

Assessment Guidelines for Able Seafarer-Engine

Standard of competence

Every candidate for certification as Able Seafarer-Engine (AS-E) must provide evidence of having achieved the required standard of competence as specified in Table A-III/5 of the STCW Code (46 CFR 12.607(a)(4)). The table below is adopted from Table A-III/5 of the STCW Code (found in Enclosure (4)) to assist the candidate and assessor in the demonstration of competency.

Practical Skill demonstrations

These assessment guidelines establish the conditions under which the assessment will occur, the performance or behavior the candidate is to demonstrate, and the standards against which the performance is measured.

Qualified Assessors

A shipboard Qualified Assessor (QA) who witnesses a practical demonstration may sign the appropriate blocks and pages in the Record of Assessment in Enclosure (3) or an equivalent record. All assessments must be signed by a qualified assessor approved by the Coast Guard in accordance with 46 CFR 10.405. In order to facilitate the transition to this new requirement, the Coast Guard will accept assessments that have been demonstrated in the presence of and signed by an assessor who has not been Coast Guard approved until December 31, 2016, provided that the assessor meets the professional requirements in 46 CFR 10.405(a)(3) to assess competence for the specific endorsement. Assessors must be in possession of the level of endorsement, or other professional credential, which provides proof that he or she has attained a level of experience and qualification equal or superior to the relevant level of knowledge, skills, and abilities to be assessed (46 CFR 10.405(a)(3)). In the interim, the Coast Guard will accept assessments signed by mariners who hold an appropriate national endorsement and have at least 1 year of experience as officer in charge of an engineering watch (OICEW) on seagoing vessels of the applicable propulsion mode(s) of at least 1,000 HP (750 kW). After December 31, 2016, QAs must be approved by the National Maritime Center to conduct the assessment (46 CFR 10.405).

Notes

RFPEW The assessments are met by holding or qualifying for an STCW endorsement as Rating Forming Part of an Engineering Watch (RFPEW).

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1.1.A <i>RFPEW</i>	Contribute to a safe engineering watch	Ability to understand orders and to communicate with the officer of the watch in matters relevant to watch keeping duties			This KUP is demonstrated by holding or qualifying for an endorsement as RFPEW.
1.2.A <i>RFPEW</i>	Contribute to a safe engineering watch	Procedures for the relief, maintenance and handover of a watch			This KUP is demonstrated by holding or qualifying for an endorsement as RFPEW.
1.3.A <i>RFPEW</i>	Contribute to a safe engineering watch	Information required to maintain a safe watch			This KUP is demonstrated by holding or qualifying for an endorsement as RFPEW.
2.1.A <i>RFPEW</i>	Contribute to the monitoring and controlling of an engine-room watch	Basic knowledge of the function and operation of main propulsion and auxiliary machinery			This KUP is demonstrated by holding or qualifying for an endorsement as RFPEW.
2.2.A <i>RFPEW</i>	Contribute to the monitoring and controlling of an engine-room watch	Basic understanding of main propulsion and auxiliary machinery control pressures, temperature and levels			This KUP is demonstrated by holding or qualifying for an endorsement as RFPEW.

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3.1.A	Contribute to fueling and oil transfer operations	<p>Knowledge of the function and operation of fuel system and oil transfer operations, including:</p> <p>.1 preparations for fuelling and transfer operations</p> <p>.2 procedures for connecting and disconnecting fuelling and transfer hoses</p> <p>.3 procedures relating to incidents that may arise during fuelling or transferring operation</p> <p>.4 securing from fuelling and transfer operations</p> <p>.5 ability to correctly measure and report tank levels</p>	On a vessel or in a laboratory or workshop, given a fueling or transfer system,	the candidate assists the engineering officer with the operation of the function and operation of fuel system and oil transfer operations.	<p>The candidate:</p> <ol style="list-style-type: none"> 1. Describes ship’s bunker piping valves, tanks, and capacities; 2. Lines up the filling and transfer system properly; 3. Ensures that the proper hoses are used; 4. Ensures that any catchments are properly maintained, prepared and/or secured; 5. Observes normal pollution abatement policies including plugging scuppers, drip pans under all fuel oil vent; 6. Ensures that the hoses are secured properly to the shipboard flanges at the shipboard bunkering station; 7. Assists in taking samples for testing before taking on fuel; 8. Takes on fuel properly; 9. Secures the fuel oil fill and transfer system after the task is complete; 10. Observes all MARPOL recommendations for proper bunker procedures; 11. Sounds tanks and uses remote operating fuel gauges to accurately measure fuel oil tank levels; 12. Uses sounding equipment to measure change in tank level and rate of tank level; and 13. Assists to complete the relevant entries in the oil record book.

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4.1.A	Contribute to bilge and ballast operations	Knowledge of the safe function, operation and maintenance of the bilge and ballast systems, including: .1 reporting incidents associated with transfer operations .2 ability to correctly measure and report tank levels	On a vessel or in a laboratory or workshop, given a bilge and ballast system,	the candidate assists the officer on watch with the operation of the bilge and ballast system in accordance with good engineering principles.	The candidate: <ol style="list-style-type: none"> 1. Correctly lines up the engineroom bilge system; 2. Assists in monitoring pressures and tank levels during pumping; 3. Assists to complete the relevant entries in the oil record book; and 4. Logs all bilge and ballast transfer actions.

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5.1.A	Contribute to the operation of equipment and machinery	Safe operation of equipment, including: .1 valves and pumps	On a vessel or in a laboratory or workshop, given a piping system,	the candidate demonstrates the ability to trace the system, identify & operate valves, and operate liquid-level measuring devices.	The candidate traces out a piping system specified by the assessor and demonstrates or describes: <ol style="list-style-type: none"> 1. Purpose of the system traced; 2. Location of the valves to be used to normally start and/or shutdown the system; 3. Location of the valves to be used in the event of an emergency shutdown of the system, including emergency shutdown devices; 4. Manual operation of each type of valve in that system, both locally and remotely operated; 5. Manual operation of any in-tank measuring devices; 6. Probable location of any leakage, what form that leakage may take, onboard notification procedures, and what precautions should be followed; 7. Any topping off procedures that are followed; 8. Any stripping procedures that are followed; and 9. Protection of bilge and ballast suction during normal operations and other configurations where the bilge and ballast suction and wells may become contaminated.

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5.1.B	Contribute to the operation of equipment and machinery	Safe operation of equipment, including: .1 valves and pumps	On a vessel or in a laboratory or workshop, given a variety of operating pumps,	the candidate assists the officer on watch with the operation of centrifugal and positive displacement pumps in accordance with good engineering principles.	The candidate: 1. Assists in lining up a pumping system; 2. Monitors discharge and suction pressures and temperatures,; 3. Observes seals and gaskets for leaks; 4. Monitors for vibration and pump temperatures; 5. Assists in maintenance of pump as per manufacturer's guidelines.
5.1.C	Contribute to the operation of equipment and machinery	Safe operation of equipment, including: .1 valves and pumps	On a vessel or in a laboratory or workshop, given various valves,	the candidate assists an engineer with the operation and repair of valves in accordance with good engineering principles.	The candidate disassembles, inspects, and reassembles a globe valve, a gate valve, and a check valve and makes repairs to them as necessary.

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5.2.A	Contribute to the operation of equipment and machinery	Safe operation of equipment, including: .2 hoists and lifting equipment .3 hatches, watertight doors, ports and related equipment Ability to use and understand basic crane, winch and hoist signals	On a vessel or in a laboratory or workshop, given a hoist, other lifting equipment, hatches & doors, and a crane or winch,	the candidate assists an engineer with the operation and repair of heavy equipment in accordance with good engineering principles.	The candidate: <ol style="list-style-type: none"> 1. Operates hoist and lifting equipment as directed; 2. Uses hand signals for crane, winch, and hoist commands to communicate with the crane, winch or hoist operator; 3. Operates hatches, watertight doors, ports, and related equipment; 4. Describes the limitations of ship's equipment and not exceeding those limitations, including: <ol style="list-style-type: none"> a. Safe working load; b. Maximum load; c. Weather and sea conditions; and d. Proper use of safety practices and situational awareness; and 5. Performs inspections and preventive maintenance as schedules dictate.

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6.1.A	Safe use of electrical equipment	Safe use and operation of electrical equipment, including: .1 safety precautions before commencing work or repair .2 isolation procedures .4 different voltages on board	On a vessel or in a laboratory or workshop, given electrical equipment for repair,	the candidate assists with electrical repairs with the notification and preparation for electrical repairs in accordance with good engineering principles.	The candidate: 1. Communicates hazards to all personnel who may come into contact; 2. Assesses effects of shut down on shipboard operations and notifies appropriate personnel; 3. Lines up alternate equipment; 4. Informs the officer in charge of the engineering watch of all actions; 5. Follows lockout/tag-out and isolation procedures; 6. Locates and prepositions fire extinguishers; 7. Locates and prepositions safety retrieval gear; 8. Locates and assesses alternate sources of electricity; 9. Checks for multiple voltage sources onboard; 10. Prepares for electric shock health hazards; and 11. Shows awareness of arc flash hazard.

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6.2.A	Safe use of electrical equipment	Safe use and operation of electrical equipment, including: .3 emergency procedures	On a vessel or in a laboratory or workshop, when making electrical repairs,	the candidate demonstrates awareness of electrical safety, first aid principles and actions in an emergency.	The candidate performs the following functions: 1. Locating resuscitation equipment; 2. Reviewing the work to be performed, verbal and hand communications and the need for a repeat of the instructions being issued by the person being given instructions; and 3. Reviewing the procedures to be followed in the event an electrical shock occurs, such as; a. De-energizing the live circuit; b. Removing the victim of electrical shock from the shock hazard if victim is unable to let go or leave the shock hazard c. Removing a victim of electrical shock from the area of the shock hazard; d. First aid for electrical shock and electrical burns; and e. CPR

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6.3.A	Safe use of electrical equipment	Safe use and operation of electrical equipment, including: Knowledge of the causes of electric shock and precautions to be observed to prevent shock	On a vessel or in a laboratory or workshop, when making electrical repairs,	the candidate demonstrates awareness of the causes of electrical shock hazards and precautions to prevent shock.	The candidate describes: 1. Causes of electrical shock, including: <ul style="list-style-type: none"> a. Handling live wiring; b. Working near live wiring; c. Equipment not appropriately insulated; d. Not disconnecting or grounding electrical storage devices; e. Activation of untagged equipment; and f. Equipment not appropriately grounded; and 2. Precautions to be observed to prevent shock , including: <ul style="list-style-type: none"> a. Tag out, lock out procedures; b. Following the warnings found in the equipment manuals for ship's equipment; c. Notifying affected personnel; d. Cordoning off area affected; e. Using properly insulated equipment; and f. Grounding equipment properly.

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7.1 A	Contribute to shipboard maintenance and repair	Ability to use painting, lubrication and cleaning materials and equipment	On a vessel or in a laboratory or workshop, when using indicated materials and equipment,	the candidate prepares and coats surfaces in accordance with good engineering principles.	<p>The candidate:</p> <ol style="list-style-type: none"> 1. Identifies product hazards using the Material Safety Data Sheet (MSDS); 2. Separates and properly disposes of waste materials; 3. Properly stores paints and flammables in designated spaces; 4. Selects and applies proper paints and epoxies; 5. Uses the proper tool for spreading the coating onto the prepared surface (brush, roller, sprayer); 6. Blocks off the area to be coated and secures ship's equipment that may be affected; 7. Dons proper protective equipment for the area being coated; and 8. Marks off the coated area so that it is not disturbed until able to withstand the wear and tear of use.
7.2.A	Contribute to shipboard maintenance and repair	Understanding manufacturer's safety guidelines and shipboard instructions	On a vessel or in a laboratory or workshop, when using indicated materials and equipment,	the candidate demonstrates knowledge of safety guidelines and shipboard instructions.	<p>The candidate locates and describes:</p> <ol style="list-style-type: none"> 1. Lock Out / Tag Out procedures; 2. MSDS; 3. Vessel manuals (machinery and equipment, operational, etc); and 4. Standing safety orders from the Captain and Chief Engineer.

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7.3.A	Contribute to shipboard maintenance and repair	Knowledge of surface preparation techniques	On a vessel or in a laboratory or workshop, when using indicated materials and equipment,	the candidate demonstrates proper surface preparation techniques.	<p>The candidate demonstrates or describes proper surface preparation techniques, including:</p> <ol style="list-style-type: none"> 1. Evaluating the surface to be prepared: <ol style="list-style-type: none"> a. Type of material; b. Current coating (or caulk, sealant); c. Condition of coating (or caulk, sealant); and d. Total surface area to be coated; 2. Evaluating the coating (or caulk, sealant) to be used: <ol style="list-style-type: none"> a. Will the coating (or caulk, sealant) bond to surface and/or current coating; b. Is a primer needed; c. Hazards of using the coating (and primer); and d. Equipment needed to coat the surface; 3. Evaluating the hazards involved in the area surrounding the surface to be prepared: <ol style="list-style-type: none"> a. Ventilation; b. Fuel sources; c. Air intakes; and d. Ignition sources; 4. Evaluating the resources available to prepare the surface: <ol style="list-style-type: none"> a. Tools available; b. Cleaning, stripping and etching chemicals available; c. Power sources available; d. Manpower available; and e. Safety equipment available; 5. Selecting the correct tools to be used; 6. Using correct products to be used; and 7. Preparing the surface provided so that it has a clean surface with the proper texture so that the coating will bond securely.

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7.4.A	Contribute to shipboard maintenance and repair	Knowledge of safe disposal of waste materials	On a vessel or in a laboratory or workshop, when using indicated waste materials and equipment,	the candidate segregates, stores, and disposes of waste in accordance with local, federal and international regulations.	The candidate demonstrates knowledge concerning local, state, federal, & international laws concerning: <ol style="list-style-type: none"> 1. Hazardous waste; 2. Non-hazardous waste; 3. Correct storage and disposal procedures; and 4. Proper disposal of waste materials.
7.5.A	Contribute to shipboard maintenance and repair	Knowledge of metal work	On a vessel or in a laboratory or workshop, when using measuring instruments and machine tools,	the candidate identifies, selects, and uses tools in accordance with good engineering principles.	The candidate: <ol style="list-style-type: none"> 1. Uses metal working tools on appropriate surfaces; 2. Selects and uses proper filing tools; 3. Selects and uses proper measuring tools including tapes, rulers, dividers, and squares; 4. Properly cleans and stows all hand tools and measuring devices; 5. Properly selects and uses electrical cords to prevent trip hazards; 6. Identifies steel, cast iron, iron, copper, brass, and aluminum; 7. Selects proper joining methods to include hot and cold joining.

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7.6.A	Contribute to shipboard maintenance and repair	Knowledge of the application, maintenance and use of hand and power tools	On a vessel or in a laboratory or workshop,	the candidate demonstrates knowledge of the maintenance and use of hand and power tools.	<p>The candidate demonstrates or describes the proper use and maintenance of the following hand and power tools:</p> <ol style="list-style-type: none"> 1. Wrenches of all types; 2. Screwdrivers and hammers; 3. Saws; 4. Drilling equipment; 5. Pipe cutters and threaders; 6. Tubing cutters and connection devices; 7. Air powered or electrical hand grinders; 8. Air powered or electrical chipping guns; 9. Files; and 10. Knives.
8.1.A	Contribute to the handling of stores	Knowledge of procedures for safe handling, stowage and securing of stores	On a vessel or in a laboratory or workshop, when handling stores,	the candidate stows and secures stores and equipment in accordance with good engineering principles.	<p>The candidate:</p> <ol style="list-style-type: none"> 1. Separates flammable and non flammable materials; 2. Separates food items from sources of contamination; 3. Properly stacks materials, including: <ol style="list-style-type: none"> a. Stacking heavy materials on the bottom and lighter materials on top; b. Following the height limits as labeled; and c. Following the orientation arrows on the packaging; 4. Separates incompatible materials; 5. Brackets or ties off all goods capable of moving and causing injury; 6. Stores items using first in/first out; and 7. Uses proper types of rope and wire to secure heavy items.

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8.1.B	Contribute to the handling of stores	Knowledge of procedures for safe handling, stowage and securing of stores	On a vessel or in a laboratory or workshop, when handling stores,	the candidate demonstrates knowledge of stores-handling gear and equipment such as cranes, derricks, and winches.	<p>The candidate's demonstration or description includes:</p> <ol style="list-style-type: none"> 1. Inspecting the equipment to be used to ensure that it is good operating condition and suitable for the load to be lifted; 2. Unstowing the equipment to be used; 3. Performing any rigging and that all of the ancillary equipment is readily available, including, block and tackle; 4. Lifting a load and moving it to a predetermined location, as determined by the assessor; 5. Securing the equipment in its stowed position; and 6. Stowing ancillary equipment.
9.1.A	Apply precautions and contribute to the prevention of pollution to the marine environment	Knowledge of precautions to be taken to prevent pollution of the marine environment	On a vessel or in a laboratory or workshop,	the candidate describes knowledge of sources of operational pollution.	<p>The candidate describes the sources of operational pollution including:</p> <ol style="list-style-type: none"> 1. Oil; 2. Noxious liquid substances; 3. Packaged goods and non-liquid substances; 4. Sewage; 5. Garbage; 6. Marine debris; and 7. Air pollution.

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9.1.B	Apply precautions and contribute to the prevention of pollution of the marine environment	Knowledge of the precautions to be taken to prevent pollution of the marine environment	On a vessel or in a laboratory or workshop,	the candidate describes knowledge of the precautions to be taken to prevent pollution of the marine environment.	<p>The candidate describes:</p> <ol style="list-style-type: none"> 1. Collection, sorting, storage, and estimating the amount of garbage onboard; 2. Preparations for preventing or controlling pollutants due to the transfer of cargo, fuel, or passengers; 3. Transferring garbage ashore for disposal; 4. Making rounds of areas which are under the responsibility of the engine department for pollution prevention and control; and 5. Awareness of the function of the following: <ol style="list-style-type: none"> a. Marine Sanitation Device (MSD); b. Oily water separator and bilge cleanliness; c. Ballast water management; d. Incinerator; e. Emission controls; and f. Vessel General Permit (VGP).
9.2.A	Apply precautions and contribute to the prevention of pollution of the marine environment	Knowledge of the use and operation of anti-pollution equipment	On a vessel or in a laboratory or workshop, given the indicated equipment,	the candidate demonstrates knowledge of the use of anti-pollution equipment.	<p>The candidate describes the use of anti-pollution equipment aboard ship, including the location and use of:</p> <ol style="list-style-type: none"> 1. Sorbents aboard the ship and the types of spills that the sorbents are effective on; 2. Booms aboard the ship and the types of spills that the booms are effective on; 3. Plugs, caps, flanges, and other equipment that can be used to stop leaks in the cargo, ballast, bunker, etc. systems.

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9.3.A	Apply precautions and contribute to the prevention of pollution of the marine environment	Knowledge of the approved methods for disposal of marine pollutants	On a vessel or in a laboratory or workshop,	the candidate identifies and describes the expected types of waste generated by a pollution incident and describe the proper way to dispose of the waste.	The candidate identifies and describes the expected types of waste that could be generated and describes the proper manner of collection and storage so that the pollution potential of that waste is minimized, including: <ol style="list-style-type: none"> 1. Contaminated rags; 2. Contaminated booms; 3. Garbage; 4. Damaged drums; 5. Contaminated sorbents; and 6. Other contaminated material specific to the type of vessel the assessment is performed on.

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10.1.A	Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including electrical safety	On a vessel or in a laboratory or workshop,	the candidate describes procedures to safeguard personnel and the vessel as it applies to electrical safety.	<p>The candidate describes procedures designed to safeguard personnel and the ship, including:</p> <ol style="list-style-type: none"> 1. Observing all pertinent instructions and electric warning signs aboard ship; 2. Observing all safety precautions regarding portable electric lights and tools; 3. Not touching or operating any device that has a tag attached; 4. Not touching bare electric wires or connections and assuming all circuits to be live; 5. Not removing explosion proofing globes from lighting fixtures; 6. Not using electric cable runs to hoist or support any weight; 7. Not using the wire ways for storage; 8. Not permitting water to get into electrical equipment; 9. Avoiding sever burns and damage to equipment and clothing caused by electrolyte from storage batteries; 10. Having an electrician disconnect the circuit and tag it as out of commission when working on electrical motors or other equipment; 11. Not starting or operating electrical equipment when flammable vapors are present; and 12. Reporting damaged electrical equipment or wiring to your superior.

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10.2.A	Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including lockout/tagout procedures	On a vessel or in a laboratory or workshop, given the indicated equipment,	the candidate performs lockout/tagout procedures in accordance with good engineering principles.	The candidate: <ol style="list-style-type: none"> 1. Identifies the equipment to be locked out; 2. Locks and tags out equipment using approved methods, including logging; 3. Informs the first assistant or watch engineer that equipment is locked and tagged; and 4. Gives appropriate notice of removal of lock/tag when work is completed.
10.3.A	Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including mechanical safety	On a vessel or in a laboratory or workshop, given the indicated equipment,	the candidate demonstrates knowledge of mechanical safety.	The candidate identifies mechanical hazards and explains safe working practices for: <ol style="list-style-type: none"> 1. Portable tools; 2. Hand tools; 3. Rotating machinery; 4. Galley equipment; and 5. Cargo securing gear.
10.4.A	Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including permit to work systems	On a vessel or in a laboratory or workshop,	the candidate describes safe working practices and personal shipboard safety including permit to work systems.	The candidate describes procedures for and spaces that require a permit to work, including: <ol style="list-style-type: none"> 1. Hot work; 2. Confined spaces; and 3. Other policies that require a permit to work such as working aloft or over the side.

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Task No.	STCW Competence	Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
10.5.A	Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including working aloft	On a vessel or in a laboratory or workshop, given the indicated equipment,	the candidate demonstrates knowledge of safe working practices and personal shipboard safety when working aloft.	<p>The candidate describes the proper preparations for going aloft, including:</p> <ol style="list-style-type: none"> 1. Notifying the appropriate officer in accordance with company procedures 2. Confirming that all equipment that may create a hazard has been turned off and tagged accordingly; 3. Confirming that the ship's motion and weather conditions will remain within safe limits; 4. Using safety equipment and checking it for operational integrity; 5. Cordoning off and placarding the area below; 6. Attaching lanyards to tools, if practical; 7. Reading safety placards in the area and taking appropriate actions; 8. Completing any required permits; and 9. Notifying appropriate personnel.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/5 of the STCW Code. Use of these Guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 12.601(b)(1)(i), alternative Assessment Guidelines must be approved by the National Maritime Center before use.

Task No.	STCW Competence	Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
10.6.A	Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including working in enclosed spaces	On a vessel or in a laboratory or workshop, given the indicated equipment,	the candidate demonstrates knowledge of the identifying characteristics of an enclosed space.	<p>The candidate describes the characteristics of an enclosed space, including:</p> <ol style="list-style-type: none"> 1. Limited openings for entry and exit; 2. Unfavorable natural ventilation; and 3. Not designed for continuous worker occupancy, and 4. Provides examples, including: <ol style="list-style-type: none"> a. Cargo spaces; b. Double bottoms; c. Fuel tanks; d. Ballast tanks; e. Pump-rooms; f. Compressor rooms; g. Cofferdams; h. Void spaces; i. Duct keels; j. Inter-barrier spaces; k. Engine crankcases; and l. Sewage tanks.
10.6.B	Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including working in enclosed spaces	On a or in a laboratory or workshop, given the indicated equipment,	the candidate demonstrates understanding of the dangers involved in an enclosed space entry.	<p>The candidate describes possible scenarios which could occur during an enclosed space entry, including:</p> <ol style="list-style-type: none"> 1. Workers being overcome by fumes and lack of oxygen; 2. Rescuers not using proper safety equipment and being overcome by the hazard; and 3. What stand-by personnel should do in trying to affect a rescue with proper equipment.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/5 of the STCW Code. Use of these Guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 12.601(b)(1)(i), alternative Assessment Guidelines must be approved by the National Maritime Center before use.

Task No.	STCW Competence	Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
10.6.C	Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including working in enclosed spaces	On a vessel or in a laboratory or workshop, given the indicated equipment,	the candidate demonstrates knowledge of procedures designed to safeguard personnel working in enclosed spaces.	<p>The candidate describes procedures designed to safeguard personnel and the ship, including:</p> <ol style="list-style-type: none"> 1. Assessment of risk; 2. Entry authorization procedures; and 3. General precautions, including: <ol style="list-style-type: none"> a. Isolating hazards; b. Ventilation; c. Interior and exterior illumination; d. Communications; e. Rescue and resuscitation equipment; f. Proper dress and safety equipment; g. Briefing of entry crew; and h. Initial and continuous testing.
10.7.A	Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including lifting techniques and methods of preventing back injury	On a vessel or in a laboratory or workshop, given the indicated equipment,	the candidate demonstrates knowledge of lifting techniques and methods of preventing back injury.	<p>The candidate shall demonstrates:</p> <ol style="list-style-type: none"> 1. Proper lifting procedures; 2. Proper procedures to set down a load; and 3. The use of back support or movement limiting devices.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/5 of the STCW Code. Use of these Guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 12.601(b)(1)(i), alternative Assessment Guidelines must be approved by the National Maritime Center before use.

Task No.	STCW Competence	Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
10.8.A	Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including chemical and biohazard safety	On a vessel or in a laboratory or workshop, given the indicated equipment,	the candidate demonstrates knowledge of the proper response to a chemical or biohazard spill or incident.	The candidate describes the proper handling of chemical or biohazard materials in accordance with the MSDS.
10.8.B	Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including chemical and biohazard safety	On a vessel or in a laboratory or workshop, given the indicated equipment,	the candidate demonstrates knowledge of the procedures to use in the event of exposure to a chemical or biohazard spill.	The candidate describes the procedures to use in the event of exposure to or spill of a chemical or biohazard including: <ol style="list-style-type: none"> 1. Isolation; 2. Reporting; 3. Reference to the MSDS; and 4. Monitoring until relieved by an emergency team.
10.9.A	Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including personal safety equipment	On a vessel or in a laboratory or workshop, given the indicated equipment,	the candidate demonstrates the use of personal safety equipment appropriate to the task being performed	The candidate demonstrates the use of personal safety equipment, including: <ol style="list-style-type: none"> 1. Gloves; 2. Goggles; 3. Respirators; 4. Aprons; 5. Face shields; 6. Steel toed shoes; 7. Hearing protection; 8. Clothing; and 9. Safety harness.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/5 of the STCW Code. Use of these Guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 12.601(b)(1)(i), alternative Assessment Guidelines must be approved by the National Maritime Center before use.