Overview for facilitators

The film is split into three modules to facilitate the learning environment within a workshop.

It is recommended that the film is viewed straight through at the beginning of the workshop, and before the viewing, the audience is invited to consider:

1) The practices and behaviour on the bridge
2) Are there any practices that occurred during the showing of the film that remind anyone of an incident or occurrence that they have experienced?

The audience should be encouraged to make notes and share their experiences with the group. The workshop provides an opportunity for everyone to share and learn from the wealth of experience in the room.

At the conclusion of the first showing of the film, you should encourage a general discussion on the groups immediate thoughts and opinions.

Each module will then be reviewed to discuss best practice, instigate discussion on specific issues raised in the film and encourage a consensus for the lessons learned and key messages to take away from the workshop.

'Man learns from his mistakes, a wise man learns from the mistakes of others'

The primary learning points and suggested open questions for the audience

Module 1

Readiness of the bridge for departure

The ship has already commenced heaving the anchor. The third officer is still 'setting up the radar', the engine room confirms the engines on standby after the order is given to heave aweigh and the pilot launch is clearly well on its way to the ship.

- Is the ship ready to get underway?
- Is the ship ready for the pilot launch?
- What are the potential consequences of not being properly prepared?
- In the video, did anyone see the master or third officer actually test the engines on bridge control?

Lessons to be learned:

- If the bridge was ready in good time proper testing of the engines could have taken place.
- The ship was underway before the engines were ready. If the engines had failed to start, the ship would effectively have been 'not under command' with a lee shore and anchored ships to leeward.
- It is better to be prepared and have a period of calm prior to the planned activity.

Third officer is sent away from the bridge

Despite the proximity of other ships, land and traffic the officer of the watch is sent away from the bridge. This reduces the bridge team to two persons, namely the master and the helmsman. The master now effectively takes sole responsibility as lookout, officer of the watch (OOW), communications, monitoring the recovery of the anchor and navigation.

- Is there anything wrong with this situation?
- What tasks is the master now undertaking?
- What are the most important tasks for the bridge team?
- What are the consequences of mistakes in these tasks?

Additional trigger questions:

- Is the master able to maintain a proper radio watch?
- How would the master deal with an on board emergency?
- Where should the pilot board?

Discussion on best practice:

- What are the requirements for lookout?
- Where can we get guidance on the best practice for watch keeping?
- What alternatives are possible to avoid this situation?
- How would it be possible to ensure these procedures are followed?

Lessons to be learned:

- The chance of human error is greatly increased by multitasking.
- The master has reduced the bridge team to an inadequate level with no margin for the team to spot an individual mistake that could place the ship in a dangerous situation.
- The responsible officer is only required to oversee pilot boarding. Guiding the pilot to the bridge can be done by anyone familiar with the safe route.
- Another option open to the bridge team would have been to wait until the pilot was on board before ordering the anchor aweigh. This would have reduced the amount of actions taking place at any one time.

Near miss with an anchored ship

The potential for missing something and creating a mishap becomes a reality. The ship starts drifting almost immediately after the order to heave aweigh the anchor. From the forward mooring deck reports arrive "3 on deck up & down," "2 on deck up & down," "1 on deck up & down." The master fails to register this and at no point does he concentrate on the ships position. Instead, he is distracted with communications and monitoring the pilot launch coming alongside.

The chief officer also makes a communication error and clearly reports too late that the anchor is aweigh. At no point is it requested that this should be reported, and the master fails to make enquiries. The master finally notices the movement of the ship when the chief officer calls on the radio "anchor sighted and clear."

- Were any mistakes made?
- Is this scenario of the OOW being sent away from the bridge a common practice?
- How could this situation have been avoided?

Similar incidents have been relatively common in the Singapore anchorages and have contributed to a number of low impact collisions. Even though the impact was at a slow speed there would usually be a considerable amount of damage to both ships.

Additional trigger questions:

- What are the main causes of this incident?
- How much damage could be caused by a ship drifting at this speed?
- How long was the third officer away from the bridge?
- What are the requirements for getting the pilot on board?

Discussion on best practice:

- Where is there guidance for best practice for monitoring the ships position?
- What options were available for the master to monitor the ships position?
- Would an additional lookout have been able to assist?

Lessons to be learned:

- Without clear procedures and guidance on bridge manning, bad habits can creep in. This is a common cause of incidents in anchorages.
- The second officer was available to ensure the safe boarding of the pilot which would have left the bridge team intact and would have prevented this incident.
- A dedicated lookout would have observed the ships movement by at least noticing the ship drifting towards the other ship.

Pilot arrives on the bridge and pilot/ master exchange

The pilot arrives on the bridge. The master is clearly on the back foot following the near miss with the anchored ship. The master then hands the pilot card to the pilot. Without even checking to read the ships heading or review the navigation of the ship, the pilot orders full ahead and issues orders for the ships heading. The master tacitly accepts this behaviour by repeating. "Okay, full ahead"

- What is wrong with this situation?
- Is there any information that should be exchanged before the pilot took the con?
- Was there any official handover to the pilot?
- What problems could result from this lack of exchange of information?

Additional trigger questions:

- How important is this initial interaction to the rest of the passage?
- What impact does this have on the bridge team?
- What potential impact could this have on the rest of the ships operation?

Discussion on best practice:

- What guidance is there for master/ pilot exchange?
- Is this a requirement in the safety management system (SMS)?
- How can this be implemented on board?
- What can be done to ensure this happens?

Lessons to be learned:

- It is essential to establish a good relationship between the master and the pilot from the moment they meet on board the ship. This relationship will affect the rest of the pilotage and the most critical part of the passage.
- It is occasionally claimed there is 'not enough' time for discussion. Even allowing for the speed at which the pilot wishes to hurry everyone along, there are long pauses during the passage where an effective dialogue between the master/pilot could be made.
- If a requirement for formal pilot/ master exchange is not included in an SMS it is excluded from any audit and therefore allows bad practice to develop.
- A formal briefing on the bridge with all interested parties ensures everyone knows what is meant to happen. It also develops a safety net in order to help prevent an individual mistake from causing a dangerous situation.
- A key element of bridge team management is having roles assigned and understood. This is missing from this scenario.

Module 2

Lack of knowledge and passage planning

The pilot is proceeding full ahead with the speed at 15 – 16 knots. The speed limit in the harbour is six knots and the VTS warns about excess speed. For the oncoming traffic the pilot also claims that the 'local regulations' say that ships going to the berth have the right of way. This should have been questioned by the master when VTS called the ship about the situation.

- Should the master be relying on the pilot for this information?
- Where should this information be available?
- When could this information have been discussed?
- Does anyone have examples of requirements for this kind of briefing?

Discussion on best practice:

- What should be included in the passage plan?
- How should the information be shared before undertaking the passage to the berth?

Lessons to be learned:

- The master/bridge team should know this information. The pilot is wrong. Had this information been readily available and discussed before the passage, this would have been crucial to aiding the bridge team control the pilots actions.
- Knowledge from various sources can help build confidence and provide a safety net for all persons on the bridge team to speak up when they notice things going awry.

Watch keeping and monitoring the pilots actions

The masters mobile phone rings which distracts him from monitoring the pilot. The bridge team management is again poor as the third officer's role of properly monitoring the ships position is hindered by the master and pilot standing in front of both radar screens. The third officer is then using the ECDIS and GPS which is not approved to plot the ships progress. It becomes clear the pilot is not integrated into the bridge team as the third officer relays information about the oncoming traffic solely to the master.

- Is it usual to receive phone calls/ requests when approaching harbour?
- Are there any experiences of this?
- How should the bridge team be working together?
- How can this be managed?

Additional trigger questions:

- Does anyone have any experience of the management of distractions on the bridge?
- Is it okay for the OOW to use the 'for training only' ECDIS to monitor the ships position?

Lessons to be learned:

- The effectiveness of the bridge team is compromised by the master taking himself out of the equation.
- If proper bridge resource management principles had been followed at this stage of the pilotage, the OOW should have been able to communicate and challenge the pilot.

COLREGS and a near miss collision situation

COLREGS, Rule 1, states that nothing in the COLREGS shall interfere with any local rules but such local rules should conform as closely to the COLREGS rules as possible. If there were any such local rules - i.e. special areas for certain size ships - these would be clearly marked on all charts and nautical publications. In any case, such rules are rare and only change responsibilities in narrow channels and other locations where large ships would otherwise not be able to manoeuvre. Had a proper passage plan and briefing taken place, the bridge team would be well aware of this. It is clear from the VTS call that it is unlikely that there was such rule, and the local ferry also questions this.

- Who is the give way ship?
- Can we be sure of the information given to us by the pilot?
- Would the language used on the VHF have assisted the master to realise the actual situation?

- Who has responsibility for the safety of the ship?
- What actions are open to the bridge team?

Additional trigger questions:

- What critical items of navigation are lacking due to ineffective bridge resource management?

Discussion on best practice:

- What guidance is there on the masters authority?
- How would the master go about making the ship safe?

Lessons to be learned:

- Proper passage planning will ensure the bridge team are fully informed of the local rules and regulations.
- The master retains ultimate responsibility for the safety of the ship. In extreme circumstances, the master can override the pilot to make the situation safe. Report this incident to the port control and ask for a new pilot.
- Had the master not been distracted and the bridge resource management had been effective the solution of slowing down would have been obvious at an earlier point during the passage. This would have allowed a safe passing.

Module 3

Engaging the tugs and speed

Due to the poor exchange of information the master is still asking basic questions about the tugs very late into the passage. The pilot helped create this situation by not discussing this earlier in phase 1 when chief officer asked about the moorings. There is a disagreement on how many tugs should be made fast due to the strength of the wind. The tugs and pilot communicate in Hindi which further delays/restricts the masters understanding of the situation. The speed remains high and the wind is gusty clearly making the bridge team uncomfortable.

- What options do the bridge team have in this situation?
- What effect does the use of different languages have on the functioning of the bridge team?
- Has anyone witnessed this kind of behaviour?

Lessons to be learned:

- The masters authority is absolute. By this stage the master has grounds to seriously doubt the capability of the pilot and he should have intervened.
- The tug is available for the ship to use and if there is any doubt it would be best practice to deploy the tug as the consequence of not doing so could be catastrophic.

- The use of a language unfamiliar to everyone in the discussion will seriously reduce the chance of the bridge team detecting an error.

Passage plan and misinformation on berth

In phase 1 the pilot informs the master verbally that they are going to berth number one. In fact, the berth they are going to is berth number two which is closer to the ships position along the quay by more than a ships length. There was no written or graphic plan exchanged. The navigational charts were never considered.

- What are the consequences of this simple miscommunication?
- Does any one have an experience of something similar?
- How could this be avoided?

Lessons to be learned:

- A simple discussion over the navigational chart or the proposed plan would have ensured the master and pilot understood clearly the destination of the ship.
- The erroneous verbal communications of the pilot would have been picked up had the plan been discussed properly.
- If the plan had been considered by everyone before the pilot discussed the potential berth with the port control, the error would have been discovered. (Bridge procedures guide ship to shore/shore to ship checklists.)
- More than one method of communication should always be used to exchange critical information, particularly when there are differing languages involved.

Abort points and ship manoeuvring

Once the miscommunication is discovered it is far too late to abort the berthing. Abort points were never discussed and were not included in the passage plan. The master at a very late stage starts to question the pilots action. Neither the master, pilot nor bridge team have control of the situation now and an accident is inevitable. With better team management - even up to a very late stage - the berthing could have been aborted and the ship could have sailed straight on without causing any damage.

- At which point could the manoeuvre have been aborted?
- At which point would the master have been justified to take control of the ship?
- How could better communication within the bridge team have detected the problem?
- How else could this have been avoided?

Lessons to be learned:

- The master has ultimate discretion under SOLAS and reinforced within ISM as part of SOLAS. As soon as the master was unhappy about the safety of the ship he should have acted.
- The final impact with the gantry crane was the result of an accumulation of errors which could have been avoided much earlier in the passage had better procedures been followed.

Summary of consensus for lessons learned

Poor bridge team management

- The master immediately puts pressure on himself by dismissing the OOW from the bridge. He is now left with all communication tasks, manoeuvring the ship whilst recovering the anchor, monitoring the position, monitoring the pilot launch and keeping a radio watch.
- There is no dedicated lookout – from the start the AB is put on the helm. There is enough traffic to warrant a dedicated lookout.
- It is 1500, the second officer is already awake in anticipation of going to mooring stations. Instead of sending the OOW down, the off duty mate could have been sent down to fetch the pilot, leaving the bridge team intact.
- The manoeuvre is not discussed prior to berthing. The officers in charge of the mooring decks do not even attend the bridge after the pilot has embarked to check what will be required of them on the mooring decks.
- The roles on the bridge are not properly designated. For the duration of the passage, the OOW struggles to reach the equipment he needs and does not relay information all of the time. This leads to no one effectively monitoring the position of the ship.
- The OOW is almost 'forced' into using the ECDIS to confirm the position despite being a 'paper ship' as stated in the SMS.
- The pilot is not integrated into the bridge team. There is no proper two way communication.
- Radio and distraction discipline is poor and throughout the passage, the master is distracted by phone calls, radio messages and mobile calls. The OOW makes a coffee for the pilot, fills in log books etc instead of monitoring the ships position on the paper chart as per SMS.

Master pilot relationship

- No proper exchange of information is conducted. The pilot card is part of the SMS but use of a checklist for the exchange is not. The ship carries the ICS bridge procedures guide but as it is not in the SMS it is not part of any audit, therefore, although an implied requirement, is not properly incorporated into the SMS on board this ship.
- If the plan had been properly discussed using visual aids the mistake the pilot makes by saying berth one instead of berth two would have been spotted.
- The master had no idea about the plan for the tugs and this manoeuvre was never discussed. This information cannot now be passed to outstations or effectively monitored by the bridge team.
- The masters haste to get underway and the near miss allowed a situation of distrust to develop between master/ pilot from the start. The pilots attitude is unsatisfactory from the beginning and this could have been addressed by a formal exchange.
- The pilots actions provides several opportunities for the master/OOW to realise the pilot was being reckless but he is never properly challenged.

- Due to distractions the OOW/master do not keep an eye on the pilot. They allow him to carry on.
- The pilot on numerous occasions speaks to other ships in the local language and does not relay this to the bridge team.

Ship handling

- The pilot shows contempt for the advice of port control and continues to proceed too fast all the way to the berth.
- The manoeuvre is poorly planned. The ship should have been brought parallel to the berth - not nose in – and as it was not discussed, no one had a chance to correct it.
- The third tug may have been useful considering the gusty wind.
- Consideration is not give to the effect of pulling the stern away with an onshore wind.

VTS/ collision avoidance

- The master and OOW should be aware of the port requirements. The pilots contrary advice should have been questioned.
- The passage plan is not sufficient therefore does not support the master or add any value to prevent an accident from occurring.

Key messages

- A full and proper exchange of information between the pilot and master is essential.
- The involvement of the entire bridge team and mooring station officers in the pre-manoeuvring briefing would ensure the plan can be monitored effectively from all positions.
- "Effective bridge resource management should eliminate the risk that an error on the part of one person could result in a dangerous situation."
- ISM empowers everyone to suggest improvements to the ships operating procedures, including navigation, and safety meetings can be used to raise suggestions. Masters have the power to bring about change through the regular review requirement under ISM 2.2.1.3 – the requirement for continuous improvement.
- When engaging a pilot - whether compulsory or voluntary - the master retains ultimate responsibility for the ship. In legal terms it will always be the ships fault and the ship owner will almost always be held responsible for any damage done.

Key references

- ICS Bridge Procedures guide
- STCW 2010
- International regulations for the prevention of collision at sea