

Subject: Inspection of aircraft engines after shock loading.

Affected engine models: All engine models:

L 1700
L 2000
L 2400

Background information: There are still different opinions on how far engines have to be inspected after shock or bend loading the propeller.

All cases in which the engine speed is suddenly reduced due to an external reaction are, technically spoken, shock loadings. For example these could be ground contacts, bird strikes or any other contact with a foreign object with the propeller turning. Engine damage is also possible in cases where the propeller has contact with an obstacle on a stopped engine. Such cases are, called a bend loading of the crankshaft. Hard landings and ground-handling incidents with the engine stopped are cases of the type mentioned above.

The stress on the engine depends on the duration of the incident, looking at the time spans of several milliseconds. Naturally it is not possible to comment over such a short time span. Also the propeller damage gives no reliable indication for the possibility of engine damage. There have been cases of only a slight shortening of the propeller and yet the crankshaft was bent. On the other hand there have also been cases of completely destroyed propellers without evidence of engine damage.

Measuring the propeller hub with the engine still assembled cannot give any indication of possible crankshaft or crankcase damage.

Please note that if the engine is subjected to a shock load the magneto (with L 2000 DA both ignition magnetos) must be replaced. For further information please refer to Technical Bulletin No. 20 (current edition).

Priority: On occurrence of incident

Compliance: Teardown inspection of the engine. Inspection of the engine mount for correct dimensions and cracks.

Remarks: If a forced stop of an aircraft engine is not reported when placing the order for either a repair or an overhaul, the operator continues to be liable for any subsequent damage even after repairing or overhauling.

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Approval: The technical content of this document is approved under the Authority of EASA ref. approval number 10077418 and have been produced in accordance with alternative procedure to DOA nr. EASA.AP509.

Note: This document has been translated to the best of our knowledge. In case of doubt however only the German original shall be considered authoritative.