# Apprenticeship Standard for: Aircraft Maintenance Fitter/Technician (Fixed and Rotary Wing)

The following Standard reflects employers' requirements for the skills, knowledge and behaviours required to be competent in the job role.

**Entry Requirements**

Individual employers will set the criteria, but most candidates will have four GCSEs C grade (or equivalent) or above on entry (including English, Maths & Science). Employers who recruit candidates without English, Maths and Science at Grade C or above must ensure that the candidate achieves this requirement, or an equivalent at Level 2, prior to completion of the Apprenticeship.

**Duration of Apprenticeship**

Normally 36 months, minimum of 24 months

**Role Profile**

Aircraft Maintenance Fitters/Technicians work on maintaining aircraft of all types from small aeroplanes to airliners, jet fighters and helicopters, both civil and military. They are expected to carry out approved maintenance processes to maintain the airworthiness of the aircraft. It involves highly skilled, complex and specialist work, maintaining aircraft systems according to approved requirements and work instructions, using relevant hand tools and equipment. They must comply with civil and or military regulatory and organisational requirements. They must be able to research data sources, ensuring that on completion of a task all aircraft documentation is accurately filled in. They will be expected to work both individually and as part of a larger maintenance team. They will demonstrate their ability to identify and resolve problems using the appropriate processes and understand the limits of their authority/approval. They will understand how and why Standard Operating Procedures are produced for maintaining aircraft and the importance of using them.

**Role Requirements (knowledge and skills)**

There are different civil and or military requirements which need a range of options depending upon the employer context.

**Core**

1. Use of mathematical techniques, algebraic expressions, formulae, calculation and physics to understand the theory of flight, aerodynamics and aviation maintenance processes
2. Understand the structure, properties and characteristics of materials used in the construction, maintenance and repair of aircraft components, whole structures and sub-assemblies
3. Understand the fundamentals of electrical, electronic, digital, analogue, aircraft systems and maintenance practices
4. Reading and interpreting engineering data; drawings, specifications, maintenance manuals, computer generated information and aircraft documentation
5. Safe selection and use of hand and mechanical tools and equipment while carrying out maintenance of aircraft
6. Appropriate bonding and assembly techniques e.g. in composite assembly
7. Complying with statutory, quality and organisational requirements for aviation safety and occupational health and safety while carrying out aircraft maintenance techniques
8. Human Factors in aviation – developing an understanding of attitudes and behaviours to ensure aviation safety
9. Use of measuring and or test equipment both mechanical and electronic while carrying out aircraft maintenance activities
10. Aircraft functional checks and fault diagnosis e.g. electrical bonding and earthing; flight control rigging
11. Use of ground support equipment

**Employer Selected Options (minimum of 2 options)**

1. Identification, control, repair and prevention of damage, fatigue and corrosion
2. Power-plant (piston & turbine engines), propellers & rotors
3. Business improvement techniques (personal accountability requirements) for working in an airworthiness environment (Maintenance practices)
4. Measuring and marking out materials to carry out precision repairs to aircraft
5. Precision drilling and finishing of holes in aircraft assemblies
6. Identifying and installing mechanical fasteners
7. Sealing and jointing techniques: use of seals, gaskets and jointing techniques
8. Assembly, repair and replacement of pipe work for aircraft and engine systems
9. Inspect, repair, remove and replace aircraft structures, components, sub-assemblies and systems
10. Aircraft flight-line handling and operations

Several options are available through the Apprenticeship depending on the context of the employer's business, whether in civil or military aviation, rotary or fixed wing aircraft, in workshop, line or base maintenance. All routes have core knowledge requirements but practical skills

options are likely to differ but are of comparable weighting. Those apprentices undertaking the EASA Category A Licence route will be required to pass the knowledge elements at 75%. Full details of the requirements including core and options, minimum requirements and rules of combination are contained in the **Employer Occupational Brief (EOB) within the Assessment Strategy.**

**Employee Behaviours**

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

1. Strong work ethic: motivated, proactive, committed
2. Dependability and responsibility: punctual, reliable
3. Positive attitude: constructive thinking, motivated to succeed, committed to equality and diversity, environmental, social and economic sustainability
4. Team player: able to work and interact effectively within a team
5. Effective communication: spoken, listening, body language, presentation, written
6. Adaptability: able to adjust to change
7. Honesty and integrity: truthful, sincere and ethical
8. Self-motivation: self-starter, able to make appropriate decisions and lead their own professional development
9. Personal commitment: prepared to make a personal commitment to the industry

**Apprenticeship Structure**

The Apprenticeship Standard will be met in three phases:

**1) Foundation Phase**

(A significant period of off-the-job training predominantly at Level 2 covering three key aspects of training, basic engineering skills, relevant underpinning knowledge and behavioural development.) The basic engineering skills include employer core and mandatory regulatory requirements, together with a range of tailored engineering skills units required to meet the specific needs of individual employers. Academic study will underpin skills development and will form the preparation for achievement of the main academic component. During this time apprentices will develop the appropriate behaviours to support their learning. This phase will culminate in a Gateway Review to ensure a strong foundation of basic skills has been developed. Successful completion of the following is required to progress into the Development Phase.

- Foundation Skills Competency – Qualification in development
- Foundation Technical Knowledge – Qualification in development
- Demonstration of appropriate behaviours (as specified above)

**2) Development Phase** (Further Vocational and Academic Learning) will build on the basic skills and knowledge from the Foundation phase and focus on developing further skills capability leading to a qualifications at Level 3 which are being developed.

**3) End point assessment and Employer Endorsement**

There will be an assessment at the end of the development phase where the apprentice will need to demonstrate competence against the knowledge, skills and behaviours in this Standard. On completion of the employer 'sign off' process, apprentices will be independently certified by a relevant, recognised, industry endorsed, third party.

**Recognition**

On achieving this Standard, each apprentice's documentation set is submitted to the approved, independent assessment body to gain the award of the Apprenticeship Certificate and to satisfy the requirements for Engineering Technician registration. Knowledge and vocational qualifications that meet national and/or regulatory requirements will be included on the Certificate.

**Level and Review**

This Apprenticeship Standard is at Level 3 (equivalent to A levels) and will be reviewed in March 2017 to ensure it remains relevant and continues to meet employers' requirements and provides the basis for progression to higher qualifications.