



NOTICE OF PROPOSED AMENDMENT (NPA) No 2009-09

DRAFT DECISION OF THE EXECUTIVE DIRECTOR OF THE EUROPEAN AVIATION SAFETY AGENCY

amending Annex I, II and III (AMC to Part-M and AMC and GM to Part-145) of Decision No 2003/19/RM of the Executive Director of the Agency of 28 November 2003 on acceptable means of compliance and guidance material to Commission Regulation (EC) No 2042/2003 of 20 November 2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks

"De-Icing/Anti-Icing"

TABLE OF CONTENTS

A. EXPLANATORY NOTE 3

- I. GENERAL 3
- II. CONSULTATION 3
- III. COMMENT RESPONSE DOCUMENT 4
- IV. CONTENT OF THE DRAFT DECISION 4
- V. REGULATORY IMPACT ASSESSMENT 5

B. DRAFT DECISION 8

- I DRAFT DECISION AMC TO PART-M 8
- II DRAFT DECISION AMC AND GM TO PART-145 9

A. Explanatory Note

I. General

1. The purpose of this Notice of Proposed Amendment (NPA) is to envisage amending Decision 2003/19/RM of the Executive Director of 28 November 2003¹ to develop AMC/GM material to relevant paragraphs of Commission Regulation (EC) No 2042/2003². The scope of this rulemaking activity is outlined in Terms of Reference (ToR) MDM.054 and is described in more detail below.
2. The European Aviation Safety Agency (hereinafter referred to as the Agency) is directly involved in the rule-shaping process. It assists the Commission in its executive tasks by preparing draft regulations, and amendments thereof, for the implementation of the Basic Regulation³ which are adopted as "Opinions" (Article 19(1)). It also adopts Certification Specifications, including Airworthiness Codes and Acceptable Means of Compliance and Guidance Material to be used in the certification process (Article 19(2)).
3. When developing rules, the Agency is bound to follow a structured process as required by Article 52(1) of the Basic Regulation. Such process has been adopted by the Agency's Management Board and is referred to as "The Rulemaking Procedure"⁴.
4. This rulemaking activity is included in the Agency's Rulemaking Programme for 2010. It implements the rulemaking task MDM.054.
5. The text of this NPA has been developed by the Agency. It is submitted for consultation of all interested parties in accordance with Article 52 of the Basic Regulation and Articles 5(3) and 6 of the Rulemaking Procedure.

II. Consultation

6. To achieve optimal consultation, the Agency is publishing the draft decision of the Executive Director on its internet site. Comments should be provided within 3 months in accordance with Article 6(4) of the EASA Rulemaking procedure. Comments on this proposal should be submitted by one of the following methods:

CRT: Send your comments using the Comment-Response Tool (CRT) available at <http://hub.easa.europa.eu/crt/>.

E-mail: In case the use of CRT is prevented by technical problems, these should be reported to the [CRT webmaster](mailto:CRT_webmaster@easa.europa.eu) and comments sent by e-mail to NPA@easa.europa.eu.

Correspondence: If you do not have access to the Internet or e-mail, you can send your comment by mail to:

¹ Decision No 2003/19/RM of the Executive Director of the Agency of 28.11.2003 on acceptable means of compliance and guidance material to Commission Regulation (EC) No 2042/2003 of 20 November 2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks. Decision as last amended by Decision 2009/008/R of 24 March 2009.

² OJ L 315, 28.11.2003, p. 1. Regulation as last amended by Commission Regulation (EC) No 1056/2008 of 27 October 2008.

³ Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.03.2008, p. 1).

⁴ Management Board decision concerning the procedure to be applied by the Agency for the issuing of opinions, certification specifications and guidance material (Rulemaking Procedure), EASA MB 08-2007, 13.6.2007.

Process Support
Rulemaking Directorate
EASA
Postfach 10 12 53
D-50452 Cologne
Germany

Comments should be submitted by 2 December 2009. If received after this deadline, they might not be taken into account.

III. Comment response document

7. All comments received in time will be responded to and incorporated in a comment response document (CRD). The CRD will be widely available on the Agency's website and in the Comment-Response Tool (CRT).

IV. Content of the draft Decision

8. Description of the problem.

In recent years a large number of events of stiff or frozen flight control systems have been reported, particularly on aircraft with non-powered flight control systems. These events were attributed to the re-hydration and subsequent freezing of residues of thickeners contained in anti-icing fluids previously applied to the aircraft. A number of Safety Recommendations have been made by Accident Investigation agencies on this subject, including the UK Air Accident Investigation Branch (AAIB) and the German Federal Bureau of Aircraft Accident Investigation (BFU).

9. A-NPA

In 2007 EASA published the Advance Notice of Proposed Amendment A-NPA 2007-11 (in relation to rulemaking task MDM.040) with the aim to consult stakeholders on the appropriate measures to be taken in order to address the safety hazards associated with the residues of fluids used for the de-icing and anti-icing of aircraft. The outcome of the A-NPA consultation as described in the CRD document published on 2 September 2008 and additional subsequent discussions with stakeholders have been considered to develop this NPA limited to continuing airworthiness and maintenance aspects.

- 9.1 As a consequence of A-NPA consultation process an action plan for task MDM.040 was developed which contained long-term, medium-term and short-term measures to be pursued by EASA. The short-term measures were the following:

- a safety information notice, SIN 2008-29, addressed to operators was published in April 2008 to draw attention to the importance of the need for the eradication of frozen deposits and the hazards of anti-icing fluid residues that might re-hydrate and freeze.
- a letter was addressed to TC holders of large and commuter aeroplanes to update information for correct application of de-icing/anti-icing fluids and guidelines on how to proceed when there is a potential for residue formation from these fluids. The letter was issued in April 2009 and was requiring action in three months time.
- the development of this NPA to address the safety recommendations relating to amendments in the 'soft' rules on continuing airworthiness and maintenance.

- 9.2 Summary of incidents/accidents and safety recommendations relating to continuing airworthiness and maintenance:

AAIB Safety Recommendation 2003-119

"It is recommended that the CAA require operators of aircraft with non-powered flying controls that are vulnerable to the effects of freezing of re-hydrated de-icing

fluid residues, to establish engineering procedures for the inspection and removal of such residues from critical control surfaces."

AAIB Safety Recommendation 2005-136

"It is recommended that where the use of 'thickened' de-/anti-icing fluids is unavoidable, the Joint Aviation Authorities, in consultation with the European Aviation Safety Agency, ensure that operators of aircraft with non-powered flight controls who use such fluids, invoke controlled maintenance procedures for the frequent inspection for accumulations of fluid residues and their removal."

BFU Safety Recommendation 11/06

"Considering the thickened de-icing fluids currently available EASA should impose a mandatory requirement on non-powered flying controlled aircraft manufacturers to develop reliable procedures for their aircraft types to ensure the identification and removal of rehydrated de-icing fluid residues in such time as to prevent any risk to the safety of flight operation."

10. Proposed approach for this NPA:

The proposed change developed below is based on the assumption that the air operator is responsible to assess whether an inspection for the presence of de-icing/anti-icing fluids residues is necessary before the commencement of a flight. The responsible person should determine this by using company procedures developed based on instructions made available by the aircraft manufacturer and the operator's experience.

When it is determined that an inspection and/or removal of residues is required, an organisation eligible to perform maintenance should complete the inspection/removal task as a line maintenance activity when this requires special tools or accessing inside panels/cowls.

11. The envisaged changes to Decision No 2003/19/RM are:

- AMC M.A.201 (h) is amended to clarify that the inspection for and the removal of fluid residues is a maintenance activity if there is the need to access inside panels, covers or cowls or use special tools.
- AMC M.A.301 – 1 (f) is amended to include as a typical action during a pre-flight check the determination on whether an inspection for absence or elimination of fluid residues is necessary prior to the flight.
- AMC M.A.306 – (a) is amended to propose that information required for the future determinations whether there might be de-icing/anti-icing fluid residues that may re-hydrate and freeze, is recorded in the Operators technical log system.
- AMC M.B.102 and AMC 145.B.10 – a paragraph is added to extend the required comprehensive knowledge for relevant authorities' inspectors to operational procedures impacting continuing airworthiness and maintenance.
- AMC M.A.606 (h) 2, AMC 145.A30 (g) and AMC and GM for 145.A.30 (j) are modified to include the inspection for absence and/or removal of residues as a maintenance task that might be performed by a category A license engineer, commander and/or flight engineer under certain considerations.
- AMC 145.A.70 (a) is modified to include in the list of line maintenance procedures the inspection and/or removal of fluid residues.

V. Regulatory Impact Assessment

12. Purpose and Intended Effect:

- a. Issue which the NPA is intended to address:

Accidents/incidents caused by stiff flight control systems due to frozen re-hydrated de-icing/anti-icing fluid residues.

b. Scale of the issue

Investigations have shown that frozen flight control systems have been a major cause for various incidents in recent years. Experience shows that these incidents are more likely to occur for aircraft with non-powered flight control systems but not exclusively.

c. Brief statement of the objectives of the NPA

The task aims to update existing AMC and GM related to Part-M and Part-145 taking into account safety recommendations from accident investigation bureaus with the objective that stakeholders improve their understanding of their responsibilities and update their working practises accordingly, if necessary.

13. Options:

a. The options identified

Option 1: Do nothing;

Option 2: Develop this change proposal considering consultation results from A-NPA 2007-11.

b. The preferred option selected is option 2, since the safety recommendations referred to in paragraph 9.2 can be addressed under this rulemaking task MDM.054.

14. Sectors concerned:

Organisations responsible for the continuing airworthiness of aircraft, maintenance organisations and competent authorities are concerned.

15. Impacts:

a. All identified impacts

i. Safety

Positive impact: The proposal in option 2 should improve safety levels during winter operations for airplanes.

ii. Economic (analysis for option 2)

Minor negative impact: Organisations will have to adapt to align with the proposed new acceptable means of compliance or similar means. It is believed that the impact will only be the development of new procedures/forms and the performance of some training for staff from affected stakeholders (organisations in charge of continuing airworthiness of aircraft, maintenance organisations and competent authorities) to adapt themselves to the proposed approach.

Medium negative impact: If proper procedures are developed, the inspection for residues might be performed frequently during the winter season. This will globally impact operations in winter and air operators would incur additional costs. Part of these costs would be revenues for maintenance organisations that would be asked from air operators to inspect/remove fluid residues on their aircraft.

Positive impact: It is expected that the number of incidents/accidents linked to the matter will be reduced, generating cost savings for the operators community in the long term.

iii. Environmental

None.

iv. Social

None.

- v. Other aviation requirements outside EASA scope

None.

- b. Equity and fairness in terms of distribution of positive and negative impacts among concerned sectors.

Option 2 is initially impacting negatively air operators but in long term this option might generate savings due to a reduction in the number of incidents/accidents. Part-145 organisations are not impacted negatively.

16. Summary and Final Assessment:

- a. Comparison of the positive and negative impacts for each option evaluated

Option 2: Economical impact is considered to be not high in comparison with the safety concern and potential safety benefits.

- b. A summary describing who would be affected by these impacts and analysing issues of equity and fairness

Continuing Airworthiness Management Organisations (CAMO)/air operators and maintenance organisations might be impacted by this change proposal but there are no new responsibilities allocated to CAMOs or maintenance organisations, so it is believed that the amendment is not introducing any unfairness.

- c. Final assessment and recommendation of a preferred option

After due consideration the Agency believes that the preferred option is Option 2.

B. Draft Decision

The text of the amendment is arranged to show deleted text, new text or new paragraph as shown below:

1. deleted text is shown with a strike through: ~~deleted~~
2. new text is highlighted with grey shading: **new**
3. ... indicates that remaining text is unchanged in front of or following the reflected amendment.

I Draft Decision AMC to Part-M

...

AMC M.A.201(h) Responsibilities

...

2. The performance of ground de-icing and anti-icing activities does not require a Part-145 approval. Nevertheless, the removal/closure of panels, cowls or covers, and use of special tools to inspect for and, when necessary, eliminate frozen water or de-icing or/and anti-icing fluid residues is considered maintenance.

...

AMC M.A.301 -1- Continuing airworthiness tasks

...

(f) a control that all the aircraft's external surfaces and engines are free from ice, snow, sand, dust etc and an assessment that, as the result of meteorological conditions and de-icing/anti-icing fluids having been previously applied on it, there are no frozen water or fluid residues that could endanger flight safety.

...

AMC M.A.306 (a) Operators technical log system

...

Section 3 ...

vi. ...; provision for the time when ground de-icing and/or anti-icing was started and the type of fluid applied, including mixture ratio fluid/water and any other information required by the operator's procedures in order to allow the assessment on whether inspections for and/or elimination of frozen water or de-icing/anti-icing fluid residues that could endanger flight safety are required.

...

AMC M.A.606(h)2 Personnel requirements

...

- c. Role changes, e.g., stretcher fit, dual controls, FLIR, doors, photographic equipment etc.
- d. Inspection for and removal of frozen water or de-icing/anti-icing fluid residues requiring removal/closure of panels, cowls or covers that are easily accessible but not requiring the use of special tools or demanding skills.
- e.d. Any check/replacement involving simple techniques consistent with this AMC and as agreed by the competent authority.

...

AMC M.B.102 (c) Competent authority – Qualification and training

...

(e) continuing airworthiness management.

(f) operational procedures when affecting the continuing airworthiness management of the aircraft or the maintenance.

...

Appendix V to AMC M.A.704 Continuing airworthiness management organisation exposition.

...

PART 1 CONTINUING AIRWORTHINESS MANAGEMENT PROCEDURES**1.11 Pre-flight inspections**

...

e) Control of snow, ice dust, residues from de-icing or anti-icing operations and sand contamination to an approved standard

...

II Draft Decision AMC and GM to Part-145**AMC 145.A.30 (g) Personnel requirements**

...

p. The de-activation only of sub-systems and aircraft components as permitted by the operator's minimum equipment list where such de-activation is agreed by the competent authority as a simple task.

q. Inspection for and removal of frozen water or de-icing/anti-icing fluid residues requiring removal/closure of panels, cowls or covers or the use of special tools.

r. ~~q.~~ Replacement of any other component as agreed by the Agency for a particular aircraft type only where it is agreed that the task is simple.

...

AMC 145.A.30 (j)(4) Personnel requirements

...

2. (i) ...

c. Role changes e.g. stretcher fit, dual controls, FLIR, doors, photographic equipment etc.

d. Inspection for and removal of frozen water or de-icing/anti-icing fluid residues requiring removal/closure of panels, cowls or covers that are easily accessible but not requiring the use of special tools or demanding skills.

e. ~~d.~~ Any check / replacement involving simple techniques consistent with this AMC and as agreed by the competent authority.

...

2. (ii) ...

k. Re-setting of tripped circuit breakers under the guidance of maintenance control.

- l. Inspection for and removal of frozen water or de-icing/anti-icing fluid residues requiring removal/closure of panels, cowls or covers that are easily accessible but not requiring the use of special tools or demanding skills.
- m. Any other simple task as agreed by the competent authority for a particular aircraft type only where it is agreed that the task is simple.

...

AMC 145.A.70(a) Maintenance organisation exposition

...

L2.2 Line maintenance procedures related to servicing/fuelling/de-icing including inspection for/removal of frozen water or de-icing/anti-icing fluid residues, etc

...

AMC 145.B.10 (3) Competent authority – Qualification and training

...

- e. continuing airworthiness management.
- f. operational procedures when affecting the continuing airworthiness management of the aircraft or the maintenance.

...

GM 145.A.30(j)(4) Personnel Requirements (Flight crew)

...

- Cabin/cockpit/emergency equipment;
- De-icing/anti-icing related maintenance activities;
- Ground handling and servicing;

...