MASTER (WORKBOAT OPERATIONS) Course duration; the course must take place over 10 days or 60 hours of formal instruction either through classroom instruction or distance learning.
Candidates may be given course notes or a self-study preparation pack in advance.

Aims  The aim of this course is to enable Masters to understand;
   - The special type of operations a workboat may undertake
   - Level of understanding necessary for the safe, secure and lawful operation of a commercially and privately operated workboat

Assessment
Assessment will be by a written 2½ hour examination of 6 questions, 3 from Topic 1, 2, 3 and 4 with a pass mark of 60% AND 3 questions from Topic 5 and 6 with a pass mark of 60%.

TOPIC 1  WORKBOAT LEGISATION AND BUSINESS AND LAW

1. Vessel Codes
   a) Can state the principles of the codes relevant to commercial vessels.
   b) Can state the requirements for the provision of safety equipment on a workboat.
   c) Can state what categorisation of waters (0-6) are and the relationship to construction and stability requirements of a workboat.
   d) Can state the manning levels qualification requirements and the limitations imposed of the carriage of passengers of the codes relevant to commercial workboats.
   e) Has an awareness of the commercial aspects of workboat operations and charter parties
   f) Has an appreciation of the requirements of MLC 2006 as laid down in MGN 490 and 491 and any regulations and legislation introduced to enforce the Convention.

2. Certification
   a) Can state the national and international certification required to be carried on a workboat of less than 500 GT.

TOPIC 2  HEALTH AND SAFETY

1. Code of safe working practices for merchant seaman
   a) Can state the requirements for health surveillance and the need and requirements for personal health and hygiene and the importance of correct food preparation and handling on a workboat.
   b) Can demonstrate knowledge of the requirements for safe systems of work in machinery spaces, unmanned machinery and refrigeration machinery spaces.
   c) Can state the safe boarding and leaving arrangements.
   d) Can demonstrate a knowledge of the procedure for entering an enclosed space and be able to define what spaces should be regarded as enclosed or dangerous.
   e) Can demonstrate knowledge of the problems associated with noise and vibration on board a workboat and any relevant regulations.
f) Can demonstrate the importance of Tool Box Talks.

**TOPIC 3   SAFETY MANAGEMENT**

1. **Safety certificate and documentation**
   a) Can state the purpose of the safety and environmental protection policy.
   b) Can describe the procedures for the reporting and analysis of non-conformities, accidents and hazardous occurrences.
   c) Can describe the importance for a maintenance system for the ship and equipment.
   d) Can state the Documentation requirements of the on board safety management system.

2. **Safety organisation and Risk Assessment**
   a) Can demonstrate an understanding of the risk assessment process, its practical operation, methodology and the completion of the matrix, including risk assessments for specialist operations.
   b) Can show an awareness of the concept of dynamic risk assessment and formal risk assessment.
   c) Can state the requirements and procedures needed for a permit to work scheme to ensure safe operations.
   d) Can describe what emergency procedures should be prepared for a workboat.
   e) Can demonstrate an understanding of the factors required to achieve a safe system of work.

3. **Seaworthiness and safe manning**
   a) Can demonstrate knowledge of the legal requirements to ensure that seafarers are adequately rested before performing any duties.
   b) Can state what the legal requirements are for safe manning on a workboat.
   c) Can state the international obligations under the Load Line convention to ensure that the vessel is seaworthy before and during any passage to sea.

4. **Security**
   a) Can state the international obligations under the ISPS code with regard to security arrangements both when the vessel is at sea or in port.
   b) Awareness of the content of the Best Management Practices for Protection against Somalia Based Piracy (BMP4) and any subsequent edition

**TOPIC 4   LIFTING, STOWAGE AND CARE OF STORES AND EQUIPMENT**

1. **Handling of equipment and care of stores and equipment**
   a) Can describe the procedure for the safe stowage and securing of machinery, diving plant, containers, survey equipment, loose pipes, stores and any other item carried on a workboat including the types of securing equipment that may be used.
   b) Can describe the procedure for the safe loading and discharging of machinery, diving plant, steelwork, containers, bulk bags, survey equipment, loose pipes, stores and any other item carried on a workboat including the types of equipment that may be used for lifting.
   c) Can state the purpose of the Document of Compliance for Carriage of IMDG and Material Safety Data Sheets and demonstrate a basic knowledge of the relevant sections of the IMO code for the “Safe Stowage, Segregation and Securing of Cargo”.
   d) Can describe the procedure for the safe stowage, securing and carriage of stores including deck cargo for ships serving offshore installations.
TOPIC 5 STABILITY

1. Specialised ship stability requirements
   a) Can demonstrate knowledge of the information contained in a stability information book as found on a workboat and its uses.
   b) Calculate the position of G, the GM and resultant list during different phases of various operations.
   c) Can demonstrate knowledge of the specific stability requirements for a workboat involved in
      i. anchor handling operations
      ii. diving support operations
      iii. dredging operations
      iv. towing operations
      v. lifting operations

TOPIC 6 SHIP HANDLING AND OPERATION

1. General
   a) Can describe the procedure and equipment used for making fast and casting off from another vessel.
   b) Can describe the safe procedure for mooring to a buoy.
   c) Can describe the procedure for the transfer of personnel by boat for ships serving off shore installations.
   d) Can describe the procedure for approaching offshore installations.
   e) Can describe the procedure for the transfer of personnel between workboats and offshore installations.

2. Diving support operations
   a) Can describe the procedure for the secure mooring and recovery of moorings of a dive support vessel.
   b) Can describe the procedure for the safe anchoring of a dive support vessel.
   c) Can describe the use of shot lines on a dive support vessel.
   d) Can describe the safe use of engines and DP on a dive support vessel.
   e) Can state the importance of the proper lines of communication and lines of responsibilities, Master/Dive Master relationship, who is in charge and why on a dive support vessel.
   f) Can explain the types of work undertaken by a dive support vessel.
   g) Can describe the different dive systems used
   h) Can give a general outline of the Dive Codes of Practice.
   i) Can describe the provision of in-water support on a dive support vessel.
   j) Can describe the procedure for the recovery of divers including the use of ladders, hyperbaric units, cages and emergency situations.

3. Anchor handling operations
   a) Can define common anchor handling terms used on an anchor-handling vessel.
   b) Can describe the need for anchor handling safety procedures including live wire, snap back and anchor handling whilst manoeuvring.
   c) Can demonstrate knowledge of wires, shackles and other securing devices including kentor shackle, pear and hinge.
   d) Can describe the safe procedures for lowering, running and deploying an anchor.
   e) Can describe the correct rigging, connection and disconnection of handling wires when lowering or lifting an anchor.
   f) Can describe the correct hand signals to be used on during lifting operations.
g) Can describe the safe operation of jaws and pins when lowering or lifting.
h) Can describe the correct procedure for lifting of anchors including the use of grapnels, lassos and surface buoys.
i) Can describe the correct procedure for decking an anchor.
j) Can describe the correct maintenance of anchor handling equipment.

4. Dredging operations
a) Can describe the importance of the use of appropriate equipment on a vessel engaged in dredging operations.
b) Can list the factors to be taken into account when planning a dredging operation, including the area to be dredged, type and quantity of material to be removed, local environmental and navigation conditions, traffic density and other potential hazards.
c) Can describe the procedure for dealing with suspicious objects in spoil.
d) Can describe the importance of and the procedure for the safe disposal of spoil, including ensuring the suitability of the planned disposal area and any required permissions.
e) Can describe the uses and procedures for different types of dredging including ploughing, jetting, grab, cutter suction or trailer.
f) Demonstrate an understanding of the importance and impact of DEFRA dredging licence, UK Hydrographic Office’s hydrographic standards and other regulations relevant to dredging.

5. Towing operations
a) Can state the importance of producing a towage plan for a vessel engaged in towage.
b) Can explain the purpose of a towage warranty survey and a tow inspection.
c) Can explain the general characteristics of a towing operation, the types of tow that may be found.
d) Can explain why different towage arrangements may be required for different phases of a tow.
e) Can explain why there may be a need for a Load Line exemption on a vessel being towed.
f) Can explain towing points and the use of towing equipment.
g) Can state the different types of propulsion systems that may be found such as azimuth propellers, CPP, FPP, Voith Schneider (VS), steerable nozzles and shrouded nozzles.
h) Can explain the effects of squat and interaction between vessels, specifically the towing vessel and the tow.
i) Can explain the need for towage emergency procedures including, for instance;
   i. grounding of tug and/or tow
   ii. man over board
   iii. failure of towing lines/gog arrangements/shackles/towing hook/winch
   iv. failure of critical systems
   v. emergency release of tow
j) Can explain the importance of obtaining local knowledge including the effect of local conditions on tows.
k) Can explain the importance of passage planning before attempting a tow including;
   i. effect on wheel over positions on position of tow
   ii. track of tow in narrow channels
   iii. ports of refuge and safe havens
   iv. use of additional tugs for critical points
l) Can explain the importance of maintaining watertight integrity whilst towing.
m) Can explain the importance of testing and inspection of towage equipment.
n) Can explain the use of bridle/gog ropes during towage operations.