## Fowey Harbour Commissioners

# Fowey Harbour Towage Guidelines

First Issued: November 2017
Latest Revision: January 2025

- **The Harbour Master is responsible for this document which should be reviewed every three years.**
- **Any amendments will be updated on the secure digital master copy.**
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## Record of Amendments

| Amendment No. | Inserted By | Date |
|---|---|---|
| Version 1 | Adopted by the Fowey Harbour Commissioners Board | November 2017 |
| Version 2 | Adopted by the Fowey Harbour Commissioners Board | January 2025 |
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# OVERVIEW

The Harbour Commissioners of Fowey Harbour (FHC), in complying with the requirements of the Port Marine Safety Code (PMSC) have identified towage as a mitigating factor to reduce the risk of certain shipping movement operations.

As such FHC requires an adequate number of approved tugs to be available to safely support ship operations within the harbour area.

These tugs must be 'fit for purpose', with the crews adequately trained and qualified for the tasks they are likely to perform. Additionally, the pilots who use these tugs should be competent to do so, having been trained to agreed standards. Accordingly, the information in this document lays down the criteria that towage operations, their management and towage users should meet.

The purpose of this guide is to provide generic and specific instructions to the Ship's Master, Tug's Master and Pilot engaged in tug assisted navigation and also the scope for using tugs as a means of reducing risk.
There are two main parts to the guidelines, the first deals with the administrative process and the second addresses the physical aspects of towage. It must be stressed that this is a guide to good practice, having drawn upon local and national guidance. It is recognised that other towing operations, particularly with small vessels occur within the harbour. These guidelines should be observed and best practice adopted where practical.

There will be circumstances and conditions that may require operating outside of these guidelines. Deviation from the guidelines must only occur after consultation with all relevant parties.

These guidelines have been produced after consultation with all operational stakeholders. These Towage Guidelines will be reviewed periodically in order to ensure that they remain current.

# ADMINISTRATION

## Introduction

Tugs must be 'fit for purpose', with the crews adequately trained and qualified for the tasks they are likely to perform, and satisfy the requirements of the Classification Society and the Harbour Authority (refer to the Port Marine Safety Code and the Guide to Good Practice) Additionally, the pilots who use these tugs should be competent to do so, having been trained to agreed standards.

## Port Tugs

Fowey Harbour Commissioners provide a Harbour Towage service to vessels in Fowey out to Harbour Limits. Vessels can operate further by arrangement, tugs are manned and maintained to MCA/ Lloyds Class standards, meeting the required national standards. All towage in the Port is undertaken under UK standard towage conditions. Additional tugs can be sourced from out of the port subject to the approval of the Harbour Master.

## Towage Capability

The vessel details and capabilities of the Fowey towage vessels are outlined in the table below.

| **Craft Details** | **Coastal Tug** | **Coastal Tug** | **Harbour Tug** |
|---|---|---|---|
| |  |  |  |
| Name | **Cannis** | **Morgawr** | **Penleath** |
| Year Built | 1982 | 1980 | 1987 |
| Official Number | IMO 8102141 | IMO 7800045 | n/a |
| Length O.A (m) | 30.00 | 28.45 | 12.72 |
| Breadth (m) | 9.2 | 8.5 | 4.2 |
| Draft (m) | 4.2 | 4.5 | 1.66 |
| G.R.T. | 285 | 223 | |
| Engine Type | Twin Ruston | Twin Ruston | 2 x Gardner |
| Propulsion Type | Twin Unit Voith | Twin Unit Voith | Twin Propeller |
| B.H.P. | 2604 hp | 2190 hp | 300 |
| Speed (kts) | 12.5 | 12 | 9 |
| Bollard Pull | 32 tonne | 23.5 tonne | 3 tonne |
| Normal Crew<br>Minimum Crew | 4<br>3 | 4<br>3 | 2 |
| Certified to carry | 8 | 8 | |

## Tug Acceptance Criteria

The following criteria must be met for approval for a tug to be used for ship assistance towage in the port of Fowey. Where required, copies of documentation listed should be provided to Fowey Harbour Commissioners (FHC) prior to any tug being used.

- Tug must be fit for purpose and coded for towing operations. Where possible, the tug should be Omni-directional. Screw tugs/workboats could be considered on a case-by-case basis with particular care paid to planning the operation for safe speed and gob line arrangements - positioning these tugs/workboats in the most effective and safest position.
- Owner to provide Towing Risk Assessments – consider the tug/workboat limitations.
- Owners to provide vessel specification sheet stating tug's maximum sustainable bollard pull certified within the last three years.
- Details of compliance to a coding body.
- Record of Qualification and Experience of Master.
- Owners/Operators emergency contact details.
- Details of Towage Equipment:
    a. Specification of tow gear and equipment.
    b. Relevant Certification.
    c. Quick release method.
    d. Gob line securing arrangements for screw tugs/workboats.
- Insurance - the Towage Operator must have in place and maintain P&I insurance for third party liability risks.
- Agreement of UK Standard Conditions for Towage.
- FHC shall be entitled to carry out a compliance check these requirements.

## Tug Crews

Standards of tugs and crews are set by the Maritime and Coastguard Agency in accordance with the PMSC and The Guide to Good Practice. All tugs must comply with these standards and the tugs must be safely and adequately crewed. In addition, Tug Masters are required to have experience and an understanding of the area in which they operate. Where out of port tugs are operating within the port, if required, a local Tug Master or Pilot can be onboard to assist. Where a Pilot is provided to give local knowledge advice, they are not engaged to provide instruction on tug handling.

## Personal Protective Equipment (PPE)

Tug crews involved in towage operations should always:

- Wear approved and in-date self-inflating lifejackets and other appropriate PPE (e.g. hard hat, safety footwear, etc) throughout the operation.
- Ensure that the working area is safe and free from trip or slip hazards.
- Remain alert to what the ship's crew is doing.

## Towing Equipment

Towing hooks, winches and alarm bells, if fitted, should be inspected regularly. The emergency release mechanisms on towing hooks and winches should be tested before every towage operation to ensure correct operation, both locally and when fitted remotely. All towing equipment in use should be suitable for the task required, certificated and inspected for damage before undertaking and after completing a towage operation. This is especially important with gob ropes – Tug masters shall ensure they are fit for purpose and in good working order to ensure reliability. It is safety critical and will save your life.

## Availability of Tugs

Current shipping levels and vessel/cargo type at Fowey indicate one tug should be available in Port with 12 hrs notice. The second tug should normally be available at 24 hrs notice. Additional tugs are available from outside the port, sourced through the Harbour Office with a minimum of 24hr notice.

## Notice and Towage Operations

Initial tug requests should be through a local port agency with a minimum of 12hrs notice prior to required time with a confirmation at no later than 4 hours prior to Pilot Boarding time by the port agent, Cancellation after this time will incur charges. Note if no port agent is appointed Fowey Harbour reserves the right to withhold Towage Services until they have received a Purchase Order. Where a need arises for a reduction or increase in the number of tugs then this will be after consultation with all parties.

## Special Category Movements

It is recognised that due to the considerable variations in possible manoeuvres, vessel size, shape, condition and degree of capability, certain vessel movements may not be adequately covered by these guidelines. In these circumstances, the vessel will be defined as a “Special Category Case” and an individual and dynamic assessment of the planned movement undertaken. This is particularly pertinent when a damaged or disabled vessel is to be moved within the port.

The method for implementing a special category assessment should consist of FHC staff and the Duty Pilot completing the Special Category Movement Form (See Annex). The completed document is then emailed to the relevant distribution list.

The assessment of the risk and the methods of mitigating such risks shall be firstly determined by local knowledge and experience.

Should they be required, the Duty Harbour Officer shall advise the details and capability of possible charter tugs available for special category move.

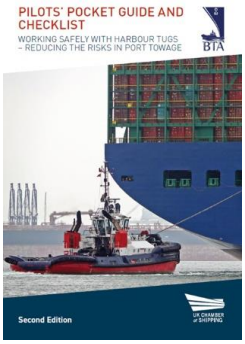
Where possible a meeting will be held with all concerned to discuss the move and consider all possible scenarios and contingency planning shall be an integral part of the assessment. The results of the assessment shall be taken by the duty Pilot with him on the ship, to discuss with the vessels master or owners representative, where upon the special category assessment becomes a guide for the ship move and complements the passage plan agreed and discussed with the Master.

## Chartered Tugs

Tugs from outside the port can be chartered in when required.

# TOWAGE OPERATIONS

## Introduction




This section seeks to provide guidance on ship towage practices as used in Fowey, the guidance draws upon nationally documented towage best practice and additionally identifies those towage procedures specific to Fowey. They should be read in conjunction with the British Tug Owners Association Pilot's Pocket Guide and Checklist.

## Preparation for Towage Operation

A comprehensive plan of action should be prepared by the Pilot or Master, taking account of all relevant factors, including tide, wind, visibility, the ship's size, type and characteristics, and the berth or buoy operator requirements.

A good knowledge of the type and capabilities of the tugs allocated to the job is important, in order that the pilot or master can ensure that tugs are suitable for the task ahead and positioned on the vessel so as to be most effective, and to facilitate a safe operation. Any conflict or mismatch between the required manoeuvre and the tugs allocated must be resolved before the towage operation begins. Responsibility for co-ordinating a towage operation lies with whoever has the conduct of the vessel being towed, be that the Master, Tow Master or the Pilot.

Familiarity with the BTA produced 'Pilots' Pocket Guide and Checklist' is strongly recommended.

When berthing and un-berthing, it is the duty of the master and pilot to ensure that the vessel is handled in a safe and controlled manner, having due regard to the safety of all those involved. The same standards should be applied to workboat towage operations, all workboats used in towage operations should be coded as such and masters should be trained and familiar with towing operations.

## Pilot / Vessel Master Exchange

In addition to the standard information passed to the Pilot, it is recommended that the master provide the Pilot with a deck General Arrangement showing the layout and safe working load (SWL) of the mooring fittings, where known, and inform him where appropriate:

- Which fairleads, chocks, bollards and strong points can be used for towing.
- Areas of hull strengthened or suitable for pushing and relevant identification marks employed.
- Tugs towlines and pennants should be used for all towage operations.
- Any special features.

The Pilot should advise the Master:

- The tug rendezvous position
- The number of tugs and the mode of towage.
- The type of tugs to be used and their bollard pull(s).
- Maximum planned speed for the passage.
- The method by which the ship's crew should take on board and release the tug's tow line.
- The prohibition on the use of weighted heaving lines.
- That on release, the tug's gear should be lowered back always under control.
- Areas of the transit posing particular risks with respect to the possible use of the tug.
- Primary and secondary VHF channels for use in the operation.

This information should be included into the EMPX system and emailed to the vessel master ahead of the planned move.

## Pilot / Tug Master Exchange

The Pilot and Tug master should discuss the following issues:

- The tug connection point, taking into account the prevailing weather and sea conditions.
- Passage details while accompanied by the tug(s), particularly details of any swing/berthing manoeuvre and release position and any abort points and procedures as required.
- Any unusual items regarding the particular vessel as gleaned from the Master/Pilot exchange.
- Any failure or reduction in the tug's ability to manoeuvre or deliver full bollard pull.
- SWL of bollards intended to be used.
- Tug Master should confirm the available method for releasing a line under load (i.e. hook, emergency brake release, mechanical or manual cutting).

## Pilot / Boatmen & Linesmen Exchange

Mooring operations using a boat should be conducted in line with the FHC / CHA procedures. All personnel involved in the mooring operation should be aware of the special considerations required namely:

- Awareness of the mooring boat's position.
- Tugs and vessels should not manoeuvre unexpectedly.
- Required position for running lines.
- What lines require running.

## Preparations and Considerations

Tug Operations impose very great loads upon ropes or warps, gear and equipment. The Code of Safe Working Practices for Merchant Seamen sets out certain precautions which should be taken.

The consequences of failure in any part of the system must be carefully considered and effective precautions taken. Onboard ship particular attention is drawn to the need to ensure that pedestal roller fairleads, lead bollards, mooring bitts and posts etc are:

- Used appropriately within their design capabilities.
- Correctly sited.
- Effectively secured to a part of the ship's structure which is suitably strengthened.

Sudden failure in any part of the system may cause death or serious injury to personnel. Sufficient manpower should be provided to ensure that individuals are not exposed to undue risk, and that the operation can be conducted safely and efficiently. Equipment such as heaving lines and messengers should be of appropriate length and strength. All equipment should be checked before the start of each operation.

## Preparations onboard the Tug

Tug Masters are to ensure that all onboard pre-departure checks are completed before getting underway, all crew are fit and appropriately rested, adequately trained for the operation and wearing correct PPE.

## Watertight Integrity

The watertight integrity of the tug should be maintained at all times. When a tug is engaged on any towage operation all watertight openings must be securely fastened.

All watertight openings should be marked with a sign stating that they are to remain closed during towage operations. Any such openings used whilst moving about the tug during a towage operation should be re-secured immediately after use.

## Towing Equipment

Towing hooks and alarm bells, if fitted, should be inspected regularly. The emergency release mechanisms on towing hooks and winches should be tested, both locally and where fitted remotely, at frequent intervals to ensure correct operation. All towing equipment in use should be inspected for damage before undertaking and after completing a towage operation.

## Tug Personnel

Tug crews involved in towage operations should always:

- Wear approved and in-date self-inflating lifejackets provided and other appropriate PPE (e.g. hard hat, safety footwear, etc) throughout the operation.
- Ensure that the working area is safe and free from trip or slip hazards.
- Remain alert to what the ship's crew is doing; Engines and other equipment should be maintained appropriately.

## Communications

**ANY UNCLEAR MESSAGES SHOULD BE QUESTIONED**

Tug Working Channel VHF Ch 9 with secondary VHF Ch 12 there is also the option of VHF 50 ('Private')
VHF communications are a vital component of safe towage operations. It is essential that those on board the ship, the tug(s), and where appropriate the mooring boats, and those on the berth, are able to communicate promptly throughout the towage operation, should the need arise.

Once VHF communications have been established, tested and Pilot/Tug Master/Linesmen information has been exchanged, personnel should keep transmissions to a minimum and should normally only call when in doubt, to confirm actions, or in an emergency. Mooring personnel should monitor the tug/ship VHF working channel in order to have a proper appreciation of progress in the mooring operation.

In all communications clear identification of the parties communicating must be used to prevent misunderstanding. The Tug Master should be kept informed of large alterations of course. Standard Marine Communication Phrases (SMCP) should be adopted to aid communication.

Pilot Instructions to the Tug should be clear, concise and follow convention. Instructions should be acknowledged by the Tug Master.

## Master or Pilot Instructions to the Tug

To avoid confusion and errors, Pilots will ask for tug power and directional requirements as follows.

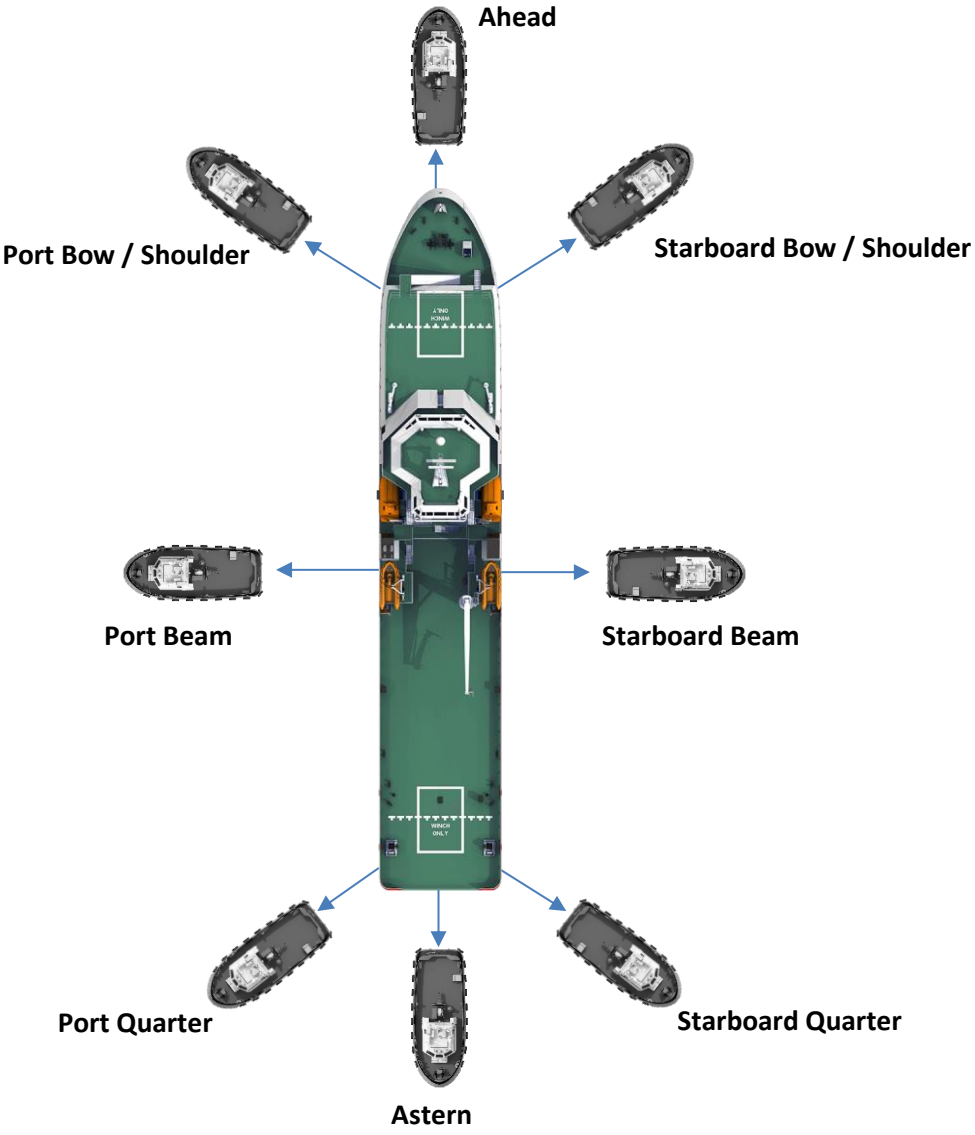
Compass points, known landmarks or position relative to the ship/towed vessel should be used when issuing orders to tugs.

Personal names should not be used to communicate, vessel's names, or move specific call signs should be used.

The power required will be indicated as percentages:

| | |
|---|---|
| 100% | Full |
| 75% | Three Quarters |
| 50% | Half |
| 25% | One Quarter |
| "Minimum" or "Easy" or "Tight Line" | Line is just tight visibly, or gear is simply just engaged when leaning on for a push. |
| "No Weight" or "All Stop" or "Slack Line" | Line is visibly slack (not in the water) or tug is holding position/barely touching the ship side ready for a push. |

The direction of pull will be indicated as shown below:



## Loss of Communications

In the event of loss of communications, the emergency means is via whistle signals. The following whistle signals are to be used between the tug and tow until VHF communications can be re-established.

Signals to or from a towing vessel ahead:

- Tow ahead – one prolonged blast followed by three short blasts.
- Tow to port bow – one prolonged blast followed by two short blasts.
- Tow to starboard bow – one prolonged blast followed by one short blast.
- Cease tow – one prolonged blast followed by six short blasts in succession.

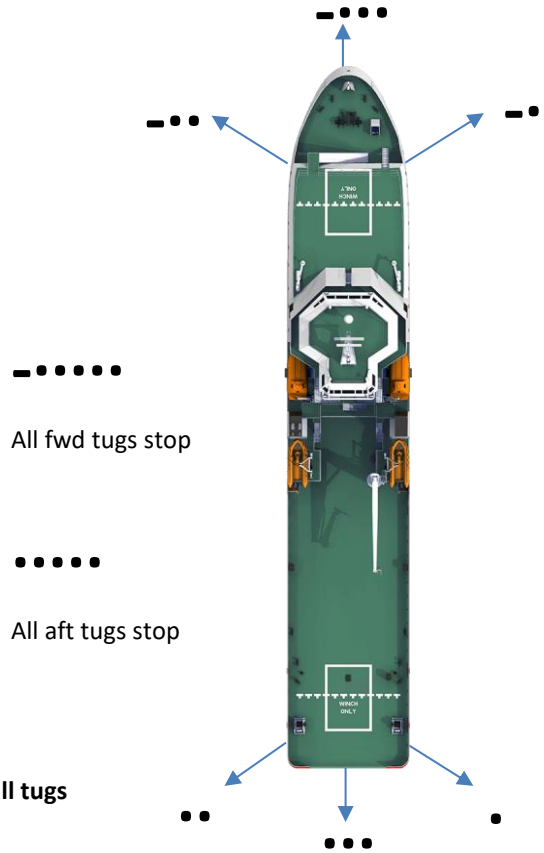
Signals to or from a towing vessel astern:

- Tow astern – three short blasts.
- Tow to port quarter – two short blasts.
- Tow to starboard quarter – one short blast.
- Cease to – six short blasts in succession.

Signals to all towing vessels:

- Hold in position – one prolonged blast followed by one short blast followed by one prolonged blast followed by one short blast.
- Let go – one prolonged blast followed by two short blasts followed by one prolonged blast.

**Emergency Whistle Signals**



All fwd tugs stop

All aft tugs stop

**Signals for all tugs**

= Hold in position

= Let go or knock out (also from tug to ship)

## Types of Operation

### Standby on Berth

Standby on berth means the tug is fully manned with engines running, lines singled up ready for a fast departure should the vessel require the tug at short notice. The tug should be prepared to make fast, or push-pull at the Pilots/Masters discretion.

### Standby in Attendance

Standby in attendance means the tug is fully manned, off the berth and in close attendance to the vessel if they are required at short notice. They should be prepared to make fast, or push-pull at the Pilots/Masters discretion.

### On the Line / Made Fast

'On the line' towing means the tug is connected to the assisted vessel by a towline normally made fast on or close to the centre-lead forward or aft. The towline is connected to the tug by a towing hook, winch or secured to the towing bitts.

### Push-Pull

The push-pull operations means that the tug is connected to the assisted vessel by a tow line and remains in close proximity to the vessel. This enables the tug to push on the vessel but then check/control the vessel by pulling-back on the tow line.

### Push Only

Push only operations mean the tug remains in close proximity to the vessel, positioned in a manner to push on the vessel where required as per the direction of Master or Pilot.

### Dead / Cold Ship / Barge Move

A dead ship is defined as a vessel in a condition under which the main population system and auxiliaries are not in operation due to the absence of power. Towing barges and dead ships by their nature require careful consideration and as such are subject to a Special Category Move assessment.

## Escort Towage

There are many different types of escort towage services, key points are:

**Right type of tug** – Only tugs certified with an escort notation should be used for these jobs.

**Bitts and fairlead to be used during escort** – The tug master must be advised of the SWL of the bitts and the fairlead.

**Passive Escort** - This is where the tug normally follows closely but is not connected and is ready to move in at short notice if required.

**Active Escort** -This is where the tug is normally connected centre lead aft and is there to assist steering the ship as and when required.

**Indirect Towage** – This is where it is planned for a tug to assist steering a ship, normally around a known and agreed navigational mark, say a tight bend in a channel. The tug would use its propulsion to steer the tug away from the general direction of heading to create drag and thus increase towline force. The tug would normally skate over to approximately 45° from the ships heading. This can generate high towline forces.

**Powered indirect** – As indirect towage, but this time the tug actively drives forward and turns away from the direction of heading to achieve a towline angle close to 90° from the ship, generating the highest towline force possible. In many cases, this can be double the direct bollard pull of the tug and can put a huge load on the ships Panama leads and bollards. It is normal for these tugs to achieve deck edge immersion at this point.

**Transverse arrest –** The tug is connected as before through the centre lead aft but is used to slow and stop the ship in an emergency. ASDs are particularly good at this manoeuvre. Units are pointed outwards at 90° and power increased; this can be up to full if required in an emergency and brought around into direct pull once the speed starts to drop below 7 – 8 knots.

**Speed** – Escort towage is normally performed at speeds above 6 – 7 knots to be effective, if considering indirect mode of towage.

## Tug Connection

Before arrival at the tug connecting position, the pilot or master should establish effective communications with the tug(s) and agree working channels. The vessel's speed should be reduced to that which allows a safe rendezvous and connection with the tug(s). The required speed should be agreed in advance with the tug master involved. Before commencing a tow, the tug master should determine which towing gear is suitable for the operation and instruct the crew accordingly.

When receiving heaving lines, the tug crew should be aware of the risk of injury through being struck by a 'monkey's fist' or other weighted object attached to the line. The ship's crew should, wherever possible, agree with the tug crew the area where the heaving line is to be thrown, to allow the recipients to move clear. When connecting to a tow, the tug crew should ensure that the towing gear is clear of any obstructions, able to run freely and is released from the tug in a controlled manner. The ship should not test the bow or stern thrust controls / ships whistle at the time when the tug is under the bow or stern passing up a line. Deck lights maybe required to be reduced to allow the tug to make a safe approach.

- The pilot or master should maintain radio contact with the tug throughout the process.
- He should be ready to revise the intended tug position if the tug master reports any restrictions at the chosen position, e.g. large flare, overhanging anchor or unsuitable push up point. The pilot or master must keep all those involved appraised of any changes to the agreed plan.
- The pilot should always advise the tug master before making headway on the vessel, allowing the tug to move to a suitable position for towing while making way. The positioning of tugs on a vessel is a matter for discussion between the pilot/master and the tug master(s), having full regard for the areas of the hull, which should be avoided, e.g. watertight doors, between frames etc.
- If the tugs are made fast alongside or pushing, they are at their most effective with a minimal ship speed through the water.

## Disconnecting

During disconnection, both the vessels and tug's crew on deck should be aware of the risk of injury if the towing gear is released from the tow in an uncontrolled manner and avoid standing directly below. They should also be aware that any towing gear which has been released and is still outboard may 'foul' on the tugs or ships propeller(s), steelworks or fendering, causing it to come tight unexpectedly. The towline should always be lowered onto the tug deck, **never just 'cast off' and left to run.**

## Tow Quick Release

The emergency release mechanism on winches and towing hooks should be tested both locally and where fitted remotely. All methods of tripping or run out are to be tested with consideration given to testing under load. Correct maintenance and operation are essential. Under no circumstances is towing equipment to be connected to any winch or hook that has a suspect release mechanism.

## Crew Safety during Towing Operations

Once the towing gear is connected, the ship's crew should indicate this to the tug crew and then clear the area and, if required to remain on deck, stand in a safe position.

If the crew are required to attend the towing gear during a towing operation, the length of time exposed should be kept to a minimum and only enter the tow deck when the Tug Master has given permission. During towage operations the towing gear equipment and personnel should be continuously monitored and any change in circumstances immediately relayed to the pilot.

This is particularly important on tugs where the tug master has a restricted view of the towing area/ personnel. Crew should be aware that the tow may have to be released in an emergency situation.

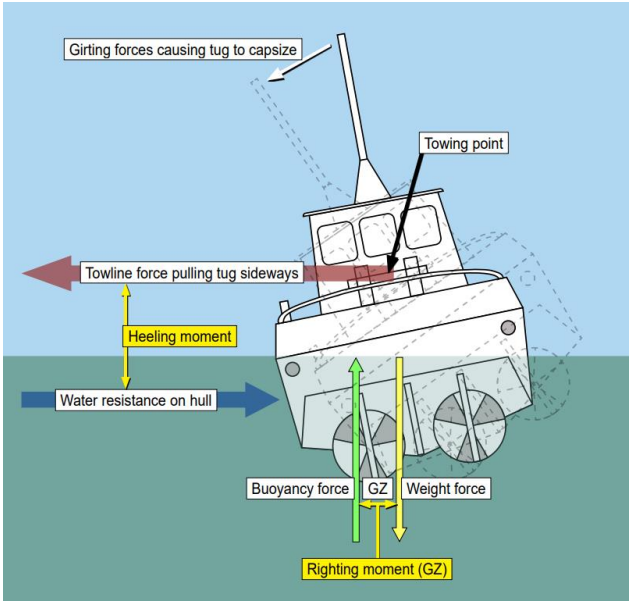
## Girting

Masters, Pilots and Tug Masters must have a clear understanding of girting and its consequences. Girting happens when the towline is secured amidships off a tug/workboat and leads of the beam at right-angles to the tug/workboat. If that line comes under tension, then a heeling movement on the tug is exerted which can overcome the righting lever causing it to girt. This can lead to deck-edge immersion, flooding and potentially capsize. See **MAIB investigation report 17-2024: Biter and Hebridean Princess**

Conventional tugs are particularly vulnerable to girting due to their relative lack of manoeuvrability. Omni-directional tugs such as ASD or Voith have integral anti-girting design due to positioning of the towing points or other design features.

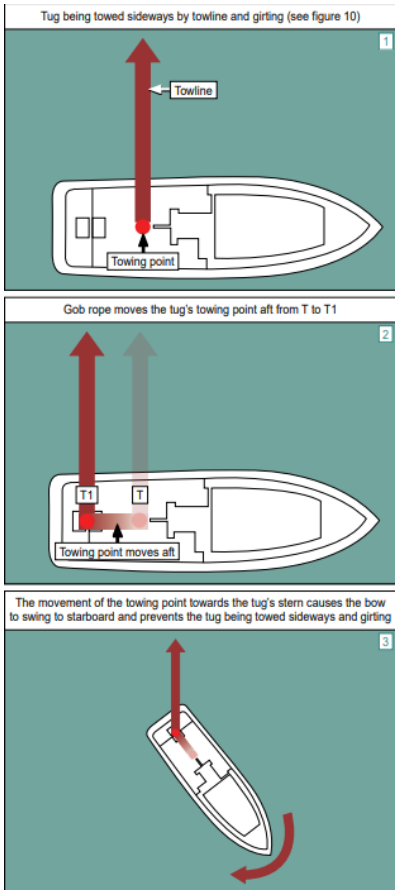
Common causes of girting are:

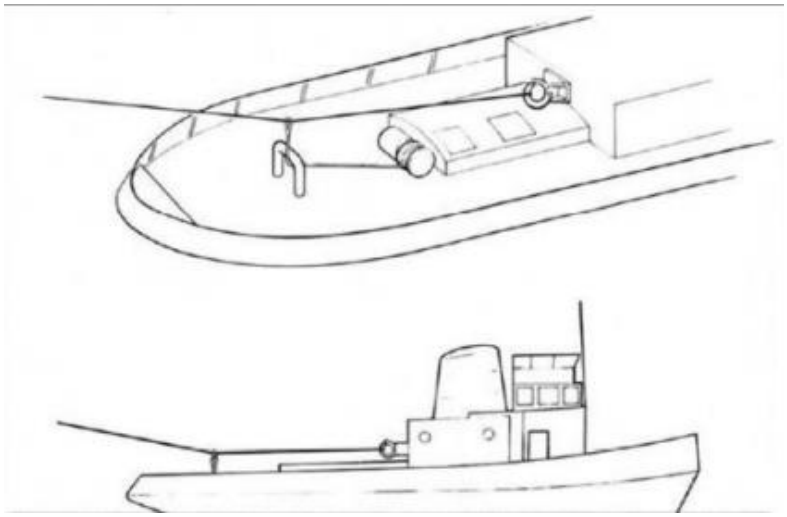
- The assisted vessel turns abruptly without warning away from the screw tug/workboat.
- The speed of the vessel is too high.
- The tug is too far astern of its intended position, compared to the speed of the vessel.
- Incorrectly rigged Gob line.



## Gob / Stopper Rope

A suitable gob rope or wire should be used where it is identified that a 'girting' situation may arise. It is deemed compulsory for gob lines to be rigged by conventional tugs/workboats in an effective way. A conventional tug towing on the bow may need a gob line rigged differently to a conventional tug on the stern, towing stern to stern, See **MAIB investigation report 17-2024: Biter and Hebridean Princess**



## Safe Speed – Conventional Tugs

When making fast and letting go a conventional tug, speed and the orientation of the tug are critical factors. The maximum planned speed for the passage should not exceed 3 knots with conventional screw tugs.

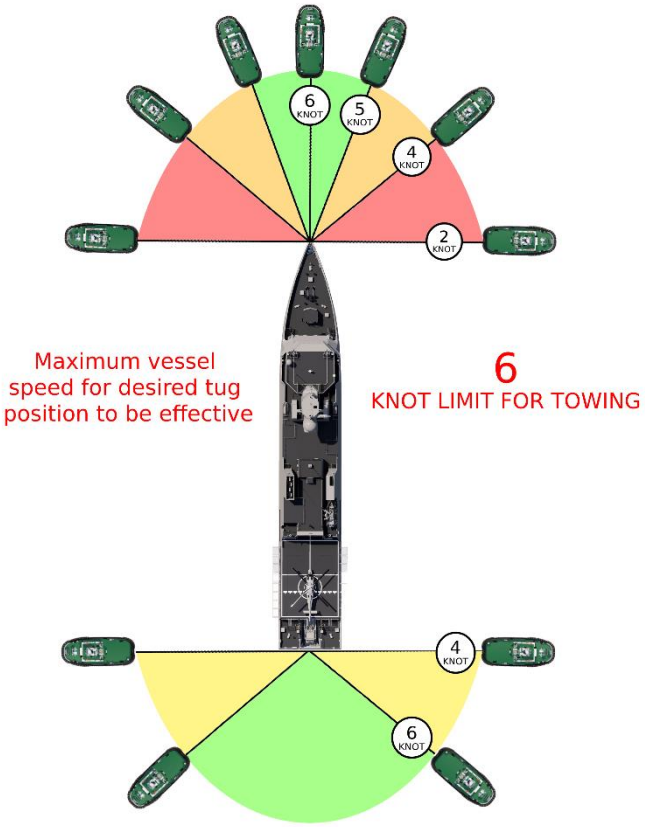
Most ship towage manoeuvres should be carried out with the minimum of way on the ship. Exercising caution when using the engines while the tugs are working. The aft tug will be affected by the wash and every tug will be affected by the change of speed either up or down, and a rapid change in speed is all the worse. The Pilot needs to ensure the vessel's speed through the water is steady and caution must be exercised when using the engines whilst the tugs are working. If the situation dictates the use of the engines, the minimum that the situation allows should be used and the tugs should be informed of what the ship is about to do as it will affect their own actions.

## Safe Speed – Omni-Directional Tugs

The maximum planned speed for the passage should not exceed 6 knots with omni directional tugs.

Some speed is required at times, the tugs generally like to have less than 4 knots through the water. This normally gives them the necessary way to assist them to manoeuvre close to the ship while it gives them plenty of power in reserve should they have to break away.

The following figure gives an indication for effective vessel speeds against direction of where an omni-directional tug can effectively work. This is because the tugs power is redirected to move the tug sideways through the water at the same speed of the ship, reducing their ability to effectively tow the ship in question in the direction of travel for the tug. The Pilot needs to ensure the vessel's speed through the water is steady and caution must be exercised when using the engines whilst the tugs are working. If the situation dictates the use of the engines, the minimum that the situation allows should be used and the tugs should be informed of what the ship is about to do as it will affect their own actions.



## Interaction

Interaction and its effects on the tug and its handling are well known and appreciated in harbour towage. Pilots, Masters and Tug Masters are reminded that these effects are multiplied as the vessel's speed increases. Areas of high and low pressure exist in and around the ship's hull and these areas can cause adverse movements of smaller vessels in close proximity. The Pilot and Tug Master should be aware of the effects of hydrodynamic interaction and the effect it may have on the tug – MGN 199(M) – Dangers of Interaction – provides further guidance and information on the effects of interaction.

## Tow Line Length

When towing on a line a Tug Master determines the tow length based on their experience – this depends on factors such as length of tug, ship speed, size and deck height of the ship to be assisted, environmental conditions and available manoeuvring space for the tug. Safety is paramount and Tug Masters should carefully consider the towline length for a forward tug assisting a ship under speed. If using a short towline, the distance is reduced between the tug and ships bow resulting in less time for a Tug Master to react to course and speed changes, The Pilot must ensure that they are careful with engine and rudder movements and keep the Tug Master well informed about upcoming changes to speed or turns.

## Tug and Tows

The majority of this document is aimed at towage assistance operations for arriving and departing ships. However, there are occasions when towage occurs which is not specifically identified in this guide such as barge towing.

Whenever there is a need to conduct this type of operation in the harbour area, if the length of the tow exceeds 20m, a Special Category Movement Form (See Annex) and towage plan must be completed to outline the operation and to agree actions for all parties

## Safety of Boatmen and Mooring Boats

Tug Masters, pilots and masters should be aware, at all times, of the position and intentions of mooring boats, especially in adverse weather conditions. This is particularly important in circumstances where visibility is limited from the tug wheelhouse and ship's bridge. Remember that bow and stern thrusters, and the wash from tugs and the vessel being assisted, can all cause significant problems for mooring boats, especially when they are in close to the vessel and/or tug(s) picking up and running with lines. Controllable pitch propellers are a separate, but equally dangerous hazard. When running aft breast or stern lines, the Pilot/Master should never use the vessel's engines without confirming with the Linesmen as to the position of the mooring boat.

## Poor Weather

During periods of poor weather with wind in excess of 40knts and directions from the SE through S to SW, Fowey Harbour Master or his Deputy, is to be consulted prior to any tug assisted move taking place. He may also board vessels alongside to discuss with Vessel's Master, mooring arrangements and the use of tugs to keep the vessels safely berthed.

If there is likelihood that the weather conditions may pose a significant risk to the Tug Crew/Tug/Towing Gear, the Tug Master should immediately inform the Pilot/Master of any concerns that he may have. The Pilot and Tug Master should take immediate action to ensure the safety of the assisted vessel/tug/tug crew and, if necessary, the operation aborted as soon as it is safe to do so.

## Towage in Restricted Visibility

When visibility is reduced, the hazards associated with towage operations are increased.

Fowey Harbour Commission have set guidelines in place to ensure that towage in restricted visibility is as safe as practical and if needs be the movement of shipping will be suspended until visibility improves, however there will be times when ships have to move when visibility is restricted.

Restricted visibility is in all circumstances where visibility is, or expected to, reduce to a distance where the tugs normal ability to perform may be impaired. Such restrictions may be due to rain, fog, mist, snow, sleet or any other conditions which impair visibility.

In circumstances where restricted visibility exists, or is likely to exist, the Master/Pilot and Tug Master shall, as part of the passage plan and risk assessment process, agree how the operation will be conducted, what dangers are associated with towing in restricted visibility and what risk reduction measures should be applied. When completing this assessment the following should be considered.

- Proposed method of towing.
- Operational status of navigational aids and equipment.
- Minimum speed to maintain steerage of vessel to be assisted.
- Movement of other vessels in the area.
- Navigational characteristics of the particular area of the river/port, including the use of information from the local port service (LPS).
- Contingency plan should visibility deteriorate after the tow has commenced and if the tug has to disengage at any point.

Minimum visibility will be advised by the Port Authority.

Should visibility fall below the minimum once a towage operation has commenced and the pilot can no longer see the tug, the speed should be reduced to a minimum safe speed and if safe and appropriate take all way off the vessel, at this point it may be necessary to implement the contingency plan if safe to do so.

As a last resort, if all parties agree that it is the safest course of action, the operation can continue to completion.

If at any time the Tug Master has any concerns about the safety of his crew or tug, he must immediately inform the Pilot and take whatever action is necessary to ensure the safety of both the tug and tow.

## Matrix for Minimum Tug Requirements

The following tables are to be used as a planning guideline tool, based on minimum available tug bollard pull. These guidelines are based on minimum requirements compiled for conventional vessels of varying length, taking into account the forces likely to be exerted by wind, current and wave action. In addition to this base line criteria, there are numerous other factors which need to be included in the overall assessment of tug support. This is to include but is not limited to:

- Vessel Draft Weather Forecast Predicted Tide
- Under Keel Clearance
- Sea State
- Vessel defects / damage
- Assets Available Vessel Orientation on Berth
- Sea Room available Tow gear length
- Vessel Windage
- Ship towing arrangements

Prior to any towage operation the pilot will conduct a dynamic risk assessment, timings may be varied to take into account factors such as water flow following heavy rain, vessel characteristics etc.

It should be noted, that in cases where the vessel's Master refuses to accept the Pilot's advice in respect of the number of tugs required to facilitate a safe operation, the Harbour Master may impose the required number of tugs by special direction. These tugs will be charged to the ship owner/Agent.

## Vessels TO Swing Buoy

| **Vessel length** | **Min. tug requirement** | **Remarks** |
|---|---|---|
| Less than 95 metres LOA | None | No berthing 2hours after LW to 2<br>Hours before HW springs. |
| 95 to 100 metres | One<br>(subject to wind strength) | Additional tug support may be required if wind >force 6. |
| 100 to 150 metres | One<br>(subject to wind strength) | As above |
| Over 150 metres LOA | Two | As above. (2 tugs or exemption 2-1) |

## Vessels FROM swing Buoy to Berths

| **Vessel length** | **Min tug requirement** | **Remarks** |
|---|---|---|
| Less than 95 metres LOA | None | Any time apart from 2 hours after LW to 2 hours before HW springs. |
| 95 to 120 metres | One | As above (Tug, or exemption 1-0 required if V/L moving to berth up river). Not on ebb tide if V/L moving to a berth up river. |
| Over 120 metres LOA | One / Two | As above (2 Tugs, or exemption 2-1 required if V/L moving to berth up river). No Tug exemptions, no move on ebb tide if V/L moving to a berth up river. |

### Vessels TO Underhills Berth

| Vessel length | Min tug requirement | Remarks |
|---|---|---|
| Less than 95 metres LOA | None | Any time on flood tide, up to 1hour after High water, then not until Low water subject to risk assessment |
| 90 to 100 metres LOA | One - cruise liners | As above |
| 100 to 150 metres | One | As above, (exemption 2-1 required if wind > force 6) |
| Over 150 metres LOA | Two | As above |

### Vessels FROM Underhills Berth to Berths

| Vessel length | Min tug requirement | Remarks |
|---|---|---|
| Less than 95 metres LOA | None | Any time on flood tide up until 1 hour after High water springs.<br>Any time neap ebb. |
| 95 to 120 metres | One, subject to Ship type. | As above. One Tug required if V/L moving to a berth up river. |
| Over 120 metres LOA | Two | As above. (2 tugs or exemption 2-1 required if V/L moving to berth up river). |

### Vessels TO No 8 Lay-by Berth

| Vessel length | Min tug requirement | Remarks |
|---|---|---|
| Less than 90 metres LOA | None | Any time on flood tide up to 1 hour after High water. Berth not suitable for deep draft V/L |
| 90 to 95 metres LOA | One or None, (subject to type and Tug Exemption) | As above |
| 95 to 100 metres | One | As above |
| 100 to 120 metres | One, (subject to Tug exemption 2-1). | As above |

### Vessels FROM No 8 Lay-by Berth

| Vessel length | Min tug requirement | Remarks |
|---|---|---|
| Less than 90 metres LOA | None | Any time on flood tide up to 1 hour after High water. |
| 90 to 95 metres LOA | None (subject to Tug Exemption 1-0) | As above - if breast lines can be run, no tug needed. |
| 95 to 100 metres | One | As above - if breast lines can be run, no tug needed. |
| 100 to 120 metres | One (subject to Tug Exemption 2-1). | As above - if breast lines can be run, no tug needed. |
| Over 120 metres LOA | Two (Exemption 2- 1) | As above - if breast lines can be run, no tug needed. |

### Vessels TO No 4 Berth from Sea

| Vessel length | Min tug requirement | Remarks |
|---|---|---|
| Less than 95 metres LOA | None | Any time, any tide. Swing Mixtow reach |
| 95 to 120 metres | One (none subject to Tug exemption) | Any time on flood tide up to 1.5 hours after High water. |
| Over 120 metres LOA | Two | As above. restrictions on length due to overlap of berths |

### Vessels FROM No 4 Berth to Sea

| Vessel length | Min tug requirement | Remarks |
|---|---|---|
| Less than 95 metres LOA | None | Any time, any tide. Subject to UKC |
| 95 to 120 metres | One or None (subject to Tug Exemption) | Any time on flood tide apart from 2 hours after LW to 2 hours before HW spring tides, up to 1.5 hours after HW |
| Over 120 metres LOA | Two (one subject to Tug Exemption 2-1) | As above. |

### Vessels TO 5, 6 & 8 Berths

| Vessel length | Min tug requirement | Remarks |
|---|---|---|
| Less than 95 metres LOA | None | Any time any tide |
| 95 – 120 metres LOA | One | Any time on food tide apart from 2 hours after LW to 2 hours before HW springs. Subject to Tug exemption parameters.<br>Up to 1 hour after HW. |
| Over 120 metres LOA | Two | As above |

### Vessels FROM 5, 6 & 8 Berths

| Vessel length | Min tug requirement | Remarks |
|---|---|---|
| Less than 95 metres LOA | None | Any time any tide |
| 95 to 120 metres | One | Any time on flood tide apart from 2 hours after LW to 2 hours before HW. Up to 1 hour after HW. |
| Over 120 metres LOA | Two | As above |

# Annex

## SPECIAL CATEGORY MOVEMENT FORM

| | | | |
|---|---|---|---|
| VESSEL NAME: | | | |
| VESSEL TYPE: | LOA:<br>BEAM: | DRAFT: | TUG DRAFT: |
| Date of Movement:<br>Time of Movement: | | Pilot Boarding Time: | |

| Special Category Reason | | |
|---|---|---|
| | YES | NO |
| Size | | |
| Windage | | |
| Draft | | |
| Manoeuvring | | |
| Tug & Tow | | |

| Availability of Ship Equipment | | |
|---|---|---|
| | YES | NO |
| Main Engine | | |
| Steering | | |
| Winches | | |
| Anchor | | |
| Thruster | | |

| Tugs Needed | | |
|---|---|---|
| | YES | NO |
| One Tug | | |
| Two Tugs | | |
| | | |
| | | |
| | | |

| Max. Wind Speed | 10kts | 15kts | 20kts | 25kts | Remarks: |
|---|---|---|---|---|---|

| Movement Window | From : | To : |
|---|---|---|

| Tugs & Tows | | |
|---|---|---|
| | YES | NO |
| Boat Req'd | | |
| Lines Req'd | | |
| | | |
| | | |

| Additional Requirements | | |
|---|---|---|
| | YES | NO |
| Line Boat | | |
| Daylight Only | | |
| | | |
| | | |

| Tugs | | | |
|---|---|---|---|
| | BP | YES | NO |
| Morgawr | 23tbp | | |
| Cannis | 32tbp | | |
| Penleath | 3tbp | | |
| | | | |

| | |
|---|---|
| Movement Assessment completed by: | |
| Date: | |
| Emailed to : | |

## SPECIAL CATEGORY MOVEMENT FORM

Additional Notes: