

EASA Part 145.A.48 Performance of Maintenance	
Name Of Auditee	
Date of Audit	
Name of Auditor	
Audit Standard EASA Part 145 IR, AMC & GM	
<i>Additional Guidance is shown in Bold Italics – Basic Questions include Management & Oversight –Ownership of Procedures - Competence & Training “as required” Completeness, Compliance & Validity of Procedures. In all cases identify the reference of MOE and Associated Procedure</i>	
Audit Criteria	Compliant Y or N – Provide MOE /Associated Procedure Reference for Compliance or detail Corrective Action Request & Reference
145.A.48 Performance of maintenance <i>Regulation (EU) 2015/1536</i> The organisation shall establish procedures to ensure that: (a) after completion of maintenance a general verification is carried out to ensure that the aircraft or component is clear of all tools, equipment and any extraneous parts or material, and that all access panels removed have been refitted; (b) an error capturing method is implemented after the performance of any critical maintenance task; (c) the risk of multiple errors during maintenance and the risk of errors being repeated in identical maintenance tasks are minimised; and, (d) damage is assessed and modifications and repairs are carried out using data specified in point M.A.304.	
GM 145.A.48 Performance of maintenance <i>ED Decision 2016/011/R</i> AUTHORISED PERSON An ‘authorised person’ is a person formally authorised by the maintenance	

organisation to perform or supervise a maintenance task. An 'authorised person' is not necessarily 'certifying staff'.

SIGN-OFF

A 'sign-off' is a statement issued by the 'authorised person' which indicates 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 a certificate of release to service.

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

ED Decision 2016/011/R

The procedure should identify the error-capturing methods, the critical maintenance tasks, the training and qualification of staff applying error-capturing methods, and how the organisation ensures that its staff is familiar with critical maintenance tasks and error-capturing methods.

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

ED Decision 2016/011/R

CRITICAL MAINTENANCE TASKS

(a) The procedure should ensure that the following maintenance tasks are reviewed to assess their impact on flight safety:

(1) tasks that may affect the control of the aircraft flight path and attitude, such as installation, rigging and adjustments of flight controls;

(2) aircraft stability control systems (autopilot, fuel transfer);

<p>(3) tasks that may affect the propulsive force of the aircraft, including installation of aircraft engines, propellers and rotors; and</p> <p>(4) overhaul, calibration or rigging of engines, propellers, transmissions and gearboxes.</p> <p>(b) The procedure should describe which data sources are used to identify critical maintenance tasks. Several data sources may be used, such as:</p> <p>(1) information from the design approval holder;</p> <p>(2) accident reports;</p> <p>(3) investigation and follow-up of incidents;</p> <p>(4) occurrence reporting;</p> <p>(5) flight data analysis;</p> <p>(6) results of audits;</p> <p>(7) normal operations monitoring schemes; and</p> <p>(8) feedback from training</p>	
<p>AMC3 145.A.48(b) Performance of maintenance</p> <p><i>ED Decision 2016/011/R</i></p> <p>ERROR-CAPTURING METHODS</p> <p>(a) Error-capturing methods are those actions defined by the organisation to detect maintenance errors made when performing maintenance.</p> <p>(b) The organisation should ensure that the error-capturing methods are adequate for 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.</p>	

AMC4 145.A.48(b) Performance of maintenance

ED Decision 2016/011/R

INDEPENDENT INSPECTION

Independent inspection is one possible error-capturing method.

(a) What is an independent inspection
An independent inspection is 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' is the person who performs the task or supervises the task and they assume the full responsibility for the completion of the task in accordance with the applicable maintenance data;

(2) the 'independent qualified person' is the person who performs the independent inspection and attests the satisfactory completion of the task and that no deficiencies have been found. The 'independent qualified person' does not issue a certificate of release to service, therefore they are not required to hold certification privileges;

(3) the 'authorised person' issues the certificate of release to service or signs off the completion of the task after the independent inspection has been carried out satisfactorily;

(4) the work card system used by the organisation should record the identification of both persons and the details of the independent inspection as necessary before the certificate of release to service or sign-off for the completion of the task is issued.

(b) Qualifications of persons performing independent inspections

The organisation should have procedures to demonstrate that the 'independent qualified person' has been trained and has gained experience in the specific inspection to be performed.

The organisation could consider making use of, for example:

(1) staff holding a certifying staff or support staff or sign-off authorisation or equivalent necessary to release or sign off the critical maintenance task;

(2) staff holding a certifying staff or support staff or sign-off authorisation or equivalent necessary to release or sign off similar task in a product of similar category and having received specific practical training in the task to be inspected; or

(3) a commander holding a limited certification authorisation in accordance with 145.A.30(j)(4) and having received adequate practical training and having enough experience in the specific task to be inspected and on how to perform independent inspection.

(c) How to perform an independent inspection

An 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:

(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 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

(6) software that is part of the critical maintenance task should be checked, for example: version, compatibility with aircraft configuration.

(d) What to do in unforeseen cases when only one person is available

REINSPECTION:

(1) Reinspection is an error-capturing method subject to the same conditions as an independent inspection is, except that the 'authorised person' performing the maintenance task is also acting as 'independent qualified person' and performs the inspection.

(2) Reinspection, as an error-capturing method, should only be performed 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 person or organisation has not assigned a suitable 'independent qualified person' to that particular line station or shift.

(3) The certificate of release to service is issued after the task has been performed

<p>by the 'authorised person' and the reinspection has been carried out satisfactorily. The work card system used by the organisation should record the identification and the details of the reinspection before the certificate of release to service for the task is issued.</p>	
<p>AMC 145.A.48(c) Performance of maintenance</p> <p><i>ED Decision 2016/011/R</i></p> <p>The procedures should be aimed at:</p> <p>(a) minimising multiple errors and preventing omissions. Therefore, the procedures should specify:</p> <p>(1) that every maintenance task is signed off only after completion;</p> <p>(2) how the grouping of tasks for the purpose of sign-off allows critical steps to be clearly identified; and</p> <p>(3) that work performed by personnel under supervision (i.e. temporary staff, trainees) is checked and signed off by an authorised person;</p> <p>(b) minimising the possibility of an error being repeated in identical tasks and, therefore, compromising more than one system or function. Thus, the procedures should ensure that no person is required to perform a maintenance task involving removal/installation or assembly/disassembly of several components of the same type fitted to more than one system, a failure of which could have an impact on safety, on the same aircraft or component during a particular maintenance check. However, in unforeseen circumstances when only one person is available, the organisation may make use of reinspection as described in point (d) of AMC4 145.A.48(b).</p>	

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

ED Decision 2016/011/R

To minimise the risk of multiple errors or errors being repeated, the organisation may implement:

- procedures to plan the performance by different persons of the same task in different systems;
- duplicate inspection or re-inspection procedures.

GM 145.A.48(d) Performance of maintenance — critical design configuration control limitations (CDCCL)

ED Decision 2016/011/R

The organisation should ensure that when performing maintenance the CDCCL are not compromised. The organisation should pay particular attention to possible adverse effects of any change to the wiring of the aircraft, even of 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 CDCCL. The organisation can prevent adverse effects associated with changes to the wiring by standardising maintenance practices through training, and not through periodic inspections. Training should be provided to avoid 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 CDCCL.

Guidance on the training of maintenance organisation personnel is provided in Appendix IV to AMC 145.A.35.

All Audit Findings have been transferred to corrective action requests	
Signature	Name
Audit Closed QM Signature	
Date	