



Terms of Reference

for rulemaking task RMT.0712

Enhancement of the safety assessment processes for rotorcraft designs

ISSUE 1

Issue/rationale

This RMT is intended to improve the safety assessment provisions for equipment, systems and installations that are contained in the certification specifications (CSs) for small and large rotorcraft (CS-27 & CS-29) to reflect the current best practice.

The safety assessment of the design of rotorcraft systems and equipment is used to identify the presence of hazards in the design, and also to help rotorcraft designers to put in place means to either eliminate the identified hazards, or to mitigate the associated safety risks.

Technology, techniques and approaches have evolved since the inception of formal safety assessment processes. It is therefore necessary to reflect the state-of-the-art safety assessment processes in the CSs.

In addition, this RMT is aimed at achieving a coordinated approach with partner authorities (e.g. the Federal Aviation Administration (FAA)) who have initiated similar activities on the topic of safety assessment and proportionate safety objectives. In this RMT, the European Aviation Safety Agency (EASA) will seek harmonisation where it is practicable.

Action area:	Rotorcraft operations		
Affected rules:	CS-27 and CS-29		
Affected stakeholders:	Rotorcraft design organisations and manufacturers		
Driver:	Efficiency/proportionality	Rulemaking group:	No
Impact assessment:	Light	Rulemaking Procedure:	Standard

EASA rulemaking process milestones



1. Why we need to change the rules — issue/rationale

The safety assessment of the design of rotorcraft systems and equipment is used to identify the presence of hazards in the design, and also to help rotorcraft designers to put in place means to eliminate the identified hazards, or mitigate the associated safety risks. Technology and techniques have evolved since the inception of formal safety assessment processes and their introduction into the CSs, and it is, therefore, necessary to maximise the probability that potential safety issues are identified during the development of a new design, in accordance with state-of-the-art safety assessment processes.

The European specifications for safety assessment for rotorcraft are currently contained in CS 27.1309 and CS 29.1309, and their associated Acceptable Means of Compliance (AMC).

Industry has developed extensive recommended practices for development assurance and safety assessment such as ED-79A/ARP4754A and ARP4761. ED-79A/ARP4754A is today recognised by the FAA in AC 20-174. The AMC to CS 27.1309 and CS 29.1309 do not, however, reference ED-79A/ARP4754A as an acceptable method for establishing a development assurance process. This results in additional effort for industry and EASA during the certification phase in order to identify and manage the safety risks, and to finally ensure that rotorcraft designs reach a minimum and acceptable safety level.

In December 2016, following the publication of CS-27/CS-29 Amendment 4, the safety assessment provisions contained in CS 27/29.1309 and the associated AMC (including the references to standards) were fully aligned with FAR 27 and 29 (and FAA AC 27-1B and 29-2C).

Since then, the FAA has published a Policy Statement entitled ‘Safety Continuum for Part 27 Normal Category Rotorcraft Systems and Equipment’ that provides a graduated scale of safety objectives for normal (small) rotorcraft. The FAA Policy Statement defines lower safety objectives than those currently contained in FAA AC 27-1B in order to facilitate the introduction of new technology, and thus it improves overall safety by defining new sub-classes for normal category rotorcraft. These sub-classes are used for establishing the certification standards for systems and equipment. The criteria for defining these sub-classes are based on the aircraft weight, the engine type and count, and the maximum number of occupants. During the development of the changes to CS 27/29.1309, any potential difference in the regulatory systems between the FAA and EASA will need to be carefully considered and coordinated to avoid an increase in the validation effort required to certify rotorcraft between certification partners, and to avoid the need for any subsequent changes to the type design.

The FAA has also developed and proposed changes to Part 27/29.1309, which were published as a Notice of Proposed Rulemaking (NPRM)¹ in November 2017. The changes proposed by the FAA are intended to allow more flexibility in the types of assessments that the applicant can provide to show compliance, to remove the distinction between category A and category B rotorcraft since the technologies and associated failure effects are similar across both categories, and to reflect the fact that equipment and systems installed in Part 27 rotorcraft are now complex and highly integrated systems.

These changes, if implemented as proposed, will create significant standard differences between the EASA and FAA CSs, and are likely to result in a lower level of regulatory efficiency. This RMT is intended to review these changes and to maximise harmonisation.

¹ http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgNPRM.nsf/0/840E1565CCE656CB862581CB004C795C?OpenDocument



It should be noted that there are no:

- safety recommendations that are pertinent to the scope of this RMT;
- exemptions that are pertinent to the scope of this RMT;
- relevant AMC considerations;
- direct references to ICAO Standards and Recommended Practices; or
- references to EU regulatory material that is relevant to this RMT.

2. What we want to achieve — objective

The overall objectives of the EASA system are defined in Article 1 of Regulation (EU) 2018/1139². This project will contribute to the achievement of the overall objectives by addressing the issues outlined in Chapter 1.

The objective of this proposal is to ensure that an acceptable safety level for equipment and systems as installed on the rotorcraft is achieved, defined and assessed during certification through the articulation of appropriate CSs. In addition, this RMT is also intended to prevent/mitigate the risk of EASA and the FAA having unjustified diverging safety assessment provisions, and ultimately, to reduce the validation effort for industry.

3. How we want to achieve it

This RMT will consider whether or not it is necessary to update the CSs for Small and Large Rotorcraft (CS 27.1309 and CS 29.1309), as well as the associated AMC for Equipment, Systems and Installations, in order to:

- where practicable, harmonise the CSs with the FAA changes to Part 27.1309 and Part 29.1309;
- determine the best means to introduce greater proportionality in the safety objectives for CS-27 Small Rotorcraft, taking into account FAA Policy Statement PS-ASW-27-15;
- assess the possibility of recognising the latest updates of industry standards, such as ED-79A/ARP4754A;
- improve the AMC to CS 27.1309 and CS 29.1309 for safety assessment to align them with current industry practices;
- determine the viability of removing the provisions that deal specifically with electrical systems, which either have a specific regulation, or can be addressed in the same way as any other system.

4. What are the deliverables

The deliverables of this RMT are:

- A notice of proposed amendment (NPA) that contains the proposed changes to CS-27 and CS-29, and the associated AMC;
- An ED Decision that amends CS-27 and CS-29.

² Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1–122).



5. How we consult

A public consultation on the published NPA will take place in accordance with Article 7 of the Rulemaking Procedure³.

6. Proposed actions to support the rulemaking activity

During the drafting of the NPA, EASA intends to organise one or two stakeholder engagement events to provide updates on the development of the new versions of CS 27.1309 and CS 29.1309 (and the associated AMC), and to receive any feedback on the proposals.

7. Reference documents

7.1. Affected decisions

- Executive Director Decision 2003/15/RM of 14 November 2003 amending Certification Specifications and Acceptable Means of Compliance for Small Rotorcraft (« CS-27 »);
- Executive Director Decision 2003/16/RM of 14 November 2003 amending Certification Specifications and Acceptable Means of Compliance for Large Rotorcraft (« CS-29 »);

7.2. Reference documents

- FAA policy statement PS-ASW-27-15 'Safety Continuum for Part 27 Normal Category Rotorcraft Systems and Equipment';
- FAA Notice of Proposed Rulemaking (NPRM) FAA-2017-0990 dated 01/11/2017, RIN: 2120-AK80.

³ EASA Management Board Decision N°18-2015 of 15 December 2015 replacing Decision 01/2012 concerning the procedure to be applied by the Agency for the issuing of opinions, certification specifications, acceptable means of compliance and guidance material ('Rulemaking Procedure').

