

# Code of Practice for Craft Towage Operations on the Thames



**PORT OF  
LONDON**  
AUTHORITY

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## INTRODUCTION

**This Code of Practice for Craft Towage Operations was published on 27/10/2021.**

**The Code aims to provide guidance and advice on craft towage on the tidal Thames. The term 'craft' in this context applies to a wide range of both routine and non-routine tows, including dumb barges, jack-ups, dead-ship vessels and many more.**

**The manoeuvring and towage in the tideway of large, unwieldy dumb barges - light or heavily loaded with various cargoes or equipment, or unusual project tows, is a specialist and skilled job. A good working knowledge of the river regime and environment, especially in the central London section, is essential, as is the knowledge and skill required to operate the tug and tow safely in a busy port area.**

**The Code is provided for the guidance of Tug Masters, tug crews and those involved or associated with craft towage operations. It may also be of interest to other river users in providing an insight into the specialist work, and in some cases, the navigational limitations of tugs and tows.**

**Save by practice of law, the Port of London Authority shall have no liability in respect of this Code of Practice.**

## SECTION 1 - RESPONSIBILITIES

### 1.1 VESSEL OPERATOR

Vessel operators should carefully note their responsibilities under Rule 2 of the International Regulations for Preventing Collisions at Sea (COLREGS). Additionally, Health and Safety at Work Regulations require employers to provide a safe working environment for all employees. This means setting out a clear Health and Safety Policy available to all crew, risk assessments for all tasks to be carried out and information relating to the duties of all crew members.

Considering this, it is prudent for vessel operators to Implement an effective Health and Safety Policy and operational Safety Management System of which all employees are aware.

It is the responsibility of the Vessel Operator to provide a safe working environment and to create a safety conscious culture ensuring all crew are correctly trained to undertake required duties.

### 1.2 TUG MASTER

The Master of a vessel at all times has responsibility for the safety of his/her vessel, crew and of any vessels being towed. The Master has the authority to make decisions affecting the safety and conduct of the tug, crew and any craft under tow. Due to the hazardous nature of towing, Tug Masters (and crew) should ensure that:

- All onboard pre-sail checks are completed before getting underway;
- Any risk assessments required are completed and applied before engaging in towage operations;
- All crew are fit, have correct PPE and are correctly trained for the task to be carried out;
- Crew are properly briefed on the work to be carried out;
- Good communication is established and maintained between the Tug Master and crew at all times during towage operations;
- Towing gear is in good condition and prepared for use (towing equipment should be inspected both before and after towage operations); and
- All watertight hatches and doors are kept closed whilst towaing to maintain the watertight integrity of the vessel(s).

### 1.3 TOW MASTER

A Tow Master must be appointed for all Non-Routine Towage Operations (See Section 3). The Tow Master must be a person suitably qualified and experienced to take on the role and must be identified and appointed by the principal Vessel Operator (towage contractor) before planning for the Non-Routine Towage Operation commences. The Tow Master (who may also be the Tug Master) has the following roles and responsibilities:

Co-ordinating the planning, preparation and rehearsal(s) for the towage operation;

- Developing a comprehensive operational risk assessment for the entire operation, and presenting it to the Harbourmaster;
- Preparing and submitting a passage plan and details of the towing configuration to the Harbourmaster;
- Determining the proposed manning and competency requirements for all personnel (excluding any Pilots) involved in the operation;
- Overall responsibility for the safety and the conduct (where no Pilot is embarked) of the towage operation and the passage; and
- Ensuring that a proper record and audit trail of the planning and approval process, and the operation itself, is maintained.

### 1.4 PILOT

Where a Pilot is allocated to a craft towage operation, the Pilot has the following role and responsibilities:

- Providing local knowledge, information and advice to the Tug Master and/or Tow Master;
- Notwithstanding the responsibilities of the Tug Master and/or Tow Master, taking conduct of the navigation of the tug and tow(s);
- Immediately advising the Harbourmaster on any aspects of the towage operation that give the Pilot cause for concern;
- Acting as the PLA's representative on board, undertaking a liaison role on behalf of the Harbourmaster as circumstances require; and
- Providing advice and support to the Harbourmaster in the planning, risk assessment and rehearsal(s) for any Non-Routine Towage Operations.

Notes:

In all cases, the Tug Master has the command of and is responsible for his vessel and crew.

## SECTION 2 – REGULATIONS AND OPERATIONAL REQUIREMENTS

### 2.1 OVERVIEW

Navigation on the tidal Thames, particularly in central London through the bridges, is always challenging. This is especially true for larger commercial vessels and without doubt for those towing or pushing barges or other craft.

The Port's marine safety management system recognises these issues and, as a result, the PLA has in place several restrictions and limitations on towage operations both in this central area and throughout the tidal Thames.

This Code does not seek to reproduce PLA regulations but simply to assist with the better understanding of them. All the regulations quoted here should be available onboard and understood by Tug Masters and crew.

### 2.2 PRINCIPAL REGULATIONS AND REQUIREMENTS

The principal regulations affecting the navigation of craft towage tugs that should be held onboard the vessel are:

- The Port of London Thames Byelaws - these set out detailed local requirements for operating vessels including modifications to the COLREGS, Reporting Incidents, Duties of the Master, Mooring and Berthing, Steering and Sailing, Light and Shapes, Sound Signals and Towing and Pushing rules.
- General Directions for Navigation in the Port of London - These contain more detailed instructions on the conduct of navigation; for example, the use of VHF and Special Signal Lights.
- Notices to Mariners – generally short-term duration, warning of events and construction works on the Thames that affect navigation through arch closures etc.
- PLA Tide Tables and Port Handbook – a useful pocket guide, which summarises much of the information above, and includes additional navigation information such as VHF Reporting Points.

### 2.3 PLA PILOTAGE REQUIREMENTS

Dependent upon the length overall of a Tug and Tow, the length of the towed object or the location of a tug and tow within the tidal Thames, some craft towage operations may be subject to compulsory pilotage requirements as required by the PLA's Pilotage Directions: <https://www.pla.co.uk/assets/pilotagedirections.pdf>

Dependent on the nature of the operation, some non-routine towage operations, which are not subject to compulsory pilotage under the Pilotage Directions, may be required by the Harbourmaster to take one or more pilots. Likewise, vessels engaged in Non-Routine Towage Operations which are subject to compulsory pilotage may be required by the Harbourmaster to take an additional pilot.

### 2.4 VESSEL LICENSING REQUIREMENTS

Craft towage tugs operating on the tidal Thames are required to be licensed under the Port of London Act 1968 (as amended). However, alternative national certification may also be accepted in lieu of PLA licensing. Vessels licensed by the PLA are inspected and licensed under the requirements of the Thames Freight Standard or the Inland Waters Small

Passenger Boat Code.

For further information please contact the PLA vessel licensing department, email: [vessellicensing@pla.co.uk](mailto:vessellicensing@pla.co.uk)

## 2.5 ANCHOR ARRANGEMENTS

All craft towage operations on the Thames should be provided with appropriate anchoring arrangements. In particular, tug and barge combinations that involve pushing ahead or towing alongside should be provided with an effective bow anchor or stern anchor. In most cases, during pushing and towing alongside operations, use of the tug's bow anchor would be inappropriate and either a bow anchor should be provided on the barge, in the event of pushing operations, or a stern anchor should be provided on the tug or barge when towing alongside.

## 2.6 ARRANGEMENTS ABOVE CHERRY GARDEN PIER

Tugs & barge combinations which involve pushing ahead or towing alongside, navigating above Cherry Garden Pier where the length overall of the tug and barge combination exceeds 50m, should be provided with both bow and a stern anchoring arrangements.

Operators of tugs and barges, where barges are towed astern of the tug above Cherry Garden Pier and the combined length of the tug and barges (excluding the towing medium) exceeds 50m, must submit a formal risk assessment to the PLA to address the anchoring arrangements of the tow combination. Operations will typically require stern anchors on towed barges unless a twin-screw tug is utilised, supported by an extensive engineering maintenance regime.

## 2.7 TOWING THROUGH THE THAMES BARRIER

Vessels navigating the Thames Barrier are allocated a span by London VTS at the Thames Barrier Navigation Centre. Whilst navigation through the main spans is relatively straight forward for most craft, difficulties can arise for vessels when negotiating a span where the adjacent gate is in the 'defence' position. This arrangement sets up eddies around the piers either side of the closed span, which can affect vessels transiting the adjacent spans, particularly tugs and tows and less manoeuvrable vessels.

When towing craft through the Thames Barrier, Tug Masters should ensure that:

- the tow is kept under close control, shortening the tow line if necessary;
- extra care is taken when passing through the Barrier; and
- when towing 3 or 5 barges, the craft are arranged with either 2 or 3 barges in the front rank, with the tow balanced by positioning the second rank (comprising either 1 or 2 barges respectively) centrally.

when towing through the Thames Barrier Tug Masters should be aware and take account of the increased tidal flow through the spans. Under normal conditions, without any spans in the defence or maintenance position, tidal flow typically increases by 0.5 knot above normal river conditions. This increases further when one or more of the spans are in the defence position, particularly when a span adjacent to the allocated span is in defence position, where tidal flows may increase by a further 1 knot.

When navigating against the tide through the Thames Barrier, Tug Masters must ensure that their vessels are capable of maintaining a safe speed through the water so as to have full

control of the tow and be able to pass through the Barrier safely. Tugs should typically be able to maintain a speed not less than 3 knots over the ground when navigating the Thames Barrier. When preparing a passage plan that includes a transit through the Barrier, Tug Masters should take into account the expected tidal conditions, predicted increase in tidal flow through the Barrier and the estimated speed of the tug and tow, to ensure that the vessel can safely navigate the Thames Barrier, before leaving the berth.

## 2.8 SIZE LIMITATIONS AND PROPULSION REQUIREMENTS ABOVE LONDON BRIDGE

The PLA together with industry, undertook a detailed navigational risk assessment of towing operations above London Bridge which particularly considered pushing and towing alongside operations. The risk assessment process led to the development of a matrix for the specific maximum length and beam of different towage configurations as well as minimum propulsion requirements. These requirements have been incorporated into Tables 1 & 2, which must be complied with for all tugs and tows routinely operating above London Bridge, unless excepted from the requirements by the Harbourmaster, on application.

Table 1 – Size Limitations and Manoeuvring Aid / Propulsion Tables for Pusher Tugs / Single Freight Vessels navigating between London Bridge and Putney Bridge

		LOA (Up to)											
		30	35	40	45	50		55	60	65	70	75	80
<b>Beam (Up to)</b>	5							A	B	C	C	C	C
	6							A	B	C	C	C	C
	7							A	B	C	C	C	C
	8							A	B	C	C	C	C
	9							A	B	C	C	C	C
	10							A	B	C	C	C	C
	11	A	A	A	A	A		A	B	C	C	C	C
	12	A	A	A	A	A		B	B	C	C	C	C
	13	A	A	A	B	B		B	C	C			
	14	A	A	A	B	B		B	C	C			
	15	A	A	A	B	B		C					
	16	A	A	A	C	C		C					
17	A	A	A	C	C								
18	A	A	A	C	C								

Required Manoeuvring Aids	Code
No aids	A
Single screw with bow thruster	B
Twin screw with / without bow thruster	C

Notes:

1. When navigating against the tide, when no swing or stern to tide berthing is required, a single screw tug is permitted.
2. There is a 75m LOA limit at Battersea Road Bridge, which reduces to 65m LOA when navigating with the ebb tide.

Table 2 – Size Limitations and Manoeuvring Aid / Propulsion Tables for Tugs towing alongside navigating between London Bridge and Putney Bridge

		LOA (Up to)											
		30	35	40	45	50		55	60	65	70	75	80
<b>Beam (Up to)</b>	5							A	A	A			
	6							A	A	A			
	7							A	A	A			
	8							A	A	A			
	9							A	A	A			
	10							A	A	A			
	11	A	A	A	A	A		A	A	A			
	12	A	A	A	A	A		A	A	A			
	13	A	A	A	A	A		A	A	A			
	14	A	A	A	A	A		A	A	A			
	15	A	A	A	A	A		A	A	A			
	16	A	A	A	A	A		A	A	A			
17													
18													

Required Manoeuvring Aids	Code
No aids	A

## WHEELHOUSE VISIBILITY – PUSHING OPERATIONS

Due to the number and density of small craft navigating above London Bridge it is vital that Masters of pushing vessels have adequate forward visibility to enable small craft to be sighted in sufficient time to take avoiding action. To ensure sufficient visibility the PLA has established minimum wheelhouse visibility requirements, which must allow for the Helmsman to see an object 1m in height at a distance of not more than 66m from the bow of the vessel – see figure 1.

Furthermore, tugs fitted with raising / lowering wheelhouses should be provided with an air draft indicator to provide information on current air draft

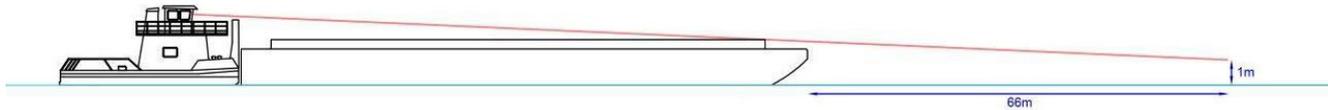


Fig 1 – Wheelhouse visibility requirements for tugs and tow navigating above London Bridge

## 2.9 USE OF RICHMOND LOCK AND WEIR

Where a tug and tow requires the transit of Richmond Lock & Weir, the safest course of action would always be to plan the passage carefully and arrive at Richmond Lock when the weirs are out; thereby avoiding the risks created by navigating through Richmond Lock with a tow.

Where it is necessary to navigate through Richmond Lock - or any lock on the tidal Thames - the passage and operation should be planned very carefully. A full navigational risk assessment should highlight all the potential risks and it is the Tug Master's responsibility to implement the necessary safety mitigation measures.

Examples of such measures may include:

- Shortening tow lines on approach to the Lock;
- Reducing speed to allow time to correctly line up with the Lock entrance;
- Consider use of a second tug to assist in manoeuvring into and out of the Lock; and
- Laying the tow on the piles on the approach to the Lock to stabilise the tow before entry into the Lock.

## SECTION 3 – NON-ROUTINE TOWAGE OPERATIONS

### 3.1 OVERVIEW

A Non-Routine Towage Operation is defined as any towage operation involving or likely to include a combination of two or more towing and/or pushing vessels in an arrangement not previously risked assessed and reviewed by the Harbourmaster. Unusual project tows, such as the towage of large dead-ship vessels will also be considered as a Non-Routine Towage Operation.

Where an intra-port operator has a safe history in respect of non-routine tows then the Harbourmaster may consider them to no longer be non-routine. For that operator a generic risk assessment and passage plan may be developed and accepted. In such circumstances a Tow Master must still be appointed, the towing vessel must have a remote release towing hook, the towing vessel be of greater bollard pull than the pushing tug.

The Operator or Tow Master of such a towage operation is required to provide the Harbourmaster with at least 5 working days advanced notice of the operation, where possible.

Where a Vessel Operator is in any doubt as to whether his planned towage operation should be classed as a Non-Routine Towage Operation, he must consult the Harbourmaster without delay, and at least 5 working days before any such towage operation is commenced. The Harbourmaster will decide whether a towage operation is to be classed as a Non-Routine Towage Operation and his decision is final.

Where operational availability allows, at the discretion of the Harbourmaster a shorter notification period may be permitted, provided the documentation is of an acceptable standard.

### 3.2 ACCEPTANCE OF NON-ROUTINE TOWAGE OPERATIONS

In situations where a proposed tow, either within or into or out of the Port is identified as a Non-Routine Towage Operation, the following procedure shall be adhered to:

The Vessel Operator must:

1. Advise the Harbourmaster, at least 5 days in advance, of the intended operation;
2. Appoint a Tow Master; and
3. Provide all necessary resources and support to the Tow Master in order to allow him to meet his responsibilities - see Section 1.1.

The Tow Master must:

1. Submit a comprehensive operational risk assessment for the entire operation to the Harbourmaster;
2. Submit an appropriate passage plan and details of the towing configuration to the Harbourmaster at least 5 days in advance of the operation; and
3. Ensure that a proper record and audit trail of the planning and approval process, and the operation itself, is maintained.

Where a Tow Master, following submission of the required documents, is unable to complete the proposed tow, an alternative duly qualified Tow Master may be substituted. In such cases, the alternative Tow Master must undertake a full review of the submitted documentation or otherwise amend and re-submit the documentation to the Harbourmaster for acceptance.

Items 1 and 2 above may be submitted by persons other than the Tow Master provided the appointed Tow Master then complies with requirements in respect of reviewing and if necessary, resubmitting the documentation.

The Harbourmaster will:

1. consider the submitted operational risk assessment, and may state requirements for change;
2. discuss the likely pilotage requirements with the Pilotage Department, including, where appropriate and/or feasible, the early allocation of a pilot or pilots to undertake the pilotage act;
3. consider the associated passage plan, and may state requirements for change;
4. if necessary, identify and require the need for one or more trials or simulations of the planned towage operation;
5. as and when content, indicate his acceptance of the documentation to the document submitter; and
6. involve and advise London VTS of the towage operation, as necessary.

## SECTION 4- CRAFT TOWAGE OPERATIONS TO AND FROM THE PORT

### 4.1 OVERVIEW

Tow Masters, Tug Masters and/or Ships' Agents are responsible for ensuring that the Harbourmaster is advised at least 5 working days in advance of the arrival of tug(s) and tow(s) at the outer port limits, or voyages from the port to beyond the port limits, in order to ensure that the following procedures and approvals can be undertaken. This includes the provision of a PLA Pilot, where necessary. Failure to ensure sufficient notice is provided is likely to result in the vessel waiting outside port limits or at the berth, with consequent delays to the towage operation. These requirements apply to all Tug and Tow operations entering or leaving the Port of London to or from Sea or the PLA port limits, whether or not the operation is defined as a Non-Routine Towage Operation.

### 4.2 REQUIREMENT TO PROVIDE INFORMATION

In order that a Tug and Tow's passage into or out of the tidal Thames is risk assessed to the satisfaction of the Harbourmaster and to assist any authorised Pilot allocated to the vessel in preparing his passage plan and to understand the nature and limitations of the towage operation, the Tug Operator or Master of such a towage operation is required to provide the following information to the Harbourmaster, at least 5 working days in advance of the tug's arrival at the port limits or departure from the berth.

The information may be provided directly or via the Ship's Agent. The provisional order for a Pilot (if required) will not be

accepted until all the information is provided to the Harbourmaster's satisfaction.

Where operational availability allows, at the discretion of the Harbourmaster, a shorter notification period may be permitted provided the full process, in accordance with section 4.3 is followed and the documentation is of an acceptable standard.

#### 4.3 INFORMATION REQUIRED

The following information will be required by the Harbourmaster:

- A completed Navigational Risk Assessment;
- A comprehensive Passage Plan for the operation;
- The name, position and direct contact details of the person in overall charge of the towage operation – the Tow Master;
- Details of the towing vessel(s), including length overall, draught, the type of propulsion, horsepower, bollard pull and details of any manoeuvring aids. This could be the vessel's fact/data sheet;
- The type and number of craft or items being towed, including full dimensions, draught characteristics and whether manned or not;
- The configuration and length of the tow, connection arrangements, towing medium and depth of the catenary, if applicable. Details are also required of the different towage configurations it is intended to utilise during the passage in the port e.g. in the estuary, lower river, central London or above bridges, as appropriate and for different weather conditions;
- Details of any additional supporting vessels involved in the operation within port limits (e.g. tug or workboat assistance) including vessel names, owner/operator and Master contact details, rendezvous points, change-over berth and agreed operational plans;
- Any restrictions or limitations of the vessels engaged in the towage operation e.g. maximum towing speed, weather limitations, if staging points are required due to depth or height restrictions on the passage etc.;
- A plan and arrangements for mooring, anchoring or securing the tow at its final (and any interim) destination in the port. Confirmation of a confirmed berth or anchorage in the port (for arriving vessels) and the name and contact details for the mooring providers;
- Details of all restrictions imposed by insurers on the towage operation; and
- Any other information deemed relevant by the Tug or Tow Master and/or requested by the Harbourmaster.

#### 4.4

Where a routine towage operation to or from sea, which does not require a pilot, is covered by an intra-port operator's generic passage plan and risk assessment, the operator will not be required to submit further information, as per 4.2-4.3 above.

Note:

For piloted vessels the passage plan will be discussed at the Pilot/Master exchange. If the Pilot has any concerns on boarding that the vessel cannot comply with the plan, or is otherwise concerned about the execution of the plan, the vessel may be prevented from starting or continuing its passage, as appropriate.

## SECTION 5 – PASSAGE PLANNING

### 5.1 IDENTIFYING THE RISKS

A thorough and detailed knowledge of the local marine environment and river regime goes hand in hand with safe navigation, particularly in a port such as London. It is important therefore that Tug Masters, in support of their background knowledge and experience, are fully aware of the potential risks to their vessel and tow and as a consequence develop and adopt a generic passage plan for towage and navigation in the port.

The safety benefits of passage planning are recognised throughout the marine world and further guidance on passage or

voyage planning can be found in SOLAS Chapter 5, Annexes 24 and 25.

## 5.2 CHARTS

Tugs should carry the appropriate, approved paper or electronic charts for their area of operation, corrected and in date. Recognising that standard charts are too cumbersome for convenient use in a cramped wheelhouse the PLA has produced an A2 sized colour chart folio that covers the tidal Thames from Teddington to Woolwich.

## 5.3 SURGE TIDE WARNINGS

When a surge tide (an exceptionally high or low tide outside predicted levels) is expected, river users will be warned immediately by London VTS on the routine half-hourly broadcast when the tide is greater than 0.3m above or below predicted levels. A tidal surge may cause a rise or fall up to 2.5m above or below prediction and may result in the closure of local tidal and defence, including the Thames Barrier. On receiving a surge tide warning, Tug Masters should be ready to modify their passage plans and especially to re-check their bridge and under keel clearances calculations.

## 5.4 WEATHER FORECASTS

Although much of the River Thames is comparatively well sheltered, Tug Masters need to be aware of the current local weather forecast, and in particular warnings of very strong winds, especially in more open waters when the tidal stream is running in the opposite direction to the wind.

## SECTION 6– TESTING, INSPECTION & MAINTENANCE OF TOWING EQUIPMENT

Before and after the completion of any tow, it is recommended that all towing equipment is thoroughly checked for defects and general wear. This should include both the towing equipment aboard the tug and also the towing equipment aboard the vessel to be towed. This should include the smooth and efficient action of the quick release system for the towing hook.

The results of the towing gear and equipment inspections should be recorded.

## SECTION 7 – FURTHER GUIDANCE AND ADVICE

Further guidance and advice can be found in the following publications:

- Code of Safe Working Practices for Merchant Seamen
- Current relevant Merchant Shipping Notices, Marine Guidance Notes and Marine Information Notes
- Port Marine Safety Code and supporting Guide to Good Practice
- Management of Health & Safety at Work Regulations
- Inland Waters Small Passenger Boat Code
- PLA Vessel Licensing Byelaws
- PLA Code of Practice for Ship Towage Operations on the Thames.
- MAIB Reports, including IJSSELSTROOM, LLANDDWYN ISLAND and CHIEFTON incidents
- International Maritime Solid Bulk Cargoes (IMSBC) Code