



## **Notification of a Proposal to issue a Certification Memorandum**

### **Post Certification Actions to Verify the Continued Integrity of Safety Critical Parts**

**EASA Proposed CM No.: Proposed CM-S-007 Issue 01 issued 30 April 2015**

**Regulatory requirement(s): CS 27/29.602, CS 29.547(b), CS 29.571 and CS 29.917(b)**

In accordance with the EASA Certification Memorandum procedural guideline, the European Aviation Safety Agency proposes to issue an EASA Certification Memorandum (CM) on the subject identified below. All interested persons may send their comments, referencing the EASA Proposed CM Number above, to the e-mail address specified in the "Remarks" section, prior to the indicated closing date for consultation.

EASA Certification Memoranda clarify the European Aviation Safety Agency's general course of action on specific certification items. They are intended to provide guidance on a particular subject and, as non-binding material, may provide complementary information and guidance for compliance demonstration with current standards. Certification Memoranda are provided for information purposes only and must not be misconstrued as formally adopted Acceptable Means of Compliance (AMC) or as Guidance Material (GM). Certification Memoranda are not intended to introduce new certification requirements or to modify existing certification requirements and do not constitute any legal obligation.

EASA Certification Memoranda are living documents into which either additional criteria or additional issues can be incorporated as soon as a need is identified by EASA.



## Log of issues

Issue	Issue date	Change description
01	30.04.2015	First issue.

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## 1. Introduction

### 1.1. Purpose and scope

The purpose of this Certification Memorandum is to supplement the existing guidance for compliance with CS 27/29.602 – Critical Parts and CS 29.547(b) / 29.917(b) – Design Assessments, detailing the need for post certification actions to verify the continued integrity of safety critical parts.

### 1.2. References

It is intended that the following reference materials be used in conjunction with this Certification Memorandum:

Reference	Title	Code	Issue	Date
---	Certification Specifications for Large Helicopters	CS-29	---	---
FAA AC 29-2C	Certification of Transport Category Rotorcraft	---	---	---

### 1.3. Abbreviations

AC	Advisory Circular
CM	Certification Memorandum
CS	Certification Specification
EASA	European Aviation Safety Agency
FAA	Federal Aviation Administration
CIVP	Continued Integrity Verification Programme
CIVPP	Continued Integrity Verification Programme Plan
CIVPR	Continued Integrity Verification Programme Report
SPC	Statistical Process Control
TCH	Type Certificate Holder

### 1.4. Definitions

Compensating Provisions	Provisions which are made available to minimize the likelihood of occurrence of hazardous and catastrophic failures. Examples are provided in FAA AC 29.917A paragraph e.(2).
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## 2. Background

Service experience over recent years has shown that assumptions made during certification regarding the influence of environmental and operational threats upon safety critical parts may not always be valid or remain valid throughout the operational life of the product. In addition, the effectiveness of maintenance actions at both component and aircraft level, when necessary to maintain the integrity of safety critical functions, can also be reduced when compared to that expected at the time of certification. Clearly, to accumulate significant operational experience without verifying the continued integrity of these components could result in extended exposure to unforeseen degraded safety margins. Actions arising from a finding in a CIVP could in the future change the certification approach for similar components or lead to continued airworthiness action. Accordingly, this CM is intended to formalise the process for review of certification assumptions, including the effectiveness of Compensating Provisions, periodically throughout the life of the helicopter type.

## 3. EASA Certification Policy

### 3.1. EASA Policy

- (a) As part of the process of compliance with CS 27/29.602 the applicant should develop and perform a “Continued Integrity Verification Programme” (CIVP). The CIVP should ensure the continued validity of assumptions made during certification regarding maintenance actions and monitoring provisions developed to comply with CS 29.547(b), CS 27/29.571 and CS 29.917(b).
- (b) Applicability: This programme will be limited to Critical Parts plus any additional parts identified by CS 29.547(b) and CS 29.917(b) for which failure could prevent continued safe flight and landing.
- (c) Objective: The CIVP should assess the validity of assumptions made at the time of certification regarding the condition and operation of the parts identified in para (b). In addition, the effectiveness of any associated maintenance actions and monitoring provisions (Compensating Provisions) should also be assessed. Additional data that if available should be used to support the CIVP includes;
  - Analysis of occurrence reports
  - Analysis of unscheduled removal rates
  - Strip Reports / Analysis at overhaul
  - Additional inspection (non-destructive and/or destructive) on selected high time or rejected components
  - Feedback from lead customers
  - Audits of subcontractors and suppliers of critical parts.
  - SPC data of manufacturing processes affecting critical characteristics
  - Review of concessions
  - Changes in utilization and operating environment
  - Operator / TCH working group activities
- (d) Schedule: The objectives identified in para (c) should be performed at suitable periods through the life of the subject components. To meet the objectives an evaluation will need to be performed of at least one sample of each component, usually from a fleet leading helicopter, however consideration should be given to repeating these tasks where different types of operation, environment or ageing effects could have a significant influence. Where inspections and feedback from service need to be provided by operators or Part 145 maintenance organisations, the information necessary should be clearly specified by the TCH within the Continued Integrity Verification Programme Plan (CIVPP) and relevant maintenance instructions.
- (e) Approval: A CIVPP, defining the tasks and schedule of the CIVP should be agreed with the Agency during certification. Reports stating the findings of the CIVP during service should be furnished to the Agency. The CIVP may be revised during the rotorcraft life if considered appropriate by the



Agency. On conclusion of the CIVP, an assessment of all findings should be made by the applicant and reported in the Continued Integrity Verification Programme Report (CIVPR). This should be jointly reviewed by the applicant and the Agency with the participation of an operator where appropriate.

### 3.2. Who this Certification Memorandum affects

Applicants for a type certificate for a helicopter in accordance with CS-27 or CS-29.

## 4. Remarks

1. This EASA Proposed Certification Memorandum will be closed for public consultation on the **11<sup>th</sup> of June 2015**. Comments received after the indicated closing date for consultation might not be taken into account.
2. Comments regarding this EASA Proposed Certification Memorandum should be referred to the Certification Policy and Safety Information Department, Certification Directorate, EASA. E-mail [CM@easa.europa.eu](mailto:CM@easa.europa.eu) or fax +49 (0)221 89990 4459.
3. For any question concerning the technical content of this EASA Proposed Certification Memorandum, please contact:

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