Introduction

- 5.1.1 As set out above in Table 1, above, there is approximately 2100m of quay in the Inner Harbour; Annex 1A of ABP’s Written Representation confirms that there is approximately 720m of quay to the west of the Scheme access to which would be through the Scheme bridge, which may require a bridge lift, depending on vessel size.
- 5.1.2 Taking into account, therefore, the relative split of quay either side of the Scheme bridge, and the additional height clearance afforded by the Scheme bridge, the Transport Assessment (document reference REP3-056) (Table 4-1 therein) presented the following table as an indication of the likely frequency and duration of bridge openings, based on information gathered through the Vessel Survey.
- 5.1.3 This matter is discussed further in the accompanying paper on the Justification and Traffic Effects of the draft Scheme of Operation, which explains how bridge openings are considered in the economic assessment of the Scheme.

Table 6 - Bridge operations

Bridge	Time of Full Opening and Closing Sequence/mins	Bridge clearance above HAT/m	Average Times Opened per day
A47 Bascule Bridge	5 - 10	2.16	14
Scheme	6 - 12	12	5

- 5.1.4 As such the Scheme bridge, by virtue of its westerly position and increased height is predicted to open far less than the A47 Bascule Bridge, based on the Vessel Survey, i.e. current levels of activity.
- 5.1.5 However, while ABP has determined the operating regime for the A47 Bascule Bridge through its 2018 Notice (as explained in the previous chapter), the Applicant proposes to impose a Scheme of Operation for the Scheme bridge that would place greater restrictions on when ABP can open it, specifically the AM and PM peak hour periods, to ensure the traffic and strategic benefits of the Scheme are properly realised. This has been supported by Highways England in the Statement of Common Ground (document reference SCC/LLTC/EX/53)).
- 5.1.6 Notwithstanding the above, ABP has ‘self-imposed’ restrictions, as such it is instructive to review the effect of the draft Scheme of Operation (document reference REP3-033)) in that context, albeit recognising ABP may seek to alter the way in which it operates the A47 Bascule Bridge in the future.

5.1.7 This section of the report should therefore be read alongside the draft Scheme of Operation and the paper on *Justification and Traffic Effects of the draft Scheme of Operation*.

5.2 Analysis of vessel survey (current port activity)

Introduction

5.2.1 In its Written Representation at paragraph 4.10, ABP states that “during the last 12 months, the A47 Bascule Bridge has been opened only on limited occasions during the rush hour however for commercial vessels as the Harbour Master has responsibly exercised his control to minimise impact on vehicular traffic”. This section provides a quantitative assessment of bridge openings in the peak traffic hours.

5.2.2 The Applicant has further interrogated the information from the Vessel Survey to confirm how in practice the A47 Bascule Bridge is being operated, having regard to the information published in paragraph 4 of the Notice (see Figure 1, above).

5.2.3 While paragraph 4(A) of the Notice (see Figure 3) does not distinguish between the discouragement of commercial traffic between 08:15 – 09:00 and 17:00 and 17:45 on weekends and weekdays, it is in peak hour on weekdays:

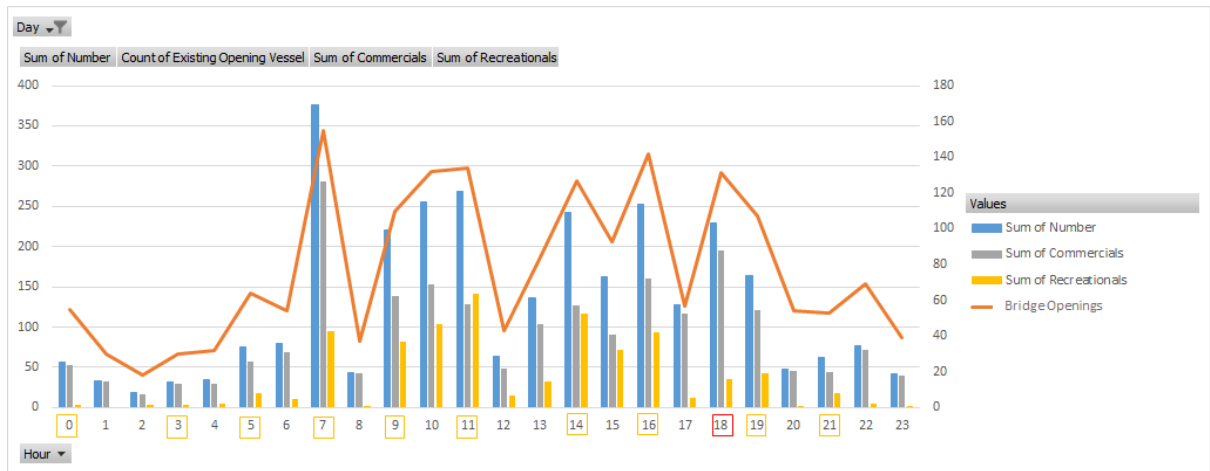
- that the passage of vessels has most impact on traffic flows due to the increased volume of traffic at this time,
- in which the assessment of impact of a bridge opening has been presented in the Transport Assessment and;
- which the Applicant is seeking a restriction on vessel movements

5.2.4 and therefore the data analysis presented below is derived from vessel survey data collated on weekdays only. There were 175 weekdays in the survey period.

Overall trends

5.2.5 The graph below confirms, as would be expected, pronounced peaks in vessel movements associated with recreational windows identified in the Notice. There are noticeable dips at 8:00 to 9:00 am and 12 noon to 13:00. This corroborates with the AM peak hour ‘restriction’ and the similar discouragement of commercial vessels between 12:30 and 13:00 as set out in the Notice. There is however a less pronounced reduction in commercial vessels movements between 17:00 and 18:00.

Figure 4 - Distribution of vessel movements and A47 Bascule Bridge openings.



5.2.6 Note: Primary Y axis shows the number of vessels and should be read alongside the respective bar charts. Secondary Y axis shows the number of bridge openings and should be read alongside the orange line. The red and yellow boxes on the X axis denote the recreational windows (as per the Notice).

5.2.7 There is a recognisable peak in commercial traffic between 07:00 and 08:00; CTVs are a significant contributor to this as Table 7, below, shows. The favoured windows of return for such vessels are, in order of volume of movements, 16:00 to 17:00 and 18:00 to 19:00 ostensibly to avoid the discouraged window of 17:00 to 17:45. There is therefore some evidence that such vessels' transits are capable of being timed to avoid peak traffic hours.

Table 7 - Number of windfarm vessel movements by hour, compared to total number of commercial movements per hour, derived from the Applicant's Vessel Survey Report:

Hour	Total Vessels	Total Windfarm CTV's
00:00	56	35
01:00	33	21
02:00	19	9
03:00	32	15
04:00	35	18
05:00	75	38
06:00	79	38
07:00	376	167
08:00	43	17
09:00	221	61
10:00	256	92

Hour		Total Vessels	Total Windfarm CTV's
11:00	12:00	269	66
12:00	13:00	63	19
13:00	14:00	137	60
14:00	15:00	243	73
15:00	16:00	162	48
16:00	17:00	253	95
17:00	18:00	128	74
18:00	19:00	230	115
19:00	20:00	164	71
20:00	21:00	47	26
21:00	22:00	62	26
22:00	23:00	76	49
23:00	24:00	42	23

ABP Peak 'Hour' openings

5.2.8 Collectively, 76 vessel movements were recorded in the 'discouraged' periods over the survey period contributing to 48 A47 Bascule Bridge openings. In the survey period of 175 days, this therefore means that the A47 Bascule Bridge was opened on average approximately once per fortnight in the AM discouraged period and once per week in the PM discouraged period.¹⁶

Table 8 – A47 Bascule Bridge openings commencing within the specified period across the survey period on weekdays

	08:15-09:00	17:00 – 17:45
Total number of A47 Bascule Bridge openings	17*	31
Total number of vessels passing	18	58
Total Commercial vessels passing	18	55
Total Recreational vessels passing	0	3
Number of vessels considered to be tidally restricted**	4	3
Instances of Single vessel passages	16	17

¹⁶ AM: 17/175 = 10%; PM: 31/175 = 18%

Instances of double vessel passages	1	5
Instances of triple vessel passages	0	5
Instances of quadruple vessel passages.	0	4
Average duration of opening in this period (when it does open)	5 min 18 sec	5 min 17 sec

5.2.9 *One AM opening appears to be due to an incident, the pilot launch berthed adjacent to the bridge and was attended by an ambulance. ** “Tidally restricted” denotes any vessel whose draught is greater than the minimum depth of water (with appropriate under keel clearance) available within the navigation channel on a given low water. More generally any vessel with a draught of more than 4.2m may be tidally restricted on certain tides and any vessel with a draught in excess of 5.2m would be restricted on nearly all tides.

5.2.10 Only seven of the 76 movements related to tidally restricted craft, the implication being that the remaining movements were reasonably avoidable, from a navigational risk perspective. It is therefore assumed that the principle driver of these openings is commercial factors. This would be particularly relevant to CTVs due to their fixed schedules and associated running costs, estimated to be £1,200 per hour (as discussed above), and thus costs incurred through any delay.

5.2.11 Three of the eighteen vessel movements from 08:15 to 09:00 were CTVs, meaning two of the seventeen openings were for CTVs. Twenty nine of the 58 vessel movements from 17:00 to 17:45 were CTVs, meaning 12 of the 31 openings were for windfarm vessels. Collectively, therefore 32 of the 56 vessel movements were CTV movements, requiring 14 openings. 14 of the 31 ABP peak hour openings were therefore demanded by CTVs. None of these vessels were tidally restricted.

5.2.12 It is therefore the case that a large proportion of openings in the ABP discouraged periods have been for CTVs, particularly in the PM peak. If such a pattern continued, the effect of the Scheme would, if the vessel’s destination is west of the Scheme and it requires an air draft greater than the prevailing clearance on the Scheme bridge, therefore be that the CTV would be unable to transit through the Inner Harbour in accordance with the current routine.

Peak Hour openings

5.2.13 It is unclear as to why in the Notice published by ABP commercial vessel traffic is discouraged for only three quarters of the peak hour, i.e. is not discouraged from 08:00 to 08:15 and 17:45 to 18:00. As is shown in **Error! Reference source not found.**, there is no obvious decrease in traffic flows in these 15 minute periods.

5.2.14 For completeness, therefore, the following tables present a similar record of openings from the Vessel Survey for the full peak hour and, separately for the two 15 minute periods omitted from the ABP peak ‘hour’ discouragement provisions.

Table 9 – A47 Bascule Bridge openings commencing within the specified period across the vessel survey period on weekdays

	08:00 – 09:00	17:00 – 18:00
Total number of A47 Bascule Bridge openings	38	61
Total number of vessels passing	44	136
Total Commercial vessels	43	124
Total Recreational vessels	1	12
Number of vessels considered to be tidally restricted	4	4
Instances of Single vessel passages	33	26
Instances of double vessel passages	4	10
Instances of triple vessel passages	1	12
Instances of quadruple (or more) vessel passages.	0	13
Average duration of opening in this period (when it does open)	4 Min 52 Sec	5 Min 14 Sec

Table 10 – A47 Bascule Bridge openings commencing within the specified period across the six-month survey period on weekdays

	08:00 – 08:15	17:45 – 18:00
Total number of A47 Bascule Bridge openings	21	33
Total number of vessels passing	26	88
Total Commercial vessels	25	79
Total Recreational vessels	1	9
Number of vessels considered to be tidally restricted	0	1
Instances of Single vessel passages	17	9
Instances of double vessel passages	3	5
Instances of triple vessel passages	1	9
Instances of quadruple (or more) vessel passages.	0	10
Average duration of opening in this period (when it does open)	4 Min 31 Sec	5 Min 07 Sec

5.2.15 NOTE: 3 movements occurred at 17:45 and therefore are shown in both the 17:00-17:45 and the 17:45-18:00 tables, hence the mismatch in figures.

5.2.16 When the figures are presented in this way, accounting for the full peak hours of traffic, the frequency of bridge lifts in the AM and PM peaks significantly increases when compared to those lifts in only the 45-minute periods, such that the A47 Bascule Bridge lifts on average once every 5 weekdays in the AM Peak and once every 3 weekdays in the PM peak¹⁷. The Applicant does not agree with ABP therefore that the A47 Bascule Bridge is being opened on “limited occasions during the rush hour”, but rather that it is being opened with some regularity, which would be expected to increase if activity in the Port were to increase.

5.2.17 The analysis does however show that vessel movements are proportionately higher in those 15-minute periods excluded from the peak traffic hour, which indicates that the Harbour Master is seeking to mitigate the effects on peak hour traffic, but openings remain regular. This data also provides some evidence therefore that vessels (including CTVs) are able to adjust their transit (plan their journey) to avoid the discouraged periods.

Summary

5.2.18 In the survey period of 175 weekdays, applying the observed vessel data to the Scheme Bridge, taking in to account the draft Scheme of Operation, and assuming an available air draft of 11.5m the impact of the Scheme on vessel movements would have been as shown in Table 11. While ABP suggests a safety margin of 1m may be appropriate (paragraph 11.9 of its Written Representation), however for 99% of the time water levels would be 0.5m below HAT¹⁸, as such the Applicant’s assessment remains robust.

¹⁷ AM Peak: $38/175 = 22\%$; PM Peak: $61/175 = 35\%$

¹⁸ HAT, Highest Astronomical Tide, a measure of the highest water level that can be expected to occur under average meteorological conditions and under any combination of astronomical conditions. In Lowestoft this is 2.98m above Chart Datum.

Table 11 - Effect of Scheme peak hour restrictions (current activity)

	A47 Bascule Bridge		Scheme Bridge (Figures in brackets are those unable to pass without a bridge opening)	
	08:00 – 09:00	17:00 – 18:00	08:00 – 09:00	17:00 – 18:00
Total number of vessels passing bridge location	44	136	31 (9)	121 (12)
Total Commercial vessels passing bridge location	43	124	30 (9)	109 (12)
Total number of CTVs passing bridge location	17	80	15 (0)	73 (0)
Number of vessels considered to be tidally restricted passing bridge location	4	4	2 (0)	1(0)
Total number of openings	38	61	2	1

5.2.19 The table above illustrates that the envisaged number of openings of the Scheme Bridge during peak hours would have been significantly less than those for the A47 Bascule Bridge, while only resulting in a marginal disruption to the timing of vessel movements as most vessels would still be able to transit. 21 of 139 (15%) commercial vessels would have been unable to transit past the Scheme over the survey period of 175 days. This means a vessel would have to adjust their transit time on average every 8 weekdays¹⁹.

5.2.20 It should be noted that in order to present a worst case, the figures above, as stated, refer to the full peak hour and as has been explained above, vessel activity has responded to the 2018 Notice, meaning journeys have been timed to target times immediately outside the 45 minute discouraged windows.

5.2.21 The Applicant would suggest therefore that vessels who would otherwise nominally be delayed would, in practical terms, be unaffected by the proposed peak hour restrictions as they would simply adjust transit times by a further 15 minutes (as the effect of the Scheme needs to be seen the context of the existing operation of the A47 Bascule Bridge). While this may appear onerous to CTV operators, the potential effect on CTVs should be understood in the context of the

¹⁹ 175/21 = 8.3

commentary above outlining the financial implications of running CTVs from this location, and that on their likely air drafts of CTVs as set out in section 3.3.

5.2.22 It is noted in responding to the Examining Authority's question 2.18, ABP suggested that of the 1,806 commercial vessels it estimated had transited past the Scheme location, 1454 would have required a Scheme opening (80%). It is not clear what information on air draft was used to support this estimate. From the results of the vessel survey the Applicant estimates the figure to be over 2,000²⁰ vessel movements though considers the number of commercial vessels requiring a Scheme opening to be in the order of 45% (between 800 and 900).

5.3 Future port activity

5.3.1 As explained in section 3.3.41, the Applicant has considered a future growth scenario in the Port for the purposes of sensitivity testing. Applying the data in that section to Table 11, would result in the following picture over an equivalent period to that of the Applicant's vessel survey, 175 weekdays:

Table 12 - Effect of Scheme peak hour restrictions (future growth)

	A47 Bascule Bridge		Scheme Bridge (Figures in brackets are those unable to pass without a bridge opening)	
	08:00 – 09:00	17:00 – 18:00	08:00 – 09:00	17:00 – 18:00
Total number of vessels passing bridge location	196	538	185 (19)	517(52)
Total Commercial vessels passing bridge location	195	526	184 (19)	501(52)
Total number of CTVs passing bridge location	168	480	168(10)	480(40)
Number of vessels considered to be tidally restricted passing bridge location	4	4	2	1
Total number of openings	168	241	2	1

5.3.2 Because the main contributor to the increased openings is CTV vessels, the number of tidally restricted vessels has not been considered to change in the future growth situation and as such the number of Scheme bridge openings does not therefore change.

5.3.3 However, the number of vessels whose passage would be restricted by the draft Scheme of Operation for the Scheme bridge increases. 71 of 685 (10%) commercial vessels would have been unable to transit past the Scheme over the

²⁰ Annual figure based on average daily movements observed during the vessel survey periods.

survey period of 175 days. This means a vessel would have to adjust a transit time on average every 2.5 weekdays²¹.

5.3.4 In such a scenario, though, A47 Bascule Bridge openings increase significantly from 38 to 168 in the AM peak (meaning, on average, it would need to open every AM peak hour) and from 61 to 241 in the PM peak (meaning, on average, it would need to open at least once in every PM peak hour. For reasons explained in paragraph 3.3.49 *et seq* one cannot consider the effect of the Scheme in a busier port in isolation of the effect of a busier port on traffic conditions with and without the Scheme. This is discussed further in the accompanying paper *Justification and Traffic Effects of the draft Scheme of Operation*.

5.4 Summary

5.4.1 The effect of peak hour restrictions on Scheme bridge lifts in the AM and PM peak based on current levels of activity is set out in Table 11 above. The consequence of the Scheme is a commercial vessel having to adjust a transit time on average every 8 weekdays.

5.4.2 The effect of peak hour restrictions on Scheme bridge lifts in the AM and PM peak based on future levels of port activity is set out in Table 12 above. The consequence of this is a commercial vessel having to adjust a transit time on average every 2.5 weekdays.

5.4.3 This assessment assumes that vessels do not manage their access to/from the Port to take account of the draft Scheme of Operation, though evidence from the operation of the A47 Bascule Bridge suggests this would be the case.

5.4.4 There is an inseparable relationship between the level of vessel activity in the Inner Harbour and the frequency with which, currently, the A47 Bascule Bridge, and in the future, both bridges will need to lift. Consequently, growth in port activity in both cases needs to be considered alongside the associated traffic implications with and without the Scheme. This is discussed further in the accompanying note on the *Justification and Traffic Effects of the draft Scheme of Operation*.

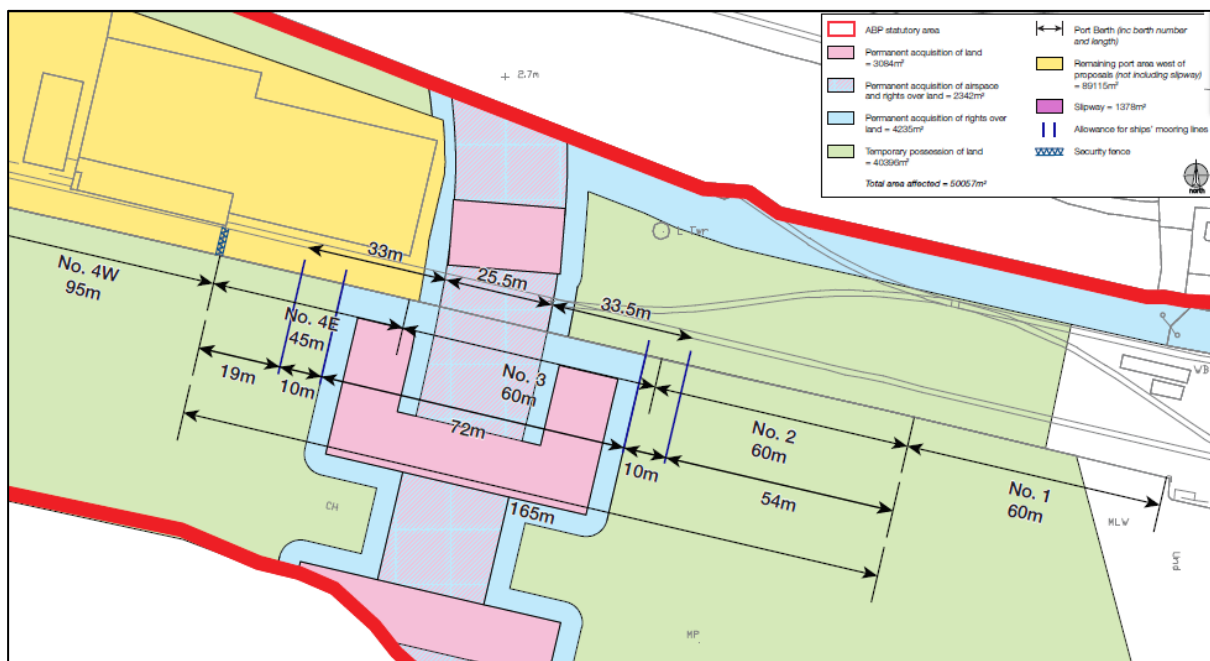
²¹ $71/175 = 2.5$

6 Operational impact of the Scheme on berthing

Extent of berthing loss

- 6.1.1 North Quay, where the Scheme is located, comprises a series of common user berths, i.e. those not assigned exclusively to a particular shipping line or operation. Figure 15-2 of the Environmental Statement indicates the location of the Scheme in relation to the existing berthing arrangements at North Quay.
- 6.1.2 As that Figure shows the Scheme sits fairly centrally to Berth No.3, a 60m berth. If the full extent of the limits of deviation (as shown in the Land Plans) is utilised, the footprint of the Scheme and associated fendering extends to 62m.
- 6.1.3 The positioning of the Scheme is such that it extends westwards 10.5m into Berth No. 4E, a 45m berth, while on its eastward extent it falls 9.5m short of the eastern end of the 60m Berth No.3 (i.e. $51.5m + 10.5m = 62m$).
- 6.1.4 This is therefore the 'direct loss' of berthing associated with the footprint of the Scheme. This is helpfully illustrated in Annex 6 of ABP's Written Representation, repeated below for convenience.

Figure 5 - Location of Scheme with reference to existing berth provision (republished from Annex 6 of ABP's Written Representation)



- 6.1.5 Either side of the 62m footprint of the Scheme lies a 5m 'rights strip' (illustrated in blue above). As the Statement of Reasons (document reference APP-007) explains the purpose of this strip is to provide the Applicant some control over operations in this area in order to protect the structure. The Applicant considers that this space will generally remain available for the mooring of

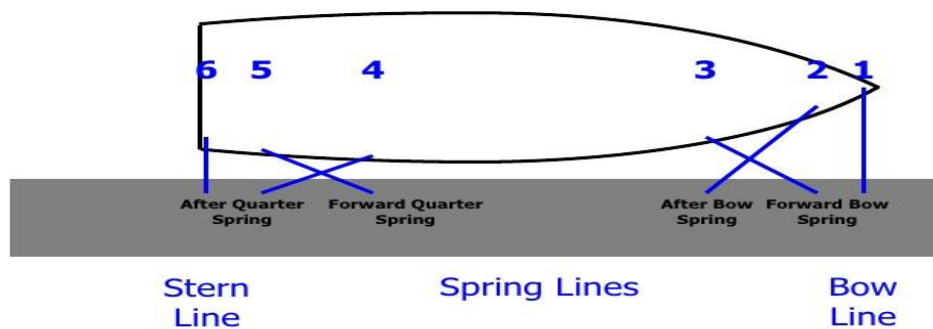
vessels/associated tying of ropes (security matters are discussed in the next section).

- 6.1.6 The Applicant understands that ABP considers that an allowance of 10m for ships' mooring lines (used to secure the ship to the land, using bollards which are regularly spaced along the quay edge (at approximately 12m along North Quay)) needs to be considered in assessing the impact of the Scheme on berthing; thus implying that vessels can only berth a further 10m away from the outermost point of the rights strip. The Applicant does not consider that this allowance needs to be made, application of this rationale to the existing berths would imply that all berths would in effect lose 20m in length as an allowance for mooring lines.
- 6.1.7 The Applicant considers that there is no impediment to a vessels mooring lines being closer, or indeed passing over, the areas were rights are sort as these rights are for maintenance access only and not intended to limit port operations, additionally while each vessel is different there are options for altering the mooring arrangements that would eliminate the need for head and stern lines, thereby removing the need for this allowance, as shown in the figure below:

Figure 6 - Alternate mooring arrangement

Shiphandling: Ground Tackle, Mooring Lines

Mooring Lines



Berth No.4E

- 6.1.8 The Applicant acknowledges that in addition to the direct loss of quay, there will be indirect effects on adjacent quay. With respect to berth No. 4E (a 45m berth) a direct loss of 10.5m leaves a berth of 34.5m, 5m of which sits within the rights strip, though as stated above, the Applicant considers this will generally remain available for berthing.
- 6.1.9 The Applicant considers that the remaining 34.5m of berth No. 4E remains usable. Analysis of the Vessel Survey shows the following distribution of commercial vessel sizes during the survey period:

Table 13 - LOA of vessels berthing in the Port during the vessel survey

Commercial vessel length overall (LOA)	Number of moves
<10m	0
10<20m	584
20<30m	1261
30-40	78
40-50	15
50-60	45
60-70	51
70-80	43
>80	4

6.1.10 Therefore around 90% of commercial vessel movements recorded in the vessel survey were for vessels of less than 30m LOA and as such could continue to use this berth. As noted earlier, 30m is sufficient berthing space for a CTV.

Berth No.3

6.1.11 The Applicant accepts that Berth No.3 (60m) is largely lost to the Scheme, though a small length of quay (9.5m) could be reassigned to berth No.2.

Berth No.2

6.1.12 Berth No.2 is unaffected by the Scheme, though would benefit from reassignment of 9.5m of quay from Berth No.3

Berth No.1

6.1.13 Berth No.1 is unaffected by the Scheme

Summary of berth loss

6.1.14 The Applicant maintains that the length of quay which is no longer usable by ABP is 62m, and it is against this figure that the extent of detriment to the Port should be considered. It believes that ABP's suggestion that the entirety of berths No.4E, No.3 and No.2 totalling 165m should be considered a direct loss is not a reasonable assessment of the impacts of the Scheme.

6.1.15 The 103m of additional quay that ABP considers a direct loss will remain usable for port operations. Berth No.4E will have reduced functionality insofar as it can no longer accommodate vessels for which it was designed, but it can accommodate the vast majority of vessels that frequent the Port, and critically it is large enough for CTVs, which ABP anticipates being increasingly common in the future. As noted above Berth No.2 is unaffected by the Scheme as such its functionality is retained.

- 6.1.16 The Applicant recognises that the Scheme in effect creates an opposite ‘book-end’ to the ‘Knuckle’ which demarcates the eastern end of Berth No.1, which is inset 5m from Silo Quay. The distance between the Scheme fenders and the Knuckle is 129.5m, which is just longer than the normal maximum length of vessel accepted in the inner harbour (quoted as 125m on ABP website).

Berth occupancy

Current berth occupancy

- 6.1.17 As noted in the Environmental Statement at paragraph 15.5.35, it was judged that this 62m loss creates a small reduction in the flexibility of the Port as a whole to accommodate vessels simultaneously, and that based on the numbers of vessel movements observed during the vessel survey the impact of this loss upon the Port is considered to be no greater than slight adverse.

- 6.1.18 The Applicant has sought berthing occupancy information from ABP, but in the absence of this has drawn its own conclusions as set out in paragraph 3.2.12, that berth occupancy during the vessel survey period averaged around 35% with peak utilisation around 80%.

Future berth occupancy

- 6.1.19 The creation of a dedicated CTV base at the Shell Quay should create a facility capable of handling all future additional CTV traffic that will potentially use the Port. This would result in the creation of up to 40 additional berths within the Port and therefore significantly increase the number of berths available. Consequently, future berth occupancy may actually reduce for the Port as whole when these new berths are factored in.

- 6.1.20 With respect to increases in other commercial vessel traffic, including that which would otherwise make use of the quay taken by the Scheme, as noted above, the Applicant has assumed this could increase by 5%. This would have a limited effect on berth occupancy within the Port.

Significance of berthing loss.

- 6.1.21 In terms of the significance of a 62m loss to the Port, it should be noted that (as shown in Table 1), there is 2100m of quay in the Inner Harbour, thus 62m represents less than 3% of that currently available. It is also pertinent to note that the area affected is a suspended quay with a four-tonne axle limit, which therefore imposes some restrictions on the operations in this location. Having regard to berthing occupancy assumptions for the past and the future (acknowledging that little information is available), this loss is not considered significant.

- 6.1.22 The Applicant also understands that ABP considers the 720m of berthing space to the west of the Scheme (namely Shell Quay (330m), No.7W (30m), No.7E (70m), No.6 (100m), No.5. (95m) and No.4W (95m)) to be indirectly impacted by the Scheme owing to the Scheme acting as an impediment to access.

- 6.1.23 As discussed in the preceding section, it is only in the AM and PM peak periods that the Applicant is seeking to restrict Scheme bridge openings; at all other times

(and indeed during peak hour periods, if air draft clearance is sufficient) there will be no impediment to commercial vessels, which are otherwise able to seek a bridge lift on demand. Additionally, no restrictions are proposed for tidally restricted vessels, whose destinations are commonly the deeper berths at Berths No.6 and No.7, at any time.

- 6.1.24 Please refer to the analysis in the preceding section which presents the likely numbers of vessels affected by such a restriction in both a 'base case' and 'future case', while the transport case for such a restriction is also set out in the accompanying paper *Justification and Effects of the draft Scheme of Operation*.

Summary

- 6.1.25 The direct loss of berthing space to the Scheme is 62m; the assessment of this loss against berth availability in the Port as presented in the Environmental Statement was judged to be slight adverse. This loss cannot be considered to be of a serious detriment to the Port.
- 6.1.26 In a future case the suggested requirement for creation of potentially up to 1200m (40 vessels at 30m) of additional CTV berthing would significantly diminish the proportional loss of berth length as a result of the Scheme.

7 Impact of the Scheme on navigational risk

7.1 Legislative background

7.1.1 The Applicant generally agrees with ABP's statements on the documents which frame the requirements for production of a Navigation Risk Assessment (NRA), namely the Port Marine Safety Code (PMSC) and associated Guide to Good Practice.

7.1.2 However, it is considered that the extracts from these selected for inclusion do not give a full picture of the position, in particular the Applicant would question the inclusion of the extract stated in paragraph 12.4 of its Written Representation regarding intolerable risks without the inclusion of how this is defined within the Guide, thereby giving the impression that the Scheme creates an intolerable risk. Whereas the preceding paragraph in the Guide, 4.2.24, states:

7.1.3 "The aim of assessing and managing marine operations in harbours is to reduce risk as low as reasonably practicable ('ALARP'). Judgement of risk should be an objective one, without being influenced by the financial position of the authority. The degree of risk in a particular activity or environment can, however, be balanced on the following terms against the time, trouble, cost and physical difficulty of taking measures that avoid the risk. If these are so disproportionate to the risk that it would be unreasonable for the people concerned to incur them, they are not obliged to do so. The greater the risk, the more likely it is that it is reasonable to go to very substantial expense, trouble and invention to reduce it. But if the consequences and the extent of a risk are small, insistence on great expense would not be considered reasonable."

7.2 Preparation of pNRA

7.2.1 In order to ensure the initial design of the Scheme included consideration of navigational safety, the Applicant began the process of preparing a preliminary Navigation Risk Assessment to consider the potential risks created as a direct result of the Scheme (both in operation and during construction).

7.2.2 To comply with the requirement of the PMSC to produce an NRA informed by consultation with stakeholders, the Applicant established a Navigation Working Group (NWG).

7.2.3 As the assessment was focused on the risks of the Scheme, a risk matrix was selected based on the Scheme design life.

7.2.4 The proposed methodology was presented to the Navigation Working Group (NWG) and its opinion on the major hazards was sought, this information is included within the pNRA (document reference APP-208).

7.2.5 Various computer modelling including hydrodynamic, sediment transport and vessel simulations were undertaken to assess the potential for the Scheme to affect aspects of navigational safety.

7.2.6 The Applicant notes that the submission of a 'preliminary' NRA as part of an application has precedent in both the Silvertown and Thames Tideway DCO projects.

7.2.7 With respect to vessel simulation the Applicant considers that the simulations undertaken so far are sufficient to establish that the broad parameters of the bridge design, namely the width of the navigation channel, location of protection fendering and waiting pontoons and the operational cycle time of the Scheme are satisfactory and would not create unreasonable impediments to navigational safety. The Applicant also notes that marine simulators are principally developed to undertake situation management simulations for the training and assessment of ships personnel, as such they are not developed to produce an absolute rendition of vessel response to all external factors, this is particularly relevant to the issue of modelling of wind shear effects and the level of model detail that would be required to simulate this with any level of accuracy.

7.3 Future development

7.3.1 As stated in the submitted pNRA, further revisions of the document will be undertaken at key stages of the Scheme development. Discussions have taken place with ABP on how these revisions can be aligned with its company standard assessment process.

7.3.2 While the Applicant has for some time sought information from ABP on how it undertakes its risk assessments, it was only in January 2019 such information has been provided. Following, therefore, a recent presentation by ABP of its existing NRA procedure (MarNIS software) the Applicant understands that this is a bespoke application with a focus on ABP's corporate mitigation measures and would therefore require significant alterations to be compatible with the assessment of the design mitigation measures for this Scheme, as is currently being assessed within the Applicant's pNRA. The system, as presented, will be more useful for producing the final operational NRA and future monitoring once the Scheme is in operation.

7.3.3 That said, the Applicant believes that application of ABP's methodology would not fundamentally change the assessment of risks associated with the Scheme and any minor amendments to the pNRA are best addressed during the planned update prior to the construction phase when further particulars will be available for consideration.

7.3.4 It is the Applicant's intention that both ABP and the NWG will be involved in future development of the Scheme NRA and this is secured through the drafting of the DCO (Requirement 11).

7.3.5 It is also the Applicant's intention to undertake additional vessel simulation based on the finalised Scheme design, once complete. This is made clear in the revised Requirement 11 submitted at Deadline 4. This final simulation model would also be made available for marine training purposes as recommended within the pNRA, if desired.

7.4 Commercial Emergency Berth

7.4.1 Within its written representation ABP comment on the need for an emergency waiting facility suitable for larger commercial vessels. The Applicant has considered this requirement in line with the principles of the NRA process and is of the opinion that a facility of this nature is not required.

Existing Situation

7.4.2 ABP response to the ExA question 2.16, does not consider the failure of the A47 Bascule Bridge for outbound vessels, its assessment only considers inbound movements, it therefore does not describe what happens in the inner harbour should the bridge fail to operate.

7.4.3 The below table sets out the Applicants interpretation of how the situation with the existing bridge correlates with the situation that could arise with the Scheme bridge.

Table 14 – Mitigation measures in bridge failure scenarios

Scenario	Mitigation	
	Scheme Bridge Failure	A47 Bascule Bridge Failure
Vessel sea going from Shell Quay	Vessel incapable of turning/reversing does not leave berth before bridge lifts.	Turns/reverses in Inner Harbour and return to berth (protocol is as existing, though involves a second Scheme bridge lift). Alternatively, Harbour Master has discretion for simultaneous lift of both bridges.
Vessel destined for Shell Quay	Turns/reverses in Inner Harbour and if no berth available uses Emergency berth in the Outer Harbour involves a second Bascule Bridge lift). Alternatively, Harbour Master has discretion for simultaneous lift of both bridges.	Uses Emergency berth in Outer Harbour (risk is as existing)

7.4.8 Using the procedure established for the pNRA, and considering that during a Scheme bridge failure event a vessel on approach would retain full navigation

control so would therefore be able to take appropriate action to minimise any impacts, the Applicant considers that for vessels less than 60m in length the severity should be ranked as 3, rising to 4 for vessels greater than 60m in length. The Applicant considers that these values would be the same for both Contact and Collision, the two principle hazard types that could occur as a result of an event.

- 7.4.9** To quantify the frequency of incident at the Applicant has first considered the anticipated frequency of Scheme bridge failure. The industry recognised precedent for measuring reliability is to target a reliability of 99.9% and this is the target that the Applicant is basing the Scheme design upon. In this scenario, this means that the bridge could be out of operation for 1 working day per year which is equivalent to 8 hours per year. While there is no database of records from bridge owners which would allow the Applicant to accurately advise on the assessment of failure to operate frequency or convert a reliability of 99.9%, an appropriate estimate would be approximately 1 in 5,000 failure to operate due to an issue with the lifting mechanism.
- 7.4.10** Notwithstanding the above, for the purpose of a worst-case assessment, the Applicant has considered 1 in 2,000 failure to operate frequency. Combining this with the predicted annual number of operations based on the results of the vessel survey, a failure rate of 1 in 1.5 years is obtained. This failure potential applies to all vessel transits requiring an opening of the Scheme bridge. The method of applying the rate to the number of operations is the probabilistic method recommended by PIANC in the Report of WG19, Ship collisions due to the Presence of Bridges.
- 7.4.11** Considering next the transit of vessels with a draught greater than 3.7m, that being the minimum depth limit on the berths located between the two bridges, the data set out in the Vessel Survey Report indicates that 84 of a total 784 identified bridge openings involved vessels with a maximum draught (and not all of these vessels would have been sailing at maximum draught) greater than this value. Combining this factor with the bridge failure rate, a coincident rate of around 1 in 15 years is obtained.
- 7.4.12** Adding the further factors that would contribute to the need for the facility, weather, visibility, tide, occupation of other berths etc. coincident rates of greater than the 120-year design life of the Scheme are obtained. Applying these likelihoods to the grading used in the pNRA a likelihood value of 1 is obtained.
- 7.4.13** These values of severity and likelihood lead to risk rating of 3 and 4, both within the low risk grading. These risk gradings are such that a methodical and systematic assessment could not view them as “intolerable”.
- 7.4.14** Notwithstanding the above, the Applicant has considered operational methods that could further reduce this risk based on the principle of ALARP. The implementation of a sequential operational mitigation process would allow management of vessel movements based on prevailing conditions at the time of transit. This process is appended to the draft Scheme of Operation, and as per the

provisions in the dDCO changes to this certified document must be agreed with ABP, in the absence of such agreement escalated to the Secretary of State.

7.4.15 Notwithstanding the above analysis, the Applicant considers that the suggested location for an emergency berth would be, in some situations, ineffective as it is seaward of the location at which the request to open the Scheme bridge would be made, therefore should the bridge fail to open a vessel would have already passed the emergency berth before they knew of the failure and would thus have to either turn or reverse back to the berth and have to undertake the manoeuvres ABP indicate may not be possible.

7.5 Summary

7.5.1 The Applicant has undertaken an initial assessment of risks using a method in accordance with the Port Marine Safety Code.

7.5.2 The assessment has been undertaken in consultation with a Navigation Working Group set up to contribute to the process.

7.5.3 The inclusion of mitigation measures identified within the outcomes of the pNRA within the Scheme are secured through the DCO.

7.5.4 An assessment of the effects of bridge failure has been undertaken using the method for the pNRA.

7.5.5 This assessment has determined that the risk level for vessels would be classed as Low and can therefore be considered as low as reasonably practicable (ALARP).

8 Impact of the Scheme on Port Security

8.1 Legislative background

- 8.1.1 The Applicant considers ABP's description of the relevant statutory and non-statutory provisions relating to port security to be accurate.

8.2 Security at the Port of Lowestoft

Port Security Plan

- 8.2.1 This is a restricted document and understandably therefore has not been made available to the Applicant for review. Nevertheless, this evidently affects the Applicant's ability to full understand the security implications of the Scheme and assist ABP in the mitigation of any issues arising. Notwithstanding this the Applicant has given consideration to the potential implications for security that may result from the construction of the Scheme Bridge

Designated Restricted Areas

- 8.2.2 It is the Applicant's understanding that there are currently no permanently designated restricted areas within the Port of Lowestoft.

Designated Temporary Restricted Areas

- 8.2.3 It is the Applicant's understanding that any berth within the Port of Lowestoft can be designated as a Temporary Restricted Area if required by the presence of a vessel to which the ISPS Code applies, which in the case of the Port of Lowestoft would most likely be in relation to a vessel in excess of 500 gross tonnes engaged on international shipping.

- 8.2.4 ABP has not indicated the frequency with which such restricted areas have been created generally and more specifically in the vicinity of the Scheme. However, noting that vessels of more than 500 gross tonnes would typically have an LOA greater than 35m, there were only 240 movements of such vessels observed during the Vessel Survey of which 47 were associated with port dredging operations, a further 83 were by vessels using assigned berths, e.g. CEFAS, and of the remaining 110 movements only 17 were of a draught that could use the berths at North Quays 2 or 4, accounting for a potential 9 vessel visits to which ISPS *may* apply on these berths. By comparison a CTV would typically be around 200 gross tonnes.

8.3 Impact of Scheme on security at the Port of Lowestoft

- 8.3.1 The main impact of the Scheme on the security of the Port is through the ability of people to walk, at an elevated level, in proximity to an area that has the capability of being designated as a restricted area, on a temporary or a permanent basis.

- 8.3.2 In the presence of such a restricted area, there is therefore a requirement to prevent, or at least deter, undetected entry and the usual method for this mitigating this type of risk to ports is through fencing and CCTV.

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- 8.3.3 In terms of people accessing a restricted area established on the North Quay, the bridge deck being some 11m above the quay level would in itself present a significant obstacle to access and, the Applicant believes, unachievable without detection.
- 8.3.4 Considering the potential for proscribed objects to be thrown onto a moored vessel, because of the location of the protection fendering that forms part of the Scheme, any moored vessel would be at least 22m from the pedestrian footway on the bridge deck, which mitigates this risk.
- 8.3.5 In considering the potential for thrown objects, the increase in range that the bridge elevation produces must also be taken into account; while any individual's throwing range is governed by many factors, the increase that would result from elevation has been assessed at between 5m and 10m. As such the distance that it could reasonably be assumed that an object could be thrown is around 25m.
- 8.3.6 The Applicant therefore recognises that mitigation measures and/or an amendment to the Port Security Plan would be needed to address this residual risk. The Applicant has already agreed with ABP that a joint review of CCTV coverage will be undertaken within the Port, and the impact on areas able to be designated as restricted areas would be considered as part of this review.
- 8.3.7 The Applicant does not consider it is practicable to include on the structure itself a specification of fence that would eliminate the ability to throw a proscribed object over it and considers that the impact is likely best addressed through active and/or passive surveillance and the design and management of the restricted areas, if established. The Applicant is unclear how ABP currently mitigates the risk of throwing of proscribed objects in to areas that may similarly be used as Temporary Restricted Areas, given the proximity between public highway and other berths within the Port.
- 8.4 Summary**
- 8.4.1 The Applicant recognises that there are potential implications for the Port Security Plan as a consequence of the Scheme, and thus potential implications for berthing certain classes of vessel on parts of berth immediately adjacent to the Scheme. The Applicant considers the physical extent of the fenders (which the Applicant has already assessed delineates the permanent direct loss of quay) mitigates the risk, though remains receptive to other security measures that would complement this in addition to CCTV.
- 8.4.2 Notwithstanding the above, given the likely frequency with which the designation of such restricted areas are likely to occur and, as ABP notes, a significant amount of alternative locations to site such restricted areas, the Applicant considers the impact on port security cannot be considered significant.

9 Other impacts

9.1 Introduction

- 9.1.1 In its Written Representation ABP raises a number of concerns about the impact of the Scheme both during construction and operation.
- 9.1.2 The Applicant notes that pursuant to ABP's Protection Provisions in the draft DCO, the Applicant cannot temporarily possess, acquire or use, or acquire new rights over, port land without the consent of the harbour authority, though such consent must not be unreasonably withheld.
- 9.1.3 Consequently, the draft DCO provides a mechanism and process by which the Applicant and ABP can work together to mitigate the effects of the Scheme during construction, when the full details of the construction methodology and contractor's requirements are known.
- 9.1.4 The Applicant is also engaged with ABP over a Side Agreement through which appropriate mitigation measures sought by ABP would be secured.

9.2 Commercial Road

- 9.2.1 ABP has raised concerns over access along Commercial Road during construction. The Applicant will undertake to maintain access along Commercial Road during construction wherever practicable. Where closures are required of Commercial Road within the Port Estate (for example to lift in a deck span), a diversion route would be agreed with ABP, this is foreseen to be to the south of Shed 3 (as shown in Annex 5 of ABP's Written Representation). It is understood port traffic has been directed along this route previously, though before doing so relevant measures to ensure the safety of all users would be agreed with ABP.
- 9.2.2 ABP seeks a commitment from the Applicant to a pre-and post-construction survey of Commercial Road within the Port Estate and a proportionate contribution to the upkeep of that stretch of road. This is agreed, noting the Applicant's access requirements over this road would be very limited, post-construction.
- 9.2.3 The Scheme will introduce a head room restriction along Commercial Road, the; minimum clearance will be no less than 5.3m. The Applicant acknowledges that this would restrict the ready movement of mobile cranes. It is understood that ABP does not own any such cranes, and it is unlikely such cranes would be required in association with the proposed CTV facility to the west of the Scheme. This matter remains under discussion with ABP.

9.3 Construction compound (plot 2-22)

- 9.3.1 Following discussion with the previous Port Manager an area for a construction compound was identified on north quay. An area adjacent to the Scheme is critical for an efficient construction programme. The exact size and configuration of the compound will be determined during the detailed design stage, and the requirements discussed with ABP pursuant to its Protective Provisions – in

particular that the Applicant cannot temporarily possess land under its powers in the DCO without the consent of ABP.

- 9.3.2** The Applicant is aware that there is an informal arrangement between ABP and Dudmans who periodically stacks HGVs in this area, as discussed in ABP's written Representation. The Applicant has engaged with Dudmans and understands the principal requirement is for access to its weighbridge. This could be resolved by limiting the size of the compound to the extent that permits access to the weighbridge, and potentially reserving space adjacent to Commercial Road for Dudman's HGVs. Conversely, as ABP notes, it may be preferable to ABP/Dudmans that such vehicles are corralled elsewhere in the Port supported with appropriate telecommunication links. Alternatively, subject to the Contractor's requirements, the Applicant would be willing to come to an agreement with ABP to lease alternative areas of land within Port should it be practicable for both parties.
- 9.3.3** As ABP has noted at paragraph 14.26(d) of its Written Representation the potential area available in the Inner Harbour is 10 hectares, by comparison plot 2-22 covers 3374m² (0.3374ha). As such the Applicant considers this matter can satisfactorily be resolved with ABP.

9.4 Shed 3 – impact during construction and operation

- 9.4.1** Shed 3 is adjacent to the pier on north quay and access to its eastern door would be obstructed during the construction of the Scheme. It is understood the Shed has recently become fully let, and the Applicant has sought, via ABP, to speak to its new tenant to understand its access requirements. There are a number of doors to this Shed and, subject to further discussion with ABP some reconfiguration (at the Applicant's expense) may be possible to minimise impact on this facility.
- 9.4.2** During the operational phase of development, the eastern door would be in proximity to a pier, and it is possible the door may need to be adjusted at the Applicant's expense. Again, the Applicant would be willing to discuss this with ABP at the appropriate time, pursuant to the need for ABP's consent to the use of the Applicant's land powers under the DCO and its approval of detailed plans prior to construction.

9.5 Temporary possession of Lake Lothing

- 9.5.1** Further to the changes to the DCO submitted at Deadline 3 the Applicant considers that ABP now has appropriate control over any effects caused by the Scheme's requirements for use of Lake Lothing during the construction period:
- the Applicant must obtain ABP's consent for use of its temporary possession powers over the Lake, pursuant to the protective provisions;
 - the Applicant must obtain ABP's consent to temporarily suspend navigation in Lake Lothing pursuant to article 20; and

- ABP must approve the construction methodology for works in the lake pursuant to the protective provisions.
- 9.5.2 Furthermore, and as noted by ABP, the Applicant has drawn the Order limits within the Lake on a wide basis to take account of potential construction issues and obstructions, pending the development of a detailed design and construction methodology by the Contractor - as such the full extent of potential detriment whether in physical extent or in time is unlikely to be caused.
- 9.5.3 With this in mind, and the controls set out in paragraph 9.5.1, it is considered that the effects of temporary possession of Lake Lothing by the Scheme will be able to managed such that little detriment will be caused.

10 Development Consent Order and Indemnity

10.1 Introduction

10.1.1 ABP has made a number of comments in its Written Representation with regard to the drafting of the draft DCO and its interactions with its statutory powers and duties. Some of these comments are now out of date given the amendments made by the Applicant to the draft DCO at Deadline 3.

10.1.2 However, the Applicant considers that none of the concerns raised by ABP in relation to the drafting of the DCO is relevant to the question of detriment to ABP's statutory undertaking caused by the Scheme – they are instead a question of how the statutory regime created by the DCO should interact with ABP's statutory powers and duties.

10.2 DCO Articles and the Requirements

10.2.1 The Applicant's position on each article and the Requirements as raised by ABP in paragraphs 22.5 – 22.20 of its Written Representation is set out in the table below.

DCO Article	Applicant's Position
Article 3 (Disapplication)	<p>The Applicant has sought to dis-apply the Port of Lowestoft Byelaws only to facilitate the development and operation of the Scheme.</p> <p>It was understood from previous discussions with ABP that the disapplication of Byelaw 25 was agreed and so the Applicant will discuss this with ABP further.</p> <p>This leaves only Byelaw 36, which seeks to remove the requirement for a permit for diving or swimming in the waters of the harbour. The Applicant considers that a permit should not be required given the broad scope of the protective provisions and the controls these would give ABP. Any diving operations will be undertaken by experienced professional divers who will have proper regard to safety considerations and will be approved by ABP under the protective provisions. As such, ABP and the Harbour Master will still be able to properly exercise their respective functions.</p>
Article 20 (temporary suspension of navigation within Lake Lothing)	<p>The Applicant amended this article at Deadline 3 such that the consent of the harbour authority will be required before it is able to be used.</p> <p>It is important that the Applicant is able to do this</p>

	<p>(rather than SCC requesting that ABP do so on its behalf as suggested in ABP's written representation) as delivery of the Scheme is the responsibility of the Applicant. As such, it will want to ensure that closures can be undertaken in line with its programme, rather than be subsumed within ABP's wider management of the Port.</p>
<p>Article 21 (removal of vessels)</p>	<p>The Applicant amended this article at Deadline 3 further to requests made by ABP. It is important that this power is able to be utilised without the consent of the harbour authority, as a vessel that is stranded within the Order limits may cause an obstruction to the construction, maintenance or operation of the new bridge, which will be an asset owned and operated by the Applicant to fulfil a traffic function. Waiting for harbour authority consent to move a vessel which is preventing the safe operation of the bridge, for example, would not be an acceptable situation.</p>
<p>Article 40 (scheme of operation)</p>	<p>This article was amended at Deadline 3 to provide a mechanism for the scheme of operation to be certified under the DCO to be varied with the consent of ABP. If that consent is not given, the Applicant would be able to seek the consent of the Secretary of State to the proposed variation. It is considered that these amendments should be sufficient to deal with ABP's concerns in relation to this article.</p> <p>In the context of ABP's submissions in part 2 of their Written Representation, the provisions of this article and the certified Scheme of Operation are important - as they provide certainty as to how the Scheme bridge will be operated, which will enable ABP's to properly manage the Port in accordance with its statutory functions. By way of example, point 11 of the Scheme of Operation would facilitate ABP's compliance with its duties under the Merchant Shipping Act 1995.</p>
<p>Article 41 (extinguishment of navigation)</p>	<p>This article was amended at Deadline 3 to give the harbour master the ability to allow a vessel to enter into the areas proposed to be closed to navigation. It is considered that these amendments should be sufficient to deal with ABP's concerns in this regard expressed in part 22 of their representation, but also with regards to their comments on the Dangerous Vessels Act 1985</p>

	<p>and the Dangerous Goods in Harbour Areas Regulations 2016.</p>
<p>Article 44 (protection against dredging)</p>	<p>This article was amended at Deadline 3 to provide that ABP must provide the Applicant with plans of its proposed dredging operation within the limits of dredging.</p> <p>These limits are tightly drawn to the new bridge, and this protection is sought to ensure that dredging activities do not cause damage to the new, statutorily authorised, structure.</p>
<p>Article 45 (byelaws)</p>	<p>The draft DCO does not create 'two sets of byelaws' controlling navigation within the Port as suggested by ABP. The changes at article 45(5) seek to amend ABP's existing byelaws; this was suggested deliberately by the Applicant for that reason – to ensure that there continues to be only one set of byelaws dealing with navigation. The byelaws in Schedule 10 to the draft DCO deal only with behaviour and traffic issues on the new bridge.</p> <p>This is important in the context of ABP's comments in part 2 of its Written Representation, as it means that there will be one set of regulating byelaws for Port operations in the harbour, meaning that ABP will be able to continue to manage the Port in accordance with its statutory duties.</p> <p>Changes are required to be made to the existing byelaws as those existing byelaws do not contemplate the existence of the Scheme bridge.</p> <p>It would be particularly unacceptable if byelaws which are put in place under this DCO for the protection of statutorily authorised works were amended or even revoked without the Applicant's approval (as is suggested in ABP's Written Representation) – it is right that the body which has sought those byelaws has some control as to their continued existence or modification. If the DCO is made the Applicant will become responsible for a statutorily authorised undertaking just as ABP is in respect of the Harbour and therefore we maintain that the principle of equivalence should apply.</p> <p>Finally, the Applicant amended this article at Deadline 3</p>

	to provide for ABP's consent to be required for any new byelaw proposed by the Applicant which affects navigation or mooring.
Requirement 11 (navigation risk assessment)	Notwithstanding the Applicant's comments in this paper that it considers that its preliminary navigation risk assessment is acceptable at this stage in the Scheme's development, it amended this article at Deadline 3 to provide for the updating of the Navigation Risk Assessment pre-construction in consultation with ABP.

10.3 Protective Provisions

10.3.1 ABP has made comments on the draft protective provisions for its benefit at paragraph 22.21 of its Written Representation. The Applicant can confirm that the changes to these protective provisions at Deadline 3 correspond to these points and so these issues can be considered as closed.

10.4 Indemnity

10.4.1 ABP makes a number of comments in part 20 of its Written Representation, outlining that it considers that the Applicant should be providing a more comprehensive indemnity than that contained in paragraph 62 of the protective provisions for its benefit contained in the draft DCO.

10.4.2 ABP's position is brought forward on the basis of a claimed 'increased risk' arising from the Scheme as well as a new 'safety hazard'. For the reasons given elsewhere in this paper, the Applicant does not agree with this position, and as such there is not a common 'starting position' between the parties that a comprehensive indemnity is in fact necessary.

10.4.3 ABP also claims that reference to precedent from other statutory authorisations for bridge projects is not appropriate to this Scheme, with the suggestion that its effects to an operational port are 'unique', being a bridge crossing through the middle of the port.

10.4.4 The Applicant would disagree with this view, and notes that there are a number of statutory authorisations which have involved the crossing of a bridge over an operational port, including the Mersey Gateway Bridge, the Gateshead Baltic Millennium Bridge and the Dartford Crossing.

10.4.5 In addition, the Applicant particularly notes the 'Twin Sails' opening bridge in Poole (consented through the Borough of Poole (Poole Harbour Opening Bridges) Order 2006) and the Hungerford Footbridges in London, consented through the River Thames (Hungerford Footbridges) Order 1999, both of which involve bridges which would potentially interfere directly with the operation of those ports given their height and location - indeed in respect of the former, the bridge is an opening bridge for that very reason.

- 10.4.6 Whilst every project is of course different, and each port/harbour concerned is different from the others, the Applicant considers that clear and consistent principles can be deduced from the precedents in terms of how the effect of the projects concerned on the statutory port and harbour undertakings in question has typically been dealt with, in terms of indemnities and other provisions.
- 10.4.7 Furthermore, it is instructive to consider that ABP have been affected by other DCOs, all of which have included protective provisions for the benefit of ABP, which have included an indemnity in a similar fashion to that set out in the draft DCO for this Scheme.
- 10.4.8 The Applicant questions why this Scheme should be considered differently from these projects, noting in particular the close location of the Tidal Lagoon scheme to the Port of Swansea, a project which also involved authorising the compulsory acquisition of ABP's land at that port.
- 10.4.9 The wording of the indemnity within the examples mentioned above is set out in the table below:

Scheme	Scope of Indemnity
Poole	<p>(a) the inspection of any of the tidal works;</p> <p>(b) the carrying out of surveys, inspections, tests and sampling within and of the Channel (i) to establish the marine conditions prevailing prior to the construction of any of the tidal works in such area of the river as the authority have reasonable cause to believe may subsequently be affected by any siltation, scouring or other alteration which the Council is liable to remedy under this Schedule; and (ii) where the Commissioners have reasonable cause to believe that the construction of any of the tidal works is causing or has caused any siltation, scouring or other alteration as aforesaid;</p> <p>(c) the construction of any of the tidal works or the failure of any of the tidal works or the undertaking by the [harbour authority] of works or measures to prevent or remedy danger or impediment to navigation or damage to any property arising from such construction, exercise or failure; and</p> <p>(d) any act or omission of the [promoter] or its servants or agents whilst engaged in the construction or operation of any of the tidal works.</p> <p>(e) all claims and demands arising out of, or in connection with, such construction, exercise, failure or act or omission as is mentioned in that paragraph.</p>

Scheme	Scope of Indemnity
Hungerford Footbridges	<p>(a) by reason of the construction or maintenance of the authorised works or failure thereof, or</p> <p>(b) by reason of any act or omission of the undertaker or of any persons in its employ or of its contractors or agents or others whilst engaged upon the construction or maintenance of the authorised works or dealing with any the failure of such works, or</p> <p>(c) from and against all claims and demands arising out of or in connection with the authorised works or any such failure, act or omission and the fact that any act or thing may have been done by the Port Authority on behalf of the undertaker or done by the undertaker, any person in its employ or its contractors or agents in accordance with plans or particulars submitted to or modifications or conditions specified by the Port Authority, or in a manner approved by the Port Authority, or under its supervision or the supervision of its duly authorised representative shall not (if it was done or required without negligence on the part of the Port Authority or its duly authorised representative, or any person in its employ or its contractors or agents) excuse the undertaker from liability under the provisions of this indemnity.</p>
Able Marine	<p>(a) accumulation or erosion in consequence of the construction of a tidal work or the exercise of the powers to dredge conferred by this Order;</p> <p>(b) surveys, inspections, tests or sampling reasonably carried out to establish whether such accumulation or erosion is occurring or has occurred;</p> <p>(c) stopping up their access to certain land parcels before providing a new vehicular access to that parcel (adjacent to rail sidings).</p> <p>(d) the movement of construction vessels obstructing or interfering with the operation of the Ports of Immingham and Grimsby.</p>
Hornsea One and Hornsea Two	<p>(a) the perusal of plans and the inspection of the specified works by A. B. Ports or its duly authorised representative</p> <p>(b) the construction or failure of the specified works [works within ABP's jurisdiction], or the undertaking by A. B. Ports of works or measures to prevent or remedy danger or impediment to navigation or damage to any property of A. B. Ports arising from such construction or failure</p> <p>(c) any act or omission of the undertaker or their servants or agents whilst engaged in the construction of any of the specified works.</p>
Tidal Lagoon	<p>(a) the perusal of plans and navigation schemes and the inspection of a specified work by AB Ports or its duly authorised representative;</p>

Scheme	Scope of Indemnity
Swansea	<p>(b) the carrying out of surveys, inspections, tests and sampling within the harbours and the approaches to the harbours— (i) to establish the marine conditions prevailing prior to the construction of any of the tidal works in such area of the River Tawe as AB Ports has reasonable cause to believe may subsequently be affected by any accumulation or erosion which the undertaker is liable to remedy under paragraph 8; and (ii) where AB Ports has reasonable cause to believe that the construction of any of the tidal works is causing or has caused any such accumulation or erosion;</p> <p>(c) the construction or failure of a specified work, or the undertaking by AB Ports of works or measures to prevent or remedy danger or impediment to navigation or damage to any property of AB Ports arising from such construction or failure including— (i) any additional costs of dredging incurred by AB Ports as a result of contamination of the seabed caused by the construction of the specified work; and (ii) any damage to the lock gates or damage from flooding caused by increased wave reflection as a result of the construction of the specified work;</p> <p>(d) any act or omission of the undertaker or their servants or agents whilst engaged in the construction of a specified work.</p>

10.4.10 In relation to precedent, the Applicant notes the provisions of the 1970 Agreement referred to previously in this paper (included in Appendix B); which simply sets out that the Board was indemnified from all claims arising from a Bascule Bridge failure, except in the case of wilful negligence of the Board, and thus conversely the Minister of Transport was similarly indemnified against negligent actions of the Board.

10.4.11 Finally, the Applicant considers that ABP's position ignores the history of protective provisions (or similar) (and the indemnities included within them) in statutory authorisations as primarily being focussed on the protection of apparatus where it is affected by a scheme - see for example Schedule 9 of the Transport and Works (Model Clauses for Railways and Tramways) Order 1992, which related to the Transport and Works Act regime, a precursor to the DCO regime; and section 21 of the Railways Clauses Consolidation Act 1843 which provided for railway companies to make good and compensate for all damage done to the property of the water or gas companies by reason of any interference with the mains, pipes, or works of those companies arising from use of the powers that Act (as incorporated in individual local Acts) gave railway companies to construct new railways.

10.4.12 From the examples and history given above, it is clear that the Applicant's approach to indemnities in the draft DCO accords with precedent, including that agreed by ABP on other DCOs and with previous comparable Schemes, as it provides for an indemnity for the construction, maintenance and failure of tidal works causing an impediment to navigation or damage to any property of the

harbour authority. In the wide context of what activities a statutory harbour authority can undertake, these elements can be considered the parallel for the 'apparatus' that has been protected by protective provisions within statutory authorisations since the Industrial Revolution.

10.4.13 Notwithstanding this accordance with precedent, the Applicant has considered ABP's submissions in part 20 of its Written Representation. In general terms the Applicant would note that the provisions requested by ABP are either unprecedented by the examples given above; would be matters that could be compensated under the Compensation Code or already covered in the general law; are in fact already covered by the indemnity in the DCO (e.g. the collapse of the LLTC would be a 'failure'); or would not arise (e.g. any navigation risk arising from lighting would be dealt with through the development of the navigation risk assessment pursuant to Requirement 11 of the draft DCO).

10.4.14 The Applicant would note in particular the following points:

ABP Contention	Applicant's Response
References to liability for 'operation or use'	<p>This can not be accepted as once the new bridge is built both ABP and third parties will be aware of its existence, and so could both foresee and mitigate any losses caused.</p> <p>The Applicant' starting position is that there is no general entitlement to compensation arising from the use of public works (outside of the special arrangements in Part 1 of the Land Compensation Act 1973). As such, persons affected by issues arising from use of those works and can pursue civil law remedies where necessary and appropriate (e.g. negligence, nuisance, breach of statutory duty, etc.).</p> <p>Furthermore, the Applicant notes that many aspects raised by ABP as potentially causing issues to its undertaking would arise from a 'failure' of the bridge.</p> <p>The indemnity already deals with the 'failure' of a specified work; meaning that if, to use an example from ABP's Written Representation, a vehicle did crash through a barrier onto port land, and it was shown that this resulted from the failure of the barrier, ABP would be able to claim under the indemnity.</p> <p>The same principle would apply if the bridge</p>

	were to get 'stuck' in a non-lifted position - any costs and losses, etc., arising to ABP from vessels being unable to traverse underneath the bridge would be claimable under the existing proposed indemnity.
The Applicant will also be expected to accept a continuing obligation to keep under review in accordance with the principles of ALARP the risks posed by the LLTC and to identify and implement any further mitigation measures which may become appropriate if technology changes or the nature of the risks are reassessed.	This is not required as part of an indemnity - the need to keep risks ALARP and under review is secured through Requirement 11 of the DCO.
ABP accepts that it will be liable for such losses as may arise due to its negligence – subject to an agreed cap.	A cap on ABP's negligence cannot be considered to be acceptable from any perspective - the Applicant should not be liable in any way for ABP's negligence. This can be contrasted with ABP's approach that the Applicant should be 'on the hook' for a wide range of uncapped losses.
The Applicant must, prior to the commencement of the LLTC Works, put in place and then maintain commercial insurance with a reputable insurer cover in a sum to be agreed.	The need for insurance is not only unprecedented in the DCOs and other statutory authorisations mentioned above. Whilst the Applicant may or may not choose to put such insurance in place, it is not reasonable and so appropriate for this to be a statutory requirement on the Applicant.
Terrorism and malicious acts; lightning strike; loss caused by pollution	All of these matters are not directly related to the existence of the Scheme and would be essentially <i>force majeure</i> activities. It is considered that these are therefore not appropriate for an indemnity. Furthermore, the Applicant notes that, as confirmed in Appendix F to the Case for the Scheme (APP-092), it is considered that terrorism/malicious acts are not a likely event for this Scheme.
References to issues which could be considered as disturbance to business operations	The Applicant would expect ABP to have insurances in place for such issues based on its current operations. The Applicant would be happy to discuss with ABP how the Applicant could facilitate any

	increase in premium to those insurances which may be caused by construction of the Scheme (albeit noting that some elements of these issues could be covered under the Disturbance head of the Compensation Code); but considers that this is not a matter for an indemnity.
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10.4.15 Notwithstanding the position set out above, the Applicant does want to work constructively with ABP and recognises that despite the fact that the general nature of the indemnity within the DCO covers damage to property and as such would deal with many of ABP's concerns, ABP would be able to derive some added comfort from the indemnity specifically making clear what would be covered within it. As such, at Deadline 4, the DCO has been amended to make clear that the indemnity will cover in particular:

- (i) any additional costs of dredging incurred by the harbour authority as a result of contamination of the lakebed caused by the construction or maintenance of the specified work; and
- (ii) damage to any plant or equipment belonging to the harbour authority and located on port land, or to any port land or building on port land, that is caused by the construction, maintenance or failure of a specified work

10.4.16 The Applicant will continue to discuss this matter with ABP.

11 Mitigation Measures

11.1 ABP Mitigation Measures and Applicant's response

11.1.1 In Chapter 15 of its Written Representation ABP suggests a number of mitigation measures are required. They are considered in turn here by reference to the preceding chapters.

11.2 Emergency Berth

11.2.1 This has been considered in Chapter 7 and for the reasons stated therein, the Applicant does not consider such a facility is required.

11.3 Replacement berthing in the Outer Harbour

11.3.1 The Applicant has discussed and considered the justification for these works and does not consider that they are proportionate or necessary to mitigate for the effects of the Scheme.

11.3.2 At paragraph 15.12 of its Written Representation, ABP sets out that mitigation works in the Outer Harbour are necessitated by:

- Direct loss – 165m of berthing;
- Indirect loss – comprising the impairment to the utility of all 720m of berthing upstream of the proposed crossing; and in particular:
- Impairment to the functionality of North Quay 6 and 7 – length 170m, depth alongside 4.7m; and
- Impairment to accessibility to berthing for larger CTV vessels working to a fixed schedule west of the proposed LLTC.

11.3.3 These matters have been considered in Chapter 6. As explained in that Chapter, the Applicant considers the direct loss to be a maximum of 62m of berthing, and having regard to that as a proportion of available berthing, alongside berthing occupancy in the Inner Harbour, does not consider this to be significant, as this does not prevent ABP from undertaking its current operations, nor expanding those operations, based on the information available to the Applicant.

11.3.4 With respect to indirect effects, the Applicant has sought to mitigate these effects by, firstly, proposing an opening structure, elevating the structure to 12m HAT and by proposing a draft Scheme of Operation with restrictions for only two hours of the day. Indeed, there are no restrictions proposed for tidally restricted vessels, as such access to the deeper berths at North Quay 6 and 7 for such vessels is unaffected. For CTV vessels the Applicant considers that for most vessels the clearance would be sufficient to allow unrestricted access and for those vessels of greater air draft the operator could adjust their sailing schedule to avoid the restricted time periods.

11.3.5 Consequently, while the Applicant recognises that the Scheme appropriates quay within the Inner Harbour and affects the functionality of some of that remaining, it does not consider the Outer Harbour works proposed by ABP are proportionate and therefore disagrees with ABP that they meet the test of equivalence as set out in its Written Representation at paragraph 15.14.

11.3.6 That said, the Applicant awaits further information from ABP on berth occupancy and is willing to reconsider its position if analysis of such data materially alters the Applicant's conclusions on the impact on the Port, particularly with regard to the certainty which can be applied to the future prospects of growth within the Port, which ABP seeks to rely on in making its case for serious detriment.

11.4 Indemnity

11.4.1 The Applicant's view on the indemnity sought by ABP is discussed in Chapter 10; as noted there the Applicant does not consider ABP's request to be reasonable or precedented.

11.5 Related issues

Oil Spill Prevention & Control

11.5.1 The Applicant has agreed with ABP that it will facilitate two additional oil transporter booms it requests are provided in its written representation. The Applicant is discussing with ABP how this is provided, as part of a proposed side agreement.

11.5.2 In any event, even if agreement is unable to be reached, ABP could, if it wished require, the provision of such booms pursuant to paragraph 54(2)(b) - the Applicant agrees that this would be a 'reasonable requirement' under that paragraph.

Statutory Port Security

11.5.3 Port Security is discussed in Chapter 8. The Applicant has agreed to cover the reasonable costs associated with a review and remedial action to ensure that CCTV provision is not detrimentally impacted by the Scheme. The Applicant agrees therefore to the reasonable costs associated with any additional statutory security measures that may be required by the Department for Transport as a consequence of the Scheme.

Traffic Management Action Plan

11.5.4 The Applicant notes that the interaction of the Scheme with Commercial Road (both in terms of the use of temporary possession powers and in practical methodology) would be subject to the Protective Provisions for ABP's benefit within the draft DCO - see paragraphs 53 and 54 (noting that the definition of 'plans' includes 'method statements').

11.5.5 As such, the Applicant agrees to enter into a Traffic Management Action Plan as required by ABP.

11.5.6 The Applicant is discussing the content of such a plan with ABP pursuant to a proposed side agreement between the parties.

Navigational Marks

11.5.7 The requirement for navigation markings for the bridge is set out in the pNRA and the finalisation of that document, including recommended mitigation measures, is secured through Requirement 11.

11.5.8 Reference to navigational markings is also made within the Scheme of Operation, which is also secured through article 40 of the DCO.

11.5.9 Finally, paragraph 59 of the Protective Provisions for the benefit of ABP refer to the harbour authority requiring the Applicant to take 'such other steps' for preventing danger to navigation as it may from time to time require. Such 'other steps' could include navigational markings.

11.5.10 However, to ensure the avoidance of doubt, the Applicant has amended paragraph 59 at Deadline 4 to specifically add the words 'navigational marks'.

12 Conclusions

- 12.1.1 The Applicant has brought the Scheme forward cognisant of its location as spanning an operational port; but recognising that the Scheme will in itself also bring benefits to the operator and tenants of the Port in improving traffic conditions on the surrounding strategic and local highway network, which is critical to their operations. The Scheme needs to be seen in this context.
- 12.1.2 As noted in chapter 3 of this paper, the Applicant considers that the question of serious detriment needs to be seen in the context of the present situation of the Port and a realistic likely scenario for future growth, and whether the Scheme can be considered to cause a detriment to those activities.
- 12.1.3 In this paper, the Applicant has considered a range of contemporary evidence:
- existing vessel movements (from its vessel survey);
 - current berth occupancy (on the basis of the data available); and
 - preferences shown by current and prospective Port tenants.
- 12.1.4 Based on this, the following conclusions have been drawn on current operational conditions:
- the operation of the A47 Bascule Bridge has a significant impact on vessel movements in and out of the Inner Harbour, influencing their transit times
 - average berth occupancy in the Inner Harbour is estimated at 35%
 - windfarm operators prefer to be located in the Outer Harbour, given its better accessibility and, despite availability of berthing in the Inner Harbour, potential CTV operators have decided to locate at other ports.
- 12.1.5 Additionally, to examine the likelihood and nature of future growth, the Applicant has considered:
- vessel movements in a possible growth scenario;
 - likely trends in vessel sizes; and
 - strategies in servicing of offshore windfarms.
- 12.1.6 The conclusions of this work are that:
- The Port is well-positioned to benefit from the development of North Sea resources, though doubt must remain over the viability of locating CTVs at the former Shell Base (west of the Scheme);
 - The scale of the requirement for CTVs in servicing the offshore sector is unclear; and

- The size of CTVs may evolve, but it is not necessarily the case they would get larger, there will certainly be vessels available that do not require a Scheme bridge lift, and that would be a consideration for a prospective CTV operator based at Shell Quay.
- In the absence of the Scheme, vessels would still be subject to the timing restrictions at the A47 Bascule Bridge (to which vessels have already adjusted) and thus the effect of the Scheme (and its draft Scheme of Operation) need to be seen in that context.

12.1.7 With respect to land take:

- the land proposed to be acquired permanently to facilitate the Scheme is not an irreplaceable part of the operational land of ABP's statutory undertaking and its loss would not seriously impair the functionality of Port given its small extent in the context of the available berthing in the Inner Harbour and current information on berth occupancy.
- the temporary land take associated with the Scheme is a small portion of the operational Port, the terms of occupation of which will be able to be managed pursuant to ABP's protective provisions.

12.1.8 ABP has raised various concerns as to the effect of the Scheme on the practical operation of the Port, on issues such as Port Security, navigational risk, traffic management and pollution, which together it claims could cause serious detriment to the Port. This paper has shown that these concerns are either (a) unfounded or (b) can be managed through the provisions of the DCO and through the provision of additional equipment paid for by the Applicant.

12.1.9 The Applicant does not deny that the Scheme will bring change to the Port of Lowestoft, but this is a different question as to whether it causes a serious detriment.

12.1.10 Through its design and proposals for operation, having regard to the current and potential future use of the Port, this paper has shown that no such serious detriment is caused; and that therefore the need for large scale mitigation interventions as proposed by ABP does not arise.

Appendix A: The London-Great Yarmouth Trunk Road (Lowestoft Inner Harbour Bridge Diversion) (No.2) Order 1969

STATUTORY INSTRUMENTS

1969 No. 946

HIGHWAYS, ENGLAND AND WALES

The London-Great Yarmouth Trunk Road (Lowestoft Inner Harbour Bridge Diversion) (No. 2) Order 1969

Made 11th July 1969
Coming into Operation 19th July 1969

The Minister of Transport makes this Order in exercise of his powers under sections 7, 20 and 286 of the Highways Act 1959(a) and of all other enabling powers:—

- 1. The London-Great Yarmouth Trunk Road (Lowestoft Inner Harbour Bridge Diversion) Order 1968(b) is hereby revoked.
2. The new highway which the Minister proposes to construct along the route described in Schedule 1 to this Order shall become a trunk road as from the date when this Order comes into operation.
3. The length of trunk road described in Schedule 2 to this Order shall cease to be a trunk road as from the 1st April next after the date on which the Minister notifies the Council of the Borough of Lowestoft that the new trunk road is open for through traffic.
4. The Minister is authorised to construct the bridge specified in Schedule 3 to this Order as part of the Trunk Road and of the new trunk road and the provision contained in Schedule 4 to this Order shall apply for the purpose of regulating its operation.

5. In this Order:—

“the deposited plan”

means the plan numbered HA. 7/2—E.44 marked “The London-Great Yarmouth Trunk Road (Lowestoft Inner Harbour Bridge Diversion) (No. 2) Order 1969”, sealed with the Official Seal of the Minister and deposited at the Ministry of Transport, St. Christopher House, Southwark Street, London S.E.1, where it is open to inspection free of charge at all reasonable hours.

“the Minister”

means the Minister of Transport;

“the new trunk road”

means the highway mentioned in Article 2 of this Order;

“the Trunk Road”

means the London-Great Yarmouth Trunk Road.

SCHEDULE 3

Plans and Specification of the New Bridge Across the Inner Harbour at Lowestoft

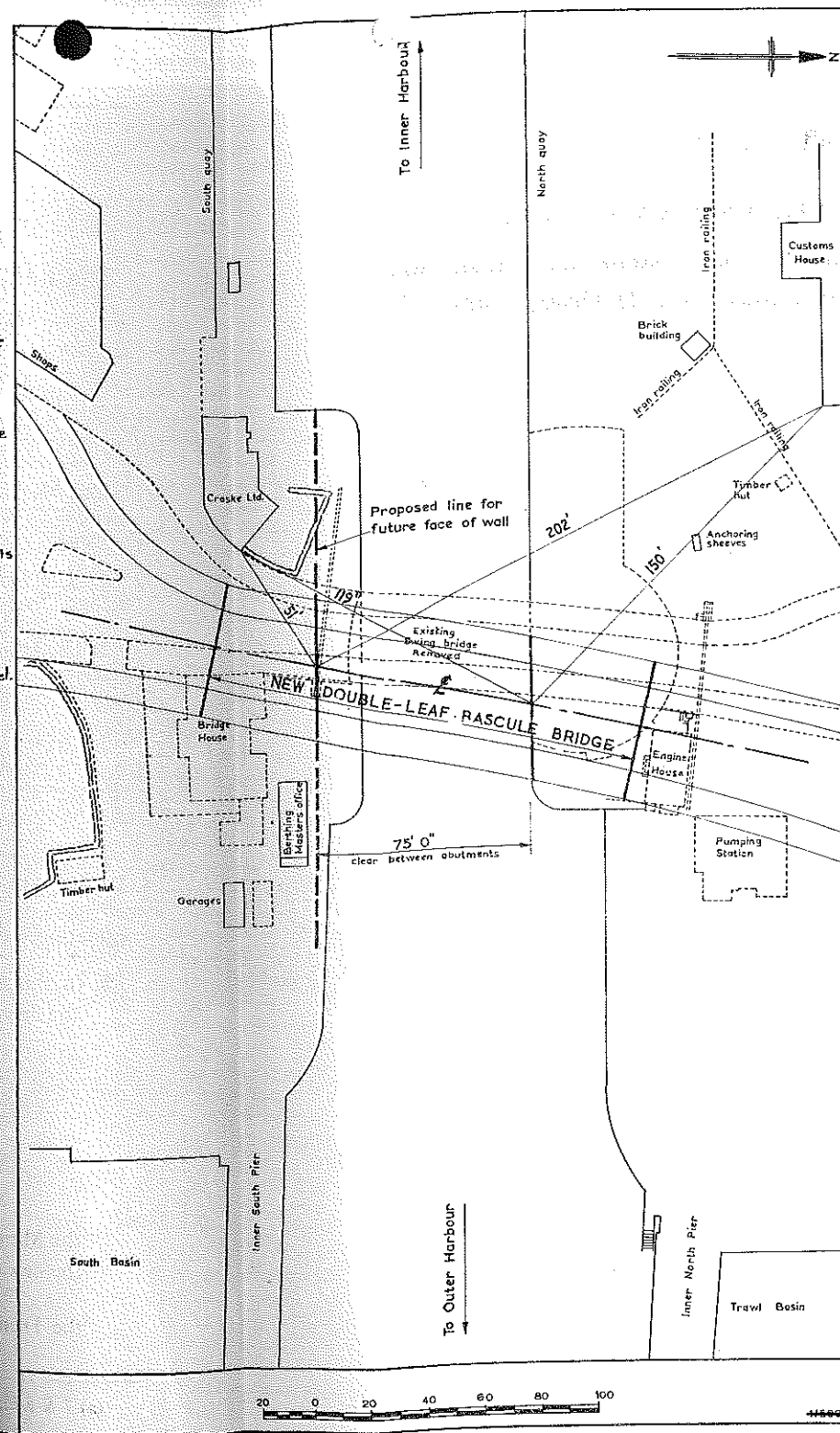
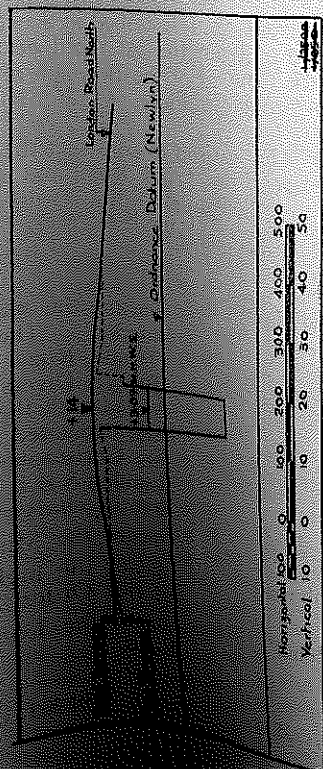
Point of Commencement and Termination.

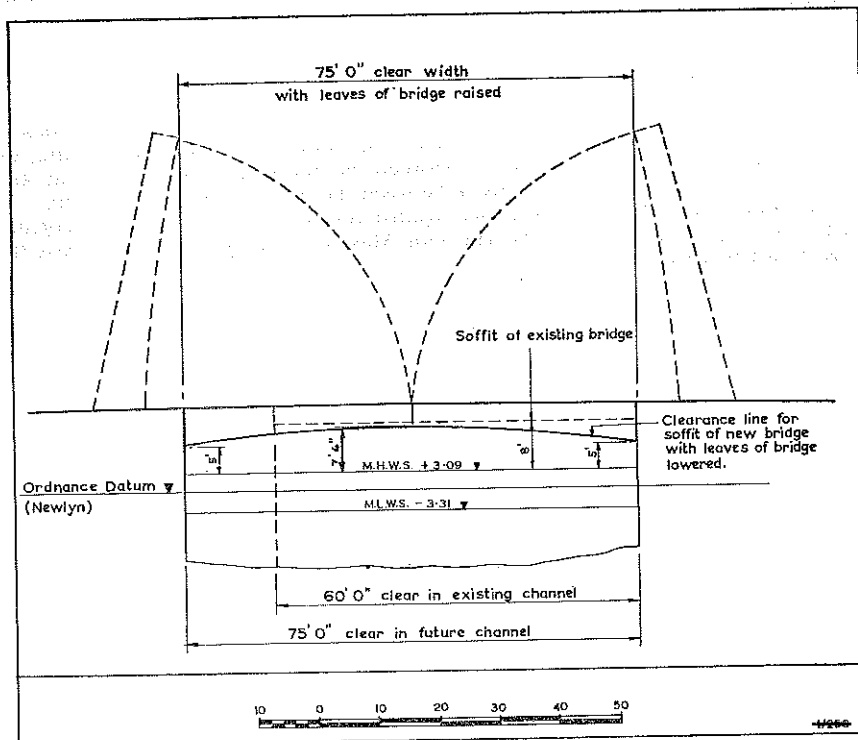
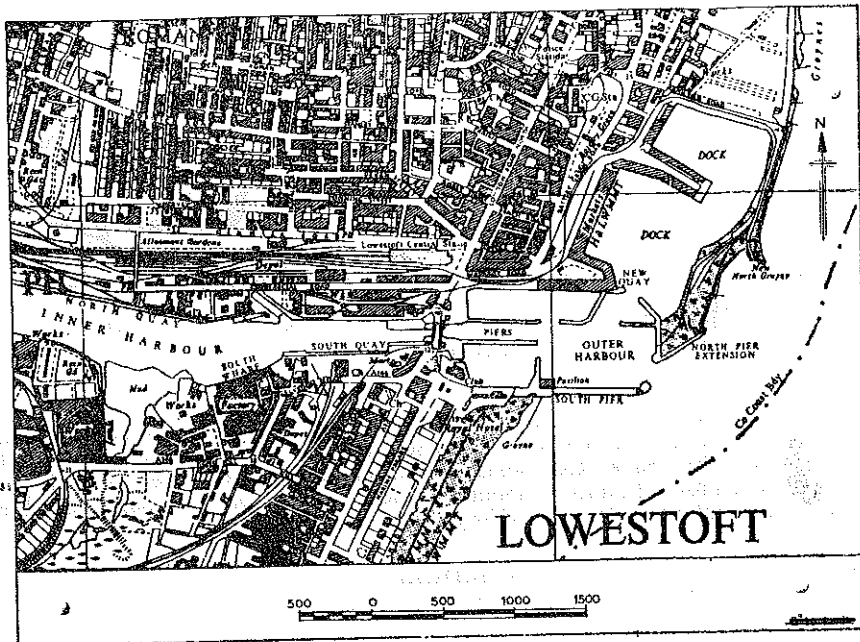
The new bridge will be located approximately on the site of the present Swing Bridge and its position fixed by the following measurements:

The centre of the road and southern abutment of the bridge to be 51 ft. from the eastern corner of Messrs. Craske's building and 202 ft. from the south eastern corner of the Customs House building. The centre of road and northern abutment of the new bridge to be 119 ft. from the eastern corner of Messrs. Craske's building and 150 ft. from the south eastern corner of the Customs House building.

Construction.

Steel double-leaf Trunnion Bascule type bridge.
 Width: Overall width 51'-6" between parapets
 Span: - 75'-0" clear width with leaves of bridge raised.
 Headroom: - Opening - upon bridge 7'-6" in centre with leaves of bridge lowered.
 Waterway - 75'-0" clear in future channel.





6. This Order shall come into operation on the 19th July 1969, and may be cited as The London-Great Yarmouth Trunk Road (Lowestoft Inner Harbour Diversion) (No. 2) Order, 1969.

Sealed with the Official Seal of the Minister the 11th July 1969.

[Redacted]
An Under Secretary of the
Ministry of Transport.



SCHEDULE 1

Route of the new trunk road

The route of the new trunk road is shown by a solid black band on the deposited plan and is a route starting at a point on the south wharf of the entrance to Lowestoft Harbour where the Trunk Road joins the existing swing bridge then going in an easterly direction for a distance of about .04 miles to join the eastern boundary of the Trunk Road about 50 yards south of its junction with Commercial Road.

SCHEDULE 2

Length of trunk road ceasing to be a trunk road

The length of trunk road ceasing to be a trunk road is shown by broad striped hatching on the deposited plan and is that length of the Trunk Road starting at a point in the north wharf of the entrance to Lowestoft Inner Harbour where the Trunk Road joins the existing swing bridge, then going northwards for a distance of about 93 yards.

SCHEDULE 4

Provisions for Regulating the Operation of the Bridge

The bridge shall be open for the passage of vessels for such reasonable periods as may be required on every week day between the hours of 6 a.m. and 10 p.m., on Sundays in May to September inclusive between the hours of 6 a.m. and 6 p.m. and on Sundays in October to April inclusive between the hours of 6 a.m. to 2 p.m. At all other times the bridge shall be closed against vessels except in case of emergency or after prior arrangement with the Harbour Master to permit a vessel to pass the bridge on a particular tide.

STATUTORY INSTRUMENTS

1969 No. 946

HIGHWAYS, ENGLAND AND WALES
**The London-Great Yarmouth Trunk Road (Lowestoft Inner
Harbour Bridge Diversion) (No. 2) Order 1969**

Appendix B: British Transport Docks Board – Ministry of Transport Agreement, dated 20 January 1970

1) Parliamentary Branch } Received completed agreement for
2) Departmental Records Officer } MINISTRY OF TRANSPORT Room. [REDACTED]
STRONG ROOM SEALING REF. NO. 59902/70.
REG NO. 1052/59 HM.33/2/03
35. of 20/11/70.

With reference to minute
I forward herewith the document referred to therein duly sealed, for authentication.

The attached document, or a certified copy bearing a registered file number, or a sealed counterpart, should be deposited in the Strong Room for safe custody. It is requested that you will be good enough to forward such document to the Strong Room via this Branch with a Loose Minute marked - "1 Parliamentary Branch, 2. Departmental Records Officer".

A receipt bearing a Strong Room number will be sent to you in due course by the Strong Room.



Parliamentary Branch.

Scanned 12/5/2016

Short title

Agreement between the Minister and the British Transport Dock Board providing for the transfer of Lowestoft Swing Bridge to the Minister under the provisions of section 100 (1) (c) of the Highways Act 1959.

THIS AGREEMENT is made the Sixth day
of February One thousand nine
hundred and seventy BETWEEN THE BRITISH TRANSPORT DOCKS
BOARD (hereinafter called "the Board") of the one part and THE
MINISTER OF TRANSPORT (hereinafter called "the Minister") of the
other part

WHEREAS the structure known as Lowestoft Swing
Bridge (hereinafter called "the Bridge") which carries the
London-Great Yarmouth Trunk Road across the Inner Harbour at
Lowestoft in the County of East Suffolk was constructed in
pursuance of powers conferred by the Norwich and Lowestoft
Navigation Act 1827 as applied by section 8 of the Great
Eastern Railway (General Powers) Act 1893 and is vested in the
Board together with the properties and installations comprised
therein or required in connection therewith which are specified
in the Schedule to this Agreement

AND WHEREAS the Bridge is no longer adequate for the
traffic wishing to use it

AND WHEREAS the Minister has prepared a scheme for
the reconstruction of the Bridge by the replacement of the
Bridge by a double bascule bridge (hereinafter called "the New
Bridge") and desires to erect and use a temporary bridge
(hereinafter called "the Temporary Bridge") alongside the
Bridge until the works for the construction of the New Bridge
are completed - all as shown on the attached plan Number SB 1502

AND WHEREAS the Board are prepared to transfer the
Bridge and the said properties and installations to the Minister
so that he may carry out such scheme of reconstruction and
the Minister is prepared to accept the transfer thereof upon
the terms and conditions hereinafter appearing

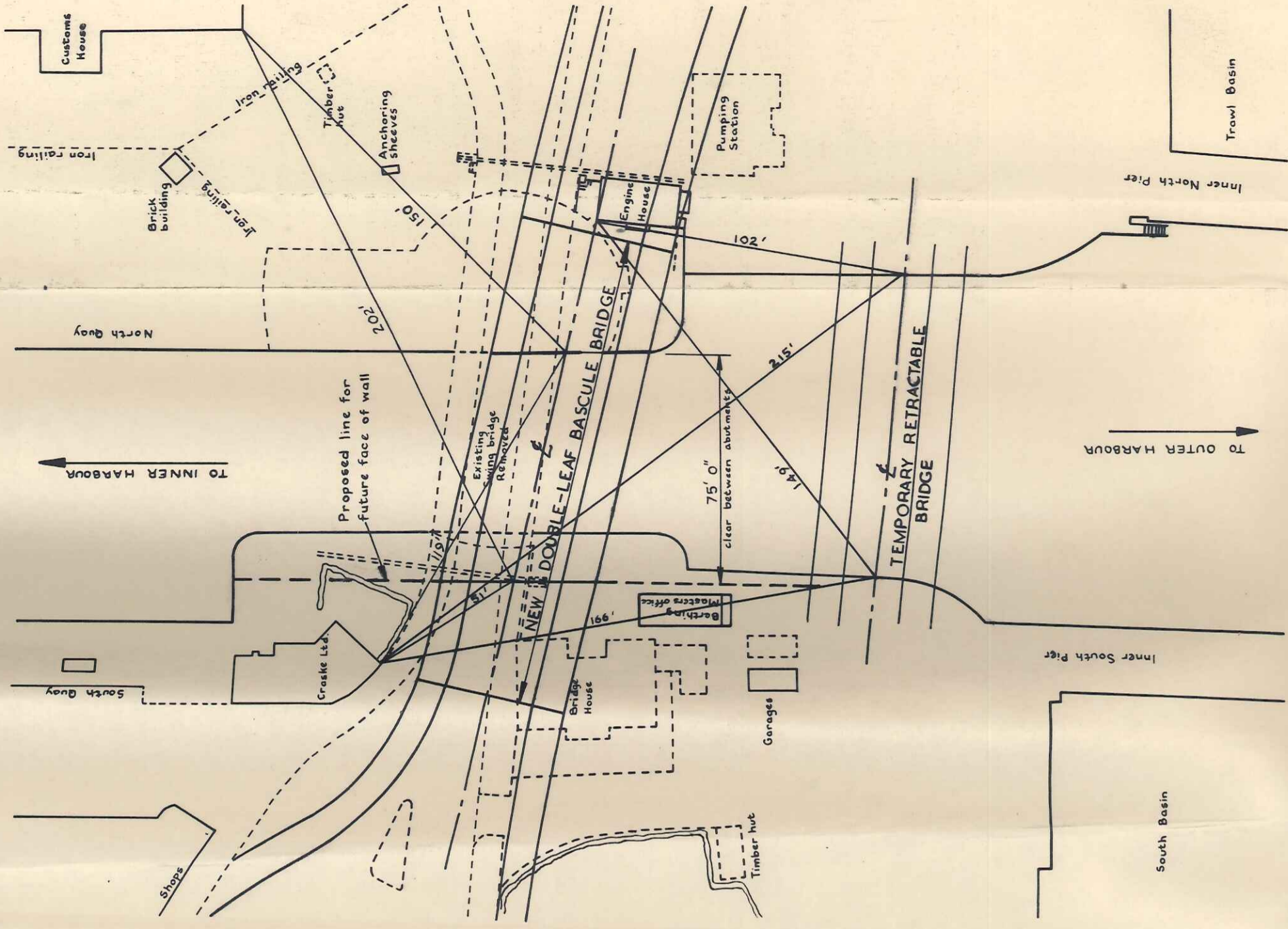
AND WHEREAS the Board are prepared to convey to the
Minister their interest in the freehold of the site of the
abutments of and approaches to the Bridge and associated
properties and installations and are prepared to grant to the
Minister easements over any land or waterways belonging to them
or to convey to the Minister any such land or dedicate any such
land required for or in connection with the New Bridge or the
Temporary Bridge upon terms to be agreed such terms to be the
subject of a separate legal document or documents

NOW IT IS HEREBY AGREED by and between the parties
hereto in accordance with the provisions of section 100(1)(c)
of the Highways Act 1959 as follows:-

1. SUBJECT to the provisions of this Agreement the Board shall
transfer to the Minister the property in the Bridge and the said
properties and installations specified in the Schedule to this
Agreement together with all the rights and obligations of the
Board attaching to the Bridge under the Norwich and Lowestoft
Navigation Act 1827 and the Great Eastern Railway (General
Powers) Act 1893 and otherwise
2. THE transfer effected by this Agreement shall take place
on the date the Minister notifies the Board that the Temporary
Bridge is open to traffic or such later date as the parties
shall agree upon

3. WITHIN six months of the date of this Agreement the Board shall pay to the Minister the sum of NINE THOUSAND THREE HUNDRED AND FORTY POUNDS as representing the value to them of the extinguishment of their liability to maintain and renew the Bridge (subject to the terms of this Agreement) together with the sum of THREE THOUSAND FIVE HUNDRED POUNDS as representing the savings of capital costs of proposed modifications to the Bridge rendered unnecessary by the said transfer
4. THE Board shall as from the date the Temporary Bridge is open to traffic as agent for the Minister cause the Temporary Bridge to be operated in a safe and efficient manner and in accordance with the requirements set out in Schedule 2 to the London and Great Yarmouth Trunk Road (Lowestoft Inner Harbour Bridge Temporary Diversion Trunking) Order 1969 or any enactment or order for the time being in force
5. THE Board shall as from the date the Minister notifies the Board that the New Bridge is to be opened or such later date as the parties may agree upon as agent for the Minister cause the New Bridge to be operated in the manner and on the terms and conditions specified in the preceding clause in relation to the Temporary Bridge (the relevant provision being Schedule 4 to the London-Great Yarmouth Trunk Road (Lowestoft Inner Harbour Bridge Diversion)(No.2) Order 1969) the Board's obligations under that clause in relation to the Temporary Bridge thereupon ceasing
6. IF the cost of operating the Temporary Bridge or the New Bridge shall be reduced by reason of any change in the method or frequency of the operation thereof or if the Minister shall decide that the operation thereof is unnecessary the Board shall not be required to make any payment on account of any consequent reduction or extinguishment of its liability under this Agreement
7. (a) THE Minister shall maintain the Temporary Bridge and all machinery and equipment constructed or used in connection therewith in good and substantial repair and in good working order until the completion of the New Bridge and shall thereafter keep the same in a safe condition and in a position permitting the passage of waterborne traffic until the said Bridge is removed
(b) The Minister shall maintain the New Bridge and all machinery and equipment constructed or used in connection therewith in good and substantial repair and in good working order
(c) It is hereby declared that the obligation to maintain the said Bridges in the condition aforesaid contained in this clause includes an obligation to carry out all routine and day-to-day maintenance and all necessary lubrication
8. THE Minister shall indemnify the Board against all suits actions claims and demands brought or made against the Board which arise out of the faulty design or construction of the Temporary Bridge or the New Bridge or failure to maintain the same as aforesaid or failure to replace defective parts thereof PROVIDED that the Board shall not have settled or admitted the same and the Board shall similarly indemnify the Minister in respect of any wilful default or negligence by the Board or any of their employees servants or agents in the operation of those Bridges

THE PLAN REFERRED TO



THE NEW BRIDGE

Point of Commencement and Termination

The new bridge will be located approximately on the site of the original Swing Bridge and its position tied by the following measurements:-

The centre of the road and southern abutment of the bridge to be 51ft. from the eastern corner of Messrs. Craske's building and 202 ft. from the south eastern corner of the Customs House building. The centre of road and northern abutment of the new bridge to be 119ft. from the eastern corner of Messrs. Craske's building and 150ft. from the south eastern corner of the Customs House building.

THE TEMPORARY BRIDGE

Point of Commencement and Termination

The temporary bridge will be located immediately to the east of the original Swing Bridge and its position tied by the following measurements:-

The centre of the road and southern abutment of the bridge to be 166ft. from the eastern corner of Messrs. Craske's building and 149 ft. from the south west corner of the Engine House building. The centre of road and northern abutment of the temporary bridge to be 215 ft. from the eastern corner of Messrs. Craske's building and 102 ft. from the south western corner of the Engine House building.

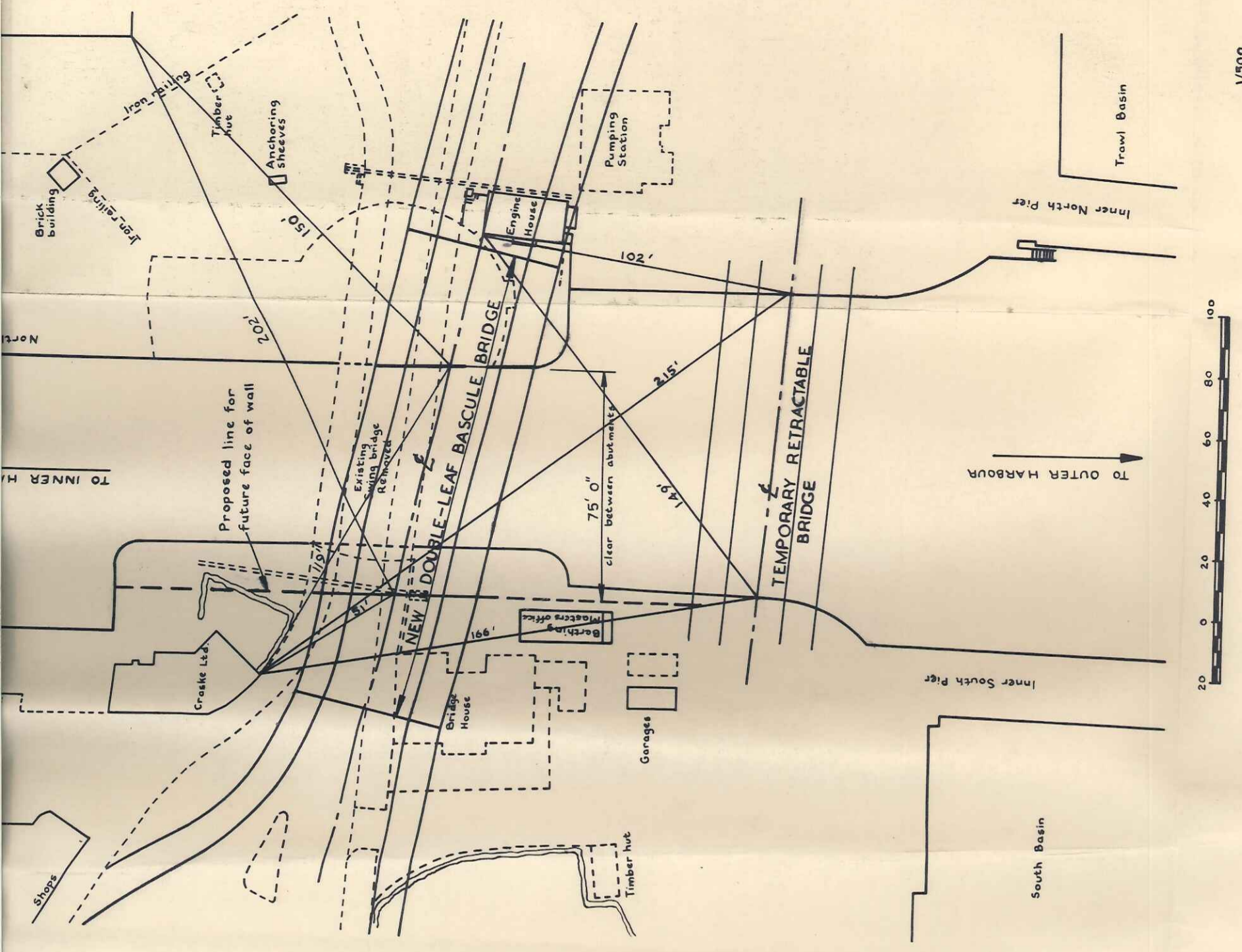
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1/500



MINISTRY OF TRANSPORT
PLANS REGISTRY
14 AUG 1969
SB 1502

9. NO payment shall be made by the Minister in respect of the transfer effected by this Agreement

10. It is hereby agreed that the liability to cause the Temporary Bridge and the New Bridge to be operated imposed by this Agreement is a liability to do the following -

(a) Cause such Bridge to be raised or lowered swung withdrawn or run out (as the case may be)

(b) Cause any road barriers to be placed in position to prevent or permit (as the case may be) the passage of vehicles and pedestrians

(c) Causing to assume the appropriate colour or aspect any lights or signals on or adjacent to such Bridge regulating or warning users of the road or the waterway

in each of such cases by means of the machinery provided and the Board shall provide all staff power and materials necessary for such operation at their own expense

11. IN case of any breakdown of the machinery provided for the operation of any road barriers or signals provided for the Temporary Bridge or the New Bridge (as the case may be) or in any similar emergency the Board shall when reasonably practicable operate such road barriers and signals manually or by some other convenient means or provide suitable alternatives PROVIDED that the Minister shall release and indemnify the Board from and against all suits actions claims and demands arising out of such operation or any attempt to carry out such operation except in the case of wilful default or negligence by the Board or any of their employees servants or agents

12. THE Minister hereby certifies that any stamp duty which but for the provisions of Section 248 of the Highways Act 1959 would be payable on these presents would be payable as an expense incurred by him under that Act and duty is therefore not payable

I N W I T N E S S whereof the Board and the Minister have caused their respective Common and Official Seals to be hereunto affixed the day and year first above written

THE SCHEDULE

(1) Building known as Swing Bridge Pumphouse at N.E. corner of Swing Bridge but excluding the land on which the same stands

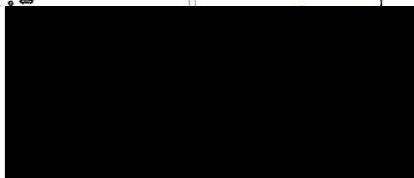
(2) All machinery pipework and ironwork including Hydraulic Accumulator

(3) Swing Bridge structure including associated bearing track cylinders pedestals and associated machinery pipework and ironwork

(4) Swing Bridge Traffic Barriers guides and gates but excepting all such electrical installations conduit pipework wires fuse boxes breakers etc. as are used by the Board for the purpose of their Harbour Works at Lowestoft

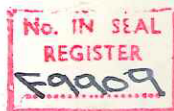
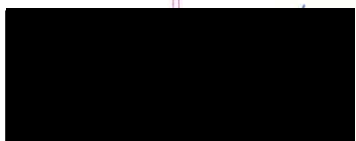
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THE COMMON SEAL of THE
BOARD was hereunto
affixed in the presence
of:-

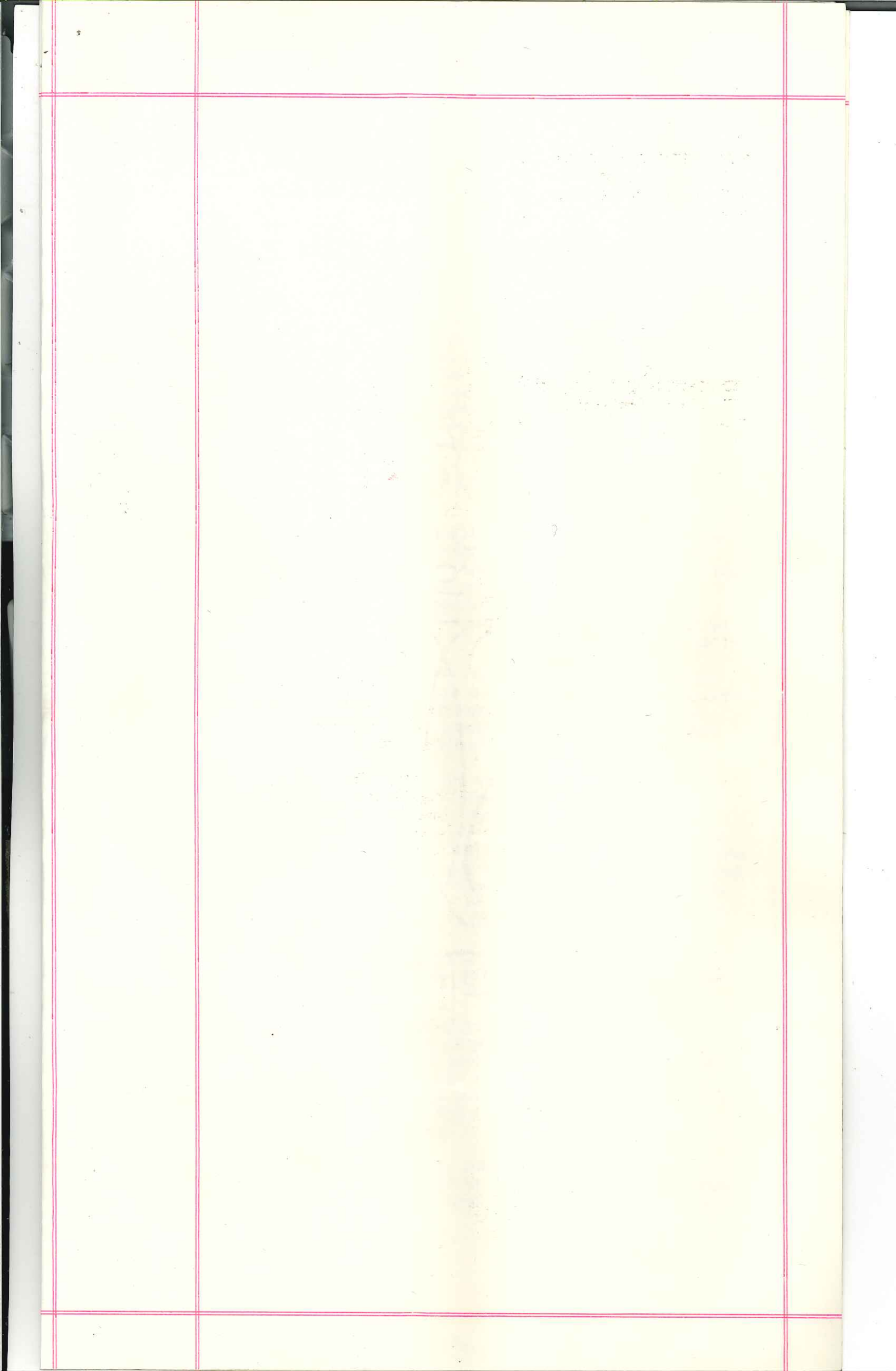


SECRETARY
948

THE OFFICIAL SEAL of THE
MINISTER authenticated
by:-



A PRINCIPLE EXECUTIVE
OFFICER OF THE MINISTRY
OF TRANSPORT.



DATED

6 February

1970

THE COMMON SEAL OF THE
BOARD AND MEMBERS
APPLIED IN THE PRESENCE
OF

[Faint signature]

SECRETARY
1970

THE COMMON SEAL OF THE
BOARD AND MEMBERS
APPLIED IN THE PRESENCE
OF

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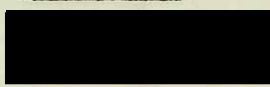
BRITISH TRANSPORT DOCKS BOARD

- and -

THE MINISTER OF TRANSPORT

A G R E E M E N T

under Section 100 of the Highways
Act 1959 relating to Lowestoft Swing
Bridge



Appendix C: Port of Lowestoft Bye-laws 1993



ABP ASSOCIATED
BRITISH PORTS

LOWESTOFT HARBOUR

**BYE-LAWS
1993**

Associated British Ports

LOWESTOFT HARBOUR BYE-LAWS 1993

Associated British Ports in exercise of the powers conferred on it by Section 83 of the Harbours, Docks & Piers Clauses Act 1847 (incorporated by Section 51 of the British Transport Docks Act 1964) and by Section 52 of the British Transport Docks Act 1964 and of all other enabling powers, hereby makes the following Bye-Laws.

PART I PRELIMINARY

Title and commencement. 1. These Bye-laws, which may be cited as the Lowestoft Harbour Bye-Laws 1993, shall come into operation on 18th May, 1994 and shall be applied to and in respect of the harbour as hereinafter defined.

Division into parts	2. These Bye-Laws are divided into parts as follows:	
		Bye-Law Nos.
	Part I Preliminary	1 - 4
	Part II Navigation of Vessels	5 - 13
	Part III Mooring and Management of Vessels	14 - 27
	Part IV Conduct of Persons in Harbour	28 - 37
	Part V Penalties for Contravention of Bye-Laws, Responsibility and Defence	38 - 40
	Part VI Revocation of Bye-Laws	41

Application 3. These Bye-Laws shall apply to all parts of the harbour as defined in Bye-Law 4 hereof.

Interpretation 4. In these Bye-Laws, unless the context otherwise requires, the following words or expressions have the meanings hereby respectively assigned to them:

- “ABP” means Associated British Ports
- “authorised officer” means any officer, employee or agent of ABP acting in the execution of his duty upon or in connection with the harbour.
- “board sailing” means the navigation or propulsion of a sail board and “sail board” means a vessel in the form of a raft with a sail and which is designed to be navigated by a person standing upright thereon.
- “Collision Regulations” means the Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1989 and subsequent amendments.

“goods” means all articles and merchandise of every description and includes fish, livestock and animals.

“harbour” means and includes:

(1) the whole area of Lowestoft Harbour from the Outer Pier Heads to the seaward side of Mutford Lock, including the Hamilton and Waveney Docks; the Trawl and Yachts Basins; the Outer and Inner Harbours; and Lake Lothing, over which ABP has jurisdiction.

(2) the dock undertaking of ABP (hereinafter described as “the docks”) and including any dry dock, slipway, lock or entrance, and all quays, jetties, plant, railways, buildings, sheds, entrances, approaches, roads, ways, bridges, gates, and all works and things and land comprising the said undertaking.

“harbour master” means the Dock and Harbour Master appointed by ABP and includes his authorised deputies and assistants and any person authorised by ABP to act in that capacity.

“hovercraft” means a vehicle which is designed to be supported when in motion wholly or partly by air expelled from the vehicle to form a cushion of which the boundaries include the ground, water or other surface beneath the vehicle.

“master” when used in relation to any vessel means any person having the command, charge or management of the vessel for the time being.

“owner” when used in relation to goods includes any consignor, consignee, shipper or agent for the sale, receipt, custody, loading or unloading and clearance of those goods and includes any other person in charge of the goods or his agent in relation thereto; and when used in relation to a vessel includes any part owner, broker, charterer, agent or mortgagee in possession of the vessel or other person or persons entitled for the time being to possession of the vessel.

“quay” means any quay, wharf, jetty, dolphin, landing stage, pontoon, or other structure used for berthing or mooring vessels, and includes any pier, bridge, roadway or footway immediately adjacent and affording access thereto.

“vessel” means a ship, boat, raft or water craft of any description and includes non-displacement craft, seaplanes and any other thing constructed or adapted for floating on or being semi-submersed in water (whether permanently or temporarily) and a hovercraft or any other amphibious vehicle.

PART II NAVIGATION OF VESSELS

5. All vessels must enter, leave and navigate in the harbour in accordance with the International Regulations for Preventing Collisions at Sea.

Application of Collision Regulations.

6. The master of a vessel arriving at the harbour shall, if required by the harbour master, furnish to him a declaration in the form to be obtained from him containing a correct statement of the

Declaration of particulars of vessel

tonnage and draught of the vessel, its last port of call, ownership, destination, particulars of its cargo and Agents acting for the vessel whilst remaining in the Port.

Vessel Movements

7. Approaching and departing vessels must make every reasonable effort to establish and maintain contact with the Lowestoft harbour control on VHF Channel 14.

Observance of signals

8. All vessels must observe the harbour control signal lights and those relating to opening bridges.

Speed of vessels

9. All vessels entering or being within the harbour shall be navigated with all reasonable care and caution and at a speed not exceeding four knots.

Water skiing, Board sailing, jetbikes, etc

10. Water skiing, board sailing and the use of jetbikes or jetskis in the harbour area may take place only where expressly permitted in writing by the harbour master.

Navigating whilst under the influence of drink or drugs

11. (a) No person shall navigate or attempt to navigate a vessel when unfit by reason of drink or drugs to do so.

(b) No master or owner of a vessel shall knowingly cause or permit any person to navigate or attempt to navigate that vessel in contravention of this Bye-Law.

Power driven vessel underway.

12. The master of a power driven vessel underway shall either be on the bridge or control position of the vessel himself or ensure that there is on the bridge or control position a member of the crew who is capable of taking command of the vessel and, when a pilot is on board, is capable of understanding the pilot's directions.

Notification of collisions etc.

13. The master of a vessel which:

(a) has been involved in a collision with any vessel, navigational mark, shore facility or property or has been sunk or grounded or become stranded in the harbour area; or

(b) by reason of accident, fire, defect or otherwise is in such a condition as to affect its safe navigation or to give rise to danger to other vessels or property;

shall, as soon as reasonably practicable, report the occurrence to the harbour master (and as soon as practicable thereafter provide the harbour master with full details in writing) and where the damage to a vessel is such as to affect or be likely to affect its seaworthiness the master shall not move the vessel except to moor or anchor in safety, otherwise than with the permission and in accordance with the directions of the harbour master.

PART III

MOORING AND MANAGEMENT OF VESSELS

Mooring persons to be in attendance.

14. The master of any vessel entering or moving within the harbour shall have sufficient competent persons in attendance for mooring purposes.

Vessels berthed to be laid close alongside.

15. The Master or owner of a vessel which is berthed within the harbour shall ensure that such vessel is close alongside and

securely made fast at all times unless otherwise directed by the harbour master.

16. The master of every vessel within the harbour, with the exception of rowing boats and other similar light non-powered vessels, shall have adequate fire extinguishing equipment available for immediate use in any part of the vessel at all times, and the nature and amount of such equipment shall take into account any abnormal fire risk associated with any such vessel.

Fire extinguishing equipment.

17. The master of every vessel within the harbour shall ensure that no fire shall be allowed thereon except in suitable containers and under watch.

Fire precautions on vessels.

18. No person shall cut adrift or unlawfully or without authority unloose any vessel which may be made fast or moored in any part of the harbour.

Moored vessels not to be cut adrift, etc.

19. No person shall make a vessel fast to, cast adrift, tamper with, or vandalise any navigational buoy, light, beacon, seamark or tideboard within the harbour.

Navigational aids not to be made fast to, tampered with, etc.

20. The master or owner of a sea-going vessel shall not, except where the vessel is lying aground, take any action to render his vessel incapable of movement without first notifying the harbour master.

Vessels to be kept in a moveable condition.

21. The master or owner of a vessel shall not permit his vessel to be left unattended whilst on-board machinery is running except by prior arrangement with the harbour master.

Machinery on board vessels not to be unattended when operating.

22. The Master or owner of a vessel which is at a quay, or attached to any mooring device, shall not permit the engines of his vessel to be worked in such a manner as to knowingly or negligently cause injury or damage to the bed, banks or quays of the harbour or to any other vessel or property.

Use of engines while vessel moored or berthed.

23. The master or owner of a vessel within the harbour or docks shall not permit or cause the engines of such vessel to be set in motion for trial purposes without the permission, in writing, of the harbour master or otherwise than in accordance with the terms of such permission.

Testing of engines.

24. The master or owner of any fishing vessel shall not permit derricks, beams, doors or any other fishing equipment to overhang the side of the vessel in such a manner as to obstruct safe mooring or cause damage to another vessel alongside whilst within the harbour.

Equipment on fishing vessels not to cause obstruction or damage.

25. The master or owner of a vessel within the harbour shall allow facilities for the free and safe passage across or over the deck of his vessel to or from any other vessel lying farther from the quay.

Access across decks.

26. No master or owner of a vessel within the harbour shall permit grit blasting or spray painting on board that vessel unless contained in a recognised area or with written permission from the harbour master or other authorised person.

Unauthorised grit blasting or spray painting.

Mooring and discharge of vessels landing fish.

27. The master of every vessel bringing fish for sale within the harbour shall moor or place his vessel and land the fish at the proper Waveney Fish Market, and not at any other place within the harbour, unless and on such terms as the harbour master shall otherwise permit.

PART IV

CONDUCT OF PERSONS IN HARBOUR

Fire precautions.

28. Every person in the area of jurisdiction of ABP shall take all reasonable precautions for the prevention of fire.

No smoking or fires.

29. No person shall smoke or carry a lighted pipe, cigar or cigarette or light fires, on the premises owned by ABP:

- (a) where smoking is expressly prohibited by a notice exhibited in a conspicuous position in such part of the premises; or
- (b) if requested by the harbour master or any authorised person not to do so in or upon any part of the premises where smoking or carrying a lighted pipe, cigar or cigarette may in their opinion be dangerous; or
- (c) near to or amongst any dangerous goods in the premises.

Use of welding and burning equipment.

30. (a) Where any operation including the use of hot rivets, welding or burning equipment or any other potential source of ignition is undertaken in any part of the harbour owned or administered by ABP, the operators shall take such precautions including the removal of flammable materials as may reasonably be necessary to prevent fire and to avoid injury.
- (b) No tanks, containers or other facilities used for storage or transportation of flammable materials shall be repaired by welding or burning until the operators of such equipment have ensured that such facilities have been rendered safe for making the repairs.
- (c) The operators of any welding or burning equipment shall ensure that every compressor or generator used in connection therewith shall be placed securely.

Entering whilst under the influence of drink or drugs.

31. No person shall enter any premises owned or administered by ABP when drunk or incapacitated by drugs.

Obstruction.

32. No person shall place vehicles, machinery, materials or rubbish on the docks in such a manner which may cause an obstruction to the lawful activities of other users or the safe passage of emergency services unless otherwise directed by the harbour master.

Oil and oil containers.

33. No master or owner of a vessel shall leave or cause to be left any drums or containers of oil products, waste oil or mixtures containing oil, on the docks during the hours of darkness except by agreement or permit from the harbour master.

34. No person shall deposit or throw into the waters of the harbour any rubbish or other material whatsoever.

Dumping in harbour waters prohibited.

35. No fishing devices may be used in any part of the harbour without the express permission of the harbour master.

Fishing in the harbour.

36. No person shall dive or swim in the waters of the harbour without a permit issued by the harbour master.

Bathing in the harbour.

37. No person should bring or allow a dog or domestic animal on any part of the docks without the express permission of the harbour master.

Dogs and domestic animals in the docks.

PART V

PENALTIES FOR CONTRAVENTION OF BYE-LAWS, RESPONSIBILITY AND DEFENCE

38. Any person contravening these Bye-Laws shall be guilty of an offence and liable on summary conviction to a fine not exceeding level 3 on the standard scale, except in the case of Bye-Laws 34 and 37 where level 2 will apply.

Penalties.

39. Where the commission by any person of an offence under these Bye-Laws is due to the act or default of some other person, that other person shall be guilty of the offence; and that other person may be charged with, and convicted of, the offence by virtue of this Bye-Law whether or not proceedings for the offence are taken against any other person.

Responsibility.

40. In any proceedings for an offence under these Bye-Laws, it shall be a defence for the person charged to prove:

Defence.

- (a) that he took all reasonable precautions and exercised all due diligence to avoid the commission of such an offence; or
- (b) that he had a reasonable excuse for his act or failure to act.

If in any case the defence provided by sub-paragraph (a) of this Bye-Law involves the allegations that the commission of the offence was due to the act or default of another person, the person charged shall not, without leave of the court, be entitled to rely on that defence unless, within a period ending seven clear days before the hearing, he has served on the prosecutor a notice in writing giving such information identifying or assisting in the identification of that person as was then in his possession.

PART VI

REVOCATION OF BYE-LAWS

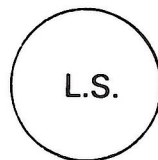
41. From and after the date of the coming into force of these Bye-Laws, the following Bye-Laws shall be revoked:

The Lowestoft Harbour and Fish Market Byelaws 1958 confirmed by the Minister of Transport and Civil Aviation on 5 November 1958.

The Lowestoft Harbour and Fish Markets Additional General Byelaws confirmed by the Minister of Transport on 25 February 1969.

The Lowestoft Harbour and Fish Markets Additional General Byelaws confirmed by the Minister of Transport on 26 November 1969.

THE COMMON SEAL OF ASSOCIATED BRITISH PORTS was hereunto affixed in the presence of:



AVRIL WINSON
Deputy Secretary

on the 4th January, 1994.

THE SECRETARY OF STATE hereby confirms the foregoing Bye-Laws.
Signed by Authority of the Secretary of State

PETER R. SMITH
An Assistant Secretary in the Department of Transport

on the 29th April, 1994.

Appendix D – Port of Lowestoft Bye-laws 1958



British Transport Docks Board

LOWESTOFT HARBOUR
AND
FISH MARKETS

BYE-LAWS

LOWESTOFT COLLEGE
OF
FURTHER EDUCATION

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COLLEGE
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FURTHER
EDUCATION
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Date *Collection*

SHELF 432

11.7.85

All references to the British
Transport Commission or The
Commission shall be read as
British Transport Docks Board.

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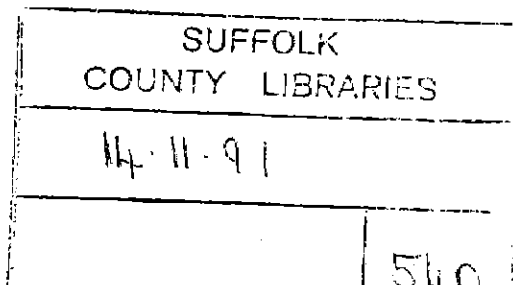
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LOWESTOFT HARBOUR AND FISH MARKETS

GENERAL BYE-LAWS

for regulating the Lowestoft Harbour and Fish Markets made by the British Transport Commission in pursuance of the Harbours, Docks and Piers Clauses Act, 1847, the Great Eastern Railway (Capital, etc.) Act, 1865, the North Eastern, Eastern and East Scottish Group Amalgamation Scheme, 1922, the Transport Act, 1947, and of all and every other Act or Order enabling them in this behalf.

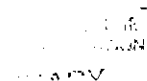
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|---|--|
| <p>1. These Bye-Laws may be cited as the Lowestoft Harbour and Fish Market Bye-Laws 1958.</p> | <p>Title</p> |
| <p>2. These Bye-Laws shall come into operation on the expiration of fourteen days after the date of confirmation thereof by the Minister of Transport and Civil Aviation, as from which date the Bye-Laws for regulating the Lowestoft Harbour and Fish Markets made by the London and North Eastern Railway Company on the 24th day of January, 1928, are hereby repealed. Provided that if at any time after the making of these Bye-Laws the Corporation shall make Bye-Laws relating to the South Pier by virtue of their powers under the Lowestoft Corporation Act 1934, the Commission's Bye-Laws shall no longer apply to the South Pier in so far as they are inconsistent with the Bye-Laws made by the Corporation.</p> | <p>Commencement and Repeal</p> |
| <p>3. In these Bye-Laws the following words and expressions shall respectively have the several meanings hereby assigned to them unless there be something in the subject or context repugnant to such construction:—</p> <p>“the Commission” means the British Transport Commission.</p> <p>“the Corporation” means the Mayor, Aldermen, and Burgesses of The Borough of Lowestoft.</p> <p>“Harbour” means the Outer Harbour and the Inner Harbour, unless the context shows that one only of them is intended, in which case “Harbour” means only the one so intended.</p> <p>“Outer Harbour” means so much of the Harbour as lies eastward of the Swing Bridge, including the same and also includes the Hamilton and Waveney Docks and the Trawl and Yacht Basins.</p> <p>“Inner Harbour” means so much of the Harbour as lies westward of the Swing Bridge, and including Lake Lothing.</p> <p>“Trawl Market” means the Fish Market which adjoins the Trawl Basin.</p> <p>“Hamilton and Waveney Markets” means the Fish Markets adjoining the Hamilton and Waveney Docks respectively.</p> <p>“Quays” means the Quays, Jetties, Wharves, and Piers of the Harbour except the South Pier unless expressly included.</p> | <p>Interpretation</p> <p>Commission</p> <p>Corporation</p> <p>Harbour</p> <p>Outer Harbour</p> <p>Inner Harbour</p> <p>Trawl Market</p> <p>Hamilton and Waveney Markets</p> <p>Quays</p> |



Harbour Master	<p>"Harbour Master" shall have the meaning assigned to it by the Harbours, Docks, and Piers Clauses Act, 1847, and shall include any person authorised by the Commission to assist the Harbour Master, or to perform his duties during his absence from any cause whatsoever; and for the purpose of these Bye-Laws (in addition to all other persons being "assistants" within the meaning of such Act), the Berthing Master, the Chief Dock Foreman and the Dockgatemmen in charge of the Swing Bridge, shall be deemed "Assistants" of the Harbour Master.</p>	10. Except by agreement with the Commission, vessels must be cleared before leaving the Harbour. The Master or other authorised person when clearing must produce at the Harbour Dues Office between the hours of 9.0 a.m. and 5.15 p.m. Saturdays excepted, 12.30 p.m. Saturdays only, their registers, manifests, and Bills of Lading. No vessel shall be cleared on Sunday.	Vessels clearing to produce registers etc.
Vessel	<p>"Vessel" includes ship, boat, hulk, lighter, and craft of every kind, whether navigated by steam or otherwise.</p>	11. Any Meter who delivers or causes to be delivered to the Master of any vessel a ticket, paper or memorandum signed by such Meter, containing a false report of the time of discharge of any vessel, and any Master who shall with the knowledge that such ticket, paper, or memorandum contains a false report of such time of discharge, deliver or cause to be delivered the same to any officer or servant of the Commission, shall be deemed guilty of a breach of these Bye-Laws.	Vessels discharging— False report by Master
Goods	<p>"Goods" includes articles, wares, and merchandise of every description.</p>	12. When a red metal flag is displayed vertically by day on the North Lock Wall or a red light exhibited by night on the North Lock Wall or on the centre of the Swing Bridge, a vessel shall not enter or leave the Inner Harbour or approach to within 200 yards of the said Bridge.	Swing Bridge— Signals prohibiting entrance or departure to or from Inner Harbour
Master	<p>"Master" when used in relation to any vessel shall be understood to mean the person having the command or charge of the vessel for the time being.</p>	13. When at night a green light is exhibited on the North Lock Wall or on the Swing Bridge, a vessel may, for the purpose of entering or leaving the Inner Harbour, approach with caution to within 100 yards of the said Bridge but shall not proceed further until a white light is exhibited on the North Lock Wall.	Swing Bridge— Signals for entering or leaving Inner Harbour
Owner	<p>"Owner" when used in relation to goods includes the consignor, consignee, shipper or agent, for sale or custody of such goods as well as the Owner thereof.</p>	<p>4. All vessels entering the Harbour shall have their bow-sprits or jib booms rigged in, and their anchors on board or hung to the bows, that is to say, by the chain at the hawse.</p> <p>5. All vessels entering or being within the Harbour shall be navigated with all reasonable care and caution and (except in the case of vessels in Her Majesty's service) at a speed not exceeding four knots.</p>	<p>When by day a red metal flag on the North Lock Wall is lowered to a horizontal position vessels may approach from the Outer Harbour and when the flag is completely lowered vessels may approach from the Inner Harbour.</p>
Vessels entering Harbour— Dismantling		14. No vessel shall be moored, anchored, or lie so as to obstruct the entrance of any other vessel into, or the departure of any other vessel from, the Outer Harbour.	Vessels not to obstruct entrance Harbour
Navigation of Vessels— Speed Limit		15. No vessel shall be moored, anchored, or lie in such a position as to obstruct the fairway to the Inner Harbour, or to obstruct any vessel entering or leaving or requiring to enter or leave the said Inner Harbour.	Vessels not to obstruct fairway to Inner Harbour
Vessels approaching Swing Bridge to secure anchors, etc.	<p>6. The Master of every vessel before approaching the Swing Bridge with his vessel, shall take securely on board any appurtenances likely to take hold of or damage any part of the bridge or walls.</p>	16. A vessel shall not be moored, anchored or lie within the Harbour except where the Harbour Master shall direct other than when moored against a quay not owned by the Commission.	Vessels in Harbour to lie where directed
Trawl beams and gear, stowage of	<p>7. The Master of any vessel about to enter the Harbour shall within a reasonable time before his vessel reaches the entrance thereto, cause the trawl beams and moveable gear to be properly stowed.</p>	17. A vessel shall not remain moored, anchored, or lie in such a position as to obstruct unreasonably any other vessel approaching, departing from, or discharging cargo at, or otherwise using the Trawl Market or the Hamilton or Waveney Markets.	Vessels not to obstruct other vessels using Markets
Vessels to pass between Outer and Inner Harbours as directed by Harbour Master	<p>8. The Master or Pilot of a vessel shall not pass or attempt to pass his vessel to or from the Outer Harbour from or to the Inner Harbour, contrary to the direction of the Harbour Master and every vessel shall pass in the order, line, and at such speed as directed by the Harbour Master and not otherwise, and must not attempt to pass another vessel proceeding in the same direction or change position from one side of the channel to the other except by order of the Harbour Master.</p>	18. The Master of a vessel shall whenever ordered to do so by the Harbour Master pass such vessel through the Swing Bridge to the Inner Harbour or to the Outer Harbour.	Vessels passing in or out of Inner Harbour
Master to report arrival of vessels	<p>9. The Master of a vessel or other authorised person shall, on arrival within the Harbour, immediately report such arrival, together with full particulars, at the Control Room on the south side of the Bridge or at the Harbour Dues Office.</p>		

Vessels discharging Coal	19. The person or persons responsible for discharging coal from a vessel in the Harbour shall do so forthwith and the coal shall be removed direct from the Commission's premises, and no vessel containing coal shall in any circumstances lie alongside any of the Commission's Quays or at the Mooring Dolphin for a longer period than is reasonably necessary to discharge the coal.	28. The owner of any ladders, stages, shore planks, or other similar equipment used for loading or discharging any vessel lying alongside any part of the Quays, shall immediately after sunset or as soon after sunset as the loading or discharging is finished for the day, remove all such ladders, stages, shore planks, or other similar equipment to a place of safety so as to leave the Quay and vessel clear of obstruction.	Cargo handling equipment to be removed at night
Navigation—Harbour Master's direction	20. No person other than the Harbour Master, or a person duly authorised by him, shall by hailing, calling, or otherwise, from the Quays (including the South Pier), or from any part of the Harbour or premises of the Commission, or from any other vessel within the Harbour, give or attempt to give any directions or orders whatever to, or in any way attempt to regulate, control, or alter the navigation or management of any vessel, whether such vessel be within or without the Harbour.	29. The Master of any vessel lying within the Harbour shall not cause a nuisance by making excessive smoke and if in the opinion of the Harbour Master such nuisance is being caused he may order the immediate cessation of such nuisance, or, in default the removal of such vessel from the Harbour.	Vessels emitting excessive smoke
Persons not to land upon or embark from South Pier, etc.	21. No person shall, without permission of the Harbour Master and a person duly authorised in that behalf by the Corporation, land upon or embark from the South Pier; nor shall any person land upon or embark from any place within the Harbours contrary to the orders of the Harbour Master, except in cases of emergency to save life or property, provided that the provisions of this Bye-Law shall not apply to persons embarking upon or landing from motor-boats or other craft which have been expressly authorised to ply for hire from the South Pier as prescribed in Bye-Law 80 hereof.	30. No person shall make fast any rope, chain, or tackle to any shed, lamp-post, or post, or any work or place within the limits of the Harbour, other than that assigned for the purpose.	Fastening ropes
Vessels cleaning or other work	22. No vessel shall be laid on the shore within the harbour for the purposes of cleaning, repairing, sale, or otherwise, except in such place as the Harbour Master may permit.	31. No incessant blowing of whistles, sirens, or hooters shall take place in the Harbour or on the premises of the Commission	Incessant blowing of whistles, etc. prohibited
Wreckage	23. Subject to the provisions of part IX of the Merchant Shipping Act, 1894, no wreck or wreckage of any kind shall be placed on the shore of the Harbour, except with the sanction of the Harbour Master.	32. Except with the previous sanction in writing of the Commission or Harbour Master, no explosive or combustible commodity, article, or thing, nor any commodity, article, or thing injurious to health, or causing or likely to cause a nuisance within the Harbour, shall be imported into, or exported from, or be brought into the Harbour or upon the South Pier, or upon any part of the Commission's Quays, Works or Premises, and in the event of such sanction not having been obtained the Harbour Master may remove any of the said articles at the expense of the Owner. The Master or other person in charge of every vessel having on board any explosive or combustible article or thing, or any commodity, article, or thing injurious to health, or causing or likely to cause a nuisance, shall, within two hours after mooring within the Harbour, give written notice to the Harbour Master, specifying all such commodities, articles, or things, as may be on board, and the Harbour Master or his assistants may, in their discretion, order any vessel having or taking on board any such commodities, articles or things, to be placed or moored in such place within the Harbour as he or they may prescribe, or to proceed out of the Harbour; and in default of compliance with any such orders the Harbour Master may either cause the said vessel to be removed from the Harbour, or the said combustible or explosive articles to be stored in a place of safety, and the said commodities to be removed, and such nuisance arising therefrom to be abated; and the costs and expenses incurred by the Harbour Master in any of the matters aforesaid shall be payable and paid by the Master of the said vessel, and shall be recoverable against him and against the vessel in the same manner and with the like remedies as penalties for breaches of these Bye-Laws.	Explosives or other articles likely to cause nuisance
Floating of wood or other substance in Harbour	24. No timber, trees, wood, or other substance shall be floated in or upon any part of the Harbour without the previous permission of the Harbour Master; nor shall any of the aforesaid things be so floated or kept except at such place or places, and with such precautions, fastenings, and moorings, as he may from time to time prescribe.	33. No person shall wilfully hinder or obstruct, or attempt to hinder or obstruct any vessel entering, navigating in, or departing from the Harbour.	Obstruction of Vessels
Vessels using ballast drop or other accommodation to take turns	25. Whenever the use of any ballast drop, slip, dry dock or crane, wharf, warehouse, market or other accommodation provided by the Commission is required for any fishing or other vessel, or it be desired to take in, load, or discharge at any berth, the Master of such vessel must take his turn in such order as shall be directed by the Harbour Master.	34. No person shall cut adrift or unlawfully or without authority unloose any vessel which may be made fast or moored in any part of the Harbour.	Unlawfully cutting moorings, etc.
Masters of Vessels to allow facilities to Vessels lying farther from Quay	26. The Master of every vessel shall allow facilities for the free passage across or over the deck of his vessel to or from any other vessel lying farther from the Quay.		
Hatches of Vessels to be closed at night	27. The Master of every vessel shall immediately after sunset or as soon after sunset as the loading or discharging is finished for the day, close the hatches of such vessel and keep the same closed until sunrise, unless there shall be a person on board during the night to guard the hatches so as to prevent accidents.		

Vessels not to rig, unrig or deal with stores at Markets	35. No Master of any vessel shall rig, fit out, unrig, take in or discharge ballast, nets or other stores from or at any of the Fish Markets if requested not to do so by the Harbour Master.	46. Except with the permission of the Harbour Master no empties or packages of any description (including barrels or packages of salt or ice) or equipment of any description (including weighing machines, tables or benches) shall be allowed to remain on, and no cooperage work of any kind shall be done in any of the Markets, or the Quays, roads or approaches thereto belonging to the Commission.	Empties or packages not to remain, or cooperage work to be performed
Intoxication—Obstruction	36. No person while upon the South Pier or in or upon the Commission's Quays, Works or Premises, or when engaged in navigating any vessel in the said Harbour, shall be intoxicated, and no person whatsoever while on any vessel in the said Harbour or upon the South Pier or upon the Commission's Quays, Works or premises shall obstruct any servant of the Commission in the execution of his duties.	47. Every person who shall land fish at any of the said Markets or elsewhere shall remove the same or cause the same to be removed therefrom within twelve hours after landing, except where the Harbour Master specially permits a longer period.	Fish landed at Markets to be removed within twelve hours after landing
Vessels to moor at proper places	37. The Master of every vessel bringing fish for sale within the Harbour shall moor or place his vessel at or near the proper Fish Markets, as hereinafter provided, and not at any other place within the Harbour, unless and on such terms as the Harbour Master shall otherwise permit.	48. All barrels or packages of whatever description containing fish shall be removed from the Fish Markets within twelve hours after the commencement of filling or packing the same, except where the Harbour Master specially permits a longer period.	Removal of barrels and packages of fish within twelve hours
Vessels discharging at Trawl Market—Position	38. The Master of a vessel discharging at the Trawl Market shall moor his vessel bow on or as otherwise permitted by the Harbour Master.	49. No person shall clean, gut or fillet fish (except for the purpose of wholesale trade and with the express permission of the Harbour Master) or cure or sell fish by retail in the Markets or on the premises of the Commission and no person shall leave or deposit at any time any offal or other offensive matter in or upon any of the Harbour Waters, Markets, Quays, Works, Premises, roads or approaches thereto belonging to the Commission.	No cleaning, etc., or retailing of fish Offal, etc., not to be deposited
Vessels discharging at Hamilton and Waveney Markets	39. The Master of every vessel discharging at the Hamilton and Waveney Markets shall moor his vessel bow on or as otherwise permitted by the Harbour Master.	50. In case of any breach of the 45th, 46th, 47th, 48th or 49th of these Bye-Laws, the servants of the Commission may remove fish, empties, barrels or packages of any description (including barrels or packages of salt) to some convenient place at the owner's expense, and sell or dispose of same.	Empties or packages if allowed to remain to be removed by Commission at Owner's expense
Vessels not to moor at Markets with sails set or propellers turning	40. No vessel, except by permission of the Harbour Master, shall lie at or near any Market with sails set or propeller going.	51. No person shall allow any fish, article, or thing, which is or has become, in the opinion of the Medical Officer of Health or any Public Health Inspector employed by the Corporation, offensive or a nuisance, to remain on the Quays, Markets, or any part of the Commission's premises, after notice to remove the same shall have been given by the Harbour Master to the Owner or to the person in charge of such fish, article or thing; and if such notice shall not be fully complied with within three hours from the time of giving the same, the Harbour Master may remove the said fish, article or thing, and either destroy or sell the same, rendering to the Owner any amount realised, less expenses of sale and removal; and this clause shall apply to the entire heap, lot, ped, or package of fish pronounced offensive or a nuisance by the said Medical Officer or Inspector, and it shall not be necessary to distinguish the fish which are offensive or cause the nuisance; but the whole heap, lot, ped, or package shall be liable to be destroyed or sold as aforesaid; and any expense incurred by the Commission in connection therewith shall be paid by the Owner.	Removal of offensive matter
Vessels to discharge forthwith	41. The Master of every vessel bringing fish for sale within the Harbour shall discharge his vessel forthwith, and the vessel shall not remain longer at the place of discharge than shall be necessary for such purpose.	52. No person shall allow any goods, articles or things, to remain upon the Quays, or any part of the Commission's premises after the Harbour Master shall have ordered their removal, and if not removed the Harbour Master may remove the same at the expense of the Owner.	Removal of Goods, etc., from Commission's premises
Landing of Trawl and Line Fish	42. Trawl and Line Fish shall be discharged and sold at the Trawl and/or Waveney Markets only according to Seasons applicable and as directed by the Harbour Master.		
Landing of Herrings and Mackerel	43. Herrings and Mackerel shall be landed in the Hamilton and Waveney Markets only and be sold in the Auction Mart and not elsewhere, provided that the Harbour Master may under exceptional circumstances give permission that Herrings and Mackerel shall be landed and/or sold at some other place which under the circumstances the Harbour Master may deem convenient.		
Vessels after discharging fish to moor off at buoys	44. No vessel, after the discharge of fish therefrom at the said Markets, shall be moored to or allowed to lie next to the North side of the Inner South Pier or South Side of the Inner North Pier, but shall be moored off at the buoys placed in the basins for that purpose or at some other convenient place indicated to the Master of the vessel by the Harbour Master or his assistants.		
Empties or other packages to be discharged expeditiously	45. The Master of every vessel arriving with empties or packages of any description (including barrels or packages of salt) shall discharge his cargo expeditiously and in such a manner as not to block up the Quays or approaches thereof.		



Fish only to be sold in Markets	53. Unless special permission is obtained in writing from the Harbour Master no person shall offer for sale in the Markets any article or goods whatsoever except fish, subject to and as authorised by these Bye-Laws, and any person offending against this or Bye-Law No. 54 shall in addition to the penalty provided by Bye-Law No. 86 of these Bye-Laws be liable to be forthwith removed from the Commission's premises by or under the direction of any servant or agent of the Commission.	61. No person shall ride, drive any horse or other animal, or otherwise propel any vehicle of any description in the Markets or on the Lock-walls, or Quays, or any part thereof, or on any part of the Commission's premises without the permission of the Harbour Master.	Persons not allowed to propel vehicles, etc., on Commission's premises
Sunday observance (fish)	54. No person shall sell, buy, pack, prepare for removal, or remove any fish in, upon or from any of the Markets or Quays or other parts of the Commission's premises on a Sunday, except with the permission of the Harbour Master.	62. No person, other than a servant of the Commission or an officer in Her Majesty's service on duty, except with the permission of the Harbour Master shall walk, stand, or be upon, or in anywise enter or use the end of the North Pier, which is or from time to time may be paled or barricaded off.	North Pier (end of)—Harbour Master's control of
Unloading or removal of goods and repairs to vessels on a Sunday	55. No goods, merchandise, or articles in or upon the Markets or Quays or other parts of the Commission's premises shall be removed on a Sunday without permission of the Harbour Master, which shall not be unreasonably withheld. Except with the special permission of the Harbour Master no vessel will be allowed to load or discharge any goods, merchandise, or articles, or do any repairs on board ship in the Harbour on Sundays.	63. No person, other than members of Her Majesty's Forces on duty or Officers in Her Majesty's service on duty, shall, for any purpose, except with the consent of the Corporation, use the South Pier without paying the toll, rate or dues prescribed except in case of emergency to save life or property.	South Pier Tolls
Fires and Lights	56. No person shall have or cause to be had any fire or naked light (a) upon the Quays, Works or Premises of the Commission, except at such times and in such manner as the Commission or Harbour Master shall permit, or (b) upon the South Pier, except at such times and in such manner as the Corporation shall permit. No fires or lights other than safety lights shall be allowed on board any vessel in the Harbour at any time unless a proper person is left in charge of the same, nor during the time of her taking on board or discharging her cargo, when any part thereof shall consist of any inflammable or combustible matter, except with special permission from the Harbour Master.	64. No person shall at any time take or cause to be taken or removed from any part of the Harbour, Quays, Banks, or Towing Paths, or any of the Works belonging to, adjoining or supporting the same, any rock, gravel, stone, shingle, sand, earth or other substance, as or for ballast or otherwise, except at such times and in such places and manner as the Harbour Master may permit and direct.	Ballast or other substance—Removal prohibited
Harbour Master's general control	57. Every person being on or using any part of the Commission's premises shall conform to all reasonable directions given by the Harbour Master or other authorised person for the purpose of preserving order or facilitating the despatch of business in the Harbour or Fish Markets.	65. Nothing contained in the foregoing Bye-Law shall be deemed to be or shall operate as a grant by or on behalf of the Crown as Owner of the foreshore and sea-bed below high-water mark, of any estate or interest in or right over such foreshore and sea-bed or any part thereof, nor shall anything contained in or done under any of the provisions of the foregoing Bye-Law in any respect prejudice or injuriously affect the rights and interests of the Crown in such foreshore and sea-bed or prevent the exercise thereon of any public rights, or prejudice or injuriously affect any right, power, or privilege legally exercisable by any person in or over and in respect of the sea shore.	Saving of Crown and other Rights
South Pier—Times of User	58. No person shall walk, stand or be upon, or use the South Pier, except between the hours from time to time allowed by the Corporation.	66. The Swing Bridge will be open for such reasonable periods as may be required for the passage of vessels on any day other than Sundays between the hours of 6.0 a.m. and 10.0 p.m. and on Sundays in October to April inclusive between the hours of 6.0 a.m. and 2.0 p.m. and on Sundays in May to September inclusive between the hours of 6.0 a.m. and 6.0 p.m. At all other times the Swing Bridge will be shut against vessels except when opened in case of emergency or after prior arrangement with the Harbour Master to permit a vessel to pass the Swing Bridge on a particular tide.	Swing Bridge—Times of opening and shutting
Persons not to loiter on Commission's premises	59. No person shall stand or loiter on the Lock-walls or Quays, or any part thereof, or on any part of the Commission's premises so as in any way to interrupt the prosecution of business.	67. Every foot passenger crossing over the Swing Bridge shall pass over and keep to the footpath and to the right thereof, and shall remain and be upon the said Bridge for such time only as may be reasonably necessary for crossing the same.	Swing Bridge—Persons crossing
Persons not to be on Commission's premises except on business	60. No person shall come, be, or remain upon the Lock-wall, Quays, or any part thereof, or on any part of the Commission's premises, unless engaged in and for the purpose of business with or on behalf of the Commission, except by permission of the Harbour Master, and any such person shall whenever so required by the Harbour Master or other authorised servant of the Commission inform him of the business or matter in respect of which such person claims to be entitled to be upon the Commission's premises.	68. No person shall in anywise occasion any obstruction, inconvenience, annoyance, or delay to any passenger upon the Swing Bridge.	Swing Bridge—No obstruction

Swing Bridge— Persons with or without vehicles or animals	69. No person with or without any wagon, cart, carriage, or other vehicle, or any animal or animals, shall pass or attempt to pass over the Swing Bridge at more than a moderate pace, or contrary to the directions of the Harbour Master or other authorised person.	77. No person shall spit upon the floor of the Markets, Quays or other part of the Commission's premises. Any person infringing or not observing this Bye-Law shall be liable to the penalty hereinafter provided, and in case of non-compliance with the request of the Harbour Master or other authorised person to desist may without prejudice to any such penalty be forthwith removed from the Commission's premises.	Spitting
Swing Bridge— No person to be upon when opening or pass within barrier	70. No person, other than a servant of the Commission, shall stand or be upon the Swing Bridge, or pass within the barrier put across the public road on either side of the Lock, at the time when the said Bridge is open, or in the course of being opened or being shut, or after a signal to pass has been given to any vessel.	78. No persons shall hawk or sell, or offer or expose for sale, any goods, effects or things, upon any part of the South Pier unless expressly authorised in writing by the Corporation.	South Pier, Sale of Articles
Swing Bridge— Vehicles, etc., not to stand upon	71. No person having the care of any wagon, cart, carriage, or other vehicle, or of any animal or animals, or of any sledge, truck, barrow, cask, basket, or bucket, or of any goods, shall permit the same to remain upon the Swing Bridge longer than may be reasonably necessary for crossing the same.	79. No person while on any part of the South Pier, unless expressly authorised in writing by the Corporation, shall verbally or by the distribution of handbills, or otherwise, solicit or collect subscriptions or charitable contributions, or beg or solicit alms or tout or importune any person for the purpose of selling any articles or animals or of letting for hire any boat, animal, article or other thing, or of obtaining the custom of any person.	South Pier. Distribution of Handbills, Collections, Touting, etc.
Disorderly behaviour	72. No person shall conduct himself riotously, violently or indecently, or use any threatening, abusive, or irritating language when upon the South Pier or in or upon any of the Markets, Quays, Works or other Premises of the Commission.	80. No person shall ply for hire from the South Pier with motor boats or any other craft unless expressly authorised in writing by the Commission and the Corporation.	South Pier. Vessels plying for hire
Defacing or affixing notices to Commission's property, etc.	73. No person shall write or paint anything upon or deface or disfigure by scribbling, drawing, placarding, or otherwise howsoever, any notice, table of tolls, or rates, notice board, post, lamp-post, fence, railing, hoarding, wall, erection, or building, upon the South Pier or upon any part of the Commission's premises, or any vessel, piling or buoy, within the Harbour; nor shall any person affix, or cause to be affixed, any bill, notice or paper within the Harbour on the South Pier or on the Commission's premises without the consent in writing of the Commission.	81. No person shall cause or suffer any dog belonging to him or in his charge to enter or remain upon the South Pier.	South Pier. Dogs prohibited
Indecent conduct, gambling	74. No person shall be guilty of any indecent exposure within the Harbour or in or upon the Commission's premises or upon the South Pier. No person shall bet, gamble, or play any game (whether for money or otherwise) with cards or dice or at pitch and toss upon the South Pier or in or upon the Markets, Quays, Works, or other part of the Commission's premises. Provided that nothing in this Bye-Law shall prohibit the playing of cards on the South Pier when permitted by the Corporation.	82. No person shall commit any nuisance upon or against or in any part of the South Pier.	South Pier. No nuisance
Bathing	75. No person other than those expressly authorised in writing by the Commission (and then only at the times and places stipulated by the Commission) shall enter any part of the Harbour for the purposes of bathing and swimming except in case of emergency to save life or property.	83. No person if a male shall intrude on or use any place set apart on the South Pier for the use of females; and no person if a female shall intrude on or use any place set apart on the South Pier for the use of males.	South Pier. Conveniences
Assemblies and Meetings	76. No person shall use (a) the South Pier without the permission of the Corporation, or (b) the Markets or any part of the Commission's premises without the permission of the Harbour Master, for the purpose of public demonstrations or meetings for political or any other purposes whatsoever.	85. No person shall throw, discharge or deposit or cause or suffer to be thrown, discharged or deposited on the South Pier, any rubbish, orange peeling, banana peeling or other waste matter or offensive substance.	South Pier. No litter

LOWESTOFT HARBOUR AND FISH MARKETS

ADDITIONAL GENERAL BYELAWS

86. Every person guilty of or accessory to any breach of these Bye-Laws shall be liable to a penalty not exceeding £5 for every such breach, which said penalty shall be recoverable and be enforced and applied under any law, statute, or authority in that behalf, and according to the provisions of the Great Eastern Railway (Capital, etc.) Act, 1865, and of any Act or Acts incorporated therewith, and may, in addition to such penalty be removed immediately from the Commission's premises by the Harbour Master, or any person or persons whom he may authorise for that purpose.

Penalties

THE COMMON SEAL of The British }
Transport Commission was hereunto }
affixed in the presence of:—

RUSHOLME
A Member

L.S.

H. L. BRAZIER
Assistant Secretary
21642

The Minister of Transport and Civil Aviation hereby confirms the foregoing Bye-Laws.

Signed on behalf of the Minister of Transport and Civil Aviation this FIFTH day of NOVEMBER, 1958.

O. F. GINGELL
An Assistant Secretary of the Ministry of Transport and Civil Aviation

Commencement

These additional general byelaws for regulating the Lowestoft Harbour and Fish Markets are made by the British Transport Docks Board (hereinafter referred to as "the Board") pursuant to the powers of the British Transport Docks Act, 1964, the Harbours, Docks, and Piers Clauses Act, 1847, and all the other powers them enabling.

1. These byelaws shall come into operation on the expiration of twenty-eight days after their confirmation by the Minister of Transport.

Signals—
Entering and
leaving Outer
Harbour

2. No person shall take or attempt to take any vessel
(a) from the sea into the Outer Harbour, or
(b) from the Outer Harbour to the sea

otherwise than in accordance with such signals as may be prescribed from time to time by the Board or their authorised Officer to indicate how vessels shall enter or leave the Outer Harbour. Any person who fails to comply with this byelaw shall be guilty of an offence and shall incur a penalty not exceeding £25.

Interpretation

3. In these additional general byelaws the words "Outer Harbour" and "vessel" shall have the same meanings respectively assigned to them as by the Lowestoft Harbour and Fish Market General Byelaws, 1958.

THE COMMON SEAL of the British }
Transport Docks Board was hereunto }
affixed in the presence of:—

S. A. FINNIS
Member

I.S.

K. E. BANTOCK
Secretary 635

on the First day of May, 1968.

The Minister of Transport hereby confirms the foregoing byelaws. Given under the Official Seal of the Minister of Transport the 25th February, 1969.

I.S.

K. T. BARNETT
An Assistant Secretary of the Ministry of Transport

For the signals at present in force for vessels entering and leaving the Harbour see Appendix hereto.

PREScribed ENTRY, DOCKING, AND DEPARTURE SIGNALS

1. Masters of vessels shall observe the Harbour control light which is a white flashing light situated below the fixed red light on the South Pier Lighthouse. This light is visible except between 232 degrees to 286 degrees true from the light. When this light is flashing vessels may proceed to sea, but no vessel shall enter the Harbour. At all other times vessels may enter the Harbour, but no vessel shall proceed to sea.
2. Authorised signals for Pilots are such as may be from time to time prescribed by Order in Council made in pursuance of the Pilotage Act, 1913.
3. Vessels must enter, leave, and navigate in the Harbour in accordance with the International Regulations for Prevention of Collisions at Sea.
4. A green light is shown on the North Pier Head and a red light on the South Pier Head, from sunset to sunrise.
5. A green light is shown from sunset to sunrise on each of the Inner Pier Heads. These lights will become visible to the person in charge upon his vessel entering the Harbour.
6. The signal prohibiting vessels from approaching the Swing Bridge is, by day, a red metal flag displayed vertically on the North Lock Wall, and by night, a red light on the centre of the Swing Bridge or on the North Lock Wall.
7. By night the exhibition of the green light on the Swing Bridge or North Lock Wall implies that a vessel may approach with caution to within 100 yards of the said Bridge, but no further until a white light is exhibited on the North Lock Wall, which indicates that the vessel is permitted to pass the said Bridge. By day, vessels may only approach from the Outer Harbour when the red metal flag on the North Lock Wall is lowered to a horizontal position and from the Inner Harbour when the flag is completely lowered.
8. The following signals are hoisted on the Flag Pole at the West end of the Inner North Pier, near the Swing Bridge, to indicate the depth of water at the entrance to the Harbour: when the water is less than ten feet—by day, a black ball; by night, a green light. When the water is ten feet or more—by day, a red flag; by night, a red light.
9. A reed signal has been placed on the South Pier Head for use in foggy weather. Four blasts of two seconds each will be given by the reed signal every minute.

EXPLOSIVES ACT, 1875 (38 Vic. cap. 17)

Bye-Laws made by the London and North Eastern Railway Company with respect to the conveyance, loading, and unloading of explosives at Lowestoft Harbour.

1. **Application of Bye-Laws.**—These Bye-Laws shall apply to all parts of the Harbour of the London and North Eastern Railway Company, at Lowestoft (hereinafter called "the Harbour") within the jurisdiction of the Company, the limits of whose jurisdiction are set forth in the Schedule hereto. Such Bye-Laws shall come into operation on the expiration of fourteen days after the date of the sanction thereof by the Minister of Transport, as from which date all previously existing Bye-Laws under the Explosives Act, 1875, relating to the Harbour are hereby revoked.
2. **Interpretation of Terms.**—The expressions contained in these Bye-Laws shall have the meanings respectively assigned to them in the Explosives Act, 1875, and in this Bye-Law.

"Harbour Master" shall mean the Harbour Master, or other officer duly appointed by the Harbour Authority, and shall include any person having authority to act in such capacity.

"Vessel" shall include "ship" and "boat".

"Class" and "Division" shall refer to the Classes and Divisions set forth in an Order in Council made under the 106th Section of the Explosives Act, 1875, and in force for the time being.

"Owner" shall mean Owner, Master, Consignor, Consignee, Broker, or Agent.

"Ships' Ammunition" shall mean any gunpowder, rockets, or other explosive, on, or in course of conveyance to or from, any ship in pursuance of the Merchant Shipping Act, 1894, or any Act amending the same, or any Order or regulation made under the said Act or Acts.

Wherever in these Bye-Laws the weight of explosive is referred to, such weight shall mean the gross weight of such explosive together with any envelope, case, or contrivance forming part of such explosive, but shall not include the weight of any barrel, case or package in which such explosive is packed for conveyance.
3. With the exception of Bye-Laws Nos. 12 (d) and 16, these Bye-Laws shall not apply to safety cartridges and other explosives of the 1st Division of the Sixth (Ammunition) Class.
4. **Ships' Ammunition and Socket Signals.**—All ships' ammunition shall be kept and conveyed in a safe and suitable manner to the satisfaction of the Harbour Master, and all due precautions shall be taken, by keeping the same in a securely locked receptacle and otherwise, to prevent the access of unauthorised persons to such ammunition. Time-expired signals should on no account be allowed to get into the hands of irresponsible persons.

Ships' ammunition shall not be stowed with, or near, explosives carried as merchandise.

No socket distress signal, socket sound signal or sound signal rocket shall be discharged in the Harbour except under the supervision of an officer of the Board of Trade, or in case of distress.

Save as above provided these Bye-Laws shall not apply to ships' ammunition.
5. **Vessels to Display Red Flag or Light.**—The Master of every vessel with any explosive on board exceeding in weight 100 lbs., on nearing the Harbour, and

during the time that such vessel remains in the Harbour with any explosive on board, shall display by day a square red flag not less than 3 feet square and by night a red light at the masthead (or if the said vessel has no mast, on a staff).

6. **Notice to be given to Harbour Master.**—The Master of every vessel with explosive on board on entering the Harbour shall, without delay, inform the Harbour Master of the nature and quantity of every explosive on board such vessel and of the time when, and place where, it is proposed to land the explosive.

7. **Berthing of Vessels.**—The Master of every vessel carrying, or about to carry, explosive shall anchor or moor such vessel only at such place as the Harbour Master shall from time to time direct, and shall not remove his vessel therefrom, except for the purpose of leaving the Harbour, without the written order or permission of the Harbour Master.

8. **Unauthorised Explosive.**—No explosive which is not on the List of Authorised Explosives* signed by a Government Inspector and in force for the time being, shall be brought within the Harbour without a special Importation Licence or the written consent of the Harbour Master, and any such explosive shall be subject to such conditions as the Harbour Master may impose.

9. **Importation Licence.**—In the case of any explosive imported from abroad to which these Bye-Laws apply, and for which an Importation Licence is required by the Explosives Act, 1875, the Owner shall satisfy the Harbour Master, by the production of the Licence, or otherwise, that the importation of the explosive in question is duly authorised.

10. **Notice of Shipment, Transshipment, Loading or Unloading.**—Before any explosive is brought into the Harbour for shipment or is transhipped from one vessel to another vessel or is loaded into or unloaded from any vessel, the Owner shall give notice to the Harbour Master and shall inform him of the nature and quantity of such explosive and of the time when, and the place where, it is intended to carry out such shipment, transshipment, loading or unloading.

11. **General Rules for Loading and Unloading.**—The following General Rules in regard to the loading or unloading of explosives into or from vessels in the Harbour shall be duly observed:—

- (a) No explosive shall be loaded from, landed at, brought into, or deposited upon any quay, wharf, jetty, landing stage, shed, warehouse, building, or other place, except such place as the Harbour Master shall from time to time direct.
- (b) During the loading or unloading of explosive there shall be no fires or artificial lights on board the vessel or vessels into or from which explosive is being loaded or unloaded, or in the vicinity of the explosive at the place where such loading or unloading is being carried on.

Provided that this Bye-Law shall not prevent the use of an electric lighting installation or a safety lamp of a construction approved by the Harbour Master, nor of ships riding or signal lights so disposed as to prevent any risk of fire or explosion.

Provided also that this Bye-Law shall not be held to apply to engine room fires when the same have been previously carefully banked.

- (c) No smoking shall be allowed at or near the place where explosive is being loaded or unloaded, and no person engaged in such loading or unloading shall carry fuzees, matches, or any appliances whatsoever for producing ignition.

*A copy of the List of Authorised Explosives may be obtained on application to H.M. Inspector of Explosives, Home Office, Whitehall, London, S.W.

- (d) No person engaged in loading or unloading explosive shall wear boots or shoes with iron nails or shod or strengthened with iron, unless such boots or shoes are covered with leather, india-rubber, felt or other material, in the form of overshoes or otherwise.
- (e) No person under the influence of drink shall be allowed on board any vessel into or from which the explosive is being loaded or unloaded, or shall be permitted to approach such explosive while in the course of being loaded or unloaded.
- (f) In loading or unloading explosive no package containing the same shall be thrown down or roughly handled, and where a package is to be slung due precaution shall be taken to sling the same in such a manner as effectually to prevent the possibility of a fall.
- (g) No explosive shall be placed on any wharf quay, or jetty, until the vessel or carriage by which the same is to be removed therefrom shall be at the place in readiness to receive the same. When the loading or unloading of explosive has been commenced, such loading or unloading shall be proceeded with, with due diligence.
- (h) The wharf and stages, and the hold, gangways and decks of any vessel into or from which explosive has been or is to be loaded or unloaded shall be carefully cleaned and swept immediately before and after such loading or unloading.
- (i) If any explosive shall escape from the package in which it is contained, or be spilt, such explosive shall immediately be carefully collected and destroyed.
- (j) During the whole of the time when explosive is being loaded into or unloaded from any ship, there shall be present an Officer of such ship specially charged with the supervision of such loading and unloading.
- (k) Cushions of leather stuffed with oakum, or of such description as may be approved by the Harbour Master, shall be provided and used in the loading and unloading of explosive to protect the packages containing the same from concussion, in such manner as the Harbour Master may direct.
- (l) While the loading or unloading of explosive is being carried out, all persons engaged in such loading or unloading shall take all due precautions for the prevention of accidents by fire or explosion, and for preventing unauthorised persons from having access to the explosive, and shall abstain from any act which tends to cause fire or explosion and is not reasonably necessary for the purpose of such loading or unloading; and shall use every reasonable endeavour to prevent any other person from committing any such act, and any such other person who, after being warned, commits any such act shall be deemed to commit a breach of this Bye-Law.
- (m) The loading and unloading of explosive shall not be carried out except between the hours of sunrise and sunset.

Provided that where the Harbour Master shall consider any one or more of the General Rules contained in this Bye-Law unnecessary for ensuring the safety of life and property in the case of the loading or unloading of any particular explosive or of any particular cargo or consignment of explosive, he may in writing exempt the Owner of such consignment of explosive from compliance with such General Rule.

12. General Rules for Stowing of Explosive.—The following General Rules in respect of the stowing of explosive in any vessel in the Harbour shall be duly observed, and no vessel in which explosive is stowed otherwise than in accordance with these Rules shall enter the Harbour.

- (a) Before any explosive is stowed in any vessel, the hold or other place of stowage shall be free from grit and otherwise clean.
- (b) There shall be no iron or steel in the interior of the hold or other place of stowage unless the same be covered, either permanently or temporarily, with leather, wood, cloth, wadmiltit, or other suitable material.
- (c) At all times when not being loaded or unloaded, explosive shall be protected from fire from without, either by being stowed in the hold of a vessel with hatches closed, or by being completely covered by painted cloth, tarpaulin, wadmiltit, or other suitable material.
- (d) Any explosive of the following classes:—
 - I. The Fifth (Fulminate) Class;
 - II. The Sixth (Ammunition) Class, Divisions I and III (containing its own means of ignition);
 - III. The Seventh (Firework) Class;shall not be stowed in the same vessel with any explosive not of the same Class and Division, unless it be sufficiently separated therefrom to prevent any fire or explosion which may take place in one such explosive being communicated to another.

Explosives of Classes I to IV and of Class VI, Division II, may be stowed together provided that in the cases of explosives of Class VI, Division II, in which there is exposed iron (e.g., Filled Shells), such explosive shall not be stowed in such a manner as to allow of such exposed iron coming in contact with any other explosive or with any case containing the same.

- (e) Explosive may not be stowed in any vessel carrying as cargo Matches, Petroleum as defined by the Petroleum Act, 1871, whether or not Petroleum to which that Act applies, Carbide of Calcium, Spirits, Mineral Acids or other articles or substances liable to cause fire or to give off inflammable vapour or to affect injuriously such explosive, unless such precautions are taken by provision of a bulkhead or otherwise as shall effectually prevent danger to the explosive from such article or substance or from the vapour thereof.
- (f) The place of stowage of explosive exceeding 100 lbs. in weight shall be constructed or fitted in such manner as may from time to time be directed by the Board of Trade.

Provided that where the Harbour Master shall consider any one or more of the General Rules contained in this Bye-Law unnecessary for ensuring the safety of life and property in the case of the stowing of any particular explosive, or of any particular cargo or consignment of explosive, he may in writing exempt the Owner from compliance with such General Rule.

13. Matches.—In any vessel or carriage containing explosive no matches other than safety matches shall be kept for use, and such safety matches shall be kept in a safe place apart from the explosive.

14. Packing and Marking.—All explosive brought into the Harbour shall be packed and marked as required by the Explosive Act, 1875, or any Orders made thereunder and in force for the time being.

15. Vessels Plying for Passengers.—No explosive exceeding 5 lbs. in weight of Classes I to IV, or Class VI, Division II, or of Class VII, and no explosive of Class V or of Class VI, Division III, shall be brought on to or conveyed in any vessel whilst carrying or plying for public passengers, and where any explosive not prohibited by this Bye-Law is carried on such vessel, all due precautions for the prevention of accident by fire or explosion shall be observed.

16. Loaded Firearms.—No Cartridge loaded into a firearm shall at any time be present on any vessel whilst carrying or plying for public passengers.

17. Repairs to Vessels.—Before any repairs or alterations are to be carried out in any part of a vessel in which explosive has been stowed, all due precaution shall be taken to remove all explosive and any remnant of the same before repairs or alterations are commenced.

18. Quantity in any one Vessel.—The weight of explosive in any one vessel shall not exceed 2,000 lbs. unless the vessel have a deck which can be so closed as effectually to protect the explosive against accident from fire from without, and the weight of explosive conveyed or stowed in any one boat shall not in any case exceed 50,000 lbs.

19. Distances between Vessels.—When two or more vessels contain explosives to an amount exceeding in the aggregate the amount allowed to be contained in one boat by the preceding Bye-Law, a distance of not less than fifty yards shall be maintained between such vessels, except during transshipments, and unless in the opinion of the Harbour Master, it is impracticable to maintain such distance.

20. Control of Vessels.—Every ship having explosive exceeding 100 lbs. in weight on board as cargo shall at all times have a sufficient crew on board and a proper watch kept, and every boat having any explosive on board shall at all times be in charge of some person who shall attend to and conduct the same with due care, skill and diligence. No person who is intoxicated shall have charge of any such boat or shall be permitted to be on or attending the same.

21. Conveyance by Rail and Road.—Explosive which is conveyed in the Harbour by rail shall be so conveyed in accordance with the Bye-Laws of the Railway Company on whose system the explosive has been or is to be conveyed; and explosive which is conveyed in the Harbour by roads shall be so conveyed in accordance with an Order of Secretary of State, made under the Explosives Act, 1875, in respect of such conveyance, and in force for the time being.

22. All steamers passing vessels which bear the signal required by Bye-Law 5 shall keep at the safest distance practicable.

23. Due Precautions.—All due precautions shall be taken in respect of any explosive in the Harbour to prevent accidents by fire or explosion, and to prevent any unauthorised person having access to the explosive.

24. Exemption for Explosive to be used in Harbour Works.—These Bye-Laws shall not apply to explosive not exceeding in weight 500 lbs. brought into or conveyed in the Harbour for immediate use therein, provided that such explosive is at all times subject to regulations made by the Harbour Master or other Officer duly appointed by the Harbour Authority, and that such use shall be only for the purposes of or shall be carried out with the consent of the Harbour Authority.

25. Facilities for Inspection.—The Owner shall when so required by the Harbour Master, or other Officer duly appointed by the Harbour Authority, or by any Police

Constable, show to such Officer or Constable all explosives under his control, or upon his vessel, and shall afford every reasonable facility to enable such Officer or Constable to inspect and examine such explosive and to ascertain whether these Bye-Laws are duly observed.

26. **Penalties.**—These Bye-Laws are supplemental to the Explosives Act, 1875, and in the event of any breach (by any act or default) of any of them, or any attempt to commit such breach, the following penalties and consequences will be incurred and ensue (that is to say):—

Pecuniary penalties not exceeding £20 for each offence, and £10 for each day during which the offence continues, and forfeiture of all or any part of the explosive in respect of which, or found in the ship, boat or vehicle in respect of which the offence has taken place.

Given under the Common Seal of the London and North Eastern Railway Company this TWENTY-THIRD day of JUNE, 1925.

THE COMMON SEAL of the London and North Eastern Railway Company was hereunto affixed in the presence of:—

P. J. DOWSETT
Assistant Secretary.

L.S.

The Minister of Transport hereby sanctions the foregoing Bye-Laws.

Signed on behalf of the Minister of Transport this FIRST day of JULY, 1925.

E. W. ROWNTREE
Assistant Secretary

SCHEDULE

The limits of the jurisdiction of the London and North Eastern Railway over the Lowestoft Harbour extend to and include the Harbour and the Station Wharves and property of the Company facing the Harbour or the River Waveney flowing into the same. (Great Eastern Railway (Capital) Act, 1865, Section 12.)

PETROLEUM (CONSOLIDATION) ACT, 1928

BYE-LAWS

Made by the Railway Executive with respect to the discharging, loading, etc., of Petroleum Spirit and Carbide of Calcium at Lowestoft Harbour.

1. **Application.**—These Bye-Laws shall apply to all parts of the Harbour of Lowestoft (hereinafter called “the Harbour”) within the jurisdiction of the Harbour Authority.

Such Bye-Laws shall come into operation on the expiration of fourteen days after the date of the confirmation thereof by the Minister of Transport, as from which date all previously existing Bye-Laws under the Petroleum Acts relating to the Harbour are hereby revoked.

2. **Interpretation.**—The expressions contained in these Bye-Laws shall have the meanings respectively assigned to them in the Petroleum (Consolidation) Act, 1928, and in this Bye-Law.

“Petroleum Spirit” shall have the meaning assigned to it in Section 23 of the Petroleum (Consolidation) Act, 1928.

“Petroleum Ship” shall mean any ship having on board or about to take on board a cargo the whole or any part of which consists of Petroleum Spirit, or having discharged Petroleum Spirit if the holds and tanks have not been rendered free from inflammable vapour to the satisfaction of the Harbour Master.

“Petroleum Barge” shall mean a petroleum ship being a barge, lighter or similar vessel.

“Owner” shall mean the Owner or Master of the Petroleum Ship or the Owner of the Petroleum Spirit as the case may require.

“Harbour Authority” shall mean the Railway Executive or other Executive of the British Transport Commission to whom the functions of the said Commission in relation to the Harbour have for the time being been delegated in pursuance of Section 5 of the Transport Act, 1947.

“Harbour Master” shall mean the Harbour Master or other Officer duly appointed by the Harbour Authority to act in such capacity or any person having authority so to act.

“Quay” shall mean any quay, pier, jetty, wharf, landing stairs, shore or other loading or discharging place within the Harbour.

PART I

PETROLEUM SPIRIT

3. **Red Flag or Light.**—The Master of every Petroleum Ship shall, on entering the Harbour, and during the time that such ship remains in the Harbour, display by day a red flag not less than three feet square, with a white circular centre six inches in diameter, and by night a red light, at the masthead or where it can be best seen

but not less than twenty feet above the deck and of such a character as to be visible all round the horizon at a distance of at least two miles, in addition to any navigation lights which may be required by any other Regulations, Rules or Bye-Laws.

Provided that in the case of a petroleum barge which cannot normally comply with this Bye-Law the Master shall display by day in a conspicuous position above the deck a red flag of metal not less than eighteen inches square with a white circular centre six inches in diameter and by night an all-round red light.

4. **Notice.**—The Owner of every Petroleum Ship, on entering the Harbour, shall without delay inform the Harbour Master of the quantity of Petroleum Spirit on his ship and of the manner in which such Petroleum Spirit is stowed.

5. **Berthing of Ship.**—The Master of every Petroleum Ship shall anchor or moor his ship only at such place as the Harbour Master shall from time to time direct, and shall not remove his ship therefrom, without the permission or the written order of the Harbour Master.

6. **Loading or discharging of Petroleum Spirit.**—The following requirements with respect to the loading or discharging of Petroleum Spirit within the Harbour shall be duly observed:—

- (a) Before any Petroleum Spirit is loaded or discharged the Owner shall give due notice to the Harbour Master of the time and place of such loading or discharging.
- (b) No Petroleum Spirit shall be loaded or discharged at any Quay other than such Quay as the Harbour Master shall from time to time direct.
- (c) Before any Petroleum Spirit contained in casks, barrels or other containers, is discharged, the holds of a Petroleum Ship having on board such containers shall be thoroughly ventilated. After all Petroleum Spirit has been removed from any Petroleum Ship, the holds and tanks shall be rendered free from inflammable vapour.

Provided that this Bye-Law shall not be deemed to require to be free from inflammable vapour the tanks of a Petroleum Ship which leaves the Harbour without delay after the discharge of Petroleum Spirit, or remains only for the purpose of taking on board bunkers, stores or ballast, or for such other purposes as may be approved by the Harbour Master and of which the tanks are closed down immediately after the discharge of such Petroleum Spirit, and are not re-opened whilst the Petroleum Ship is within the Harbour, except with the permission of the Harbour Master, and provided also that this Bye-Law shall not be deemed to require the cargo tanks of a petroleum barge, which have been closed down immediately on completion of discharge, to be free from inflammable vapour before proceeding to another berth within the limits of the Harbour for the purpose of loading without unreasonable delay cargo of a similar nature.

- (d) The rigging of hoses, the loading or discharging and the disconnecting of hoses shall not be permitted between sunset and sunrise unless:—
 - (i) Adequate safe illumination is provided on board the ship, the equipment used for such illumination to be designed and constructed in accordance with Lloyd's Register of Shipping or other approved Classification Society's requirements in relation to the position in the ship in which it is installed and maintained in accordance with such requirements; and/or
 - (ii) Safe lighting in accordance with Bye-Law No. 7 is provided on shore adequately to illuminate the ship when alongside the Quay.

Should anything occur during discharging or loading between sunset and sunrise to necessitate a repair to the plant pipes or connections or to interfere in any way with the uninterrupted discharging or loading of the Petroleum

Spirit discharging or loading shall be temporarily suspended and not resumed until adequate safety measures have been taken.

- (e) From the time when the holds or tanks of a Petroleum Ship are first opened for the purpose of loading or discharging Petroleum Spirit until such time as all Petroleum Spirit shall have been loaded into or removed from such holds or tanks, and the holds or tanks shall have been securely closed down and in the case of discharging, rendered free from inflammable vapour, as required by this Bye-law, there shall be no fire or artificial light on board such ship.

Provided that this Bye-Law shall not prevent the use of lamps, heaters, cookers or other apparatus electric or otherwise designed and constructed in accordance with Lloyd's Register of Shipping or other approved Classification Society's requirements in relation to the position in the ship in which it is installed, and maintained in accordance with such requirements, and provided also that this Bye-Law shall not be deemed to prohibit the loading or discharging of a Petroleum Ship under conditions approved by the Harbour Master by means of steam from her own boilers, power generated on board by electrical plant or internal combustion engines, designed, constructed, installed, positioned and maintained in accordance with the requirements of Lloyd's Register of Shipping or other approved Classification Society's requirements, or by steam or electric power supplied from the shore and connected by equipment which shall comply with such requirements and with the following requirements related to electrical equipment, where these are additional:—

- (1) The connection between the shore cable and the ship shall be made by means of a connection box designed, constructed, positioned and maintained in accordance with Lloyd's Register of Shipping or other approved Classification Society's requirements.
- (2) The cable shall be flexible tough-rubber sheathed type in accordance with B.S.7.
- (3) Means, as by a changeover switch or suitable inter-locking device, shall be installed at the ship's switchboard to prevent the shore supply from being connected to the ship's switchboard while this is connected to the ship's generating plant.
- (4) All electrical equipment used in or in connection with the shore supply to the ship shall be maintained in such condition as to prevent danger from electric shock or fire.
- (f) The Owner shall take adequate steps to prevent any person under his control from smoking at or near the place where Petroleum Spirit is being discharged or loaded, and to prevent any person engaged in such discharging or loading from carrying fuzees, matches, or any appliance whatsoever for producing ignition.
- (g) Petroleum Spirit contained in casks, barrels or other containers shall not be discharged or loaded in the Harbour, unless such containers are staunch and free from leakage and are of such strength and construction as not to be liable to be broken or to leak except in case of gross carelessness or extraordinary accident. Provided that any defective containers may be discharged with the approval of the Harbour Master and under such conditions as he may direct.
- (h) All openings from cargo tanks to the atmosphere, except the gas escape line shall, save with the special permission of the Harbour Master be kept closed during the loading or discharging of Petroleum Spirit on board a Petroleum Ship, except that ullage plugs or sighting ports may be removed for taking dips or samples, such ullage plugs or sighting ports to be closed immediately this has been done, unless such openings are adequately protected by strong non-corroding wire gauze which shall be kept clean and free from obstruction, of mesh not less than 28 to the linear inch and of gauge not less than 28 S.W.G. or other flameproof device approved by Lloyd's Register of Shipping or other approved Classification Society.

PART II
CARBIDE OF CALCIUM

(which, under an Order in Council, dated the 5th November, 1929, made under the Petroleum (Consolidation) Act, 1928, comes within the provisions of that Act.)

- (i) All pipes and other appliances used in the loading or discharging of Petroleum Spirit in bulk shall be reasonably free from leakage. All pipe lines and hoses shall whilst rigged for loading or discharging Petroleum Spirit, be adequately and continuously earthed and kept constantly under supervision.
- (j) When the discharging or loading of Petroleum Spirit has been commenced such discharging or loading shall be proceeded with with due diligence, and if it is discontinued the tanks and holds of the Petroleum Ship shall immediately be closed.
- (k) No Petroleum Spirit contained in casks, barrels or other containers shall be discharged at any Quay until the ship or carriage by which the same is to be removed therefrom shall be at the place in readiness to receive the same, and all Petroleum Spirit discharged in the Harbour shall be forthwith removed therefrom, or to some duly licensed place of storage.
- (l) No Petroleum Spirit shall be brought to the place of loading until the Petroleum Ship into which it is to be loaded is in readiness to receive the same.
- (m) No Petroleum Spirit shall be discharged or allowed to escape into the waters of the Harbour.
- (n) The Owner shall take all due precautions for the prevention of accident by fire in discharging or loading Petroleum Spirit.
- (o) Iron or steel hammers or other instruments capable of causing a spark shall not be used for the purpose of opening or closing the hatches or tank lids of a Petroleum Ship.

7. Fires, Lights and Electrical Apparatus not to be used on or near Quay.—Fires, lights or electrical apparatus other than electric filament lamps or self-contained electric lamps, heaters, cookers, or other types of safe apparatus, so designed, constructed and maintained as to be incapable of igniting inflammable vapour, shall not be used on or near the Quay at which Petroleum Spirit is being discharged or loaded, or upon which Petroleum Spirit is lying.

8. Distance between Ships.—All Petroleum Ships shall when moored or anchored lie singly and there shall be maintained a clear space of not less than 100 feet of water-way between any such petroleum ships and any steam vessel. Provided that this Bye-Law shall apply to petroleum barges only so far as practicable and shall not apply to petroleum barges in charge of a tug when moored or anchored on account of fog, mist, falling snow, heavy rain storms or other exceptional causes affecting visibility or to petroleum barges when lying alongside a quay and actually discharging or loading and shall not prevent any vessel lying alongside a Petroleum Ship with the consent of the Harbour Master for the purpose of being laden or discharged and shall not apply to petroleum barges lying at approved moorings.

9. Watchman.—Every Petroleum Ship shall be watched by a competent person on board such ship until all Petroleum Spirit shall have been discharged or loaded and the holds, tanks or vents securely closed and every Petroleum Ship shall at all times have on board a responsible person to carry out and give effect to the provisions of these Bye-Laws.

10. Fire-fighting Appliances.—All Petroleum Ship and shore fire-fighting appliances shall be kept ready during the operation of loading and discharging Petroleum Spirit.

11. Inspection.—The Owner shall, when so required by the Harbour Master, or other official authorised by the Harbour Authority, afford every reasonable facility to enable such official to ascertain whether these Bye-Laws are duly observed.

12. Notice.—The Owner or Master of every sea-going ship carrying a cargo, any part of which consists of Carbide of Calcium shall, on entering the Harbour immediately give notice of the nature of such cargo to the Harbour Master, and shall place or moor his ship in such place as the Harbour Master may direct; and while any Carbide of Calcium remains on board, shall not remove his ship without the written permission of the Harbour Master.

13. Ventilating Hold.—Every ship's hold in which Carbide of Calcium is present, and from which Carbide of Calcium is to be discharged in the Harbour, shall be efficiently ventilated from the time of entering the Harbour until all such Carbide of Calcium has been discharged or until the ship has left the Harbour; and every ship's hold into which Carbide of Calcium is to be loaded shall be similarly efficiently ventilated from the time loading commences until the ship leaves the Harbour.

14. Removal after Discharging.—All Carbide of Calcium discharged from any ship shall be removed without unnecessary delay to some duly licensed place of storage or beyond the limits of the jurisdiction of the Harbour Authority.

15. Carbide of Calcium not to be brought to place of loading until ship is ready.—No Carbide of Calcium shall be brought to the place of loading until the ship into which it is to be loaded is in readiness to receive the same.

16. Conveyance in Closed Containers.—Carbide of Calcium shall be brought into the Harbour only in hermetically-closed metal containers of such strength and construction or so protected as not to be liable to be broken or to become defective or insecure in conveyance otherwise than by gross negligence or extraordinary accident.

17. Where Package may be Opened.—No containers of Carbide of Calcium shall be opened within the limits of the jurisdiction of the Harbour Authority except in some licensed place of storage or with the written consent of the Harbour Master in such place as he may direct.

18. Precaution against Water.—Every reasonable precaution shall be taken to prevent the contact of water or moisture with the Carbide of Calcium, and where such contact may have occurred, to prevent the gas evolved from being ignited.

19. Watchman.—Every ship having Carbide of Calcium on board shall at all times whilst in the Harbour have on board a competent watchman and a responsible person to carry out and give effect to the provisions of these Bye-Laws.

20. **Inspection.**—The Owner or Master of the ship or the Owner of the Carbide of Calcium shall, when so required by the Harbour Master, or other official authorised by the Harbour Authority, afford every reasonable facility to enable such official to ascertain whether these Bye-Laws are duly observed.

Given under the Common Seal of the }
Railway Executive this FIFTH day of }
DECEMBER, 1952:—

No. 5815

D. WATSON
Member

E. G. MARSDEN
Secretary

The Ministry of Transport hereby confirms the foregoing Bye-Laws.

Signed on behalf of the Minister of Transport this SIXTEENTH day of DECEMBER, 1952.

S. R. WALTON
Assistant Secretary

Attention is drawn to Section 8 of the Petroleum (Consolidation) Act, 1928, requiring notice of the nature of the cargo of a ship carrying petroleum spirit to be given to the Harbour Authority. The notification to the Harbour Master required by Bye-Law 4 above will be accepted by the Harbour Authority as the notice required by that Section.

N.B. The Petroleum (Consolidation) Act, 1928 (Section 7) provides as follows:—

- (5) If it appears to a Harbour Master or to any person acting under the orders of a Harbour Authority that any ship or any Petroleum Spirit is in a place in which it ought not in accordance with any such Bye-Laws as aforesaid, to be, he may cause it to be removed so as to be in conformity with the Bye-Laws, and any expenses incurred by the Harbour Authority in connection with any such removal may be recovered summarily as a civil debt from the Owner of the ship or of the Petroleum Spirit, as the case may be.
- (6) In the event of any contravention of the requirements of any Bye-Law in force under this section, the Owner and Master of any ship in or in relation to which the contravention occurs, and, except in the case of a contravention in respect of the mooring of a ship, the Owner of any Petroleum Spirit in respect of which the contravention occurs, shall each be guilty of an offence and shall be liable on summary conviction thereof to a fine not exceeding fifty pounds for every day on which the offence occurs or continues:—

Provided that it shall be a good defence to proceedings for any such offence to prove:—

- (a) if the proceedings are against the Owner or Master of a ship for an offence in respect of the loading or landing of Petroleum Spirit, that all reasonable means were taken by the Master to prevent the commission of the offence, and that the offence was not caused or facilitated by any act or neglect on the part of the Owner or of any person engaged or employed by the Owner or Master; and
- (b) if the proceedings are against the Owner of Petroleum Spirit for an offence in respect of the loading or landing thereof, or in respect of any failure to observe precautions required to be observed with respect to ships carrying Petroleum Spirit whilst in Harbour, that the offence was not caused or facilitated by any act or neglect on his part or on the part of any person engaged or employed by him.

Appendix E - Information for Small Craft and Yachts Using Lowestoft Harbour and the Seaward Approaches to Mutford Lock

ASSOCIATED BRITISH PORTS LOWESTOFT

INFORMATION FOR SMALL CRAFT AND YACHTS USING LOWESTOFT HARBOUR AND THE SEAWARD APPROACHES TO MUTFORD LOCK:

1. ALL vessels must enter, leave and navigate in the harbour in accordance with the International Regulations for Preventing Collisions at Sea.
- 1(A) Small craft and yachts should give particular attention to "Narrow Channels" Rule No 9(b) "a vessel of less than 20 metres in length or a sailing vessel shall not impede the passage of a vessel which can safely navigate only within a narrow channel or fairway".
2. All vessels moving with the Port and its approaches must make every reasonable effort to establish and maintain contact with the Lowestoft Harbour Control on **VHF Channel 14**. If at all possible advise Port Control of the communication problems and intended passage plan by calling by telephone on +441502 572286
- 2(A) ANY vessel without radio contact must give particular attention to the harbour control lights and navigate with extreme caution in the vicinity of structures, which may mask their presence. They must also navigate with caution and give due regard to other vessels or small craft that may be unaware of their intentions.
3. ALL vessels must observe the international port traffic signals located on the South Pier, and in the Yacht Basin.
 - **Three vertical red lights** - vessels shall not proceed.
 - **Green, white, green vertical lights** - a vessel may proceed only when it has received specific orders to do so.
- 3(A) Small craft and yachts without VHF communication observing the green, white, green signal may proceed with extreme caution, those vessels in the Yacht Basin must contact the Port Control before departure.
- 3(B) Mariners should note that Port Control (located at the harbour bridge) and departing vessels within the Outer Harbour basin, have extremely limited vision to the north of the entrance piers and should conduct their navigation accordingly.
4. The Lowestoft Harbour Bridge (between the Outer and Inner Harbours) will only be opened on demand for commercial shipping over 50 gross tonnes. A minimum of 20 minutes notice is required to facilitate a commercial Bridge lift
- 4(A) Commercial shipping is discouraged from passage: **0815 - 0900** hours, **1230 - 1300** hours and **1700 - 1745** hours.
- 4(B) Small craft and yachts may use a bridge opening for commercial shipping provided that prior arrangement has been made with Lowestoft Harbour Control - VHF Channel 14, telephone +441502 572286 or personal visit, subject to vessels proceeding in the same direction as the commercial vessel. Other vessels wishing to pass through the bridge from the opposite direction will have to wait for the next advertised small craft opening time.
- 4(C) In addition to 4(B) and subject to prior notification of at least twenty minutes, small craft and yachts may be given a bridge opening at the following times:
Monday – Friday: - 0300, 0500, 0700, 0945, 1115, 1430, 1600, 1900, 2100, 2400.
Sat. Sun. Bank Holidays: - 0300, 0500, 0700, 0945, 1115, 1430, 1600, 1800, 1900, 2100, 2400.
- 4(D) A waiting pontoon for small craft and yachts is available in the east end of the Trawl Dock for vessels waiting a bridge lift. All vessels must maintain a listening watch on **VHF14** and follow instructions from Port Control. Failure to maintain a close listening watch may mean missing the advertised lift. **If late for a bridge lift inform the Bridge operator, as soon as possible.**
5. Navigation in the bridge channel is controlled by VHF advice with additional red and green traffic control signals when the bridge is operated. Vessels must not proceed through the bridge until the leaves are fully raised AND the green traffic lights are exhibited on the North side of the Bridge Channel
- 5(A) Small craft and yachts in a flotilla situation should make every effort to co-ordinate their movements with Lowestoft Harbour Control, 'close up' and ensure that the time taken to transit the bridge channel is reasonable, safe and kept to the minimum. Once the bridge has been lifted the red lights on the east and west side may both be switched to green, allowing inwards and outwards movements at the same time. Should a light remain red, a vessel must not proceed until instructed by the bridge operator, keeping clear of vessels using the main channel.

NOTE: Long bridge openings make it difficult to preserve the facility from pressures of road traffic and in consequence bridge operators are instructed not to wait for stragglers, subject to not impeding safety of navigation.

6. Small craft passing under the bridge have a clearance of 2.2 metres at mean high water springs (approximately 2.4 metres on the tide gauge) with a reduction of 0.5 metres for the arch sides. Vessels able to drop masts and aerials and which can pass under the bridge, must do so, once they have received permission from Port Control
7. **The maximum permitted speed in the harbour is 4 knots.**
8. Water skiing activities and the use of jet bikes or jet skis in the harbour area is subject to written permission.
9. General port details may be obtained from Admiralty Chart No 1535, which is generally updated every year.
- 9(A) Visitor Moorings:
 - Lowestoft Haven Marina – School Road +441502 580300,
 - Royal Norfolk & Suffolk Yacht Club – +441502 566726,
 - Lowestoft Cruising Club (occasional) - +447913 391950,
 - Oulton Broad Yacht Station – +441502 574946.
- 9(B) Vessels approaching from the sea must contact Lowestoft Port Control on **VHF 14** prior to entry into the Harbour. This should be done 2 cables from the harbour entrance. A vessel requiring a bridge lift may be directed to wait in the bridge channel or on the waiting pontoon in the east end of the Trawl Dock. **VHF 14** must be monitored at all times when waiting for a bridge or when on passage in the harbour.
Lowestoft Haven Marina (LHM) is situated on the south side of Lake Lothing 400 metres from Mutford Lock. Vessels requiring a berth must call Lowestoft Haven Marina which maintains a listening watch on **VHF 80 and 37**. Before leaving Lowestoft Haven Marina on passage to sea contact the Port Control on **VHF 14** for details of vessel movements and remain on this channel until clear of the Harbour entrance. Keep to the 4 Knot speed limit, allow a minimum of 25 minutes passage time from the LHM to the Bridge. Vessels Observed breaking the speed limit will be refused a bridge lift until the next advertised small craft opening.
- 9(C) Traffic signals for vessel movements between the Bridge channel and the Yacht Basin are controlled for departing vessels only. Due to the restricted visibility and manoeuvring room, vessels must at all times contact the Port Control before departure on **VHF14**, telephone +441502 572286 or personal visit.
 As there are no controlling lights for vessels entering the Yacht Basin, vessels exiting this basin must proceed with extreme caution, even when the green white green lights are shown for departure from the Yacht Basin.
10. The mooring of small craft or yachts alongside any property owned by Associated British Ports is only permitted with the permission or direction of the Harbour Master, and may attract a charge in accordance with the published tariff.
11. All small craft / yachts are strongly advised to obtain the latest weather information before proceeding to sea.
12. Lifejackets should be worn at all times when on passage in Lowestoft Harbour and when at sea.

MUTFORD LOCK AND OPENING BRIDGES

Transit bookings by telephone +441502 531778 Lock or +441502 574946 Oulton Broad Yacht Station or VHF Ch. 73

Mutford Lock, connecting the Lowestoft Inner Harbour with Oulton Broad, is operated daily under the direction of the Broads Authority and provides a point of access to approximately 120 miles of navigable inland waterways.

The Lock, with safe usable dimensions of 22 metres x 6.5 metres, has a water depth of 2 metres plus tidal variations and should only be used by craft suitable for the water depths of Oulton Broad. Non-local craft with a draft exceeding 1.7 metres should seek advice from Mutford Lock staff and consider the Oulton Broad tide, which is approximately three hours after Lowestoft with a mean range of 0.7 metres.

Mutford Road Bridge, adjacent to the Lock, has a clearance of 2.1 metres at mean high water springs (approximately 2.4 metres on the Lowestoft tide gauge) and it is therefore advisable for all craft requiring an opening to make an advance booking and to be prepared to wait. Such bookings will automatically include the Railway Bridge located close eastward. VHF Channels 73, and 14 are monitored on an occasional basis by Mutford Control, which is attended daily in response to bookings and at the following times: a) **Weekly April to October:** 0800-1800 b) **Fri/Sat/Bank Holidays May-September:** Any vessel wishing to use Mutford between 1800-1930 must give notice on VHF or telephone before 1700 on that day c) **Weekly Nov-March** 0800-1100 (Pre-booking advisable).

- NOTES: 1. A charge of £13.00 is levied for each lock transit or day return – (subject to review)
 2. Broads tolls are payable in addition to the inward lock transit depending on length of stay.
 3. Craft entering with a fixed air draft of more than 7.3m are confined by fixed bridges to the River Waveney.
 4. Local maps and publications are recommended.
 5. Mutford Road Bridge, Lifting Restrictions : Prior to 0900, 1200-1300, 1700-1800.
 6. Railway Bridge may be delayed swinging due to late arrival of trains.

USE OF JETSKIS – LOWESTOFT HARBOUR

The Lowestoft Harbour Bye-laws 1993 - No. 10 states:-

'Water ski-ing, boardsailing and the use of jetbikes or jetskis in the Harbour area, may take place only where expressly permitted in writing by the Harbour Master'.

In order to obtain written permission from the Harbour Master, the following criteria must be met before a decision is made on allowing an applicant in the Harbour area with a jetski or jetbike.

- The Port does not operate a launching slipway, so written proof of an agreement with a berth owner or operator, is needed where the jetski is to be launched.
- There must be hand-held VHF onboard the vessel to monitor traffic and call the Port Control on VHF Channel 14 when launching, approaching the Bridge and entering and berthing the Harbour.
- Jetski to proceed from its launch slipway directly to sea, keeping to the speed limit of 4 knots and observing all traffic signal lights in the Harbour and directions from the Bridge Operator.
- Mooring of jetskis in the Harbour alongside ABP quays or vessels berthed in the Harbour is strictly prohibited unless prior agreement is obtained from the Bridge Control or vessel owner.
- Details of jetski and any distinguishing features to be registered with the Harbour Master.
- Jetskis to be in sound and good mechanical condition.
- Lifejackets are to be worn by all riders.
- Written evidence of adequate insurance cover must be provided and maintained.

Written permission will be provided by the Harbour Master, if he is satisfied that the above conditions will be met. A.B.P. reserves the right to suspend or revoke any permission if any of the above conditions are not kept, or if it is felt that on the grounds of safety, the passage of jet skis in the Harbour becomes a hazard to its owner or other Harbour users.

CAPTAIN G. HORTON

**HARBOUR MASTER
LOWESTOFT**

3rd December 2018