

Implementing rules : CAT.POL.H.305(b)

(b) To obtain and maintain such approval the operator shall:

(1) conduct a risk assessment, specifying:

- (i) the type of helicopter; and
- (ii) the type of operations;

(2) implement the following set of conditions:

- (i) attain and maintain the helicopter/engine modification standard defined by the manufacturer;
- (ii) conduct the preventive maintenance actions recommended by the helicopter or engine manufacturer;
- (iii) include take-off and landing procedures in the operations manual, where they do not already exist in the AFM;
- (iv) specify training for flight crew; and
- (v) provide a system for reporting to the manufacturer loss of power, engine shutdown or engine failure events;

and

(3) implement a usage monitoring system (UMS).

Existing Acceptable Means of Compliance: AMC2 CAT.POL.H.305(b)**DGAC France Alternative Means of compliance :****IMPLEMENTATION OF THE SET OF CONDITIONS – RECIPROCATING ENGINES**

To obtain an approval under CAT.POL.H.305(a), the operator conducting operations without an assured safe forced landing capability should implement the following:

(a) Attain and then maintain the helicopter/engine modification standard defined by the manufacturer that has been designated to enhance reliability during the take-off and landing phases.

(b) Conduct the preventive maintenance actions recommended by the helicopter or engine manufacturer as follows:

- (1) engine oil spectrometric and debris analysis — as appropriate;
- (2) engine trend monitoring, **based on cylinder compression checks**;
- (3) **cylinder and induction/exhaust valve borescope inspections as appropriate**; and
- (4) oil consumption monitoring.

(c) The usage monitoring system should fulfil at least the following:

(1) Recording of the following data:

- (i) date and time of recording, or a reliable means of establishing these parameters;
- (ii) amount of flight hours recorded during the day plus total flight time;

(iii) cylinder head temperature exceedance: value, duration;

(iv) oil temperature exceedance: value, duration;

(v) manifold absolute pressure (MAP) exceedance (if appropriate to engine configuration): value, duration;

(vi) crankshaft RPM exceedance: value, duration.

(2) Data storage of the above parameters, if applicable, covering the maximum flight time in a day, and not less than 5 flight hours, with an appropriate sampling interval for each parameter.

(3) The system should include a comprehensive self-test function with a malfunction indicator and a detection of power-off or sensor input disconnection.

(4) A means should be available for downloading and analysis of the recorded parameters. Frequency of downloading should be sufficient to ensure data are not lost through overwriting.

(5) The analysis of parameters gathered by the usage monitoring system, the frequency of such analysis and subsequent maintenance actions should be described in the maintenance documentation.

(6) The data should be stored in an acceptable form and accessible to the competent authority for at least 24 months.

(d) The training for flight crew should include the discussion, demonstration, use and practice of the techniques necessary to minimise the risks.

(e) Report to the manufacturer any loss of power control, engine shutdown (precautionary or otherwise) or engine failure for any cause (excluding simulation of engine failure during training). The content of each report should provide:

(1) date and time;

(2) operator (and maintenance organisations where relevant);

(3) type of helicopter and description of operations;

(4) registration and serial number of airframe;

(5) engine type and serial number;

(6) power unit modification standard where relevant to failure;

(7) engine position;

(8) symptoms leading up to the event;

(9) circumstances of engine failure including phase of flight or ground operation;

(10) consequences of the event;

(11) weather/environmental conditions;

(12) reason for engine failure — if known;

(13) in case of an in-flight shutdown (IFSD), nature of the IFSD (demanded/un-demanded);

(14) procedure applied and any comment regarding engine restart potential;

2021 05 18 - AIROPS - AMOC FR N°38
(ref. EASA : 2021-00023)

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(15) engine hours and cycles (from new and last overhaul);

(16) airframe flight hours;

(17) rectification actions applied including, if any, component changes with part number and serial number of the removed equipment; and

(18) any other relevant information.