

## AIRCRAFT ENGINEERS

### BACKGROUND INFORMATION

Aircraft Engineers are normally employed by airlines, aircraft manufacturers, the aeronautical sections of the government departments and aircraft maintenance organisations.

Aircraft Engineers involved in maintenance are required to inspect, service, repair and overhaul civil aircraft on the ground. Aircraft maintenance covers a very broad spectrum from minor servicing and troubleshooting to stripping and rebuilding thousands of components that make up aircraft systems. (This sheet does not include work on Military Aircraft, as they are serviced under MOD contracts.)

Engineers usually specialise in either the mechanics or the avionics (electronics) of an aircraft. Mechanical Engineers specialise in the engine, the airframe the electrical systems and avionic line replaceable units where the units are self testing. [The airframe is the structure and fabric of an aircraft i.e. landing gear, doors, environmental control, flying control surfaces.]

Between flights, Engineers carry out a set schedule of pre-flight checks on aircraft investigate any defects reported by the flight crew during the previous flight or found during the schedule checks. They may also need to remove components to diagnose the problem and make any adjustments or repairs that are necessary.

Some Engineers are purely workshop based and overhaul mechanical or avionic components. There are two types of workshop involved in the maintenance, overhaul, repair and modification of components. They are categorised more by their ownership rather than what they actually do. These are:

- Component Workshops
- Specialist Component Workshops

The overhaul, repair and modification of complete aircraft and most of their associated systems and components is undertaken by a few large airline companies, third party repair organisations and independent specialist organisations.

Most unlicensed engineers have a personal log book which will contain information on courses taken and actual work undertaken. All log book entries must be countersigned by a senior member of the organisation dealing with aircraft maintenance. Signed worksheets are another alternative as some countries do not use log books, e.g. South Africa.

### INDUSTRY REQUIREMENTS

There is little difference in the basic engineering skills required for a Licensed or Unlicensed Engineer. A Licensed Engineer will be required to make decisions about serviceability before releasing an aircraft. An Unlicensed Engineer may just work on one area of the aircraft i.e. the wings, engine or in a component overhaul workshop and cannot release an aircraft for flight.

An Unlicensed Engineer may have just finished an apprenticeship or have come

## Internal Caseworker Guidance

into the industry from another engineering discipline such as vehicle mechanics. Some employers recruit such people and train them up. Some will end up working in component workshops while others may progress to working on particular areas of an aircraft.

The work of an Unlicensed Engineer must be certified by a Licensed Engineer. There is a certain amount of natural progression involved in obtaining a license, however, there are some very experienced Unlicensed Engineers, who for personal reasons have decided not to apply for a license; however their work must be covered by a licensed engineer.

Further advice: The holding of a national licence, other than a Part-66 licence, will not be recognised by the CAA or Part 145 maintenance organisation.

The CAA are the regulatory authority, responsible to HM Government for aviation safety within the UK civil industry. The CAA issue licences in accordance with Commission Regulation (EC) 2042/2003 Annex III (this being European Legislation). This is known as Part-66 Aircraft Maintenance Licence (AML). Every licence application is judged on its own merits. The level of experience required is 'stepped' according to the level of licence applied for. Experience levels can be reduced if the applicant has prior technical training and further reduced if the applicant has completed an approved course with an approved training organisation.

The minimum requirements are stated within Commission Regulation (EC) 2042/2003. An Aircraft Maintenance Licence (Part-66) is valid for a period of 5 years. The licence is renewable for 5 year periods.

The British Civil Airworthiness Requirements (BCAR) Licence is no longer available to new applicants as the examinations were closed to new applicants on 01 November 2004. The Part-66 has now superseded the BCAR Licence.

Experience must be gained whilst maintaining operating aircraft and not solely in component workshops or on static or non-flying aircraft. If there is any doubt regarding an individual's previous experience you should contact the CAA for further advice.

## REGISTRATION WITH A PROFESSIONAL BODY

There is currently no registration requirement with a professional body; however workers must apply for licensing from the CAA as mentioned above.

## CASEWORKER TREATMENT

B&C: There are no specific qualification criteria to become an Aircraft Engineer however, employers usually specify particular qualifications such as BTEC, HND, HNC or NVQs, which are often acquired during the course of an apprenticeship. It is not the norm for a practising Maintenance Engineer to hold a degree. However, in Europe the Part-66 (AML) Category C Licence function (certification of scheduled maintenance checks) is often carried out by a graduate engineer.

The job of **Licensed Aircraft Engineer** meets the skills' criteria if they hold a Part-66 licence with relevant aircraft type ratings and authorisation issued by a Part 145

Internal Caseworker Guidance  
organisation. This is equivalent to NVQ Level 4. If they do not have this qualification, they should be treated as an Unlicensed Aircraft Engineer.

The job of **Unlicensed Aircraft Engineer** would normally still meet the skills' criteria where it can be shown they have either the relevant qualifications or at least 3 years industry related experience. The level of experience acquired by an Unlicensed Engineer is slightly lower than that of a Licensed Engineer, at NVQ 3. However, this would still satisfy the skills criteria of the scheme. A personal log book would assist in proving capability.

## **SALARY**

An Unlicensed Aircraft Maintenance Engineer would normally earn between £15,000 and £19,500 per annum.  
Licensed Engineers employed in the field of general aviation will earn between £18,000 and £25,000 per annum.  
A Licensed Engineer working in avionics, and employed by a major airline can expect to earn between £25,000 - £38,000 per annum.

## **ADVERTISING**

The following journals are the main sources of advertising for Aircraft Maintenance Engineers:

**Flight International Magazine** Flight International, Quadrant house, The Quadrant, Sutton, Surrey, SM2 5AS. Tel: 02086 523811, Fax: 02086 524802. E-mail: [flight.international@rbi.co.uk](mailto:flight.international@rbi.co.uk). Contact: Jean Nye, Tel: 0181 6528702, E-mail: [jean.nye@rbi.co.uk](mailto:jean.nye@rbi.co.uk)  
[www.flightinternational.com](http://www.flightinternational.com)

**Association of Licensed Aircraft Engineers Tech – Log** Bourn House, 8 Park Street, Bagshot, Surrey, GU19 5AQ. Tel: 01276 474888, Fax: 01276 452767. E-mail: [alae@bagshot.sagehost.co.uk](mailto:alae@bagshot.sagehost.co.uk). Contact: Jill Lyons

## **FURTHER INFORMATION**

**Civil Aviation Authority, Safety Regulation Group**, Aviation House, Gatwick Airport South, Gatwick, West Sussex, RH6 0YR or  
Tel: 01293 573700, Fax: 01293 573999. E-mail: [ELDWEB@srg.caa.co.uk](mailto:ELDWEB@srg.caa.co.uk)

European Aviation Safety Agency Website: [www.easa.eu.int](http://www.easa.eu.int)