



NOTICE OF PROPOSED AMENDMENT (NPA) No 2012-04

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

amending Decision No 2003/19/RM of the Executive Director of the European Aviation Safety 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

and

DRAFT OPINION OF THE EUROPEAN AVIATION SAFETY AGENCY

for a Commission Regulation amending Commission Regulation (EC) No 2042/2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks

'Critical Tasks'

EXECUTIVE SUMMARY

This NPA is aimed at providing requirements and detailed guidance for the identification of flight safety sensitive maintenance tasks and the measures necessary to detect errors.

To that end, this NPA proposes:

- A new requirement 145.A.48, for Part-145 organisations to establish procedures to prevent and detect errors during the performance of maintenance.
- AMC and GM to 145.A.48 on the contents of such procedures and how to implement error capturing methods.
- Amending M.A.402 in order to clearly identify the applicability of the requirements.

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A. Explanatory Note

I. General

1. The purpose of this Notice of Proposed Amendment (NPA) is to envisage amending Annex I (Part-M) and Annex II (Part-145) to Commission Regulation (EC) No 2042/2003¹ and Decision 2003/19/RM of the Executive Director of 28 November 2003² to develop AMC/GM material. The scope of this rulemaking activity is outlined in Terms of Reference (ToR) RMT.0222 (MDM.020) issue 1 dated 11 May 2009 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 4-year Rulemaking Programme. It implements the rulemaking task RMT.0222 (MDM.020)
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 Rulemaking Procedure. Comments on this proposal should be submitted by one of the following methods:

¹ 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 (OJ L 315, 28.11.2003, p. 1). Regulation as last amended by Commission Regulation (EU) No 1149/2011 of 21 October 2011 (OJ L 298, 16.11.2011, p. 1).

² 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 2012/004/R of the Executive Director of the Agency of 19 April 2012.

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). Regulation as last amended by Regulation 1108/2009 of the European Parliament and of the Council of 21 October 2009 (OJ L 309, 24.11.2009, p. 51).

⁴ EASA MB Decision 01-2012 of 13 March 2012 amending and replacing MB Decision 08-2007 concerning the procedure to be applied by the Agency for the issuing of opinions, certification specifications and guidance material ('Rulemaking Procedure').

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

E-mail: Comments can be sent by e-mail only in case the use of CRT is prevented by technical problems. The(se) problem(s) should be reported to the [CRT webmaster](mailto:CRT_webmaster@easa.europa.eu) and comments sent by email to NPA@easa.europa.eu.

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

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

Comments should be submitted **by 12 September 2012**. 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 available on the Agency's website and in the Comment-Response Tool (CRT).

IV. Content of the draft Opinion/Decision

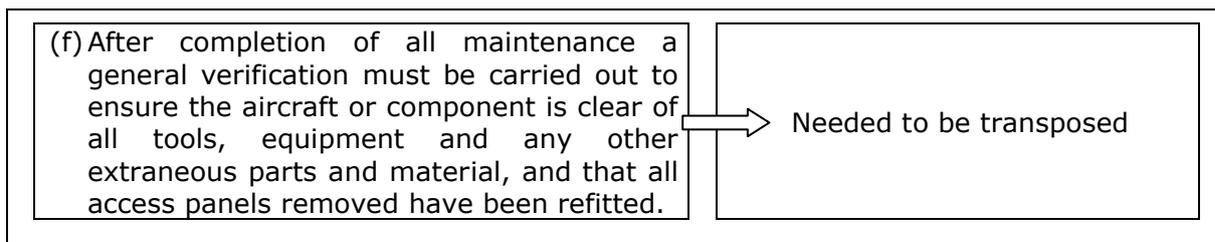
8. The following safety recommendations have been addressed to the Agency:
 - AIBN recommendation 12/2006. Report SL RAP.: 8/2006 Report on the aircraft accident at Bergen airport Flesland, Norway, on 31 January 2005 involving ATR42-320
 - Safety Recommendation 2005-123. Report 3/2005: Report on the serious incident to Boeing 757-236, G-CPER on 7 September 2003
 - Safety Recommendation 2006-030AAIB Bulletin: 11/2006 EW/C 2004/10/03 Report on the accident Mooney Aircraft Corporation M20J, G-EKMW
9. These safety recommendations highlight the need to have requirements to prevent and detect errors being made during the performance of maintenance.
10. In the light of these safety recommendations, the Agency initiated the rulemaking task RMT.0222 (MDM.020). The first draft of the Terms of Reference was presented to the SSCC in 2007. This initial draft proposed:
 - a. Reviewing Regulation 2042/2003 to select the most adequate terms for the concept of 'critical tasks', give a methodology for the identification of the tasks, and define the roles that both operators and maintenance organisations should play.
 - b. Considering whether the Type Certificate (TC) holders should be given any role on this matter in order to define such systems and the associated critical tasks.
11. At that time, work was already on-going under the FAA Key Safety Information (KSI) project and the FAA Commercial Airplane Certification Process Study (CPS) project. Those projects studied the involvement of the TC holders in the definition of the 'critical systems'. Considering this fact, the Agency decided to process RMT.0222 (MDM.020) to focus only on the continuing airworthiness aspects and monitor closely the FAA projects.

12. The draft Terms of Reference were revised accordingly and the objectives of the task were focused on reviewing and amending Regulation 2042/2003 and its associated AMC and GM. In 2009 a Rulemaking Group was created with representatives of National Aviation Authorities, TC holders, operators and maintenance organisations. A total of 5 meetings were held before the issue of this NPA.
13. Additionally, the Agency standardisation activities have shown the need to clarify that the current requirements of M.A.402 are also applicable to Part-145 organisations. This is due to the fact that article 3(2) of regulation 2042/2003 requires organisations involved in maintenance of aircraft and components to comply with the provisions of Part-M.
14. Consequently, this NPA has been drafted with the following objectives:
 - Transpose and adapt the requirements of M.A.402 to Part-145;
 - Harmonise the terminology used in Part-M and Part-145 for 'critical tasks';
 - Provide guidance for the identification of flight safety sensitive maintenance tasks and the measures necessary to detect errors.

Transpose and adapt the requirements of M.A.402 to Part-145

15. The following table identifies which elements of M.A.402 are already contained in Part-145 and which needed to be transposed.

M.A.402	Part-145
<p>(a) All maintenance shall be performed by qualified personnel, following the methods, techniques, standards and instructions specified in the M.A.401 maintenance data.</p> <p>Furthermore, an independent inspection shall be carried out after any flight safety sensitive maintenance task unless otherwise specified by Part-145 or agreed by the competent authority.</p>	<p>145.A.45</p> <p>Needed to be transposed</p>
<p>(b) All maintenance shall be performed using the tools, equipment and material specified in the M.A.401 maintenance data unless otherwise specified by Part-145. Where necessary, tools and equipment shall be controlled and calibrated to an officially recognised standard.</p>	<p>145.A.40</p>
<p>(c) The area in which maintenance is carried out shall be well organised and clean in respect of dirt and contamination.</p>	<p>145.A.25</p>
<p>(d) All maintenance shall be performed within any environmental limitations specified in the M.A.401 maintenance data.</p>	<p>145.A.25</p>
<p>(e) In case of inclement weather or lengthy maintenance, proper facilities shall be used.</p>	<p>145.A.25</p>



16. To transpose the requirements of M.A.402 to Part-145 a new paragraph 145.A.48 is added. This paragraph requires Part-145 organisations to establish procedures to prevent and detect errors being made during the performance of maintenance. As a result of the addition of this paragraph, the requirements of 145.A.65(b)(3) are moved to 145.A.48 to ensure consistency.
17. The following table summarises the proposed requirements of 145.A.48

<p>145.A.48 Performance of maintenance The organisation shall establish procedures to ensure that:</p>	
<p>(a) After completion of all maintenance a general verification is carried out to ensure the aircraft or component is clear of all tools, equipment and any other extraneous parts and material, and that all access panels removed have been refitted.</p>	<p>This paragraph adapts the current requirement of M.A.402 (f)</p>
<p>(b) An error capturing method is implemented after the performance of any flight safety sensitive maintenance tasks;</p>	<p>This paragraph adapts the current requirement of M.A.402 (a)</p>
<p>(c) During line and base maintenance the risk of multiple errors and errors being repeated in identical tasks is minimised.</p>	<p>This paragraph adapts the current requirement of 145.A.65 (b)(3)</p>

Harmonise the terminology used in Part-M and Part-145 for 'critical tasks'.

18. To harmonise the terminology the first step is to identify the terms used in the current regulation. This shows that whereas point M.A.402 (a) refers to 'flight safety sensitive maintenance tasks', point 145.A.65 (b)(3) refers to 'critical systems'. Since the terms 'critical part' and 'critical component' are already used in various Certification Specifications, such as CS-27, CS-29, CS-E, CS-P, this NPA proposes the term 'flight safety sensitive maintenance tasks' to avoid any possible misunderstanding.
19. This NPA includes this term both in M.A.402 and 145.A.48 to refer to those tasks that, if improperly performed, can endanger the safety of the flight or produce a system malfunction.

Provide guidance for the identification of identify flight safety sensitive maintenance tasks and the implementation of error capturing methods.

20. The current AMC M.A.402 (a) provides guidance on the identification of flight safety sensitive maintenance tasks. This AMC is reworded and transferred to AMC1 and AMC2 to M.A.402 (g) and to AMC2 to 145.A.48 (b).
21. Paragraph 145.A.48 (b) introduces the concept of error capturing methods instead of just mirroring from the current M.A.402 (a) the requirement for an independent

inspection. This variation is made to acknowledge the fact that Part-145 organisations may develop and implement measures to capture errors other than independent inspections.

22. Error capturing methods are actions performed in addition to the maintenance actions required by the affected task with the objective of detecting errors made during the performance of such task. Error capturing methods need to be adequate to the specific task and the disturbance of the system.
23. Independent inspections are included in AMC3 to 145.A.48 (b) together with re-inspections as error capturing methods. This AMC provides details of the level of qualification for personnel performing an error capturing method.

V. Regulatory Impact Assessment

1. Process and consultation

This NPA has been developed as the result of rulemaking activity RMT.0222. The NPA will be published for consultation in order to allow all affected stakeholders to make comments and propose amendments.

2. Issue analysis and risk assessment

2.1. Issue which the NPA is intended to address

The proposal addresses the need for organisations and persons performing maintenance to implement means to detect errors made during maintenance.

2.2 Sectors concerned

The issue affects organisations and persons performing maintenance.

2.3. Safety risks

Inadequate procedures, the lack of procedures to detect if errors made during maintenance may have an impact on the safety of the flight. The worst foreseeable situation would be that the error is made on a system that controls the flight path, the stability or the propulsive forces. Proper implementation of procedures to detect errors and proper qualification of the persons implementing them would reduce the risks associated to such maintenance activity.

3. Objectives

The overall objectives of the Agency are defined in Article 2 of Regulation (EC) No 216/2008. This proposal will contribute to the overall objectives by ensuring that a high uniform level of civil aviation safety in Europe is maintained that is both safe and cost-effective

The specific objective of this proposal is therefore to improve maintenance by providing guidance for identification of tasks which require error capturing methods and acceptable means to implement those errors capturing methods.

Option No	Description
0	Baseline option. Do nothing.
1	Provide guidance (AMC/GM) only and no implementing rules (IR) change.
2	Amend both the IR to add clarity to the requirements provide AMC/GM on how to identify flight safety sensitive maintenance tasks and perform error capturing methods.

4. Analysis of the impacts

Option 0: Do nothing			
Impact type	Pros	Cons	Overall
<i>Safety impact</i>	None identified	Potential risks would continue and create room for further accidents as the ones quoted in the explanatory note.	The issues identified on safety would continue.
<i>Economic</i>	No change in maintenance procedure: no direct economic impact for maintenance organisations.	Consequences of errors in maintenance would continue to create cancellations, rejected take offs, air turn back, damage to the aircraft systems.	

Option 1: To provide AMC/GM only (no change to IR)			
Impact type	Pros	Cons	Overall
<i>Safety impact</i>	This option would improve the identification of flight safety sensitive maintenance tasks and the implementation of error capturing methods.	Part-145 organisations would continue to miss compliance with the provisions of M.A.402, which require identification of flight safety sensitive maintenance tasks and the implementation of error capturing methods	The positive safety impact will be very limited. This option would have a positive economic impact limited only to those persons, organisations implementing the proposed guidance.
<i>Economic</i>	<i>The improvement of the methods to detect errors will minimize the costs associated to the consequences of those errors, such as cancellations, rejected take offs, air turn back, damage to the aircraft systems.</i>	None identified	

Option 2: To amend both; the IR to add clarity to the requirements and provide AMC/GM on how to identify flight safety sensitive maintenance tasks and perform error capturing methods.			
Impact type	Pros	Cons	Overall
<i>Safety impact</i>	<p>Improvement the implementation of independent inspections for flight safety sensitive maintenance tasks performed outside a Part-145 organisation.</p> <p>Reduction of the number of Part-145 organisations without procedures for identification of flight safety sensitive maintenance tasks or with inadequate procedures and therefore it would reduce the risk of errors not being detected.</p>	Not identified	Overall this option would have both a positive safety and economic safety impact on all organisations and on persons performing maintenance.
<i>Economic</i>	The improvement of the methods to detect errors will minimize the costs associated to the consequences of those errors, such as cancellations, rejected take offs, air turn back, damage to the aircraft systems.	<p>Those Part-145 organisations that have not implemented yet adequate procedures in line with the proposed requirements and guidance material, will have develop them and revise their manuals.</p> <p>The NAAs will have to amend their auditing tools in line with the changes introduced.</p>	

No other impacts were identified.

5. Conclusion and preferred option

The preferred option is option 2: To amend both the IR to add clarity to the requirements and provide AMC/GM on how to identify flight safety sensitive maintenance tasks and perform error capturing methods.

B. Draft Rules

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 amendment to Regulation (EC) 2042/2003

Amend article 2 as follows

Within the scope of ~~the basic~~ this Regulation, the following definitions shall apply:

...

- n) 'flight safety sensitive maintenance tasks' means those tasks that involve the assembly or any disturbance of a system or any part on an aircraft that, if errors occurred, could endanger the flight safety.

II. Draft Opinion**Annex I: Part-M****M.A.402 Performance of maintenance**

~~(a) All maintenance shall be performed by qualified personnel, following the methods, techniques, standards and instructions specified in the M.A.401 maintenance data.~~

~~Furthermore, an independent inspection shall be carried out after any flight safety sensitive maintenance task unless otherwise specified by Part 145 or agreed by the competent authority.~~

~~(b) All maintenance shall be performed using the tools, equipment and material specified in the M.A.401 maintenance data unless otherwise specified by Part 145. Where necessary, tools and equipment shall be controlled and calibrated to an officially recognised standard.~~

~~(c) The area in which maintenance is carried out shall be well organised and clean in respect of dirt and contamination.~~

~~(d) All maintenance shall be performed within any environmental limitations specified in the M.A.401 maintenance data.~~

~~(e) In case of inclement weather or lengthy maintenance, proper facilities shall be used.~~

~~(f) After completion of all maintenance a general verification must be carried out to ensure the aircraft or component is clear of all tools, equipment and any other extraneous parts and material, and that all access panels removed have been refitted.~~

Except for maintenance performed by a maintenance organisation approved in accordance with Annex II (Part-145), any person or organisation performing maintenance shall:

- a) be qualified for the tasks performed as required by this part;

- b) use the methods, techniques, standards and instructions specified in the M.A.401 maintenance data;
- c) use the tools, equipment and material specified in the M.A.401 maintenance data. Where necessary, tools and equipment shall be controlled and calibrated to an officially recognised standard;
- d) ensure that maintenance is performed within any environmental limitations specified in the M.A.401 maintenance data;
- e) ensure that proper facilities are used in case in case of inclement weather or lengthy maintenance;
- f) carry out a general verification after completion of all maintenance to ensure the aircraft or component is clear of all tools, equipment and any other extraneous parts and material, and that all access panels removed have been refitted;
- g) ensure that an independent inspection is performed after any flight safety sensitive maintenance task; and
- h) ensure that the area in which maintenance is carried out is well organised and clean in respect of dirt and contamination.

Annex II: Part-145

145.A.30 Personnel requirements

...

(i) Component certifying staff shall comply with Part-66 the provisions of Article 5(6) of this Regulation 2042/2003.

...

145.A.48 Performance of maintenance

The organisation shall establish procedures to ensure that:

- a) after completion of all maintenance a general verification is carried out to ensure the aircraft or component is clear of all tools, equipment and any other extraneous parts and material, and that all access panels removed have been refitted;
- b) an error capturing method is implemented after the performance of any flight safety sensitive maintenance tasks; and
- c) during line and base maintenance the risk of multiple errors and errors being repeated in identical tasks is minimised.

145.A.65 Safety and quality policy, maintenance procedures and quality system

...

~~(b) The organisation shall establish procedures agreed by the competent authority taking into account human factors and human performance to ensure good maintenance practices and compliance with this Part which shall include a clear work order or contract such that aircraft and components may be released to service in accordance with 145.A.50.~~

~~1. The maintenance procedures under this paragraph apply to 145.A.25 to 145.A.95.~~

~~2. The maintenance procedures established or to be established by the organisation under this paragraph shall cover all aspects of carrying out the maintenance activity, including the provision and control of specialised services and lay down the standards to which the organisation intends to work.~~

~~3. With regard to aircraft line and base maintenance, the organisation shall establish procedures to minimise the risk of multiple errors and capture errors on critical systems, and to ensure that no person is required to carry out and inspect in relation to a~~

~~maintenance task involving some element of disassembly/reassembly of several components of the same type fitted to more than one system on the same aircraft during a particular maintenance check. However, when only one person is available to carry out these tasks then the organisation's work card or worksheet shall include an additional stage for re-inspection of the work by this person after completion of all the same tasks.~~

~~4. Maintenance procedures shall be established to ensure that damage is assessed and modifications and repairs are carried out using data approved by the Agency or by an approved Part 21 design organisation, as appropriate.~~

- b) The organisation shall establish procedures agreed by the competent authority taking into account human factors and human performance to ensure good maintenance practices and compliance with the applicable requirements established in 145.A.25 to 145.A.95. The procedures under this paragraph shall:
- 1) ensure that a clear work order or contract has been agreed between the organisation and the organisation requesting maintenance to clearly establish the maintenance to be carried out so that aircraft and components may be released to service in accordance with 145.A.50;
 - 2) cover all aspects of carrying out the maintenance activity, including the provision and control of specialised services and lay down the standards to which the organisation intends to work; and
 - 3) ensure that damage is assessed and modifications and repairs are carried out using data approved by the Agency or by an approved Part-21 design organisation, as appropriate.

...

II Draft Decision AMC to Part-M

Decision No 2003/19/RM, Annex I (AMC to Part-M) and Annex VI (GM to Part-M) are consolidated in one Annex. GM to Appendix II to Part-M 'Use of the EASA Form 1 for maintenance' is moved to Annex I.

Decision No 2003/19/RM, Annex I (AMC to Part-M) and Annex VI (GM to Part-M) are amended as follows:

Annex I AMC/GM to Part-M

AMC M.A.402 (a) Performance of maintenance

~~1. When working outside the scope of an approved maintenance organisation personnel not authorised to issue a CRS should work under the supervision of certifying personnel. They may only perform maintenance that their supervisor is authorised to release, if the supervisor personally observes the work being carried out to the extent necessary to ensure that it is being done properly and if the supervisor is readily available, in person, for consultation. In this case licensed engineers should ensure that each person maintaining an aircraft or component has had appropriate training or relevant previous experience and is capable of performing the task required, and that personnel who carry out specialised tasks such as welding are qualified in accordance with an officially recognised standard.~~

~~2. In the case of limited Pilot Owner maintenance as specified in M.A.803, any person maintaining an aircraft which they own or jointly own, provided they hold a valid pilot licence with the appropriate type or class rating, may perform the limited Pilot owner~~

maintenance tasks in accordance with Appendix VIII of Annex I (Part-M) of Regulation (EC) No 2042/2003.

3. The general maintenance and inspection standards applied to individual maintenance tasks should meet the recommended standards and practices of the organisation responsible for the type design which are normally published in the maintenance manuals.

In the absence of maintenance and inspection standards published by the organisation responsible for the type design maintenance personnel should refer to the relevant aircraft airworthiness standards and procedures published or used as guidance by the Agency or the competent authority. The maintenance standards used should contain methods, techniques and practices acceptable to the Agency or competent authority for the maintenance of aircraft and its components

4. Independent inspections.

4.1 The manufacturer's instructions for continued airworthiness should be followed when determining the need for an independent inspection.

4.2 In the absence of maintenance and inspection standards published by organisation responsible for the type design, maintenance tasks that involve the assembly or any disturbance of a control system that, if errors occurred, could result in a failure, malfunction, or defect endangering the safe operation of the aircraft should be considered as flight safety sensitive maintenance tasks needing an independent inspection. A control system is an aircraft system by which the flight path, attitude, or propulsive force of the aircraft is changed, including the flight, engine and propeller controls, the related system controls and the associated operating mechanisms.

4.3 Independent inspections should be carried out by at least two persons, to ensure correct assembly, locking and sense of operation. A technical record of the inspections should contain the signatures of both persons before the relevant CRS is issued.

4.3.1 An independent inspection is an inspection first made by an authorised person signing the maintenance release who assumes full responsibility for the satisfactory completion of the work, before being subsequently inspected by a second independent competent person who attests to the satisfactory completion of the work recorded and that no deficiencies have been found.

4.3.2 The second independent competent person is not issuing a maintenance release therefore is not required to hold certification privileges. However they should be suitably qualified to carry out the inspection.

4.4 When work is being done under the control of an approved maintenance organisation the organisation should have procedures to demonstrate that the signatories have been trained and have gained experience on the specific control systems being inspected.

4.5. When work is being undertaken by an independent M.A.801 (b) 2 certifying staff, the qualifications and experience of the second independent competent person should be directly assessed by the person certifying for the maintenance, taking into account the individual's training and experience. It should not be acceptable for the certifying staff signing the release to show the person performing the independent inspection how to perform the inspection at the time the work is completed.

4.6 In summary the following maintenance tasks should primarily be considered when inspecting aircraft control systems that have been disturbed:

- installation, rigging and adjustment of flight controls.
- installation of aircraft engines, propellers and rotors.
- overhaul, calibration or rigging of components such as engines, propellers, transmissions and gearboxes.

Consideration should also be given to:

- previous experience of maintenance errors, depending on the consequences of the failure.
- information arising from an 'occurrence reporting system'

4.7 When checking control systems that have undergone maintenance, the person signing the maintenance release and the person performing the independent check should consider the following points independently:

- all those parts of the system that have actually been disconnected or disturbed should be inspected for correct assembly and locking.
- the system as a whole should be inspected for full and free movement over the complete range.
- cables should be tensioned correctly with adequate clearance at secondary stops.
- the operation of the control system as a whole should be observed to ensure that the controls are operating in the correct sense.
- if the control system is duplicated to provide redundancy, each system should be checked separately.
- if different control systems are interconnected so that they affect each other, all interactions should be checked through the full range of the applicable controls.

FOR MAINTENANCE PERFORMED OUTSIDE OF AN APPROVED MAINTENANCE ORGANISATION

- a) Maintenance should be performed by persons authorised to issue a release to service or under the supervision of persons authorised to issue a release to service. Supervision should be to the extent necessary to ensure that the work is performed properly and the supervisor should be readily available for consultation.
- b) The persons authorised to issue a release to service should ensure that:
 - 1) each person working under its supervision has received appropriate training or has relevant previous experience and is capable of performing the task required; and
 - 2) each person who performs specialised tasks, such as welding, is qualified in accordance with an officially recognised standard.

GM M.A.402 (a) Performance of maintenance

In the case of limited Pilot-Owner maintenance as specified in M.A.803, any person maintaining an aircraft which they own or jointly own, provided they hold a valid pilot licence with the appropriate type or class rating, may perform the limited Pilot-owner maintenance tasks in accordance with Appendix VIII of Annex I (Part-M) of Regulation (EC) No 2042/2003.

AMC M.A.402 (b) Performance of maintenance

The general maintenance and inspection standards applied to individual maintenance tasks should meet the recommended standards and practices of the organisation responsible for the type design which are normally published in the maintenance manuals. In the absence of maintenance and inspection standards published by the organisation responsible for the type design, maintenance personnel should refer to the relevant aircraft airworthiness standards and procedures published or used as guidance by the Agency or the competent authority. The maintenance standards used should

contain methods, techniques and practices acceptable to the Agency or competent authority for the maintenance of aircraft and its components.

AMC M.A.402 (b) (c) Performance of maintenance

...

AMC1 M.A.402 (g) Performance of maintenance

FLIGHT SAFETY SENSITIVE MAINTENANCE TASKS

The following maintenance tasks should primarily be reviewed to assess their impact on safety:

- a) Tasks that may affect the control of the aircraft flight path and attitude, such as installation, rigging and adjustments of flight controls, electronic or mechanical;
- b) Aircraft stability control systems (autopilot, fuel transfer);
- c) Task that may affect the propulsive force of the aircraft, including installation of aircraft engines, propellers and rotors; and,
- d) Overhaul, calibration or rigging of components such as engines, propellers, transmissions and gearboxes.

AMC2 M.A.402 (g) Performance of maintenance

INDEPENDENT INSPECTION

- a) An independent inspection consists of an inspection performed by an 'independent qualified person' of a task carried out by an 'authorised person', taking into account that:
 - 1) The 'authorised person' assumes full responsibility for satisfactory completion of the task.
 - 2) The 'independent qualified person' attests satisfactory completion of the task and that no deficiencies have been found. The 'independent qualified person' is not issuing a maintenance release therefore he/she is not required to hold certification privileges.
 - 3) The maintenance release for the task is performed by the 'authorised person' after the independent inspection is carried out satisfactorily.
 - 4) The workcard system should record the name, the signature and the licence number for each person, the date of and the details of the inspection, as necessary, before the maintenance release for the task is issued.
- b) Qualifications of personnel performing independent inspection
 - 1) When the work is performed by a Part-M subpart-F
 - The organisation should have procedures to demonstrate that the 'independent qualified person' has been trained and has gained experience on the specific control systems being inspected
 - 2) When the work is performed outside an approved Part-M subpart-F
 - i. The 'independent qualified person' should hold:
 - A. a Part-66 license or equivalent national when national regulation applies; or

B. a current pilot licence valid for the aircraft type issued in accordance with European regulations or equivalent national when national regulation applies.

- ii. Additionally, the 'authorised person' should assess the qualifications and experience of the 'independent qualified person' taking into account that the independent qualified person should have received training and have experience in the particular task. It should not be acceptable that the 'authorised person' shows the 'independent qualified person' how to perform the inspection at the time the work is completed.

c) How should the independent inspection be performed?

The independent inspection should ensure for example correct assembly, locking and sense of operation. When inspecting control systems that have undergone maintenance, the independent qualified person should consider the following points independently:

- 1) all those parts of the system that have actually been disconnected or disturbed should be inspected for correct assembly and locking;
- 2) the system as a whole should be inspected for full and free movement over the complete range;
- 3) cables should be tensioned correctly with adequate clearance at secondary stops;
- 4) the operation of the control system as a whole should be observed to ensure that the controls are operating in the correct sense;
- 5) if the control system is duplicated to provide redundancy, each system should be checked by different persons;
- 6) if different control systems are interconnected so that they affect each other, all the interactions should be checked through the full range of the applicable controls; and
- 7) software that is part of the flight safety sensitive maintenance task (i.e. version, compatibility with aircraft configuration).

GM M.A.402 (g) Performance of maintenance

Several data sources may be used for the identification of flight safety sensitive maintenance tasks, such as:

- information from the TC holder;
- accident reports;
- investigation and follow-up of incidents;
- occurrence reporting;
- flight data analysis;
- results of audits;
- normal operations monitoring schemes;
- feedback from training; and
- information exchange systems.

GM to Appendix II to Part-M 'Use of the EASA Form 1 for maintenance' is moved to Annex I

Annex VI (GM to Part-M)

GM to Appendix II to Part-M Use of the EASA Form 1 for maintenance

EASA Form 1 Block 12 'Remarks'

Examples of data to be entered in this block as appropriate:

- Maintenance documentation used, including the revision status, for all work performed and not limited to the entry made in block 11. A statement such as 'in accordance with the CMM' is not acceptable;
- NDT methods with appropriate documentation used when relevant;
- Compliance with airworthiness directives or service bulletins;
- Repairs carried out;
- Modifications carried out;
- Replacement parts installed;
- Life-limited parts status;
- Shelf life limitations;
- Deviations from the customer work order;
- Release statements to satisfy a foreign Civil Aviation Authority maintenance requirement;
- Information needed to support shipment with shortages or re-assembly after delivery;
- References to aid traceability, such as batch numbers.

III Draft Decision AMC to Part-145

AMC2 145.A.30 (e) Personnel requirements

...

5. The human factors training should address the procedures defined by the organisation to identify flight safety sensitive maintenance tasks and the error capturing methods implemented.

AMC 145.A.47 (a) Production planning

...

3. When establishing the production planning procedure, consideration should be given to the following:
 - logistics₇
 - inventory control₇
 - square meters of accommodation₇
 - man-hours estimation₇
 - man-hours availability₇

- preparation of work;
- hangar availability;
- environmental conditions (access, lighting standards and cleanliness);
- co-ordination with internal and external suppliers, etc.
- ~~scheduling of safety critical tasks during periods when staff are likely to be most alert~~
- scheduling of flight safety sensitive maintenance tasks during periods when staff are likely to be most alert.

AMC1 145.A.48 (b) Performance of maintenance

The procedure should identify the method for capturing errors, the maintenance tasks concerned, the training and qualification of personnel, and how the organisation ensures that its staff is familiar with flight safety sensitive maintenance tasks and error capturing methods.

AMC2 145.A.48 (b) Performance of maintenance

FLIGHT SAFETY SENSITIVE MAINTENANCE TASKS

- a) The procedures should ensure that the following maintenance tasks are reviewed to assess their impact on safety:
- 1) Tasks that may affect the control of the aircraft flight path and attitude, such as installation, rigging and adjustments of flight controls, electronic or mechanical;
 - 2) Aircraft stability control systems (autopilot, fuel transfer);
 - 3) Tasks that may affect the propulsive force of the aircraft, including installation of aircraft engines, propellers and rotors; or
 - 4) Overhaul calibration or rigging of components such as engines, propellers, transmissions and gearboxes.
- b) The procedure should describe which data sources are used to identify the flight safety sensitive maintenance tasks.

AMC3 145.A.48 (b) Performance of maintenance

ERROR CAPTURING METHODS

- a) Error capturing methods are those actions defined by the organisation to detect maintenance errors made when performing maintenance.
- b) The organisation should ensure that the error capturing methods are adequate to the work and the disturbance of the system. A combination of several actions (visual inspection, operational check, functional test, rigging check) may be necessary in some cases
- c) Error capturing methods may consist of:
- 1) Independent inspection:
 - i. An independent inspection consists of an inspection performed by an 'independent qualified person' of a task carried out by an 'authorised person', taking into account that:
 - A. the 'authorised person' assumes full responsibility for satisfactory completion of the task;

- B. the 'independent qualified person' attests satisfactory completion of the task and that no deficiencies have been found. The 'independent qualified person' is not issuing a maintenance release therefore he/she is not required to hold certification privileges;
 - C. the maintenance release for the task is performed by the 'authorised person' after the independent inspection is carried out satisfactorily; and
 - D. the workcard system established by the organisation should record signatures of both persons and the details of the inspection as necessary before the maintenance release for the task is issued.
- ii. Qualifications of personnel performing independent inspection
- A. The organisation should have procedures to demonstrate that the 'independent qualified person' has been trained and has gained experience on the specific inspection being performed.
 - B. The independent qualified person should hold as a minimum the same Part-66 licence subcategory (or equivalent national when national rules apply) as the authorised person.
- iii. The independent inspection should ensure correct assembly, locking and sense of operation. When inspecting control systems that have undergone maintenance, the independent qualified person should consider the following points independently:
- A. all those parts of the system that have actually been disconnected or disturbed should be inspected for correct assembly and locking;
 - B. the system as a whole should be inspected for full and free movement over the complete range;
 - C. cables should be tensioned correctly with adequate clearance at secondary stops;
 - D. the operation of the control system as a whole should be observed to ensure that the controls are operating in the correct sense;
 - E. if the control system is duplicated to provide redundancy, each system should be checked by different persons;
 - F. if different control systems are interconnected so that they affect each other, all the interactions should be checked through the full range of the applicable controls; and
 - G. software that is part of the flight safety sensitive maintenance task (i.e. version, compatibility with aircraft configuration)

2) Re-inspection:

- i. A re-inspection is an error capturing method subject to the same conditions as an independent inspection except that the 'authorised person' performing the maintenance task is also acting as 'independent qualified person' and performs the inspection.
- ii. A re-inspection as an error capturing method should only be used in unforeseen circumstances when only one person is available to carry out the task and perform the independent inspection. The circumstances cannot be considered unforeseen if the organisation has not programmed a suitable 'independent qualified person' onto that particular line station or shift

- iii. The maintenance release for the task is performed by the 'authorised person' after the re-inspection is carried out satisfactorily. The workcard system, established by the organisation, should record the signature and the details of the re-inspection before the maintenance release for the task is issued.

AMC 145.A.48 (c) Performance of maintenance

The procedures should be aimed at:

- a) minimising the possibility of an error being repeated in identical tasks and therefore compromising more than one system or function. Thus, the procedure should ensure that no person is required to carry out or inspect a maintenance task involving disassembly or reassembly of several components of the same type fitted to more than one system on the same aircraft or component during a particular maintenance check. However, when only one person is available to carry out these tasks then the organisation's work card or worksheet should include an additional stage for re-inspection of the work by this person after completion of all the same tasks;
- b) preventing omissions. Therefore the procedures should specify:
- 1) that every maintenance task should be signed-off only after completion;
 - 2) how the grouping of tasks for the purpose of signing-off should allow critical steps to be clearly identified; and
 - 3) that work performed by personnel under supervision (i.e. temporary staff, trainees) should be checked and signed-off by an authorised person.
- c) ensuring that when carrying out a modification, repair or maintenance, Critical Design Configuration Control Limitations are not compromised.

~~AMC 145.A.65(b)(3) Safety and quality policy, maintenance procedures and quality system~~

~~1. The purpose of this procedure is to minimise the rare possibility of an error being repeated whereby the identical aircraft components are not reassembled thereby compromising more than one system. One example is the remote possibility of failure to reinstall engine gearbox access covers or oil filler caps on all engines of a multi-engined aircraft resulting in major oil loss from all engines.~~

~~—Another example is the case of removal and refitment of oil filler caps, which should require a re-inspection of all oil filler caps after the last oil filler cap has supposedly been refitted.~~

~~2. Procedures should be established to detect and rectify maintenance errors that could, as minimum, result in a failure, malfunction, or defect endangering the safe operation of the aircraft if not performed properly. The procedure should identify the method for capturing errors, and the maintenance tasks or processes concerned.~~

~~In order to determine the work items to be considered, the following maintenance tasks should primarily be reviewed to assess their impact on safety:~~

- ~~• Installation, rigging and adjustments of flight controls,~~
- ~~• Installation of aircraft engines, propellers and rotors,~~
- ~~• Overhaul, calibration or rigging of components such as engines, propellers, transmissions and gearboxes~~

~~but additional information should also be processed, such as:~~

- ~~Previous experiences of maintenance errors, depending on the consequence of the failure,~~
- ~~Information arising from the 'occurrence reporting system' required by 145.A.60,~~
- ~~Member State requirements for error capturing, if applicable.~~

~~3. In order to prevent omissions, every maintenance task or group of tasks should be signed-off. To ensure the task or group of tasks is completed, it should only be signed-off after completion. Work by unauthorised personnel (i.e. temporary staff, trainee,..) should be checked by authorised personnel before they sign-off. The grouping of tasks for the purpose of signing-off should allow critical steps to be clearly identified~~

~~Note: A "sign-off" is a statement by the competent person performing or supervising the work, that the task or group of tasks has been correctly performed. A sign-off relates to one step in the maintenance process and is therefore different to the release to service of the aircraft. "Authorised personnel" means personnel formally authorised by the maintenance organisation approved under Part 145 to sign-off tasks. "Authorised personnel" are not necessarily "certifying staff".~~

~~4. The maintenance organisation should ensure that when carrying out a modification, repair or maintenance, Critical Design Configuration Control Limitations are not compromised; this will require the development of appropriate procedures where necessary by the maintenance organisation. The maintenance organisation should pay particular attention to possible adverse effects of any wiring change to the aircraft, even a change not specifically associated with the fuel tank system. For example, it should be common practice to identify segregation of fuel gauging system wiring as a Critical Design Configuration Control Limitation.~~

~~Maintenance organisations can prevent adverse effects associated with wiring changes by standardising maintenance practices through training, rather than by periodic inspection. Training should be provided to end indiscriminate routing and splicing of wire and to provide comprehensive knowledge of critical design features of fuel tank systems that would be controlled by a Critical Design Configuration Control Limitation. EASA guidance is provided for training to maintenance organisation personnel in an Appendix IV to be added to AMC to Part 145.~~

~~The maintenance of ignition prevention features is necessary for the inherent safety and reliability of an aircraft's fuel tank system. The aircraft cannot be operated indefinitely with the failure of an ignition prevention feature. The failure will have a direct adverse effect on operational safety. It could prevent the continued safe flight and landing of the aircraft or cause serious or fatal injury to the occupants. The fuel system review required will identify ignition prevention features of the design. The failure of any of these features may not immediately result in an unsafe condition, but it may warrant certain maintenance to support continued airworthiness.~~

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

...

PART 2 MAINTENANCE PROCEDURES

...

2.23.. Control of critical tasks. Procedures for implementation of error capturing methods on flight safety sensitive maintenance tasks

...

2.29 Procedures for general verification after completion of maintenance

2.30 Procedures for preventing errors during performance of maintenance...

Appendix II to AMC 145.B.20(5): EASA Form 6

Part-145 APPROVAL RECOMMENDATION REPORT		EASA FORM 6				
Part 2: Part-145 Compliance Audit Review						
The five columns may be labelled and used as necessary to record the approval class and/or product line reviewed. Against each column used of the following Part-145 subparagraphs please either tick (√) the box if satisfied with compliance or cross (X) the box if not satisfied with compliance and specify the reference of the Part 4 finding next to the box, or enter N/A where an item is not applicable, or N/R when applicable but not reviewed.						
Para	Subject					
145.A.25	Facility requirements	<input type="checkbox"/>				
145.A.30	Personnel requirements	<input type="checkbox"/>				
145.A.35	Certifying Staff and support staff	<input type="checkbox"/>				
145.A.40	Equipment, Tools and material	<input type="checkbox"/>				
145.A.42	Acceptance of Components	<input type="checkbox"/>				
145.A.45	Maintenance Data	<input type="checkbox"/>				
145.A.47	Production Planning	<input type="checkbox"/>				
145.A.48	Performance of maintenance	<input type="checkbox"/>				
145.A.50	Certification of maintenance	<input type="checkbox"/>				
145.A.55	Maintenance Records	<input type="checkbox"/>				
145.A.60	Occurrence Reporting	<input type="checkbox"/>				
145.A.65	Safety and Quality Policy, maintenance procedures and Quality System	<input type="checkbox"/>				

145.A.70	Maintenance Organisation Exposition (see Part 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.75	Privileges of the organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.80	Limitations on the organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.85	Changes to the organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.95	Findings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competent surveyor(s):		Signature(s):						
Competent authority office:		Date of Form 6 part 2 completion:						

Part-145 APPROVAL RECOMMENDATION REPORT	EASA FORM 6																																	
<p>PART 3: Compliance with 145.A.70 Maintenance organisation exposition</p> <p>Please either tick (√) the box if satisfied with compliance; or cross (X) if not satisfied with compliance and specify the reference of the Part 4 finding; or enter N/A where an item is not applicable; or N/R when applicable but not reviewed.</p>																																		
<p>Part 1 Management</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; padding: 2px;">1.1</td><td style="width: 15%; border: 1px solid black; height: 20px;"></td><td style="padding: 2px;">Corporate commitment by the accountable manager</td></tr> <tr><td style="padding: 2px;">1.2</td><td style="border: 1px solid black; height: 20px;"></td><td style="padding: 2px;">Safety and Quality Policy</td></tr> <tr><td style="padding: 2px;">1.3</td><td style="border: 1px solid black; height: 20px;"></td><td style="padding: 2px;">Management personnel</td></tr> <tr><td style="padding: 2px;">1.4</td><td style="border: 1px solid black; height: 20px;"></td><td style="padding: 2px;">Duties and responsibilities of the management personnel</td></tr> <tr><td style="padding: 2px;">1.5</td><td style="border: 1px solid black; height: 20px;"></td><td style="padding: 2px;">Management Organisation Chart</td></tr> <tr><td style="padding: 2px;">1.6</td><td style="border: 1px solid black; height: 20px;"></td><td style="padding: 2px;">List of Certifying staff and B1 and B2 support staff (Note: a separate document may be referenced)</td></tr> <tr><td style="padding: 2px;">1.7</td><td style="border: 1px solid black; height: 20px;"></td><td style="padding: 2px;">Manpower resources</td></tr> <tr><td style="padding: 2px;">1.8</td><td style="border: 1px solid black; height: 20px;"></td><td style="padding: 2px;">General description of the facilities at each address intended to be</td></tr> <tr><td style="padding: 2px;">1.9</td><td style="border: 1px solid black; height: 20px;"></td><td style="padding: 2px;">Organisations intended scope of work</td></tr> <tr><td style="padding: 2px;">1.10</td><td style="border: 1px solid black; height: 20px;"></td><td style="padding: 2px;">Notification procedure to the competent authority regarding changes to the organisation's activities/approval/location/personnel</td></tr> <tr><td style="padding: 2px;">1.11</td><td style="border: 1px solid black; height: 20px;"></td><td style="padding: 2px;">Exposition amendment procedures</td></tr> </table>		1.1		Corporate commitment by the accountable manager	1.2		Safety and Quality Policy	1.3		Management personnel	1.4		Duties and responsibilities of the management personnel	1.5		Management Organisation Chart	1.6		List of Certifying staff and B1 and B2 support staff (Note: a separate document may be referenced)	1.7		Manpower resources	1.8		General description of the facilities at each address intended to be	1.9		Organisations intended scope of work	1.10		Notification procedure to the competent authority regarding changes to the organisation's activities/approval/location/personnel	1.11		Exposition amendment procedures
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2.12		Optional modification procedure
2.13		Maintenance documentation in use and completion of same
2.14		Technical record control
2.15		Rectification of defects arising during base maintenance
2.16		Release to service procedure
2.17		Records for the operator
2.18		Reporting of defects to the competent authority/Operator/Manufacturer
2.19		Return of defective aircraft components to store
2.20		Defective components to outside contractors
2.21		Control of computer maintenance record systems
2.22		Control of manhour planning versus scheduled maintenance work
2.23		Control of critical tasks Procedures for implementation of error capturing methods on flight safety sensitive maintenance tasks
2.24		Reference to specific maintenance procedures
2.25		Procedures to detect and rectify maintenance errors
2.26		Shift/task handover procedures
2.27		Procedures for notification of maintenance data inaccuracies and ambiguities to the type certificate holder
2.28		Production planning procedures
2.29		Procedures for general verification after completion of maintenance
2.30		Procedures for preventing errors during performance of maintenance
Part L2 Additional Line Maintenance Procedures		
L2.1		Line maintenance control of aircraft components, tools, equipment, etc.
L2.2		Line maintenance procedures related to servicing/fuelling/de-icing, etc.
L2.3		Line maintenance control of defects and repetitive defects
L2.4		Line procedure for completion of technical log
L2.5		Line procedure for pooled parts and loan parts
L2.6		Line procedure for return of defective parts removed from aircraft
L2.7		Line procedure for control of critical tasks
Part 3 Quality System Procedures		
3.1		Quality audit of organisation procedures
3.2		Quality audit of aircraft
3.3		Quality audit remedial action procedure
3.4		Certifying staff and support staff qualification and training procedure

3.5		Certifying staff and support staff records						
3.6		Quality audit personnel						
3.7		Qualifying inspectors						
3.8		Qualifying mechanics						
3.9		Aircraft/aircraft component maintenance tasks exemption process control-						
3.10		Concession control for deviation from organisation's procedures						
3.11		Qualification procedure for specialised activities such as NDT, welding etc.						
3.12		Control of manufacturers' and other maintenance working teams						
3.13		Human Factors training procedure						
3.14		Competence assessment of personnel						
3.15		Training procedures for on-the-job training as per Section 6 of Appendix III to Part-66 (limited to the case where the competent authority for the Part-145 approval and for the Part-66 licence is the same)-						
3.16		Procedure for the issue of a recommendation to the competent authority for the issue of a Part-66 licence in accordance with 66.B.105 (limited to the case where the competent authority for the Part-145 approval and for the Part-66 licence is the same)-						
Part 4								
4.1		Contracting operators						
4.2		Operator procedures/paperwork						
4.3		Operator record completion						
Part 5 Appendices								
5.1		Sample Documents						
5.2		List of subcontractors						
5.3		List of Line maintenance locations						
5.4		List of Part-145 organisations						
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">MOE Reference:</td> <td style="width: 50%; border: none;">MOE Amendment:</td> </tr> <tr> <td style="border: none;">Competent authority audit staff:</td> <td style="border: none;">Signature(s):</td> </tr> <tr> <td style="border: none;">Competent authority office:</td> <td style="border: none;">Date of Form 6 part 3 completion:</td> </tr> </table>			MOE Reference:	MOE Amendment:	Competent authority audit staff:	Signature(s):	Competent authority office:	Date of Form 6 part 3 completion:
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IV Draft Decision GM to Part-145**GM1 145.A.30 (e) Personnel requirements**

...

6. Procedures, information, tools and practices

6.1 Visual Inspection

6.2 Work logging and recording

6.3 Procedure – practice / mismatch / norms

6.4 Technical documentation – access and quality

6.5 Flight safety sensitive maintenance tasks and error capturing methods (independent inspections, re-inspections, etc.)

...

GM 145.A.48 (b) Performance of maintenance**FLIGHT SAFETY SENSITIVE MAINTENANCE TASKS**

Several data sources may be used To identify the flight safety sensitive maintenance tasks, such as:

- 1) information from the TC holder;
- 2) accident reports;
- 3) investigation and follow-up of incidents;
- 4) occurrence reporting;
- 5) flight data analysis;
- 6) results of audits;
- 7) normal operations monitoring schemes; and
- 8) feedback from training.

GM1 145.A.48 (c) Performance of maintenance

One example is the reinstallation of engine gearbox access covers or oil filler caps on all engines of a multi-engine aircraft by the same individual.

GM2 145.A.48 (c) Performance of maintenance

A 'sign-off' is a statement by the authorised person performing or supervising the work, that the task or group of tasks has been correctly performed. A sign-off relates to one step in the maintenance process and is therefore different to the release to service of the aircraft. An 'authorised person' is a person formally authorised by the maintenance organisation approved under Part-145 to sign-off tasks. An 'authorised person' is not necessarily 'certifying staff'.

GM3 145.A.48 (c) Performance of maintenance

The organisation should pay particular attention to possible adverse effects of any wiring change to the aircraft, even a change not specifically associated with the fuel tank system. For example, it should be common practice to identify segregation of fuel gauging system wiring as a Critical Design Configuration Control Limitation. The

organisation can prevent adverse effects associated with wiring changes by standardising maintenance practices through training, rather than by periodic inspection. Training should be provided to end indiscriminate routing and splicing of wire and to provide comprehensive knowledge of critical design features of fuel tank systems that would be controlled by a Critical Design Configuration Control Limitation. Guidance is provided for training to maintenance organisation personnel in an Appendix IV to AMC 145.A.35. The maintenance of ignition prevention features is necessary for the inherent safety and reliability of an aircraft's fuel tank system. The aircraft cannot be operated indefinitely with the failure of an ignition prevention feature. The failure will have a direct adverse effect on operational safety. It could prevent the continued safe flight and landing of the aircraft or cause serious or fatal injury to the occupants. The fuel system review required will identify ignition prevention features of the design. The failure of any of these features may not immediately result in an unsafe condition, but it may warrant certain maintenance to support continued airworthiness.

GM 145.A.65 (c)(1) Safety and quality policy, maintenance procedures and quality system

...

145.A.47	Yes	Yes	Yes	Yes	Yes
145.A.48	Yes	Yes	Yes	Yes	Yes
145.A.50	Yes	Yes	Yes	Yes	Yes
145.A.55	Yes	Yes	Yes	Yes	Yes

...