Launch operations at Fawley (Risk Assessment)

Phenix
Approved

Risk Assessment

Østensjø Rederi AS
Document no.: 2014-0009

General

Title:	Launch operations at fawley	**Location of activity:**	Deck
Risk eval. activity:	Tanker assistance	**Ship operation:**	Steaming
Approved date:	31.01.2014	**Geographical region:**	English Channel
		Risk assessment leader:	

Attendees

No.	Name	Position	Company	Signature

Risk assessment

No.	Task/Activity	Hazard	Hazard desc.	Exposed	RL	Corrective actions	RRL
1.	Boarding/leaving launch	Drowning Entanglement	Slip, fall, crush	Slippery decks and ladder, leading to personal injury, possible MOB.	D3	Ful PPE to be warn plus auto inflate lifejacket.	C3
2.	Rope running	Entanglement	Collision with jetty/vessel	Environmental conditions, lack of awareness. Could lead to p-ersonal injury and damage to launch.	D3	Keep good lookout, be aware of tide and wind.--	--
3.	Rope running	Entanglement	Hit by heaving line.	Lack of attention leading to personal injury.	B2	Wear full PPE, be vigilant for yourself and others.--	A2
4.	Rope running	Entanglement	Uncontrolled tripping of hook on jetty.	poor standards on the jetty leading to injury	D3	be aware the hazard exists and report any incident to charterer.	--
5.	Rope running	Motion Radiation Squeezing Entanglement Toxication	Debris falling fromk jetty or ship.	Poor house keeping leading to personal injury.	D3	PPE, report ship to charterer.	--
6.	Rope running	Entanglement	Barbs on mooring wires.	Poormaintenance on ship leading to handling injury.	C3	Wear PPE, use boat hook, report ship to charterer.	C3
7.	Rope running	Entanglement	Trapping of limbs.	Sudden movement of launch catcyhing	E2	Wear PPE, good communications between ship and launch and launch coxswain and AB on deck.	D2

				deck man off balance, leading to entangklement in ropes.			
8.	Rope running	Entanglement	Fouling of launch props.	Too much line in water becoming vaught in and damaginf props.	C3	Good communication with vessel.	--
9.	Towing	Drowning	Girting	Gog line not used, leading to personal injury and damage to launch.	C3	Use gog line on every tow, crew to be aware of danger of girting and its severe consequences.	C3
10.	Towing	Entanglement	Tow line parting.	Chaffing on sharp steel work on ship leading to personal injury.	E2	Wear PPE, launch crew to keep in wheelhouse whilst towing.	D2
11.	ferrying Passengers	Drowning	Passengers.	Persons unfamiliar with boats, leading to personal injury.	E2	Make passengers wear lifejackets. Keep special watch on pax whilst on launcch.	D2

Risk Leader Signature:

Solent Towage Ltd training programme for launch coxswain

Launch Crew Training Programme – COXSWAIN

Name..... **Launch.....** **Type .....**

Topic - all to be exercised and signed off in presence of experienced Launch Coxswain	**Comments**	**Signed off by**	**Date**
Connect tow to barge. Manoeuvre tug into various positions, hold position according to Pilot's order. (1) straight tow (2) turn to port (3) turn to starboard			
With tow connected to barge, demonstrate manoeuvre when tow line comes ahead of beam			
Connect tow to STL tug underway, running ahead. (1) tow in straight line (2) turn to port (3) turn to starboard (4) letting go	Stay on lee side of bow or quarter during connection. (1) Stretch out ahead or astern, hold position (2 & 3) awareness of position, over-running, girting. (4) back up under bow		
Connect tow to STL tug, underway, running alongside quarter (1) maintain position (2) tow to port or starboard	Run on quarter of ship during connection. Stretch out. Ensure tow rope remains on or aft of beam. If tug is allowed to drop astern of beam, risk of being pulled round and girted.		
Drop astern on STL tug Towing speed 3 – 4 kts **MAXIMUM**	Go round on tight line when safe to do so. Do not drop round on slack line.		
Esso Manoeuvring Criteria	Be aware of the current berthing criteria with respect to the launches		
Reporting of incidents and Near Misses	Be aware of the Company Policy with respect to reporting HSE incidents		

Launch Crew Training Programme – COXSWAIN

Record of Towage Manoeuvres	Manoeuvre(s) conducted	Signed off by	Date
Vessel 1: Length: Deadweight:			
Vessel 2: Length: Deadweight:			
Vessel 3: Length: Deadweight:			
Vessel 4: Length: Deadweight:			
Vessel 5: Length: Deadweight:			
Vessel 6: Length: Deadweight:			

Date Training complete:.....

Senior Launch Coxswain..... **Signed:** .....

Tug Master..... **Signed** .....

Trainee: ..... **Signed** .....

A Guide to Good Practice on Port Marine Operations - Section 9

SECTION 9

SHIP TOWAGE OPERATIONS

9.1 INTRODUCTION

9.1.1. Ship towage is a vital service that needs to be properly reviewed, approved and regularly assessed by harbour authorities.

9.1.2. Harbour authorities need to develop systems to ensure continued safe and efficient towage services including the ability to respond to emergencies. These systems should be reviewed regularly in the light of experience, changes in legislation, tug technology and the operating environment.

9.1.3. In developing these systems harbour authorities should seek to involve the relevant stake holders including; the towage operators, pilots, berth operators, dock masters, boat men, vessel owners and operators

9.1.4. The prime consideration in developing these systems and policies should be to enhance the safety of those that operate in the port and to prevent accidents.

9.1.5. Good communications and team work between towage operators and harbour authorities are essential to ensure efficient and safe operations.

9.1.6. This section provides guidance to harbour authorities in establishing good practice for the safe operation of towage services within port limits.

Tugs

The need for tugs should be included in the risk assessment - taking account not only those vessels which need their assistance to navigate in the harbour (whether as an active or passive escort), but also of the scope for using tugs as a means of reducing risk. An assessment may identify that additional use of tugs is an appropriate means of adequately reducing a particular risk.

The assessment should have regard to the capacity of available of tugs. If tugs are provided commercially, this may be determined by the operator's judgement of the likely work. If commercial provision of tugs is not enough for the effective management of relevant risk, the authority will have to identify other means of doing so. These may impose restrictions on harbour operations. Options include augmenting commercially provided towing resources - including the authority contracting tugs itself.

Harbour authorities should, in consultation with users and pilots, develop towage guidelines based on their risk assessment and incorporate them in their safety management system. The guidelines should not used however, to restrict access to the provision of services by properly qualified suppliers.

Towage guidelines, and related directions, should be used to ensure the use of tugs with appropriately trained and qualified pilots and crew. Competence standards developed for inshore tug personnel should be used for this purpose. The safety management system should provide wherever possible for tug crews to train with pilots and other port marine personnel.

9.2 ASSESSMENT OF PORT TOWAGE OPERATIONS

9.2.1. There are four main areas that the harbour authorities need to consider when assessing towage operations in the port:

Tugs and Equipment

Crew Competence and Training

Safety Management Systems (SMS)

Additional Tug Capabilities

9.2.2. Harbour authorities should develop their own methods of assessing and authorising tug operations and tugs as "fit for purpose" within the port limits, using suitably qualified surveyors, with the following items amongst the considerations.

Tugs and Equipment

- Tug propulsion type and configuration
- Tug general condition and certification
- Tug equipment for towing, particularly winch operations including quick release mechanism of winches and tow hooks, noting that such items are not presently covered by class survey
- Navigation and communications equipment.
- Verification of bollard pull

Crew Competence and Training

- Recruitment, training and certification to MCA required standards [2]
- Manning Policy
- General safety culture
- Crew familiarisation with specific tug types and local port environment
- Familiarity and involvement with Risk Assessment process especially regarding inherent risks in towage operations including
    - girting
    - inter-ship and fixed objects interaction
    - watertight integrity

[2] Crew to have STCW or Boatmaster Licence where appropriate, depending on tug or area of operation. Relevant crew will also be expected to have the MCA towage endorsement Modules "Basic Towing Knowledge" and "Ship Assist Towage" Endorsements which will become the recommended qualifications for harbour towage.

    - manual handling of towage equipment
    - adverse weather including restricted visibility
    - Slips, trips and falls
- Crews' familiarisation with the harbour authorities' emergency response plans and exercise of same
- Required levels of joint training between Pilots and Tug Masters and, where appropriate, PEC holders. (i.e. Simulator and Bridge Resource Management training).

Safety Management Systems (SMS)

- Crew knowledge of and compliance with Safety Management Systems.
- Incident and near-miss reporting, investigation, including follow up, close out and sharing of lessons learned
- Maintenance procedures and operational defect reporting
- Critical systems plant condition monitoring
- Risk assessments
- Compliance with Hours of Work regulations

Additional Tug Capabilities

9.2.3. For routine and emergency planning purposes it would be prudent, at the time of periodic assessments, to record the available tugs' design and construction capabilities and limitations, e.g.

- Towing over the stern capability and whether fitted with towing winch or hook
- Suitability for push/pull operations with bow winch or not
- Active escort capability
- Fire fighting capability
- Clear deck space for helicopter or other emergency operations
- Pollution response capabilities including oil recovery.
- On-scene command facilities
- Transfer of stores/equipment

9.3 TUG UTILISATION GUIDELINES

9.3.1. Guidelines on the number, bollard pull and type of tugs to be used should be established following consultation between facility operators, towage service providers, pilots, harbour authorities, vessel owners and operators following detailed risk assessments. When establishing such guidelines, it is essential to consider the capabilities of tug types as well as propulsion power and bollard pull.

9.3.2. These guidelines need to be based on an objective assessment of safety and take account of the conditions normally prevailing in the harbour and at the berths, as well as the manoeuvring characteristics of vessels normally calling. Towage guidelines may generally be advisory; however, where risk assessments identify a minimum towage requirement in order to mitigate the risks, consideration should then be given to make this requirement mandatory.

9.3.3. Allocation of tugs will depend upon the number, type, propulsion power and bollard pull of the tug fleet available.

The principal factors are:

- Risk assessments
- Bollard pull versus vessel's displacement and windage
- Size, type and manoeuvrability of ships assisted, e.g. tankers, gas carriers, container vessels, ferries etc.
- Scientific data including simulator and other trials
- Historical evidence and experience, including past reports and incidents
- Physical and environmental limitations including tidal streams, wind speeds and directions, and restricted visibility
- Redundancy and back up
- The geography of the port and its approaches, i.e. its navigational complexity
- Difficulties associated with particular berths, locks, bridges etc, including their condition, dredged boxes and limiting water depths
- Environmentally sensitive areas
- The applicability of escorting
- Dead-ship and other floating objects
- Preferred method for securing tugs (if required for particular berths, locks etc).

Special Considerations include:-

Restricted Visibility

9.3.4. Towing in restricted visibility poses the most serious threat to the safety of the tug and its crew.

The Flying Phantom tragedy illustrates the risk to crew when towing in poor visibility.

9.3.5. Harbour authorities should have agreed comprehensive procedures for the use of tugs in restricted visibility, including limitations of visibility for use of tugs, methods of tug assistance, and contingencies.

9.3.6. Particular attention should be paid to

- passage planning with particular reference to forecasts
- communications
- tug positions
- tug assist methods
- speed of vessel
- abort positions
- contingency, including lay berths, anchorages and turning areas
- emergency procedures.

Berth / Jetty / Dock / Terminal Hazard Assessments

9.3.7. Harbour authorities and or facility operators, whoever has primary responsibility, should conduct a periodic hazard assessment of each berth or group of berths. That assessment should involve towage service providers and pilot representatives. It may be appropriate to engage all relevant stakeholders, including vessel operators, line handlers and facility managers, for efficiency and team-building purposes.

Liaison and Co-ordination

9.3.8. Ship towage operations have inherent risks. These risks can largely be mitigated by good communications with open reporting, dialogue and regular liaison.

9.3.9. Among the means of facilitating cooperation and understanding between stakeholders, the following should be considered:

- Regular stakeholders' meetings to include, but not limited to, marine incident reports and lessons learnt
- Regular Tug Master and Pilot meetings
- Management of change, such as new technologies and the introduction of new tugs
- Strategic planning for port developments as they impact on towage requirements, including new berths or vessel types.
- System to communicate changes to dedicated port fleet, including dry-docking or redeployment.
- Tug Masters' input to Pilots' training in simulators

- Pilots to accompany Tug Masters on tug operations; several during initial training and thereafter periodical re-familiarisation.
- Tug Masters to accompany Pilots on the same basis as above.
- Clear directions from harbour authorities when there are requirements to act contrary to guidelines
- Encourage open discussion between stakeholders in case of any difficulties being experienced and promote “no blame” culture.
- Institute incident and near-miss reporting system including feedback and lessons learnt
- Contingency planning including towage in restricted visibility
- Emergency response exercises.

Other Considerations

9.3.10. Harbour authorities should agree a policy on use of ships’ towing gear; with towage operators, generally; ships’ mooring lines should not normally be used for towing operations except in an emergency, or where a proper risk assessment is carried out. Where such use is authorised, extreme caution should be taken to ensure that the size and condition of the line is suitable and duly certificated.

- Harbour authorities should have a procedure, developed in consultation with towage operators, to establish the SWL of vessels’ bitts that are used for towage. These bitts need to be sufficient for the bollard pull of the tug employed. If the bollard pull of the tug exceeds the SWL of the bitts, then the tugmaster should be informed and reduced towage forces employed.

- Harbour authorities should have a procedure to ensure that ships’ personnel do not use unsuitable or dangerously weighted heaving lines.

- Harbour authorities should have a procedure that ensures that ships’ crews do not let go towing gear in such a fashion that there is a danger of it fouling the tug or ship’s propulsion system, or endangering personnel.

Dead Tows, Unusual Objects and Non- Routine Towage Events

9.3.11 The correct use of tugs on such objects requires special consideration and proper planning should be given to the movement of such vessels or floating objects.

9.3.12 Arrivals/departures from/ to sea should be pre-approved by the harbour authority utilising a standard format including method statements regarding:

- riggers/line handlers being transferred to the tow to recover sea gear, emergency tow lines and to prepare for berthing-
- Harbour tug numbers and where and if the tow is to be transferred from the sea tug: such decisions will depend largely on the suitability of the sea tug to

perform assist duties as well as berth characteristics, locks etc. and the availability of suitable harbour tugs.

- weather limitations-
- suitability of destination berth and whether adjacent berths need to be cleared-
- number of suitably experienced pilots required for the sea tug and/or tow-

9.3.13 In-port project non-routine tows should be risk assessed by all appropriate stake holders. Key decisions should be recorded and the person (acting as Towing Master) who is responsible for the safety of the manoeuvre and the passage plan should be clearly identified.. This person is responsible:

- for conducting an appropriate risk assessment (see Chapter 4) to be submitted to the harbour authority
- producing a method statement
- the passage plan and
- the safety of the manoeuvre

9.3.14 The Harbour Authority should give written approval for the tow to go ahead once the plan has been reviewed and agreed.

9.3.15 In exceptional circumstances and for major projects, the use of simulated trials should be considered.

9.3.16 Pilots training should include towage events of non-propelled objects utilising a variety of tug types. A Port authority should consider the appropriate level of experience (in particular with respect to the operation of tugs, familiarity and experience of the intended manoeuvre etc), when deciding if a PEC holder can conduct dead tow, or whether a Pilot(s) should be assigned.

9.4 USEFUL REFERENCES

Tug Use in Port (Ch 8)	Nautical Institute
Working with Tugs	Videotel
Mooring Equipment Guidelines (3rd Ed)	OCIMF

MGN 209(M) towage endorsement - *"Basic Towing Knowledge" and "Ship Assist Towage"" Endorsements*

Major Ports who have undertaken extensive work on the Port Marine Safety Code Towage Guidelines, with input from:-

- The Bristol Port Company
- Port of London Authority

- ABP Southampton
- ABP Humber
- Harwich Haven Authority
- Forth Ports Limited