

It is difficult to get statistics, but it is known that high-profile navigation incidents have occurred where the full bridge team did indeed have BRM training or an equivalent. The evidence is there that many BRM or equivalent courses are not effective and the outcome of the training is poor.

To provide some context into this apparent failure of BTM/BRM, we can quote the Norwegian Accident Investigation Board's (AIBN) report into a bulk carrier grounding in 2008.

*"Based on conversations with pilots and bridge crews, the AIBN believes that lack of an effective bridge team is not unique to this accident. Although both the ship's officers and the pilot have attended BRM courses, this appears not to have been sufficient to introduce a practice where the ship's bridge crew and the pilot together form a well-functioning bridge team. Both ship management companies and the pilot services are still lagging behind in establishing how to introduce the BRM principles in practice."*

Subsequent to the grounding and based on the internal investigation, the ship management company decided to send the ship's navigators on another BRM course.

## BRIDGE WORK

### MONITORING THE SHIP'S POSITION

The navigator must accurately establish the ship's position at appropriate intervals and use this information to keep the ship on a safe track, taking into account navigational risks. If this simple task was performed effectively, many groundings would be prevented.

The traditional skill of looking out of the bridge windows and confirming what you see with what you see on the chart, electronic or otherwise, is fundamental for safe navigation.

Fixing the ships position:

- fix at appropriate regular intervals
- fix at more frequent intervals using visual, GPS and radar in confined waters
- if there are discrepancies in the positions to the planned track then this should be investigated, or when under pilotage, brought to the pilot's attention
- parallel indexing should not replace checking the ship's position on the chart at regular intervals.

### CHANGE OF THE WATCH

Poor watch handover practices are often an underlying cause of major grounding and collision incidents. and sometimes the use of checklists appears to be covering up the fact that officers consider a good bridge handover needs only a completed checklist without having a proper briefing or exchange of relevant information.

Owners should highlight that changing over the watch:

- is an important part of the navigational watch
- should be carried out effectively whatever the situation
- cannot be replaced by a checklist
- requires that the position, course and traffic is checked within a short time
- should be considered as a key part of bridge training.



### CASE STUDY

A loaded, chemical tanker on a trans-Pacific passage ran aground on an uninhabited but clearly charted coral atoll, 4 kilometres across. All deck officers had joined the ship and owner for the first time, and the master had also just joined the ship a few weeks previously.

The ocean passage plan showed that the course had been drawn inshore of the 200 metre line when passing the atoll. GPS position fixes were put on the chart every two hours; however, ECDIS displays showed a track at 0.5 mile from the centre of the atoll where the water depths were from 0 to 30 metres.

On the morning of the grounding, the weather and visibility conditions were good and the chief officer arrived on the bridge minutes before 0400 hours to take over the watch. The radar showed an echo at 11 miles, which the second officer reported was a cloud. The chief officer then sat on a stool in the corner of the bridge to smoke a cigarette and drink a cup of coffee. The radar target of the 'cloud' was deselected, now preventing the Automatic Radar Plotting Aid (ARPA) from alarming. At 0400 hours, with the ship's speed at 16 knots, the second officer left the bridge with the island now six miles away, providing a distinct radar echo. At 0430 hours, the chief officer made another cup of coffee and the ship grounded on the atoll six minutes later. There was no other land within 1,200 miles.

### LESSONS LEARNT

- masters should check the passage plans as well
- watch handover briefings should be comprehensive
- the officer taking over the watch should confirm the ship's position and passage plan
- the officer taking over the watch should confirm the targets and traffic on the radar
- procedures should ensure that masters assess the navigational competence of officers.

### CASE STUDY

A loaded bulk carrier departed a port and after dropping off the pilot, the master left the bridge, handing over to the second officer. The second officer left the auto pilot as set by the master and did not monitor the ship's progress or put a position on the chart for over 40 minutes. 20 minutes after the master left the bridge, the ship had run aground at 14 knots, seriously damaging the hull and steering gear.

### LESSONS LEARNT

- a proper watch handover briefing is essential
- watchkeepers must retain situational awareness
- frequent checks on the ship's position-keeping is fundamental for safe navigation
- deviations from the passage plans require additional vigilance in coastal waters.



### BRIDGE PROCEDURES

Bridge navigational procedures should be a part of the owner's Safety Management System and this should outline the owner's requirements on how the bridge is to be managed. This is an important procedure and serious consideration should be given to its contents. Initially bridge procedures should include the guidance referred to in the *ICS Bridge Procedures Guide (4 Ed 2007)* and other similar guidance material. However, the following should also be considered to be a part of bridge procedures even if not addressed in the *ICS Bridge Procedures Guide*:

- when to pick up and disembark the pilot
- pilot briefings and duties under pilotage
- training the lookout
- appraisal of navigational competence
- appropriate watchkeeping manning (for example, river transits, heavy traffic, unfamiliar port approaches)
- fatigue management.

The scourge of using the mobile telephone on the bridge should be restricted. A number of case studies point to the use of the mobile phone as instrumental in causing the incident.

### BRIDGE FAMILIARISATION

There is a firm perception that when an owner engages a navigational officer, it is on the basis of accepting that his certificate of competency is proof that he will be acceptable on board their ships. Most companies have for some years been diligent in making sure that the certificates of competency are 'genuine'; however, the 'blind' acceptance that the certificate of competency is an assurance that the person is a competent navigator is certainly a false one. A demanding pre-joining navigational assessment is one way of determining if those navigators are suitable.

When the new watchkeeper joins the ship, often he has had no proper familiarisation on that particular bridge and rarely does he have an overlap voyage with the watchkeeper being relieved. It is also rare that a competence assessment is done prior to taking control of the watch, and that should be of some concern.

A significant number of navigational collisions or groundings have occurred soon after the watchkeeper has joined the ship. However, the method of employing the seafarer from a third-party manager or crewing agency could mean that there is less control on who is employed, less control on their competence, experience and suitability.

Owners should ensure that assessments of competence are carried out before a watchkeeper takes over the bridge watch for the first time. No employer ashore would employ a person in a similar position of authority, without some proper assessment, so why should it be accepted on ships.

### CASE STUDY

A ship at night was steaming in a traffic separation scheme, at high speed in high density traffic. The experienced master had just joined the ship the previous day but had never sailed with the junior officer who took over the evening watch. The master was therefore unaware of the watchkeeper's competence or confidence on the bridge.

The weather and visibility were good and a lookout was on the bridge. The watchkeeper had to monitor the ship's position and make a number of alterations of course for small ships. He mistook a slow-moving coastal ship being overtaken as a crossing vessel, altered course and ran the ship aground at full speed.

The inexperienced junior officer was overwhelmed by the amount of navigational duties he had to cope with and he lost his situational awareness. He appeared to have little understanding of the COLREGS and was not confident enough to call the master. The master did not ensure that the watchkeeper was supported in a busy navigational area and he did not carry out a proper assessment on the watchkeeper before he was left to do the watch on his own. This is also not an isolated example, and it is often found that the master apparently does not consider it necessary to provide support to junior watchkeepers in busy waters.

## THE COLLISION REGULATIONS – (COLREGS)

The issue of not fully understanding and complying with the COLREGS is possibly the major cause of collision incidents. It is difficult to understand, because after a collision, more often than not the watchkeeper has indeed got the correct certificate of competency. However, there is much evidence from many navigational incidents, not only from the club's analysis of incidents but also from incidents in the public domain that suggest that numerous bridge watchkeepers, including masters, appear to have a lack of understanding or a disregard of the COLREGS. This raises a number of questions which could include:

- are the certificates of competency properly examined by the examining authorities?
- are the candidates for watchkeepers properly screened by companies prior to signing on?
- is there a need for additional training and examining of the COLREGS?