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# The 2010 Manila Amendments to the Seafarers' Training, Certification and Watchkeeping (STCW) Code

3 August 2010

#### **PART A**

# Mandatory standards regarding provisions of the annex to the STCW Convention

#### **CHAPTER II**

#### Standards regarding the master and deck department

#### Section A-II/2

Mandatory minimum requirements for certification of masters and chief mates on ships of 500 gross tonnage or more

#### Applicable from 2012-01-01, see IMO-Vega Note

#### **Standard of competence**

- 1 Every candidate for certification as master or chief mate of ships of 500 gross tonnage or more shall be required to demonstrate the competence to undertake, at the management level, the tasks, duties and responsibilities listed in column 1 of table A-II/2.
- 2 The minimum knowledge, understanding and proficiency required for certification is listed in column 2 of table A-II/2. This incorporates, expands and extends in depth the subjects listed in column 2 of table A-II/1 for officers in charge of a navigational watch.
- 3 Bearing in mind that the master has ultimate responsibility for the safety and security of the ship, its passengers, crew and cargo, and for the protection of the marine environment against pollution by the ship, and that a chief mate shall be in a position to assume that responsibility at any time, assessment in these subjects shall be designed to test their ability to assimilate all available information that affects the safety and security of the ship, its passengers, crew or cargo, or the protection of the marine environment.
- 4 The level of knowledge of the subjects listed in column 2 of table A-II/2 shall be sufficient to enable the candidate to serve in the capacity of master or chief mate \*.

- The level of theoretical knowledge, understanding and proficiency required under the different sections in column 2 of table A-II/2 may be varied according to whether the certificate is to be valid for ships of 3,000 gross tonnage or more or for ships of between 500 gross tonnage and 3,000 gross tonnage.
- 6 Training and experience to achieve the necessary level of theoretical knowledge, understanding and proficiency shall take into account the relevant requirements of this part and the guidance given in part B of this Code.
- 7 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and criteria for evaluating competence tabulated in columns 3 and 4 of table A-II/2.

#### **Near-coastal voyages**

An Administration may issue a certificate restricted to service on ships engaged exclusively on near-coastal voyages and, for the issue of such a certificate, may exclude such subjects as are not applicable to the waters or ships concerned, bearing in mind the effect on the safety of all ships which may be operating in the same waters.

<sup>\*</sup> The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

### Table A-II/2

# Specification of minimum standard of competence for masters and chief mates on ships of 500 gross tonnage or more

Function: Navigation at the management level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Plan a voyage and conduct navigation	Voyage planning and navigation for all conditions by acceptable methods of plotting ocean tracks, taking into account, e.g.:  .1 restricted waters  .2 meteorological conditions  .3 ice  .4 restricted visibility  .5 traffic separation schemes  .6 vessel traffic service (VTS) areas  .7 areas of extensive tidal effects  Routeing in accordance with the General Provisions on Ships' Routeing  Reporting in accordance with the General principles for Ship Reporting Systems and with VTS procedures	Examination and assessment of evidence obtained from one or more of the following:  .1 approved in-service experience .2 approved simulator training, where appropriate .3 approved laboratory equipment training using: chart catalogues, charts, nautical publications and ship particulars	The equipment, charts and nautical publications required for the voyage are enumerated and appropriate to the safe conduct of the voyage  The reasons for the planned route are supported by facts and statistical data obtained from relevant sources and publications  Positions, courses, distances and time calculations are correct within accepted accuracy standards for navigational equipment  All potential navigational hazards are accurately identified
Determine position and the accuracy of resultant position fix by any means	•	Examination and assessment of evidence obtained from one or more of the following:  .1 approved in-service experience  .2 approved simulator training, where appropriate	The primary method chosen for fixing the ship's position is the most appropriate to the prevailing circumstances and conditions  The fix obtained by celestial observations is within accepted accuracy levels
	of the resulting position fix	.3 approved laboratory	The fix obtained by terrestrial observations

	.3 using modern electronic navigational aids, with specific knowledge of their operating principles, limitations, sources of error, detection of misrepresentation of information and methods of correction to obtain accurate position fixing	equipment training using:  .1 charts, nautical almanac, plotting sheets, chronometer, sextant and a calculator  .2 charts, nautical publications and navigational instruments (azimuth mirror, sextant, log, sounding equipment, compass) and manufacturers' manuals  .3 radar, terrestrial electronic position-fixing systems, satellite navigation systems and appropriate nautical charts and publications	is within accepted accuracy levels  The accuracy of the resulting fix is properly assessed  The fix obtained by the use of electronic navigational aids is within the accuracy standards of the systems in use. The possible errors affecting the accuracy of the resulting position are stated and methods of minimizing the effects of system errors on the resulting position are properly applied
Determine and allow for compass errors	Ability to determine and allow for errors of the magnetic and gyro-compasses  Knowledge of the	Examination and assessment of evidence obtained from one or more of the following:	The method and frequency of checks for errors of magnetic and gyro-compasses ensures accuracy of information
	principles of magnetic and gyro-compasses	.1 approved in-service experience	
	An understanding of systems under the control of the master gyro and a knowledge of the operation and care of the	<ul><li>.2 approved simulator training, where appropriate</li><li>.3 approved</li></ul>	
	main types of gyro-compass	laboratory equipment training	
		using: celestial observations, terrestrial bearings and comparison between magnetic and gyrocompasses	
Coordinate search and rescue operations	A thorough knowledge of and ability to apply the procedures contained in the International Aeronautical and Maritime Search and Rescue	Examination and assessment of evidence obtained from one or more of the following:	The plan for coordinating search and rescue operations is in accordance with international guidelines and standards

	(IAMSAR) Manual	<ul> <li>.1 approved in-service experience</li> <li>.2 approved simulator training, where appropriate</li> <li>.3 approved laboratory equipment training</li> <li>using: relevant publications, charts, meteorological data, particulars of ships involved, radiocommunication equipment and other available facilities and one or more of the following:</li> <li>.1 approved SAR training course</li> <li>.2 approved simulator training, where appropriate</li> <li>.3 approved laboratory equipment training</li> </ul>	Radiocommunications are established and correct communication procedures are followed at all stages of the search and rescue operations
Establish watchkeeping arrangements and procedures	Thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea, 1972, as amended  Thorough knowledge of the content, application and intent of the Principles to be observed in keeping a navigational watch	Examination and assessment of evidence obtained from one or more of the following:  .1 approved in-service experience  .2 approved simulator training, where appropriate	Watchkeeping arrangements and procedures are established and maintained in compliance with international regulations and guidelines so as to ensure the safety of navigation, protection of the marine environment and safety of the ship and persons on board
Maintain safe navigation through the use of information from navigation equipment and systems to assist command decision making  Note: Training and assessment in the use of ARPA is not	An appreciation of system errors and thorough understanding of the operational aspects of navigational systems  Blind pilotage planning  Evaluation of navigational information derived from all sources, including radar and ARPA, in order to make and implement command decisions for	Examination and assessment of evidence obtained from approved ARPA simulator and one or more of the following:  .1 approved in-service experience  .2 approved simulator training, where appropriate	Information obtained from navigation equipment and systems is correctly interpreted and analysed, taking into account the limitations of the equipment and prevailing circumstances and conditions  Action taken to avoid a close encounter or

required for those who serve exclusively on ships not fitted with ARPA. This limitation shall be reflected in the endorsement issued to the seafarer concerned	collision avoidance and for directing the safe navigation of the ship  The interrelationship and optimum use of all navigational data available for conducting navigation	.3 approved laboratory equipment training	collision with another vessel is in accordance with the International Regulations for Preventing Collisions at Sea, 1972, as amended
Maintain the safety of navigation through the use of ECDIS and associated navigation systems to assist command decision making  Note: Training and assessment in the use of ECDIS is not required for those who serve exclusively on ships not fitted with ECDIS. This limitation shall be reflected in the endorsement issued to the seafarer concerned	system software to conform to established procedures  .2 system and information updating, including the ability to update ECDIS system version in accordance with vendor's product development  .3 create and maintain system configuration and backup files  .4 create and maintain log files in accordance with established procedures  .5 create and maintain route plan files in accordance with established procedures  .6 use ECDIS log-book and track history functions for inspection of system functions, alarm settings and user responses  Use ECDIS playback functionality for passage review, route planning and review of system functions		established, applied, and monitored  Actions taken to minimize risk to safety of navigation
Forecast weather and oceanographic conditions	Ability to understand and interpret a synoptic chart and to forecast area weather, taking into account local weather	Examination and assessment of evidence obtained from one or more of the following:	The likely weather conditions predicted for a determined period are based on all available information

	conditions and information received by weather fax  Knowledge of the characteristics of various weather systems, including tropical revolving storms and avoidance of storm centres and the dangerous quadrants  Knowledge of ocean current systems  Ability to calculate tidal conditions  Use all appropriate nautical publications on tides and currents	.1 approved in-service experience .2 approved laboratory equipment training	Actions taken to maintain safety of navigation minimize any risk to safety of the ship  Reasons for intended action are backed by statistical data and observations of the actual weather conditions
Respond to navigational emergencies	Precautions when beaching a ship  Action to be taken if grounding is imminent, and after grounding  Refloating a grounded ship with and without assistance  Action to be taken if collision is imminent and following a collision or impairment of the watertight integrity of the hull by any cause	assessment of	The type and scale of any problem is promptly identified and decisions and actions minimize the effects of any malfunction of the ship's systems  Communications are effective and comply with established procedures  Decisions and actions maximize safety of persons on board
Manoeuvre and handle a ship in all conditions	Assessment of damage control  Emergency steering  Emergency towing arrangements and towing procedure  Manoeuvring and handling a ship in all conditions, including:  .1 manoeuvres when approaching pilot stations and embarking or disembarking pilots, with due regard to weather, tide, headreach and stopping distances	Examination and assessment of evidence obtained from one or more of the following:  .1 approved in-service experience  .2 approved simulator training, where appropriate	based on a proper assessment of the ship's manoeuvring and engine characteristics and the forces to be expected while berthed alongside or lying at anchor  While under way, a full
	.2 handling ship in rivers, estuaries and	.3 approved manned scale ship model,	assessment is made of possible effects of

	restricted waters, having regard to the effects of current, wind and restricted water on helm response  .3 application of constant- rate-of-turn techniques  .4 manoeuvring in shallow water, including the reduction in under-keel clearance caused by squat, rolling and pitching  .5 interaction between passing ships and between own ship and nearby banks (canal effect)  .6 berthing and unberthing under various conditions of wind, tide and current with and without tugs	where appropriate	shallow and restricted waters, ice, banks, tidal conditions, passing ships and own ship's bow and stern wave so that the ship can be safely manoeuvred under various conditions of loading and weather
	.7 ship and tug interaction .8 use of propulsion and		
	manoeuvring systems		
Manoeuvre and handle a ship in all conditions (continued)	.9 choice of anchorage; anchoring with one or two anchors in limited anchorages and factors involved in determining the length of anchor cable to be used		
	.10 dragging anchor; clearing fouled anchors		
	.11 dry-docking, both with and without damage		
	.12 management and handling of ships in heavy weather, including assisting a ship or aircraft in distress; towing operations; means of keeping an unmanageable ship out of trough of the sea, lessening drift and use of oil		
	.13 precautions in manoeuvring to launch rescue boats or		

Manoeuvre and handle a ship in all conditions (continued)	survival craft in bad weather  .14 methods of taking on board survivors from rescue boats and survival craft  .15 ability to determine the manoeuvring and propulsion characteristics of common types of ships, with special reference to stopping distances and turning circles at various draughts and speeds  .16 importance of navigating at reduced speed to avoid damage caused by own ship's bow wave and stern wave  .17 practical measures to be taken when navigating in or near ice or in conditions of ice accumulation on board  .18 use of, and manoeuvring in and near, traffic separation schemes and in vessel traffic service (VTS)		
Operate remote	areas Operating principles of	Examination and	Plant, auxiliary
controls of propulsion plant and engineering systems and services	marine power plants Ships' auxiliary machinery General knowledge of marine engineering terms	assessment of evidence obtained from one or more of the following:  .1 approved in-service experience  .2 approved simulator training, where appropriate	machinery and equipment is operated in accordance with technical specifications and within safe operating limits at all times

## Function: Cargo handling and stowage at the management level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence

Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes Knowledge of and ability to apply relevant international regulations, codes and standards concerning the safe handling, stowage, securing and transport of cargoes

Knowledge of the effect on trim and stability of cargoes and cargo operations

Use of stability and trim diagrams and stress-calculating equipment, including automatic data-based (ADB) equipment, and knowledge of loading cargoes and ballasting in order to keep hull stress within acceptable limits

Stowage and securing of cargoes on board ships, including cargo-handling gear and securing and lashing equipment

Loading and unloading operations, with special regard to the transport of cargoes identified in the Code of Safe Practice for Cargo Stowage and Securing

General knowledge of tankers and tanker operations

Knowledge of the operational and design limitations of bulk carriers

Ability to use all available shipboard data related to loading, care and unloading of bulk cargoes

Ability to establish procedures for safe cargo handling in accordance with the provisions of the relevant instruments such as IMDG Code, IMSBC Code, MARPOL 73/78 Annexes III and V and other relevant information

Ability to explain the basic

Examination and assessment of evidence obtained from one or more of the following:

- .1 approved in-service experience
- .2 approved simulator training, where appropriate

using: stability, trim and stress tables, diagrams and stress-calculating equipment The frequency and extent of cargo condition monitoring is appropriate to its nature and prevailing conditions

Unacceptable or unforeseen variations in the condition or specification of the cargo are promptly recognized and remedial action is immediately taken and designed to safeguard the safety of the ship and those on board

Cargo operations are planned and executed in accordance with established procedures and legislative requirements

Stowage and securing of cargoes ensures that stability and stress conditions remain within safe limits at all times during the voyage

Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes

(continued)

Assess reported defects and damage to cargo spaces, hatch covers and ballast tanks and take appropriate action	principles for establishing effective communications and improving working relationship between ship and terminal personnel  Knowledge of the limitations on strength of the vital constructional parts of a standard bulk carrier and ability to interpret given figures for bending moments and shear forces  Ability to explain how to avoid the detrimental effects on bulk carriers of corrosion, fatigue and inadequate cargo handling	Examination and assessment of evidence obtained from one or more of the following:  1 approved in-service experience 2 approved simulator training, where appropriate using: stability, trim and stress tables, diagrams and stress-calculating equipment	Evaluations are based on accepted principles, well-founded arguments and correctly carried out. The decisions taken are acceptable, taking into consideration the safety of the ship and the prevailing conditions
Carriage of dangerous goods	International regulations, standards, codes and recommendations on the carriage of dangerous cargoes, including the International Maritime Dangerous Goods (IMDG) Code and the International Maritime Solid Bulk Cargoes (IMSBC) Code  Carriage of dangerous, hazardous and harmful cargoes; precautions during loading and unloading and care during the voyage	Examination and assessment of evidence obtained from one or more of the following:  .1 approved in-service experience  .2 approved simulator training, where appropriate  .3 approved specialist training	Information on dangers,

# Function: Controlling the operation of the ship and care for persons on board at the management level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Control trim, stability and stress	Understanding of fundamental principles of ship construction and the theories and factors affecting trim and stability and measures necessary to preserve trim and stability	Examination and assessment of evidence obtained from one or more of the following:  .1 approved in-service experience	Stability and stress conditions are maintained within safe limits at all times
	Knowledge of the effect on		

	trim and stability of a ship in the event of damage to and consequent flooding of a compartment and countermeasures to be taken  Knowledge of IMO recommendations concerning ship stability	<ul><li>.2 approved training ship experience</li><li>.3 approved simulator training, where appropriate</li></ul>	
Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea, security and the protection of the marine environment	Knowledge of international maritime law embodied in international agreements and conventions  Regard shall be paid especially to the following subjects:  .1 certificates and other documents required to be carried on board ships by international conventions, how they may be obtained and their period of validity  .2 responsibilities under the relevant requirements of the International Convention on Load Lines, 1966, as amended  .3 responsibilities under the relevant requirements of the International Convention for the Safety of Life at Sea, 1974, as amended  .4 responsibilities under the International Convention for the Prevention of Pollution from Ships, as amended  .5 maritime declarations of health and the requirements of the International Health Regulations  .6 responsibilities under international instruments affecting the safety of the ship, passengers, crew and cargo	Examination and assessment of evidence obtained from one or more of the following:  .1 approved in-service experience  .2 approved training ship experience  .3 approved simulator training, where appropriate	Procedures for monitoring operations and maintenance comply with legislative requirements  Potential non-compliance is promptly and fully identified  Planned renewal and extension of certificates ensures continued validity of surveyed items and equipment

	<ul> <li>.7 methods and aids to prevent pollution of the marine environment by ships</li> <li>.8 national legislation for implementing international agreements and conventions</li> </ul>		
Maintain safety and security of the ship's crew and passengers and the operational condition of lifesaving, firefighting and other safety systems	Thorough knowledge of life-saving appliance regulations (International Convention for the Safety of Life at Sea)  Organization of fire drills and abandon ship drills  Maintenance of operational condition of life-saving, fire-fighting and other safety systems  Actions to be taken to protect and safeguard all persons on board in emergencies  Actions to limit damage and salve the ship following a fire, explosion, collision or grounding	Examination and assessment of evidence obtained from practical instruction and approved in-service training and experience	Procedures for monitoring fire-detection and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established emergency procedures
Develop emergency and damage control plans and handle emergency situations	Preparation of contingency plans for response to emergencies  Ship construction, including damage control  Methods and aids for fire prevention, detection and extinction  Functions and use of life-saving appliances	Examination and assessment of evidence obtained from approved in-service training and experience	Emergency procedures are in accordance with the established plans for emergency situations
Use of leadership and managerial skill	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:	Assessment of evidence obtained from one or more of the following:  .1 approved training  .2 approved in-service experience  .3 approved simulator training	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

	<ul> <li>.1 planning and co-ordination</li> <li>.2 personnel assignment</li> <li>.3 time and resource constraints</li> <li>.4 prioritization</li> <li>Knowledge and ability to apply effective resource management:</li> <li>.1 allocation, assignment, and prioritization of resources</li> <li>.2 effective communication on board and ashore</li> </ul>		based on assessment of current competence and capabilities and operational requirements  Operations are demonstrated to be in accordance with applicable rules
	.3 decisions reflect     consideration of team     experiences      .4 assertiveness and     leadership, including     motivation		Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks
	.5 obtaining and maintaining situation awareness  Knowledge and ability to apply decision-making techniques:  .1 situation and risk assessment		Communication is clearly and unambiguously given and received  Effective leadership behaviours are demonstrated  Necessary team
Use of leadership and managerial skill (continued)	<ul><li>.2 identify and generate options</li><li>.3 selecting course of action</li><li>.4 evaluation of outcome effectiveness</li></ul>		member(s) share accurate understanding of current and predicted vessel state and operational status and external environment
	Development, implementation, and oversight of standard operating procedures		Decisions are most effective for the situation  Operations are demonstrated to be effective and in accordance with applicable rules
Organize and	A thorough knowledge * of	Examination and	Actions taken and

manage the provision of medical care on board  1. International Medical Guide for Ships or equivalent national publications  2. medical section of the International Code of Signals  3. Medical First Aid Guide for Use in Accidents Involving Dangerous Goods	assessment of evidence obtained from approved training	-
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The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

### **IMO-Vega Guide**

The STCW Code comprises two parts:

Part A - Mandatory standards regarding provisions of the Annex to the 1978 STCW Convention, as amended, and

Part B - Recommended guidance regarding provisions of the 1978 STCW Convention, as amended.

Each section of the STCW Code refers to each regulation annexed to the Convention.

### **IMO-Vega Note**

The 2010 amendments to the STCW Code, as adopted by Resolution 2 to the Final Act of the Manila Conference, will enter into force 2012-01-01. See corresponding section applicable to 2012-01-01.

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The STCW Code Part A is made mandatory in the STCW Convention Reg. I/1 paragraph 2.

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