

Electrician's Mate (EM)



Electrician's Mates are responsible for the operation of a ship's electrical power generation systems, lighting systems, electrical equipment and electrical appliances. The duties include installation, operation, adjustment, routine maintenance, inspection, test and repair of electrical equipment. EM's also perform maintenance and repair of related electronic equipment.

What they do

The duties performed by EMs include:

- installing power and lighting circuits;
- repairing distribution circuits;
- running wiring for lights and other equipment;
- maintaining operating efficiency of distribution panels, switches, switchboards, controllers, voltage regulators, current transformers and voltage transformers;
- maintaining operating efficiency of electric motors;
- repairing electrical equipment and appliances;
- installing and maintaining storage batteries;
- inspecting, maintaining, testing and repairing electric power equipment;
- maintenance and repair of shipboard elevator systems;
- interpreting electrical sketches, diagrams and blueprints;
- maintenance and repair of various propulsion and auxiliary control consoles;
- connecting electric power machinery and electric power equipment.

Credit Recommendations

The American Council on Education recommends that semester hour credits be awarded in the vocational certificate and lower-division bachelor's/associate's degree categories for courses taken in this rating on electricity and electronics.

Qualifications and Interests

The most important qualifications for the EM rating are manual dexterity; competence with tools, equipment and machines; ability to do detailed work; a logical mind; resourcefulness; and a willingness to learn about electricity,

Career Path After Recruit Training

Enlistees are taught the fundamentals of this rating through on-the-job training or formal Navy schooling. Advanced technical training is available during later stages of career development.

| School | Present Location | Approximate Training Time | Subjects | Training Methods |
|-------------------------------|------------------|---------------------------|--|---|
| Basic Engineering Common Core | Great Lakes, IL | 9 Weeks | Introduction to technical documentation and basic mechanical theory. | Self paced and group instruction with practical application |
| Engineering Electrical Core | Great Lakes, IL | 4 Weeks | CPR, electrical math, basic schematics, AC/DC circuits, solid state characteristics, logic systems | Group Instruction |
| EM Strand Technical School | Great Lakes, IL | 2 Weeks | Basic technical knowledge and skills of electricity and electronics required for rating. | Group instruction, and practical application |

After "A" school, some EM's are assigned to specialized training on particular equipment. After training, EM's may be assigned to ships of all types, naval shipyards, repair bases and other facilities ashore in the United States or overseas. During a 20-year period in the Navy, EM's spend about 65 percent of their time assigned to fleet units and 35 percent to shore stations.

electrical systems and test equipment.
Normal color perception is required.

Working Environment

Most work in the EM rating is performed indoors, under varied conditions at sea and ashore. Work may be done in a shop-like environment. EM's do mostly physical work of a technical nature and usually work closely with other ratings. EM's are stationed primarily aboard USN ships.

Opportunities

While about 4200 men and women work in the EM rating, the high application rate makes placement opportunities competitive for qualified applicants.

O*Net SOC Code O*Net SOC Title

- 17-3023.00 Electrical and Electronic Engineering Technicians
- 47-1011.00 First-Line Supervisors/Managers of Construction Trades and Extraction Workers
- 47-2111.00 Electricians
- 49-1011.00 First-Line Supervisors/Managers of Mechanics, Installers, and Repairers
- 49-2092.00 Electric Motor, Power Tool, and Related Repairers

- 49-2093.00 Electrical and Electronics Installers and Repairers, Transportation Equipment
- 49-2094.00 Electrical and Electronics Repairers, Commercial and Industrial Equipment
- 49-2095.00 Electrical and Electronics Repairers, Powerhouse, Substation, and Relay
- 49-2096.00 Electronic Equipment Installers and Repairers, Motor Vehicles
- 49-9012.00 Control and Valve Installers and Repairers, Except Mechanical Door
- 49-9042.00 Maintenance and Repair Workers, General
- 49-9051.00 Electrical Power-Line Installers and Repairers
- 49-9098.00 Helpers - Installation, Maintenance, and Repair Workers
- 51-2022.00 Electrical and Electronic Equipment Assemblers
- 51-8013.00 Power Plant Operators
- 51-8021.00 Stationary Engineers and Boiler Operators

Since Navy programs and courses are revised at times, the information contained on this rating card is subject to change.

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