

The Licensed Aircraft Maintenance Engineer

Why the Licensed Aircraft Maintenance Engineer is important

Licensed Aircraft Maintenance Engineers (Certifying staff) are engineers to whom a company (because of their specialised training, competence and experience) has assigned the role of certifying for the correct state of systems maintained on aircraft, such as engines, hydraulics, autopilot, communications, radar, etc.).

The licensed engineer is the sole arbitrator of safety whilst the aircraft is on the ground. The Licensed Aircraft Maintenance Engineer will only supply their signature to a Certificate of Release to Service (CRS) when he or she is 100% certain that the aircraft is safe to fly. The Certificate of Release to Service (CRS) is a legal statement clearing an aircraft for further flight following maintenance whilst attributing full responsibility for the quality of all maintenance covered by the CRS to the issuing Licensed Engineer.

The appointment of certifying personnel with authority to release aircraft back into service and the quality statement by signature are two institutions that apply worldwide. As well as setting up a competent gatekeeper, such systems ensure that responsibility can be retraced and attributed to specific persons. This is due to the fact that aircraft maintenance is rated as an area of high potential danger.

The Licensed Engineer is one of the most effective ways to counter commercial pressure and the resultant lowering of safety standards.

Why maintenance matters

There is a close link between standards of maintenance and safety. The International Civil Aviation Organisation (ICAO) has established minimum standards of airworthiness and operational safety for operating aircraft. The Licensed Aircraft Maintenance Engineer has studied long and trained hard to obtain his qualification in accordance with ICAO requirements.

Why aviation is different from other sectors of industry

The key feature making aviation different from other sectors of industry is safety criticality. It is true that safety is also important for other transport sectors, but the failure of a key system during aircraft operation is more likely to lead to catastrophic results. The Licensed Aircraft Maintenance Engineer is therefore a key figure in ensuring that your aircraft is fit and safe for its next flight.



Training and Accreditation of the “Licensed” Aircraft Maintenance Engineer

The National Aviation Authority (NAA) of each country is primarily responsible for ensuring that Licensed Aircraft Maintenance Engineers are trained to the required standard. This requires the Engineer’s aircraft engineering knowledge to be examined and assessed independently of their employer. Only after having successfully completed all National Aviation Authority required examinations is the Engineer issued a licence.

The Licence at this stage remains inactive as the Engineer must still undergo intensive aircraft specific training, so called type training and demonstrate substantial experience. Once the type training has been successfully completed and the experience requirements have been met, the Licence is returned to the National Aviation Authority in order for the training to be endorsed. Once the national authority is satisfied that all training requirements have been met, the Licence is reissued with the appropriate aircraft type endorsed on it.

However the process is still not complete. The Licensed Aircraft Maintenance Engineer must now complete an employer specific internal assessment and competence program before finally being issued with an authorisation enabling the licence holder to be able to certify aircraft as fit for purpose.

Can industry maintain its high standards and impressive safety record without the Licensed Aircraft Maintenance Engineer?

The short answer is no it can’t. In a notoriously difficult and competitive industry, airlines are under enormous pressure to produce a profit. With aircraft maintenance usually performed out of sight, it is unfortunately often considered an easy target for cost cutting. Cost cutting takes on many forms but needless to say very few suggestions are actually beneficial to either passengers or safety.

In addition there is enormous pressure applied by the aviation industry on regulators to move towards a more light touch regulatory approach which ultimately allows for lower cost options rather than the safest of standards. As the link between maintenance standards and safety has already been well established by the International Civil Aviation Organisation, any relaxation of regulatory oversight will only serve to increase the risks of air travel. The aviation industry is well aware that the independently Licensed Engineer is extremely effective in upholding standards and maintaining safety levels yet some still perceive them as an unnecessary cost burden.

Just recently an attempt was made by the aviation industry to severely reduce the involvement and influence of the Licensed Aircraft Maintenance Engineer in the maintenance process by attempting to unduly influence amendments to aviation regulations detailing Licensed Engineer responsibilities. Although unsuccessful on that occasion, newly proposed European Aviation Safety Agency (EASA) regulatory amendments will offer the aviation industry a further opportunity to undermine one of the most effective methods of upholding safety.



There are two basic methods in use today, of authorising personnel to certify aircraft.

- 1) The independently (state) approved Licensed Aircraft Maintenance Engineer
- 2) The employee, internally trained and approved by an employer but not required to hold independent qualifications.

It is generally accepted that option 1 above offers the best protection against slippage of standards and therefore consistently maintains the highest level of safety. This is due to the independence of the licence and the benchmarked standards that are applied before a licence can be issued to an individual.

Option 2 theoretically should be able to maintain an equally high level of safety. A company serious about their safety responsibilities will ensure that individuals are well trained and not placed under any adverse pressure to certify aircraft that are not airworthy.

However experience has clearly demonstrated that such systems offer patchy levels of safety as internal systems are often not benchmarked against an independent standard and local differences can vary the level of safety considerably. Furthermore, the level of independence is lowered as the individual is internally authorised and the authorisation could be removed at any time by the company. Therefore there are genuine concerns that the internal company authorisation system does not take into proper account the effect of peer pressure, human factors or economic considerations for the individual who is dependent on the company for his job.

This has already been highlighted as a contributing factor following aircraft incident investigations. One incident report following an investigation into a near disaster stated:

"It is not sufficient to issue maintenance staff with authorisations and expect that they will always stick to them rigidly whilst ignoring all external pressures and factors applied to them in the workplace; this is ignoring the influence of human factors. Simply relying on procedures and assuming that people will always adhere to them is unrealistic and can, over a period of time, result in a gradual shift in the norm away from best practice as people inevitably respond to the most pressing environmental and peer influences around them".

The Way Forward

The future requires a coordinated team approach if the current excellent safety levels are to be maintained. With the move towards a global standard gathering momentum the aviation industry must now exercise some maturity with regards to maintenance and safety.

The aviation industry must offer its unequivocal support to the Licensed Engineer. The Licensed Engineer remains the hidden hero of safety within modern aviation. At 3 o'clock in the morning a sole Licensed Engineer is often the only difference between a safe or unsafe flight; they are the final gate keeper in terms of safety and have well-earned the public trust they hold.



Airlines must respect and appreciate this rather than continue to undermine the Licensed Engineer and ultimately safety under the banner of cost cutting in pursuit of short term profits.

If airlines are serious about safety always being paramount then they must also lend their unequivocal support to the "state issued" licence, with the privileges of the licence remaining attached to the individual Licensed Engineer and not the company.

For More Information Contact:

Aircraft Engineers International (AEI),
Post Box 5
2450 AA Leimuiden,
Netherlands

Tel: +31 655 930 175

Email: Aircraft-Engineers@airengineers.org

Web: www.airengineers.org