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**Adopted on 4 December 2013**
**(Agenda item 10)**

# RECOMMENDATIONS FOR THE TRAINING AND CERTIFICATION OF PERSONNEL ON MOBILE OFFSHORE UNITS (MOUs)

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

ALSO RECALLING resolution A.891(21) by which it adopted *Recommendations on training of personnel on Mobile Offshore Units (MOUs)*,

CONSIDERING that personnel on MOUs are often required to work under potentially hazardous conditions and will be in a better position to protect themselves and others in the event of an emergency with adequate training,

RECOGNIZING the need for maritime safety, security awareness, environmental protection and emergency preparedness training, competency and fitness for all personnel working on MOUs,

RECOGNIZING ALSO that the recommendations would provide an international standard for training for all personnel on MOUs complimentary to that required by the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, and the Seafarers' Training, Certification and Watchkeeping (STCW) Code,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee, at its ninety-second session,

1 ADOPTS the *Recommendations for the training and certification of personnel on mobile offshore units (MOUs)*, as set out in the annex to the present resolution;

2 URGES Governments concerned to implement the defined competencies in these Recommendations as soon as practicable and to issue certificates and all other appropriate documents to personnel who are qualified and have successfully completed the training recommended in these Recommendations;

3 URGES ALSO Governments to consider acceptance of relevant certificates and documents based on this resolution;

4 AUTHORIZES the Maritime Safety Committee to keep these Recommendations under review and amend them as necessary;

5 REVOKES resolution A.891(21).

Annex

**RECOMMENDATIONS FOR THE TRAINING AND CERTIFICATION OF PERSONNEL ON MOBILE OFFSHORE UNITS (MOUs)**

## 1 SCOPE

1.1 These Recommendations provide an international standard for training for all personnel on mobile offshore units aimed at ensuring adequate levels of safety of life and property at sea, security awareness, and protection of the marine environment complimentary to that required by the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, and the Seafarers' Training, Certification and Watchkeeping (STCW) Code (STCW Convention).

1.2 The provisions of these Recommendations are without prejudice to the rights of coastal States, under international law, to impose their own requirements relating to training, qualifications and certification of personnel on board MOUs. This includes any MOU engaged, or intending to engage, in exploring, exploiting, producing, conserving or managing the natural resources of those parts of the seabed, including its subsoil, and waters superjacent to the seabed which are subject to the jurisdiction of those coastal States.

## 2 TERMS AND DEFINITIONS

For the purpose of these Recommendations, the terms used have the meanings defined hereunder:

2.1 *Administration* means the Government of the State whose flag the MOU is entitled to fly.

2.2 *Ballast Control Operator* (BCO) means the person assigned responsibility for the normal day-to-day control of trim, draught and stability.

2.3 *Barge Supervisor* (BS) means a person who may provide support to the offshore installation manager (OIM) in certain essential marine matters. The barge supervisor on some MOUs may be referred to as the stability section leader, barge engineer or barge master.

2.4 *Certificate of competency* (CoC) means a certificate issued and/or endorsed by the Administration for offshore personnel in accordance with the provisions of these recommendations and entitling the lawful holder thereof to serve in the capacity and perform the functions involved at the level of responsibility specified therein.

2.5 *Certificate of proficiency* (CoP) means a certificate, other than a certificate of competency, issued to offshore personnel stating that the relevant requirements of training, competencies or seagoing service in these recommendations have been met.

2.6 *Coastal State Administration* means the Government of the coastal State concerned in cases where a MOU is engaged in exploration for, or exploitation of, the seabed and subsoil thereof, adjacent to the coast over which the coastal State exercises sovereign rights for the purposes of exploration and exploitation of its natural resources.

2.7 *Company* means the owner of the Mobile Offshore Unit (MOU) or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the MOU from the owner and who, on assuming such responsibility, has agreed to take over all the duties and responsibilities imposed on the company by these recommendations.

2.8 *Documentary evidence* means documentation, other than a certificate of competency or certificate of proficiency, used to establish that the relevant requirements of these recommendations have been met.

2.9 *Dynamic Positioning System* means a system whereby a self-propelled MOU's position and heading is automatically controlled by using its own propulsion units.

2.10 *Emergency preparedness training* means training which prepares individuals to respond adequately and safely to anticipate emergency situations.

2.11 *ISPS Code* means the International Ship and Port Facility Security (ISPS) Code adopted on 12 December 2002, by resolution 2 of the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, as may be amended by the Organization.

2.12 *Maintenance supervisor* (MS) means the person assigned responsibility for the inspection, operation and testing, as required, of all machinery and equipment as specified by the owner of the MOU. The maintenance supervisor on some MOUs may also be referred to as the chief engineer, technical section leader or rig mechanic.

2.13 *Maritime crew* comprises the OIM, barge supervisor, ballast control operator and maintenance supervisor as well as other deck and engineer officers, radio operators and ratings as defined in regulation I/1 of the STCW Convention, as amended.

2.14 *Maritime safety training* means training with respect to safety of life at sea, including personal and group survival.

2.15 *Mobile offshore accommodation unit* is a unit the primary purpose of which is to accommodate personnel working offshore.

2.16 *Mobile offshore drilling unit* is a unit capable of engaging in drilling operations for the exploration for, or exploitation of, resources beneath the seabed such as liquid or gaseous hydrocarbons, sulphur or salt.

2.17 *Mobile offshore units* (MOUs) means vessels which can be readily relocated and which can perform an industrial function involving offshore operations other than those traditionally provided by vessels covered by chapter I of the 1974 SOLAS Convention. Such MOUs include at least the following:

.1 *column-stabilized unit* is a MOU with the main deck connected to the underwater hull or footings by columns or caissons;

.2 *non-self-propelled unit* is a MOU not fitted with mechanical means of propulsion to navigate independently;

.3 *self-elevating unit* is a MOU with movable legs capable of raising its hull above the surface of the sea;

.4 *self-propelled unit* is a MOU fitted with a mechanical means of propulsion to navigate independently;

.5 *submersible unit* is an MOU with a ship-shape, barge-type or novel hull design (other than a self-elevating unit) intended for operation while bottom bearing; and

.6 *surface unit* is a MOU with a ship- or barge-type displacement hull of single- or multiple-hull configuration intended for operation in the floating condition.

2.18 *Mode of operation* means the condition or manner in which a MOU may operate or function while on location or in transit. The modes of operation of a MOU include the following:

.1 *Operating conditions:* conditions wherein a MOU is on location for the purpose of conducting operations, including drilling and production activities, and wherein combined environmental and operational loadings are within the appropriate design limits established for such operations. The MOU may be either afloat or supported on the seabed, as applicable.

.2 *Survival conditions:* conditions wherein a MOU may be subjected to environmental loadings in excess of those established by the MOU's operating manual. It is assumed that routine operations will have been discontinued due to the severity of the environmental loading. The MOU may be either afloat or supported on the seabed, as applicable.

.3 *Transit conditions:* conditions wherein a MOU is moving from one geographical location to another.

.4 *Combined operations:* operations in association with, or in close proximity to, another mobile offshore MOU or offshore installation, where conditions on the other MOU or installation may have an immediate impact on the safety of the MOU; for example, a mobile offshore drilling MOU attached to a fixed platform.

2.19 *Muster list* means the list prescribed by an international convention or recommendation which applies to the MOU. If no convention or recommendation applies, it means a similar list which indicates essential information on actions to be taken in the event of an emergency, in particular the station to which each person should go and the duties which that person should perform including the designation of individual responsibilities for the safety of others.

2.20 *Offshore installation manager* (OIM) means a competent person, certified in accordance with these recommendations, who has been appointed in writing by the company to manage the offshore activities of the MOU.

2.21 *Offshore Personnel* means personnel on board the MOU as indicated in section 5.1.

2.22 *Other mobile offshore unit* is a MOU which may be involved in any single offshore activity or combination of offshore activities such as:

.1 construction;

.2 maintenance (including the maintenance of wells);

.3 lifting operations;

.4 pipe-laying and related operations;

.5 emergency/contingency preparedness, including firefighting;

.6 production systems;

.7 accommodations;

.8 storage systems; and

.9 diving.

MOUs do not include vessels such as:

.1 supply vessels;

.2 standby vessels;

.3 anchor-handling vessels;

.4 seismic vessels;

.5 ship-shape mono hull diving support vessels; and

.6 special purpose ships.

2.23 *Person in charge* (PIC) means the person on each MOU to whom all personnel are responsible in an emergency. This person should be designated in writing (with title) by the owner or operator of the MOU. The PIC may be the Master or OIM.

2.24 *Security duties* include all security tasks and duties as defined by chapter XI-2 of the International Convention for the Safety of Life at Sea (SOLAS 1974, as amended) and the International Ship and Port Facility Security (ISPS) Code.

2.25 *Ship security officer* (SSO) means the person on board, accountable to the PIC, designated by the company as responsible for the security of the MOU, including implementation and maintenance of the ship security plan and liaison with the company security officer and port facility security officers.

2.26 *Special personnel* means all persons carried on board a MOU in connection with the special purpose of the MOU or with special work being carried out on the MOU, and who are neither seafarers nor directly or indirectly paying passengers.

## 3 RESPONSIBILITIES OF COMPANIES AND PERSONNEL

3.1 Every company employing personnel assigned to duty on MOUs has responsibility for ensuring that the standards set out in these recommendations are given full and complete effect. In addition, other measures as may be necessary should be taken to ensure that personnel can make knowledgeable and informed contributions to the safe operation of the MOU.

3.2 The company should provide written instructions to the PIC setting forth the procedures to be followed in order to:

.1 provide appropriate documentation of training for all personnel working on MOUs which indicates that training in accordance with this standard and, as applicable, with the STCW Convention has been accomplished; and

.2 maintain training records on the MOU.

3.3 The PIC should designate a knowledgeable individual who will be responsible for ensuring that an opportunity is provided to each newly assigned individual to receive essential information in a language that he or she understands.

3.4 The company should ensure that those responsible for the training and assessment of competence of all trained personnel on the MOU are appropriately qualified for the type and level of training and assessment involved.

## 4 MARITIME CREW ON SELF-PROPELLED MOBILE OFFSHORE UNITS AND, WHERE REQUIRED, ON OTHER UNITS

4.1 All maritime crew members on self-propelled MOUs and, where required, on other units should meet the requirements of the STCW Convention.

4.2 In addition to meeting the requirements referred to in paragraph 4.1 above, all maritime crew members should be given onboard training and instruction in types of emergencies which might occur on the particular type of MOU on which they serve.

## 5 STANDARDS OF TRAINING AND INSTRUCTION

### 5.1 Categories of offshore personnel

Offshore personnel are, for practical reasons, divided into four categories:

Category A: Visitors and special personnel not regularly assigned who are on board for a limited period of time, in general not exceeding three days, and who have no tasks in relation to the normal operations of the MOU.

Category B: Other special personnel without designated responsibility for the safety, security and survival of others.

Category C: Regularly assigned special personnel with designated responsibility for the safety, security and survival of others.

Category D: Maritime crew members.

### 5.2 Safety induction training and instruction

5.2.1 Personnel (Category A) should receive safety induction training or instruction in accordance with established company policies on their first attendance on board a MOU, and repeated within the frequency requirements established by the company. The company should maintain documentary evidence of this training or instruction.

5.2.2 Such safety induction training or instruction should ensure, as a minimum, that personnel are able to:

.1 Understand elementary safety matters, safety information symbols, signs and alarm signals; especially with regard to knowing what to do if:

.1 a person falls overboard;

.2 fire, smoke, or hydrogen sulphide is detected; or

.3 the fire, abandon ship, toxic gas, or other general alarm is sounded (including recognition of each alarm type on board);

.2 Locate and don lifejackets and, if provided, immersion suits and emergency escape breathing devices;

.3 Identify muster and embarkation stations and emergency escape routes; and

.4 Understand section 7 (Fitness for Duty) of these recommendations.

**5.3 Familiarization training and instruction**

5.3.1 Before being assigned to duties related to the regular operations of the MOU, all offshore personnel (categories B, C and D) should receive offshore orientation, familiarization training or sufficient information and instruction in personal survival techniques, security and workplace safety. Such safety familiarization training, information or instruction should ensure that personnel are able to:

.1 communicate with other persons on board on elementary safety matters and understand safety information symbols, signs and alarm signals, especially with regard to knowing what to do if:

.1 a person falls overboard,

.2 fire, smoke, or hydrogen sulphide is detected; or

.3 the fire, abandon ship, toxic gas, or other general alarm is sounded (including recognition of each alarm type on board);

.2 locate and don lifejackets and, if provided, immersion suits and emergency escape breathing devices;

.3 identify muster and embarkation stations and emergency escape routes;

.4 raise the alarm and have a basic knowledge of the use of portable fire-extinguishers;

.5 take immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board;

.6 close and open the fire, weathertight and watertight doors fitted on the MOU, other than those for hull openings;

.7 follow the unit's basic safe work practices and permit-to-work system; and

.8 understand the unit's basic organizational structure and chain of command.

5.3.2 A generalized course of offshore safety training or instruction obtained onshore may satisfy this requirement provided it is supplemented with the training, information or instruction specified in 5.3.1.3 and 5.3.1.8 above.

5.3.3 Safety familiarization training should be provided at intervals not greater than five years.

5.3.4 Individuals should hold a CoP or provide documentary evidence of having received safety familiarization training within the previous five years, as required.

### 5.4 Security awareness training or instruction

5.4.1 All offshore personnel (categories B, C and D) should receive security awareness training or instruction so as to acquire the knowledge and understanding as it relates to their MOU and their assigned duties in order that they may contribute to the enhancement of maritime security. The company should maintain documentary evidence of this training or instruction.

5.4.2 All offshore personnel (categories B, C and D) without designated security duties should receive security awareness training or instruction at intervals not greater than five years. Revalidation of this training or instruction may be satisfied if the person has met the security-related familiarization requirements of STCW regulation VI/6 and participated in the drills and exercises required by the ISPS Code. These personnel should hold a CoP or provide documentary evidence of having received security awareness training or instruction within the previous five years, as required.

### 5.5 Training for all regularly assigned personnel, maritime crew and other special personnel

5.5.1 Before being assigned to duties related to the regular operations of the MOU, all regularly assigned personnel, maritime crew and other special personnel without designated responsibility for the safety and survival of others (i.e. categories B, C and D) should receive training in personal survival, fire prevention and firefighting, elementary first aid, personal safety and social responsibilities, and security awareness training and instruction as set out in tables 5.5.1 to 5.5.6. Every effort should be made to provide such training prior to proceeding offshore.

5.5.2 The following training should be provided either on shore and/or on the MOU, as appropriate, by qualified and experienced persons:

.1 Familiarization and orientation on general arrangements of the MOU, central processes, operating systems, equipment and procedures, organization, safety philosophy and contingency plans, as well as preventive safety systems such as permit-to-work procedures, company health and medical services, and other matters related to safety.

.2 Practical familiarity with emergency duties.

.3 Understanding the critical need to bring any abnormal situation to the attention of a responsible person.

.4 Knowledge of available evacuation methods and procedures.

.5 Knowledge of alarm procedures for emergency situations.

.6 Knowledge of safety procedures.

.7 Hydrogen sulphide ($H_2S$) training, where applicable.

.8 Operations and emergencies involving divers, where applicable.

5.5.3 A regular programme of drills and exercises should be established in order to provide and/or supplement training and provide for evaluation and assessment. Guidance regarding drills and exercises is provided in appendix 1.

5.5.4 Individuals should hold a CoP or provide documentary evidence of having achieved the required standard of competence to undertake the tasks, duties and responsibilities listed in column 1 of tables 5.5.1 to 5.5.6 within the previous five years as required through demonstration of competence, examination or continuous assessment as part of an approved training programme, in accordance with flag and/or coastal State requirements. However, in the absence of these, a recognized industry standard should be achieved. Guidance regarding the use of drills for assessment of competence is provided in appendix 1.

**5.6 Specialized training**

5.6.1 Specialized training, as appropriate to the individual duties assigned on the muster list, should be provided to personnel in categories C and D.

5.6.2 Depending on their assigned duties, personnel should receive instruction and training as specified in, or equivalent to, the following:

.1 for those in charge of survival craft, proficiency in survival craft and rescue boats other than fast rescue boats as specified in table A-VI/2-1 of the STCW Code;

.2 for those assigned to operate fast rescue boats, proficiency in fast rescue boats as specified in table A-VI/2-2 of the STCW Code;

.3 for those in charge of the MOU, and those designated to control firefighting operations, proficiency in advanced firefighting as specified in table A-VI/3 of the STCW Code;

.4 for those designated to provide immediate first aid, proficiency in medical first aid as specified in table A-VI/4-1 of the STCW Code;

.5 for a person designated to take charge of medical care on board the MOU, proficiency in taking charge of medical care as specified in table A-VI/4-2 of the STCW Code;

.6 for a person designated security duties on board the MOU, proficiency in security duties as specified in section A-VI/6-2 of the STCW Code;

.7 for MOUs with helidecks, the designated helicopter landing officer (HLO) should have completed an accredited HLO course, which should include basic meteorological observer training; and

.8 for MOUs with dynamic positioning systems, the dynamic positioning operator(s) (DPO) should gain the appropriate training and experience in accordance with the guidance provided by industry and recognized by the Organization.[1]

5.6.3 Since specialized training may not be provided on the MOU, care should be taken to ensure that newly assigned personnel with designated responsibility for the survival of others have sufficient experience, instruction, information or training on the equipment they are to use.

5.6.4 Individuals should hold a CoP or provide documentary evidence of having received specialized training or instruction within the previous five years, as required.

[1] MSC.1/Circ.738/Rev.1 and STCW B-V/f.

***Table 5.5.1***

**SPECIFICATION OF MINIMUM STANDARD OF PROFICIENCY IN PERSONAL SURVIVAL**

| **Competence** | **Knowledge, understanding and proficiency** | **Methods for demonstrating competence** | **Criteria for evaluating competence** |
|---|---|---|---|
| Emergency signals | Personnel should receive an initial orientation on the types and identification of emergency signals<br><br>Personnel should be acquainted with the posting of the muster list as a source for defining emergency signals<br><br>In the case of combined operations personnel should receive supplemental information on additional alarms and procedures | Assessment of evidence obtained during satisfactory participation in drills and exercises | Actions taken during drills and in emergencies are appropriate to the emergency signal |
| Mustering of personnel | During onboard orientation all personnel will be shown their primary safe muster areas<br><br>Personnel should be acquainted with the posted muster list | Assessment of evidence obtained during satisfactory participation in drills and exercises | Actions taken during drills and in emergencies are appropriate to the emergency signal |
| Use of lifejacket | Personnel will receive instruction on location, types, inspection and donning lifejackets | Don lifejacket | Lifejacket is donned correctly |
| Use of immersion suits | Personnel will be given instruction on location, type, inspection and donning of immersion suits, if required | Don immersion suit | Immersion suits are donned correctly |
| Lifeboat procedures | Personnel will be instructed on proper entry into lifeboats and the use of seat belts | Board lifeboat during drills and strap in | Lifeboat is boarded correctly |
| Modes of evacuation | Personnel will be instructed on the selection and use of available modes of evacuation. This may include:<br><br>- helicopter<br>- catwalks or bridges<br>- standby vessel<br>- lifeboat<br>- liferaft<br>- adders/escape devices<br>- jumping from height (undesirable) | Assessment of evidence obtained during satisfactory participation in drills and exercises | Demonstration of correct actions during drills and exercises |

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Boarding liferafts or buoyant apparatus | Personnel will be instructed on boarding a liferaft or buoyant apparatus both at deck level and from the sea | Assessment of evidence obtained during satisfactory participation in drills and exercises | Demonstration of correct actions during drills and exercises |
| Water survival techniques | Personnel will be instructed on the following, as applicable:<br>- use of lights and whistles and other signalling devices<br>- proper body positions to conserve body heat and prevent hypothermia<br>- how to right an inverted liferaft<br>- boarding a rescue craft from the water | Assessment of evidence obtained during satisfactory participation in drills and exercises | Demonstration of correct actions during drills and exercises |
| Deployment of life rings and associated equipment | Personnel will be instructed in the procedures for deploying life rings and associated equipment<br><br>Personnel will be instructed in the procedures for raising the alarm | Assessment of evidence obtained during satisfactory participation in drills and exercises | Demonstration of correct actions during drills and exercises |

***Table 5.5.2***

**SPECIFICATION OF MINIMUM STANDARD OF COMPETENCE IN FIRE PREVENTION AND FIREFIGHTING**

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Minimize the risk of fire and maintain a state of readiness to respond to emergency situations involving fire | Personnel should receive instruction that would include, but not be limited to, the following:<br><br>.1 elements of fire and explosion (the fire triangle)<br>.2 types and sources of ignition<br>.3 flammable materials, fire hazards and spread of fire<br>.4 requirement for constant vigilance<br>.5 classification of fire and applicable extinguishing agents<br><br>Personnel should receive an initial orientation and familiarization instruction that would include, but not be limited to, the following:<br><br>.1 onboard firefighting organization and muster list<br>.2 location of firefighting equipment and emergency escape routes<br>.3 onboard fire and smoke detection and automatic alarm systems<br>.4 actions to be taken on discovery of smoke or fire<br>.5 in the case of combined operations, supplemental instruction on additional alarms and procedures<br><br>Personnel should receive instruction on actions to be taken, given the individual's status on board | Assessment of evidence obtained during satisfactory participation in drills and exercises | Initial actions during drills or in response to emergencies conform to established procedures |
| Fight and extinguish fires | Personnel should receive familiarization instruction that includes the following:<br><br>.1 selection and use of firefighting equipment and its location on board<br>.2 selection and use of personal protective equipment<br>.3 firefighting and containment methods<br>.4 firefighting agents | Assessment of evidence obtained during satisfactory participation in drills and exercises or from approved instruction or during attendance at an approved course | Action during drills in response to emergencies conform to established procedures |

*Table 5.5.3*

**SPECIFICATION OF MINIMUM STANDARD OF PROFICIENCY IN ELEMENTARY FIRST AID**

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Take immediate and appropriate action upon encountering an accident or other medical emergency | Assessment of needs of casualties and of threats to own safety | Assessment of evidence obtained from approved instruction or during attendance at an approved course | The manner and timing of raising the alarm is appropriate to the circumstances of the accident or medical emergency |
| | Appreciation of body structure and functions | | |
| | Understanding of immediate measures to be taken in case of emergency, including the ability to:<br>.1 position casualty<br>.2 apply resuscitation techniques<br>.3 control bleeding<br>.4 apply appropriate measures of basic shock management<br>.5 apply appropriate measures in event of burns and scalds, including accidents caused by electric current<br>.6 rescue and transport a casualty<br>.7 improvise bandages and use materials in emergency kit | | Takes prompt action to evaluate the nature and extent of injuries and to prioritize treatment proportional to any threat to life<br>Applies appropriate first aid measures to identified injuries in accordance with training provided<br>Risk of further harm to self and casualty is minimized at all times |

***Table 5.5.4***

**SPECIFICATION OF MINIMUM STANDARD OF COMPETENCE IN PERSONAL SAFETY**

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Comply with emergency procedures | Types of emergency which may occur, such as collision, fire, foundering<br><br>General knowledge of contingency plans for response to emergencies and individual responsibility thereunder<br><br>Emergency signals; and specific duties allocated to crew members in the muster list; muster stations; and correct use of personal safety equipment<br><br>Action to take on discovering potential emergency including: fire, collision, foundering and ingress of water<br><br>Action to take on hearing emergency alarm signals<br><br>Value of training and drills<br><br>Knowledge of escape routes and internal communication and alarm systems | Assessment of evidence obtained during satisfactory participation in drills and exercises or from approved instruction or during attendance at an approved course | Action during drills or in response to emergencies conform to established procedures<br><br>Information given on raising alarm is prompt, accurate, complete and clear |
| Take precautions to ~~p~~revent pollution of the marine environment | Basic knowledge of the impact of shipping on the marine environment and the effects of operational or accidental pollution on it<br><br>Basic environmental protection procedures<br><br>Basic knowledge of complexity and diversity of the marine environment | Assessment of evidence obtained during satisfactory participation in drills and exercises from approved instruction or during attendance at an approved course | Organization procedures designed to safeguard the marine environment are observed at all times |
| Observe safe working practices | Importance of adhering to safe working practices at all times<br><br>Safety and protective devices available to protect against potential hazards<br><br>Precautions to be taken prior to entering enclosed spaces (see resolution A.1050(27)) | Assessment of evidence obtained during satisfactory participation in safety meetings or from approved instruction or attendance at an approved course | Safe working practices are observed and appropriate safety and protective equipment is correctly used at all times |

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Contribute to effective communications on board MOU | Understand principles of, and barriers to, effective communication between individuals and teams within the MOU<br><br>Ability to establish and maintain effective communications | Assessment of evidence obtained from approved instruction or during attendance at an approved course | Communications are clear and effective at all times |
| Understand and take necessary action to control fatigue | Importance of obtaining the necessary rest<br><br>Effects of sleep, schedules, and the circadian rhythm on fatigue<br><br>Effects of physical stressors on personnel<br><br>Effects of environmental stressors in and outside the MOU and their impact on personnel<br><br>Effects of schedule changes on personnel fatigue | Assessment of evidence obtained from approved instruction or during attendance at an approved course | Fatigue management practices are observed and appropriate actions are used at all times |

***Table 5.5.5***

**SPECIFICATION OF MINIMUM STANDARD OF COMPETENCE IN SOCIAL RESPONSIBILITIES**

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Contribute to effective human relationships on board MOU | Personnel should receive familiarization instruction that would include, but not be limited to, the following:<br>.1 importance of maintaining good human and working relationships<br>.2 basic teamworking principles and practice, including conflict resolution<br>.3 special emphasis should be given to the following:<br>.1 social responsibilities, individual rights and responsibilities and practice of respect for co-workers:<br>.1 no ethnic, racial, religious or sexual jokes or harassment<br>.2 no horseplay or practical jokes<br>.3 no profanity<br>.4 control noise levels<br>.5 dress appropriately<br>.6 attend to personal hygiene<br>.7 maintain neatness in living and working spaces<br>.8 respect for privacy of others<br>.9 respect for property of others<br>.10 comply with company policies regarding prohibited items<br>.2 dangers of drug and alcohol abuse:<br>.1 company policy<br>.2 operator policy (if different)<br>.3 legal sanctions<br>.3 factors affecting human relationships in the offshore environment:<br>.1 harsh weather and working environments<br>.2 physically demanding<br>.3 long hours and isolation from shore<br>.4 be prepared for unexpected extended stays<br>.5 prohibited items | Documentation from orientations given to personnel should reflect this topic is adequately covered<br><br>This can be demonstrated by video, computer-based training, training syllabus or personnel receiving this information verbally through lectures<br><br>Examination and assessment of evidence obtained from one or more of the following:<br>.1 instruction or training given prior to going offshore,<br>.2 instruction or training given on board the MOU, or<br>.3 direct observation of actions or conduct during training or instruction, while en route to or while on board the MOU | Demonstration of correct knowledge |

*Table 5.5.6*

## SPECIFICATION OF MINIMUM STANDARD OF COMPETENCE IN SECURITY AWARENESS

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Contribute to the enhancement of maritime security through heightened awareness | Basic working knowledge of maritime security terms and definitions, including elements that may relate to piracy and armed robbery<br><br>Basic knowledge of international maritime security policy and responsibilities of Governments, companies and persons<br><br>Basic knowledge of international maritime security levels and their impact on security measures and procedures aboard ship and in port facilities<br><br>Basic knowledge of security reporting procedures<br><br>Basic knowledge of security-related contingency plans | Assessment of evidence obtained from approved instruction or during attendance at an approved course | Requirements relating to enhanced maritime security are correctly identified |
| Recognition of security threats | Basic knowledge of techniques used to circumvent security measures<br><br>Basic knowledge enabling recognition of potential security threats, including elements that may relate to piracy and armed robbery<br><br>Basic knowledge enabling recognition of weapons, dangerous substances and devices and awareness of damage they can cause<br><br>Basic knowledge in handling security-related information and security-related communications | Assessment of evidence obtained from approved instruction or during attendance at an approved course | Maritime security threats are correctly identified |
| Understanding the need for and methods of maintaining security awareness and vigilance | Basic knowledge of training, drill and exercise requirements under relevant conventions, codes and IMO circulars, including those relevant for anti-piracy and anti-armed robbery | Assessment of evidence obtained from approved instruction or during attendance at an approved course | Requirements relating to enhanced maritime security are correctly identified |

## 6 SPECIALIZED TRAINING AND QUALIFICATIONS OF KEY PERSONNEL

### 6.1 General

6.1.1 Every MOU should have sufficient key persons on board possessing the knowledge, qualifications, skills and experience necessary to ensure the safe operation of the MOU. It is recognized that the nature of MOUs and their operations necessitate the consideration of specialized training and qualifications. The Administration should determine the adequacy of the knowledge, qualifications, skills and experience of the personnel assigned the responsibility for essential safety and pollution prevention functions on the basis of the design, type, size, and operating parameters of each MOU. Administrations are invited to consider the essential functions listed below in determining the necessary knowledge, qualifications, skills and experience for key personnel.

6.1.2 For personnel with STCW certificates, additional guidance on meeting the training requirements that are specified in this section is provided in appendix 2. The recommendations provided in appendix 2 are subject to the approval of the Administration.

### 6.2 Offshore installation manager (OIM)

6.2.1 The essential safety and pollution prevention functions for which the OIM is responsible and the related knowledge, competencies and qualifications required will depend on the type of MOU and its mode of operation:

.1 The person in charge should be well acquainted with the characteristics, capabilities and limitations of the MOU and should have a full knowledge of the organization and actions to take in an emergency and the need to conduct and keep records of emergency drills and training; and

.2 Persons delegated by him should possess the capability to maintain and operate all firefighting equipment and life-saving appliances on board the MOU and be able to train others in these activities.

6.2.2 Subject to the more precise indications given in table 6.1, which relates to the training, knowledge, skill and competency requirements for particular types of MOUs, it is considered necessary for the proper discharge of the essential safety and pollution prevention functions assigned to the OIM for the OIM to have knowledge, experience and demonstrated competence in each of the following matters:

.1 stability and construction:

.1 the general principles of construction;

.2 the static and dynamic stability of floating MOUs; theory and factors affecting trim and stability; measures to preserve safe trim and stability, including sufficient knowledge of stability calculations and the use of stability booklets; also the relationship with the regulatory requirements in respect of the stability curves for operating and survival conditions, taking into account the effect of the environmental conditions prevailing;

.3 the effect on the trim and stability of a floating MOU in the event of damage to, and consequential flooding of, any compartment; counter-measures to be taken; knowledge of the principle and importance of maintaining the watertight integrity of the MOU; procedures for maintaining watertight integrity;

.4 loading supplies and ballasting in order to keep the unit's stresses within acceptable limits;

.5 principal structural members and required periodical inspections; basic knowledge of the effects of welding; effects of corrosion on the structure;

.6 the effect of the mooring system on stability; and

.7 preloading and leg reaction stresses on self-elevating MOUs;

.2 station-keeping, mooring and dynamic positioning:

.1 seabed composition and characteristics;

.2 behaviour of mooring systems and force distribution, including the effect of environmental conditions;

.3 consequences of failure of the mooring system;

.4 anchor placement and recovery, and working with anchor-handling vessels; and

.5 the principles of the dynamic positioning system, including capabilities and limitations of thrusters, power systems and maximum allowable position offsets;

.3 transit operations:

.1 the 1972 Collision Regulations, as amended;

.2 navigation and electronic navigational aids appropriate to the type of MOU; and

.3 towing procedures, including recovery of tow;

.4 emergency procedures and safety equipment:

.1 life-saving and firefighting procedures, including drills;

.2 maintenance and inspection of life-saving and firefighting appliances in accordance with the regulatory requirements;

.3 communication procedures in emergencies;

.4 precautions to be taken before the onset of heavy weather;

.5 evacuation procedures; and

.6 crisis management and crowd control;

.5 personnel transfers:

.1 precautions to be taken during transfer of personnel;

.2 use of the personnel basket;

.3 helicopter transfers; and

.4 vessel transfers;

.6 handling and stowage of supplies, including dangerous goods:

.1 safe handling, stowage and care of equipment, supplies and dangerous goods;

.2 cranes and lifting equipment and inspections; and

.3 procedures for loading and discharge of helicopters and supply vessels;

.7 pollution prevention and control:

.1 pollution prevention systems and equipment; and

.2 pollution control procedures;

.8 meteorology:

.1 the characteristics of various weather systems;

.2 ability to apply available meteorological information to ensure safety of the MOU and, upon request, supply other vessels or aircraft with information;

.3 sources of meteorological information; and

.4 the effects of weather on the environmental limits of the MOU;

.9 safe working practices:

.1 occupational safety, health and hygiene;

.2 hazardous areas;

.3 permits to work;

.4 work over water;

.5 work in enclosed spaces (see resolution A.1050(27));

.6 personnel training;

.7 understanding of organization and communication; and

.8 understanding and inspection of safety equipment;

.10 regulatory and certification requirements, including an appreciation of international and national regulations and recommendations affecting operations; and

.11 industrial operations as they relate to maritime safety, including appreciation of the interrelationship between marine operations and specific industrial activities, including, where appropriate, the following:

.1 drilling and maintenance, where appropriate, of wells;

.2 construction and offshore maintenance and repair;

.3 production;

.4 accommodation support;

.5 lifting operations;

.6 pipe-laying;

.7 diving; and

.8 firefighting support.

6.2.3 Methods for demonstrating competence and criteria for evaluating competence for OIMs are set forth in table 6.2.

6.2.4 Every OIM serving on board a MOU should hold a CoC.

**6.3 Barge supervisor (BS)**

6.3.1 Knowledge, experience and competence in each of the following matters is considered necessary for the proper discharge of the essential safety and pollution prevention functions assigned to the barge supervisor:

.1 stability and construction:

the stability concepts specified for the ballast control operator plus a period of service in that capacity;

.2 construction:

principles of construction, structural members, watertight integrity and damage control;

.3 emergency duties:

responsibilities set forth in the emergency plan or operating manual relating to the safety of the MOU;

.4 communications:

communication procedures for normal operations and for an emergency;

.5 safe working practices:

.1 occupational safety, health and hygiene;

.2 hazardous areas;

.3 permits to work;

.4 work over water;

.5 work in enclosed spaces (see resolution A.1050(27));

.6 personnel training; and

.7 understanding and inspection of safety equipment;

.6 regulatory requirements:

international and national regulations and recommendations affecting operations;

.7 emergency first aid:

provision of first aid to a casualty pending transfer to a medical facility;

.8 transit operations:

.1 the 1972 Collision Regulations, as amended;

.2 navigation and electronic navigational aids appropriate to the type of MOU; and

.3 towing procedures, including recovery of tow;

.9 seamanship

.1 heavy weather;

.2 store and bulk liquid transfer;

.3 manoeuvring and positioning;

.4 anchor handling; and

.5 dynamic positioning, if applicable.

6.3.2 Methods for demonstrating competence and criteria for evaluating competence for BSs are set forth in table 6.3.

6.3.3 Every BS serving on board a MOU should hold a CoC.

**6.4 Ballast control operator (BCO)**

6.4.1 Knowledge, experience and competence in each of the following matters is considered necessary for the proper discharge of the essential safety and pollution prevention functions assigned to the ballast control operator on column-stabilized MOUs:

.1 basic stability:

.1 understanding of general terms, i.e. displacement, draught, trim, heel, freeboard, buoyancy, reserve buoyancy, etc.;

.2 understanding of centre of gravity, centre of buoyancy, position of metacentre, righting lever and its effect on transverse stability;

.3 stable, unstable and neutral equilibrium;

.4 theory of moments applied to stability including the effects of heavy lifts and movement of same;

.5 effect of adding, removing and shifting weight; calculation of vertical, transverse and longitudinal shift of centre of gravity;

.6 understanding of the inclining experiment report and its use;

.7 effect of free surface on stability and factors affecting same;

.8 general understanding of change of trim, trimming moments, longitudinal metacentre and longitudinal stability;

.9 use of hydrostatic curves, deadweight scale and hydrostatic tables;

.10 use of cross curves to produce a curve of statical stability and information from curve;

.11 dynamic stability; synchronous rolling and angle of loll; stability criteria for MOUs;

.12 effect of mooring system on stability; and

.13 daily loading calculations;

.2 application of stability knowledge, where the following should include the relevant theory and calculations:

.1 deck loads and effect on stability; change in lightweight;

.2 examination of ballasting systems and procedures;

.3 response to systems failures including station-keeping systems, damage to structures and subsequent action;

.4 damage control procedure, watertight compartments counter-flooding, use of pumping systems and cross-connections;

.5 environmental conditions and their effect on stability;

.6 unit and environmental limitations and criteria for changing to survival condition;

.7 zones of reduced stability, precautions to take, unsymmetrical ballasting/deballasting and importance of sequence with regard to stress;

.8 theory of calculations carried out on daily loading sheet, variations in chain deployed and effect on vertical moment; and

.9 emergency procedures;

.3 supplementary training:

having successfully completed the formal training, as indicated above, no individual should work in a ballast control room without the supervision of a competent person for a period of time to enable him to become fully conversant with the ballasting systems of that MOU. Before being left in sole charge and being required to react alone in the event of an emergency, the individual should receive experience of simulated emergency situations.

6.4.2 Methods for demonstrating competence and criteria for evaluating competence for BCOs are set forth in table 6.4.

6.4.3 Every BCO serving on board a MOU should hold a CoC.

**6.5 Maintenance supervisor (MS)**

6.5.1 On self-propelled MOUs, the person assigned responsibility for the operation and maintenance of the main propulsion and auxiliary machinery should meet the appropriate knowledge requirements of chapter III of the STCW Convention (see section 4.1 on self-propelled MOUs).

6.5.2 On non-self-propelled MOUs, the person assigned responsibility for the operation and maintenance of the power plant and auxiliary machinery should have knowledge, experience and competence in each of the following:

.1 operation and maintenance of engines.

.2 operation and maintenance of auxiliary machinery including pumping and piping systems, associated control systems and, if appropriate, jacking systems;

.3 detection of machinery malfunction, location of faults to prevent or minimize damage;

.4 maintenance and repair problems;

.5 operation and maintenance of systems for fire prevention, detection and extinction;

.6 safe working practices;

.7 maintenance of survival craft and launching appliances; and

.8 pollution prevention procedures.

6.5.3 Methods for demonstrating competence and criteria for evaluating competence for MSs on non-self-propelled MOUs are set forth in table 6.5.

6.5.4 Every MS serving on board a MOU should hold a CoC.

*Table 6.1*

**KNOWLEDGE AND TRAINING REQUIREMENTS FOR AN OIM FOR DIFFERENT TYPES OF MOU**

| Knowledge/ experience listed in section 6.2.2 | Type of MOU | | | | | | |
|---|---|---|---|---|---|---|---|
| | Self-Propelled | | | Non-Self-Propelled | | | |
| | Surface MOU | Column-stabilized MOU | Other | Column-stabilized MOU | Other | Bottom-bearing submersible MOU | Bottom-bearing self-elevated MOU |
| .1.1 | X | X | X | X | X | X | X |
| .1.2 | X | X | X | X | [3] | [2] | [2] |
| .1.3 | X | X | X | X | X | [2] | [2] |
| .1.4 | X | X | X | X | X | X | X |
| . 1.5 | X | X | X | X | X | X | X |
| .1.6 | X[1] | X[1] | X[1] | | X | X | |
| .1.7 | | | | | | | X |
| .2.1 | X | X | X | X | X | X | X |
| .2.2 | X[1] | X[1] | X[1] | | X | X | |
| .2.3 | X[1] | X[1] | X[1] | | X | X | |
| . 2.4 | X | X | X | X | X | X | X |
| .2.5 | X | X | X | | | | |
| .3.1 | X | X | X | X[3] | [3] | [2,3] | [2.3] |
| .3.2 | X | X | X | X[3] | [3] | [2.3] | [2.3] |
| .3.3 | X | X | X | X | X[3] | [2] | [2] |
| .4 to.11 | X | X | X | X | X | X | X |

[1] Except for MOUs in dynamic positioning mode.

[2] Bottom-bearing MOUs whilst afloat.

[3] Depends on MOU type and circumstances of operation (to be determined by the Administration).

***Table 6.2***

## SPECIFICATION OF MINIMUM STANDARD OF COMPETENCE FOR OFFSHORE INSTALLATION MANAGER

| **Competence** | **Knowledge, understanding and proficiency** | **Methods for demonstrating competence** | **Criteria for evaluating competence** |
|---|---|---|---|
| Plan and ensure safe ballasting and deballasting operations and accounting of changes in deck loads | Knowledge of, and ability to apply, relevant international and national standards concerning stability<br><br>Use of loading stability information which may be contained in or derived from stability and trim diagrams, operation manual, and/or computer-based loading and stability programs | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Ballasting and deballasting are planned and executed in accordance with established procedures<br><br>Changes in deck loads are accounted for in accordance with established procedures |
| Operational control of trim, stability and stress | Understanding of fundamental principles of MOU construction, including principal structural members and required periodic inspections<br><br>Basic knowledge of effects of welding, and effects of corrosion on the structure<br><br>Understanding of fundamental principles and the theories and factors affecting trim and stability and measures necessary to preserve trim and stability (afloat mode)<br><br>Stability criteria for MOUs (static and dynamic), environmental limits and criteria for survival conditions<br><br>Understanding of inclining experiment, deadweight survey, and their use<br><br>Use of daily loading calculations<br><br>Knowledge of the effect:<br><br>.1 on trim and stability of MOU in event of damage to and consequent flooding of a compartment, and countermeasures to be taken (afloat mode)<br>.2 of loading supplies and ballasting in order to keep the MOU's stresses within acceptable limits<br>.3 of mooring systems and mooring line failure<br>.4 of pre-loading and leg stresses on self-elevating MOUs<br>.5 of loss of buoyancy | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | MOU structure, stability and stress conditions are maintained within safe limits at all times |

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Maintain safety and security of MOU personnel and the operational condition of life-saving, firefighting and other safety systems | Knowledge of life-saving appliance regulations (International Convention for the Safety of Life at Sea) as applicable to MOUs<br><br>Organization of fire and abandon ship drills<br><br>Maintenance of operational condition of life-saving, firefighting and other safety systems<br><br>Actions to be taken to protect and safeguard all persons on board in emergencies, including evacuation<br><br>Actions to limit damage following a fire, explosion, collision, or grounding<br><br>Precautions to be taken before onset of heavy weather | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Procedures for monitoring fire-detection and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established emergency procedures<br><br>Life-saving appliances and firefighting equipment are maintained in accordance with prescribed standards |
| Develop emergency and damage control plans and handle emergency situations | Preparation of contingency plans for response to emergencies<br><br>MOU construction, including damage control<br><br>Methods and aids for fire prevention, detection and extinction<br><br>Functions and use of life-saving appliances<br><br>Evacuation from MOU<br><br>Precautions to be taken before onset of heavy weather | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Emergency procedures are in accordance with the established plans for emergency situations |
| Respond to emergencies | Knowledge of :<br><br>.1 emergency procedures<br>.2 the effect of trim and stability of flooding due to damage, firefighting , loss of buoyancy or other reasons and countermeasures to be taken<br><br>Effectively communicate stability-related information | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Established procedures are followed during drills and emergencies<br><br>Communications are clear and effective |

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Maintain MOU safe for transit, station keeping, mooring and dynamic positioning conditions | Knowledge of:<br>.1 the 1972 Collision Regulations, as amended<br>.2 navigation and electronic navigational aids appropriate to the type of MOU<br>.3 towing procedures, including recovery of tow<br>.4 seabed composition and characteristics<br>.5 behaviour of mooring systems and force distributions, including the effect of environmental conditions<br>.6 consequences of mooring system failure<br>.7 anchor placement and recovery, and working with anchor handling vessels<br>.8 principles of dynamic positioning system, including capabilities and limitations of thrusters, power systems and maximum allowable position offsets (For Dynamic Position equipped vessels only)* | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Transit, station keeping, mooring and dynamic positioning operations are within safe limits at all times<br><br>Communications are effective and comply with established procedures |
| Forecast weather and oceanographic conditions | Knowledge of:<br>.1 characteristics of weather systems<br>.2 ability to apply available meteorological information to ensure safety of MOU and , upon request, supply other vessels or aircraft with information<br>.3 sources of weather information<br>.4 the effects of weather on the MOU environmental limits | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | The likely weather conditions for a determined period are based on all available information<br><br>Actions taken to maintain safety of navigation and operations minimize risk to safety of MOU |
| Plan and ensure safe transfer of personnel | Knowledge of:<br>.1 precautions to be taken during transfer of personnel<br>.2 use of the personnel basket<br>.3 helicopter transfers<br>.4 vessel transfers<br>.5 effect of environmental conditions on method of personnel transfer | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Personnel transfers are conducted safely |

* Resolution MSC.38(63), annex 2.

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Plan and ensure safe loading, stowage, securing and handling of supplies, including dangerous goods | Knowledge of:<br>.1 the effect on trim and stability of cargoes and cargo operations<br>.2 safe handling, stowage and care of equipment, supplies and dangerous goods<br>.3 crane and lifting equipment, and their inspections<br>.4 procedures for loading and discharge of helicopters and supply vessels<br>.5 precautions during loading, and unloading, and use of dangerous, hazardous, or harmful goods | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | The likely weather conditions for a determined period are based on all available information<br>Stowage and securing of cargoes and supplies ensures that stability and stress conditions remain within safe limits, and are in accordance with established guidelines and legislative requirements<br>Information on dangers, hazards and special requirements is recorded in a suitable format for easy reference in the event of an incident |
| Prevention of pollution | Methods and aid to prevent pollution of the environment<br>Knowledge of:<br>.1 pollution prevention systems and controls<br>.2 pollution control procedures, including the MOU's MARPOL I/26 and article 3 of OPRC Convention Shipboard Oil Pollution Emergency Plan, MARPOL Annex V Waste Management Plan, and any plan dealing with dangerous/hazardous goods<br>.3 importance of proactive measures to protect the marine environment | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Operations are conducted without hazarding the environment through spills of oil or dangerous/hazardous goods, or garbage<br><br>Actions to ensure that a positive environmental reputation is maintained |
| Monitor and control safe working practices | Knowledge of safe working practices, such as:<br>.1 occupational safety, health and hygiene<br>.2 hazardous areas<br>.3 permits to work<br>.4 work over water<br>.5 work in confined spaces<br>Knowledge of personnel training, organization and communication<br><br>Understanding and inspection of safety equipment<br>Identify, evaluate, control new hazards through engineering controls or safe working practices | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Operations minimize hazards to personnel |

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and the protection of the marine environment | Knowledge of international maritime law embodied in international agreements and conventions<br>Regard should be paid to the following subjects:<br>.1 certificates and other documents required to be carried on board MOUs by international conventions and/or agreements<br>.2 responsibilities under the relevant requirements of the:<br>- International Convention on Load Lines;<br>- International Convention for the Safety of Life at Sea;<br>- International Convention for the Prevention of Pollution from Ships;<br>.3 maritime declarations of health and the requirements of the International Health Regulations<br>.4 responsibilities under international instruments affecting the safety of the MOU, visitors, crew and cargo<br>.5 methods and aids to prevent pollution of the marine environment by MOUs<br>.6 national legislation for implementing international agreements and conventions | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Procedures for monitoring operations and maintenance comply with legislative requirements<br><br>Potential non-compliance is promptly and fully identified<br><br>Planned renewal and extension of certificates ensures continued validity of surveyed items and equipment |
| Monitor and control industrial operations impacting maritime safety | Knowledge and appreciation of the interrelationship between marine operations and specific industrial activities including, where appropriate, the following:<br>.1 drilling and maintenance, where appropriate, of wells<br>.2 construction and offshore maintenance and repair<br>.3 production<br>.4 accommodation support<br>.5 lifting operations<br>.6. pipe-laying<br>.7 diving<br>.8 firefighting support | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Industrial operations are carried out safely |

*Table 6.3*

**SPECIFICATION OF MINIMUM STANDARD OF COMPETENCE FOR BARGE SUPERVISOR**

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Plan and ensure safe ballasting and deballasting operations and accounting of changes in deck loads | Knowledge of and ability to apply relevant international and national standards concerning stability<br><br>Use of loading stability information as may be contained in or derived from stability and trim diagrams, operation manual, and/or computer-based loading and stability programs | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Ballasting and deballasting are planned and executed in accordance with established procedures<br><br>Changes in deck loads are accounted for in accordance with established procedures |
| Operational control of trim, stability and stress | Understanding of fundamental principles of MOU construction, including principal structural members and required periodic inspections, watertight integrity and damage control<br><br>Basic knowledge of effects of welding, and effects of corrosion on the structure<br><br>Understanding of fundamental principles and the theories and factors affecting trim and stability and measures necessary to preserve trim and stability<br><br>Stability criteria for MOU (static and dynamic), environmental limits and criteria for survival conditions<br><br>Understanding of inclining experiment, deadweight survey, and their use<br><br>Use of daily loading calculations<br><br>Knowledge of the effect of mooring systems and mooring line failure | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | MOU structure, stability and stress conditions are maintained within safe limits at all times |

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Respond to emergencies | Knowledge of :<br><br>.1 emergency procedures<br>.2 the effect of trim and stability of flooding due to damage, firefighting, loss of buoyancy or other reasons and countermeasures to be taken<br>Effectively communicate stability related and damage control information | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Established procedures are followed during drills and emergencies<br><br>Communications are clear and effective |
| Seamanship | Knowledge of :<br><br>.1 the 1972 Collision Regulations, as amended<br>.2 navigation and electronic navigational aids appropriate to the type of MOU<br>.3 towing procedures, including recovery of tow<br>Proficiency in the following:<br>.1 heavy weather<br>.2 store and bulk liquid transfer<br>.3 manoeuvring and positioning<br>.4 anchor handling<br>.5 dynamic positioning, if applicable<br>Effectively communicate navigational and cargo handling information | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Transit, station keeping, mooring and dynamic positioning operations are within safe limits at all times<br><br>Communications are effective and comply with established procedures |
| Plan and ensure safe loading, stowage, securing and handling of supplies, including dangerous goods | Knowledge of:<br><br>.1 the effect on trim and stability of cargoes and cargo operations<br>.2 safe handling, stowage and care of equipment, supplies and dangerous goods<br>.3 crane and lifting equipment, and their inspections<br>.4 procedures for loading and discharge of helicopters and supply vessels<br>.5 precautions during loading, and unloading, and use of dangerous, hazardous, or harmful goods | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | The likely weather conditions for a determined period are based on all available information<br><br>Stowage and securing of cargoes and supplies ensures that stability and stress conditions remain within safe limits, and are in accordance with established guidelines and legislative requirements<br>Information on dangers, hazards and special requirements is recorded in a suitable format for easy reference in the event of an incident |

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Monitor and control safe working practices | Knowledge of safe working practices, such as:<br><br>.1 occupational safety, health and hygiene<br>.2 hazardous areas<br>.3 permits to work<br>.4 work over water<br>.5 work in confined spaces<br>Knowledge of personnel training, organization and communication<br>Understanding and inspection of safety equipment | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Operations minimize hazards to personnel |
| Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and the protection of the marine environment | Knowledge of international maritime law embodied in international agreements and conventions<br>Regard should be paid to the following subjects:<br><br>.1 certificates and other documents required to be carried on board MOUs by international conventions and/or agreements<br>.2 responsibilities under the relevant requirements of the:<br>- International Convention on Load Lines;<br>- International Convention for the Safety of Life at Sea;<br>- International Convention for the Prevention of Pollution from Ships;<br>.3 responsibilities under international instruments affecting the safety of the MOU, visitors, crew and cargo<br>.4 methods and aids to prevent pollution of the marine environment by MOUs<br>.5 national legislation for implementing international agreements and conventions<br>.6 importance of proactive measures to protect the marine environment | Assessment of evidence obtained from one or more of the following: in-service experience, direct observation, formal instruction, simulator training, or examination | Procedures for monitoring operations and maintenance comply with legislative requirements<br><br>Potential non-compliance is promptly and fully identified<br><br>Planned renewal and extension of certificates ensures continued validity of surveyed items and equipment<br><br>Actions to ensure that a positive environmental reputation is maintained |
| Provide first aid to a casualty prior to transfer to medical facility | See table A-VI/4-1 of STCW Code | See table A-VI/4-1 of STCW Code | See table A-VI/4-1 of STCW Code |

***Table 6.4***

**SPECIFICATION OF MINIMUM STANDARD OF COMPETENCE FOR BALLAST CONTROL OPERATOR**

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Plan and ensure safe ballasting and deballasting operations and accounting of changes in deck loads | Knowledge of and ability to apply relevant international and national standards concerning stability<br><br>Use of loading stability information as may be contained in or derived from stability and trim diagrams, operations manuals, and/or computer-based loading and stability programs | Assessment of evidence obtained from one or more of the following:<br>in-service experience, direct observation, formal instruction, simulator training, or examination | Ballasting and deballasting operations are planned and executed in accordance with established procedures<br><br>Changes in deck loads are accounted for in accordance with established procedures |
| Operational control trim, stability and stress | Understanding of fundamental principles of ship construction and the theories and factors affecting trim and stability and the measures necessary to preserve trim and stability<br><br>Stability criteria for MOUs, environmental limits and criteria for survival conditions<br><br>Understanding the inclining experiment report and its use<br><br>Use of daily loading calculations<br><br>Dynamical stability<br><br>Effect of mooring systems and mooring line failure | Assessment of evidence obtained from one or more of the following:<br>in-service experience, direct observation, formal instruction, simulator training, or examination | Stability and stress conditions are maintained within established limits at all times |
| Respond to emergencies | Knowledge of emergency procedures<br><br>Knowledge of the effect on trim and stability of flooding due to damage, firefighting , loss of buoyancy or other reasons and countermeasures to be taken<br><br>Effectively communicate stability-related information | Assessment of evidence obtained from one or more of the following:<br>in-service experience, direct observation during drills and exercises, formal instruction, simulator training, or examination | Established procedures are followed during drills and emergencies<br><br>Communications are clear and effective |
| Prevention of pollution | Methods and aids to prevent pollution of the environment<br><br>Knowledge of relevant international and national requirements, regard should be paid especially to:<br><br>.1 certificates and other documents required by international conventions or national law, how they may be obtained, and their period of validity<br>.2 responsibilities under relevant international agreements<br>.3 importance of proactive measures to protect the marine environment | Assessment of evidence obtained from one or more of the following:<br>in-service experience, formal instruction, or examination | Follows pollution prevention procedures established by international convention, national requirements and company policy<br><br>Actions to ensure that a positive environmental reputation is maintained |

*Table 6.5*

**SPECIFICATION OF MINIMUM STANDARD OF COMPETENCE FOR MAINTENANCE SUPERVISORS ON NON-SELF-PROPELLED MOUs**

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Use appropriate tools for fabrication and repair operations typically performed on MOUs | Characteristics and limitations of materials used in construction and repair<br>Characteristics and limitations of processes used for fabrication and repair<br>Properties and parameters considered in the fabrication and repair of systems and components<br>Application of safe working practices in the workshop environment | Assessment of evidence obtained from one or more of the following:<br>workshop skills training, in-service experience, or examination | Identification of important parameters for fabrication of typical MOU-related components is appropriate<br>Selection of material is appropriate<br>Fabrication is to designated tolerances<br>Use of equipment and machine tools is appropriate and safe |
| Use hand tools and measuring equipment for dismantling, maintenance, repair and re-assembly of onboard plant and equipment | Design characteristics and selection of materials in construction of equipment<br>Interpretation of machinery drawings and hand tools<br>Operational characteristics of equipment and systems | Assessment of evidence obtained from one or more of the following:<br>workshop skills training, in-service experience, or examination | Safety procedures followed are appropriate<br>Selection of tools and spare gear is appropriate<br>Dismantling, inspecting, repairing and reassembling equipment is in accordance with manuals and good practice<br>Re-commissioning and performance testing in accordance with manuals and good practice |
| Use hand tools, electrical and electronic measuring and test equipment for fault-finding, maintenance and repair operations | Safety requirements for working on electrical systems<br>Construction and operational characteristics of onboard AC and DC electrical systems and equipment<br>Construction and operation of electrical test and measuring equipment | Assessment of evidence obtained from one or more of the following:<br>workshop skills training, in-service experience, or examination | Implementation of safety procedures is satisfactory<br>Selection and use of test equipment is appropriate and interpretation of results is accurate<br>Selection of procedures for the conduct of repair and maintenance is in accordance with manuals and good practice<br>Commissioning and performance testing of equipment and systems brought back into service after repair is in accordance with manuals and good practice |

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Operate alternators, generators and control systems | Generating plant<br>Appropriate basic electrical knowledge and skills<br>Preparing, starting, coupling and charging over alternators or generators<br>Location of common faults and action to prevent damage<br>Control systems<br>Location of common faults and action to prevent damage | Assessment of evidence obtained from one or more of the following:<br>in service experience, simulator training, laboratory equipment training, or examination | Operations are planned and carried out in accordance with established rules and procedures to ensure safety of operations |
| Maintain engineering systems, including control systems | Appropriate basic mechanical knowledge and skills<br>Safe isolation of electrical and other types of plant and equipment required before personnel are permitted to work on such plant or equipment<br>Undertake maintenance and repair to plant and equipment | Assessment of evidence obtained from one or more of the following:<br>in service experience, simulator training, laboratory equipment training, or examination | Isolation, dismantling and reassembly of plant and equipment is in accordance with accepted practices and procedures. Action taken leads to the restoration of plant by the method most suitable and appropriate to the prevailing circumstances and conditions |
| Operate, monitor and evaluate engine and machinery performance and capacity | Operation and maintenance of:<br>engines<br>auxiliary machinery including pumping and piping systems, associated control systems and, if appropriate, jacking systems | Assessment of evidence obtained from one or more of the following:<br>in-service experience, formal instruction, simulator training, or examination | Action during drills or in response to emergencies conform to established procedures |
| Detect and identify the cause of machinery malfunctions and correct faults | Detection of machinery malfunction and location of faults to prevent or minimize damage | Assessment of evidence obtained from one or more of the following:<br>in-service experience, formal instruction, simulator training, or examination | Methods of comparing actual operating conditions are in accordance with recommended practices and procedures<br><br>Actions and decisions are in accordance with recommended operating specifications and limitations |

| Competence | Knowledge, understanding and proficiency | Methods for demonstrating competence | Criteria for evaluating competence |
|---|---|---|---|
| Organize safe maintenance and repair procedures | Marine engineering practice<br><br>Organizing and carrying out safe maintenance and repair procedures | Assessment of evidence obtained from one or more of the following:<br>in-service experience, formal instruction, simulator training, or examination | Maintenance activities are correctly planned and carried out in accordance with technical, legislative, safety and procedural specifications<br>Appropriate plans, specifications materials and equipment are available and used for maintenance and repair<br>Actions taken lead to the restoration of the plant by the most suitable method |
| Operate and maintain survival craft and launching systems and systems for fire prevention, detection and extinction | Maintenance of operational condition of survival craft and launching systems and systems for fire prevention, detection and extinction<br><br>Actions taken to protect the MOU and its personnel and limit damage following fire, explosion, collision or grounding | Assessment of evidence obtained from one or more of the following:<br>in-service experience, formal instruction, simulator training, or examination | Procedures for maintaining equipment ensure that equipment remains operational<br>Actions taken in response to drills or emergencies follow established procedures |
| Prevention of pollution | Methods and aids to prevent pollution of the environment<br><br>Knowledge of relevant international and national requirements, regard should be paid especially to:<br><br>.1 certificates and other documents required by international conventions or national law, how they may be obtained, and their period of validity<br>.2 responsibilities under relevant international agreements<br>.3 importance of proactive measures to protect the marine environment | Assessment of evidence obtained from one or more of the following:<br>in-service experience, formal instruction, simulator training, or examination | Follows pollution prevention procedures established by international conventions, national requirements and company policy<br><br>Actions to ensure that a positive environmental reputation is maintained |
| Ensure safe working practices | Safe working practices | Assessment of evidence obtained from one or more of the following:<br>in-service experience, formal instruction, simulator training, or examination | Working practices are in accordance with legislative requirements, codes of practice, environmental concerns, and company policies<br>Safe working practices are observed and appropriate safety and protective equipment is correctly used at all times |

## 7 FITNESS FOR DUTY

7.1 Each Administration should direct the attention of companies to familiarize all their offshore personnel (Categories A, B, C & D) with the requirements, principles and guidance as set out in these recommendations. Offshore personnel should:

.1 make proper assignments to ensure that a safe watch and work schedule, appropriate to the prevailing circumstances and conditions, is maintained on board the MOU;

.2 take into account any limitations in qualifications or fitness of an individual on watch or working prior to allowing or assigning them the watch or task;

.3 understand their individual roles and responsibilities and those of other personnel on watch or workers on duty with them;

.4 make effective use of all resources available (e.g. information, equipment and other personnel);

.5 understand the functions and operation of equipment under their purview;

.6 understand information provided to them by their equipment (i.e. readings) and by other personnel on watch or working with them prior to acting on it;

.7 maintain an exchange of appropriate communication in any situation; and

.8 notify their immediate supervisor and/or the OIM without hesitation when in any doubt as to what action to take in the interest of safety or security.

7.2 Each Administration should direct the attention of companies that adequate measures are established for the purpose of preventing drug and alcohol abuse.

7.3 Each Administration should direct the attention of companies to establish and enforce rest periods for all personnel, especially personnel on watch and those whose duties involve safety, security or pollution prevention.

7.4 Arrangements regarding rest and fatigue:

1 Administrations should take into account the danger posed by fatigue of personnel, especially those whose duties involve the safety and security of the MOU;

.2 All personnel whose duties involve designated safety, security or pollution prevention should be provided with a minimum rest period of not less than 10 hours in any 24-hour period, and 77 hours in any seven-day period, except in emergency situations and as determined by the Administration;

.3 Musters, firefighting, lifeboat drills and other drills prescribed by national laws and regulations or by international instruments should be conducted in a manner that minimizes the disturbance of rest periods and does not induce fatigue; and

.4 Nothing in these recommendations should be deemed to impair the right of the Master, OIM, or Person-in-Charge of the MOU to require any personnel to perform any hours of work necessary for the immediate safety or security of the MOU, the personnel on board, to effect crew-changes, or for the purpose of aiding another MOU in distress. Accordingly, the Master, OIM, or Person-in-Charge may suspend the schedule of rest to perform any necessary work until the normal situation of the MOU has been restored.

## 8 MEDICAL STANDARDS

Administrations should establish standards of medical fitness for offshore personnel (Categories C & D) serving on board MOUs and those personnel should hold a valid medical certificate issued in accordance with the requirements of the Administration or recognized industry standards. Flag States are encouraged to recognize the coastal State's medical regime when in place.

## Appendix 1

## GUIDANCE ON DRILLS AND EXERCISES

### 1 INTRODUCTION

1.1 This Guidance is offered to aid in the development of an effective programme of drills and exercises for training and assessment of basic offshore emergency response. Drills and exercises are a primary means of testing and maintaining the emergency response arrangements of a mobile offshore MOU. They also are an integral part of the system of providing basic safety training and other emergency response training to individuals and evaluating individual skills and knowledge in these areas.

### 1.2 Definitions

1.2.1 *Exercise* means a test of the emergency response arrangements under as near realistic conditions as possible on the MOU and involves all MOU personnel.

1.2.2 *Drill* means a form of exercise which provides the opportunity to practice elements of the system. Drills are carried out under realistic conditions while allowing for instruction and training, e.g. breathing apparatus drills for the fire team, casualty handling for first aid and stretcher teams, etc.

### 1.3 Drill and exercise programme

1.3.1 The drill and exercise programme should be an integral part of the MOU's training programme. For drills and exercises that are intended to develop, maintain and assess competencies which are too risky or too complex to perform on board the MOU, e.g. lifeboat launching in rough seas, approved simulators may be used, in accordance with flag State and/or coastal State requirements. However in the absence of these, a recognized industry standard to enhance the realism of the drill and the exercise should be considered. The design of a programme of drills and exercises can be considered on four levels.

*Offshore/onshore exercises*

1.3.2 Since many MOUs rely on shore-based support during response to major emergencies, these exercises are intended to test and develop communications and relationships between the MOU and onshore emergency support teams. To maximize the benefits of such exercises, considerable coordination and planning may be required.

1.3.3 Arrangements should be made for independent observers, i.e. persons not involved in the actual exercise, to monitor both the offshore and onshore elements of the exercise and provide objective assessment and feedback.

1.3.4 Offshore/onshore exercises should be held at such intervals as to allow each OIM to participate in at least one such exercise every three years, i.e. the nominal frequency should be approximately an 18-month interval.

*Offshore exercises*

1.3.5 These exercises are intended to test and develop communications and relationships for those on board the MOU and for the MOU's emergency support teams. They are also used to test and develop integrated emergency response arrangements for MOUs engaged in combined operations.

1.3.6 When possible, arrangements should be made for independent observers, i.e. persons not involved in the actual exercise, to monitor the exercise and provide objective assessment and feedback.

*Routine drills*

1.3.7 A programme of routine drills is established to provide systematic practical training and experience in the elements of basic offshore emergency response. The programme should ensure that all the elements of required individual and team competence in basic offshore emergency preparedness training are regularly tested. Various elements can be tested during a drill.

1.3.8 Consideration should also be given to carrying out drills in order to provide training and heighten awareness prior to conducting non-routine or hazardous operations.

*Assessment drills*

1.3.9 A programme of assessment drills should be specifically established to provide for periodic and systematic demonstration of individual competence in the elements of basic safety training. Other elements of emergency response as may be determined to be appropriate for the MOU may also be assessed.

**1.4 Evaluation and assessment**

1.4.1 Assessors should be assigned for each exercise and drill. If practicable, assessors should not be active participants in the drill or exercise, so that they can dedicate their time and attention to training and assessment.

1.4.2 All assessors should:

.1 have an appropriate level of knowledge and understanding of the competence to be assessed;

.2 be qualified in the tasks for which the assessment is being made; and

.3 have received appropriate guidance in assessment methods and practice and have gained practical assessment experience.

1.4.3 Arrangements should be made periodically which permit the OIM, PIC or other supervisors, to be released from their normal emergency response role to monitor the key aspects of the MOU's drills.

1.4.4 As a matter of routine, personnel with key emergency response roles should monitor the performance in their areas and ensure that appropriate action is taken to resolve any problems which are identified.

1.4.5 Drills should be structured so as to also demonstrate that associated emergency appliances and equipment are complete, in good working order and ready for immediate use.

1.4.6 A debriefing should be held after each drill exercise for training purposes and to assist in the overall assessment and evaluation.

### 1.5 Records and follow-up

1.5.1 Records, similar to the samples provided in attachment 1, should be maintained, describing the scope of all drills which are conducted. More detailed reports may be appropriate for exercises.

1.5.2 Records should include any recommendations for improvements or modification which were identified with respect to emergency procedures, drill or exercise procedures, or equipment.

1.5.3 A record, similar to the sample provided in attachment 2, should be maintained of all assessment drills. When assessment drills are completed, suitable endorsements should also be made in individuals' training record books, training passports or other appropriate records.

1.5.4 A system should be established to ensure that all recommendations are properly considered and appropriate action taken.

### 1.6 Special precautions

1.6.1 For MOUs that may be working with open wells, the status of the well and the safety of well operations should be given special consideration.

1.6.2 For MOUs involved in combined operations, the effect of the drill or exercise on the other MOU or facility should be considered. Nevertheless, the development of drill and exercise scenarios addressing combined operations is encouraged.

## 2 OFFSHORE EXERCISES

### 2.1 Exercise scenarios

Offshore exercises should be varied and challenging. Scenario details should be adequate to allow for a realistic exercise but not so prescriptive as to prevent variations and an injection of the unexpected into the exercise. An example of an exercise scenario is provided in attachment 3.

### 2.2 Planning of exercises

2.2.1 Exercises should be carried out at a time which minimizes disruption to operations without detriment to the exercise objectives.

2.2.2 There should be elements of surprise in the timing of the exercise. However, this needs to be balanced with safety and other operational requirements.

2.2.3 Where possible, offshore exercises should be held when there are onshore management or other suitably qualified personnel available to assist in monitoring the exercise and to input realistic variations to the scenarios at random and unexpectedly. If there are no persons with the necessary knowledge or experience of an emergency exercise available then the OIM, or other supervisors, should fulfil this function.

2.2.4 Offshore exercises should be held at approximately three-month intervals.

## 3 ROUTINE DRILLS

### 3.1 Drill scenarios

3.1.1 Routine drills are a means of practising emergency response, building teamwork, and providing training in basic safety and other elements of emergency response.

3.1.2 It is essential that routine drills do not become repetitive. Drills should be developed from a selection of the elements relevant to current or planned operations so as to provide variety and a challenge to the personnel of the MOU.

3.1.3 All the required elements of basic safety training should be covered by the drill programme within any three-month period. Additional emergency response elements may be added to address unit-specific concerns such as combined operations (assistance to others), helideck firefighting, etc. Possible elements for developing routine drills are provided in attachment 4.

3.1.4 Unless a drill is designed to meet a specific training purpose, e.g. breathing apparatus procedures for fire team members, then each drill should include the mustering of all personnel to both their normal and alternative muster points.

3.1.5 For MOUs operating (or scheduled to operate) in areas where hydrogen sulphide ($H_2S$) is a concern, the $H_2S$ mustering procedures should be included.

### 3.2 Frequency

3.2.1 One abandon MOU and one fire drill should be held every week. Drills should be so arranged that all regularly assigned personnel participate in one abandon MOU and one fire drill at least once a month. A drill should take place within 24 hours, if possible, after a personnel change if more than 25% of the personnel have not participated in abandon MOU and fire drills on board that particular MOU in the previous month.

3.2.2 Other drills should be held as frequently as required to ensure that the required levels of competence in basic safety and emergency response preparedness are achieved.

## 4 ASSESSMENT DRILLS

4.1 Assessment drills are designed for the specific purpose of providing a means for an individual to demonstrate that he or she has achieved the required standard of competence in basic safety (i.e. personal survival, firefighting, elementary first aid, and personal safety) and other emergency response elements determined to be appropriate for the MOU.

4.2 Personnel not regularly assigned to a MOU may experience difficulty in documenting that they have achieved the required standard of competence in basic safety under realistic conditions (i.e. they may have only been assessed during shore-based training). Accordingly, installation managers should be encouraged to include such personnel in assessment drills when they are conducted.

4.3 Because of the importance attached to proficiency in basic safety, individuals failing to demonstrate the required level of proficiency should be immediately provided with remedial training.

4.4 Guidance on assessment drills is provided in attachment 5.

**Attachment 1**

**SAMPLE DRILL/EXERCISE RECORD**

**MOU:** **Date:**

**Brief description of drill/exercise scenario:** (e.g. fire in pantry, muster, etc.)

**Emergency response elements exercised:**

**1 Emergency control centre**
- Command
- Communications
- Information availability
- Establishing alternate location

**2 Mustering**
- Accounting for personnel
- Moving and controlling personnel
- Communications

**3 Evacuation/escape**
- Survival craft boarding
- Survival craft launching
- Escape systems
- Protective equipment
- Communications

**4 Fire teams**
- Leadership
- Communications
- Fire containment and extinction
- Dewatering
- Breathing apparatus procedures
- Search and rescue
- Casualty handling

**5 First aid**
- Casualty management
- Casualty handling
- Casualty evacuation

**6 Well control (if applicable)**
- Trip drills
- Kick drills
- Well control
- Well kill
- Shallow gas

**7 Helideck (if installed)**
- Leadership
- Fire monitor and rescue equipment
- Casualty handling

**8 Collision/Flooding**
- Manual operation of valves
- Preserving watertight integrity
- Emergency dewatering

**9 Man overboard**
- Rescue boat launching
- Standby vessel communication

**10 Severe storm**
- Securing equipment on deck
- Preserving watertight integrity

**11 Hydrogen sulphide**

**12 Diving operations (if applicable)**
- Onboard emergency while divers submerged
- Emergencies involving divers

**13 Assistance to others**

**14 Enclosed Space Entry and Rescue (See resolution A.1050(27))**

**15 Rescue at heights**

**16 Security awareness**

**17 Environmental awareness**

**Comments on performance:**

**Recommendations for improvements:**

**Signed:**_____ **Position:**_____

**Date:** _____

**Attachment 2**

**ASSESSMENT DRILL RECORD SHEET**
**(A separate record sheet should be completed for each drill)**

**MOU name:** **Location:**

**Date of drill:**

**Drill No:** **Drill title:**

**Candidates assessed:**

| Name: | Employer: | Training passport or record No: | Performance: |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**Assessor:**

**Name:** **Position:**

I confirm that I have assessed the performance of the above candidates against the drill objectives and found it to be satisfactory. I have endorsed their individual records accordingly.

**Signature:** **Date:**

**OIM:**

I confirm that the above drill and assessment was carried out.

**Signature:** **Date:**

## Attachment 3

## SAMPLE OFFSHORE EMERGENCY RESPONSE EXERCISE SCENARIO

**Objective:**

To demonstrate the MOU's ability to respond to a major incident which escalates to the point that evacuation is appropriate.

**Outline scenario:**

- Exercise commences with a manually initiated alarm and a report of fire, collision, loss of well control or other escalating event.
- Emergency response procedures are put into action.
- Person or persons are identified as missing.
- The event escalates until the response teams conclude containment is no longer possible.
- Abandon MOU procedures are initiated.
- Personnel proceed to controlled evacuation or escape points, as directed.

**Expected response:**

- Personnel make job sites safe and proceed to assigned muster areas.
- On MOUs engaged in well operations, the drill crew closes the well and makes it safe.
- The OIM proceeds to designated emergency control point and takes control.
- Standby vessel, emergency response organization and onshore base(s) are notified of exercise, as appropriate.
- Mustering, identify missing person or persons and where last seen.
- Fire teams, appropriately clothed, run hoses and commence search of area.
- Where safe and appropriate to do so, fixed firefighting systems are activated and performance verified.
- Casualties are located and are moved to a safe area by first aid responders and/or the stretcher-bearers.
- Fire escalates and personnel ordered to preferred evacuation points.
- Fire teams are withdrawn and abandon MOU alarm is initiated.

**Possible scenario variables:** (Not all will be used in a single exercise)

- Communications failure between fire team leader, muster checkers and/or OIM.
- OIM incapacitated at any stage during the exercise.
- Other key personal incapacitated.
- Routes to muster areas and/or evacuation points are blocked.
- Critical equipment fails, e.g. loss of a fire pump.
- Search teams are trapped.
- Casualties in other areas require immediate medical attention.

**Attachment 4**

**POSSIBLE ELEMENTS OF EMERGENCY RESPONSE FOR DEVELOPING ROUTINE DRILLS**

**1 Emergency control centre**
- Command
- Communications
- Information availability
- Establishing alternate location

**2 Mustering**
- Accounting for personnel
- Moving and controlling personnel
- Communications

**3 Evacuation/Escape**
- Survival craft boarding
- Survival craft launching
- Escape systems
- Protective equipment
- Communications

**4 Fire teams**
- Leadership
- Communications
- Fire containment and extinction
- Dewatering
- Breathing apparatus procedures
- Search and rescue
- Casualty handling

**5 First aid**
- Casualty management
- Casualty handling
- Casualty evacuation

**6 Well control (where applicable)**
- Trip drills
- Kick drills
- Well control
- Well kill
- Shallow gas

**7 Helideck (if installed)**
- Leadership
- Fire monitor and rescue equipment
- Casualty handling

**8 Collision/Flooding**
- Manual operation of valves
- Preserving watertight integrity
- Emergency dewatering

**9 Man overboard**
- Rescue boat launching
- Standby vessel communication

**10 Severe storm**
- Securing equipment on deck
- Preserving watertight integrity

**11 Hydrogen sulphide**

**12 Diving operations (if applicable)**
- Onboard emergency while divers are underwater
- Emergencies involving divers

**13 Assistance to others (particularly for combined operations)**

**14 Enclosed Space Entry and Rescue (see resolution A.1050(27))**

**15 Rescue at heights**

**16 Security awareness**

**17 Environmental awareness**

## Attachment 5

## STANDARD ASSESSMENT DRILLS

### Mustering

**Drill objectives:** Candidates are to demonstrate to the satisfaction of the assessor that on hearing/observing alarms they:

- correctly identify the alarm, appropriately make safe their work area, and proceed to their assigned muster area;
- arrive at the muster area suitably clothed, with the required personal protective equipment, and with such other equipment as may be assigned on the muster list or station bill;
- follow the instructions and directions of the muster checker or other person in control; and
- can don the personal protective equipment.[2]

**Drill conditions:** This drill can form part of the MOU's routine drill programme provided that:

- the assessor is in a position to observe the candidates at their muster area;
- the drill includes transferring the group from the muster area to the point of evacuation, or escape, if different from the muster area; and
- persons being assessed demonstrate the ability to don all appropriate personal protective equipment.[3]

**Assessment frequency:** Personnel should be assessed performing this drill at 21 to 27-month (nominal 24-month) intervals.

**Assessment process:** Prior to the commencement of the drill the candidates for assessment should be identified so as to be recognizable by the assessor. The assessor will evaluate each candidate in achieving the drill objectives. In the event that the assessor is not satisfied with a candidate's performance, the candidate's supervisor or employer should be informed.

**Survival craft boarding procedures**

**CAUTION – PRECAUTIONS SHOULD BE TAKEN TO PROTECT AGAINST INADVERTENT ACTIVATION OF THE SURVIVAL CRAFT'S RELEASING GEAR DURING THIS DRILL**

**Drill objectives:** By the end of the drill candidates will demonstrate to the satisfaction of the drill assessor that they can:

- board a survival craft in accordance with appropriate procedures;
- secure themselves in the survival craft; and
- assist others in the survival craft.

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2 Including both lifejackets and immersion suits if operating in an area where immersion suits are provided. If sealed immersion suits are provided, individuals may demonstrate donning procedures on suits provided for demonstration and drill purposes.

3 For assessment purposes, this part of the drill may take place at the end of the routine drill when other personnel have stood down.

**Drill conditions:** This drill can form part of the MOU's routine drill programme provided that the assessor is in a position to observe candidates throughout the drill.

**Assessment frequency:** Personnel should be assessed performing this drill at 21 to 27-month (nominal 24-month) intervals for each type of survival craft installed.

**Assessment process:** Prior to the commencement of the drill the candidates for assessment should be identified so as to be recognizable by the assessor. The assessor will ensure that each candidate has achieved the drill objectives. In the event that the assessor is not satisfied with a candidate's performance, the candidate's supervisor or employer should be informed.

**Survival craft start and launching procedures**

**CAUTION – PRECAUTIONS SHOULD BE TAKEN TO PROTECT AGAINST INADVERTENT ACTIVATION OF THE SURVIVAL CRAFT'S RELEASING GEAR DURING THIS DRILL**

**Drill objectives:** By the end of the drill, candidates will demonstrate to the satisfaction of the drill assessor that they:

- can secure the survival craft for launch;
- can start the survival craft using both primary and back-up systems;
- are familiar with the procedures for launching and releasing the survival craft;
- know which way to steer the survival craft; and
- are familiar with the essential equipment within the survival craft.[4]

**Drill conditions:** This drill will not normally form part of the MOU's routine drill programme. This drill should be carried out at the end of a routine drill or as a separate event. The number of personnel involved in the drill should be restricted, nominally to a maximum of six.

**Assessment frequency:** Personnel should be assessed performing this drill at 21 to 27-month (nominal 24-month) intervals.

**Assessment process:** The assessor should ask the candidate to secure the survival craft ready for launching and then ask them to talk through the start-up launch and steering procedures to achieve the drill objectives. In the event that the assessor is not satisfied with a candidate's performance, the candidate's supervisor or employer should be informed.

**Escape drill**

**Drill objectives:** By the end of the drill candidates will demonstrate to the satisfaction of the drill assessor that they know:

- the locations of the MOU's escape and emergency communications equipment; e.g. liferafts, knotted ropes, scramble nets, other personnel escape systems and EPIRBs;
- how to deploy the equipment;

[4] Care should be exercised to prevent the inadvertent broadcast of distress calls when handling radios, EPIRBs, etc.

- the techniques for using the equipment; and

- the precautions for jumping into the water from a height.

**Drill conditions:** This drill will not normally form part of the MOU's routine drill programme. This drill should be carried out at the end of a routine drill or as a separate event. When used for assessment purposes the number of participants in the drill should be restricted to a maximum of six.

**Assessment frequency:** Personnel should be assessed performing this drill at 21 to 27-month (nominal 24-month) intervals.

**Assessor:** The assessment will be carried out by a supervisor who has the necessary knowledge and skills.

**Assessment Process:** The assessor should ask candidates to take them to where the escape systems are located. The candidate should then be asked to talk through the procedures for deploying the equipment, outline how the equipment should be used and, when appropriate, demonstrate its use. In the event that the assessor is not satisfied with a candidate's performance, the candidate's supervisor or employer should be informed.

**First aid drill**

**Drill objectives:** By the end of the drill candidates will demonstrate to the satisfaction of the drill assessor that they:

- can take the basic precautions to maintain an airway;

- understand and can apply basic cardio-pulmonary resuscitation (CPR);

- can take necessary precautions to control bleeding; and

- know the actions to take to assist a hypothermia victim.

**Drill conditions:** This drill should be carried out with a maximum of six candidates in controlled conditions. If available, suitable aids should be used to assist candidates to demonstrate their skills to the satisfaction of the assessor.

**Assessment frequency:** Personnel should be assessed performing this drill at 21 to 27-month (nominal 24-month) intervals.

**Assessment Process:** The assessor should take the candidates through the basic requirements of first aid, ask questions of the group, and ask for demonstrations of the various techniques. A first aid mannequin should be available for these demonstrations. In the event that the assessor is not satisfied with a candidate's performance, the candidate's supervisor or employer should be informed.

**Fire drill**

**Drill objectives:** By the end of the drill candidates will demonstrate to the satisfaction of the drill assessor that they:

- understand the elements of fire and explosion, types and sources of ignition and classification of fire and appropriate extinguishing agents;

- know the onboard firefighting organization and their individual responsibilities;
- can locate fire-alarms, firefighting equipment and emergency escape routes;
- can take the necessary actions upon discovery of smoke or fire;
- know the appropriate actions to take to exit a smoke-filled space;
- can properly use escape breathing apparatus, if provided; and
- can properly use equipment commonly used to extinguish small fires.

**Drill conditions:** This drill should be carried out with a maximum of six candidates in controlled conditions. Actual use of equipment is encouraged if it can be done safely.

**Assessment frequency:** Personnel should be assessed performing this drill at 21 to 27-month (nominal 24-month) intervals.

**Assessment process:** The assessor should examine the candidates in their basic knowledge of fire theory, onboard firefighting organization and individual responsibilities. Candidates should be asked to individually demonstrate and walk through the actions they would take upon discovery of smoke or fire.

## Appendix 2

## GUIDANCE FOR PERSONNEL WITH STCW CERTIFICATES OF COMPETENCY TO MEET THE SPECIALIZED TRAINING SPECIFIED IN SECTION 6 OF THESE RECOMMENDATIONS

### 1 Introduction

This Guidance is offered to assist in the identification of additional training requirements for STCW-certificated mariners serving on board Mobile Offshore MOUs (MOUs), to be equivalent to the specialized training specified for the various positions listed in section 6 of these recommendations. These recommendations are subject to the approval of the Administration.

### 2 Definitions

2.1 *Convention* – in this appendix refers to the International Convention on Standards of Training, Certification and Watchkeeping (STCW) for Seafarers 1978, as amended.

2.2 *Officer in Charge of a Navigational Watch* in this appendix refers to personnel certified in accordance with the Convention regulation II/1.

2.3 *Masters or Chief Mates* – in this appendix refers to personnel certified in accordance with the Convention regulation II/2.

2.4 *Officer in Charge of an Engineering Watch* in this appendix refers to personnel certified in accordance with the Convention regulation III/1.

2.5 *Chief Engineer and Second Engineer* in this appendix refer to personnel certified in accordance with the Convention regulation III/2.

### 3 Additional recommended training for personnel certificated under the Convention

3.1 Offshore Installation Manager – to fulfil the role of OIM, as specified in paragraph 6.2 of these recommendations, personnel holding a valid STCW certificate of competency as Master or Chief Mate should in addition successfully complete a training course in Well Control and MOU Stability (MOU-type specific).

3.2 Barge Supervisor – to fulfil the role of BS, as specified in paragraph 6.3 of these recommendations, personnel holding a valid STCW certificate of competency as Master, Chief Mate or Officer in Charge of a Navigational Watch should in addition successfully complete a training course in MOU Stability (MOU-type specific).

3.3 Ballast Control Operator – to fulfil the role of BCO, as specified in paragraph 6.4 of these recommendations, personnel holding a valid STCW certificate of competency as Master, Chief Mate, Chief Engineer, Second Engineer, Officer in Charge of a Navigational Watch or Officer in Charge of an Engineering Watch should in addition successfully complete a training course in MOU Stability (MOU-type specific).

3.4 Maintenance Supervisor – to fulfil the role of MS, as specified in paragraph 6.5 of these recommendations, personnel holding a valid STCW certificate of competency as Chief Engineer, Second Engineer, or Officer in Charge of an Engineering Watch, require no additional training.