Human Element Competencies Templates

1.Regulation, Administration & Management

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
REGULATORS **Knowledge of the human element in the development of international regulations**	**Have a full understanding of** the IMO Human Element Vision, Principles and Goals for the Organization (Resolution A.947(23)) **Understand the need to apply:** - the Checklist for Considering Human Element issues by IMO Bodies (MSC-MEPC.7/Circ.1) - the interim Guidelines for the application of the Human Element Analysing Process (HEAP) to the IMO-rule making process. (MSC/Circ.878-MEPC/Circ.346) - the Guidance on the use of the Human Element Analysing Process (HEAP) and Formal Safety Assessment in the IMO-rule making process. (MSC/Circ.1022-MEPC/Circ.391)	Interview Observation Interview Observation Interview Observation Interview Observation	Consider the human element when developing any IMO or ILO Resolution, Instrument or Circular Consider the input from seafarers or their proxies, during the development or amendment process related to any Resolution, Instrument or Circular Provide guidance on the human element aspects of the application and/or implementation of any proposed solution being provided for Administrations, ship owners/managers, seafarers and surveyors Establish, and require the enforcement of, principles and rules which ensure a uniform minimum international standard for the safety of life at sea, the safety of navigation, the protection of the marine environment and the safety, security and wellbeing of ships' crews Set the necessary levels of knowledge, skills, abilities and experience for personnel employed in the maritime sector to properly perform job tasks Provide practical guidelines for the investigation of human factors in marine casualties and incidents

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
ADMINISTRATORS (FLAG STATES) **Knowledge of the human element in the national interpretation of international regulations**	**Fully understand**: - the importance of the requirements of pertinent IMO, ILO, WHO and regional instruments relevant to maritime safety and protection of the marine environment - the importance of properly addressing the human element for the safety of life at sea, the safety of navigation, the protection of the marine environment and the safety, security and wellbeing of ships' crews - the need to promote safety of life at sea by establishing and requiring the enforcement of, principles and rules which ensure that a uniform national standard is maintained, at least in line with the required minimum international standards - regional instruments relevant to maritime safety and protection of the marine environment - measures to prevent/suppress terrorism against ships and to improve security aboard and ashore, so as to reduce the risk to passengers, crews and port personnel and to the vessels and their cargoes, in accordance with the requirements of the ISPS Code	Interview Observation Interview Observation Interview Observation Interview Observation Interview Observation	IMO Resolution A.973(24) - Code for the implementation of mandatory IMO Instruments ILO Guidelines for flag State inspections under the Maritime Labour Convention, 2006 International Health Regulations (2005) - Toolkit for implementation in national legislation SOLAS 1974 (as amended) IMO/ILO Code of practice on security in ports Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs) (as amended) International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW) (as amended) Maritime Labour Convention, 2006 The International Health Regulations (2005)

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	Recognize the need to: - investigate human factors in marine casualties and incidents, and act on the findings - properly consider the human element when developing/amending national maritime instruments related to safety, security and protection of the marine environment	Interview Observation Interview Observation	IMO MSC.255(84): The Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) IMO MSC-MEPC.7/Circ.1 - Checklist for Considering Human Element issues by IMO Bodies The Human Element Best Practice for Ship Operators (The Lloyd's Register Group)
SHIPOWNER/SHIPMANAGER **Knowledge of international and national regulation and good practice relating to the human element in the development and application of the company's corporate policies**	**Fully understand:** - the importance of properly addressing the human element for the safety of life at sea, the safety of navigation, the protection of the marine environment and the safety, security and wellbeing of ships' crews	Interview Observation	The Human Element Best Practice for Ship Operators (The Lloyd's Register Group) Establish and communicate a policy for the human-centred approach to ship design/operations Have a policy for using human element data Maintain increased awareness of usability Facilitate personal and technical interactions on human element issues Seek and exploit expert guidance and advice on human element issues Perform research to develop human element data as it is required Develop or provide relevant staff with human element skills Develop a plan to achieve and maintain the optimum level of usability throughout ship operation

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	Fully understand: - the importance of safety at sea, prevention of human injury or loss of life and avoidance of damage to the environment, in particular to the marine environment/property in, accordance with the requirements of the ISM Code	Interview Observation	Identify the specialist skills required and plan how to provide them Manage a lifecycle plan to address HE issues Commitment from the top Demonstrate a full understanding of the content of the ISM Code SOLAS 1974 (as amended) IMO/ILO Code of practice on security in ports ISPS Code Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs) (as amended) International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW) (as amended) Maritime Labour Convention, 2006 The International Health Regulations (2005) Appropriate Flag State legislation Appropriate Best Practice Guides

2.Design, Build, Maintain

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
NAVAL ARCHITECTS, DESIGNERS & PROJECT MANAGERS **Knowledge of industry rules, regulations and guidelines impacting the human element in design**	**Demonstrate an understanding of**: – what it means to live and work at sea – the human element design requirements of international resolutions, conventions and instruments, classification rules, international standards and Flag State regulations	 Familiarisation trip to sea, written report, interview Test (computer or written), interview	 Undertake project whilst at sea Access the relevant information and apply it in design
NAVAL ARCHITECTS & DESIGNERS **Human Element best practices**	**Understand the importance of** the human element to assure good design and construction as well as operational aspects **Demonstrate an understanding of** a human-centred approach to ergonomic design **Understand** the relationship between design, build and operation from a human element perspective **Understand that:** design must take full account of the nature of the task and its implications for the human - any plan for human-centred design should form part of the overall project plan - process modelling and assessment is an element in the assurance of timely and effective system delivery - the design process is iterative - the design team should include multi-disciplinary skills and perspectives	Test (computer or written), interview Test (computer or written), interview Test (computer or written), interview Observation	Ergonomic criteria are established for the design Ergonomics are considered early and continuously within the design process The environment in which a system, product, service or facility is intended to be used is identified and described Sufficient attention is given to the application of ergonomics principles in order to prevent any negative effects Conceptual and detailed designs take account of ergonomics criteria Evaluation of the ergonomic design of any system, product or service is based on established ergonomic criteria Develop a practical model of the user's work from the requirements, context of use, allocation of function and design constraints for the system Produce a description of how the system will be used

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NAVAL ARCHITECTS & DESIGNERS **Human Element best practices (Contd)**	- project planning should allocate time and resources for human-centred activities		Produce designs for the user-related elements of the system that take account of the user requirements, context of use and human element data The operational safety and business effectiveness of the ship/system are dependent on a number of elements all working together in an integrated way The users (or potential users) are involved in the process of design Users are involved throughout the lifecycle such that the design is driven and refined by user-centred evaluation The design addresses the whole user experience Design solutions include ergonomics and user requirements

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PROJECT MANAGERS **Human element best practices**	**Understand that** human-centred design should be planned and integrated into all phases of the product life cycle	Observation	The relative importance of ergonomics in the project is considered The environment in which a system, product, service or facility is intended to be used, is considered, taking full account of the nature of the task and its implications for the seafarer Designed for the target population and the whole user-experience User-centred evaluation and established ergonomic criteria drive and refine the design Context of use specified such that design is based upon an explicit understanding of users, tasks and environments – through case studies/exercises User needs identified and user requirements specified Milestones for human-centred activities integrated into the overall design and development process Required range of skills and viewpoints identified Workers or users (or potential workers or users) involved in the process Most suitable formats for exchanging human element data identified and used Human resources and human-centred design included in corporate procedures, standards and guides Research undertaken into required ship and system usability for future operating concept

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
PROJECT MANAGERS **Human element best practices (Contd)**			Usability defined as a competitive asset Usability objectives set for ship operation User-centred infrastructure developed
SHIPOWNER/OPERATOR **Human element best practices**	**Understand the need to**: - take the human element into account during the design and building of a new sip - include and integrate human-centred design into the overall project plan and all phases of the product life cycle - relate human element issues to business benefits - plan and integrate human-centred design into all phases of the product life cycle - present the needs and represent the interests of the crew and support staff to naval architects, designers, equipment manufacturers etc.	Observation	Occupational health and safety risks to the crew are predicted The developing ship and/or systems is regularly reviewed Input from the crew (or representative seafarers) on the usability of the developing ship and its systems is collected Risks to the community and environment arising from human error in ship operations assessed Human-centred solutions for each design option are produced Key aspects of the ship and its systems before are tried out before they are built Design options for each aspect of the ship and its systems related to operation and its effect on stakeholders are generated Ship/system designed for customisation

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SHIPOWNER/OPERATOR **Human element best practices (Contd)**			Type approval and regulatory requirements are met The preferences and needs of the crew are captured Specific complaints and any history of maintenance problems, for example from a sister ship, or previous use of the same item of equipment, are considered Input is collected from crew carrying out real tasks in a realistic environment Feedback from an existing sister ship is obtained where applicable Prototype surveys and human reliability analyses carried out

3.Maritime education and training (MET)

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Human element best practices	**Understand** the relevance of the human element in design, build and operation of marine assets	Written task: skill review, portfolio, project task, interview	Display understanding of key strategic features of HE and their significance & of the human–centred approach to systems Recognise the impact of performance shaping factors in the context of safety and operations Approved in-service experience *The Human Element Best Practice for Ship Operators* (The Lloyd's Register Group)
	Have a basic understanding of: - applied social sciences - national cultural differences - ergonomics and psychology/cognitive science - the effect of context of use and the environment on human performance	Written task, project work, role play, simulation	Peer observation and review
	Demonstrate the ability to: - apply a student-centred approach to the design of education and training	Exemplars of work-based evidence, portfolio	Student feedback
	- create the prerequisites for students to acquire own skills	Practical demonstrations in classroom	Peer observation and review
	- transfer skills and deliver knowledge to a diverse student audience	Practical demonstrations in classroom Exemplars and portfolio of work	Communicate complex ideas in a clear and concise manner

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Human element best practices	**Fully understand** the principles of: - teaching practice - assessment and examination schemes, e.g. formative and summative methods **Demonstrate the ability to** design education and training programmes including: - presentation skills - classroom management skills - communication theory - feedback and de-briefing **Fully understand** the principles of: - curriculum development - flexible and blended teaching and learning strategies - identifying and writing learning objectives and outcomes - lesson and resource planning procedures - the use of examination methods that constitute a learning opportunity	Exemplars and portfolio of work Work-based evidence Work-based evidence Interviews, portfolio of evidence, student feedback, peer review	Presentation of information in a manner that can be understood and applied by the learners

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Human element best practices	**Demonstrate the ability to** evaluate and apply IT effectively in teaching, including: - the selection of instructional methods and material planning assessments - knowledge of common teaching and general software packages, e.g. PowerPoint - awareness of web-based services, multi-media products and services and social media	Portfolio	
	Demonstrate the ability to empathise with student needs, including: - psychology of learning - factors which influence effective student learning - the needs of different national, cultural, ethnic groups and students with disabilities	Interview, observation	
	Demonstrate academic leadership, with regard to the principles of **l**eadership, coaching, mentoring**,** appraisals**,** motivation & engagement	Interview	
	Fully understand: - what it means to live and work at sea	Familiarisation trip to sea; written report	
	- the international maritime context (political, economic, environmental, geographical, socio-technical)	Interview, assessment	Identify problematic areas e.g. isolation, communication challenges, team working

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Compliance with conventions, resolutions, rules and regulations	**Be fully conversant with:**		
	- relevant IMO, ILO, WHO Conventions & Resolutions, (e.g. SOLAS, MARPOL, STCW and MLC)	Interview, assessment	
	- Flag State regulations of own nation, or of country where teaching	Interview, assessment	
	- the Role and overview of Classification societies rules	Interview, assessment	
	- Best Practice Guides and other industry standards appropriate to the subject being taught	Interview, assessment	

4.Finance, Insurance, Chartering & Brokering

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Financier/Banker **Human element best practices**	**Fully understand the need:**		
	- for safe, sustainable and dependable shipping	Test (computer or written), interview	Assess the human element issues associated with the sector being offered for investment.
	- to balance the return risks with those of financial risk, market risk, asset risk and operator risk	Test (computer or written), interview	Assess the human element implications of the owner/charterer/sub-charterer agreements and long term plans (COA, TC/P, VC/P, etc.) Gauge risks arising from not addressing the human element in ship operations
	- to specify the correct level of operational knowledge and processes to protect the income generation of the ship through the covenants in the loan or lease documentation	Test (computer or written), interview	
	- to appreciate the level of risk from inadequate integration between people, process and plant	Test (computer or written), interview	
	- to appreciate the need to price risk highly, as an incentive for operators to pay more attention to addressing human-system issues	Test (computer or written), interview	

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Finance director (person responsible for financial planning and control in a shipping company)			
Human element best practices	**Be fully aware of** the marketplace and define and maintain a position relative to the market place	Test (computer or written), interview	
	Fully understand the need:		
	- for safe, sustainable and dependable shipping	Test (computer or written), interview	Encourage socially responsible investment through the consideration of the human element in the balance between economic, social and environmental considerations.
	- to balance the return risks with those of financial risk, market risk, asset risk and operator risk	Test (computer or written), interview	
	- to embrace the principle of the three legs of sustainability, business, environment and social conditions being in harmony	Test (computer or written), interview	Consider people's needs and abilities in order to enhance utilisation, quality and efficiency; providing cost effective solutions and reducing the likelihood that systems, products or services will not be used correctly.
	- to continuously improve the social conditions of seafarers and of the social conditions of those affected by maritime activities	Test (computer or written), interview	Take responsibility for the impact of the organisation's activities upon its employees, as well as its customers, the community and the environment Ensure the right balance between the cost of, versus the investment in, people
	- for triple bottom line accounting and through-life cost-benefit analysis	Test (computer or written), interview	Include the human element in the business case for future operating concepts
	Fully understand:		
	- the human element implications of any business opportunity	Test (computer or written), interview	Include the 'soft' costs of introduction, operation and disposal, and human contributions to system effectiveness, including human error and human resilience in recovering from system failures
	- the business implications of any human element issue	Test (computer or written), interview	Include usability and human element activities as part of the business strategy

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Finance director (person responsible for financial planning and control in a shipping company) **Human element best practices (continued)**			Ensure that business management sets demands on usability for ship operations Ensure that business management is interested in how the usability of their ship operations compares to that of competitors Ensure that senior management directly control the funds to maintain/improve user-centred design skills, resources, technology, awareness and culture Establish through-life cost accounting in order to assess the costs and benefits of a user-centred approach regarding the operation of future systems in their expected context Provide human element data and advice to purchasing processes in general Provide and review human element aspects of investment appraisals, cost effectiveness analyses, business cases and high-level metrics or other financial performance indicators Use through-life and other suitable total cost models as part of financial analysis

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
The underwriter (Hull or P&I) **Human element best practices**	**Fully understand:**		
	- the importance of the human element in the mitigation of risk	Test (computer or written), interview	Understand the client's approach to business in particular how they address human-system issues
	- the need for safe, sustainable and dependable shipping	Test (computer or written), interview	
	- that human failure is a leading cause of total and partial losses of vessels and of the valuable cargoes they carry	Test (computer or written), interview	
	- that the human element in shipping operations and its impact on risk is critical	Test (computer or written), interview	Work with clients in managing and embracing all risks
	- the need for underwriters and surveyors to be knowledgeable about how the transportation supply chain works	Test (computer or written), interview	Ensure that underwriters, loss control professionals and surveyors who assume and manage the risks associated with international trade are properly trained and have the appropriate experience to carry out their duties
	- the need for underwriters and surveyors to have a practical understanding of the standard operating procedures applied by the vessels/owners they insure/survey to fully appreciate and evaluate constantly evolving risks	Test (computer or written), interview	Identify human-system risks and seek to avoid them Encourage risk reduction through ergonomic design
	- the need to assess crew and office management to ensure that shipowners are entrusting their vessels to quality seafarers	Test (computer or written), interview	Highlight human element issues when assessing and prioritising risk, when raising awareness of the threats that can lead to insurance claims, and when determining what controls should be in place to reduce such claims.
	- the importance of the crew matrix in assessing risk	Test (computer or written), interview	Establish whether the ship is manned by owner's crew or a third party manager's crew; is the ship manned down to the safe manning certificate or at a more sensible level; cultural mix and age profiles Be prepared to filter out unsuitable ships

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P&I Claims Directors/Claims executives **Human element best practices**	**Fully understand the need:**		
	- for safe, sustainable and dependable shipping	Test (computer or written), interview	
	- to accurately assess the human element aspects of claims for full assessment and processing into loss prevention guidance	Test (computer or written), interview	Consider and promote continuous improvement in human element skills and knowledge within their own and appointed survey companies
	- to raise the awareness of the human element issues relating to accidents	Test (computer or written), interview	Develop appropriate human element guidance material and tools for members and appointed survey companies
	- to provide contemporaneous advice on current claims trends	Interview, evidence	Check for adequate procedures and if there is any evidence they are being followed and logged. Encourage risk reduction through ergonomic design Prioritise the high risk areas from claims through analysis, and determine what the threats are that cause these claims
	- to develop loss prevention programmes for individual shipowners, for members and for the shipping industry as a whole	Interview, evidence	Focus on the high-risk threats which cause P&I claims and the controls that have failed to contain some of the threats; and on the effectiveness of controls to mitigate the consequences Whenever there has been an accident, identify who did what, why and with what consequences Claims executives should be aware of the positive side of the human element so they can help the owner mitigate either at the sharp end and/or when in court trying to prove the owner was trying his best

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Brokers (Cargo, Hull, P&I) **Human element best practices**	**Fully understand the need:** - for safe, sustainable and dependable shipping	Test (computer or written), interview	Ensure that the ship and its crew are 'fit for purpose'
	- select quality and vetted ships, across the market	Interview, evidence	Ensure that the ship is properly equipped and 'fit for the crew'
	- to address people's needs and abilities to enhance utilisation, quality and efficiency; providing cost effective solutions and reducing the likelihood that systems, products or services will be rejected by their users	Interview, evidence	
Charterers	**Fully understand the need:**		
	- for safe, sustainable and dependable shipping	Test (computer or written), interview	Encourage socially responsible investment through the consideration of the human element in the balance between economic, social and environmental considerations
	- to address people's needs and abilities to enhance utilisation, quality and efficiency; providing cost effective solutions and reducing the likelihood that systems, products or services will be rejected by their users	Interview, evidence	Consider human element effects on tasks, jobs, products, tools, equipment, systems, organizations, services, facilities and environments which are better for human health and well-being Ensure that the client takes responsibility for the impact of the organisation's activities upon its employees, its customers, the community and the environment
	- to filter out unsuitable shipping	Interview, evidence	Ensure that best practices are applied and that the selected vessel is 'fit for purpose', properly equipped and 'fit for the crew'

5.Health, Safety, Security, Environmental, Quality (HSSEQ)

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Human element best practices	**Understand**:		
	- what it means to live and work at sea	Familiarisation trip to sea; written report	Identify problematic areas e.g. isolation, communication challenges, team working
	- cultural and religious differences of multinational crews	Test (computer or written), interview	Describe culture and religious challenges associated with staff within area of responsibility
	- the need to promote a company culture	Interview, observation	Enact the values of the organisation (e.g. walk the talk)
	Have a professional knowledge of:		
	- current HSSEQ practices	Observation	Demonstrate knowledge of current HSSEQ practices – e.g. good practice guides, ISO9001 etc
	- welfare issues	Interview	Describe welfare challenges associated with staff in area of responsibility Demonstrate empathy towards staff and their families
	Understand underlying human factors in the accident investigation process	Interview, observation	Recommended reading: *MAIIF Investigators Manual* (http://www.maiif.org/index.php/investigators-manual)
	Understand how human factors influence HSSEQ during training, drills, meetings, inspections, audits, surveys, projects and claims	Interview, role play, work-based evidence	

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Knowledge of conventions, resolutions, rules and regulations	**Ensure compliance with**:		
	- relevant Maritime conventions, e.g. SOLAS, STCW, MLC, ISM Code other conventions and resolutions	Interview, assessment	Demonstrate knowledge of maritime conventions relevant to the human element
	- current and emerging legislation in relation to the human element issued by, e.g. ILO, IMO, WHO, Flag State	Interview, assessment	Demonstrate knowledge of current and emerging legislation as relevant to the human element
	- international and national employment laws	Interview, assessment	Demonstrate knowledge of international and national employment laws as relevant to the human element
	- the principles of safe manning	Interview, assessment	Demonstrate knowledge of the principles of safe manning considerations as relevant to the human element. Recommended reading: *A Rough Guide to interpreting the Principles of Safe Manning* (**Alert!** he01125)
	Understand:		
	- international industry standards, e.g.: ISO9001, OHSAS 18001, ISPS	Interview	Locate relevant information and demonstrate knowledge on specific human element issues
	– national industry standards, e.g.: Flag State requirements	Interview	Locate relevant information and demonstrate knowledge on specific human element issues
	– Best Practice guidelines (in specific sectors) appropriate to the HSSEQ function	Interview	Locate relevant information and demonstrate knowledge on sector specific human element best practice guidelines
Knowledge about the tasks to be performed	**Understand**:		
	- the need to actively consider human-related risks in the Risk Assessment process	Records, interview	Locate appropriate HSSEQ risk assessment records Demonstrate an understanding of the human-related risks associated with HSSEQ

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Knowledge about the tasks to be performed	**Understand**:		
	- the need to ensure that changes to procedures working practices, equipment and systems are based on an explicit understanding of users, their abilities, their expected work and the working environment	Interview	Locate and demonstrate examples of organisational changes incorporating consideration of the human element
	- how human factors can affect systems performance and reliability, and be able to mitigate the effects	Work-based evidence	Locate appropriate documentation and demonstrate strategic planning for continuous performance of staff
	Demonstrate ability to:		
	- identify and monitor the competencies of the staff in area of responsibility	Interview, records	Locate appropriate documentation and demonstrate knowledge of performance monitoring processes
	- identify HSSEQ training needs in area of responsibility	Records	
	- define, deliver and implement HSSEQ solutions with the human element in mind for: training, drills, meetings, inspections, audits, surveys, projects, claims	Interview, role play, work-based evidence	
	- define, manage, and communicate HSSEQ change		
	- define, implement and manage the continuous performance of staff, e.g.: appraisals , promotions, succession planning		Provide appropriate performance monitoring documentation for staff under area of responsibility
Knowledge of human behaviour	**Understand** human performance influencing factors, e.g. workload, stress, fatigue, emotion, family issues, grievances, etc.	Interview	Demonstrate knowledge of performance influencing factors and how these can impact on staff under area of responsibility. Recommended reading: *Exploring Human Factors* (**Alert!** Issue No.2 Centrespread)
	Ability to recognise and manage human element issues in staff – e.g. stress, fatigue, emotion, family issues, grievances, work life balance etc.	Records, interview	Locate appropriate documentation Demonstrate corrective action

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Knowledge of human behaviour	**Understand** the need for, and ability to, communicate effectively by: - selecting appropriate methods of communication - using closed loop communication - mitigating linguistic challenges in a multi-culture environment - actively listening and allowing feedback	Interview, 360° feedback, observation	Demonstrate understanding and provide examples of effective communication
	Ability to mentor, motivate and inspire staff	360° feedback, observation	Demonstrates appropriate behaviour in the workplace
	Ability to understand team dynamics and team working in relation to HSSEQ	Observation	

6.HR Director, HR Manager, Personnel Officer

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Knowledge of conventions, resolutions, rules and regulations	**Be fully conversant with and fully understand the need to implement:**		
	- pertinent IMO, ILO, WHO and other regional instruments relevant to the human element and particularly the HR function	Test (computer or written), interview	Demonstrate knowledge of maritime conventions and resolutions relevant to the human element
	- international codes, guidelines and standards in the context of SOLAS 1974 (as amended), STCW 1978 (as amended), and MARPOL 73/78 (as amended) and the ILO Maritime Labour Convention 2006 (MLC 2006)	Test (computer or written), interview	Demonstrate knowledge of pertinent international codes, guidelines and standards
	- other regional instruments relevant to maritime safety and protection of the marine environment	Test (computer or written), interview	Demonstrate knowledge of current and emerging legislation relevant to the human element
	- Company regulations relevant to the HR management of seafarers	Test (computer or written), interview	Demonstrate knowledge of Company regulations relevant to the HR management of shore staff and ships' crews
	- international and national employment laws	Test (computer or written), interview	Demonstrate knowledge of international and national employment laws
	- the IMO Principles of Minimum Safe Manning	Practical example	Demonstrate knowledge of the IMO Principles of Minimum Safe Manning
Human element best practices	**Be fully conversant with** human element best practice guidelines	Interview	*The Human Element Best Practice for Ship Operators* (The Lloyd's Register Group) Locate relevant information and demonstrate knowledge on sector specific human element best practice guidelines

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	Fully understand:		
	- what it means to live and work at sea	Familiarisation trip to sea, written report, interview	Identify problematic areas e.g. isolation, communication challenges, team working
	- international maritime context (political, economic, environmental, geographical, socio-technical)	Test (computer or written), interview	Describe political, economic, environmental, geographical and socio-technical challenges associated with ships' areas of operation
	- cultural and religious differences with respect to multi-national crewing	Test (computer or written), interview	Describe cultural and religious challenges associated with seafarers within area of responsibility
	- the need to promote a company culture	Observation	Observed to enact the values of the organisation (e.g. *walk the talk*)
	Demonstrate a professional knowledge of:		
	- current HR practices, such as recruitment, selection, promotion, appraisal and competency management systems as they apply to the seafarer community	Observation Certification	Hold a relevant HR qualification
	- welfare issues, as they apply to the seafarer community	Interview Observation	Describe the welfare challenges associated with seafarers in area of responsibility Demonstrate empathy towards seafarers and their families
Human Resources knowledge	**Demonstrate ability to**:		
	- define, implement and monitor a human resources strategy	Record Interview	Locate and describe appropriate documentation
	- define and implement a competency standards matrix	Record Interview	Locate and describe appropriate documentation (for both technical and non-technical competencies)
	- define crewing solutions and delivery plans	Record Interview	Locate and describe appropriate documentation

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	- define, manage, and communicate organisational change, evaluate operational solutions and obtain feedback	Record Observation	Locate appropriate documentation and describe the method for implementing and communicating organisational change
	- understand the human element considerations associated with crew rotations, and consider these in planning	Interview	Communicate effectively with staff in line with organisational change plans
	- develop relationships with seafarers and their families	Interview Records	Locate and demonstrate the crew rotation system & describe the necessary considerations associated with planning crew rotations
	- manage crew change logistics taking into consideration all aspects, e.g. immigration, customs, time to reach destination, fatigue etc.	Interview	Demonstrate knowledge of seafarers and their families under area of responsibility
	- define, implement and manage the continuous performance of seafarers with respect to selection, recruitment, appraisals, promotions, succession planning & exit interviews	Interview Records	Describe the necessary considerations associated with crew change logistics Locate appropriate documentation and demonstrate strategic planning for continuous performance of seafarers
	Demonstrate the ability to recognise and manage human element issues in seafarers, e.g. stress, fatigue, emotion, family issues, grievances, work life balance	Interview Records	Locate appropriate documentation and demonstrate knowledge of performance monitoring processes Provide appropriate performance monitoring documentation for seafarers under area of responsibility Demonstrate knowledge of performance influencing factors and how these can impact on seafarers under area of responsibility Locate appropriate documentation Demonstrate corrective action

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	Understand the need for communication and the ability to communicate effectively	Interview	Demonstrate understanding and provide examples of effective communication Select appropriate methods of communication Closed loop communication Mitigate linguistic challenges in multi-cultural environment Active listening
	Demonstrate the ability to mentor, motivate and inspire staff	360° feedback Observation	Demonstrate appropriate behaviour in the workplace

7.Operations

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
SHIP OPERATORS (OWNERS, MANAGERS), MASTER & SENIOR OFFICERS **Knowledge of conventions, resolutions, rules and regulations**	**Be fully conversant with and fully understand** the need to implement: - pertinent IMO, ILO, WHO and other regional instruments relevant to maritime safety and protection of the marine environment - international codes, guidelines and standards in the context of SOLAS 1974 (as amended), STCW 1978 (as amended), the International Regulations for Preventing Collisions at Sea, 1972 (as amended), IHR 2005, and MARPOL 74/78 (as amended) and the ILO Maritime Labour Convention 2006 (MLC 2006) - other regional instruments relevant to maritime safety and protection of the marine environment - Company regulations relevant to the safe conduct of the ship, the safe and timely delivery of its cargo and the health, safety and wellbeing of the crew - measures to prevent/suppress terrorism against ships and to improve security aboard and ashore, in accordance with the ISPS Code	Test (computer or written), interview	

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
SHIP OPERATORS **Human element best practices**	**Fully understand the need to**: - promote and manage human element activities to reflect the needs of safe and effective operation, and provide the necessary resources - facilitate information feedback, exchange and other communication about human element issues, in required formats - establish a focus on human element issues (including usability, health and safety) in those aspects of shipping operations that deal with the business strategy (current and future), markets, options for future operations and planning their concept - effectively involve and consult crew and support staff on each significant aspect of the ship and its systems in order to improve its usability, health and safety, or performance - include human element issues in decision making, trade-off and risk management studies, in order to mitigate the risk to safe and effective ship and company operation - take account of the human element in the acquisition, supply and operation of systems and the management of services - ensure that human element issues arising from the operation, support and maintenance of the ship and its systems are given sufficient attention	Test (computer or written), interview	Recommended reading: The Human Element Best Practice for Ship Operators - The Lloyd's Register Group Demonstrate that task descriptions of actual work on board correspond to company procedures and checklists Make sure that any data collected is relevant and analysis of it is planned, as is the feedback loop Pull together a team with relevant representatives, 'gel' the group and demonstrate the intended process Demonstrate a process that can take account of new build or retrofit changes Involve the right crew and ask the right questions, based on task or mission analysis Involve a HF expert as appropriate Ensure a blame-free culture Demonstrate that data collected is properly addressed

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	- ensure that the human element is given sufficient attention throughout the introduction and validation of an operation		ATOMOS templates FSA+HE analysis
Human element best practices	**Fully understand the need to**:		
	- ensure that modifications to the ship and its equipment take account of human element issues identified in service, and that the human element is managed during major work originating from the company office		Demonstrate a process that can take account of new build or retrofit changes – involving the right crew and asking the right questions – based on task or mission analysis SOLAS V Regulation 15 - Principles relating to bridge design, design and arrangement of navigational systems and equipment and bridge procedures; MSC/Circ.834 - Guidelines for Engine-Room Layout, Design and Arrangement; MLC 2006; MSC/Circ.982 - Guidelines on ergonomic criteria for bridge equipment and layout; MSC.64(67) - Performance standards for IBS; MSC.86(70) Performance standards for INS
	- achieve safe and effective operation in the most timely and cost-effective manner by provision of the correct number of competent crew and support staff		Demonstrate knowledge of work/job design and teamwork, and group psychology Understand the implications of IMO Resolution A.1047(27) - Principles of Minimum Safe Manning
	- operate an HR strategy based on the company business objectives that includes a mechanism for recording and implementing lessons learnt		Show willingness to participate and how work is performed
	- identify the changes to existing staffing and personnel resources and skill demands imposed by planned operations and predict staff availability over planned future developments		Use of Best Practice Indicators (BPIs) to demonstrate HE best practices (The Human Element Best Practice for Ship Operators - The Lloyd's Register Group)
	- deliver individual and collective training solutions reconciled to the requirements of safe and effective ship operations		Identify user needs as opposed to user wants

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Human element best practices	**Fully understand the need to**: - provide data on ship operations in order to improve staffing provision and deployment, ship and system design, and operational deployment - check usability of a system, by selecting and applying appropriate practices that use human element data - establish, clarify and communicate the characteristics of the users, their tasks and the technical, organisational and physical environment in a system will operate - establish, clarify and communicate the requirements of the users of a system - ensure that the design options for any product system of work take account of the human element - ensure that feedback on the evaluation of the aspects of a system related to its use or users is collected and reported		Demonstrate comparison between task analysis and actual operations – critically review discrepancies and suggest revisions
Knowledge about safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment	**Fully understand the need to recognise:** - the importance of safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment, in particular to the marine environment and to property, in accordance with the requirements of the ISM Code - the Master's responsibility with regard to: implementing the safety and environmental-protection policy of the Company; motivating the crew in the observation of that policy; issuing appropriate orders and instructions in a clear and simple manner; verifying that specified requirements are	ISM audits ISM audits	Properly Implementing the ISM Code, taking into account the human element Properly Implementing the ISM Code, taking into account the human element

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	observed; and reviewing the safety management system and reporting its deficiencies to the shore-based management		
	- that the master has the overriding authority and the responsibility to make decisions with respect to safety and pollution prevention and to request the Company's assistance as may be necessary	ISM audits	Properly Implementing the ISM Code, taking into account the human element
MASTER **Knowledge about safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment**	**Fully understand the need to recognise:** - the importance of properly addressing the human element for safety of life at sea, prevention of human injury or loss of life, and avoidance of damage to the marine environment and to property, in accordance with the requirements of the ISM Code	ISM audits	Implementing the ISM Code
	- his/her responsibilities with regard to implementing the SMS; motivating the crew in the observation of that policy; issuing appropriate orders and instructions in a clear and simple manner; verifying that specified requirements are observed; and reviewing the safety management system and reporting its deficiencies to shore-based management	ISM audits	Implementing the ISM Code
	- that he/she has the overriding authority and the responsibility to make decisions with respect to safety and pollution prevention and to request the Company's assistance as may be necessary	ISM audits	Implementing the ISM Code
	- new crew members are made familiar with their duties	ISM audits	Implementing the ISM Code

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
MASTER			
Knowledge about safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment	**Fully understand the need to ensure that**:		
	- the ship is manned with qualified, certificated and medically fit seafarers in accordance with national and international requirements	ISM audits	Implementing the ISM Code
	- new crew members are made familiar with their duties	ISM audits	Implementing the ISM Code
	Fully understand the need to ensure that:		
	- instructions, which are essential to be provided prior to sailing are identified, documented and given	ISM audits	Implementing the ISM Code
	- appropriate training is provided for all crew members	ISM audits	Implementing the ISM Code
	- relevant information is provided in (a) language(s) understood by crew members	ISM audits	Implementing the ISM Code
	- crew members are able to communicate effectively	ISM audits	Implementing the ISM Code
	- plans and instructions for key shipboard operations are available; tasks involved are defined and assigned to qualified crew members	ISM audits	Implementing the ISM Code
	- procedures are in place to identify, describe and respond to potential emergency shipboard situations	ISM audits	Implementing the ISM Code
	- programmes are established for drills and exercises to prepare for emergency actions	ISM audits	Implementing the ISM Code
	- the ship can respond at any time to hazards, accidents and emergency situations	ISM audits	Implementing the ISM Code

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	Fully understand the need to ensure that:		
	- non-conformities, accidents and hazardous situations are investigated and reported to the Company; timely corrective action is taken	ISM audits	Implementing the ISM Code
	- all documents and data relevant to the SMS are properly controlled	ISM audits	Implementing the ISM Code
	- valid documents are available on board; changes to documents are reviewed and approved by authorized personnel; obsolete documents are promptly removed	ISM audits	Implementing the ISM Code
	- the Safety Management Manual is kept in a form that the Company considers most effective, and that all documentation relevant to the ship is carried on board	ISM audits	Implementing the ISM Code
MASTER **Human element best practices**	**Fully understand the need to ensure that**:		
	- ships' crews are effectively involved and consulted on each significant aspect of the ship and its systems so as to improve its usability, health and safety, or performance	Audit	Use of Best Practice Indicators (BPIs) to demonstrate HE best practices (The Human Element Best Practice for Ship Operators - The Lloyd's Register Group)
	- communication between the crew and other stakeholders is effective	Audit	
	- the crew are aware of human element issues, are involved in the feedback process and are notified of changes made to design, operation, training or manning as a result of their input	Audit	
	- the crew competencies required to operate and support the ship and its systems are identified and continuously reviewed over time	Audit	

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	Fully understand the need to ensure that:		
	- ship maintenance and maintainability requirements for support are met by the ship and its systems	Audit	
	- the overall performance of the ships and their systems is consistent with required capability	Audit	
	- he/she works together with operations staff to achieve the objectives of the organisation	Audit	
	- the principles relating to bridge design, design and arrangement of navigational systems and equipment and bridge procedures (as appropriate) are complied with	Audit	SOLAS V Regulation 15 - Principles relating to bridge design, design and arrangement of navigational systems and equipment and bridge procedures; MSC/Circ.834 - Guidelines for Engine-Room Layout, Design and Arrangement; MLC 2006; MSC/Circ.982 - Guidelines on ergonomic criteria for bridge equipment and layout; MSC.64(67) - Performance standards for IBS; MSC.86(70) Performance standards for INS
SENIOR OFFICERS **Knowledge about safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment**	**Fully understand the need to ensure that:** - all crew members are fully conversant with the Company's SMS and it is properly implemented	ISM audits	Implementing the ISM Code Ensure awareness of the need for, and method of, implementing a sound reporting culture and blame-free culture
	- all crew members are aware of the identify and role of the DPA	ISM audits	Implementing the ISM Code
	- new crew members are familiar with their duties	ISM audits	Implementing the ISM Code
	- all crew members have an adequate understanding of relevant rules, regulations, codes and guidelines	ISM audits	Implementing the ISM Code Check employee satisfaction

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	Fully understand the need to ensure that:		
	- non-conformities, accidents and hazardous situations are reported in accordance with the SMS	ISM audits	Implementing the ISM Code If possible involve crew in process
	- the ship is maintained in conformity with the provisions of relevant rules and regulations and Company instructions	ISM audits	Implementing the ISM Code
	- the results of audits and reviews are brought to the attention of crew members; timely corrective action is taken on deficiencies	ISM audits	Implementing the ISM Code
	- crew members are involved and consulted on each significant aspect of the ship and its systems to improve usability, health and safety or performance; crew feedback is widespread and effective	ISM audits	Implementing the ISM Code
	- crew members are aware of human element issues, and of the changes made as a result of their input	ISM audits	Implementing the ISM Code
BRIDGE TEAM **Knowledge about safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment**	**Be fully conversant with and understand the need to comply with:**		
	- the provisions of the International Regulations for Preventing Collisions at Sea, 1972 (as amended)	Regular testing, simulation	Convention on the International Regulations for Preventing Collisions at Sea 1972 (as amended)
	- the appropriate provisions of MARPOL 74/78 (as amended)	Test (computer or written), interview	International Convention for the Prevention of Pollution from Ships and subsequent protocols
	- the principles of Bridge Resource Management, including the involvement of the pilot when appropriate	Onboard continuation training, navigational audits	ISF Bridge Procedures Guide
	- procedures for responding to system failures and emergency situations	Onboard continuation training, navigational audits	ISF Bridge Procedures Guide

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	- the principles relating to bridge design, design and arrangement of navigational systems and equipment and bridge procedures (as appropriate)	Test (computer or written), interview	Knowledge of SOLAS V Regulation 15 - Principles relating to bridge design, design and arrangement of navigational systems and equipment and bridge procedures
ENGINEERING TEAM **Knowledge about safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment**	**Be fully conversant with and understand the need to comply with:**		
	- **t**he appropriate provisions of MARPOL 74/78 (as amended)	Test (computer or written), interview	Knowledge of The International Convention for the Prevention of Pollution from Ships and subsequent protocols
	- the principles of Ship Resource Management	Onboard continuation training, engineering audits	
	- procedures for responding to system failures and emergency situations	Onboard continuation training, engineering audits	

8.Surveyors & Inspectors

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
ALL SURVEYORS AND INSPECTORS **Awareness of the human element**	**Have a knowledge of:** - what is meant by the human element - the benefits of addressing the human element in shipping - the impact of changes in the marine industry on people - the regulatory expectations with respect to the human element - the human aspects in ship design	Test (computer or written), interview CBT, with evaluation	Demonstrate an understanding of: - context of use analysis in design evaluation - the nature of work systems and socio-technical systems - the people aspects of systems design - human error prevention - the current fragmented state of regulation, and the implications for the human element - the impact of changes to the sector e.g. new technology, the changing seafarer population - the use of product, performance and process characteristics in specifying and assessing human-systems - the need for a human-centred design approach

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
PLAN APPROVAL SURVEYORS **Meeting ergonomic requirements in the design of the ship and its systems**	**Be fully aware of** the need: - to consider users in design - for design documentation to contain human element information **Have a knowledge of**: - human element hazards and risks related to the structural arrangements, physical layout, systems and control, equipment and environment aspects - human factors methods and techniques and when to ask for expert advice - the methods and techniques for assessing design documentation related to the human element in design - regulations, standards and guidance for the human element - the information required to perform an assessment of ergonomics in design - the hazards and risks associated with lack of ergonomic thinking in the design process - human element criteria and procedures for assessment of rule requirements	Test (computer or written), interview Practical examples CBT, with evaluation	Demonstrate an understanding of: - operational concept - task design - HRA/EHFA - standards for the human element - sources of specialist advice - specific Rule requirements - implied Rule requirements - regulatory requirements that affect Survey - tools and methods Explain the use of relevant plans and documentation Demonstrate an understanding of: - the project evidence approach - the evaluation approach - when to contact an ergonomics specialist for assistance

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
FIELD SURVEYORS (Class, Flag, Vetting, PSC) **Applying ergonomic design principles**	**Have a knowledge of**: - ergonomics in the design of ships and ship systems - relevant design and plan approval documentation and guidance - usability evaluation methods	Test (computer or written), interview Practical examples CBT, with evaluation	Demonstrate an understanding of: - good and bad practices in design with respect to ergonomics and usability - the hazards and risks associated with lack of ergonomics in the design and installation of: access and egress' layout, noise and vibration management, heating and ventilation, lighting - physical hazards (rotating machinery, falls from height, etc.) - basic usability evaluation, including: identifying users and their tasks, informal usability evaluation, reporting the results of a simple usability evaluation
AUDITORS (ISM, ISPS, MLC etc.) **Identifying human element issues**	**Have a knowledge of**: - Human-system and human element issues with respect to the effect of work, the working environment and living conditions on the health, safety and wellbeing of the person - the rights of every seafarer to fair terms of employment, decent working and living conditions on board ship, and to health protection, medical care, welfare measures and other forms of social protection - Work, work-systems procedures, organisational behaviours and dynamics, task analysis, fatigue, etc. - Manning levels (both minimum safe and optimal)	Test (computer or written), interview Practical examples CBT, with evaluation	Identify human element issues with respect to: manning, personnel, training, social and organisational, system safety and OHS Demonstrate the ability to: - maintain knowledge in the human element, be aware of the diversity and value of knowledge about the human element and be able to apply this knowledge in discussions with clients, in the preparation of study reports and to a client's capability improvement - detect conflicts between safety and security - determine the effects of external interventions on general wellbeing To include an understanding of HEAT-S

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
FORENSIC/LOSS SURVEYORS (cargo, damage, accident investigation) **Identifying human factor/human error issues**	**Have a knowledge of:** - how mismatches between system requirements and human capacity could cause or contribute to an occurrence - safety hazard (engineering, administration and personal protection) mitigation strategies that result in conditions that are likely to exceed human operational capacity, or reinforce behavioural risk adaptation - sources of data relating specifically to human factors - data gathering models - human performance influencing factors - the concepts of usability and context of use - human error classification - cognitive interviewing techniques - the physiological bases of alertness and fatigue and of how fatigue affects performance - cultural differences and the sub-cultures that may be on board a ship, particularly those with multi-national crewing	Test (computer or written), interview Practical examples CBT, with evaluation	Demonstrate an understanding of the difference between human error and human factors and the effects of context of use on the usability of equipment and systems Demonstrate how to determine the type and quality of data to be collected and reviewed with respect to: - Primary sources relating to human factors including: hardware evidence, paper documentation, voyage data recorders, marine communications, traffic services and recordings, Interviews, direct observation of marine personnel activities and simulations, and factual information - Secondary sources including: marine occurrence databases, reference literature and human factors/ergonomics professionals, psychologists, medical practitioners and sociologists etc. Describe the possible error mechanisms (human error types or modes) Demonstrate an understanding of: - the basic concepts of sleep and fatigue - common fatigue-related performance effects - terms such as fatigue, sleep debt, circadian rhythm etc.

9.Technical

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Technical Directors, Superintendents & Chief Engineers **Knowledge of conventions, resolutions, rules and regulations**	**Be fully conversant with and fully understand the need to implement**: - pertinent IMO, ILO, WHO and other regional instruments relevant to maritime safety and protection of the marine environment - international codes, guidelines and standards in the context of SOLAS 1974 (as amended), STCW 1978 (as amended), and MARPOL 73/78 (as amended) - the provisions of the ILO Maritime Labour convention 2006 (MLC, 2006) - other regional instruments relevant to maritime safety and protection of the marine environment - IMO Guidelines for Engine-Room Layout, Design and Arrangement (MSC/Circ.834), as appropriate - Company regulations relevant to the safe conduct of the ship, the safe and timely delivery of its cargo and the health, safety and wellbeing of the crew	Test (computer or written), interview	

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Superintendents **Human element best practices**	**Fully understand the need to**: - take account of the human element in the acquisition, supply and operation of systems and the management of services - include human element issues in decision making, trade-off and risk management studies, in order to mitigate the risk to safe and effective ship and company operation - Ensure that human element issues arising from the technical operation, support and maintenance of the ship and its systems are given sufficient attention - Give sufficient attention to the human element throughout the introduction and validation of a new system	Test (computer or written), interview	Recommended reading: The Human Element Best Practice for Ship Operators - The Lloyd's Register Group Demonstrate knowledge about decision making processes and cognitive ergonomics Have a strategy of how to evaluate blueprints and design with regards to the work environment and ergonomics Facilitate information feedback, exchange and other communication about human element issues, including the provision of human element data in standard formats Make sure that any data collected is relevant and analysis of it is planned, as is the feedback loo Pull together a team with relevant representatives, 'gel' the group and demonstrate the intended process (cf UCD) Demonstrate a process that can take account of new build or retrofit changes– involving the right crew and asking the right questions – based on task or mission analysis? Be aware of the need to involve a HF expert in meetings where this is discussed Show knowledge of work/job design and teamwork, and group psychology. Show comparison between task analysis and actual operations – critically review discrepancies and suggest revisions… Show willingness to participate and how work is performed, collect user needs as opposed to user wants

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Chief Engineer **Human element best practices**	**Recognise**: - the importance of properly addressing the human element in the provision of a safe, efficient, effective and acceptable working environment	Interview, observation	Demonstrate responsibilities with regard to the scope and use of the safety and work management systems
	- the importance of safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment, in particular to the marine environment and to property, in accordance with the requirements of the ISM Code	Safety audit	Motivate the crew in the observation of the policy Plan work, issuing appropriate orders and instructions in a clear and simple manner
	- the overall performance of the ships and their systems is consistent with required capability	Engineering audit	Ensure that specified requirements are observed
	- ship maintenance and maintainability requirements for support are met by the ship and its systems in conformity with the provisions of relevant rules and regulations and Company instructions	ISM audit Engineering audit	Implementing the ISM Code
	- crew are effectively involved and consulted on each significant aspect of the ship and its systems so as to improve its usability, health and safety, or performance and are notified of changes made to design, operation, training or manning as a result of their input	Engineering audit	Show that task descriptions of actual work on board correspond to procedures and checklists (from company)
	- the technical officers, ratings and officer trainees are aware of human element issues and are engaged in the feedback process	Engineering audit	

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Chief Engineer/Technical Officers			
Knowledge about safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment	**Be fully conversant with and fully understand the need to implement** the ISM Code as it pertains to the Technical Department	ISM audits	Implementing the ISM Code Awareness of the need for a blame free culture and methods for a sound reporting culture
	Be fully conversant with and fully understand the need to implement:		
	- the provisions of MARPOL 73/78 (as amended)	Interview, observation	
	- other regional instruments relevant to maritime safety and protection of the marine environment	Interview, observation	
	- Company regulations relevant to the safe conduct of the ship, the safe and timely delivery of its cargo and the health, safety and wellbeing of the crew	Interview, observation	
	- the principles of Engine Room Resource Management, safe working and ergonomics	Interview, observation	
	- procedures for responding to system failures and emergency situations	Interview, observation	Onboard continuation training
	- the importance of properly addressing the human element in the provision of a safe, efficient, effective and acceptable working environment	Safety audit	