Peel Ports London Medway

Towage Guidelines for the River Medway and the Swale

August 2025

TOWAGE GUIDELINES

FOR THE RIVER MEDWAY AND THE SWALE

Document Information

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	*To be read in conjunction with the Peel Ports Group Towage instructions	
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Contents

Introduction

These guidelines have been developed to enhance the safety of marine towage operations within the River Medway and jurisdiction of Port of Sheerness Limited trading as Peel Ports London Medway and provide a framework to enhance communications and teamwork between towage operators, tug masters, pilots, vessel masters and the Harbour Authority.

Definitions

LOA - Vessel Length Overall. When calculating Vessel Length Overall (LOA), in respect of routine/ship assist towage (where the Authorised Pilot is piloting the vessel) the LOA will not include the tugs and associated lines.

In respect of general towage, project towage, non-routine or dead tows, the LOA means the distance from the forward end of the towing vessel to the stern of the last vessel or object towed; For the sake of clarity the length overall of a tug and tow is the combined length of towing vessel, towline and vessel being towed. This must be in consultation with the Pilot.

Ship Assist Towage or assisting vessels under way, typically during entering or leaving and/or shifting berth within a harbour.

Dead Tows or assisting vessels without propulsion including, but not limited to, barges, pontoons, dredgers, rigs which typically involves vessels entering and leaving harbour being towed by a sea-going tug or other vessel.

General Towage including towage of smaller barges, pontoons, rigs normally within harbour limits and marine construction equipment.

Project Towage including unusual events which require special consideration.

Towage Governance

The Port Marine Safety Code requires ports to develop a method and criteria to approve tugs, workboats and operators working within their jurisdiction. Statutory Harbour Authorities (SHA) must be satisfied that Tugs operating within their jurisdiction are able to do so safely. SHAs facilitate this requirement through a Compliance Check which is designed to assess the operational safety and support systems, including risk assessment, training, plans and procedures operated by such organisations. This Compliance Check is designed to be simple and relevant to the operations carried out by each organisation and is intended to satisfy the requirements placed on the Statutory Harbour Authority by the Port Marine Safety Code. However the Compliance Check in no way absolves the towage providers of their responsibilities to operate safely and in compliance with industry best practice and relevant rules, regulations and standards.

Licensing Requirements

Tugs must as a minimum be licensed/registered with the Port in accordance with local legislation.

The power to license Tugs and Small Commercial Vessels (SCV) is in accordance with Part II, Section 11 of the 'Medway Ports Authority Act 1973', which states -

Power to license tugs, etc.

1.
a. The Authority may from time to time license such number of tugs belonging to any person for such period and on such terms and conditions as they think fit.
b. The Authority may charge a fee not exceeding five pounds for the granting of a licence under paragraph (a) of this subsection.
2.
a. It shall not be lawful otherwise than in emergency for any person to use or employ any tug for moving vessels within the port unless there is in force in relation thereto a licence granted under paragraph (a) of subsection (1) of this section.
b. Any person who contravenes the provisions of this section shall be liable on summary conviction to a fine not exceeding one hundred pounds.
3. In this section "tug" means any vessel other than a vessel of five tons gross or less.

The Peel Ports London Medway tug and SCV application form and requirements can be found on the marine pages of the port website. https://www.peelports.com/marine/our-ports/london-medway

As part of the licencing/registration requirements the SHA reserves the right to conduct regular documentation contractor audits of the towage operator and reserves the right to engage a marine surveyor.

CHAPTER 1 - Towage Recommendations

1.1 Towing Matrix

The towing matrix for Peel Ports London Medway sets a baseline guide for minimum towage for vessels by LOA bound for specific locations within the port, the matrix is derived from extensive pilot experience and knowledge of the prevailing conditions and port traffic. Specific maximum length and beam of different towage configurations as well as minimum propulsion requirements have been considered. These requirements have been incorporated into the Matrix which should be complied with for all tugs and tows routinely operating in the area unless excepted from the requirements by application to the Harbour Authority.

It should be noted that advice within these guidelines is based on the following assumptions:

The purpose of these Rules and Guidelines is to provide assistance when considering tug allocations for ships using and manoeuvring in the River Medway and The Swale.

Rules are indicated in **RED** and thus compulsory. The sections not in red, which deal with tug recommendations, are guidelines only and are thus not compulsory. However, the guidelines are a result of many years Pilotage experience in manoeuvring vessels in the Medway and The Swale, where techniques and tug types have proved efficient, effective and safe. It should be appreciated that Medway Pilots are experts in their district and prudent shipmasters would be well advised to heed the Pilots' tug requirements. Pilots in UK law (Pilotage Act 1987) are more than advisors; in compulsory Pilotage areas (such as the Medway and The Swale) they are entitled to be given the 'conduct' of the vessel. This does not relieve the Master of his specific or common law duties of command.

Circumstances may arise that dictate a departure from these guidelines. A Pilot may require more tugs than the recommendations suggest, which may be the result of particular tidal, weather or traffic concerns. Equally, Pilots may use their discretion to alter the recommendations if circumstances permit. In the rare case of disagreement, the Statutory Harbour Authority will be the arbiter.

The tug systems presently used on the River Medway and Swale are a combination of omnidirectional and conventional tug systems. These systems have distinctly different handling characteristics and may require different configurations. Medway Pilots are highly trained and experienced in ship handling and tug use; their expertise should be respected.

An annual Notice to Mariners will be published listing all approved ship assist tugs with details of their bollard pull capability.

Pilots and Tug masters should know the capabilities and limitations of the tugs involved in each operation. Particular consideration should be given to the best use of individual tugs, bearing in mind the planned manoeuvre and the local conditions and circumstances.

Tug Requirements - Arrival and Departure

All of the below guidelines are based on omnidirectional towage unless otherwise stated.

Sheerness

Berth	Vessel Length	Vsl Side to	Tide/Wx/ Manoeuvre	Tug Requirement
Sheerness Docks (SD). 1, 2, 3, 6, 7, 11	< 100m	Port Side	Any	As per Pilot / Master
	100-120m	Port Side	Any	1*
	120-135m	Port Side	Any	2
	> 135m	Port Side	Any	2*
SD. 1, 2, 3, 6, 7, 11	< 100m	Stbd Side	Flood Tide	As per Pilot / Master
	100-135m	Stbd Side	Flood Tide	2*
	> 135m	Stbd Side	Flood Tide	2*
SD. 1, 2, 3, 6, 7, 11	< 100m	Stbd Side	Ebb Tide	As per Pilot / Master
	100-135m	Stbd Side	Ebb Tide	2
	> 135m	Stbd Side	Ebb Tide	2
SD. 1, 2, 3, 6, 7, 11	100m	Stbd Side	30 mins after HW to 1 hour before LW, where average wind speed is 25 knots with any westerly component)	1
SD. 10	< 120m	Any	Any	1*
	> 120m	Any	Any	2 *
SD. 4 (Car Terminal)	> 170m (large car carriers) **	Port Side	Any	2***
SD. 4 (Car Terminal)	> 170m (large car carriers) **	Stbd Side	Flood Tide Ebb Tide	2*** 3***

* 1 tug may be replaced by an operational bow thrust.

** for vessels other than large car carriers the requirements are as per berths 1,2,3,6, 7 & 11

*** for departures 1 tug may be replaced by an operational bow thrust

Isle of Grain

Berth	Vessel Length	Vsl Side to	Tide/Wx/ Manoeuvre	Tug Requirement
BP Jetty 1*	See Appendix 1			
Thamesport Upper & Lower ***	< 100m	Any	Any	As per Pilot / Master
	100-140m	Any	Any	1*
	140-170m	Any	Any	2*
	170–250m	Any	Any	2*
	> 250m**	Any	No Swing	2*
	> 250m**	Any	Flood Tide with Swing	2
Jetty 6 & 7	> 200m	Any	Berthing	2
			Unberthing, when LNG Vsl alongside	1
LNG Jetty 8 & 10	See Appendix 2			

* 1 tug may be replaced by an operational bow thrust

** For v/ls over 300m and / or draft 12.3 or more minimum combined bollard pull 125t.

Berthing stern to EBB tide is NOT recommended, however, if this manoeuvre is undertaken extra tugs should be considered.

Chatham and Upriver

Berth	Vessel Length	Vsl Side to	Tide/Wx/ Manoeuvre	Tug Requirement
Chatham Locks & Basin 3	< 92m	Any	Any	As per Pilot / Master
	92-125m	Any	Any	1*
	125-140m	Any	Any	2*
All Berths Upriver of Chatham	< 92m	Any	Any	As per Pilot / Master
	92-107m	Any	Any	1*
	> 107m	Any	Any	2*

* 1 tug may be replaced by an operational bow thrust

The Swale

Berth	Vessel Length	Vsl Side to	Tide/Wx/ Manoeuvre	Tug Requirement (Conventional Tugs used)
Ridham Dock	< 80m	Any	Any	As per Pilot / Master
	80-95m	Any	Any	1*
	< 95m	Any	Any	2*
Grovehurst	< 90m	Any	Any	As per Pilot / Master
	> 90m	Any	Any	1*

* 1 tug may be replaced by an operational bow thrust

1.2 Deviation from the Towing Matrix

Due to the considerable variations in vessel size, shape, condition, and degree of manoeuvring capability, the recommended number of tugs from the matrix given may be more than the safe minimum number of tugs for a particular vessel. As a consequence, the master of any visiting ship may order the recommended number of tugs as per the towage matrix contained within this document or opt to consult with an authorised Pilot where both marine professionals may agree to deviate from the Tug Matrix contained within this document by use of their own professional judgment to set a safe and appropriate level of tug provision for a particular vessel. Likewise, that tug provision may exceed the guidelines in exceptional circumstances, or when directed by the Harbour Master under his statutory powers.

The master of any vessel can arrange such consultation through his Agent, who will then contact the appropriate Pilot to consider the Master's request. In assessing any variation from the Towage Matrix, the following points will be taken into consideration, namely:

- The complexity of the manoeuvre
- The Length of the vessel
- The draught of the vessel
- The windage area of the vessel
- The minimum under keel clearance during the planned passage transit
- Range of the tide on the date in question – springs or neaps
- Expected wind conditions.
- Disposition of other vessels and port infrastructure
- The forecast weather conditions, including visibility.
- Manoeuvring aids – thrusters, size, and number
- Type of propulsion system – controllable pitch, fixed pitch, or azimuth
- Type of steering system – single or twin rudders, high-lift, or standard
- The Gross Registered Tonnage (GRT) in relation to the vessel's principal dimensions
- Unusual design of vessel
- Any reported defects to the vessel
- Type of main engine – air start, diesel electric, gearbox
- Availability of boatmen and line handling vessels

Peel Ports London Medway reserves the right to direct the minimum number, type, and capabilities of the tugs to be used for any movement. The final decision rests with the Harbour Master or their appointed deputies.

1.3 Qualifications

National certification of tug crew is set by the Maritime and Coastguard Agency in accordance with the PMSC[1] and The Guide to Good Practice[2]. All crew must meet these requirements and tugs must be safely and adequately manned.

Experience

Operators of registered tugs shall ensure that their crews are trained with a sound understanding of the tugs they operate, relevant towage techniques and the area in which they operate. The Harbour Authority must be satisfied that the towage provider crews operating within the port are trained with a firm understanding of the tugs they operate & towage techniques and the area in which they operate.

Training/Education of Pilots with regards to Towage operations

As per National and international training standards; Pilots MUST be able to demonstrate a number of criteria to work with tugs and become acquainted with the characteristics and limitations of the specific tugs operating within the port prior to any operation involving towage.

1.4 Working Hours

All tug crew members must be properly rested in line with the recommendations of national and international legislation. Please see relevant Working Time Directive[3].

1.5 Personal Protective Equipment

Personnel on exposed decks are to, at all times wear appropriate personal protective equipment ("PPE"), including self-inflating (working) lifejackets, in line with the tug operator's current risk assessment. It is the Tug Master's responsibility to enforce the wearing and use of PPE[4].

1.6 Tug Usage for Pilot Exemption Certificate Holders

Under all routine operations Pilot Exemption Certificate (PEC) holders are permitted only to make tugs fast with a towline if in possession of a valid tug/towage endorsement.

PEC holders without a tug/towage endorsement are not permitted to make tugs fast with a towline or move their vessel when in a non-self-propelled state using tugs. Masters in

[1] Port Marine Safety Code, November 2016, Chapter 2 Key Measures to Secure Marine Safety, Para 2.18 Competence Standards
[2] Guide to Good Practice on Port Marine Operations, February 2018
[3] EUR-Lex - 31999L0063 - EN - EUR-Lex (europa.eu)
[4] Code of Safe Working Practices for Merchant Seafarers, 2015 edition – Incorporating Amendment 3, October 2018, Para 30.6.1 – 6.4

Charge are required to take a pilot if they intend to employ the services of a tug unless they have a PEC with a Towage Endorsement.

Under exceptional circumstances where the safety of People, Environment and Assets are at risk, then a Master with or without a Tug Endorsement must take all necessary action including if they sees fit, connection to a tug

1.7 Automatic Identification Signal (AIS) on vessels

Registered tugs (including work boats) are required to have an Automatic Identification (AIS) unit fitted in order to work in any of the Peel Ports SHAs. General Direction no. 22 states the requirements for the use of AIS systems.

2.0 - Preparing for Towage Operations

2.1 Planning and Coordination

Before towing operations commence, ae plan should be agreed by the Vessel Master and Pilot in consultation with the Tug Master . This should take account of all relevant factors, including tide, wind, visibility, ship size, type and characteristics, and specific berth requirements. The Pilot is to ensure they has a sound knowledge of the tug's capabilities and limitations. The Pilot and Master are to agree the tugs are suitable for the task and positioned correctly for the operation. The Pilot, Vessel masters and all tug masters must be in total agreement 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 or the Pilot. Communication with the tugs will be through the pilot. It is the duty of the Master/Pilot to ensure that the vessel is handled in a safe and controlled manner, having due regard to the safety of tugs deployed on the job.

The number of personnel employed in any towage operation should be determined having due regard for the size of the vessel and the prevailing operational and environmental circumstances. In all cases, 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. Due regard should also be given to the size, weight and scope of the towing gear and lines to be handled. All those with a responsibility for personnel or equipment involved in assisting the towage/mooring of vessels have a duty to ensure that safe working practices are followed, and that associated equipment is fit for purpose. They should also ensure that those involved are properly trained, adequately briefed in their duties and issued with, and use, suitable and effective personal protective equipment (PPE)

2.2 Towage Information Exchange

Pilot and Vessel Master

In addition to the standard information passed to the Pilot, Masters shall provide the Pilot with a general deck arrangement showing the layout and safe working load (SWL) of the mooring fittings, where known, and inform him/her about:

- Fairleads, chocks, bollards and strong points that can be used for the towing operation;
- Areas of hull strengthened or suitable for pushing by tugs and relevant identification marks employed (This information is needed due to variations in ship construction);

- Any special features (i.e. controllable pitch propellers, thrusters, Azimuths etc);
- All bollards should be marked with the SWL, and a mooring equipment plan should be available on request.

It is recognised that providing a deck arrangement plan formally is not always practicable. Pilots and Masters shall verbally exchange that information at the earliest opportunity and pass that information to the tug master where relevant.

Note: Using ships' mooring lines as towlines is not recommended and Towage providers should avoid operating with ships' lines, unless it is an emergency. If so, the Pilot and Master should confirm that the strength of the mooring line is in accordance with the tug's towing forces. If this is not the case, then the tug's power must be limited accordingly.

The Pilot should advise the Master about:

- The tug rendezvous time and position;
- The number of tugs and the mode of towage;
- The planned (optimum) ship speed when connecting the tugs' lines;
- The type of tug(s) to be used and their bollard pull(s);
- Maximum planned speed for the operation;
- The method by which the ship's crew should heave and release the tug's towline;
- A dedicated crew member to monitor tug and tug's line during heave and release;
- The ship's crew is to be instructed not to release the towline in an uncontrolled manner, which could result in injury to tug crew and/or fouling of propulsion units;
- The prohibition on the use of weighted heaving lines;
- High risk areas during vessel transit (with respect to the possible use of the tug);
- Use and positioning of the tug(s) for berthing and manoeuvring;
- Primary (tug working) VHF Channel (Ch.73) and secondary Port VTS VHF (Ch.11) channel for use in the operation;
- Tug Positions must be on the MPX;

Pilot/PEC Holder and Tug Master

The Pilot/PEC Holder (with towage endorsement) and Tug Master shall, as a minimum, discuss the following:

- Methods of communication;
- Clear understanding of responsibilities;
- The SWL of the vessel's bollards, fairleads, strong points etc. to be used for towing (failure to provide this information could result in damage to the vessel or tug);
- Berthing details in their entirety, including tug positioning around the vessel's hull and the vessel's required position on the berth;
- The tug to vessel make-fast location, taking into account the prevailing weather and sea conditions;

- Escorting operation (if appropriate) and berthing;
- The planned (optimum) vessel speed through the water when connecting to the tug's towline;
- If active escorting, the start point of the escorted passage;
- The maximum speed of the tug;
- Passage details while accompanied by tugs, particularly details of any swinging manoeuvre, release position and sequence of release;
- Any significant weather forecast/anticipated;
- Intended and emergency use of vessel's anchors;
- Any unusual items regarding the particular vessel as gleaned from the Master/Pilot exchange;
- If appropriate, any shallow water or bank effect areas where significant surges might be experienced that may add to the tug's towline loads;
- The Tug Master shall advise the Pilot/PEC Holder immediately if there is any reduction in the tug's operational characteristics, such as ability to manoeuvre, delivery of bollard pull or any other operational defect which could affect the tug's capabilities; and when confirming that the tug is fast and ready to assist, the Tug Master shall also confirm both the tug's name and position on the vessel

2.3 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 the correct PPE.

Mooring and towing operations inflict immense loads upon ropes or wires, gear and equipment. As a result, sudden failure in any part of the system may cause death or serious injury to personnel. During towing operations, Tug Masters shall employ a clear decks policy. Should the need arise for a crew member to go out onto the deck where there is no other alternative and/or for the sole purpose of the safety of the tug and it's crew, then the tension on the line should be reduced to the absolute minimum for the duration of that activity.

2.4 Watertight Integrity

The watertight integrity of a tug should be maintained at all times. When the tug is engaged on any towage operation, all watertight openings should be securely fastened. The tug crew should avoid working below the waterline at this time.

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. The pilot / Master is to

inform the tug if they observe any exterior openings on the tug that are not closed, and which may affect the tugs' watertight integrity.

If entry is required through a hatch or door during towage operations, the Tug Master must be informed and the hatch or door closed immediately after use. Watertight doors are not to be left open, even if access is required for a short period of time.

2.5 Testing and Inspection of Towing Equipment

Where fitted, towing hooks and alarm bells should be inspected regularly, preferably daily. The emergency-release mechanisms on towing hooks and winches should be tested, both locally and where fitted remotely, at frequent intervals as dictated by the towage operator to ensure correct operation.

All fixed and running gear, including ropes, shall be carefully maintained, tested, certified and regularly inspected against wear, damage and corrosion. Particular attention is drawn to the need to ensure that fairleads, lead bollards, mooring bitts etc. are used appropriately and within their design capabilities. All towing equipment in use should be inspected for damage before undertaking and after completing a tow. This is especially important with gob/gog 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.

Mooring winches and other equipment shall be maintained to the manufacturer's specifications and be properly serviced. Equipment such as heaving lines and messengers should be of appropriate length and strength. All equipment shall be checked before the start of each operation.

2.6 Dead and Non-Routine Tows

DEAD tow and non-routine towage applications and towage method statement must be submitted by the responsible person/organisation to the Port for approval. All dead/non-routine tows are subject to a consultation with stakeholders including but not limited to Port Marine Management, Pilots, relevant terminal, vessel master.

'The Guide' now requires Harbour Authorities to give special consideration to tows involving dead ships or unusual objects and towage events of a non-routine nature.7 A dead ship is defined as a vessel in a condition under which the main propulsion plant, boilers and auxiliaries are not in operation due to the absence of power. Towing barges and dead ships by their nature requires careful consideration.

Ship owners, towage contractors, tug masters, project managers and agents are further advised that the person responsible for the safety and planning of the manoeuvre (and thereby acting as the Towing/Barge Master) must be clearly identified and be responsible for the production of risk assessments, method statements and passage plans which

must be discussed and agreed in advance with the Harbour Authority. Once agreed, and before towing commences, a toolbox talk must be organised for all parties to discuss the operation and, as a minimum, include the tug master, barge master and pilot.

Unless otherwise agreed with the port authority, a barge/dead ship operation is to have a Tow Master (responsible person) in charge on board the barge/dead ship; this must not be the pilot. The Tow Master shall be suitably competent and experienced in barge operations, and will have overall responsibility for the safety of the towage operation; the Pilot will have the conduct of the passage. The Tow Master must also be satisfied that all appropriate risk assessments are in place. The Tow Master will board the barge on arrival/departure (in the absence of an embarked individual) and will act as Tow Master who will remain responsible for the safety of the barge at all times.

2.7 Towage Notification

All non-routine or dead tows will require a full towage/passage plan and associated risk assessments are to be submitted ahead of the towage operation as well as any necessary SCV licensing and insurance documents being received. The Port of London Authority (PLA) should be advised of such towage operations as PLA permission will normally be required. Non-routine towage authorisation will not unreasonably be withheld but will require the involvement of marine managers and pilots in the decision. To that end, sufficient time must be given for the tow plan to be reviewed. In the case of complex tows, a working group may be convened consisting of appropriately skilled personnel to ensure that all risks have been considered. When the details of the venture have been fully discussed and agreed the written approval of the Harbour Authority will be given on this form. Such complex operations may require information at least 3 weeks in advance to facilitate the planning process.

Submission of a Towage Request, Risk Assessment and Methods Statements (RAMS) will be required at least 48 hours in advance. Weekend or bank holiday towing operations require 72 or 96 hours submission respectively.

CHAPTER 3 - Communications

3.1 VHF Communication

VHF communications are a vital component of safe towage operations and the communications plan on when, where and why the pilot will communicate with the tug master should be discussed at the initial contact. . It is essential that those on board the vessel, the tug(s), where appropriate the line handlers and mooring boats, and those on the berth, are able to communicate promptly and effectively throughout the towage operation. Prior to towing operations, the Pilot, Master, Tug Master(s), Line handlers and Boatmen should establish communications, exchange relevant information and agree a plan for the towage operation. Pilots, Line handlers and Boatmen should carry fully charged VHF handhelds. Spare Batteries for VHF's should be carried.

Once VHF communications have been established, tested and information has been exchanged, personnel should keep transmissions to a minimum and should normally only call when in doubt, or in an emergency. Mooring personnel should consider monitoring the tug/ship VHF working channel in order to gain appreciation of progress during the operation.

It is important that effective communications are maintained between; the towing vessel, the Pilot, the bridge team, and the mooring decks of the vessel undertow. In all communications, clear identification of the parties communicating should be used to prevent misunderstandings. The Tug Master should be informed in advance of large course alterations or increase or reduction in speed.

In all communications, clear identification of the parties communicating shall be used to prevent misunderstandings. The Tugmaster and Boatmen shall be kept informed of the proposed use of thrusters and anchors on the towed vessel and of engine movements and helm orders, as appropriate. Early warnings of intended course / engine changes should be given where possible.

Any unclear messages should be questioned.

3.2 VHF Channels

The Pilot is to ensure he/she communicates with Medway VTS on commencement of any towing operation, whether it is an inbound or outbound transit or shift. The Tug Master shall always maintain, so far as possible, a listening watch on VHF channel 74 for the Port as well as the Pilot/Tug working channel.

3.3 Tug Control Instructions

During towage operations it is very important that Pilots communicate as discussed in the initial exchange unambiguous, clear and easy to understand intentions and requests/instructions.

The Tug Master must immediately inform the Pilot/Master of any concerns as to the safety of the tug and its crew. The Pilot/Master and Tug Master shall take immediate action to ensure the safety of both the tug and assisted vessel; if necessary, they must abort the operation as soon as it is safe to do so.

Pilots should only refer to the tug's name when conveying instructions to the tug and refrain from using the Tug Master's name. A tug name may be substituted by an agreed naming/numbering system (Tug A, Tug B), which must be agreed upon prior to the start of the towage operation. This will also assist the vessel's bridge team to understand what is going on.

3.3 Standard Tug Communications

The power used by the tug will be based on the actual ship's bollard rating.

The format of instructions shall be: Tug name // position // power e.g:

Ramsey - right astern – 25%

To avoid any confusion within the River Medway and Swale Pilots will use the following power and directional orders as laid out below:

Required Power

10% - Minimum

25% -

50% -

75% -

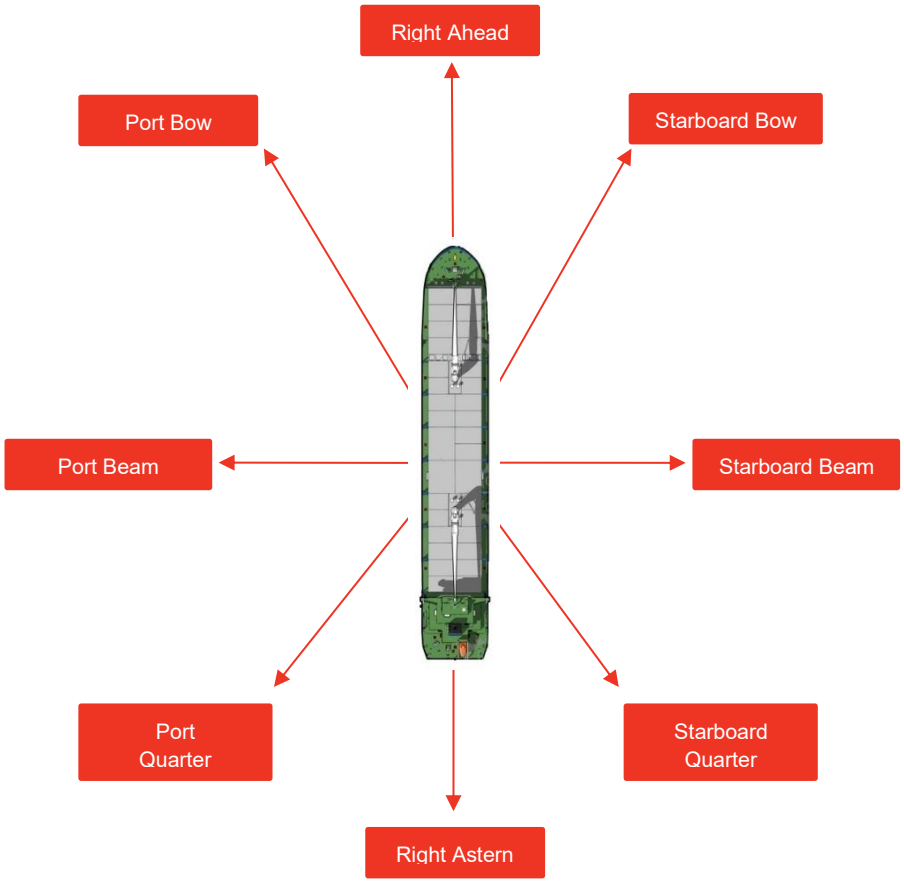
100% - Maximum

Other Terms

Easy – Minimum weight required to put tension into the tow.

No Weight – No weight or tension on the tow.

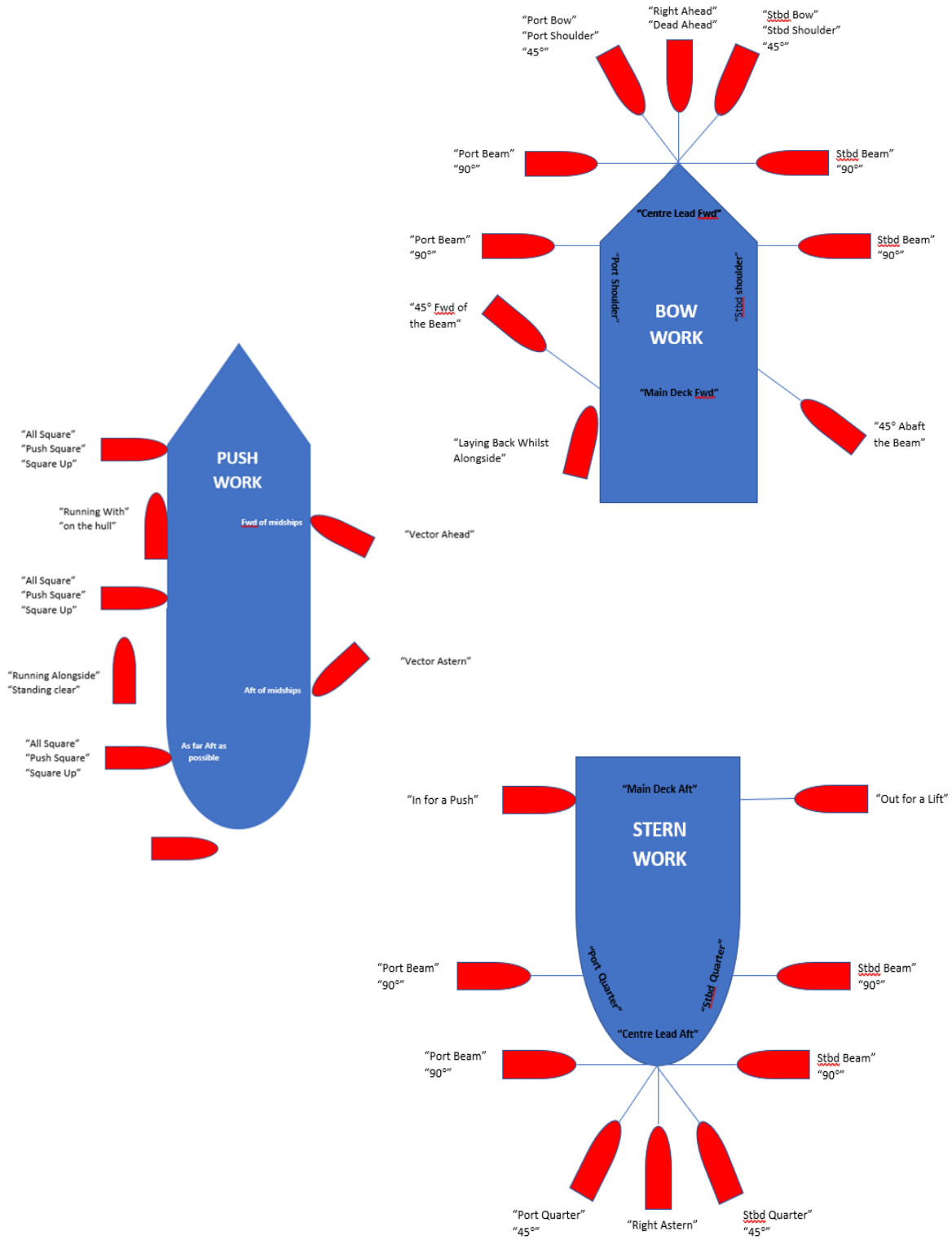
Lean On – Minimum power required to keep the tug in position against the hull/object.



3.4 Standard Hand Signals

Communication between the tug and mooring deck/position is important, and it is advisable to use standard hand gestures in addition to VHF radio communications. These are particularly useful in passing securing information and determining towline length. The following are standard hand signals in common use.

3.5 Tug Positions



3.6 Emergency Communications

Pilots, PEC holders and Tug masters should be well acquainted with the emergency towing sound signals. In the case of a VHF communications failure, the pilot or tug master(s) shall sound the below sound signals to highlight the loss of communication. On the sounding of these signals the tugs shall arrest any ship movement and the pilot will assist where possible to ensure the safety of the ship and tugs is maintained until communications by VHF or other means can be established.

Communications failure sound signal: 

The reply to which either by the tug(s) or the ship: 

From Pilot to Tug:

HEAD TUG:

Tow to Starboard - 1 Short Blast 
Tow to Port- 2 Short Blasts 
Tow Ahead- 3 Short Blasts 
Stop 5 or more - Short Blasts 

FORWARD ALONGSIDE TUG:

Tow off - 1 Short Blast 
Push On - 2 Short Blasts 
Stop - 5 or more Short Blasts 
Both forward tugs must work together

STERN TUG:

Tow to Starboard - 1 long + 1 Short Blast 
Tow to Port - 1 long + 2 Short Blasts 
Tow Astern- 1 long + 3 Short Blasts 
Stop 1 long + 5 or more Short Blasts 

AFT ALONGSIDE TUG:

Tow Off 1 long + 1 Short Blast 
Push On 1 long + 2 Short Blasts 
Stop 1 long + 5 or more Short Blasts 

Both stern tugs must work together

CHAPTER 4

Preparing for Towage Operations

4.1 Connection and Disconnecting Towing Gear

Before commencing a tow, the tug master should (where applicable to that vessel) determine which towing gear is suitable for the operation and instruct the crew accordingly.

When receiving heavy 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 a line. They should stand clear of and where possible indicate the area that the heaving line is to be thrown down to. **The use of dangerously weighted heaving lines will be reported to the MCA**[5]. Prior to any towage operation the pilot is to remind the Master that the use of weighted heaving lines is prohibited.

When connecting to the assisted vessel, (where applicable to that vessel) the tug crew should ensure that the towing gear is clear of any obstructions, able to run freely and is run out from the tug in a controlled manner.

During disconnection, seafarers on deck should be aware of the risk of injury if the towing gear is released by the assisted ship in an uncontrolled manner, and avoid standing directly below.

They should also be aware that any towing gear that has been released and is still outboard may 'foul' on the tug's propeller(s), steelworks or fendering, causing it to come tight unexpectedly.

4.2 Tow Quick Release

The emergency release mechanisms on winches and towing hooks should be tested both locally and where fitted remotely. Towing winch and towing hook release mechanisms are to be frequently tested for correct operation. All methods of "tripping" or "run out" are to be tested (Pneumatic, manual pull, lever or knock out etc). Consideration should be given to testing under load

Release mechanisms are also to be tested at other times, if a fault is suspected or an exceptional shock loading has been experienced.

[5] Safety Bulletin 2 - Dangerously weighted ships heaving lines - GOV.UK (www.gov.uk)

Records of testing the emergency release mechanisms should be kept and made available to the Harbour Authority on request. Under no circumstances is towing equipment to be connected to any winch or hook that has a suspect release mechanism. Correct maintenance and operation are essential.

4.3 Running Against the tide

Masters & Pilots should be aware that it is sometimes difficult to manoeuvre a tug into position against the tide without pulling any weight on the towline. Sometimes it may be appropriate for a tug to run with the vessel stern first to make fast and thus be ready to tow in the same direction.

4.4 Girting (Girding)

Vessel's Masters, Pilots and Tug Masters must have a clear understanding of girting and its consequences. Girting happens when the towline comes at right-angles to the tug. The tug is pulled bodily through the water by its tow, which can lead to deck-edge immersion, flooding and capsize; unless the towline is released in good time.

Girting occurs when a towline is secured amidships off a tug and leads off the beam. Should the line come under tension, this will exert a heeling moment on the tug, and should the force of that moment be sufficiently powerful can overcome the tug's righting lever causing it.to girt and potentially capsize. Due to the rapid nature of these incidents it cannot be assumed that the winch will pay out or that the towline part prior to a capsize incident.

Conventional tugs are particularly vulnerable to girting, and due to their relative lack of manoeuvrability, it may be impossible to extract them from a problematic situation.

Omni-directional tugs, such as ASD, ATD and Voith's, have integral anti-girting design, due to the positioning of the towing point at the extremities, avoiding an athwartships moment.

Common causes of girting are:

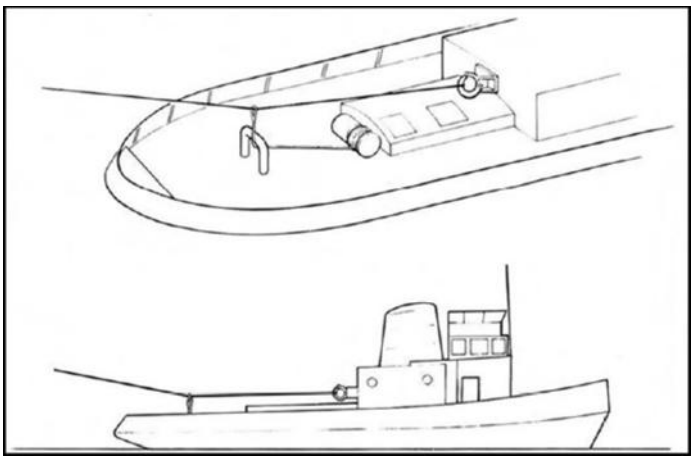
- The assisted vessel turns abruptly and without warning away from the tug.
- The speed of the vessel is too high.
- The tug is too far astern of its intended position, compared to the speed of the vessel.

Please see 'Further Guidance and Advice Section' towards the end of this document. It provides information on additional reading.

4.5 Use of GOB/GOG Rope[6]

The use of a gob/gog rope for towage of vessels by conventional tugs is compulsory. This includes both forward and aft tugs.

Conventional tugs deliver the highest bollard pull in the forward direction and will mostly be used as a bow tug on a hawser. When connected at the stern of the vessel being assisted, they will effectively be working in the “conventional” mode, also referred to as “stern to stern”. The “towing point” will be moved further aft from the towing hook by using a Gob-line and a “stopper” block. The use of the Gob-line is very important in order to avoid girting of the tug. Shown in below diagram.



As discussed in other sections; the rope should be inspected thoroughly before and after use for signs of degradation and replaced at regular intervals ensuring good practice. This practice is also important for shackles and bollards or any other equipment associated with the rope or wire.

4.6 Seafarer Safety

Once the towing gear is connected, the deck crew should indicate this to the master and then clear the deck. Should the need arise for a crew member to go out onto the deck where there is no other alternative and/or for the sole purpose of the safety of the tug and its crew, then the tension on the line should be reduced to the absolute minimum for the duration of that activity

During towage operations, the towing gear, equipment and personnel should be continuously monitored and any change in circumstances immediately relayed to the

[6] An adjustable gog rope, on a dedicated gog winch, fitted to the tow line allows for a moveable 'fairlead' from which the tow line leaves the tug. The purpose of the gog rope is to optimise the tow line angle relative to the tug and enhance tug safety.

master. This is particularly important on tugs where the master has a restricted view of those areas/personnel.

During all towing operations, where a tug is made fast to the assisted ship, the crew should be aware that the towing gear may have to be released in an emergency situation, and that this may occur without any warning.

4.7 Emergency Release

For the duration of the towing operation the crew should be aware of the requirement to release towing equipment in an emergency. They should be aware of the procedures and be able to do so safely and efficiently with little or no warning.

The emergency release mechanisms on winches and towing hooks should be tested both locally and where fitted remotely. Towing winch and towing hook release mechanisms are to be frequently tested for correct operation. All methods of "tripping" or "run out" are to be tested (Pneumatic, manual pull, lever or knock out etc). Consideration should be given to testing under load.

Release mechanisms are also to be tested at other times if a fault is suspected or an exceptional shock loading has been experienced.

Records of testing the emergency release mechanisms should be kept and made available to the Harbour Authority on request. Under no circumstances is towing equipment to be connected to any winch or hook that has a suspect release mechanism. Correct maintenance and operation are essential.

4.8 Safe Speed [7]– Conventional Tugs

When making fast and letting go a conventional tug, speed and the orientation of the tug are critical factors. The Pilot is to ensure that speed is through the water NOT speed over the ground. It is generally accepted that 2 to 4 knots is appropriate for conventional tugs but the pilot should check with the tug master on a case by case basis. The pilot needs to ensure the vessel's speed is steady and caution must be exercised when using the engines whilst the tugs are working. The stern 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. 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.

In strong tidal conditions a high percentage of the tug's power may be utilised in maintaining position on the vessel before applying thrust to the vessel. If the tugs are

[7] Safe Speed guideline. If this is different, it must be discussed and justified

made fast alongside they are at their most effective with a minimal ship speed through the water.

4.9 Safe Speed – ASD Tugs

The following ASD tug connecting speeds guidelines should be adhered to unless the circumstances of the case deem otherwise and only with the tug Master's consent;

Bow tug - <5kts
Side tug - <6kts
Stern ASD tug - <7-8kts

The Pilot is to ensure that speed is through the water NOT speed over the ground. It remains the responsibility of both the Master, Pilot and Tug Masters to ensure the operation is conducted at a safe speed for all participating vessels throughout the operation.

4.10 Interaction

Interaction and its effects on the tug and its handling are well known, and appreciated in port/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 speed of water flowing between the tug and the vessel increases at the last moment as the tug comes alongside. As this happens the tug therefore has to increase speed to maintain the same speed as the vessel. The Tug Master has to compensate for the tug either being drawn in or pushed off the vessel.

In areas where interaction exists, and when manoeuvring alongside a vessel, the Tug Master should be aware of the possibility of underwater obstructions such as bulbous bows, stabiliser fins and areas of the ship's side, such as pilot doors, which are to be avoided.

The Pilot/Master and the crew should be aware of interaction and the effect it may have on the tug. Marine Guidance Notice 199(M) – Dangers of Interaction – provides further guidance and information on the effects of interaction, including when manoeuvring at close quarters[8].

4.11 Critical Tug Positions

The positioning of tugs on a vessel is a matter for discussion between the Pilot / Master and the Tug master, having full regard for the areas of the hull which should be avoided,

[8] Code of Safe Working Practices for Merchant Seafarers, 2015 edition – Incorporating Amendment 3, October 2018, Para 30.8.1 – 8.3 [11] MGN 199(M) Dangers of Interaction, 2002

e.g. watertight doors, between frames etc. The forward tug is especially vulnerable when passing up the tow line. This tug has to position itself very close under the bow, sometimes under 1 metre from the ship's water plane. The Tug master will be concerned about any bulbous bow or other underwater protrusion, the proximity of the flare of the bow etc. At the same time the Tug Master is countering the hydraulic pressure wave that exists around the bow to avoid severe interaction.

Flares or cut-aways at the bow or stern are of particular concern and can increase the dangers of interaction. Extra caution should be taken by Pilots / Masters when the tug is making fast under a flare / cutaway, especially when the vessel is moving / swinging towards the tug. The danger is compounded at night with the risk of shadows from deck lighting.

4.12 Bollard Pull

The bollard pull of a tug is the amount of static force (pull) that can be exerted on a stationary object. The towing force that the tug can apply to an assisted vessel depends upon the type of propulsion unit, and the method of assistance. it should be borne in mind that the stated Bollard Pull of a tug is not a constant force that can be imparted on the vessel in any given scenario, and is only an indication of the maximum static pull in controlled situations. Factors such as ships speed, tidal stream and the mode of operation, will impact the maximum force that can be applied to the assisted vessel.

4.13 Safe Working Load of Vessel Mooring Equipment

The Pilot/Master should establish the SWL of the vessel's mooring equipment intended to be used for towage operation as part of the Pilot/ Master exchange. This information should be compared with the bollard pull (or dynamic escort force) of the allocated tug. Use of equipment with lower SWL should be avoided. If this is not possible, then the Tug Master must be advised of the SWL and not to exceed this limit. Panama fairleads are preferred to other types of fairleads for towing operations.

4.14 Tow Line Length

When towing on a line a tug master determines the length on the basis of his insight and experience. The towline length when towing on a line depends on factors such as type and length of tug, size and deck height of the ship to be assisted, environmental conditions and available manoeuvring space for the tug. Ship's speed is also important.

There are advantages and disadvantages to both short and long towline lengths and pilots should familiarise themselves with how the manoeuvrability of both the tug and the vessel being assisted if affected. This must be in consultation with the Pilot.

Again, safety is paramount and tug masters should consider carefully the towline length for a forward tug assisting a ship under speed. When using a short towline the distance between the forward tug and ship's bow is very small. Consequently, the time available for a tug master to react is very limited. The tug master should constantly and closely observe course and speed changes. Pilots must ensure that they are careful with engine and rudder movements and keep the tug master well informed about intended manoeuvres[9].

4.15 Static and Dynamic forces in short and long tow lines.

The below is information gathered from Chapter 7 of Tug Use in Port, A Practical Guide. Pilots and tug masters are encouraged to read this section to consolidate their knowledge.

Static forces in short and long towlines

A tug sometimes has to work with a steep towline angle, for instance when a ship has to enter a dry dock. Up to a vertical towline angle of 40 degrees the influence on the force in the towline is not so large. However, when the vertical towline angle further increases, the force in the tow-line increases very rapidly. At a vertical towline angle of 60 degrees the force is already twice the exerted towing force of the tug. A vertical towline angle of 45 – 50 degrees for tugs secured at the ship's side is not too large but when towing on a line it is a large angle, although it does happen. In this case the static force in the towline is already 1,5 times as high as the towing force of the tug.

There is not always a direct relationship between the forces in a towline and the towing force exerted by the tug. Tugs operating in the indirect towing method, particularly at high speeds as is the case with escort tugs, experience very high towline loads mainly due to the high lift forces generated by the tug's underwater body and skeg, if fitted. However, the main factors for the maximum static forces in the towline during normal harbour operations are the tug's bollard pull and the towline angle.

Dynamic forces in a short and long towline

In addition to static forces, dynamic forces can occur in a towline and can reach high values. They are generated by sudden accelerations of the tug, wrong tug manoeuvres, waves, swell, and so on, creating shock loads in the towline. Horizontal tug accelerations can be kept under control to some degree by careful manoeuvring, but this is not the case with vertical accelerations due to waves and swell. It is obvious that these vertical accelerations, which can even be created by waves of passing ships, have a large effect on the forces in a towline, especially in the case of short and steep towlines. The longer a towline and the higher the elasticity, the better dynamic forces can be absorbed and the lower the peak values of the towline loads will be. That is why much attention has to be paid to strength and elasticity of a towline especially when tugs have to work in wave and/or swell conditions with short towlines.

[9] Tug Use in Port, A practical Guide, Captain Henk Hensen, Second Edition, Chapter 7, Sections 7.5.4 – 5.5

Assuming again a vertical towing angle of 45 – 50 degrees , towline forces certainly reach higher values than the previously mentioned 1.5 times bollard pull, due to the dynamic forces generated. How large the dynamic forces are will depend, amongst other things, on length, type and/or composition of the towline. But towline forces in excess of two times the bollard pull of the tug are not uncommon, particularly when towlines with little stretch, such as steel wire and the modern fibre towlines, are used. It is clear that when the brake holding power of the towing winch is less than this value the brake of the winch may slip. This is, of course, only when the minimum breaking strength of the towline is sufficient to cope with the dynamic forces.

It is also worth noting that a short towline means the ship and tug are closer together and this will impact on interaction between both vessels and subsequently impacting tug safety and effectiveness of the towing operation.

4.16 Mooring Vessels

Tug masters, Pilots and Masters should be aware, at all times, of the position and intentions of mooring boats, especially in strong tidal conditions, at night or during restricted visibility or adverse weather conditions.

This is particularly important in circumstances where visibility is limited from the tug's 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.

The Pilot or Master should never use the vessel's engines without confirming with the Boatmen and / or Line handlers as to the position of the mooring boats. Sound signals can be used as a warning on occasions when vessel noise compromises VHF monitoring.

4.17 Escort Towage

Tugs designed for escort operations can exert (when using dynamic towing techniques) a towing force somewhat higher than the tug's bollard pull. This fact must be considered by Pilots/Masters when considering use of escort tugs.

Escorting as a regular operation is becoming common within the port towage industry. This type of operation is carried out in the 'passive' and 'active' modes: passive when running free in close attendance, and active when fast to the tow. If active escort is being undertaken the form of towage can be 'direct' or 'indirect', depending on the speed of the tow. When made fast, all those involved should be aware that increased loads can be applied to towing gear, especially when operating in the indirect mode.

4.18 Standard Risk Assessment

All towage companies operating within the jurisdiction of Peel Ports London Medway shall have in place current risk assessments for all standard towing operations, any unusual or specific operation will require at least a dynamic risk assessment.

CHAPTER 5

Restricted visibility

Some areas are prone to heavy and dense patches of restricted visibility, especially in Autumn and early Spring where conditions can change without warning and visibility can reduce rapidly. Once committed to the Port limits there is often no option to berth or turn around. Therefore transiting these high risk areas will require management. Pilots are advised to dynamically risk assess individual vessels with consideration for size, crew competence, equipment and PPU availability

Where visibility is reduced or expected to be reduced by fog, mist, rain, or other causes and impacts on the ability of the tug to conduct its role is impaired.

The minimum visibility for any towage operations is 0.2NM (2 Cables) or the assisted vessels length if greater and in all cases the Master/Pilot/Tig Master can see other vessels bridge.

These procedures should outline the Pilot/Master/Tug Master Exchange as part of the passage planning and associated risk assessment process. The process should include consideration of the dangers associated with towing in restricted visibility and the control measures appropriate. These considerations should include:

- Type of tug, propulsion method, towing from winch or hook and location of winch/hook.
- The pick up speed in reduced visibility to be a maximum of 6 knots through the water
- 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 area.
- Navigational characteristics of the particular area of the port including the use of information from Group port Control

5.1 Restricted Visibility During an Operation

Should visibility reduce to a level that it becomes restricted during a towage operation the Pilot, in consultation with the Master and Tug master will discuss the situation and agree a course of action to ensure the safety of all persons and vessels involved, given the location of the tow, and the prevailing environmental and vessel traffic conditions. The Pilot will immediately inform the port VTS/LPS of the circumstances and the decisions

made. They will then keep them updated of any further operational developments as well as any improvement or degradation of the visibility.

Some potential courses of action are:

- Let go the forward tug, or any other assisting tug and take the vessel to anchor.
- Use the tugs to turn the vessel, let go the tugs and the vessel proceeds outside the Port Limits.
- Let go the forward tug, or any assisting tug and have the tug assist in a pushing mode.
- Allow the tug to manoeuvre the vessel under the Pilot/Masters instructions. This may include using the tug to maintain the vessels position at a safe location in the Port.
- Proceed alongside

Depending on location and traffic, the safest course of action may The Tug Master should immediately inform the Pilot and Master and Port Control of any concerns he may have as to the safety of his tug and crew. If necessary the operation should be aborted as soon as it is safe to do so.

The Port Authority retains the right to make a final decision on when visibility has improved sufficient for the operation to proceed.

5.2 Towing in Adverse Weather Conditions

When towing in adverse weather, hazards associated with towage operations are increased. In circumstances where heavy weather (e.g., high winds and/or heavy swell) 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 hazards are associated with the towage operation and what risk reduction measures are to be applied.

When completing this assessment, the following must be considered:

- Sea and/or swell conditions at the intended operating area and the route to/from same.
- Wind speed, direction and trend; e.g., rising, steady or falling.
- State of tide and trend.
- Information offered by latest weather forecast and other vessels in the area.
- Type of tug, propulsion method, towing from winch or hook and location of winch/hook.
- Proposed method of towing, including likelihood of shock-load to towing gear.
- Movement of other vessels in the area.

- Navigational characteristics of the particular area of the river including the use of information from Vessel Traffic Services (VTS).

A contingency plan should weather deteriorate before/after the tow has commenced and/or if the tug has to disengage at any stage of the operation must be formulated. This could include after careful consideration, but not only be limited to, one or more of the following:

- Tug does not make fast and remains on station to assist the vessel to a position of safety.
- Tug is let go and remains on station to assist the vessel to a position of safety.
- Tug is let go to assist in a pushing mode.

If there is likelihood that the weather conditions may pose a significant threat to the tug, its crew or towing equipment, the Tug Master shall immediately inform the Pilot/Master of any concerns that he may have. The Pilot/Master and Tug Master shall take immediate action to ensure the safety of the tug and the assisted vessel (and their respect crews) and, if necessary, the operation shall be aborted as soon as it is safe to do so.

The agreed course of action must be fully communicated to Medway VTS on VHF Ch.74

CHAPTER 6

Further guidance and advice

Further guidance and advice can be found in the following publications

Reference Documents

- The Risk of Tugs Capsizing due to Girting
- http://eurotugowners.com/guidelines-for-safe-harbour-towage-operations/
- http://www.workboatassociation.org/news/nwa-towage-good-practice-guide--published-december-2016/
- Tug Use in Port: A Practical Guide – Nautical Institute;
- Recommendations for Ships' Fittings for use with Tugs – OCIMF;
- The Ship handlers' Guide – Nautical Institute;
- Current relevant Merchant Shipping Notices;
- Code of Safe Working Practices for Merchant Seamen;
- Management of Health & Safety at Work Regulations;
- Current relevant Merchant Shipping Acts;
- Girting and capsize of tug Flying Phantom while towing bulk carrier Red Jasmine with 1 person injured and loss of 3 lives - GOV.UK
- MAIBInvReport 17/2024 - Biter / Hebridean Princess - Very Serious Marine Casualty

Appendices

Appendix 1 – BP Isle of Grain Jetty 1 – Tug Requirements

Extract from BP Oil UK Limited's, Isle of Grain Terminal, Kent – "Towage and Berthing Guidelines & Mooring Arrangements". Sections 2.1.6 & 3

Class A Tankers

2.1.6 Four tugs will be engaged for berthing and two tugs for unberthing irrespective of the availability of bow and/or stern thrusters or other shipboard manoeuvring aids.

Class B Tankers

3. Tug Requirements - Class "B" Tankers

3.1 Vessels below 15,999 dwt Tugs to Master's/Pilot's requirements

3.2 Vessels between 15,999-19,999 dwt Berthing - 2 tugs Unberthing - 1 tug

3.3 Vessels of 20,000 dwt over Berthing - 2 tugs Unberthing - 2 tugs

3.4 Vessels fitted with fully operational manoeuvring aids may berth with fewer tugs than stated above. The following table is for guidance of Masters and Pilots when determining the reduction in tug numbers.

Activity	Number of Tugs						
	No Manoeuvring Aids	Controlled Pitch, Prop and/or Enhanced Rudder	Bow Thrusters		Twin Screw Enhanced Rudder Plus min. 1000 HP Bow Thruster	Bow & Stern Thrusters Combined Power	
			Up to 999 HP	1000 to 2000 HP		Up to 3000 HP	Above 3000 HP
Berthing							
Over 16,000 dwt	2	2	2	1	1	1	1
Unberthing							
16,000 - 19,999 dwt	1	1	0	0	0	0	0
Over 20,000 dwt	2	2	2	2	1	1	0

The decision whether additional tugs should be used over and above the minimum requirement shown above will rest with the Master, in consultation with the Pilot, taking into account the prevailing weather conditions.

For vessels of 45,000 tonnes displacement and above, 2 tugs will be engaged for berthing irrespective of the availability of bow and/or stern thrusters or other shipboard manoeuvring aids.

Appendix 2 – Grain LNG Terminal – Tug Requirements

Extract from "Pilotage Rules and Guidelines for LNG Vessels Visiting Grain LNG Terminal" Section 18

18. Tug Requirements and Positions

The below requirements are the minimum for towage; however, higher-rated towage is currently being used. Any changes to this will have to be fully assessed by simulation.

The positioning of the tugs for berthing and un-berthing will be at the Master and Pilot's discretion but should normally follow the agreed format as shown below:

18.1. Berthing 4 Tugs: (min 200t) (Not Q MAX)

Tug	Joining Position	Min Pull	LNGC Max spd (stw)	Position
1st Tug	Oaze to Medway Buoy	65t	Ship speed 10k	Centre lead aft
2nd Tug	At the Medway Buoy	45/70t	Ship speed 8k	Alongside fore'd
3rd Tug	At No 3 Buoy	45/70t	Ship speed 8k	Alongside aft
4th Tug	Fast before Kent Buoys	45/70t	Ship speed <5k	Centre lead fore'd

18.2. Un-berthing Ballast Condition 3 Tugs: (Not Q MAX)

Tug	Joining Position	Min Pull	Let go Position	Position
1st Tug	From the berth	65/70t	Escort to Medway Buoy	Centre lead aft
2nd Tug	From the berth	45/70t	Escort to No 3 buoy (note)	To be advised
3rd Tug	From the berth	45/70t	See note below	To be advised

The position of the tugs on sailing will be dependent on the wind and tidal direction.

In winds exceeding 25 Kts the 3rd tug is to join the 2nd tug as escort on the port and starboard shoulders either made fast or running free at the Pilot and master's discretion.

A 4th tug may be deployed for un-berthing in certain weather and wind conditions

18.3. Q MAX Berthing 4 Tugs: (min 240t)

Tug	Joining Position	Min Pull	LNGC Max spd (stw)	Position
1st Tug	Oaze to Medway Buoy	65t	Ship speed 10k	Centre lead aft
2nd Tug	At the Medway Buoy	45/70t	Ship speed 8k	Alongside for'd
3rd Tug	At No 3 Buoy	45/70t	Ship speed 8k	Alongside aft
4th Tug	Fast before Kent Buoys	45/70t	Ship speed <5k	Centre lead for'd

A 5th tug may be deployed for berthing in certain weather and wind conditions

18.4. Q MAX Un-berthing Normal condition 4 Tugs: (min 240t if wind > 20kts)

Tug	Joining Position	Min Pull	LNGC Max spd (stw)	Position
1st Tug	Oaze to Medway Buoy	65/70t	Ship speed 10k	Centre lead aft
2nd Tug	At the Medway Buoy	45/70t	Ship speed 8-10k	Alongside for'd
3rd Tug	At No 3 buoy	45/70t	Ship speed 8-10k	Alongside aft
4th Tug	Fast before Kent Buoys	45/65t	Ship speed <5k	Centre lead for'd

The position of the tugs on sailing will be dependent on the wind and tidal direction. In winds exceeding 20 Kts the 3rd tug is to join the 2nd tug as escort on the port and starboard shoulders either made fast or running free, at the Pilot and Master's discretion.

A 5th tug may be deployed for un-berthing in certain weather and wind conditions

18.5. Un-berthing Loaded Condition 3 Tugs: (Not Q MAX)

Tug	Joining Position	Min Pull	Let go Position	Position
1st Tug	From the berth	65/70t	Escort to Medway Buoy	Centre lead aft
2nd Tug	From the berth	45/70t	Escort to No 3 buoy (note)	To be advised
3rd Tug	From the berth	45/70t	See note below	To be advised

The position of the tugs on sailing will be dependent on the wind and tidal direction.

In winds exceeding 25 Kts the 3rd tug is to join the 2nd tug as escort on the port and starboard shoulders either made fast or running free at the Pilots and master's discretion.

A 4th tug may be deployed for un-berthing in certain weather and wind conditions.