

(b) The medical examination for qualified member of the engine department is the same as for an original license as engineer, as set forth in §10.205 of this subchapter. If the applicant is in possession of an unexpired license, the Officer in Charge, Marine Inspection, may waive the requirement for a physical examination.

(c) An applicant holding a certificate of service for a particular rating as qualified member of the engine department and desiring certification for another rating covered by this same form of certificate may qualify therefor without a physical examination unless the Officer in Charge, Marine Inspection, finds that the applicant obviously suffers from some physical or mental infirmity to a degree that would render him incompetent to perform the ordinary duties of a qualified member of the engine department. In this event the applicant shall be required to undergo an examination to determine his competency.

[CGFR 65-50, 30 FR 16640, Dec. 30, 1965, as amended by USCG-1998-4442, 63 FR 52189, Sept. 30, 1998]

§ 12.15-7 Service or training requirements.

(a) An applicant for a certificate of service as qualified member of the engine department shall furnish the Coast Guard proof of qualification based on six months' service in a rating at least equal to that of wiper or coal passer.

(b) Training programs approved by the Commanding Officer, National Maritime Center, may be substituted for the required service at sea in accordance with the following:

(1) A graduate of a school ship may be rated as qualified member of the engine department upon satisfactory completion of the course of instruction. For this purpose, *school ship* is interpreted to mean an institution which offers a complete course of instruction, including a period of sea training, in

the skills appropriate to the rating of qualified member of the engine department.

(2) Training programs other than those classified as a school ship may be substituted for up to one-half of the required service at sea.

(c) To qualify to receive an STCW endorsement for service as a "rating forming part of a watch in a manned engine-room or designated to perform duties in a periodically unmanned engine-room" on a seagoing vessel driven by main propulsion machinery 750 kW [1,000 hp] propulsion power or more, an applicant shall prove seagoing service that includes training and experience associated with engine-room watchkeeping and involves the performance of duties carried out under the direct supervision of a qualified engineer officer or a member of a qualified rating. The training must establish that the applicant has achieved the standard of competence prescribed in table A-III/4 of the STCW Code, in accordance with the methods of demonstrating competence and the criteria for evaluating competence specified in that table.

[CGD 80-131, 45 FR 69241, Oct. 20, 1980, as amended by CGD 95-072, 60 FR 50460, Sept. 29, 1995; CGD 95-062, 62 FR 34538, June 26, 1997; CGD 95-062, 62 FR 40140, July 25, 1997; USCG-1998-4442, 63 FR 52189, Sept. 30, 1998]

§ 12.15-9 Examination requirements.

(a) Each applicant for certification as a qualified member of the engine department in the rating of oiler, watertender, fireman, deck engineer, refrigeration engineer, junior engineer, electrician, or machinist shall be examined orally or by other means and only in the English language on the subjects listed in paragraph (b) of this section. The applicant's general knowledge of the subjects must be sufficient to satisfy the examiner that he is qualified to perform the duties of the rating for which he makes application.

(b) List of subjects required:

Subjects	Machinist	Refrigerating engineer	Fireman/Watertender	Oiler	Electrician	Junior engineer	Deck engineer
1. Application, maintenance, and use of hand tools and measuring instruments	X	X	X	X	X	X	X
2. Uses of babbitt, copper, brass, steel, and other metals	X	X	X	X	X	X	X

Subjects	Machin-ist	Refrigerating engi-neer	Fire-man/ Water-tender	Oiler	Elec-trician	Junior engi-neer	Deck engi-neer
3. Methods of measuring pipe, pipe fittings, sheet metal, machine bolts and nuts, packing, etc	X	X	X	X	X	X	X
4. Operation and maintenance of mechanical remote control equipment	X		X	X	X	X	X
5. Precautions to be taken for the prevention of fire and the proper use of firefighting equipment	X	X	X	X	X	X	X
6. Principles of mechanical refrigeration; and functions, operation, and maintenance of various machines and parts of the systems		X		X		X	
7. Knowledge of piping systems as used in ammonia, freon, and CO ₂ , including testing for leaks, operation of bypasses, and making up of joints		X				X	
8. Safety precautions to be observed in the operation of various refrigerating systems, including storage of refrigerants, and the use of gas masks and firefighting equipment	X	X	X	X	X	X	X
9. Combustion of fuels, proper temperature, pressures, and atomization			X	X		X	
10. Operation of the fuel oil system on oil burning boilers, including the transfer and storage of fuel oil			X	X		X	X
11. Hazards involved and the precautions taken against accumulation of oil in furnaces, bilges, floorplates, and tank tops; flarebacks, leaks in fuel oil heaters, clogged strainers and burner tips	X	X	X	X	X	X	
12. Precautions necessary when filling empty boilers, starting up the fuel oil burning system, and raising steam from a cold boiler			X	X		X	
13. The function, operation, and maintenance of the various engineroom auxiliaries	X	X	X	X	X	X	
14. Proper operation of the various types of lubricating systems	X	X	X	X	X	X	X
15. Safety precautions to be observed in connection with the operation of engineroom auxiliaries, electrical machinery, and switchboard equipment	X	X	X	X	X	X	X
16. The function, operation, and maintenance of the bilge, ballast, fire, freshwater, sanitary, and lubricating systems	X	X	X	X		X	X
17. Proper care of spare machine parts and idle equipment	X	X	X	X	X	X	X
18. The procedure in preparing a turbine, reciprocating, or Diesel engine for standby; also the procedure in securing			X	X		X	
19. Operation and maintenance of the equipment necessary for the supply of water to boilers, the dangers of high and low water and remedial action			X	X		X	
20. Operation, location, and maintenance of the various boiler fittings and accessories	X		X	X		X	
21. The practical application and solution of basic electrical calculations (Ohm's law, power formula, etc.)					X	X	X
22. Electrical wiring circuits of the various two-wire and three-wire D.C. systems and the various single-phase and poly-phase A.C. systems					X	X	X
23. Application and characteristics of parallel and series circuits					X	X	X
24. Application and maintenance of electrical meters and instruments					X	X	X
25. The maintenance and installation of lighting and power wiring involving testing for, locating and correcting grounds, short circuits and open circuits, and making splices					X	X	X
26. The operation and maintenance of the various types of generators and motors, both A.C. and D.C					X	X	X
27. Operation, installation, and maintenance of the various types of electrical controls and safety devices					X	X	X
28. Testing and maintenance of special electrical equipment, such as telegraphs, telephones, alarm systems, fire-detecting systems, and rudder angle indicators					X	X	
29. Rules and Regulations and requirements for installation, repair, and maintenance of electrical wiring and equipment installed aboard ships					X	X	X
29a. Pollution laws and regulations, procedures for discharge containment and cleanup, and methods for disposal of sludge and waste from cargo and fueling operations	X	X	X	X	X	X	
30. Such further examination of a nonmathematical character as the Officer in Charge, Marine Inspection, may consider necessary to establish the applicant's proficiency	X	X	X	X	X	X	X