Oral exam syllabus for Master Yachts Unlimited STCW Code II/2

Section A-II/2
Mandatory minimum requirements for certification of Master Yachts Unlimited

Standard of competence

1. Every candidate for certification as *Master Yachts Unlimited* shall be required to demonstrate the competence to undertake, at the management level, the tasks, duties and responsibilities listed in the 'Competence' column of table A-II/2.

2. The minimum knowledge, understanding and proficiency required for certification is listed in the 'knowledge, understanding and proficiency' column of table A-II/2.

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, 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 the protection of the marine environment.

4. The level of knowledge of the subjects listed in the 'Knowledge, understanding and proficiency' column of table A-II/2 shall be such that in the examiners professional judgement it would be sufficient to enable the candidate to serve in the capacity of master and undertake management level functions.

5. Candidates and Examiners should refer to the 'Criteria for evaluating competence' and 'Further guidance for evaluating competence'

Function: Navigation at the management level

Competence	Knowledge, understanding and proficiency	Criteria for evaluating competence	Further guidance 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	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	Passage planning with respect to the use of navigational publications including ENCs and RNCs used in ECDIS Assessing all risks and with strategic overview for the intended passage Understand and interpret a synoptic chart and use of weather routing services Knowledge of characteristics of various weather systems, including tropical revolving storms, the avoidance of storm centres and dangerous quadrants Practical measures to be taken when navigating in or near ice and dealing with ice accumulation on board The requirements of ship routeing and mandatory reporting systems IALA systems of maritime buoyage

	General principles for Ship Reporting Systems and with VTS procedures		Responsibilities with respect to monitoring the vessel's safe navigation. Ability to safely adjust the passage plan due to change in circumstances or related hazards The requirements of ship routeing and mandatory reporting systems Danger messages and obligatory reporting requirements
Determine position and the accuracy of resultant position fix by any means	Position determination in all conditions: 1. by celestial observations 2. by terrestrial observations, including the ability to use appropriate charts, notices to mariners and other publications to assess the accuracy of the resulting position fix 3. using modern electronic navigational aids, with specific knowledge of their operating principles, limitations, sources of error, detection of	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 The fix obtained by terrestrial observations 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	Determining the accuracy of the ship's position by assessing various position fixing methods

	misrepresentation of information and methods of correction to obtain accurate position fixing	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 principles of magnetic and gyro-compasses An understanding of systems under the control of the master gyro and a knowledge of the operation and care of the main types of gyro-compass	The method and frequency of checks for errors of magnetic and gyro-compasses ensures accuracy of information	The operation and care of various types of compasses Care and maintenance of the magnetic compass and binnacle Knowledge of the purpose and use of compass correctors (candidates will not be required to demonstrate a compass correction procedure) Knowledge of how to find the magnetic bearing of a distant object and subsequent construction of a deviation card
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 (IAMSAR) Manual	The plan for coordinating search and rescue operations is in accordance with international guidelines and standards	Use of most current the International Aeronautical and Marine Search and Rescue (IAMSAR) Manual (Volume III), distress and emergency signals Search and Rescue (SAR) around the UK and world-wide Initiate search patterns for various situations

		Radiocommunications are established and correct communication procedures are followed at all stages of the search and rescue operations	Search and Rescue (SAR) plans for passenger ships Safety during helicopter operations Assisting a ship or aircraft in distress; rescuing the passengers and crew of a disabled ship or ditched aircraft Correct use of distress signals and awareness of penalties for misuse Emergency communications within the GMDSS regulations
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	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	A thorough knowledge of the principles of navigational watchkeeping at sea, including under pilotage, at anchor and in port Application of the ICS Bridge Procedures Guide
Maintain safe navigation through the use of information from navigation equipment and systems to assist command decision making	An appreciation of system errors and thorough understanding of the operational aspects of navigational systems Blind pilotage planning	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	Electronic navigational systems – limitations and sources of error, methods of correction Radar and ARPA – practical use of, modes of operation, performance monitoring, limitations, sources of

Note: Training and assessment in the use of ARPA is not 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	Evaluation of navigational information derived from all sources, including radar and ARPA, in order to make and implement command decisions for collision avoidance and for directing the safe navigation of the ship The interrelationship and optimum use of all navigational data available for conducting navigation	Action taken to avoid a close encounter or collision with another vessel is in accordance with the International Regulations for Preventing Collisions at Sea, 1972, as amended	error, methods of correction and parallel indexing Understand the use of bridge equipment, including rate of turn indicators, course recorders, echo sounders and NAVTEX, BNWAS and VDR/SVDR A thorough knowledge and understanding of the content, application and intent of the International Regulations for Preventing Collisions at Sea
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	Management of operational procedures, system files and data, including: 1. manage procurement, licensing and updating of chart data and 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	Operational procedures for using ECDIS are established, applied, and monitored Actions taken to minimize risk to safety of navigation	Interpret and analyse information from ECDIS and other interface equipment, taking into account the limitations of the equipment including ENC and RNC and prevailing circumstances and conditions Explain the need to carry out performance checks and tests of ECDIS equipment Appropriate initial responses to malfunction of ECDIS and its impact on related critical equipment

	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		ECDIS, S57 and S52 updates Interpretation of ENC`s data ECDIS updates and setting of safety parameters for a passage
Forecast weather and oceanographic conditions	Ability to understand and interpret a synoptic chart and to forecast area weather, taking into account local weather 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	The likely weather conditions predicted for a determined period are based on all available information Actions taken to maintain safety of navigation minimise any risk to safety of the ship Reasons for intended action are backed by statistical data and	Sources of meteorological information, ability to use and interpret information obtained from ship borne meteorological instruments, knowledge of characteristics of various weather systems, reporting and recording systems.

	dangerous quadrants Knowledge of ocean current systems Ability to calculate tidal conditions Use all appropriate nautical publications on tides and currents	observations of the actual weather conditions	Ability to detect the presence of Tropical Revolving Storms.
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 damage control Emergency steering	The type and scale of any problem is promptly identified and decisions and actions minimise 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	Actions to be taken following: accidental damage including collision, grounding, flooding or major mechanical damage, loss of rudder and/or propeller and impairment of watertight integrity of the ship through any cause including the possibility of beaching a ship and subsequent surveys Protection of the marine environment Use of the effect on trim and stability, and subsequent actions in the event of damage to and consequent flooding of a compartment Action to be taken when disabled and in distress Application of damage stability information to assess vessel’s condition to ensure the safety of the

	Emergency towing arrangements and towing procedure		crew, passengers and vessel; including protection of the marine environment Use of emergency steering systems Preparations and precautions for emergency towing and being towed Action to safeguard all persons on board in emergencies Assisting a ship or aircraft in distress
Manoeuvre and handle a ship in all conditions	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, head reach and stopping distances 2. handling ship in rivers, estuaries and restricted waters, having regard to the effects of current, wind and restricted water on helm response 3. application of constant-rate-of-turn techniques	All decisions concerning berthing and anchoring are 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 assessment is made of possible effects of 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	Demonstrate an understanding of ship manoeuvres commonly undertaken under all weather conditions including approaching pilot stations, restricted waters and shallow water Embarking and disembarking pilots Use of steering control systems, including automatic pilot, operational procedures and change-over from manual to automatic control and vice-versa, adjustment of controls for optimum performance Berthing and unberthing at jetties, quays, mooring buoys and single-

	4. maneuvering 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 7. ship and tug interaction 8. use of propulsion and maneuvering systems 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		point moorings with/without tugs, with/without tidal stream, with/without wind Conning the ship, effects of wind and current, effects of dead-weight, draft, trim, speed and under-keel clearance on turning circles and stopping distances; interaction and squat Different types of anchors and their advantages and disadvantages, preparation for anchoring, anchoring in a tideway and in confined water, operation of anchoring with a single anchor and use of a second anchor, dragging anchor, clearing a foul anchor and hawse, hanging off an anchor, breaking and slipping cables, getting under way

	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		Management and handling of ships in heavy weather
	13 precautions in manoeuvring to launch rescue boats or survival craft in bad weather		Precautions when manoeuvring to launch rescue boats or 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		Importance of navigating at reduced speed to avoid damage caused by own ship’s bow wave and stern wave
	16 importance of navigating at reduced speed to avoid damage caused by own ship's bow wave and stern wave		Manoeuvres to launch and recover rescue boats/survival craft
	17 practical measures to be taken when navigating in or near ice or in conditions of ice accumulation on board		Navigation in the vicinity of ice, ice reporting and steps to be taken in the event of ice accretion

	18 use of, and manoeuvring in and near, traffic separation schemes and in vessel traffic service (VTS) areas		Conduct in and near traffic separation schemes and vessel traffic service (VTS) areas
Operate remote controls of propulsion plant and engineering systems and services	Operating principles of marine power plants Ships' auxiliary machinery General knowledge of marine engineering terms	Plant, auxiliary machinery and equipment is operated in accordance with technical specifications and within safe operating limits at all times	Understanding of working principles of main propulsion and auxiliary machinery

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

Competence	Knowledge, understanding and proficiency	Criteria for evaluating competence	Further guidance 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 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	Stability and stress conditions are maintained within safe limits at all times	Use of stability and trim information, use of stress-calculating equipment, knowledge of movable loads, Yacht operations and ballasting with respect to stability and hull stress Action in event of loss of stability due to damage to hull, down flooding risk from large openings or ingress of water into hull including flooding of compartment. Dry-dock preparation and procedures. Effect of heavy weather on the ship's structure Effect upon ship behaviour of lists, stiff and tender stability conditions, large angles of heel/list and associated righting precautions: the effect of excessive trim

			The importance of free surface effects and the identification and correction of an angle of loll Specific effects on stability and stress caused by ship type or nature of trade.
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	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	The application of current Merchant Shipping Health and Safety legislation, including the Code of Safe Working Practices for Merchant Seamen and the main elements of Risk Assessment Improvement and Prohibition Notices Safe manning, Seafarer Employment Agreements, conditions of employment, official log book and the law relating to entries Maritime declarations of health and requirements of the international health regulations Understanding of load line marks, entries and reports in respect of freeboard, draft and allowances Routine inspection of living quarters and storerooms, and complaints procedure

	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 and crew. 7. methods and aids to prevent pollution of the marine environment by ships 8. national legislation for implementing international agreements and conventions		Requirements for records including Oil Record Book; Requirements for drills and training The requirements of the regulations concerning fire-fighting appliances The requirements of the regulations concerning life-saving appliances The international conventions relevant to the operation of ships including certificates and other documents required to be carried on board ships including Large Commercial Yacht Code. Requirements for statutory and classification surveys Reports required by the Marine Accident Investigation Branch (MAIB) Putting into port with damage to ship, both from business and technical points of view. Obligations with respect to pilotage Towage and salvage agreements Purpose of Flag State and Port State Control

			Purpose and application of the International Safety Management (ISM) Code Purpose and application of the MLC 2006 Responsibilities under International Convention for Prevention of Pollution including masters' duties, obligations and liabilities, including the keeping of records Methods and equipment to prevent pollution Measures to be taken to prevent pollution in port and at sea and Ballast Water Management (BWM) convention
Maintain safety and security of the ship's crew and passengers and the operational condition of life- saving, fire- fighting 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	Procedures for monitoring fire-detection and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established emergency procedures	Preparations for sea prior to sailing with respect to watertight integrity and additional precautions to be taken before the onset of heavy weather Practical knowledge of the particular loadline items affecting seaworthiness Master's responsibility with respect to stowaways and prevention of smuggling

	safeguard all persons on board in emergencies Actions to limit damage and salve the ship following a fire, explosion, collision or grounding		Precautions to safeguard against terrorism, piracy and armed robbery Precautions to be taken in pest control in living spaces The organisation and direction of fire-fighting and abandon ship parties Organisation of fire and abandon ship exercises including the training and use of SOLAS training manuals Methods of dealing with fire on board ship; prevention of fire at sea and in port Action to be taken to prevent the spread of fire Master`s responsibilities on condition of life saving appliances, firefighting appliances and other safety systems
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	Emergency procedures are in accordance with the established plans for emergency situations	Application of decision support system in emergency situations The organisation of fire-fighting and abandon ship parties Launch, manage and ensure survival in survival craft, recover survival craft

	Functions and use of life-saving appliances		at sea and beach or land survival craft
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: 1. planning and co-ordination 2. personnel assignment 3. time and resource constraints 4. prioritization Knowledge and ability to apply effective resource management: 1. allocation, assignment, and prioritization of resources 2. effective communication on board and ashore	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	Knowledge of personnel management, organisation and training including disciplinary Procedures Application of hours of work and rest legislation

	3. decisions reflect consideration of team experiences 4. assertiveness and leadership, including motivation 5. obtaining and maintaining situation awareness Knowledge and ability to apply decision-making techniques: 1. situation and risk assessment 2. identify and generate options 3. selecting course of action 4. evaluation of outcome effectiveness Development, implementation, and oversight of standard operating procedures	Necessary team member(s) share accurate understanding of current and predicted vessel state and operational status and external environment Decisions are most effective for the situation Operations are demonstrated to be effective and in accordance with applicable rules	
Organise and manage the provision of medical care on board	A thorough knowledge of the use and contents of the following publications: 1. International Medical Guide for Ships or equivalent national publications	Actions taken and procedures followed correctly apply and make full use of advice available	Sources of medical advice from on board publications and the radio medical advice from the shore

	2. Medical section of the International Code of Signals 3. Medical First Aid Guide for Use in Accidents Involving Dangerous Goods		