Navigation risk assessments

This article discusses the use of navigation risk assessments to assess the competence and experience of navigating officers.

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Introduction

Whilst it is widely acknowledged that The International Convention on Standards of Training, Certification and Watchkeeping (STCW) has improved the average standard of competence of deck officers within the maritime industry, many accidents still occur due to lack of competence, negligence and other human factors. The concept of STCW is a good one and the content is sound, but a gap exists somewhere between its intentions and its application. This gap results in allisions, collisions and groundings.

Identifying trends

The European Maritime Safety Agency's statistics for the years 2011 to 2015 indicate that navigation casualties made up 50% of all ship casualties recorded in that reporting period. Of these navigation casualties, 36% were contact incidents, 33% were groundings/strandings and 31% were collisions. All of these incidents occurred in spite of the training and certification of the officers involved and the procedures designed to prevent them.

The Standard Club is a firm promoter of navigation risk assessments (NRA) as an alternative means for the assessment of navigation competence. This is based on the realisation that there are few reliable substitutes for the close observation of deck officers during routine operations. The aim of a navigation risk assessment is to obtain a real insight into the abilities and attitudes of the deck officers on board a given ship. Combining the data from the club's claims with the qualitative information gathered during our own NRAs has revealed the following trends:

- Busy traffic separation schemes followed by pilotage waters are the areas of greatest danger.
- Master/pilot exchanges are often weak and defeat the purpose of having them.
- Manning levels on the bridge during critical phases often fall below safe levels.
- Monitoring the vessel's position by all available means is not routine on many bridges.
- Over-reliance on GNSS/ECDIS is commonplace.
- This over-reliance is compounded by neglecting to use visual fixing and parallel indexing techniques.
- SMS mandated checks are often neglected, a common example being gyro compass checks.
- Checklists are often completed ineffectively, suggesting that there is a tick box culture.

In every instance where one of these deficiencies was observed, the officer was properly certified and worked within the confines of an approved safety management system. Two key themes exist within these deficiencies: a failure to follow an established procedure and a failure to maintain best navigation practice. It is not clear why officers disobey known safety procedures, or why their navigation standards fall short of best practice. One question that needs to be answered is whether the deck officers are merely being complacent or are unable to maintain best practices. What is clear however is that compliance with STCW standards alone does not guarantee that an officer will be a competent officer of the watch (OOW).

Raw material

Deck officers must combine the skills learnt during formal classroom instruction with practical experience and intuition. An OOW must be able to collate data from disparate sources and convert it into actionable information. This process must sometimes occur quickly and under intense pressure. Whilst skills such as these can be learnt and improved upon, some people are simply not suited to this role. Recent collisions in coastal waters have occurred because both bridge teams failed to take action, which appears to indicate that some deck officers lack the ability to perform their role under pressure.

The industry should ask itself whether its methods of training and promotion are sufficient to weed out officers who fall short of such requirements.

The Standard Club promotes the use of close observation of officers in an operational setting to ensure they can be effective in all circumstances. There are other ways, including:

- simulation courses which feature carefully structured scenarios designed to test the seafarers' practical skills and adherence to procedures
- promotion systems which emphasise the ability to fulfil the role rather than the level of certification alone. Such systems could include the close observation of officers during a probationary period
- analysis of the VDR data after the ship has passed through a confined/dangerous area such as the Singapore Strait

- reporting and assessment methods which also include the assessment of an officer's confidence, initiative and ability to make decisions under pressure. This would be in addition to the traditional methods of evaluating officers, such as their ability to complete day-to-day tasks
- the promotion of a just culture within the organisation which encourages near-miss reports to be made and seniors to be challenged without repercussions, allowing weak team members to be identified and addressed
- an ongoing assessment by officers of their peers to watch for actions or omissions that could result in a dangerous situation and to report such issues.

Conclusion

The maritime industry has made great strides in its pursuit of safety in the last 30 years. Despite these achievements, it still falls short. Advanced equipment and systems have provided measurable successes, but these elements are frequently undermined by poor human performance. If the maritime industry wishes to compete with the aviation industry's safety record, it must solve the human as well as the technical problems it faces.

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Two key themes are apparent when observing deficiencies in routine operations:

- a failure to follow an established procedure
- a failure to maintain best navigation practice.