



REGULATORY PROGRAM

Piston engine overhaul—Proposed under Part 43



The information provided below is a guide only as to how the rules may work in practice once Part 43 is made and commences.

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Who should read this information sheet?

- › Licensed aircraft maintenance engineers
- › Aviation Maintenance Technician (AMT) certificate holders
- › Registered operators
- › CAR30 organisations
- › Part 145 Approved Maintenance Organisations

What is an engine overhaul?

An overhaul of an engine means the engine has been:

- › dismantled, cleaned and inspected
- › repaired as necessary
- › parts have been replaced if they are unserviceable or do not meet manufacturers specifications
- › reassembled
- › tested in accordance with approved standards and data, or standards and data acceptable to CASA.

What are standards acceptable to CASA?

The manufacturers' overhaul manuals are documentation that clearly stipulate the work that must be accomplished during an engine overhaul and outline the limits and tolerances to be used during the inspections.

In most cases, the standards that are outlined in the manufacturer overhaul manuals are standards acceptable to

CASA and the work on the engine must be carried out using methods techniques and practices set out in the relevant overhaul instructions.

What are the requirements before a person can overhaul a piston engine?

Before a person can overhaul a piston engine, they must:

- › hold a Part 66 licence (B1.2 or B1.4) that does not have an engine exclusion, or
- › hold an **AMT 1 Certificate-Engine overhaul**
- › have access to the manufacturer's current instructions for carrying out the overhaul—the most recent instructions
- › understand and comply with those instructions.
- › have appropriate facilities to undertake the overhaul
- › have the required tools, special tools, test equipment and apparatus in order to comply with the manufacturer's instructions, including any crankcase splitting jigs, assembly stands, engine testing rigs, cooling shrouds or test clubs as specified by the engine manufacturer
- › perform the work to an accepted industry standard
- › not undertake the overhaul unless the individual
 - if carrying out the overhaul under the privileges of a B1 licence, has previously performed an overhaul of a similar engine or has satisfactorily completed an overhaul under the direct supervision of a person who has previously completed a similar type of overhaul, or
 - holds an AMT certificate that permits them to perform the overhaul and release the engine to service





Note: reference to the “manufacturers’ current instructions” means the most recent version of the relevant overhaul manual—it does not include service bulletins, service instructions etc that the manufacturer may publish from time to time. For more information about service bulletins please refer to the Dealing with Manufacturers Service Bulletins information sheet.

There are several factors to be considered before a licensed aircraft maintenance engineer (LAME) can overhaul an engine:

- › in order to do the work to an accepted industry standard, they need the appropriate facilities. A garage may be suitable if it has the necessary work benches, lighting and environmental contamination controls and the required engine test facilities.
- › unless the LAME has previously overhauled an engine, then they must undergo the required training or satisfactorily perform an engine overhaul under the direct supervision of someone who has met one of the following:
 - have been employed to carry out overhauls in an engine overhaul shop. The work experience must be relevant to the work being assessed
 - have previously carried out an overhaul of a similar engine.

Note: If a LAME carries out an engine overhaul and does not hold an **AMT Certificate-Engine overhaul**, then they must be able to provide documentary evidence of their compliance with one of the training, experience, or supervised task completion requirements listed above.

Does an IA holder need to release an engine after overhaul?

Engine overhauls will not be treated as a major repair under Part 43. However, if the work involves:

- › separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with an integral supercharger
- › separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with other than spur-type propeller reduction gearing
- › special repairs to structural engine parts by welding, plating, metalizing, or other methods

Then it is considered a major repair and requires an inspection authorisation (IA) holder to certify that the work conforms to the approved data (refer to paragraph 2 of Appendix A to Part 43).

What are the requirements for testing an engine after overhaul?

The manufacturers of reciprocating engines allow the airframe to be considered a suitable test stand for the running in of overhauled engines, provided the following requirements are observed:

- › a test club is used in place of a flight propeller
- › a suitable cooling shroud or scoop is used to gather and direct cooling air over the cylinders
- › a cylinder head temperature pickup is installed on each cylinder to monitor individual cylinder temperature
- › all necessary engine gauges are calibrated.

What are the certification requirements for an overhauled engine?

The person releasing the engine to service after an overhaul is required to list:

- › a statement that the engine has been overhauled
- › the date of completion of the overhaul
- › the time in service of the engine at overhaul
- › details of overhaul instructions that were used
- › details of new and/or used replacement parts by part number and serial number if applicable
- › service bulletins, if any, that have been incorporated
- › details of engine test stand and measuring equipment used
- › details of engine test results
- › the signature, certificate number, and kind of certificate held by the person approving the work. The signature constitutes the approval for return to service for the engine.

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