



FOCA AltMoC

Alternative Means of Compliance

CAT.POL.H.305(b) – Implementation of the Set of Conditions for Reciprocating Engines

This document is an 'Alternative Means of Compliance' issued by FOCA



CoRE

Scope	Implementation of the set of conditions for reciprocating engines
Applies to	AOC-Holders
Valid from	17 December 2019
Purpose	Compulsory

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This document is an
Alternative Means of Compliance (AltMoC) issued by FOCA

according to

Regulation (EU) No 965/2012 (Air Operations), ARO.GEN.120

Preliminary Information

What is an AltMoC issued by FOCA?

The EASA homepage on the internet states (as of end 2016):

‘Since AMCs are non-binding, regulated persons may choose alternative means to comply with the rule. In this case, however, they lose the presumption of compliance provided by the EASA AMC, and need to demonstrate to competent authorities that they do comply with the law.’

The implementing rules for Aircrew licensing, Air Operations, Aerodromes and Air Traffic Controller licensing describe the process to be used by regulated persons and competent authorities when they intend to use an AltMoC to comply with the rules.

Implementing Rules establish that the implementation of AltMoC by organisations is subject to prior approval by the competent authority and indicate what needs to be done in order to obtain the approval.

Implementing Rules also establish the obligations of competent authorities when giving the prior approval to an organisation and when they adopt themselves an AltMoC that can be used by the regulated organisations under their oversight.

One of the obligations stipulated in the Implementing Rules is to notify EASA of such AltMoCs. Competent authorities are requested to use the EASA prepared AltMoC Notification Form for notifying AltMoCs proposed by organisations or used by themselves.

For more information from EASA on AMC and AltMoC, please consult the [FAQ](#).’

To these statements FOCA would like to add the following additional information:

- AltMoCs may not only be issued as alternative to an already existing AMC. FOCA may as well publish AltMoCs that cover issues where no AMC is available. Therefore, the term *alternative* may be slightly misleading in some cases.
- AltMoCs may be seen as an administrative ordinance in traditional Swiss legal doctrine. However, conditions, issuing power and legal effects are pure products of Union legislation. Legal practitioners, attorneys and courts in Switzerland, therefore, should not attempt to categorise AltMoCs under traditional national principles of administrative law. They should always bear in mind that AltMoC are genuine legal instruments of the EU aviation safety regulation.

What are the effects of an AltMoC issued by FOCA?

AltMoCs issued by FOCA have basically the same legal status and effect as AMCs. Except that the author of AltMoCs is not EASA but FOCA. AltMoCs are not evaluated by EASA in advance but are reviewed within a short time after their publication by FOCA. Therefore, once released by FOCA, AltMoCs become immediately applicable to all parties under Swiss jurisdiction. In other words, they immediately may be used as an alternative to existing AMCs or they must be used if no such AMC is available. In either case they provide presumption of conformity with the essential requirements and the implementing rules.

However, AltMoCs do not have cross-border effect: an operator under foreign jurisdiction has no legal claim to his competent authority to allow use of an AltMoC issued by FOCA. And FOCA will not automatically accept in its jurisdiction the use of an AltMoC issued by foreign competent authorities.

Different matters are AltMoCs developed and requested by an ATO, operator or regulated person and which are not issued but only approved by FOCA. These have effect for the applicant only. Third parties must submit a complete application for their own including full proof that their AltMoC fulfils the legal requirements.

AltMoC may motivate EASA to initialise own rule making aiming an additional IR or additional AMC. The start of such rule making procedure does *senso stricto* not have any effect on the AltMoC until the time where a revised IR or a new AMC legally replaces the AltMoC. However, such rule making activities might increase the likelihood that competent authorities accept the underlying foreign AltMoC.

Log of Revision (LoR)

Date	Issue	Revision	Highlight of Revision
17.12.2019	1	0	First Issue

List of Effective Chapters

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ToC ISS 1 / REV 0 / 17.12.2019
Ch. 0 ISS 1 / REV 0 / 17.12.2019
Ch. 0.1 ISS 1 / REV 0 / 17.12.2019
Ch. 0.2 ISS 1 / REV 0 / 17.12.2019
Ch. 0.4 ISS 1 / REV 0 / 17.12.2019
Ch. 1 ISS 1 / REV 0 / 17.12.2019

List of Abbreviations

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The following abbreviations are within this AltMoC:

Abbreviation	Definition	Abbreviation	Definition
AltMoC	Alternative Means of Compliance	IFSD	In-Flight Shut Down
AMC	Acceptable Means of Compliance	MAP	Manifold Absolute Pressure
EASA	European Aviation Safety Agency	RPM	Revolution Per Minute
FOCA	Federal Office of Civil Aviation		

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0 Introduction

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AMC2 CAT.POL.H.305(b) addresses the requirements to be met by operators of turbine engine helicopters seeking an approval to operate without and assured safe forced landing capability under CAT.POL.H.305(a).

0.1 Legal References

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Commission Regulation (EU) No 965/2012: CAT.POL.H.305 (b)

0.2 Purpose of this AltMoC

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This AltMoC supplements AMC2 CAT.POL.H.305(b) and provides for appropriate parameters for reciprocating (piston) engines instead of turbine engines. This includes items to be monitored under a Usage Monitoring System as part of the engine reliability programme necessary for approvals to be granted.

0.3 Terms and Conditions

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When used throughout the GM/INFO the following terms shall have the meaning as defined below:

Term	Meaning	Reference
<i>shall, must, will</i>	These terms express an obligation, a positive command.	EC English Style Guide: Ch. 7.19
<i>may</i>	This term expresses a positive permission.	EC English Style Guide: Ch. 7.21
<i>shall not, will not</i>	These terms express an obligation, a negative command.	EC English Style Guide: Ch. 7.20
<i>may not, must not</i>	These terms express a prohibition.	EC English Style Guide: Ch. 7.20
<i>need not</i>	This term expresses a negative permission.	EC English Style Guide: Ch. 7.22
<i>should</i>	This term expresses an obligation when an acceptable means of compliance should be applied .	EASA Acceptable Means of Compliance publications FOCA policies and requirements
<i>could</i>	This term expresses a possibility.	http://oxforddictionaries.com/definition/english/could
<i>ideally</i>	This term expresses a best possible means of compliance and/or best experienced industry practice.	FOCA recommendation

Note: To highlight information or an editorial note a specific note box is used.

- The use of the male gender should be understood to include male and female persons.

1 AltMoC CAT.POL.H.305(b) Helicopter Operations without an Assured Safe Forced Landing Capability

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IMPLEMENTATION OF THE SET OF CONDITIONS FOR RECIPRO-CATING 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) cylinder and induction/exhaust valve borescope inspections as appropriate;
 - (3) engine trend monitoring based on cylinder compression checks; 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;
- (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.