Australian Government
Australian Maritime Safety Authority

Master <100m Near Coastal

Skills and Knowledge Required for Marine Order 505 (Certificates of competency — national law) 2022

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TABLE 1 – SURVIVAL AT SEA

Outcome	Content	Standards for evaluating competence
Survive at sea in the event of vessel abandonment	• Types of emergency situations which may occur, such as collision, fire, foundering • Types of life-saving appliances normally carried on board • Equipment in survival craft • Location of personal life-saving appliances • Principles concerning survival, including: - value of training and drills - personal protective clothing and equipment - need to be ready for any emergency - actions to be taken when called to survival craft stations - actions to be taken when required to abandon ship - actions to be taken when in the water - actions to be taken when aboard a survival craft - main dangers to survivors	• Don a lifejacket • Don and use an immersion suit • Safely jump from a height into the water • Right an inverted liferaft while wearing a lifejacket • Swim while wearing a lifejacket • Keep afloat without a lifejacket • Board a survival craft from the vessel and from the water while wearing a lifejacket • Take initial actions on boarding survival. craft to enhance chance of survival • Stream a drogue or sea-anchor • Operate survival craft equipment • Operate location devices, including radio equipment • Action taken on identifying muster signals is appropriate to the indicated emergency and complies with established procedures. • The timing and sequence of individual actions are appropriate to the prevailing circumstance and conditions and minimise potential dangers and threats to survival • Method of boarding survival craft is appropriate and avoids dangers to other survivors • Initial actions after leaving the vessel and procedures and actions in water minimise threats to survival
Operate life-saving appliances	**Life-saving** • Ability to organise abandon ship drills and knowledge of the operation of survival craft and rescue boats, their launching appliances,and arrangements, and their equipment, including radio life-saving appliances, satellite EPIRBs, SARTs, immersion suits and thermal protective aids	• Actions in responding to abandon ship and survival situations are appropriate to the prevailing circumstances and conditions and comply with accepted safety practices and standards

TABLE 2 – FIRE PREVENTION AND FIRE FIGHTING*

Outcome	Content	Standards for evaluating competence
Minimise the risk of fire and maintain a state of readiness to respond to emergency situations involving fire	• Shipboard fire-fighting organisation • Location of fire-fighting appliances and emergency escape routes • The elements of fire and explosion (the fire triangle) • Types and sources of ignition • Flammable materials, fire hazards and spread of fire • The need for constant vigilance • Actions to be taken on board ship • Fire and smoke detection and automatic alarm systems • Classification of fire and applicable extinguishing agents • Ability to organise fire drills • Knowledge of classes and chemistry of fire	• Initial actions on becoming aware of an emergency conform with accepted practices and procedures • Action taken on identifying muster signals is appropriate to the indicated emergency and complies with established procedures
Fight and extinguish fires	• Fire-fighting equipment and its location on board • Fixed installations • Fire-fighter's outfits • Personal equipment • Fire-fighting appliances and equipment • Fire-fighting methods • Fire-fighting agents • Fire-fighting procedures • Use of breathing apparatus for fighting fires and effecting rescues • Knowledge of fire-fighting systems • Understanding of action to be taken in the event of fire, including fires involving oil systems	• The type and scale of the problem is promptly identified, and initial actions conform with the emergency procedure and contingency plans for the vessel • Evacuation, emergency shutdown and isolation procedures are appropriate to the nature of the emergency and are implemented promptly • The order of priority, and the levels and time-scales of making reports and informing personnel on board, are relevant to the nature of the emergency and reflect the urgency of the problem • Clothing and equipment are appropriate to the nature of the fire-fighting operations • The timing and sequence of individual actions are appropriate to the prevailing circumstances and conditions • Extinguishment of fire is achieved using appropriate procedures, techniques and fire-fighting agents • Breathing apparatus procedures and techniques comply with accepted practices and procedures • Use various types of portable fire extinguishers • Use self-contained breathing apparatus • Extinguish smaller fires, e.g., electrical fires, oil fires, propane fires

* Practical exercises and instruction conducted under approved and truly realistic training conditions using approved equipment and systems (e.g., simulated shipboard conditions) and, whenever possible and practicable, in darkness

Outcome	Content	Standards for evaluating competence
Fight and extinguish fires continued		• Extinguish extensive fires with water, using jet and spray nozzles • Extinguish fires with foam, powder or any other suitable chemical agent • Enter and pass through, with lifeline but without breathing apparatus, a compartment into which high-expansion foam has been injected • Fight fire in smoke-filled enclosed spaces wearing self-contained breathing apparatus • Extinguish fire with water fog or any other suitable fire-fighting agent in an accommodation room or simulated engine-room with fire and heavy smoke • Extinguish oil fire with fog applicator and spray nozzles, dry chemical powder, or foam applicators • Effect a rescue in a smoke-filled space wearing breathing apparatus

TABLE 3 – ADVANCED FIRE FIGHTING*

Outcome	Content	Standards for evaluating competence
Control fire-fighting operations aboard vessels	• Fire-fighting procedures at sea and in port, with particular emphasis on organisation, tactics and command • Use of water for fire extinguishing, the effect on vessel stability, precautions and corrective procedures • Communication and coordination during fire-fighting operations • Ventilation control, including smoke extraction • Control of fuel and electrical systems • Fire-fighting process hazards (dry distillation, chemical reactions, boiler uptake fires, etc.) • Fire fighting involving dangerous goods • Fire precautions and hazards associated with the storage and handling of materials (paints, etc.) • Management and control of injured persons • Procedures for coordination with shore-based fire fighters	• Actions taken to control fires are based on a full and accurate assessment of the incident, using all available sources of information • The order of priority, timing and sequence of actions are appropriate to the overall requirements of the incident and to minimise damage and potential damage to the vessel, injuries to personnel and impairment of the operational effectiveness of the vessel • Transmission of information is prompt, accurate, complete and clear • Personal safety during fire control activities is safeguarded at all times
Organise and train fire parties	• Preparation of contingency plans • Composition and allocation of personnel to fire parties • Strategies and tactics for control of fires in various parts of the vessel	• Composition and organisation of fire control parties ensure the prompt and effective implementation of emergency plans and procedures
Inspect and service fire-detection and fire-extinguishing systems and equipment	• Fire-detection systems; fixed fire-extinguishing systems; portable and mobile fire-extinguishing equipment, including appliances, pumps and rescue, salvage, life-support, personal protective and communication equipment • Requirements for statutory and classification surveys	• Operational effectiveness of all fire-detection and fire-extinguishing systems and equipment is maintained at all times in accordance with performance specifications and legislative requirements
Investigate and compile reports on incidents involving fire	• Assessment of cause of incidents involving fire	• Causes of fire are identified and the effectiveness of countermeasures is evaluated

* Practical exercises and instruction must be conducted under approved and truly realistic training conditions using approved equipment and systems (e.g., simulated shipboard conditions) and, whenever possible and practicable, in darkness

TABLE 4 – SAFETY, ENVIRONMENTAL MANAGEMENT AND SOCIAL RESPONSIBILITIES

Outcome	Content	Standards for evaluating competence
Comply with emergency procedures	• Types of emergency which may occur, such as collision, fire, foundering • Knowledge of shipboard contingency plans for response to emergencies • Emergency signals and specific duties allocated to crew members in the muster list; muster stations; correct use of personal safety equipment • Action to take on discovering potential emergency, including fire, collision, foundering and ingress of water into the vessel • Action to take on hearing emergency alarm signals • Value of training and drills • Knowledge of escape routes and internal communication and alarm systems	• Initial action on becoming aware of an emergency, and follow-up actions, conform to established emergency response procedures • Information given on raising alarm is prompt, accurate, complete and clear
Take precautions to prevent pollution of the marine environment and ensure compliance with pollution prevention requirements	• Basic knowledge of the impact of shipping on the marine environment and the effects of operational or accidental pollution on it • Basic knowledge of complexity and diversity of the marine environment • Prevention of pollution of the marine environment and anti-pollution procedures • Knowledge of environmental protection procedures and the precautions to be taken to prevent pollution of the marine environment • Anti-pollution procedures and all associated equipment	• Organisational procedures designed to safeguard the marine environment are observed at all times • Procedures for monitoring shipboard operations and ensuring compliance with MARPOL requirements are fully observed
Observe safe working practices	• Importance of adhering to safe working practices at all times • Safety and protective devices available to protect against potential hazards aboard ship • Precautions to be taken prior to entering enclosed spaces • Familiarisation with international measures concerning accident prevention and occupational health	• Appropriate safety and protective equipment is correctly used • Procedures and safe working practices designed to safeguard personnel and the vessel are observed at all times

Outcome	Content	Standards for evaluating competence
Contribute to effective communications on board	• Understand the principles of, and barriers to, effective communication between individuals and teams within the vessel • Ability to establish and maintain effective communications	• Communications are clear and effective at all times
Contribute to effective human relationships on board	• Importance of maintaining good human and working relationships aboard ship • Basic teamworking principles and practice, including conflict resolution‘ • Social responsibilities; employment conditions; individual rights and obligations; dangers of drug and alcohol abuse	• Expected standards of work and behaviour are observed at all times
Understand and take necessary actions to control fatigue	• Importance of obtaining the necessary rest • Effects of sleep, schedules, and the circadian rhythm on fatigue • Effects of physical stressors on seafarers • Effects of environmental stressors in and outside the vessel and their impact on seafarers • Effects of schedule changes on seafarer fatigue	• Fatigue management practices are observed and appropriate actions are used at all times

TABLE 5 – NAVIGATION

Outcome	Content	Standards for evaluating competence
Plan and conduct a coastal passage and determine position	**Navigation** • Ability to determine the vessel's position by the use of: - landmarks - aids to navigation, including lighthouses, beacons and buoys - dead reckoning, taking into account winds, tides, currents and estimated speed • Thorough knowledge of and ability to use nautical charts and publications, such as chart catalogues, sailing directions, tide tables, notices to mariners, radio navigational warnings and ships' routeing information • Use of sextant, azimuth mirror, electronic navigation equipment, echo-sounding equipment and compass • Reporting in accordance with General Principles for Ship Reporting Systems and with vessel traffic service (VTS) procedures • Voyage planning and navigation for all conditions by acceptable methods of plotting coastal tracks, taking into account, e.g.: - restricted waters - meteorological conditions - ice - restricted visibility - traffic separation schemes - VTS areas - areas of extensive tidal effects	• Information obtained from nautical charts and publications is relevant, interpreted correctly and properly applied • The primary method of fixing the vessel's position is the most appropriate to the prevailing circumstances and conditions • The position is determined within the limits of acceptable instrument/system errors • The reliability of the information obtained from the primary method of position fixing is checked at appropriate intervals • Calculations and measurements of navigational information are accurate • Charts and publications selected are the largest scale on board suitable for the area of navigation, and charts are corrected in accordance with the latest information available
	ECDIS • Thorough knowledge of and ability to use ECDIS	• Examination and assessment of evidence obtained from one or more of the following: - approved training vessel experience - approved ECDIS simulator training

Outcome	Content	Standards for evaluating competence
Plan and conduct a coastal passage and determine position	**Navigational aids and equipment** • Ability to operate safely and determine the vessel's position by use of all navigational aids and equipment commonly fitted on board the vessels concerned	• Assessment of evidence obtained from approved radar simulator • Performance checks and tests of navigation systems comply with manufacturer's recommendations, good navigational practice and IMO resolutions on performance standards for navigational equipment • Interpretation and analysis of information obtained from radar is in accordance with accepted navigational practice and takes account of the limits and accuracy levels of radar
	Compasses • Knowledge of the errors and corrections of magnetic compasses • Ability to determine errors of the compass, using terrestrial means, and to allow for such errors	• Errors in magnetic compasses are determined and applied correctly to courses and bearings
	Automatic pilot • Knowledge of automatic pilot systems and procedures; changeover from manual to automatic control and vice versa; adjustment of controls for optimum performance	• Selection of the mode of steering is the most suitable for prevailing weather, sea and traffic conditions and intended manoeuvres
Maintain a safe navigational watch	**Watchkeeping** • Thorough knowledge of content, application and intent of the *International Regulations for Preventing Collisions at Sea, 1972*, as amended • Knowledge of content of the Principles to be observed in keeping a navigational watch • Use of routeing in accordance with the General Provisions on Ships' Routeing • Use of reporting in accordance with the General Principles for Ship Reporting Systems and with VTS procedures	• The conduct, handover and relief of the watch conforms with accepted principles and procedures • A proper lookout is maintained at all times and in conformity with accepted principles and procedures • Lights, shapes and sound signals conform with the requirements contained in the *International Regulations for Preventing Collisions at Sea, 1972*, as amended and are correctly recognised • The frequency and extent of monitoring of traffic, the vessel and the environment conform with accepted principles and procedures • Action to avoid close encounters and collision with other vessels is in accordance with the *International Regulations for Preventing Collisions at Sea, 1972*, as amended Decisions to adjust course and/or speed are both timely and in accordance with accepted navigation procedures

Outcome	Content	Standards for evaluating competence
		• A proper record is maintained of movements and activities relating to the navigation of the vessel • Responsibility for safe navigation is clearly defined at all times, including periods when the master is on the bridge and when under pilotage

TABLE 6 – VESSEL STABILITY AND CONSTRUCTION

Outcome	Content	Standards for evaluating competence
Maintain seaworthiness of the vessel	**Ship stability** • Working knowledge and application of stability, trim and stress tables, diagrams and stress-calculating equipment • Understanding of fundamental actions to be taken in the event of partial loss of intact buoyancy • Understanding of the fundamentals of watertight integrity **Ship construction** • General knowledge of the principal structural members of a vessel and the proper names for the various parts	• The stability conditions comply with the IMO intact stability criteria under all conditions of loading • Actions to ensure and maintain the watertight integrity of the vessel are in accordance with accepted practice

TABLE 7 – NAUTICAL KNOWLEDGE

Outcome	Content	Standards for evaluating competence
Respond to emergencies	**Emergency procedures, including:** • Precautions for the protection and safety of passengers in emergency situations • Initial assessment of damage and damage control • Action to be taken following a collision • Action to be taken following a grounding • Emergency steering • Arrangements for towing and for being taken in tow • Rescuing persons from the sea • Assisting a vessel in distress • Appreciation of the action to be taken when emergencies	• The type ad scale of the emergency is promptly identified • Initial actions and, if appropriate, manoeuvring are in accordance with contingency plans and are appropriate to the urgency of the situation and the nature of the emergency
Respond to a distress signal at sea	**Search and rescue** • Knowledge of the contents of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual	• The distress or emergency signal is immediately recognised • Contingency plans and instructions in standing orders are implemented and complied with
Manoeuvre the vessel and operate power plants	• Vessel manoeuvring and handling • Knowledge of factors affecting safe manoeuvring and handling • The operation of power plants and auxiliaries • Proper procedures for anchoring and mooring	• Safe operating limits of vessel propulsion, steering and power systems are not exceeded in normal manoeuvres • Adjustments made to the vessel's course and speed maintain safety of navigation • Plant, auxiliary machinery and equipment is operated • in accordance with technical specifications and within safe operating limits at all times
Transmit and receive information by visual signalling	**Visual signalling** • Ability to use the International Code of Signals • Ability to transmit and receive, by Morse light, distress signal SOS as specified in Annex IV of the *International Regulations for Preventing Collisions at Sea, 1972*, as amended, and appendix 1 of the International Code of Signals, and visual signalling of single-letter signals as also specified in the International Code of Signals	• Communications within the operator's area of responsibility are consistently successful

Outcome	Content	Standards for evaluating competence
Meteorology	• Ability to use and interpret information obtained from shipborne meteorological instruments • Knowledge of the characteristics of the various weather systems, reporting procedures and recording systems • Ability to apply the meteorological information available	• Measurements and observations of weather conditions are accurate and appropriate to the passage • Meteorological information is evaluated and applied to maintain the safe passage of the vessel
Monitor compliance with legislative requirements	• Basic working knowledge of the relevant IMO conventions concerning safety of life at sea, security and protection of the marine environment	• Legislative requirements relating to safety of life at sea, security and protection of the marine environment are correctly identified
Application of leadership and teamworking skills	• Working knowledge of shipboard personnel management and training • A knowledge of related international maritime conventions and recommendations, and national legislation • Ability to apply task and workload management, including: - planning and co-ordination - personnel assignment - time and resource constraints - prioritisation • Knowledge and ability to apply effective resource management: - allocation, assignment and prioritisation of resources - effective communication on board and ashore - decisions reflect consideration of team experiences - assertiveness and leadership, including motivation - obtaining and maintaining situational awareness • Knowledge and ability to apply decision-making techniques: - situation and risk assessment - identify and consider generated options - selecting course of action - evaluation of outcome effectiveness	• The crew are allocated duties and informed of expected standards of work and behaviour in a manner appropriate to the individuals concerned • Training objectives and activities are based on assessment of current competence and capabilities and operational requirements • Operations are demonstrated to be in accordance with applicable rules • Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks • Communication is clearly and unambiguously given and received • Effective leadership behaviours are demonstrated • Necessary team member(s) share accurate understanding of current and predicted vessel status and operational status and external environment • Decisions are most effective for the situation

TABLE 8 – COMMAND NAVIGATION, BUSINESS AND SHIP OPERATIONS

Outcome	Content	Standards for evaluating competence
Apply command navigation procedures on vessels limited by tonnage or near coastal operations	**Watchkeeping Practices** • Establish safe watchkeeping procedures on vessels, potentially with limited qualified personnel • Respond to potential collision and emergency situations • Maintain watchkeeping records	• Develop standing orders to supplement SMS • Apply accepted principles for watchkeeping, assigning and responsibilities of bridge teams, briefings, handover of watch, bridge resource management, fatigue management strategies • Navigation including checks, position fixing, passage plan analysis, traffic monitoring and safe progress is undertaken using accepted principles • Demonstrate leadership of bridge team in response to navigational emergency • Potential collision situations are analysed and appropriate actions taken including search and rescue • Record keeping practices comply with regulations and vessel operating procedures
Manage business and administration on vessels limited by tonnage or near coastal operations	**Business and Administration** • Develop plans for general and specific vessel operations • Ensure legal requirements are fulfilled • Ensure commercial and business requirements are fulfilled • Monitor and control vessel expenditure • Develop and implement vessel safety management system (SMS) • Monitor and control vessel physical resources • Analyse and compile operational and voyage data • Provide leadership to officers and crew • Allocate duties and maintain set standards of work on board vessel • Resolve conflict • Plan, organise, promote and evaluate shipboard training and assessment	• Vessel operations plans are drawn up according to company goals, procedures operational orders, regulatory requirements, established maritime practice and are reviewed, validated and evaluated • National and international conventions, codes, laws, regulations and standards are implemented • General contracts, legal requirements, company procedures and established marine management practices are interpreted and implemented • Vessel budgets and accounting procedures are prepared and reported according to established financial procedures • Vessel inventory of plant, equipment and other physical resources are maintained and reported on using established practices • Operational voyage data collection and reporting is implemented using established marine management practices • Demonstrate leadership capabilities • Work requirements for crew are clear and within capability of crew member • Recognise and control conflict • Identify and organise workplace training and assessment requirements as identified

Outcome	Content	Standards for evaluating competence
Manage operations and maintenance on vessels limited by tonnage or near coastal operations	**Operations and Maintenance** • Manage maintenance of vessel stability and safety parameters • Administer planning or cargo operations • Dock or slip vessel • Carry out inspection and routine maintenance • Administer correct selection and use of maintenance equipment and materials	• Vessel safety parameters are correctly maintained within normal operational limits • Vessel routine preventative maintenance is planned and carried out according to procedures • Appropriate plans, procedures and preparations are implemented for docking / slipping a vessel • Inspections, identification of deterioration, maintenance procedures and tasks, and reporting and recording practices are undertaken according to WH&S, pollution prevention, regulatory, company and manufacturers' requirements • Correct tools are used for maintenance tasks, defects are identified, equipment is cleaned and stowed appropriately

TABLE 9 – CARGO HANDLING AND STOWAGE

Outcome	Content	Standards for evaluating competence
Monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage	**Cargo handling, stowage and securing** • Knowledge of safe handling, stowage and securing of cargoes, including dangerous, hazardous and harmful cargoes, and their effect on the safety of life and of the vessel • Use of the International Maritime Dangerous Goods (IMDG) Code	• Cargo operations are carried out in accordance with the cargo plan or other documents and established safety rules/regulations, equipment operating instructions and shipboard stowage limitations • The handling of dangerous, hazardous and harmful cargoes complies with international regulations and recognised standards and codes of safe practice
Inspect and report defects and damage to cargo spaces, hatch covers and ballast tanks	• Knowledge and ability to explain where to look for damage and defects most commonly encountered due to: - loading and unloading operations - corrosion - severe weather conditions • Ability to state which parts of the vessel shall be inspected each time in order to cover all parts within a given period of time • Identify those elements of the vessel structure which are critical to the safety of the vessel • State the causes of corrosion in cargo spaces and ballast tanks and how corrosion can be identified and prevented • Knowledge of procedures on how the inspections shall be carried out. • Ability to explain how to ensure reliable detection of defects and damages • Understanding of the purpose of the “enhanced survey programme”	• The inspections are carried out in accordance with laid-down procedures, and defects and damage are detected and properly reported • Where no defects or damage are detected, the evidence from testing and examination clearly indicates adequate competence in adhering to procedures and ability to distinguish between normal and defective or damaged parts of the vessel

TABLE 10 – TANKER CARGO OPERATIONS

Outcome	Content	Standards for evaluating competence
Contribute to the safe cargo operation of oil and chemical tankers	• Basic knowledge of tankers: - types of oil and chemical tankers - general arrangement and construction • Basic knowledge of cargo operations: - piping systems and valves - cargo pumps - loading and unloading - tank cleaning, purging, gas-freeing and inerting • Basic knowledge of the physical properties of oil and chemicals: - pressure and temperature, including vapour pressure/ temperature relationship - types of electrostatic charge generation - chemical symbols • Knowledge and understanding of tanker safety culture and safety management	• Communications within the area of responsibility are clear and effective • Cargo operations are carried out in accordance with accepted principles and procedures to ensure safety of operations
Contribute to the safe operation of a liquefied gas tanker	**Design and operational characteristics of liquefied gas tankers** • Basic knowledge of liquefied gas tankers - types of liquefied gas tankers - general arrangement and construction • Basic knowledge of cargo operations: - piping systems and valves - cargo handling equipment - loading, unloading and care in transit - emergency shutdown (ESD) system - tank cleaning, purging, gas-freeing and inerting	• Communications within the area of responsibility are clear and effective • Cargo operations are carried out in accordance with accepted principles and procedures to ensure safety of operations

Outcome	Content	Standards for evaluating competence
	• Basic knowledge of the physical properties of liquefied gases, including: - properties and characteristics - pressure and temperature, including vapour pressure/ temperature relationship - types of electrostatic charge generation - chemical symbols • Knowledge and understanding of tanker safety culture and safety management	
Take precautions to prevent hazards on oil, chemical and liquefied gas tankers	• Basic knowledge of the hazards associated with tanker operations, including: - health hazards - environmental hazards - reactivity hazards - corrosion hazards - explosion and flammability hazards - sources of ignition - electrostatic hazards - toxicity hazards - vapour leaks and clouds - extremely low temperatures - pressure hazards • Basic knowledge of hazard controls: - inerting, water padding, - drying agents and monitoring techniques - anti-static measures - ventilation - segregation - cargo inhibition - importance of cargo compatibility - atmospheric control - gas testing • Understanding of information on a Safety Data Sheet (SDS)	• Correctly identifies, on an SDS, relevant cargo-related hazards to the vessel and to personnel, and takes the appropriate actions in accordance with established procedures • Identification and actions on becoming aware of a hazardous situation conform to established procedures in line with best practice

Outcome	Content	Standards for evaluating competence
Apply work health and safety precautions and measures on oil, chemical and liquefied gas tankers	• Function and proper use of gas-measuring instruments and similar equipment • Proper use of safety equipment and protective devices, including: - breathing apparatus and tank-evacuating equipment - protective clothing and equipment - resuscitators - rescue and escape equipment • Basic knowledge of safe working practices and procedures in accordance with legislation and industry guidelines and personal shipboard safety including: - precautions to be taken when entering enclosed spaces - precautions to be taken before and during repair and maintenance work - safety measures for hot and cold work - electrical safety - ship/shore safety checklist • Basic knowledge of first aid with reference to a Safety Data Sheet (SDS)	• Procedures for entry into enclosed spaces are observed • Procedures and safe working practices designed to safeguard personnel and the vessel are observed at all times • Appropriate safety and protective equipment is correctly used • First aid do's and don'ts
Carry out fire-fighting operations on oil, chemical and liquefied gas tankers	• Tanker fire response organisation and action to be taken • Fire hazards associated with cargo handling and transportation of: - liquefied gases in bulk - hazardous and noxious liquids in bulk • Fire-fighting agents used to extinguish: - gas fires - oil and chemical fires • Fixed fire-fighting foam system operations • Portable fire-fighting foam operations • Fixed dry chemical system operations • Spill containment in relation to fire-fighting operations	• Initial actions and follow-up actions on becoming aware of fire on board conform with established practices and procedures • Action taken on identifying muster signal is appropriate to the indicated emergency and complies with established procedures • Clothing and equipment are appropriate to the nature of the fire-fighting operations • The timing and sequence of individual actions are appropriate to the prevailing circumstances and conditions • Extinguishment of fire is achieved using appropriate procedures, techniques and fire-fighting agents

Outcome	Content	Standards for evaluating competence
Respond to emergencies on oil, chemical and liquefied gas tankers	• Basic knowledge of emergency procedures, including emergency shutdown	• The type and impact of the emergency is promptly identified, and the response actions conform to the emergency procedures and contingency plans
Take precautions to prevent pollution of the environment from the release of liquefied gases, oil or chemicals	• Basic knowledge of the effects of liquefied gas, oil and chemical pollution on human and marine life • Basic knowledge of shipboard procedures to prevent pollution • Basic knowledge of measures to be taken in the event of spillage, including the need to: - report relevant information to the responsible persons - assist in implementing shipboard spill-containment procedures - prevent brittle fracture	• Procedures designed to safeguard the environment are observed at all times

TABLE 11 – SECURITY AWARENESS

Outcome	Content	Standards 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 • Basic knowledge of international maritime security policy and responsibilities of Governments, companies and persons • Basic knowledge of maritime security levels and their impact on security measures and procedures aboard ship and in port facilities • Basic knowledge of security reporting procedures • Basic knowledge of security-related contingency plans	• Requirements relating to enhanced maritime security are correctly identified
Recognition of security threats	• Basic knowledge of techniques used to circumvent security measures • Basic knowledge enabling recognition of potential security threats, including elements that may relate to piracy and armed robbery • Basic knowledge enabling recognition of weapons, dangerous substances and devices and awareness of the damage they can cause • Basic knowledge in handling security-related information and security-related communications	• Maritime security threats are correctly identified
Understanding of 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	• Requirements relating to enhanced maritime security are correctly identified