

**UOS reference number**

ST0772

**Trailblazer reference number**

TB0388

**Title of occupation**

Marine Surveyor

**Trailblazer name**

Marine Surveyor

**Core and options**

No

**Resubmission**

No

**Level of occupation**

Level 6

**Route**

Engineering and Manufacturing

**Typical duration of apprenticeship**

48 months

**Target date for approval**

28 June 2019

**Occupational profile**

**Summary**

This occupation is found in the commercial and leisure maritime sectors, including maritime regulators, classification societies, small commercial vessel certifying authorities, port authorities, marine insurers, brokers, survey companies and consultancy companies, including large, medium-sized and small employers. The broad purpose of the occupation is to provide independent verification, by inspection or examination of a subject ship or other vessel, its structure, machinery, equipment and systems, to ensure compliance with established and known standards of, and regulations and rules for: construction, stability, outfitting, equipping, safety and operation. The purpose of the marine survey is to establish the condition of the subject ship or vessel (or parts, machinery, equipment or systems) and any potential or actual damage or repairs required thereto, and verify the subject ship's or other vessel's suitability and fitness to operate, including appropriate certification for same. The value of a subject ship or other vessel (or its constituent parts, machinery, equipment or systems) is also established through marine survey commissioned for such purpose. In their

daily work, an employee in this occupation interacts with a wide range of marine professionals, including: the Master (Captain), Chief Engineer and crews of ships or other vessels; client or subject company representatives (such as Marine Superintendents, Brokers, Administrators and Managers); maritime regulators (such as Maritime and Coastguard Agency (MCA) officials, Classification Society staff, naval architects and marine engineers and Certifying Authority specialists); insurance loss adjusters; and commercial or private clients and their representatives, including legal professionals. While much of the planning for a survey is undertaken in an office environment, the surveys themselves are undertaken onboard the subject ship or other vessel, either in port (alongside a quayside or in a dry dock) or, from time-to-time, during operations. A Marine Surveyor is expected to maintain a level of personal drive and fitness to work outside in all weathers, and to inspect all parts of a ship or small vessel, including safe working at heights and in confined spaces. An employee in this occupation will be responsible for providing professional services of expert survey (including close examination and inspection for verification of standards, regulations and rules) of ships or other vessels, constituent parts, machinery, equipment and systems, including planning for and safe conduct of the survey itself, and production and presentation of written and oral reports of the survey's results and outcomes. Such reports and presentations will require production of high-quality documents that will provide evidence, imagery, conclusions, recommendations and, where required by the purpose, relevant valuations. Marine Surveyors may work alone, jointly with equivalent Surveyors from other interested parties, or in company with other surveyors for whom they could be responsible. Working to the instructions provided and from their own professional knowledge, the Marine Surveyor will have significant autonomy for the planning, completeness and safe conduct of, and reporting of the survey. In conduct of a survey, Marine Surveyor may have to manage their own work with due consideration of the environment and of other persons, including ship's staff or technical contractors.

**Typical job titles**

Typical job titles include MCA Senior Executive Officer Marine Surveyor  
Marine Surveyor  
Ship Surveyor  
Surveyor  
Ship Classification Surveyor  
Flag State Surveyor  
Marine warranty surveyor  
Class A3 Surveyor  
Examiner  
Associate or Partner/Director of surveying company.

| Duty                                                                     | Criteria for measuring performance                                                                                      | Knowledge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Skills                                                                                                                                                                                                                                                                                                                                                                                            | Behaviours                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plan a survey of a subject ship or other vessel, machinery or equipment. | Accuracy, efficiency and value for money of plan produced; compliance with legislation, standards and codes of practice | <ul style="list-style-type: none"> <li>Contracting, contract law, setting expectations, request for services, the parameters of the role including liability and risk (K1)</li> <li>Due diligence and risk assessment processes (K2)</li> <li>Different types and purposes of surveys and the implications on planning timescales, budget and scope: e.g. in water, out of water, cargo, machinery, stability, towage, etc., and the impact of location and weather conditions (K3)</li> <li>Vessel layout, construction and operation for a range of vessels of varying types and complexity, including types of vessel and area of operations (e.g. world-wide, coastal, domestic or inland), and terminology used for naming parts of ships, boats and other vessels. (K4)</li> <li>Types and properties of materials used in ship construction &amp; repair such as wood, steel, aluminium, glass reinforced polymers (GRP) and carbon fibre (K5)</li> <li>Principles of design, construction and operation of main propulsion, auxiliary, deck and other machinery, equipment and systems, typically used in ships, boats and other vessels. (K6)</li> </ul> | <ul style="list-style-type: none"> <li>Communicate effectively and professionally at all levels both internally and externally (S1)</li> <li>Positively challenge stakeholders to effect change where appropriate (S2)</li> <li>Assess requirements for the survey and organise and plan within the timescales and budget set (S3)</li> <li>Manage time and resources effectively (S4)</li> </ul> | <ul style="list-style-type: none"> <li>Be self-motivated with the ability to work independently and with integrity (B1)</li> <li>Able to take personal responsibility for their actions, demonstrate leadership and show resilience (B2)</li> <li>Able to work under pressure to tight deadlines (B3)</li> <li>Able to influence a range of stakeholders within the parameters of the role (B4)</li> <li>Able to take account of other people's priorities and needs (B5)</li> </ul> |

| Duty                                                                                                                                                                                                                                                                                                                                                                                                      | Criteria for measuring performance                                                                                                                                                                                                                                        | Knowledge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Skills                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Behaviours                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Undertake a condition survey on a ship or other vessel or constituent parts, in a safe manner, to verify the condition against relevant maritime rules and regulations, appropriate technical and operational standards, and recognised good maritime practice. Such surveys will include the vessel's structure, machinery, systems, equipment, life saving appliances, and documentation/certification. | All requirements and aspects of the instructions for survey must be successfully performed, while on-board, with relevant regulations, appropriate standards and recognised best practice taken into account, as applicable to the survey and the subject ship or vessel. | <ul style="list-style-type: none"> <li>Relevant International Maritime Organisation (IMO) conventions and applicable regulations, appropriate standards and best operational practice (e.g. IMO Conventions on: Load Line, Safety of Life at Sea, Maritime Pollution, associated UK maritime regulations including but not limited to: UK Merchant Shipping Act 1995, Life Saving Appliances Regulations, Small Commercial Vessel Codes and regulations, Regulations and Rules for Lifting Equipment and Lifting Operations, including testing and examination, Accident and Hazardous Incident Reporting Regulations. International Standards Organisation (ISO), European Norms (EN) and British Standards Institution (BSI) Standards relevant to ships and commercial and leisure vessels. (K7)</li> </ul> | <ul style="list-style-type: none"> <li>Read and interpret drawings, data and other relevant information (S5)</li> <li>Interpret appropriate engineering formulae and compare results with actual on-board readings, data / calculations submitted and survey findings. (S6)</li> <li>Work competently and safely in the workplace to meet regulatory and legislative requirements (S7)</li> <li>Apply engineering principles, regulatory and Classification Society requirements to the ship, vessel, machinery, equipment or system. (S8)</li> <li>Advise on appropriate regulations and guidance relevant to the ship or vessel (S9)</li> <li>Build, lead and manage multi-functional teams, interacting with and influencing a range of internal and external stakeholders (S10)</li> <li>S1</li> <li>S4</li> </ul> | <ul style="list-style-type: none"> <li>B1</li> <li>B2</li> <li>B3</li> <li>B4</li> <li>B5</li> <li>Apply logic to progress of a survey or other work, to ensure efficiency of working. (B6)</li> </ul> |

| Duty | Criteria for measuring performance | Knowledge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Skills | Behaviours |
|------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|
|      |                                    | <ul style="list-style-type: none"> <li>• Safe access to and egress from the vessel (K8)</li> <li>• Comparison of design, construction, outfitting, equipping, and operation of a range of subject ships or vessels with selected appropriate Classification Society rules and MCA Regulations and Codes for design, construction and upkeep of ships and vessels, to identify and heighten awareness of deficiencies. (K9)</li> <li>• Tonnage, displacement and load line measurement and calculations, including international and UK Load Line conventions and regulations. (K10)</li> <li>• Typical ship and vessel propulsion, auxiliary, ancillary and deck machinery and systems appropriate to the vessel to be surveyed. (K11)</li> <li>• Rules, regulations and safe practice for the maritime carriage of passengers and specialist personnel (K12)</li> <li>• Theory and practice, including calculations regarding hydrostatics, vessel handling and hydrodynamics including towage (K13)</li> <li>• Marine environmental protection, including responsibility of the vessel to port, national or international jurisdiction (K14)</li> <li>• K4</li> <li>• K5</li> <li>• K6</li> </ul> |        |            |

| Duty                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Criteria for measuring performance                                                                                                                                                                                                                                                                                                                                    | Knowledge                                                                                                                                                                                                                                                                                  | Skills                                                                                                                                                                                                                    | Behaviours                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Record the objective findings, results and outcomes of the survey, and prepare and present high-quality written evidence reports of the survey and high-quality audio-visual presentations to stakeholders.                                                                                                                                                                                                                                                                                                                                                                                                                | Evidence-based, succinct and accurate reports and presentations; effectiveness of verbal and visual communication in terms of clarity and brevity.                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>Effective oral and written communication strategies; the terminology used in this occupation and the appropriate format of survey reports (K15)</li> <li>Effective audio-visual presentational strategies, techniques and systems. (K16)</li> </ul> | <ul style="list-style-type: none"> <li>Produce succinct and accurate survey reports (S11)</li> <li>Deliver effective oral and audio-visual presentations (S12)</li> <li>S1</li> <li>S2</li> <li>S10</li> </ul>            | <ul style="list-style-type: none"> <li>B1</li> <li>B2</li> <li>B3</li> <li>B4</li> <li>B5</li> </ul> |
| Verify a ship's or other vessel's characteristics and safe behaviour under load and in an intact or damaged condition, through checking the calculations of a ship's or other vessel's data, drawings and other information, from specifications, observations and measurements onboard, and present the findings. This will include but not be limited to calculation of tonnage, displacement, stability data and load line/freeboard requirements, including: Gross Tonnage (for large ships); Gross Tonnage (for small ships, which use a different process); Load Line; Static and dynamic stability characteristics. | The fullness of applicable theories of ship and other vessel design, regarding materials, structural strength, volume, displacement, buoyancy and stability. The typical practices through which key ship's characteristics are calculated and presented, the accuracy of example calculations and neatness and effectiveness of presentation of calculation results. | <ul style="list-style-type: none"> <li>K3</li> <li>K4</li> <li>K6</li> <li>K7</li> <li>K9</li> <li>K10</li> <li>K11</li> <li>K12</li> <li>K13</li> <li>Knowledge of the effects of load and damage to a ship (or other vessel) and its operational characteristics. (K17)</li> </ul>       | <ul style="list-style-type: none"> <li>S4</li> <li>S5</li> <li>S6</li> <li>S10</li> <li>Apply scientific calculation to various conditions of the ship (or other vessel) and the environment prevailing. (S13)</li> </ul> | <ul style="list-style-type: none"> <li>B1</li> <li>B2</li> <li>B3</li> </ul>                         |

| Duty                                                                                                                 | Criteria for measuring performance                                                                                               | Knowledge                                                                                                                                                                                                                                                                                                                                                                                                                  | Skills                                                                                                                                                                                                                                                                                                                                              | Behaviours                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Undertake the estimated valuation of a subject ship or other vessel, or its constituent machinery, systems or parts. | Accuracy of estimations and valuations to examples of comparative ships, vessels, machinery, systems or equipment installations. | <ul style="list-style-type: none"> <li>• K1</li> <li>• K2</li> <li>• K3</li> <li>• K4</li> <li>• K6</li> <li>• K7</li> <li>• K9</li> <li>• K11</li> <li>• K12</li> <li>• K13</li> <li>• K14</li> <li>• The ship and vessel market place and relationship between typical build/construction/supply costs and market prices for a range of different ship and vessel types, operational purposes and ages. (K18)</li> </ul> | <ul style="list-style-type: none"> <li>• S1</li> <li>• S2</li> <li>• S3</li> <li>• S4</li> <li>• S5</li> <li>• S7</li> <li>• S8</li> <li>• S10</li> <li>• S11</li> <li>• S12</li> <li>• Assess the market and prevailing conditions, to calculate a value and price for the subject ship, vessel, machinery, equipment or systems. (S14)</li> </ul> | <ul style="list-style-type: none"> <li>• B1</li> <li>• B2</li> <li>• B3</li> <li>• B4</li> <li>• B5</li> </ul> |

| Duty                                                                                                                                                                                                                                                                                                                                                                                     | Criteria for measuring performance                                                                                                                                                                                                                             | Knowledge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Skills                                                                                                                                                                                                                                                                                                         | Behaviours                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Determine whether the subject ship or vessel is fit to operate. Enforce upon ship's owners and operators the impact of the outcome.                                                                                                                                                                                                                                                      | Successful determination of the subject ship's or other vessel's fitness for purpose and communication of same to a range stake-holders. Early and effective intervention and prevention of the ship operating, in cases where the vessel is not fit to do so. | <ul style="list-style-type: none"> <li>• K2</li> <li>• K4</li> <li>• K6</li> <li>• K7</li> <li>• K8</li> <li>• K9</li> <li>• K10</li> <li>• K11</li> <li>• K12</li> <li>• K13</li> <li>• K14</li> <li>• The condition that would be expected from a fully compliant ship or vessel in good order and under competent management. (K19)</li> <li>• The safety culture, safety management systems and practice onboard vessels to be expected from a fully compliant ship or vessel in good order and under competent management, as required by regulations and rules. (K20)</li> <li>• The authority for detaining a vessel or, otherwise, prevent its departure or onward voyage, where the ship or vessel is not safe to operate. (K21)</li> </ul> | <ul style="list-style-type: none"> <li>• S1</li> <li>• S2</li> <li>• S4</li> <li>• S5</li> <li>• S6</li> <li>• S7</li> <li>• S8</li> <li>• S9</li> <li>• S10</li> <li>• S11</li> <li>• S12</li> <li>• Set out and impose a decision upon ship owners, managers, operators, master and staff. (S15)</li> </ul>  | <ul style="list-style-type: none"> <li>• B1</li> <li>• B2</li> <li>• B3</li> <li>• B4</li> <li>• B5</li> <li>• B6</li> <li>• Personal resolution and determination in enforcing unpopular decisions. (B7)</li> </ul> |
| Undertake appropriate and relevant personal risk assessments for access to a ship or other vessel, for working safely on-board the vessel during survey and for safe egress. This includes determination and application of appropriate safety risk control measures, including development of safe systems of work and use of safety instrumentation and personal protective equipment. | Identify, develop and apply relevant and effective safe systems of working, appropriate risk control measures and correct use of safety instrumentation and personal protective equipment in advance of and throughout the survey.                             | <ul style="list-style-type: none"> <li>• K2</li> <li>• K4</li> <li>• K6</li> <li>• K7</li> <li>• K8</li> <li>• K11</li> <li>• K13</li> <li>• Theory and practice for hazard identification, risk assessment, appropriate risk mitigation and control, and development of appropriate safe systems of work. (K22)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>• S1</li> <li>• S3</li> <li>• S4</li> <li>• S5</li> <li>• S6</li> <li>• S7</li> <li>• S9</li> <li>• S10</li> <li>• S11</li> <li>• Undertake effective hazard identification and risk assessment processes using recognised and appropriate procedures. (S16)</li> </ul> | <ul style="list-style-type: none"> <li>• B1</li> <li>• B2</li> <li>• B3</li> <li>• B4</li> <li>• B5</li> </ul>                                                                                                       |

| Duty                                                                                                                                                                                                                      | Criteria for measuring performance                                                                                                                                                                                                                                                    | Knowledge                                                                                                                                                                                                                                                                                                                                                                                         | Skills                                                                                                                                                                   | Behaviours                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Liaise and communicate effectively with clients, ship owners, operators and agents, ship's masters and staff, regulatory authorities, classification societies, insurers, and ship building yards and ship repair yards   | Successfully apply knowledge and understanding of the purpose, structure and hierarchy within the various organisations involved with ship design, building, upkeep and operations, so that communications and liaison for planning and conducting business are effective and timely. | <ul style="list-style-type: none"> <li>• K1</li> <li>• K2</li> <li>• K3</li> <li>• K4</li> <li>• K6</li> <li>• K7</li> <li>• K9</li> <li>• K11</li> <li>• K14</li> <li>• K15</li> <li>• K16</li> <li>• Purpose, structure and hierarchy within various organisations involved with ship design, building, upkeep and operations, including the MCA and Classification Societies. (K23)</li> </ul> | <ul style="list-style-type: none"> <li>• S1</li> <li>• S3</li> <li>• S4</li> <li>• S5</li> <li>• S8</li> <li>• S9</li> <li>• S10</li> <li>• S11</li> </ul>               | <ul style="list-style-type: none"> <li>• B1</li> <li>• B2</li> <li>• B3</li> <li>• B4</li> <li>• B5</li> </ul> |
| Maintain awareness of the risks of a range of emergencies that may arise on-board a subject ship or vessel, and respond safely and correctly, for self-preservation and prevention of harm to others and the environment. | Ability to effectively raise an alarm and to follow emergency instructions issued by the crew.                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>• K2</li> <li>• K4</li> <li>• K6</li> <li>• K7</li> <li>• K20</li> <li>• Action required and means of escape in emergency conditions (e.g. fire, flood, vessel instability). (K24)</li> </ul>                                                                                                                                                              | <ul style="list-style-type: none"> <li>• S1</li> <li>• S2</li> <li>• S4</li> <li>• S5</li> <li>• S6</li> <li>• S7</li> <li>• S9</li> <li>• S11</li> <li>• S16</li> </ul> | <ul style="list-style-type: none"> <li>• B1</li> <li>• B2</li> <li>• B3</li> <li>• B4</li> <li>• B5</li> </ul> |



| Duty                                                                                                                                                                                                 | Criteria for measuring performance                                                                                                                                                                                                                                                                                                                | Knowledge                                                                                                                                                                                                                                                                                                                                                    | Skills                                                                                                                                                                                                                                                                                                                                                                              | Behaviours                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Investigate marine casualties and breakdowns, such that diagnosis of causal factors and identification of actions necessary for avoidance of repetition are accomplished, communicated and reported. | Effectively appreciate and assess the situation, and identify and report causal factors and actions necessary, in a timely and professional manner, communicating findings and outcomes effectively as required by the circumstances with the client, the shipping company, regulators vessel's crew and other interested parties, at all levels. | <ul style="list-style-type: none"> <li>• K1</li> <li>• K2</li> <li>• K3</li> <li>• K4</li> <li>• K6</li> <li>• K7</li> <li>• K8</li> <li>• K9</li> <li>• K10</li> <li>• K11</li> <li>• K12</li> <li>• K13</li> <li>• K14</li> <li>• K15</li> <li>• Failure mode effects analyses, investigative techniques and diagnosis of causal factors. (K25)</li> </ul> | <ul style="list-style-type: none"> <li>• S1</li> <li>• S2</li> <li>• S3</li> <li>• S4</li> <li>• S5</li> <li>• S6</li> <li>• S7</li> <li>• S8</li> <li>• S9</li> <li>• S10</li> <li>• S11</li> <li>• S12</li> <li>• S14</li> <li>• Identify causal factors and means of prevention of re-occurrence of ship, structural, machinery, equipment or systems failures. (S17)</li> </ul> | <ul style="list-style-type: none"> <li>• B1</li> <li>• B2</li> <li>• B3</li> <li>• B4</li> <li>• B5</li> </ul> |

| Duty                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Training requirement | Method of delivery | Provider type | OTJ days |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|---------------|----------|
| Plan a survey of a subject ship or other vessel, machinery or equipment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | —                    |                    |               | 45       |
| Undertake a condition survey on a ship or other vessel or constituent parts, in a safe manner, to verify the condition against relevant maritime rules and regulations, appropriate technical and operational standards, and recognised good maritime practice. Such surveys will include the vessel's structure, machinery, systems, equipment, life saving appliances, and documentation/certification.                                                                                                                                                                                                                  | —                    |                    |               | 140      |
| Record the objective findings, results and outcomes of the survey, and prepare and present high-quality written evidence reports of the survey and high-quality audio-visual presentations to stakeholders.                                                                                                                                                                                                                                                                                                                                                                                                                | —                    |                    |               | 30       |
| Verify a ship's or other vessel's characteristics and safe behaviour under load and in an intact or damaged condition, through checking the calculations of a ship's or other vessel's data, drawings and other information, from specifications, observations and measurements onboard, and present the findings. This will include but not be limited to calculation of tonnage, displacement, stability data and load line/freeboard requirements, including: Gross Tonnage (for large ships); Gross Tonnage (for small ships, which use a different process); Load Line; Static and dynamic stability characteristics. | —                    |                    |               | 120      |
| Undertake the estimated valuation of a subject ship or other vessel, or its constituent machinery, systems or parts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | —                    |                    |               | 40       |
| Determine whether the subject ship or vessel is fit to operate. Enforce upon ship's owners and operators the impact of the outcome.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | —                    |                    |               | 20       |

| Duty                                                                                                                                                                                                                                                                                                                                                                                     | Training requirement | Method of delivery | Provider type | OTJ days |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|---------------|----------|
| Undertake appropriate and relevant personal risk assessments for access to a ship or other vessel, for working safely on-board the vessel during survey and for safe egress. This includes determination and application of appropriate safety risk control measures, including development of safe systems of work and use of safety instrumentation and personal protective equipment. | —                    |                    |               | 20       |
| Liaise and communicate effectively with clients, ship owners, operators and agents, ship's masters and staff, regulatory authorities, classification societies, insurers, and ship building yards and ship repair yards                                                                                                                                                                  | —                    |                    |               | 20       |
| Maintain awareness of the risks of a range of emergencies that may arise on-board a subject ship or vessel, and respond safely and correctly, for self-preservation and prevention of harm to others and the environment.                                                                                                                                                                | —                    |                    |               | 5        |
| Investigate marine casualties and breakdowns, such that diagnosis of causal factors and identification of actions necessary for avoidance of repetition are accomplished, communicated and reported.                                                                                                                                                                                     | —                    |                    |               | 20       |

| Qualification                                                                                                                                                                                                                                                                       | Basis for mandation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>BEng Marine Surveying</b><br>Level: 6 (non-integrated degree)<br>Type: Type 2 off-the-job qualification<br>Ofqual regulated: No<br>Awarding bodies <ul style="list-style-type: none"> <li>• Liverpool John Moores University</li> <li>• Southampton Solent University</li> </ul> | <b>Hard sift</b><br>—<br>The qualification is mandated in order to meet the requirements of the occupation and for the purpose of IEng registration, through IMarEST. Candidates will benefit from the development and attainment of the knowledge and skills necessary to apply technology to engineering problems, but also maintain and manage current technology, in a multidisciplinary environment. This last proves useful not only and specific to this standard, but to further the candidate's professional progress<br>— |

### Entry requirements

Individual employers will set the selection criteria for their Apprenticeships. Entrants to the role should typically have an advanced level qualification (level 3) and experience of working in a maritime environment in roles such as Standards of Training, Certification and Watchkeeping (STCW) Officer Of The Watch (OOW), Engineering OOW, Electro Technical Officer, or equivalent knowledge and experience from a maritime background.

### Professional recognition

| Professional body                                                 | Level                                      |
|-------------------------------------------------------------------|--------------------------------------------|
| Institute of Marine Engineering, Science and Technology (IMarEST) | Corporate Member and Incorporated Engineer |

### Trailblazer membership details

#### Chair

Alan Cartwright (Blabey Engineering Limited)

#### Facilitator

Di Fitch (Liverpool John Moores University)

#### Employer members

| Name            | Employer                                  |
|-----------------|-------------------------------------------|
| Alan Cartwright | Blabey Engineering Limited                |
| Alan Chapman    | Brookes Bell                              |
| Allan Larsen    | Larsen Marine Ltd                         |
| Craig Sproul    | Lloyd's Register                          |
| Gary Holdforth  | Port of London Authority                  |
| John Fearnley   | MECAL Limited                             |
| Matthew Briggs  | Maritime & Coastguard Agency Headquarters |
| Nick Gladwell   | SCMS                                      |
| Octavio Rinaldi | Bureau Veritas                            |
| Richard Morris  | Royal National Lifeboat Association       |
| Tony Heslop     | Maritime & Coastguard Agency (South)      |

#### Other members

| Name            | Employer                                                |
|-----------------|---------------------------------------------------------|
| Caitriona Hanly | Institute of Marine Engineering, Science and Technology |
| Diane Fitch     | Liverpool John Moores University                        |
| Emma Baggett    | Cornwall College                                        |
| Iain MacKinnon  | Maritime Skills Alliance                                |
| Jaimie Cross    | Maritime Learning Alliance                              |
| Jane Gentry     | Yacht Designers and Surveyors Association               |
| John Chudley    | Institute of Marine Engineering, Science and Technology |
| Jonathan Ridley | Southampton Solent University                           |
| Mark Ranson     | National Workboat Association                           |
| Martin Peart    | Falmouth Marine School                                  |

## Additional information (continued)

| Name          | Employer                                    |
|---------------|---------------------------------------------|
| Mike Schwartz | International Institute of Marine Surveyors |
| Paul Napper   | Lloyd's Maritime Academy                    |
| Richard Thain | Maritime Learning Alliance                  |
| Ted Bailey    | Lloyd's Maritime Academy                    |