



Passage Plan+



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1.

Introduction

Voyage/Passage planning is something that must¹ be carried out for every vessel before departure. Every company has its own procedures and there are many guides defining how it should be handled. This guide should be seen as a complement to the individual member's already existing Voyage/Passage Plan procedures. We therefore call this document Voyage/Passage Plan +.

Voyage/Passage planning is something that every bridge officer should be familiar with.² However, the quality of Voyage/Passage planning can differ greatly from officer to officer. As an insurance company, we handle many claims every year and issues regarding Voyage/Passage planning are a recurring theme.

We believe these suggestions will enhance our members' existing Voyage/Passage Plans.

We would also like to thank Captain Hans Hederström and Captain Antonio Di Lieto for their invaluable help.

¹ IMO RESOLUTION A.893(21) adopted on 25 November 1999 GUIDELINES FOR VOYAGE PLANNING

² It's Master's responsibility and also company responsibility (through ISM/SMS) to ensure compliant and sufficient Voyage/Passage planning.

2.

Preventive measures – best practices

As an underwriter, we expect that our members follow the requirements for proper Voyage/Passage planning as per international and national regulations.

There are several documents that can be used for Voyage/Passage planning. Two such documents that are useful are 'A Good Practice Guide To Pilotage Planning' by the New Zealand Maritime Pilots' Association and 'The International Chamber of Shipping Bridge Procedure Guide Sixth Edition'³.

³ ICC Bridge Procedures Guide Sixth edition is a good foundation for a navigation policy, Chapter 3 is dedicated to passage planning.

Voyage/ Passage plan +

The below suggestions are what we believe should be included to make an even more resilient Voyage/Passage Plan, which we call Voyage/Passage Plan +.

3.1 Port cards

Port cards include critical navigation information. There should be a general section which applies to all the company's vessels which are port specific e.g. photos of the port and other points of interest. As they include experiences from all company vessels, this document should be continuously updated.

It is important to include how successful operations were achieved and the learning experiences from them. When debriefed they help to understand what went well and what did not and the reasons for this. There should also be a vessel specific section which defines proper propulsion capabilities, mooring arrangements, specific environmental limitations etc.

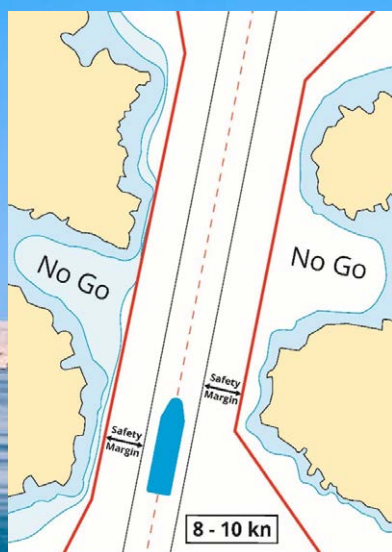
3.2 Voyage/Passage Planning in Confined Waters

- The Voyage/Passage Plan is the foundation for the entire navigation control process from berth to berth.
- The Voyage/Passage Plan should facilitate timely interventions by the bridge team members - this is one of the cornerstones of MCRM.
- **The Safety Margin⁴** is a resource to be used, when necessary, in case of unexpected/unplanned situations.
- **Effective communication⁵** is needed in case the pilot makes a deviation from the planned corridor. This must be done without criticising or creating a feeling of threat which could cause the pilot to react defensively. The vessel is still in the agreed corridor and has not used any of the safety margin.

⁴ The Safety Margin should be entered in all critical navigation equipment e.g. ECDIS, Radar.

⁵ See section 3.5.

Fig 1



We need to redefine how we create a Voyage/Passage Plan for confined waters in order to combine Voyage/Passage planning with MCRM tools.

An interval of planned values that represent normal operations. If everything goes according to plan, none of these values will be exceeded.

No-go area/values that cannot be exceeded (i.e. non-navigable waters, breakwaters, speeds beyond or below which it is impossible to control the vessel). If the no-go value is exceeded, then the ship is either aground or has an allision or collision.

The Safety Margin: the difference between planned values/ areas and no-go values/areas. This represents the safety margin available for a specific critical element. The safety margin is a resource and can be used intentionally in order to adapt to unplanned situations, such as traffic or changes in environmental⁶ conditions. It may also be used unintentionally due to conning errors⁷.

For this concept to work effectively, critical navigational elements must be agreed upon and shared in advance before navigating in confined waters.

⁶ Environmental conditions which have an impact on the vessel e.g. tide, currents, visibility, wind, waves.

⁷ How to define safety margins is discussed in the excellent article Mental Models in Confined waters – Antonio Di Lieto, Hans Hederström, Peter Listrup, Ravi Nijjer Seaways June 2018

3.3 Voyage/Passage Plan sub sections

We can divide the Voyage/Passage Plan into four different sub-sections. In this way, we can emphasize in more detail the critical and final stages of the plan.

The outline below is published in the book Diligent Pilotage⁸.



Route plan

Track keeping phase of the voyage within a corridor associated with the track.



Manoeuvring plan

The details about the dynamic positioning phase in a turning basin, near berth anchorage or when the ships move slowly.



Mooring plan

The details about the static positioning of the ship.



Towing plan

The details about the use of tugs under both normal and emergency conditions. During a pilotage⁹, such planning could potentially affect all previous phases.



Sharing pilotage plans before the pilot boards¹⁰

if the pilots in the destination port publish their pilotage plan electronically a bridge team can be properly prepared well in advance of the pilot arriving on the bridge and have it implemented in the ECDIS and other critical navigation equipment. It is recommended that the plan is included as a subsection to the own Voyage/Passage plan. Published pilot plans are not common but done correctly will improve safety.

⁸ Diligent Pilotage by Antonio Di Lieto - page 74

⁹ It is essential that common language is used between Pilot, the bridge team, tug crew.

¹⁰ Good Practice Guide To Pilotage Planning by the New Zealand pilot association

3.4 Bridge Team setup

This is a suggestion on how the bridge team can be setup¹¹.

One person can have several roles if only the Master and one Officer are present on the bridge. This means that the Master can be Conning and Command while the OOW is Monitoring and Assisting Navigator. For this system to work, it is imperative that correct information is received by all team members. It should always be clear who has the conn i.e. if the OOW has the conn, the Master must clearly inform the bridge team when he takes the conn. Just because the Master is on the bridge doesn't mean he has the conn, however the Master always has command of the vessel as he/she is legally responsible for the safety of the vessel.

¹¹ The Swedish Club Bridge instructions

Officer Conning¹²

- will be in operational control of the vessel.
- informs all team members about planned manoeuvres and actions.
- delegates defined tasks to team members.
- shall request challenges from team members when there is any deviation from agreed plan.

Officer Monitoring¹³

- shall monitor the progress of the vessel and ensure that the actions of the conning officer have the intended effect.
- shall intervene/challenge the actions of the conning officer when the vessel is about to use the safety margin or when in doubt about the conning officer's actions.
- shall keep him/herself updated on the progress of the vessel to the extent that he/she can assume control of the vessel at any time.
- under many circumstances, it is an advantage if the more senior officer¹⁴ acts as the Monitor.

Assisting Navigator

- shall assist in monitoring the position of the vessel.
- shall ensure the logbook¹⁵ is completed.
- shall verify that checklists have been completed.
- shall handle communication both internally and externally i.e. VHF, UHF and answering the phone if needed.

Lookout

- Is responsible for reporting visible traffic or objects.

Command

- The Master always has overall command of the vessel but not necessarily the conn.

¹² Also referred to as the Pilot.

¹³ Also referred to as the Co-Pilot.

¹⁴ The purpose is to train junior officers however this could be difficult when there is only the Master and OOW on the bridge. How this is setup will always be by Master's discretion.

¹⁵ Can be an electronic logbook

3.5 Communication

Communication between the bridge team and the pilot is critical for safe operations. Reality and its meaning for one person can be completely different for another.

For communication to be effective it is essential that we ensure that our message has been well received and understood by the recipient. This enhances situational awareness, which defines our understanding of what is happening and what is likely to happen.

When the bridge officer is not fully aware of what is happening around the vessel and has not fully reflected on what the consequences of his action or inaction will be, then we see poor situational awareness.

Suggested tools:

Thinking aloud – This is as it sounds, the intended action will be voiced. “I will alter to starboard to two-seven-five and reduce speed to ten knots.” After this has been voiced to all on the bridge the action is taken.



Closed-loop communication

A closed-loop sequence of orders may be illustrated as follows: The pilot orders, "Starboard, steer three-five-five." The helmsman repeats the order verbatim, "Starboard, steer three-five-five." The pilot then closes the loop by confirming to the helmsman that the order was correctly repeated.

PACE (Probe Alert Challenge Emergency)

A plan has been agreed upon. If there is a deviation from the plan, this could be voiced in the following manner by using PACE.

Probe

"Mr Pilot is there a reason why we are using the safety margin?"

Alert

"Mr Pilot we are a cable port into the safety margin".

Challenge

"Mr Pilot I recommend altering to starboard and slowdown".

Emergency

"Mr Pilot you are relieved, I will take the conn".

3.6 Due Diligence in Voyage/Passage planning

According to case law, for proper Voyage/Passage planning it is not enough to just comply with rules and regulations. Voyage/Passage planning should also include due diligence.

The following bullet points were raised by Richard Robinson¹⁶ when it comes to due diligence in pilotage. This can be applied to Voyage/Passage planning as well.

Due diligence essentially means to think of all possible practical precautions that can be done and implemented. The plan should have defined margins and what is expected of the bridge team if these are used.

Think of this when making the Voyage/Passage Plan:

- identify all possible, critical issues of concern with an argument on why for each of them (foreseeability)
- identify all possible practical precautions (technically doable)
- determine which possible practical precautions are reasonable, taking into account the availability and suitability of good practices/knowledge and their cost
- Implement the precautions
- Assure Quality
(check that what was said has been implemented¹⁷)

¹⁶ Richard Robinson – Partner at R2A Due Diligence Engineers Topic: Demonstrating due diligence in marine pilotage

¹⁷ Comply with IMO RESOLUTION A.893(21) adopted on 25 November 1999 GUIDELINES FOR VOYAGE PLANNING

Conclusion

Most voyages are successful and nothing happens.
No groundings, collisions or heavy contacts with a berth.

This guide should be seen as a complement to the SMS's already approved Voyage/Passage Plan procedures. It focuses on some specific best practices that will enhance safety.

One of the main takeaways is that the safety margin is imperative for the bridge team to have a unified understanding of what is expected and what is not. Having defined safety margins makes it easier for a bridge team member to voice that the safety margin is being used and that corrective actions should be taken.

A robust and efficient Voyage/Passage Plan can help the bridge team detect anomalies, errors, and faults that could otherwise lead to a grounding, contact, or collision.

No system is perfect, but a prepared bridge team is better at detecting an issue before it is too late. A flexible system allows all bridge team members to contribute and analyse new information that will have an impact on the vessel's safety.

It is not about having the most requirements and the longest checklist, but more about being able to adapt to the constantly changing situations and information that occur during a vessel's voyage.

By implementing Voyage/Passage Plan+ we believe safety is improved.



