LOSS PREVENTION
Briefing

NORTH
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LOSS PREVENTION BRIEFING FOR NORTH MEMBERS SHIPS

AUGUST 2015

Produced in co-operation with the United Kingdom Maritime Pilots' Association and the International Maritime Pilots' Association

Pilotage Series - Master Pilot Information Exchange

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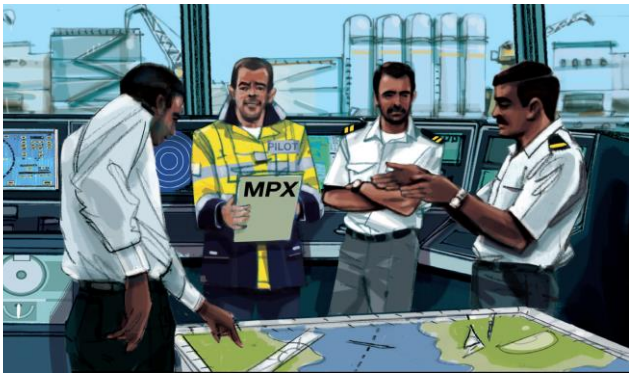

Introduction

One of the most high risk events for a vessel is departing from or arriving at a port. The port will often be unfamiliar to the crew on board, may require navigation in confined or congested waters, with high traffic density. Additionally interaction with third parties such as harbour pilots, tugs and Vessel Traffic Services (VTS), may give rise to communication difficulties.

While there are a number of sources of information on ports available to the Master, it is the expertise and local knowledge of harbour pilots which is most heavily relied upon to ensure that the vessel completes the berthing operation safely. Using their knowledge of local conditions and navigational hazards pilots provide advice and assistance to the Master during the pilotage.

Although the Pilot will have detailed knowledge of the particular port and will likely have extensive ship handling experience, it is probable that they will not have detailed knowledge of the specific equipment fitted to the vessel or of its manoeuvering characteristics; this is the crew's area of expertise. Therefore, for the vessel to arrive or depart from the port safely, the Master, crew and the Pilot must operate as an effective team. This can only be achieved by a comprehensive exchange of relevant information from the vessel to the Pilot and from the Pilot to the vessel, so that the entire bridge team and the Pilot have a full and shared understanding of the intended operation.

IMO Resolution A.960 'Recommendations on Training and Certification and Operational Procedures for Maritime Pilots other than Deep Sea Pilots' contains the following statement:

"Efficient pilotage depends, among other things, upon the effectiveness of the communications and information exchanges between the Pilot, the Master and the bridge personnel and upon the mutual understanding each has for the functions and duties of the other."

This briefing is intended to supplement information already available from sources such as the International Chamber of Shipping's Bridge Procedure Guide by explaining the reasoning behind the information exchange. It also provides examples where the exchange of information, or understanding of, the operation has been problematic thereby resulting in costly incidents.

Master to Pilot Information

While the Master Pilot information exchange must be comprehensive, the method of relaying information should be carefully considered. Checklists can provide a useful guide to the information to be discussed, however care should be taken to ensure this does not become a tick-box exercise completed without much thought.

It is possible that where different languages are spoken an individual's ability to process spoken information may be limited resulting in critical information being missed or misunderstood. Therefore, it is essential that good judgement is exercised as to the amount of information provided so as to avoid overloading either the Pilot or members of the bridge team.

Ship Particulars

The information exchange should include details of:

- the vessel's current deepest draught,
- trim,
- displacement,
- air draught (distance from waterline to highest point of the vessel),
- overall length, including the length of the bulbous bow,
- beam,
- freeboard.

This information will dictate the route chosen to or from the berth and will ensure that planning and execution of all manoeuvres makes suitable allowance for the dimensions of the vessel.

This information is critical in avoiding groundings and contact with harbour structures. For example, there have been a number of significant incidents where vessels not making way have been turned in basins using tugs without making allowance for the bulbous bow, resulting in contact being made with the jetty.

The Pilot should also be familiarised with the vessel's squat tables, which will alert him to whether the vessel will squat by the head or the stern when underway and also provides an approximation of the amount the draught will increase for a given speed. This may assist the Pilot, in conjunction with the Pilot's experience and the port's guidelines, in considering the most appropriate speed for the available depth of water whilst ensuring steerage is maintained.

Anchors

In addition to the Pilot knowing that the anchors are available and ready for use in the event of an emergency, it is important that details of the anchor equipment are provided, particularly where the intended manoeuvres require their use. The length of anchor cable available may also have an influence on how the anchors can be utilised to assist in manoeuvering the vessel.

Manoeuvering Details

Discussion of the vessel's manoeuvering characteristics, covering the whole pilotage, at the current draught and trim, are critical to ensuring the safe completion of the intended operation. This discussion should include details on:

- the number of propellers,
- whether or not they are CPP,
- their direction of rotation,

- the type and maximum allowable angle of the rudder(s),
- the turning circle and stopping distance in the current condition, shown on a readily accessible poster,
- the number and capacity of fore and aft thrusters including details of the effective thruster speed
- the minimum steerage speed,

Most or all of this information should be found on the vessel's pilot card which should be of the IMO standard design. This information will have a significant influence on how the vessel can be manoeuvred, the number and size of tugs required and the manoeuvering advice provided by the Pilot. It is also critical that information regarding the likely speed of the vessel for a given engine command is exchanged and understood.

Failure to fully advise the Pilot of this information and incorporate it into a manoeuvering plan has resulted in a number of claims where the vessel has been unable to make an intended turn and has subsequently run aground, or made contact with a berth or another vessel.

Main Engine Details

Information relating to the type of engine(s) fitted, the maximum number of starts which can be made and the time taken to go from full ahead to full astern will allow the Pilot to plan the vessel manoeuvres effectively whilst allowing suitable time for engine commands to take effect.

Equipment Defects

The Pilot must be advised of any equipment defects related to the manoeuvrability and or navigation of the vessel. Depending on the nature of the defect and the individual port regulations the vessel may not be permitted to proceed with the pilotage without repairs being completed or without having additional tugs in attendance. The Pilot will likely be required by law to report any defects to the local Port State Control officers. In some circumstances this may result in the vessel being detained.

Other Important Information

The more detailed and complete the information passed to the Pilot, then the better placed he will be to develop a suitable plan in conjunction with the bridge team which incorporates any restrictions or peculiarities of the vessel.

However, it is critical that the common language has been specified, including the method of relaying communications to tugs / VTS etc. Clarification should be sought that the information exchanged has been fully understood.

Where a vessel calls regularly at a port(s) then it may be beneficial for the Company and the local pilots association to meet and explore methods of working together which may be beneficial to all parties.

Arrangements for disembarking the Pilot should also form a part of the Master Pilot information exchange.

Pilot to Master Information

Berth and Tug Details

The Pilot should provide the bridge team with details of the intended berth in order to confirm that the berth is suitable for the vessel, that the berth to berth voyage plan has been completed to the correct berth and to confirm which side alongside the vessel will moor. The berth details will allow the Master to ensure that the vessel's mooring plan is appropriate for the expected weather, taking account of the number and position of bollards, the method of passing mooring lines ashore, the positioning of other vessels on or near the intended berth and any shore structures which may pose a hazard to the safe movement of the vessel.

Where tugs are to be employed, the Pilot should provide the bridge team with information relating to the number, type and size (bollard pull) of the tugs available, how the tugs will be employed (either made fast or free), whether tugs lines or ships lines will be utilised, where the tugs will be positioned and where / when they will meet the vessel.

The pivot point, or point around which the vessel will rotate, will move depending on whether or not the vessel is making way, moving ahead or moving astern e.g. midships, approximately ¼ vessels length from the forward perpendicular or approximately ¼ vessels length from aft perpendicular respectively.

The position of the pivot point should be considered for each stage of an intended manoeuvre when deciding on how tugs are to be utilised, as the tug's positioning relative to the pivot point will have a significant influence on the ability of the tug to turn the vessel. This is particularly noticeable when the required bollard pull is close to the maximum pull which the tug can achieve.

The Pilot should be notified of the SWL of the ships bollards, bitts and leads to ensure that these are not overloaded by the tug(s). As the tests to determine the bollard pull of a tug are static, it is important to remember that the towing force can significantly exceed the bollard pull figure in dynamic towing conditions.

There have been a number of large claims caused by incorrect positioning of tugs, using tugs with insufficient or too much power, or a failure to consider the position of the pivot point when positioning tugs for a manoeuvre. An example of this is a vessel approaching a berth with the intention of turning through 90° with tugs positioned fore and aft. The number and size of the tugs used was insufficient, the aft tug was unable to stop the vessels forward movement as the approach speed was too high and as the pivot point was forward the forward tug could not exert enough turning force to prevent the vessel contacting the berth.

Prior to the employment of tugs, the Master should have an idea of the static bollard pull required given the current displacement of the vessel. The required bollard pull can be roughly calculated by the following formula:

$$\text{Bollard pull(t)} = \frac{\text{displacement(t)} \times 60}{100{,}000} + 40$$

On vessels such as container ships or car carriers where there is a significant windage area, then the required bollard pull can be calculated by the following formula which is suitable for winds on the beam up to 30° either side:

$$\text{Total required bollard pull (Kgf)} = 0.08 \times A \times V^2$$

(A = the ship's longitudinal windage area in square metres, V = The wind speed in metres per second) (Kgf to MT / 1000) approximately.

Expected Weather and Sea Conditions

The bridge team should have assessed the expected weather and current conditions during their passage planning, however the Pilot may be able to provide additional information on any local anomalies. With the bridge team being fully informed of the expected conditions, then they will be in a position to properly monitor the progress of the vessel along the planned route and will be less likely to be caught out by unexpected changes in wind and or current.

By assessing and understanding the conditions expected at each stage of the voyage, this information can be factored into the voyage plan and where possible may be used to assist in manoeuvering the vessel more effectively.

Voyage Plan

Although the vessel's bridge team will already have developed a berth to berth voyage plan, this may not match the Pilot's intended voyage plan. It is therefore critical that a detailed discussion takes place between the Pilot and the bridge team regarding the intended route. This allows any differences between the plans to be fully understood and all relevant navigational charts to be amended as appropriate. When the Pilot and the bridge team all have a thorough understanding of the proposed plan, then the vessel's progress can be effectively monitored and any error made by either party can be quickly identified and remedied.

Contingency planning should form a part of the voyage plan. This should include information such as the identification of abort points, emergency anchorages and no-go areas.

The vessel should not commence the pilotage until a shared voyage plan has been agreed and understood by both the Pilot and the bridge team. While it is preferable to have all relevant charts and documents amended to incorporate any agreed changes prior to commencing the pilotage, this may not be possible due to traffic density and or tidal restrictions. However, every effort should be taken to do what you can in the time available.

When the Pilot and bridge team have differing plans, then there is no plan.

Regulations and Other Information

The Pilot should provide the bridge team with details of any applicable local regulations which could affect the movement or operation of the vessel or the loading or discharge of cargo. For example some ports prohibit the movement of vessels during the hours of darkness.

Any other information relevant to the safe movement or operation of the vessel should be provided by the Pilot to the bridge team.

This will allow the Master to ensure that the vessel complies with port requirements and confirms that no aspect of the intended passage will place the vessel at risk.

Records of the Master / Pilot exchange should be retained on board the vessel in accordance with company procedures. These can be used in conjunction with recovered VDR recordings, in particular audio recordings, to assess the effectiveness of the information exchange and the pilotage as a whole.

Discussions

As can be seen from the above, it is critical for the safe completion of a pilotage that a detailed professional discussion is held prior to commencing a pilotage. Ideally this discussion and all future communications relating to the pilotage should be conducted in English or in another agreed language understood by both bridge team and Pilot. Where the Pilot is relaying instructions to tugs or communicating with the VTS in the local language, this should be summarised for the benefit of the bridge team. Where the Master and bridge team are communicating in a language not understood by the Pilot then a suitable translation should be made for the Pilot's benefit.

In order to avoid confusion between the Pilot and bridge team, communications which are not directly related to the safe movement of the vessel should be avoided, for example mobile phone calls with third parties.

Summary

The presence of a Pilot on board never relieves the Master or bridge team of their duties and responsibilities for the safe navigation of the vessel.

Only by clear, detailed and professional discussion and communications between the bridge team and Pilot can the Pilot effectively contribute to the safe completion of a port arrival or departure. The flow of information between the Pilot and bridge team should be an ongoing process which continues for the duration of the pilotage. This ensures all parties can monitor the vessel's progress and will be aware of any developing situation or change in expected conditions.

In order to ensure the continued development of the bridge team and their interaction with third parties, where appropriate it may be beneficial from time to time to review the VDR recording for the port arrival or departure.

Not only does this provide the Master and crew with the ability to critically assess their performance during the course of the pilotage, but also ensures familiarity with saving and recovering VDR data.

Acknowledgements

This briefing has been produced in co-operation with the United Kingdom Maritime Pilots' Association and the International Maritime Pilots' Association.

Website: www.ukmpa.org

Website: www.impahq.org

Further Information

Website: www.nepia.com

Email: loss.prevention@nepia.com

: @NorthPandIclub

: North of England P&I Association Limited