Lead Engineering Maintenance Technician Apprenticeship

EMPLOYER FACTSHEET

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This occupation is found in the engineering and manufacturing sector. Sectors typically include maritime, maritime defence, automotive, energy, engineering construction and general engineering maintenance. industries. Lead Engineering Maintenance Technicians typically perform a multi-disciplinary role, managing or leading other technicians.

Key Information

Level	4
Duration	Typically 42 months incl 6 month EPA period.
Entry requirements	- 16 years or over. - Please contact our Apprenticeship team for further entry requirements.
Delivery	A minimum of 30 hours of on the job training at work place. Delivery is done remotely.
Occupation summary	The broad purpose of the occupation is to offer engineering support, technical leadership and expertise. Examples can include support for installation, refit, overhaul, alteration, upgrading, design and maintenance. They can also provide support for testing significant assets, systems or machinery. They assist in the delivery of complex and critical asset management programmes.
Typical job titles	Installation Technician, Process Technician, Production Support Technician, Senior Maintenance Technician, Test and Commissioning Technician.
Professional Recognition	The Institute of Engineering and Technology.

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We are the largest college provider of apprenticeships in west London

We work with major companies including Brunel University London, Martin-Baker Aircraft Limited & Menzies etc.

Government funding may be available. Eligibility and criteria apply

Employers involved in creating this standard:

Babcock International Group, BAE Systems, Bromford Housing Association, Cavendish Nuclear, First Group, MVV, Ministry of Defence, Pendennis Shipyard, Royal Navy, RWE Energy, Rolls Royce.

01895 853780
employers@hruc.ac.uk
www.hruc.ac.uk/employers
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Qualifications

English and maths qualifications

Apprentices without level 2 English and maths will need to achieve this level prior to taking the end-point assessment. For those with an education, health and care plan or a legacy statement, the apprenticeship's English and maths minimum requirement is Entry Level 3. A British Sign Language (BSL) qualification is an alternative to the English qualification for those whose primary language is BSL.

Other qualifications

Mandatory qualifications applicable to all sectors (for both aerospace and non-aerospace apprentices)

Mandatory qualification 1: Pearson BTEC Level 4 Higher National Certificate in Engineering or Pearson BTEC Level 4 Higher National Certificate in Manufacturing Operations.

Level of qualification: 4

Additional mandatory qualifications applicable only to Aerospace apprentices to meet Civil Aviation (CAA) requirements

Aerospace mandatory qualification 1: EAL Level 2 Diploma in Aerospace and Aviation Engineering (Foundation Competence).

Level of qualification: 2

Mandatory period of protected learning (only applicable to the Aerospace Sector)

To meet the requirements of Civil Aviation Authority (CAA) regulations all individuals trained against this standard must complete a period of mandatory protected training leading to successful achievement of the mandatory qualification 601/7289/7 EAL Level 2 Diploma in Aerospace and Aviation Engineering (Foundation Competence).

Aerospace mandatory qualification 2: EAL Level 4 Diploma in Engineering and Advanced Manufacturing (Development Competence).

Occupation duties

Duty
Duty 1: Define and implement safety control measures appropriate to each maintenance activity informing the relevant people. Ensure the safe and efficient performance of every maintenance task in compliance with these measures.
Duty 2: Collate, interpret and analyse all technical information. For example, work procedures, design briefs, and maintenance manuals. Operating specifications, maintenance equipment calibration records, asset performance and calibration data.
Duty 3: Plan maintenance activities to guide the maintenance team. Ensure that work instructions, permits, and safety briefings are available in advance of maintenance activities. Ensure that operating procedures, contact details for relevant people, materials and resources are available.
Duty 4: Lead or undertake maintenance, modifications, repairs, upgrades, alterations and additions to systems, plant and equipment. Provide technical and team leadership, where appropriate, to complete maintenance activities.
Duty 5: Carry out inspection activities on equipment. For example, pressures, flows, temperatures, installation checks, material state and feasibility studies.
Duty 6: Inform teams of any significant maintenance and engineering technical issues as they occur. Provide technical and team leadership, advice and guidance as needed.
Duty 7: Liaise with internal and external stakeholders ensuring that engineering and maintenance operations meet agreed timescales. Examples of stakeholders could include asset managers, equipment operatives, auditors, suppliers, customers.
Duty 8: Deal with problems that occur within the activity using a structured and controlled approach. For example, unexpected technical or process issues, team related issues, escalating as required.
Duty 9: Generate documentation on completion of maintenance work to provide a complete record of the activity. Forward information required to support future asset maintenance planning. For example, test forms, defect reports, service records and handover reports.
Duty 10: Review engineering and maintenance procedures identifying potential improvements to processes, materials, resources or planning. For example, improvements on costs, efficiencies and quality.

Knowledge

K1: Awareness of health and safety regulations, relevant to the occupation and the technician's responsibilities. Health and safety regulations.

K2: Risk identification, risk assessments, mitigations and safe systems of work.

K3: Awareness of environment and sustainability regulations, relevance to the occupation and the technician's responsibilities. Environment and sustainability. Environmental Protection Act - responsibilities. Types of pollution and control measures: noise, smells, spills, and waste. Sustainability. Resource Management. Environmental permits. Waste management. Waste Electrical and Electronic Equipment Directive (WEEE). Hazardous waste regulations. Re-cyclable materials and waste disposal procedures. Energy consumption and usage profiling. Data logging to optimise energy performance. The Climate Change Agreements. Carbon Reduction Commitment (CRC).

K4: Engineering mathematical techniques and scientific principles: methods, techniques, graphical expressions, symbols, formulae.

K5: Engineering materials: characteristics, properties and impact on use.

K6: Problem solving techniques: diagnostics, root cause analysis, 6 thinking hats, DMAIC (Define, Measure, Analyse, Improve, Control), PDCA (Plan Do Check Act). Fault finding techniques: root cause analysis, 5 Whys', fishbone, half-split.

K7: Maintenance and engineering strategies, practices and techniques: planned, preventative, predictive and reactive.

K8: Standard operating procedures and work instructions: rationale, review and updates.

K9: Engineering, manufacturing and maintenance technical information, related documentation, such as job records, service reports, checklists and condemn notices; representations, drawings, graphical information, visuals and symbols.

K10: Manufacturers' instructions: what they are and how to use them. Warranties: what they are and impact on engineering maintenance work.

K11: Awareness of engineering international, national and regulatory standards, relevance to the occupation and technician's responsibilities. British Standards (BS). International Organisation for Standardisation standards (ISO). European Norm (EN).

K12: The function of an engineering maintenance department. Limits of autonomy and reporting channels. Different teams and functions involved in operation and interdependencies.

K13: Leadership and management techniques: customer relationship management, negotiating, influencing, networking, commercial awareness, conflict management and assertiveness.

K14: Workplace training and development and competence assurance techniques in the workplace. How to pass on knowledge to colleagues and provide guidance to customers or stakeholders.

K15: Planning, prioritising, work scheduling, workflow and time management techniques. Work management systems. Work categorisation systems.

K16: Verbal communication techniques: Matching style to audience. Barriers in communication and how to overcome them. Engineering terminology.

K17: Communication techniques: written documentation. Report writing.

K18: The engineering maintenance sector. Regulators. Types of employers. Clients. Supply chain. Stakeholders. Audits.

K19: Resources: Human, physical, space, documentation, tooling, specialist equipment, spares and materials. Stock and services considerations.

K20: Awareness of Quality Management Systems (QMS) and the principles of quality control and assurance, principles and practice in a maintenance and engineering environment. Relevance to the occupation and the technician's responsibilities.

K21: Continuous improvement techniques: lean, 6-sigma, KAIZEN, 5S (Sort, set, shine, standardise and sustain).

K22: Project management techniques: Strengths, Weaknesses, Opportunities, Threats (SWOT), stakeholder matrices, risk mapping and summary risk profiles.

K23: Information technology: Management Information Systems (MIS), spreadsheets, presentation, word processing, email, virtual communication and learning platforms. General Data Protection Regulation (GDPR). Documentation and data collection: principles, methods and requirements - electronic and paper. Analytical data, job records, timekeeping, service reports, checklists and condemn notices. Technological development and innovation in the engineering sector. Industry 4.0. IT networking and digital twinning.

K24: Business operation considerations: efficiency, customer satisfaction, competitiveness, minimising risks to operation, finance, business ethics and licenses.

K25: Equity, diversity and inclusion in the workplace.

Skills

S1: Comply with health and safety regulations and procedures. Apply safe systems of work.

S2: Comply with environmental and sustainability regulations and procedures when using resources. Segregate resources for re-use, recycling and disposal applying sustainability principles.

S3: Follow manufacturers' instructions and standard maintenance procedures.

S4: Identify and document risks and hazards in the workplace. Advise on and apply control measures.

S5: Record or enter information - paper based or electronic. For example, job sheets, risk assessments, equipment service records, test results, handover documents and manufacturers' documentation, asset management records, work sheets, checklists, waste environmental records and any legal reporting requirements.

S6: Plan and schedule tasks, projects or resources in the workplace.

S7: Manage tasks, projects or resources in the workplace.

S8: Evaluate tasks, projects or resources in the workplace.

S9: Communicate with colleagues and stakeholders verbally.

S10: Communicate in writing.

S11: Negotiate with colleagues or stakeholders. For example, to access equipment or arrange system outage.

S12: Identify potential conflicts and apply resolution strategies.

S13: Identify training needs of team members in the workplace.

S14: Provide technical leadership for maintenance practices and techniques.

S15: Provide technical leadership for repair practices and techniques.

S16: Provide technical leadership for fault finding techniques and practices.

S17: Identify problems and apply methods to identify causes and solutions. Escalate issues or concerns.

S18: Comply with engineering standards and regulations. For example, ISO9001.

S19: Interpret and use information from engineering data sources to apply changes.

S20: Lead on continuous improvement projects. Apply continuous improvement techniques. Devise suggestions for improvement.

S21: Manage technical handover of completed repair or maintenance activity.

Behaviour

B1: Prioritise and promote the environment and sustainability.

B2: Prioritise and promote health and safety.

B3: Apply a professional approach.

B4: Promote adoption of emerging and advanced engineering and maintenance technologies.

B5: Commit to professional development of self and others.

B6: Take responsibility for work.

B7: Act ethically.

B8: Collaborate within teams, across disciplines and external stakeholders.