EFFECTIVE BRIDGE ORGANISATION

1.1   OVERVIEW

An effective Bridge Team will manage efficiently all the resources that are available and promote good communication and teamwork. This will allow the Bridge Team to plan and complete a berth to berth passage, in full compliance with the COLREGS and the watchkeeping requirements of the International Convention (and Code) on Standards of Training, Certification and Watchkeeping for Seafarers (STCW Convention), and have the ability to anticipate dangerous situations and respond to emergencies.

The information which supports an effective bridge organisation should be included in the ship's Safety Management System (SMS). This is a requirement of the ISM Code and should take into account:

- Safe manning levels;

- Safe conduct of navigation;

- Compliance with MARPOL and minimising impact on the environment;

- Effective communication and teamwork;

- Effective training and familiarisation;

- Sound shipboard operational procedures; and

- Robust and practised emergency responses.

1.2   BRIDGE RESOURCE MANAGEMENT AND THE BRIDGE TEAM

1.2.1   COMPOSITION OF THE BRIDGE TEAM

The Bridge Team should be sufficiently resourced to meet the operational requirements of the passage plan. When considering the composition of the Bridge Team and ensuring that the bridge is never left unattended at sea, the Master should take into account the following:

- Visibility, sea state and weather conditions;

- Traffic density;

- Activities occurring in the area in which the ship is navigating;

- Navigation in or near traffic separation schemes or other routeing measures;

- Navigation in or near fixed and mobile installations;

- Ship operating requirements, activities and anticipated manoeuvres;

- Operational status of bridge equipment including alarm systems;

- Whether manual or automatic steering is anticipated;

- Any demands on the navigational watch that may arise as a result of exceptional circumstances; and

- Any other relevant standard, procedure or guidelines relating to watchkeeping arrangements or the activities of the vessel.

1.2.2 SOLE LOOK-OUT

Under the STCW Code, the Officer of the Watch (OOW) may, in certain circumstances, be the sole look-out in daylight conditions. Clear guidance on the conduct of sole look-out should be included in the SMS (see Section 3.4.2).

1.2.3 THE BRIDGE TEAM

At all times during sea passages, port approaches and pilotage, the Bridge Team should continue to work effectively to ensure the safety of the ship. This will include liaison between different navigational watches, the engine room and, as appropriate, other departments.

All personnel who have bridge navigational watch or advisory duties will be part of the Bridge Team. The Master, other members of the Bridge Team and the Pilot, when embarked, should work together and co-operate to ensure the safe navigation of the ship.

1.2.4 THE BRIDGE TEAM AND THE MASTER

The Master has overall authority and remains responsible for all decisions with respect to the safe conduct of navigation and protection of the environment. This should be clearly stated in the SMS.

The Master should not be constrained by the Company or charterer from taking any decision which is necessary for the safety of navigation.

The Bridge Team should recognise and understand:

• The information that should be routinely reported to the Master;

• The need to keep the Master fully informed; and

• The circumstances under which the Master should be called (see Section 3.6 & Checklist 17).

When the Master is on the bridge, careful consideration should be given to the circumstances in which it may be appropriate to take control from the OOW. There will often be benefit in the OOW retaining control with the Master providing oversight and guidance.

1.2.5 BRIDGE TEAM LEADERSHIP, RESOURCE MANAGEMENT AND TEAMWORK

The performance of a Bridge Team relies on good leadership, teamwork and management. The importance of this is recognised under the STCW Convention and the requirement for Bridge Resource Management (BRM) training for watchkeeping officers.

A Bridge Team which has a plan and is well briefed will work effectively and be able to develop and maintain good situational awareness. The Bridge Team should then be able to anticipate dangerous situations and recognise the development of a sequence of errors. This will enable it to take action to break a chain of errors and avert an emergency (see Section 3.8).

In order to ensure that chains of errors are identified and addressed as soon as possible, an appropriate approach to raising safety concerns or doubt without any fear of reprisal or ridicule is needed. A 'just culture'[1] is an example of this type of approach.

'Challenge and response' is a leadership approach which has been demonstrated to foster effective communication and teamwork. Under no circumstances should this approach be considered as undermining the authority delegated to the OOW by the Master.

Providing that this does not compromise the immediate safety of the ship, members of the Bridge Team could be encouraged to:

• Seek clarification regarding the actions of other Bridge Team members with the aim of better understanding the decision making process; and

1 Further information may be found in the ICS Guidelines on the Application of the IMO International Safety Management (ISM) Code.

Practise thinking aloud. This can also assist the development of junior officers by encouraging them to discuss their actions openly.

1.2.6 THE BRIDGE TEAM AND INTERNAL COMMUNICATION

The Bridge Team has the central role in maintaining communications with the engine room and all other operating areas.

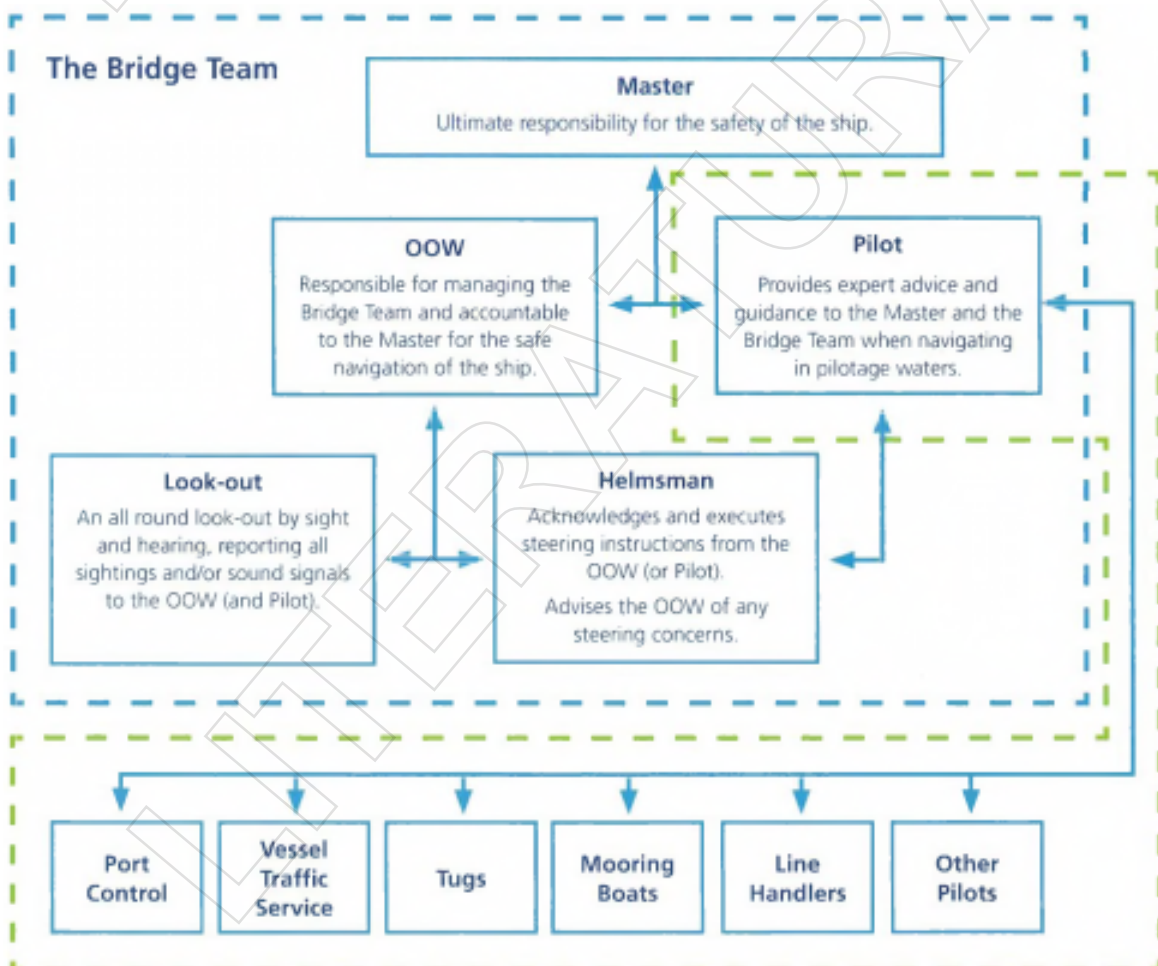It is essential that bridge and engine room personnel communicate regularly on matters including:

• Machinery and propulsion status, including defects;

• Any existing or anticipated circumstances, including fuel changeover procedures and planned maintenance, with the potential to affect machinery performance or the manoeuvrability of the ship;

• Any planned or anticipated speed changes; and

• Any environmental regulatory requirements (see Section 3.17).

The Bridge Team will co-ordinate the activities of the whole ship on behalf of the Master. This will be aided by good internal communications and a well briefed plan. This is particularly important during emergency situations when an effective response will depend on good communication and co-ordinated actions by all personnel.

1.2.7 DUTIES WITHIN THE BRIDGE TEAM

The Bridge Team refers to all personnel with bridge watchkeeping or advisory duties.

Duties and responsibilities should be clearly assigned by the OOW who should ensure that all members of the Bridge Team understand the duties assigned to them. The following diagram illustrates an example of a Bridge Team.

The Bridge Team

Master
Ultimate responsibility for the safety of the ship.

OOW
Responsible for managing the Bridge Team and accountable to the Master for the safe navigation of the ship.

Pilot
Provides expert advice and guidance to the Master and the Bridge Team when navigating in pilotage waters.

Look-out
An all round look-out by sight and hearing, reporting all sightings and/or sound signals to the OOW (and Pilot).

Helmsman
Acknowledges and executes steering instructions from the OOW (or Pilot).
Advises the OOW of any steering concerns.

Port Control | Vessel Traffic Service | Tugs | Mooring Boats | Line Handlers | Other Pilots

The presence of a Pilot does not relieve the Master or the Bridge Team from their duties and responsibilities for ship safety and prevention of pollution. Guidance on effective pilotage and associated roles and responsibilities within the Bridge Team is set out in Chapter 5.

Encouraging proactive reporting of events and actions allows the OOW to monitor the Bridge Team and detect potential deterioration in watchkeeping performance.

Maintaining Bridge Team performance will be aided by a bridge environment which is free from distractions. To avoid disruption and distraction on the bridge it is recommended that:

- Unrestricted bridge access is limited to only those with operational bridge responsibilities;

- The use of mobile phones and other personal electronic devices should be strictly controlled (see Section 1.4); and

- Internal and external communications should generally be restricted to those related to the safe navigation of the ship (see Section 1.5).

> The Bridge should be free from distractions and all non-essential activity should be avoided.

1.2.8   NEW PERSONNEL AND FAMILIARISATION

The ISM Code and the STCW Convention require the Company to implement a system for familiarising new personnel with ship equipment and procedures. The familiarisation procedures should be covered in the SMS and in written instructions that the Company provides to the Master for whenever a new member of the Bridge Team is assigned to the ship.

A reasonable period of time should be allocated for familiarisation and a designated officer should be responsible for providing familiarisation.

Familiarisation should be delivered on a one to one basis in a common language and should be supported by using a checklist (see Checklists B3 & B4). Familiarisation should cover all bridge equipment and procedures appropriate to the duties and responsibilities of individual members of the Bridge Team.

Particularly with computer-based systems, there can be significant differences between the equipment installed on different ships, even within the same fleet. Noting that some equipment or systems, such as ECDIS, are particularly complex it is recognised that for any one systemsomefamiliarisation may take place on shore before joining a ship. IHowever, for all systems some familiarisation withthe equipment as installed on board a particular ship will always be required.

Self-teaching manuals, videos or computer-based training (CBT) programmes are examples of methods that could be used on board ship to support familiarisation. These methods should complement rather than replace one to one familiarisation with equipment and procedures.

1.2.9   HOURS OF REST

The STCW Code stipulates that watchkeepers, including the Master, are required to take mandatory minimum rest periods in order to be fit for duty. In summary the requirements are:

- Minimum of 77 hours rest in any 7 day period;

- Minimum of 10 hours rest in any 24 hour period; and

- The 10 hour rest period should not be split into more than 2 periods, one of which should be at least 6 consecutive hours, with the interval between periods being not more than 14 hours.

In order to provide ship operators with some flexibility, STCW contains provisions for exceptions which may be permitted by the flag State and that should also be accepted by Port State Control (PSC). It is recommended that evidence of permitted exceptions is kept on board.

The International Labour Organization (ILO) Maritime Labour Convention (MLC), compliance with which is subject to PSC, also stipulates minimum rest periods and maximum work hours for all seafarers.[2] In practice, however, the STCW requirements are slightly stricter and are those normally enforced by PSC.

1.2.10 RECORD KEEPING AND SCHEDULES

The STCW Code (and the ILO MLC) requires that individual seafarers' records of hours of rest are maintained in order to demonstrate compliance. Unless the flag State requires otherwise, these should follow the model formats that have been agreed by IMO and ILO.[3] Individual rest hour records are required to be signed by the seafarer to whom they refer.

The STCW Code also requires companies to maintain a schedule of working arrangements, indicating normal hours of work for different grades of seafarer, which should be posted on board ship in a readily accessible place.

Due to the complexity of complying with the regulations and maintaining accurate records and work schedules, the use of a computer-based recording system for rest hours is recommended.[4]

1.2.11 DRUG AND ALCOHOL POLICIES

The STCW Code includes requirements for the prevention of drug and alcohol abuse. For the purpose of preventing alcohol abuse, flag States apply a limit of not greater than 0.05% blood alcohol level (   ), or 0.25 mg/l alcohol in the breath, to seafarers performing safety, security or environmental protection duties. However, some Administrations may apply more stringent limits.

The Company should have a drug and alcohol policy. Bridge Team members should comply with this policy at all times.

It is recommended that Company policy is enforced by the Master amongst visitors to the ship including but not limited to Pilots, contractors and officials.

If there is any concern that the Company's drug and alcohol policy is not being adhered to, the Master (or Chief Officer if appropriate) should take immediate action to ensure the safety of the ship is not compromised.

1.2.12 USE OF ENGLISH

English is accepted as the language of international shipping. Communications, including with ratings, should be in English or in a defined language that is common to all Bridge Team members. Communications within the Bridge Team need to be clearly understood by every member. Therefore, if English is not the working language of the ship, the Company or Master should establish and record an alternative working language in the ship's log book.

The STCW Code requires the OOW to have knowledge of written and spoken English that is adequate to:

• Understand charts and nautical publications;

• Understand meteorological information and messages concerning the ship's safety and operations; and

• Communicate with other ships and coast stations.

During an emergency, in order to ensure clear and effective communication, IMO Standard Marine Communication Phrases (SMCP) should be used, particularly for external communications.

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2   Further information may be found in the ISF Guidelines on the Application of the ILO Maritime Labour Convention.

3   IMO/ILO Guidelines for the Development of Tables of Seafarers' Shipboard Working Arrangements and Formats of Records of Seafarers' Hours of Work or Hours of Rest.

4   ISF Watchkeeper is a computer program designed to assist companies comply with the individual work/rest hour record requirements and the preparation of compliant tables of shipboard working arrangements. Further details are available at www.isfwatchkeeper.com.

The same approach to communications within the Bridge Team should also apply when navigating under pilotage. The Pilot should always be expected to explain instructions exchanged with other ships, pilot boats, tugs and Vessel Traffic Services (VTS) to the Master and Bridge Team in English or a defined working language common to all personnel involved.

1.3 COMPANY POLICY AND PROCEDURES

The ISM Code requires every Company to have an SMS which covers instructions and procedures to ensure safe operation of ships and protection of the environment. This should include practical guidance on navigational safety including:

- Allocation of bridge watchkeeping duties and responsibilities;
- Procedures for passage planning and navigation, including departures from the passage plan;
- Chart and nautical publication update and correction procedures;
- ECDIS procedures (including chart and software updates);
- Procedures to ensure that all essential navigation equipment and main and auxiliary machinery are available and fully operational;
- Ship position reporting procedures;
- Accident and near miss reporting procedures;
- Recording of relevant events and Voyage Data Recorder (VDR) policy;
- Use of Bridge Navigational Watch Alarm System (BNWAS) modes (automatic, on and off) and procedures for ensuring correct operation;
- Bridge access and distraction prevention procedures;
- Procedures for familiarisation and effective handover when crew changes occur;
- Training and drill requirements;
- A system for identifying particular training needs;
- Company contacts, including the Designated Person Ashore (DPA);
- Emergency procedures; and
- Any other information relevant to the safe operation of the ship.

The SMS should identify clear levels of authority and lines of communication between the Master, ship's officers, crew and the Company.

1.3.1 INFORMATION DISTRIBUTION

IMO, flag States, other regulatory bodies and the shipping industry regularly publish new rules, guidance, best practice (including lessons learned from marine casualties) and information intended for ships. The Company should have a clear procedure to forward relevant information to Masters and crews.

The Company should:

- Assess the relevance of the information or requirements to its fleet and operations;
- Implement the requirements or best practice in the SMS, if appropriate; and
- Inform ships of the new requirements or recommendations and seek confirmation of receipt and implementation.

The Master and Bridge Team should:

- Review and implement the new requirements or guidance as soon as practicable; and

- Inform the Company of effective implementation or any difficulties experienced when implementing new requirements or guidelines.

1.3.2 ORDERS

1.3.2.1 Master's Standing Orders

Lines of authority on board should be in accordance with the SMS and operational procedures manuals. The Master should explain particular requirements to the Bridge Team in Master's Standing Orders. These orders should be drafted to support the SMS.

Company and Masters' Standing Orders should be read by all Bridge Team members upon joining the ship, signed and dated. A copy of the orders should be available on the bridge for reference.

1.3.2.2 Bridge Order Book

In addition to Master's Standing Orders, specific instructions will be needed. At least at daily intervals, the Master should write in the bridge order book what is expected of the OOW for that period. These orders should be signed by each OOW when taking over a watch, to confirm that they have read, understood and will comply with the orders.

The OOW should brief other members of the Bridge Team, as appropriate, on any particular activities or requirements for the forthcoming watch.

1.4 MOBILE PHONES AND PERSONAL ELECTRONIC DEVICES

The Company should have a written policy requiring that mobile phones or other personal electronic devices should only be used on the bridge in circumstances approved by the Master.

Notwithstanding occasions when use of mobile phones or personal electronic devices may be permitted, the Company policy should minimise the distraction resulting from such devices by, in general, limiting their use to operationally necessary circumstances.

1.5 BRIDGE INTERNET AND EMAIL

Where internet and email services are available on the bridge, the Company should have a policy to manage their use. Access to internet and email use by bridge watchkeepers should generally be limited to those circumstances where it is necessary for the safe navigation of the ship, in order to minimise distraction that might be caused to the Bridge Team.

Internet access and email on the bridge should usually be restricted to:

- Updates for nautical charts and publications, licences and permits;

- Weather information;

- Navigational warnings; and

- Information relevant to the ship's operations and passage plan.

1.6 EMERGENCY PREPAREDNESS

The SMS should identify potential emergency shipboard situations, and establish procedures to address these. The actions of the Bridge Team in the event of distress, damage, fire, pollution, personnel accidents, security and cargo emergencies should be included.

A programme of drills and exercises should be established to practise emergency actions and foster effective responses by the Bridge Team in the event of an emergency. This should include practising the ship specific procedures for recovery of persons from the water.5

During emergencies the Bridge Team remains responsible for the safety of navigation.

Procedures should be in place to support effective responses to emergencies (see Section 3.20) by ensuring that:

• Initial actions to establish control of an emergency are instigated;

• Communications between the Bridge Team and all personnel involved in an emergency are effective;

• If appropriate, the Bridge Team can establish and maintain communications with SAR services, shore authorities, other vessels and/or aircraft; and

• Emergency responses are reviewed to ensure their continued effectiveness.

All drills and exercises undertaken on board the ship should be recorded in accordance with Company procedures. Mandatory emergency drills should be recorded as required by the flag State.

5   Advice can found in ICS Recovery of Persons from the Water: Guidelines for the Development of Plans and Procedures.