Apprenticeship Standard for: Maritime Electrical Fitter

The following standard reflects employers' requirements for the skills, knowledge and behaviours expected from someone to be competent in the job role.

Occupational Profile

The Electrical Fitter utilises engineering drawings, data and documentation in order to undertake the manufacture, installation, testing, commissioning, fault diagnosis, maintenance, overhaul and removal of electrical and data systems on maritime vessels. This covers propulsion machinery, weapons, sensors, reactor and auxiliary systems (such as water, air conditioning, electronic equipment including programmable logic controllers, power generation and distribution). It requires knowledge and expertise in the use of common and specialist electrical equipment, machines and hand tools, and the use of a variety of measuring and diagnostic equipment and processes to ensure individual components and assemblies meet the required specification. The Electrical Fitter must comply with statutory regulations and organisational safety requirements and will be expected to work both individually and as part of a team. They will be able to work with minimum supervision, taking responsibility for the quality and accuracy of the work they undertake and will be proactive in finding solutions to problems and identifying areas to improve business processes.

Essential Occupation Requirements (all in a Maritime context) - Knowledge

1. An understanding of mathematical techniques, formula and calculation.
2. An understanding of maritime electrical/electronic engineering technology and principles applied in the design, equipment build, operation and maintenance of maritime vessels.
3. How to correctly select and use hand, electrical, mechanical tools and test equipment used in the Maritime Industry.
4. An understanding of the practical and theoretical requirements of maritime electrical, electronic, mechanical, electromechanical, fibre-optics, fluid power equipment and systems used on board vessels.
5. Understanding how the improvement of processes and procedures used by an Electrical Fitter in the Maritime Industry can be more efficient and effective.
6. Knowledge of material and properties used in the electrical area of the Maritime Industry.
7. An understanding of quality, safety, health and environment as applied working in the Maritime Industry.

Essential Occupation Requirements (all in a Maritime context) - Skills

1. Comply with quality, safety, health and environmental regulations related to the Maritime Industry.
2. Read, analyse and interpret engineering data, drawings and documentation used in the design, equipment build, operation and maintenance of maritime vessels.
3. Use hand, power and machine tools to measure, mark out, cut, drill, shape and finish components to the required engineering tolerances.
4. Assembly, removal, maintenance and overhaul of components, sub-assemblies and whole systems in a maritime environment.
5. Apply assembly and installation methods and techniques (such as terminations, connectors, mechanical fasteners, seals, gaskets, and jointing materials) on maritime vessels.
6. Undertake testing, inspection and diagnostic activities on components, equipment and systems on maritime vessels, making adjustments where applicable.
7. Consider sustainability and environmental impacts when making safety, quality and cost decisions.

Employee Behaviours

Modern Engineering organisations require their employees to have a set of behaviours that will ensure success both in their role and in the overall company objectives. The required behaviours are:

- **Health, Safety and Environment:** committed to their own and their colleagues wellbeing at work and the wider environment
- **strong work ethic:** motivated; proactive; committed
- **dependability and responsibility**: punctual; reliable
- **positive attitude:** constructive thinking; optimism; motivated to succeed
- **team player:** able to work and interact effectively within a team and committed to equality & diversity
- **effective communication:** spoken; listening; body language; presentation; written
- **adaptability:** able to adjust to change
- **honesty and integrity:** truthful; sincere and ethical
- **self-motivation:** self-starter; able to make independent decisions & lead own professional development
- **personal commitment:** prepared to make a personal commitment to the industry.

Entry - Individual employers will set the selection criteria for their apprenticeships. In order to optimise success candidates will typically have 4 GCSEs at Grade C or equivalent, including Mathematics, English and a Science.

Duration of Apprenticeship - Typically 42 to 48 months, (timescales may reduce if an apprentice has prior relevant experience/ qualifications on entry).

Qualifications and Development - Apprentices without level 2 English and Mathematics will need to achieve this level prior to completion of the apprenticeship.

After a period of foundation skills and technical knowledge development all apprentices will be required to achieve the following qualifications (**working titles -currently in development**):

- Level 2 Maritime Electrical (Foundation Competence)
- Level 2 Maritime Electrical (Foundation Technical Knowledge).

After a further period of skills and technical knowledge development all apprentices will be required to achieve the following qualifications (**working titles - currently in development**):

- Level 3 Maritime Electrical (Development Competence)
- Level 3 Maritime Electrical (Development Technical Knowledge).

All the qualification requirements in the foundation and development phases are mandatory outcomes for the completion and final certification of the apprenticeship. Each qualification has a core and options approach and employers will select the most applicable pathway and unit options to meet their business requirements. Further detail can be found in the Employer Occupational Brief which is an annex to the Assessment Plan.

There will be an assessment at the end of the development phase where the apprentice will need to demonstrate full competence against the knowledge, skills and behaviours set out in the standard and Employer Occupational Brief. On successful completion of the employer endorsement phase (sign off) apprentices will be then be put forward to be awarded their apprenticeship completion certificated by a recognised industry endorsed third party.

Link to Professional registration - This apprenticeship is recognised by the Institution of Engineering & Technology (IET) and the Institute of Mechanical Engineers (IMechE) at 'Engineering Technician' Level.

Level - This apprenticeship standard is at Level 3.

Review date - This apprenticeship standard will be reviewed after 3 years to ensure it remains relevant and continues to meet employers' requirements and provides the basis for progression to higher qualifications and or job roles.