



U. S. Coast Guard Sector



Auxiliary Assistant Machinery Inspector Performance Qualification Standard

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Sector Training Guide

Auxiliary Assistant Machinery Inspector Performance Qualification Standard

Qualification Code: AUX-MI

This booklet is one section of your personal on the job training (OJT) manual. It is your OJT guide to qualification as an Auxiliary Assistant Machinery Inspector. It is your responsibility to document completed unit training items.

The AUX-MI qualification is one of several “specific cargo / vessel related” Auxiliary Assistant commercial vessel examiner competencies. Those members who will be required to assist in inspecting machinery shall complete this PQS workbook.

On a limited basis, PQS task items may be “deferred” by your unit commander to accurately address the type of vessels / cargo normally examined at your port. If a task is deferred, the reason for deferment must be clearly articulated in the space provided in this PQS workbook. Task items shall only be deferred if the particular task item requires a certain type of vessel, vessel system or cargo type that is not normally examined / encountered at the trainee’s port.

- If a PQS task item is deferred, you will not be authorized to examine / perform the function required by the deferred task item.
- You will still receive full AUX-MI qualification even if some items are deferred.
- Domestic Inspection Division Chiefs shall examine tasks of newly reported AUX-MI examiners to identify any deferred task items necessary for their port.
- **Auxiliarists are prohibited from entering confined spaces. Under no circumstances shall any Auxiliarist be allowed to do tasks requiring such entry.**

Verifying Officers shall be experienced and qualified personnel who have demonstrated the ability to evaluate, instruct, and observe other personnel in the performance task criteria. Verifying Officers must be certified in the competencies for which they are to verify and must be Sector command designated. Verifying Officers must enter their title, name, and initials in the Record of Verifying Officers section before making entries in your workbook.

A Verifying Officer shall observe your successful performance of each task and document such with date and initials in the appropriate space provided in this booklet. It may be necessary to perform a task several times. The Verifying Officer will not give credit for any task that is not performed satisfactorily.

Auxiliarists do not have law enforcement authority. They cannot independently exercise COTP, OCMI, FMSC or FOSC authority and may become personally liable for actions they take outside of prescribed directives. Do not allow an Auxiliarist to be placed in a position that will compromise the limitations on the member’s authority.

When you have completed all of the items required for this qualification, your COTP will issue a Letter of Designation and your Active Duty Unit Training Coordinator will record and certify the your qualification in Training Management Tool (TMT). You must forward a copy of your Letter of Designation to your DIRAUX for entry into AUXDATA. Should any item be waived the qualification is considered local and will not be entered into AUXDATA and may not be used toward qualification for the Trident device.

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RECORD OF COMPLETION		
Training Prerequisites	Date	Verifying Officer's Signature
A. Completion of resident training course (<i>Optional</i>):		
1. Marine Inspector Course		
2. SMI Machinery Course		
B. Completion of correspondence courses:		
1. Introduction to Marine Safety and Environmental Protection (IMSEP)		
2. ICS 100		
3. ICS 200		
4. ICS 210 <i>or</i> ICS 300		
5. IS 700		
6. IS 800		
C. Favorable DO PSI if required by COTP		
D. Completion of PQS Workbook.		
E. Successful completion of unit level oral board.		
F. Designation Letter submitted for approval.		
G. Once Designation Letter is signed, enter certification in TMT		

RECORD OF VERIFYING OFFICERS			
Date	Title	Verifying Officer's Name	Initials

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<u>Task Number</u>	<u>AUX-MI Master Tasks</u>	<u>Completed Date</u>	<u>Defer</u>
CD04	Discuss scope of inspection with owner's representative.		
CD05	Obtain CG-2692 for reportable marine casualties.		
CD06	Examine gas-free certificate.		
CD08	Review any outstanding CG-835s and ask if other deficiencies exist.		
ES01	Inspect switchboards.		
ES02	Inspect ship's service generators.		
ES04	Inspect emergency generators.		
ES05	Inspect battery installation.		
ES07	Inspect motor controllers.		
ES08	Ensure lighting systems/fixtures are adequate and meet requirements.		
ES10	Ensure receptacle outlets are properly grounded.		
ES11	Inspect distribution panels.		
ES13	Inspect electrical cable installation.		
ES15	Test power operated watertight doors from local/remote control units.		
ES16	Test/inspect internal communication and control systems.		
ES18	Inspect components installed in designated hazardous locations.		
ES21	Inspect the general alarm system emergency batteries.		
ES22	Perform operational test of remote ventilation shutdowns.		
FF01	Determine amount, type, location of fire protection equipment required.		
FF08	Inspect semi-portable firefighting equipment.		
FF09	Inspect portable firefighting equipment.		
FF10	Inspect fire main and fire stations.		
FF13	Witness operational test of fire detection system.		
FP01	Verify that required forms, placards and notices are posted.		
FP04	Verify that the International Safety Management Code Safety Management system is properly implemented aboard the vessel.		
GH07	Inspect paint lockers.		
GH08	Inspect ladders, railways, and gangways.		
LS04	Inspect life preservers.		
LS08	Inspect immersion suits.		
MI01	Determine condition of the components of the steering gear		

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<u>Task Number</u>	<u>AUX-MI Master Tasks</u>	<u>Completed Date</u>	<u>Defer</u>
	assembly.		
MI04	Inspect fuel oil service and transfer system.		
MI06	Inspect bilge pumps installation, piping, and valves in machinery spaces.		
MI10	Examine refrigeration/air conditioning machinery.		
MI11	Examine potable water system.		
MI13	Observe operational tests of machinery.		
MI16	Inspect the diesel installation and assembly.		
MI19	Inspect air starting systems.		
MI20	Inspect hydraulic starting systems.		
MI21	Inspect electric starting systems.		
MI22	Witness operational test of main propulsion diesel automation.		
MI25	Internally examine UPVs requiring internal examination.		
MI26	Externally examine UPVs.		
MI27	Witness Hydrostatic test of UPV.		
MI28	Ensure all UPVs are properly equipped with pressure relief valves.		
MI29	Witness pressure relief valve test.		
MI33	Conduct an examination of an auxiliary/heating boiler.		
MI40	Ensure insulation on steam piping provided to reduce personnel hazard.		
NT01	Witness dye penetrant NDT in accordance with applicable standards.		
NT02	Witness magnetic particle NDT in accordance with applicable standards.		
NT03	Witness radiography NDT in accordance with applicable standards.		
NT04	Witness ultrasonic NDT in accordance with applicable standards.		
PP03	Inspect pollution prevention equipment and documentation in machinery spaces.		
WI01	Inspect watertight doors.		
WI03	Test power-operated watertight doors from local/remote control units.		
WI04	Inspect watertight bulkhead penetrations.		
WI06	Inspect remote-operated valves and controls.		
WR01	Evaluate welding repair proposal.		
WR02	Complete initial visual inspection of weld repair.		

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<u>Task Number</u>	<u>AUX-MI Master Tasks</u>	<u>Completed Date</u>	<u>Defer</u>
WR03	Complete intermediate visual inspection of weld repair.		
WR04	Complete final visual inspection of weld repair.		
WR05	Witness pressure testing of welded repairs.		
WR06	Complete steps to approve Weld Procedure Specification (WPS) for engineering and cargo system construction or repair IAW Subchapter F of the Code of Federal Regulations.		
WR07	Complete steps to approve Weld Performance Qualifications (WPQ) for engineering and cargo system construction or repair IAW Subchapter F of the Code of Federal Regulations.		
WR08	Review approved Weld Procedure Specification (WPS) for engineering and cargo system construction or repair.		
WR09	Review approved Welder Performance Qualification (WPQ) for engineering and cargo system construction or repair.		

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<u>Task Number</u>	<u>Task</u>	<u>Date Completed</u>	<u>Verifying Officer</u>	<u>Comp</u>	<u>Defer</u>	<u>Comments about Deferment</u>
CD04	Discuss scope of inspection with owner's representative. Decide on general sequence of inspection.	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
CD05	Obtain CG-2692 for reportable marine casualties/ structural failure report.	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
CD06	<p>Examine gas-free certificate issued by an NFPA-certified marine chemist for hot work and/or confined space entry.</p> <ul style="list-style-type: none"> • Information on the gas-free certificate meet the requirements of NFPA Standard 306 and Coast Guard confined space entry/benzene exposure policy • Gas-free certificate been maintained by a designated competent person and records kept as required by OSHA regulations • Marine chemist certified by NFPA • Review benzene and confined space entry policies • OSHA Competent Person log up to date • Meters used by OSHA Competent Person are calibrated 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
CD08	Review any MISLE inspection notes and outstanding deficiencies (CG-835s). Ask owner's representative if any other	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____

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	deficiencies exist.					_____
ES01	Inspect switchboards. <ul style="list-style-type: none"> • Nonconductive mat on deck in front of board • Nonconductive rails on board face • Nonconductive rails at the rear and sides • Dripshield on the board's top • Ground detection indicators working with no grounds indicated • Meters calibrated and working • Synchronizing controls working. • Identification for controls and meters • Area is dry and clean • Working space is provided in accordance with regulations • Overcurrent protection properly labeled 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
ES02	Inspect ship's service generators. <ul style="list-style-type: none"> • Generators of a size or arrangement which require overspeed trips • Operational test of overspeed trips and alarms within specified limits • If the DC or AC generators operate in parallel, are the reverse power/current trips working • Guards installed around rotating or live machinery 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____

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	<ul style="list-style-type: none"> • Discoloration from overheating apparent • Filters on air intakes working to keep internals free from dust and dirt • Windings oily or dirty • Odd bearing noises present • Voltage regulated within limits specified by CFR • Working diesel low lube oil pressure trip and alarms • Working high temperature detectors and alarms for AC generators • Nameplates properly in place 					_____
ES04	Inspect emergency generator. <ul style="list-style-type: none"> • Means of starting is provided • The following alarms/shutdowns are operable: <ul style="list-style-type: none"> • Low lube oil pressure • High cooling water temperature • Overspeed • Fixed firefighting system shutdown • The generator auto-start circuit functions and the generator can power its full-rated load within 20 seconds and accept the final emergency load within 45 seconds of loss of the normal power supply • Emergency Generator is tested under load. • Independent fuel supply is provided, 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____

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	with remote shut-off valve installed and properly marked					_____
ES05	Inspect emergency batteries. <ul style="list-style-type: none"> • Size of installation and required ventilation • Battery box is properly lined • Batteries are secure in the trays • Adequate space provided over the cells • A means of charging is provided • Conductor overcurrent protection is provided • Ventilation/charger interlocked 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____
ES07	Inspect motor controllers. <ul style="list-style-type: none"> • Units are installed in suitable cases, or if open type, within limited access enclosure • Wearing parts are accessible • Controls are marked for each motor served • Wiring diagram is affixed to the controller enclosure • Motor controllers are drip-proof/watertight 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____
ES08	Ensure lighting systems and fixtures are adequate and meet regulations. <ul style="list-style-type: none"> • Passageways and public areas • Machinery spaces • Passenger and crew spaces 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____

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	<ul style="list-style-type: none"> • Berth lights • Exit lights • Pilot ladders • Navigation • Signaling lights • Lifeboat and liferaft embarkation stations 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
ES10	Ensure receptacle outlets have grounding poles and are properly grounded.	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/>
ES11	Inspect distribution panels. <ul style="list-style-type: none"> • Circuit directory provided • Amperage ratings of the protective devices in accordance with required circuit directory • Panelboard blanks installed, where necessary 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
ES13	Inspect electrical cable installation and determine: <ul style="list-style-type: none"> • Vertical and horizontal supports properly spaced • Radius of the bends exceed CFR specifications • Portable cables used for unauthorized purposes • Acceptable materials used • Hazardous conditions exist (jury rigs, 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

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	dead end cables, splices, etc.)					_____
ES15	Test power-operated watertight doors from local and remote control units.	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
ES16	Test internal communication and control systems and ensure the following systems work properly. <ul style="list-style-type: none"> • General alarms (bells and contractors) • Sound powered phones to all required stations • Engine order telegraph and wrong direction alarm • Public address system • Engineer's assistance needed alarm • Engineer's call system • Fire detection/fire alarm system • Refrigerated space alarm system 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____ _____
ES18	Inspect components installed in designated hazardous locations and ensure explosion proof installation. <ul style="list-style-type: none"> • Fuel purifier rooms • Paint locker • Cargo area • Pumprooms 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____
ES21	Inspect the general alarm system emergency batteries.	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____

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ES22	Inspect ventilation systems and perform operational test of alarms and remote ventilation shutdowns.	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
FF01	Determine amount, type and location of fire protection equipment required. <ul style="list-style-type: none"> • By the vessel's Certificate of Inspection • By the respective regulations 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
FF08	Inspect semi-portable fire fighting equipment. <ul style="list-style-type: none"> • Installation approved • System serviceable • Instructions posted • Correct type and amount on hand • Markings correct 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____
FF09	Inspect portable firefighting equipment. <ul style="list-style-type: none"> • Fire extinguishers approved • Each unit serviceable • Adequate spare charges provided • Correct type and amount on hand • Distributed per fire control plan • Markings correct • Servicing properly logged 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____
FF10	Inspect fire main and fire stations.	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____

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	<ul style="list-style-type: none">• Correct number of fire pump(s) provided• Fire hoses meet acceptable standards• Equipment provided at each required fire station pursuant to regulations• Requirements for hose length and size at each fire station complied with• Fire pump(s) capable of providing adequate pressure to highest and most remote fire station using pitot tube• Pressure gauge installed on discharge side of fire pump• Fire hoses serviceable after hydro testing• Valves at fire stations operable• Fire main(s), hose(s), and equipment compatible at each station• Approved nozzles and applicators provided for each fire station• Fire pump relief valve functions properly• Markings correct	_____	_____			_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
FF13	Witness operational test of fire detection system. <ul style="list-style-type: none">• System serviceable• All sensors free of obstructions and functioning• Alarms and indicators functioning correctly• Required instructions and diagrams	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____

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	<ul style="list-style-type: none"> provided • Markings correct 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____
FP01	Verify that the required forms, placards, and notices are posted. <ul style="list-style-type: none"> • Pollution/MARPOL: <ul style="list-style-type: none"> ○ Placard ○ Waste management plan • Coast Guard forms: <ul style="list-style-type: none"> ○ CG-809: Station bills, drills ○ CG-811: Lifesaving signals and instructions ○ CG-841: Certificate of Inspection ○ CG-848: Station Bill ○ CG-2832: Vessel Inspection Record ○ CG-3372: Oil Pollution • Passenger notices • Plans posted: <ul style="list-style-type: none"> ○ General arrangement ○ Fire control plan • Rules and regulations for class of vessel • SOLAS certificates • Markings: conspicuous and legible 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____
FP04	Verify that the International Safety Management Code Safety Management system is properly implemented aboard the vessel. <ul style="list-style-type: none"> • Designated Person Ashore • Maintenance program for vital equipment 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____

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	<ul style="list-style-type: none"> • Safety and Environmental Policy • Record keeping • Master's Review and Authority • Clearly defined company responsibilities and authority 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____
GH07	Inspect paint lockers. <ul style="list-style-type: none"> • Required fire protection equipment provided in accordance with applicable regulations and vessel's approved fire safety plan • Space(s) designated constructed of or wholly lined with metal • Space(s) well vented and means provided to secure ventilation if necessary 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____
GH08	Inspect ladders, rails and gangways. <ul style="list-style-type: none"> • An approved pilot ladder provided and maintained in good repair • Accommodation ladder of sufficient size provided to be used when distance from sea level to vessel's deck is more than 30 feet • "Rails" are provided on accommodation ladders, when used 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____
LS04	Inspect life preservers. <ul style="list-style-type: none"> • Properly equipped with lights, whistles and reflective tape • Approved for intended service 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____

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	<ul style="list-style-type: none"> • Sufficient serviceable units aboard and properly stowed • Properly marked 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
LS08	Inspect immersion suits. <ul style="list-style-type: none"> • Equipped as required • Physically serviceable • Sufficient number of units aboard and properly stowed 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____
MI01	Determine condition of the following components of the steering gear assembly: <ul style="list-style-type: none"> • Insides of motor controller and switch gear boxes • Mounting bolts for all equipment (vibration) attachments, links and pins • Freedom of movement and absence of any friction noises on motors and pumps • Cleanliness of space (absence of fire/personnel hazards) • Evidence of saltwater leakage through rudder post packing or vent ducts 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____
MI04	Inspect fuel oil service and transfer system. <ul style="list-style-type: none"> • Determine condition of piping and manifolds • Determine condition of fuel oil HP and LP strainers • Ensure fuel oil pump relief pump valves discharge to suction side of fuel oil 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____

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	<p>pumps</p> <ul style="list-style-type: none"> • Ensure no excessive fuel oil leakage exists • Witness operation of fuel oil pumps • Ensure instrumentation is operable • Externally examine fuel oil heaters • Test remote operated fuel oil system valves • Determine condition of fuel oil tank vent lines and flame screens 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
MI06	<p>Inspect bilge pumps installation, piping, and valves in machinery spaces.</p> <ul style="list-style-type: none"> • System capable of pumping from any watertight compartment except ballast, oil and water tanks • Standing water drains to suction pipes • Bilge manifold has independent bilge suction control and is properly marked • Suction strainers are installed • Emergency bilge suction installed, where required • Instrumentation operable 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
MI10	<p>Examine refrigeration/air conditioning machinery.</p> <ul style="list-style-type: none"> • Rotating machinery guards • Piping • Wiring • Pressure vessels 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

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MI11	Examine potable water system. <ul style="list-style-type: none"> • Dedicated tanks; treated or coated • Tanks ventilated with insect screens installed • Water pump(s) and pressurization system operable • Pressure tank installation 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____
MI13	Determine what prime mover operational tests are required; witness tests and state if results are satisfactory. <ul style="list-style-type: none"> • Overspeed trips • Low lube oil shutdowns and alarms • High coolant temperature alarm 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____
MI16	Inspect the main diesel installation and assembly, paying particular attention to the following: <ul style="list-style-type: none"> • Crankcase explosion covers • Fuel and lube oil fittings (checking for leakage) • Instrumentation • Gratings and rails around the engine • Guards over rotating machinery • Exhaust system: <ul style="list-style-type: none"> ○ Leaks ○ Lagging (not oil soaked) ○ Proximity of combustible material or walkways ○ Water cooling system ○ Bulkhead penetrations 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____

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	<ul style="list-style-type: none"> • Engine foundations and tank top's structural condition • Air intakes • Crankcase vents (clear) 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
MI19	Inspect air starting systems. <ul style="list-style-type: none"> • Air receivers • Piping • Compressors 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
MI20	Inspect hydraulic starting systems. <ul style="list-style-type: none"> • Pumps and strainers • Piping • Accumulators 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
MI21	Inspect electrical starting systems.	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
MI22	Witness operational test of main propulsion diesel automation system. <ul style="list-style-type: none"> • Determine that the system has not been modified/jury rigged and is the same as that depicted in the procedures • Testing the automation system using the methods specified by approved procedure • Verify that automatic systems have not been bypassed or overridden by manual devices except as noted in approved test 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____

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	procedure <ul style="list-style-type: none"> • Verify proper operation of required alarms, shutdowns, controls and internal communications in accordance with the approved test procedure • Verify that bridge controls/alarms function in sync with engineroom control panel <ul style="list-style-type: none"> ○ Based on automation system • testing, assess if vessel manning remains consistent with regulation/policies and determine corrective action, if necessary: <ul style="list-style-type: none"> ○ Temporary increase of engineroom manning ○ Further underway evaluation 					<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
MI25	Internally examine unfired pressure vessels requiring internal examination. <ul style="list-style-type: none"> • Check for corrosion, scale, pitting, cracks and erosion • Examine welded connections internally 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
MI26	Externally examine unfired pressure vessels. <ul style="list-style-type: none"> • Pressure gauge • Evidence of structural damage • Data plate legible • Foundations structurally sound • Attachments secure 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
MI27	Witness Hydrostatic test of unfired pressure	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

Auxiliary Assistant Machinery Inspector

<u>Task Number</u>	<u>Task</u>	<u>Date Completed</u>	<u>Verifying Officer</u>	<u>Comp</u>	<u>Defer</u>	<u>Comments about Deferment</u>
	vessel.					
	<ul style="list-style-type: none"> • Determine when hydrostatic test required • Determine MAWP • Observe pressure test 					
MI28	Ensure all unfired pressure vessels are properly equipped with pressure relief valves.	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
MI29	Witness pressure relief valve test. <ul style="list-style-type: none"> • MAWP not exceeded • Valve seats tightly • Spring set within range • Correct valve type • Hand lifting device 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
MI33	Conduct an examination of an auxiliary/heating boiler. <ul style="list-style-type: none"> • Furnace (distortion) • Combustion chamber (crown sheet, wrapper sheet, back sheets (distortion)) • Boiler shell and heads • Stay bolts • Boiler saddles and foundations • Plating in way of mountings (wastage due to leaking valves and fittings) • Cracks in the plating due to flexing of the heads or leakage 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	

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	<ul style="list-style-type: none"> • Wastage around manhole gaskets • Note heat number and condition of fusible plugs • Waterside tubes (Pitting - determine general depth and tube type) • Waterside internal surface conditions (scaling, pitting, corrosion, erosion) • Mountings opened/removed • Safety valve operation • Witness hydrostatic test 	_____	_____			_____ _____ _____ _____ _____ _____ _____
MI40	Ensure insulation is provided to reduce personnel hazard.	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
NT01	Witness dye penetrant NDT in accordance with applicable standards. <ul style="list-style-type: none"> • Approve NDT method for specific applications. • Determine acceptability of technician's qualification. • Evaluate results. 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____
NT02	Witness magnetic particle NDT in accordance with applicable standards. <ul style="list-style-type: none"> • Approve NDT method for specific applications. • Determine acceptability of technician's qualification. • Evaluate results. 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____

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NT03	Witness radiography NDT in accordance with applicable standards. <ul style="list-style-type: none"> • Approve NDT method for specific applications. • Determine acceptability of technician's qualification. • Evaluate results. 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____
NT04	Witness ultrasonic NDT in accordance with applicable standards. <ul style="list-style-type: none"> • Approve NDT method for specific applications. • Determine acceptability of technician's qualification. • Evaluate results. 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____
PP03	Inspect pollution prevention equipment and documentation in machinery spaces. <ul style="list-style-type: none"> • Slop tank provided and located in accordance with regulations • Pump, fixed, or portable piping system(s), valve(s), and controls, as the regulation apply to vessel in question, are provided to remove dirty oil and bilge slops • Pump, fixed piping, valve(s), and controls are provided for combined fuel and ballast tank(s) as needed and where specified by regulation • Oily water separator installed properly and functions correctly • Oil discharge prohibition placard is 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____

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	placed at the bilge and ballast manifold and/or in each machinery space					
WI01	Inspect watertight doors. <ul style="list-style-type: none"> • Knife edges intact and in good repair; no excessive paint buildup • Gasket material installed in channel is in good condition and not painted • Knife edges and channel meet as designed when door closed • Hinges and hinge bolts in good condition; no sagging of door due to rounded out hinges or worn hinge bolts • Dogs are all operable; grease fittings still usable • Dogging wedges not excessively worn and fit up satisfactory • Quick-closing gear operable and adequate closure achieved • Any port lights installed in watertight doors use wire mesh reinforced glass • Dogging wrench provided in vicinity of watertight door(s) 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
WI03	Test power-operated watertight doors from local and remote control units.	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
WI04	Inspect watertight bulkhead penetrations. <ul style="list-style-type: none"> • Penetrations properly sealed to maintain 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	

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	<p>watertight integrity through use of devices such as stuffing tubes</p> <ul style="list-style-type: none"> Sealant used, if stuffing tubes are employed, is non-flammable product designed for such use and is approved 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____
WI06	<p>Inspect remote-operated valves and controls.</p> <ul style="list-style-type: none"> Each valve identified as to function either by tag affixed to handle or by independent means Each valve adequately lubricated and freely operated Reach rods and other manual remote control mechanisms function properly Each power-operated valve can be operated from control stations An adequate means of control is provided to secure valves on fuel and lube oil lines to prevent pollution incident 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
WR01	<p>Evaluate welding repair proposal.</p> <ul style="list-style-type: none"> Plan or sketch submitted with bill of materials Configuration of repair acceptable Material specification same as existing or equivalent Method of joining acceptable 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____
WR02	Complete initial visual inspection of weld	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____

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	repair. <ul style="list-style-type: none"> • Examine fit up in accordance with approved weld procedures • Examine joint preparation in accordance with approved weld procedures • Verify materials (base, filler, gas) in accordance with approved weld procedures • Verify proper preheat temperature/time in accordance with approved weld procedures • Evaluate weather conditions • Check welding equipment in accordance with approved weld procedures 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____
WR03	Complete intermediate visual inspection of weld repair. <ul style="list-style-type: none"> • Check back gouging for full penetration weld • Check proper cleaning between weld passes • Check interpass temperatures in accordance with approved procedures • Verify that proper weld sequencing is followed • Evaluate weather conditions 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____
WR04	Complete final visual inspection of weld repair. <ul style="list-style-type: none"> • Perform dry search to ensure welding 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____

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	<ul style="list-style-type: none"> complete and followed weld details • Perform surface inspection of welds for defects • Verify proper postheat temperature/time in accordance with approved weld procedures 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____
WR05	Witness pressure testing of welded repairs. <ul style="list-style-type: none"> • Witness hose testing • Witness air testing • Witness hydrostatic testing 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____
WR06	Complete steps to approve Weld Procedure Specification (WPS) for engineering and cargo system construction or repair IAW Subchapter F of the Code of Federal Regulations. <ul style="list-style-type: none"> • Witness WPS test coupon fit for welding • Review coupon test results • Draft WPS approval 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____
WR07	Complete steps to approve Welder Performance Qualification (WPQ) for engineering and cargo system construction or repair IAW Subchapter F of the Code of Federal Regulations. <ul style="list-style-type: none"> • Witness WPS test coupon fit for welding • Review coupon test results • Draft WPS approval 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____

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WR08	Review approved Weld Procedure Specification (WPS) for engineering and cargo system construction or repair. <ul style="list-style-type: none"> • Determine suitability of WPS for application • Determine suitability of third party WPS acceptance 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____
WR09	Review approved Welder Performance Qualification (WPQ) for engineering and cargo system construction or repair. <ul style="list-style-type: none"> • Determine suitability of WPS for application • Determine suitability of third party WPS acceptance 	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____ _____ _____ _____ _____ _____ _____

SAMPLE LETTER OF DESIGNATION

U.S. Department of
Homeland Security

United States
Coast Guard



Command's Name

Street Address
City, State Zip Code
Staff Symbol:
Phone:
Email:

1601
DATE

MEMORANDUM

From: I. M. Frank, CAPT
Unit's Name

Reply to
Attn of:

To: M. O. Ore, USCG Auxiliary

Subj: DESIGNATION AS AUXILIARY ASSISTANT MACINERY INSPECTOR

Ref: Auxiliary Assistant Machinery Inspector Performance Qualification Standard Workbook

1. Congratulations! You have completed all requirements necessary to perform the duties of an Auxiliary Assistant Machinery Inspector. You are authorized to carry out the responsibilities of an Auxiliary Assistant Machinery Inspector within the scope of your qualifications. This is a significant milestone in your professional development and I commend your accomplishments.
2. This Letter of Designation should be retained as part of your personal Training Record and you will be assigned the Auxiliary Assistant Machinery Inspector Qualification Code "AUX-MI".

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