



Notice of Proposed Amendment 2019-05 (C)

Embodiment of safety management system (SMS) requirements into Part-145 and Part 21

RMT.0251 PHASE II

EXECUTIVE SUMMARY

With reference to Rulemaking Task (RMT).0251 Phase II in EPAS 2019-2023, this Notice of Proposed Amendment (NPA) proposes amendments to Annex I (Part 21) to Regulation (EU) No 748/2012 and Annex II (Part-145) to Regulation (EU) No 1321/2014, in order to:

- introduce safety management principles that implement ICAO Annex 19; and
- foster an organisational culture for effective safety management and effective occurrence reporting in accordance with Commission Regulation (EU) No 376/2014.

Note 1: Phase I of RMT.0251 was limited to the introduction of safety management requirements into Part-CAMO (see Opinion No 06/2016).

Note 2: The review of the occurrence reporting system was governed by RMT.0681, but certain additional changes are proposed through this RMT, in light of the principles of ICAO Annex 19, Chapter 5.

This NPA proposes to consider the applicability of safety management systems (SMSs) to Part-145 approved maintenance organisations, as well as to production and design organisations that are approved in accordance with Subparts G and J of Part 21.

By doing so, safety will be enhanced through:

- the establishment of safety policies and objectives that are associated with sufficient resources;
- the systematic identification of hazards, and a risk management system;
- the safety assurance system, including giving consideration to safety performance; and
- safety promotion.

This RMT also aims to streamline the procedures for oversight, and introduce a set of new, common management system requirements for competent authorities to increase their efficiency.

NPA 2019-05 is divided into three parts. The present NPA 2019-05 (C) includes the draft implementing rules (IRs) as well the draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) for Part-145.

NPA 2019-05 (A) includes:

- the procedural information pertaining to the regulatory proposal;
- the explanatory note to the proposed amendments;
- the regulatory impact assessment; and
- a detailed summary of the proposed amendments (see Chapter 7 ‘Appendices’).

The draft IRs as well as the draft AMC and GM for Part 21 are proposed in NPA 2019-05 (B).

Action area:	Systemic enablers to safety — safety management		
Affected rules:	Part-145 and Part 21		
Affected stakeholders:	AMOs (Part-145); POA holders; DOA holders; ETSOA holders; competent authorities		
Driver:	Safety	Rulemaking group:	No (but Focused Consultation Group)
Impact assessment:	Full	Rulemaking Procedure:	Standard

• EASA rulemaking process milestones



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Proposed amendments to Part-145

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

- deleted text is ~~struck through~~;
- new or amended text is highlighted in grey;
- an ellipsis '[...]' indicates that the rest of the text is unchanged.

Important note: 'easy-to-read document'

Under each modified requirement (i.e. implementing rules), the blue underlined [AMC or GM](#), when also modified, can be accessed through activation of the associated hyperlinks [Click with the mouse]. In order to return to the previous view (i.e. initial text), please use [Alt + Left arrow].



Draft Cover Regulation (EU) No 1321/2014 (Draft EASA opinion)**Article 4 Continuing-airworthiness organisation approvals¹**

[...]

9. Limited certifying staff authorisations issued in accordance with 145.A.30(j)(3) or (j)(4) to holders of a flight engineer licence which are valid at the date of entry into force of this Regulation shall remain valid until they expire or they are revoked by the maintenance organisation.
10. Organisations that hold a certificate issued in accordance with Annex II (Part-145) before *(insert date of entry into force of the new Regulation)* shall adapt their management system, training programmes, procedures and manuals to be compliant with Annex II to this Regulation within two years of its entry into force.

[...]

¹ This amendment is made to the text of Article 4 as proposed through Opinion No 05/2016 (<https://www.easa.europa.eu/document-library/opinions/opinion-052016>).



Draft Annex II (Part-145) to Regulation (EU) No 1321/2014 (Draft EASA opinion)

[Note: related AMC/GM:

- [GM1 to Annex II \(Part-145\) Definitions](#)]

145.1 General Competent authority

Regulation (EU) No 1321/2014

For the purpose of this Part, the competent authority shall be:

- (1) for organisations that have~~ing~~ their principal place of business in a Member State, the authority designated by that Member State or by another Member State in accordance with Article 64 of Regulation (EU) 2018/1139, or the Agency pursuant to Articles 64 or 65 of Regulation (EU) 2018/1139, or;
- (2) for organisations that have~~ing~~ their principal place of business located in a third country, the Agency.



SECTION A — TECHNICAL AND ORGANISATION REQUIREMENTS

145.A.10 Scope

This Section establishes the requirements to be met by an organisation to qualify for the issue or continuation of a certificate ~~an approval~~ for the maintenance of aircraft and components.

[Note: related AMC/GM:

- [AMC1 145.A.10 Scope](#)
- [GM1 145.A.10 Scope](#)]

145.A.15 Application for an organisation certificate

~~An application for the issue or change of an approval shall be made to the competent authority in a form and manner established by such authority.~~

- (a) An application for a certificate or an amendment to an existing certificate in accordance with this Annex shall be made in a form and manner established by the competent authority, taking into account the applicable requirements of Annex I (Part-M), Annex Vb (Part-ML) and this Annex.
- (b) Applicants for an initial certificate pursuant to this Annex shall provide the competent authority with:
 - (1) the results of a pre-audit performed by the organisation against the applicable requirements provided for in Annex I (Part-M), Annex Vb (Part-ML) and this Annex;
 - (2) documentation demonstrating how they will comply with the requirements established in this Regulation.

That documentation shall include, as provided for in point 145.A.85, a procedure that describes how changes not requiring prior approval will be managed and notified to the competent authority.

[Note: related AMC/GM:

- [AMC1 145.A.15 Application for an organisation certificate](#)
- [AMC2 145.A.15 Application for an organisation certificate](#)
- [GM1 145.A.15\(b\) Application for an organisation certificate](#)
- [Appendix III to AMC1 145.A.15 EASA Form 2](#)]

145.A.20 Terms of approval

- (a) The approval is indicated on the certificate, which is included in Appendix III, and is issued by the competent authority.



- (b) The organisation shall specify the scope of work deemed to constitute approval in its maintenance organisation exposition (MOE) (Appendix IV to Annex I (Part-M) Appendix II contains a table of all classes and ratings).

145.A.30 Personnel requirements¹

- (a) The organisation shall appoint an accountable manager who has corporate authority for ensuring that all maintenance required by the customer can be financed and carried out in accordance with Regulation (EU) 2018/1139 and its delegated and implementing acts to the standard required by this Part. The accountable manager shall:
- (1) ensure that all necessary resources are available to accomplish maintenance in accordance with this Annex, Annex I (Part-M) and Annex Vb (Part-ML), as applicable, with point 145.A.65(b) to support the organisation approval certificate;
 - (2) establish and promote the safety and quality policy specified in point 145.A.200(a) 145.A.65(a);
 - (3) demonstrate a basic understanding of this Regulation Annex (Part-145).
- (b) The accountable manager organisation shall nominate a person or group of persons, whose with the responsibility ies include for ensuring that the organisation is always in compliance complies with this Annex, Annex I (Part-M) and Annex Vb (Part-ML) Part. Such person(s) shall ultimately be responsible to the accountable manager.
1. The person or persons nominated shall represent the maintenance management structure of the organisation and be responsible for all functions specified in this Part.
 2. The person or persons nominated shall be identified and their credentials submitted in a form and manner established by the competent authority.
 3. The person or persons nominated shall be able to demonstrate relevant knowledge, background and satisfactory experience related to aircraft or component maintenance and demonstrate a working knowledge of this Part.
 4. Procedures shall make clear who deputises for any particular person in the case of lengthy absence of the said person.
- (c) The accountable manager under point (a) shall appoint nominate a person or group of persons with the responsibility for managing the compliance monitoring function the quality system, including the associated feedback system as part of the management system required by point 145.A.65(c). The appointed person shall have direct access to the accountable manager to ensure that the accountable manager is kept properly informed on quality and compliance matters.
- (ca) The accountable manager shall nominate a person or group of persons with the responsibility for managing the development, administration, and maintenance of effective safety management processes as part of the management system.

¹ This amendment is made to the text of 145.A.30 as proposed through Opinion No 06/2016 (<https://www.easa.europa.eu/document-library/opinions/opinion-062016>).



- (cb) The accountable manager shall ensure that the person or group of persons nominated in accordance with points 145.A.30(b), (c) and (ca) have direct access to keep him/her properly informed on compliance and safety matters.
- (cc) The person or persons nominated in accordance with points 145.A.30(b), (c) and (ca) shall be able to demonstrate relevant knowledge, background and satisfactory experience related to aircraft or component maintenance and demonstrate a working knowledge of this Regulation. Such person(s) shall be ultimately responsible to the accountable manager.
- (d) The organisation shall have a maintenance man-hour plan ~~showing to ensure~~ that the organisation has sufficient staff to plan, perform, supervise, inspect and ~~quality~~ monitor the organisation's activities in accordance with the terms of approval. In addition, the organisation shall have a procedure to reassess work intended to be carried out when actual staff availability is less than the planned staffing level for any particular work shift or period.
- (e) The organisation shall establish and control the ~~competence~~ competency of personnel involved in any maintenance, ~~development of maintenance programmes,~~ airworthiness reviews, safety management and/or ~~quality audits~~ compliance monitoring in accordance with a procedure and to a standard agreed by the competent authority. In addition to the necessary expertise related to the job function, the ~~competence~~ competency of the personnel must include an understanding of the application of safety management principles, as well as human factors and human performance issues that are appropriate to that person's function and responsibilities in the organisation. ~~'Human factors' means principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration of human performance. 'Human performance' means human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.~~
- [...]
- (j) By derogation to points (g) and (h), in relation to the obligation to comply with Annex III (Part-66), the organisation may use certifying staff who are qualified in accordance with the following provisions:
- (1)- For an organisation whose facilities are located outside the Community territory, the certifying staff may be qualified in accordance with the national aviation regulations of the State in which the organisation facility is registered, subject to the conditions specified in Appendix IV to this Part.
- (2)- For line maintenance carried out at a line station of an organisation which is located outside the Community territory, the certifying staff may be qualified in accordance with the national aviation regulations of the State in which the line station is based, subject to the conditions specified in Appendix IV to this Part.
- (3)- For a repetitive pre-flight airworthiness directive which specifically states that the flight crew may carry out such airworthiness directive, the organisation may issue a limited certification authorisation to the aircraft commander and/or the flight engineer on the basis of the flight crew licence held. However, the organisation shall ensure that sufficient practical training has been carried out to ensure that ~~such~~ the aircraft



commander ~~or flight engineer~~ can accomplish the airworthiness directive to the required standard.

- (4)- In the case of aircraft operating away from a supported location, the organisation may issue a limited certification authorisation to the commander ~~and/or the flight engineer~~ on the basis of the flight crew licence held, subject to being satisfied that sufficient practical training has been carried out to ensure that the commander ~~or flight engineer~~ can accomplish the specified task to the required standard. The provisions of this point shall be detailed in an exposition procedure.
- (5)- In the following unforeseen cases, where an aircraft is grounded at a location other than the main base where no appropriate certifying staff are available, the organisation contracted to provide maintenance support may issue a one-off certification authorisation:
- (i) to one of its employees ~~that holding~~ equivalent type authorisations on aircraft of similar technology, construction and systems; or
 - (ii) to any person with not less than ~~five~~ 5 years maintenance experience ~~and who holding~~ a valid ICAO aircraft maintenance licence rated for the aircraft type requiring certification, provided ~~that~~ there is no organisation appropriately approved under this Part at that location, and the contracted organisation obtains and holds on file evidence of the experience and the licence of that person.

All such cases as specified in this point must be reported to the competent authority within ~~seven~~ 7 days after issuing such a certification authorisation. The organisation ~~that issuing~~ the one-off authorisation shall ensure that any such maintenance that could affect flight safety is re-checked by an appropriately approved organisation.

- (k) If the organisation performs airworthiness reviews and issues the corresponding airworthiness review certificate ~~for ELA1 aircraft not involved in commercial operations~~ in accordance with point ML.A.903 of Annex Vb (Part-ML), it shall have airworthiness review staff ~~who are qualified and authorised in accordance with point 145.A.37 point ML.A.904 of Annex Vb (Part-ML)~~.

[Note: related AMC/GM:

- [AMC1 145.A.30\(a\) Personnel requirements](#)
- [AMC1 145.A.30\(b\) Personnel requirements](#)
- [GM1 145.A.30\(b\) Personnel requirements](#)
- [AMC1 145.A.30\(c\) Personnel requirements](#)
- [AMC1 145.A.30\(c\);\(ca\) Personnel requirements](#)
- [GM1 145.A.30\(ca\) Personnel requirements](#)
- [AMC1 145.A.30\(cc\) Personnel requirements](#)
- [AMC1 145.A.30\(d\) Personnel requirements](#)



- [AMC1 145.A.30\(e\) Personnel requirements](#)
- [AMC2 145.A.30\(e\) Personnel requirements](#)
- [AMC3 145.A.30\(e\) Personnel requirements](#)
- [AMC4 145.A.30\(e\) Personnel requirements](#)
- [AMC5 145.A.30\(e\) Personnel requirements](#)
- [GM1 145.A.30\(e\) Personnel requirements](#)
- [GM2 145.A.30\(e\) Personnel requirements](#)
- [GM3 145.A.30\(e\) Personnel requirements](#)
- [GM4 145.A.30\(e\) Personnel requirements](#)
- [GM5 145.A.30\(e\) Personnel requirements](#)
- [GM6 145.A.30\(e\) Personnel requirements](#)
- [AMC1 145.A.30\(f\) Personnel requirements](#)
- [AMC1 145.A.30\(h\) Personnel requirements](#)
- [AMC1 145.A.30\(j\)\(4\) Personnel requirements](#)
- [GM 145.A.30\(j\)\(4\) Personnel requirements \(Flight crew\)](#)
- [AMC1 145.A.30\(j\)\(5\) Personnel requirements](#)
- [AMC1 145.A.30\(j\)\(5\)\(i\) Personnel requirements](#)
- [AMC1 145.A.30\(j\)\(5\)\(ii\) Personnel requirements](#)
- [Appendix IV to AMC3 145.A.30\(e\) and AMC2 145.B.200\(a\)\(3\) ~~145.B.10\(3\)~~ Fuel Tank Safety Training\]](#)

145.A.35 Certifying staff and support staff

[...]

- (d) The organisation shall ensure that all certifying staff and support staff receive sufficient ~~continuation~~ recurrent training in each ~~two-year~~ 2-year period to ensure that such staff have up-to-date knowledge of relevant technology, organisation procedures and safety management, as well as human factor issues.
- (e) The organisation shall establish a programme for ~~continuation~~ recurrent training for certifying staff and support staff, including a procedure to ensure compliance with the relevant points of 145.A.35 as the basis for issuing certification authorisations under this Part to certifying staff, and a procedure to ensure compliance with Annex III (Part-66).
- (f) Except where any of the unforeseen cases of point 145.A.30(j)(5) apply, the organisation shall assess all prospective certifying staff for their ~~competence~~ competency, qualification and capability to carry out their intended certifying duties in accordance with a procedure as



specified in the exposition prior to the issue or re-issue of a certification authorisation under this Part.

[...]

(i) The person responsible for the ~~quality system~~ **compliance monitoring** shall also remain responsible on behalf of the organisation for issuing certification authorisations to certifying staff. ~~Such~~ **That** person may nominate other persons to actually issue or revoke the certification authorisations in accordance with a procedure as specified in the exposition.

(j) **(Reserved)** ~~The organisation shall maintain a record of all certifying staff and support staff, which shall contain:~~

- ~~1. — the details of any aircraft maintenance licence held under Annex III (Part 66); and~~
- ~~2. — all relevant training completed; and~~
- ~~3. — the scope of the certification authorisations issued, where relevant; and~~
- ~~4. — particulars of staff with limited or one-off certification authorisations.~~

~~The organisation shall retain the record for at least three years after the staff referred to in this point have ceased employment with the organisation or as soon as the authorisation has been withdrawn. In addition, upon request, the maintenance organisation shall furnish the staff referred to in this point with a copy of their personal record on leaving the organisation.~~

~~The staff referred to in this point shall be given access on request to their personal records as detailed above.~~

[...]

[Note: related AMC/GM:

- [AMC1 145.A.35\(a\) Certifying staff and support staff](#)
- [AMC1 145.A.35\(d\) Certifying staff and support staff](#)
- [AMC1 145.A.35\(e\) Certifying staff and support staff](#)
- [AMC1 145.A.35\(f\) Certifying staff and support staff](#)

145.A.36 Records of airworthiness review staff

~~The organisation shall record all details concerning the airworthiness review staff and maintain a current list of all the airworthiness review staff together with their scope of approval as part of the organisation's exposition pursuant to point 145.A.70(a)6.~~

~~The organisation shall retain the record for at least three years after the staff referred to in this point have ceased employment (or engagement as a contractor or volunteer) with the organisation or as soon as the authorisation has been withdrawn. In addition, upon request, the maintenance organisation shall provide the staff referred to in this point with a copy of their personal record on leaving the organisation.~~

~~The staff referred to in this point shall be given access on request to their personal records.~~



145.A.37 Airworthiness review staff

- (a) In order to be approved to carry out airworthiness reviews, a Part-145 organisation shall have appropriate airworthiness review staff who comply with all of the following requirements:
- (1) they have acquired experience in continuing airworthiness of at least 1 year for sailplanes and balloons and of at least 3 years for all other aircraft;
 - (2) they hold an appropriate licence issued in accordance with Annex III (Part-66) or a nationally recognised maintenance personnel qualification appropriate to the aircraft category (when Article 5(6) refers to national rules) or an aeronautical degree or equivalent, or they have acquired experience in continuing airworthiness in addition to that referred to in point (1) of at least 2 years for sailplanes and balloons and at least 4 years for all other aircraft;
 - (3) they have acquired appropriate aeronautical-maintenance training.
- (b) Before the organisation issues an airworthiness review authorisation, the organisation shall nominate the person who will perform an airworthiness review of an aircraft under supervision of the competent authority or already authorised airworthiness review staff of the organisation. If this supervision is satisfactory, the competent authority shall formally accept that person to become airworthiness review staff.
- (c) The Part-145 organisation shall ensure that the airworthiness review staff can demonstrate appropriate recent continuing airworthiness experience.

145.A.45 Maintenance data

- (a) The organisation shall hold and use applicable current maintenance data in the performance of maintenance, including modifications and repairs. 'Applicable' means relevant to any aircraft, component or process specified in the organisation's terms of approval approval class rating schedule and in any associated capability list.

In the case of maintenance data provided by an operator or customer, the organisation shall hold such data when the work is in progress, with the exception of the need to comply with point ~~145.A.55(c)~~ 145.A.55(a)(3).

- (b) For the purposes of this Part, applicable maintenance data shall be any of the following:
- ~~(1)~~ Any applicable requirement, procedure, operational directive or information issued by the authority responsible for the oversight of the aircraft or component;
 - ~~(2)~~ Any applicable airworthiness directive issued by the authority responsible for the oversight of the aircraft or component;
 - ~~(3)~~ Instructions for continuing airworthiness, issued by type certificate holders, supplementary type certificate holders, any other organisation required to publish such data by Annex I (Part- 21) to Regulation (EU) No 748/2012, and in the case of aircraft or components from third countries, the airworthiness data mandated by the authority responsible for the oversight of the aircraft or component;



- (4)- Any applicable standard, such as but not limited to, maintenance standard practices recognised by the Agency as a good standards for maintenance;
- (5)- Any applicable data issued in accordance with point (d).
- (c) The organisation shall establish procedures to ensure that if ~~found~~, any inaccurate, incomplete or ambiguous procedure, practice, information or maintenance instruction contained in the maintenance data used by maintenance personnel ~~is found~~, it is recorded as part of the internal safety reporting scheme referred to in point 145.A.202, and notified to the author of the maintenance data.
- (d) The organisation may only modify maintenance instructions in accordance with a procedure that is specified in the maintenance organisation's exposition. With respect to those changes, the organisation shall demonstrate that they result in equivalent or improved maintenance standards, and shall inform the type-certificate holder of any such changes. Maintenance instructions for the purposes of this point means instructions on how to carry out the particular maintenance task: they exclude the engineering design of repairs and modifications.
- (e) The organisation shall provide a common work card or worksheet system to be used throughout the relevant parts of the organisation. In addition, the organisation shall either accurately transcribe accurately the maintenance data contained in points (b) and (d) onto such work cards or worksheets, or make precise reference to the particular maintenance task or tasks contained in such that maintenance data. Work cards and worksheets may be computer-generated and held on an electronic database that is subject to both adequate safeguards against unauthorised alteration, and for which there is a back-up electronic database, which shall be updated within 24 hours of any entry made to the main electronic database. Complex maintenance tasks shall be transcribed onto the work cards or worksheets and subdivided into clear stages to ensure that there is a record of the accomplishment of the complete maintenance task. The procedures under this point shall take into account human factors and human performance limitations.

Where the organisation provides a maintenance service to an aircraft operator who requires their work cards or worksheet system to be used, then such those work cards or that worksheet system may be used. In this case, the organisation shall establish a procedure to ensure correct completion of that the aircraft operator's work cards or worksheets are correctly completed.

- (f) The organisation shall ensure that all applicable maintenance data is readily available for use when required by maintenance personnel.
- (g) The organisation shall establish a procedure to ensure that maintenance data it controls is kept up to date. In the case of operator/customer-controlled and provided maintenance data, the organisation shall be able to show that either it either has written confirmation from the operator/customer that all such maintenance data is up to date, or that it has work orders that specifying the amendment status of the maintenance data to be used, or that it can show that it is on the operator/customer maintenance data amendment list.

[Note: related AMC/GM:

- [AMC1 145.A.45\(c\) Maintenance data](#)



- [AMC1 145.A.45\(d\) Maintenance data](#)
- [AMC1 145.A.45\(e\) Maintenance data](#)

145.A.47 Production planning

- (a) The organisation shall have a system appropriate to the amount and complexity of work to plan the availability of all necessary personnel, tools, equipment, material, maintenance data and facilities in order to ensure the safe completion of the maintenance work.
- (b) As part of the management system, the the planning of maintenance tasks, and the organising of shifts, shall take into account human performance limitations, including the risk of fatigue for maintenance personnel.
- (c) When it is required to hand over the continuation or completion of maintenance tasks for reasons of a shift or personnel changeover, relevant information shall be adequately communicated between the outgoing and the incoming personnel.
- (d) The organisation shall ensure that any aviation safety hazards associated with external working teams carrying out maintenance at the organisation's facility are considered by the organisation's management system.

[Note: related AMC/GM:

- [AMC1 145.A.47\(b\) Production planning](#)
- [GM1 AMC 145.A.47\(b\) Production planning](#)
- [GM1 145.A.47\(d\) Production planning](#)

145.A.48 Performance of maintenance

- (a) The organisation shall only carry out maintenance on an aircraft or component for which it is approved when all the necessary facilities, equipment, tooling, material, maintenance data and personnel are available.
- (b) The organisation shall be responsible for the maintenance that is performed under its approval.
- (c) The organisation shall establish procedures to ensure that:
 - (1)(a) after the completion of the 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 that were removed have been refitted;
 - (2)(b) an error-capturing method is implemented after the performance of any critical maintenance task;
 - (3)(c) the risk of multiple errors during maintenance and the risk of errors being repeated in identical maintenance tasks are minimised; and,



(4)(d) damage is assessed, and modifications and repairs are carried out using the data specified in point M.A.304.

Any hazards identified in relation to these tasks shall be addressed in accordance with the organisation's safety risk management procedures required by point 145.A.200(a)(3).

[Note: related AMC/GM:

- [AMC1 145.A.48\(a\) ~~AMC 145.A.80 Limitations on the organisation~~ Performance of maintenance](#)
- [AMC1 145.A.48\(c\)\(2\) ~~AMC1 145.A.48\(b\)~~ Performance of maintenance](#)
- [AMC2 145.A.48\(c\)\(2\) ~~AMC2 145.A.48\(b\)~~ Performance of maintenance](#)
- [AMC3 145.A.48\(c\)\(2\) ~~AMC3 145.A.48\(b\)~~ Performance of maintenance](#)
- [AMC4 145.A.48\(c\)\(2\) ~~AMC4 145.A.48\(b\)~~ Performance of maintenance](#)
- [AMC1 145.A.48\(c\)\(3\) Performance of maintenance](#)
- [GM1 145.A.48\(c\)\(3\) Performance of maintenance](#)
- [GM1 145.A.48\(c\)\(4\) ~~GM 145.A.48\(d\)~~ Performance of maintenance - critical design configuration control limitations \(CDCCL\)\]](#)

145.A.50 Certification of maintenance

- (a) A certificate of release to service shall be issued by appropriately authorised certifying staff on behalf of the organisation when it has been verified that all the maintenance that was ordered has been properly carried out by the organisation in accordance with the procedures specified in point 145.A.70, taking into account the availability and use of the maintenance data specified in point 145.A.45, and that there are no known non-compliances which are known to endanger flight safety.

[...]

[Note: related AMC/GM:

- [GM1 ~~AMC~~ 145.A.50\(a\) Certification of maintenance](#)
- [AMC1 145.A.50\(b\) Certification of maintenance](#)
- [AMC1 145.A.50\(e\) Certification of maintenance\]](#)

145.A.55 Record-keeping¹ ~~Maintenance and airworthiness review records~~

- (a) Maintenance records

(1)(a) The organisation shall record all the details of any maintenance work that is carried out. As a minimum, the organisation shall retain all the records that are necessary to prove

¹ This amendment is made to the text of 145.A.55 as proposed through Opinion No 13/2016 (<https://www.easa.europa.eu/document-library/opinions/opinion-132016>).



that all the requirements have been met for the issue of the certificate of release to service, including the subcontractor's release documents and for the issue of any airworthiness review certificate and recommendation.

- (2)(b) The organisation shall provide a copy of each certificate of release to service to the aircraft owner/operator, together with a copy of any detailed maintenance records that are associated with the work carried out and that are necessary to demonstrate compliance with point M.A.305.
- (3)(c) The organisation shall retain a copy of all detailed maintenance records (including certificates of release to service) and any associated maintenance data for three 3 years from the date when the aircraft or component to which the work relates was released from the organisation.

~~In addition, it shall retain a copy of all the records related to the issue of airworthiness review certificates and recommendations for three years from the date of issue and shall provide a copy of them to the owner of the aircraft.~~

- ~~1. The records under this point shall be stored in a manner that ensures protection from damage, alteration and theft.~~
- ~~2. Computer backup discs, tapes etc. shall be stored in a different location from that containing the working discs, tapes etc., in an environment that ensures they remain in good condition.~~
- ~~(4)3. Where~~ If an organisation approved under this Annex (Part 145) terminates its operation, all the retained maintenance records covering the last three 3 years shall be transferred distributed to the last owner or customer of the respective aircraft or component, or shall be stored as in the manner specified by the competent authority.

(b) Airworthiness review records

- (1) If an organisation has the privilege referred to in point 145.A.75(f), it shall retain a copy of each airworthiness review certificate that it has issued, together with all the supporting documents, and shall make these records available, upon request, to the owner of the aircraft.
- (2) The organisation shall retain a copy of all the records referred to in point (b)(1) for 3 years after the issue of the airworthiness review certificate.
- (3) If an organisation terminates its operation, all the retained airworthiness review records covering the last 3 years shall be transferred to the last owner or customer of the respective aircraft, or shall be stored in the manner specified by the competent authority.

(c) Management system, contracting and subcontracting records

- (1) The organisation shall ensure that the following records are retained:
 - (i) records of management system key processes as defined in point 145.A.200;
 - (ii) contracts, both for contracting and subcontracting, as defined in point 145.A.205;



- (2) Management system records, as well as any contracts pursuant to point 145.A.205, shall be kept for a minimum period of 5 years.
- (d) Personnel records
- (1) The organisation shall ensure that the following records are retained:
- (i) records of the qualifications and the experience of the personnel involved in maintenance, compliance monitoring and safety management;
- (ii) records of the qualifications and the experience of all the airworthiness review staff.
- (2) The records of all the airworthiness review staff shall include details of any appropriate qualifications held, together with a summary of their relevant continuing airworthiness experience and training, and a copy of the authorisation.
- (3) The records of all the certifying staff and support staff shall contain the following:
- (i) the details of any aircraft maintenance licence held under Annex III (Part-66) or equivalent;
- (ii) all the relevant training that they completed;
- (iii) the scope of the certification authorisations that were issued, where relevant;
- (iv) the particulars of the staff that held limited or one-off certification authorisations.
- (4) Personnel records shall be kept as long as a person works for the organisation, and shall be retained until 3 years after the person has left the organisation, or after an authorisation has been withdrawn.
- (5) The staff referred to in (d)(2) and (d)(3) shall upon request be given access to their personnel records as detailed above. In addition, upon request, the maintenance organisation shall furnish each of them with a copy of their personnel records on leaving the organisation.
- (e) The organisation shall establish a system of record-keeping that allows adequate storage and reliable traceability of all the activities developed.
- (f) The format of the records shall be specified in the organisation's procedures.
- (g) Records shall be stored in a manner that ensures that they are protected from damage, alteration and theft.

[Note: related AMC/GM:

- [AMC1 145.A.55 Record-keeping](#)
- [GM1 145.A.55 Record-keeping](#)
- [GM1 145.A.55\(a\)\(1\) Record-keeping Maintenance and airworthiness review records](#)
- [AMC1 145.A.55\(a\)\(3\) AMC 145.A.55\(c\) Record-keeping Maintenance and airworthiness review records](#)



- [AMC1 145.A.55\(d\)](#) [AMC 145.A.35\(j\)](#) ~~Certifying staff and support staff~~ [Record-keeping](#)
- [AMC2 145.A.55\(d\)](#) [AMC 145.A.36](#) ~~Record-keeping~~ [Records of airworthiness review staff](#)

145.A.60 Occurrence reporting

- (a) As part of its management system, the organisation shall implement an occurrence reporting system that meets the requirements as defined in Regulation (EU) No 376/2014⁽¹⁾ and Implementing Regulation (EU) 2015/1018⁽²⁾. ~~The organisation shall report to the competent authority, the state of registry and the organisation responsible for the design of the aircraft or component any condition of the aircraft or component identified by the organisation that has resulted or may result in an unsafe condition that hazards seriously the flight safety.~~
- (b) Without prejudice to point (a), the organisation shall ensure that any incident, malfunction, technical defect, exceeding of technical limitations, occurrence that would highlight inaccurate, incomplete or ambiguous information contained in data established in accordance with Annex I (Part 21) to Regulation (EU) No 748/2012 or other irregular circumstance that has or may have endangered the safe operation of the aircraft and that has not resulted in an accident or serious incident are reported to the competent authority and to the organisation responsible for the design of the aircraft. ~~The organisation shall establish an internal occurrence reporting system as detailed in the exposition to enable the collection and evaluation of such reports, including the assessment and extraction of those occurrences to be reported under point (a). This procedure shall identify adverse trends, corrective actions taken or to be taken by the organisation to address deficiencies and include evaluation of all known relevant information relating to such occurrences and a method to circulate the information as necessary.~~
- (c) Without prejudice to Regulation (EU) No 376/2014 and Implementing Regulation (EU) 2015/1018, the reports referred to in points (a) and (b) shall be made ~~The organisation shall make such reports~~ in a form and manner established by the competent authority and shall ~~Agency and ensure that they~~ contain all pertinent information about the condition and ~~evaluation results~~ known to the organisation.
- (d) ~~Where~~ **If** the organisation is contracted by a commercial operator to carry out maintenance, the organisation shall also report to the operator any such condition ~~that~~ affecting the operator's aircraft or component.
- (e) ~~The organisation shall produce and submit such reports~~ Reports shall be made as soon as ~~practicable~~ possible, but in any case within 72 hours of the organisation identifying the condition to which the report relates, unless exceptional circumstances prevent this.

⁽¹⁾ Regulation (EU) No 376/2014 of the European Parliament and of the Council of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation, amending Regulation (EU) No 996/2010 of the European Parliament and of the Council and repealing Directive 2003/42/EC of the European Parliament and of the Council and Commission Regulations (EC) No 1321/2007 and (EC) No 1330/2007 (OJ L 122, 24.4.2014, p. 18) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1550059605071&uri=CELEX:32014R0376>).

⁽²⁾ Regulation (EU) 2015/1018 of 29 June 2015 laying down a list classifying occurrences in civil aviation to be mandatorily reported according to Regulation (EU) No 376/2014 of the European Parliament and of the Council (OJ L163, 30.06.2015, p. 1). (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1550744323518&uri=CELEX:32015R1018>)



- (f) Where relevant, the organisation shall produce a follow-up report to provide details of the actions it intends to take to prevent similar occurrences in the future, as soon as these actions have been identified. This report shall be produced in a form and manner established by the competent authority.

[Note: related AMC/GM:

- [AMC 145.A.60\(b\) Occurrence reporting](#)

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

- (a) ~~The organisation shall establish a safety and quality policy for the organisation to be included in the exposition under point 145.A.70.~~
- (b) The organisation shall establish procedures agreed by the competent authority, which ensure that taking into account human factors, and human performance to ensure and good maintenance practices are taken into account during maintenance, including all contracted and subcontracted activities, and which comply with the requirements of this Annex compliance with the applicable requirements established in 145.A.25 to 145.A.95. The maintenance procedures established under this point 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 the aircraft and components may be released to service in accordance with point 145.A.50; and,
 - (2) cover all aspects of carrying out the maintenance, including the provision and control of specialised services, and lay down the standards to which the organisation intends to work.
- (c) ~~The organisation shall establish a quality system that includes the following:~~
- ~~1. Independent audits in order to monitor compliance with required aircraft/aircraft component standards and adequacy of the procedures to ensure that such procedures invoke good maintenance practices and airworthy aircraft/aircraft components. In the smallest organisations the independent audit part of the quality system may be contracted to another organisation approved under this Part or a person with appropriate technical knowledge and proven satisfactory audit experience; and~~
 - ~~2. A quality feedback reporting system to the person or group of persons specified in point 145.A.30(b) and ultimately to the accountable manager that ensures proper and timely corrective action is taken in response to reports resulting from the independent audits established to meet point (1).~~

[Note: related AMC/GM:

- [AMC 145.A.65\(a\) Safety and quality policy, maintenance procedures and quality system](#)
- [AMC1 145.A.65\(b\) Safety and quality policy, Maintenance procedures and quality system](#)



- [GM1 145.A.65 Maintenance procedures](#)
- [GM2 145.A.65\(b\)\(1\) Safety and quality policy, Maintenance procedures and quality system](#)
- [AMC1 145.A.65\(b\)\(2\) Safety and quality policy, Maintenance procedures and quality system](#)

145.A.70 Maintenance organisation exposition (MOE)

- (a) ~~'Maintenance organisation exposition' means the document or documents that contain the material specifying the scope of work deemed to constitute approval and showing how the organisation intends to comply with this Annex (Part 145).~~

The organisation shall ~~provide the competent authority with~~ establish a maintenance organisation exposition (MOE) that, ~~containing the following information:~~

- specifies the scope of work and shows how the organisation intends to comply with this Annex; and
- provides all the necessary instructions, information and procedures for the personnel of the organisation to perform their duties.

It shall contain directly, or by reference, all of the following information:

- ~~(1)-~~ A statement signed by the accountable manager confirming that the maintenance organisation will at all times work in accordance ~~exposition and any referenced associated manuals define the organisation's compliance with this Annex (Part 145), Annex I (Part-M) and Annex Vb (Part-ML), as applicable, and will be complied with the approved MOE at all times. When~~ If the accountable manager is not the chief executive officer of the organisation, then such the chief executive officer shall countersign the statement;
- ~~(2)-~~ the organisation's safety and quality policy and the related safety objectives as specified by point ~~145.A.200(a)(2) 145.A.65;~~
- ~~(3)-~~ the title(s) and name(s) of the persons nominated under point 145.A.30(b), (c) and (ca);
- ~~(4)-~~ the duties and responsibilities of the persons nominated under point 145.A.30(b), (c) and (ca), including the matters on which they may deal directly with the competent authority on behalf of the organisation;
- ~~(5)-~~ an organisation chart showing the associated chains of accountability and responsibility between all the persons referred to in ~~nominated under points 145.A.30(b), (c), (ca), (h) and (k), and related to point 145.A.200(a)(1);~~
- ~~(6)-~~ a list of the certifying staff, support staff and, if applicable, the airworthiness review staff ~~and staff responsible for the development and processing of the maintenance programme,~~ with their scopes of approval;
- ~~(7)-~~ a general description of the manpower resources and of the system that is in place to plan the availability of staff, as required by point 145.A.30(d);
- ~~(8)-~~ a general description of the facilities ~~located at each address specified in the organisation's approval certificate;~~



- (9) a specification of the scope of work of the organisation's that is scope of work relevant to the extent terms of approval;
- (10) the notification procedure of point 145.A.85 for organisation changes; the procedure that defines the scope of changes not requiring prior approval, and that describes how such changes will be managed and notified, as required by points 145.A.15(b) and 145.A.85(c);
- (11) the procedure for amending the maintenance organisation exposition MOE amendment procedure;
- (12) the procedures and quality management system documentation established by the organisation under points 145.A.25 to 145.A.205 145.A.90, and any additional procedure that is followed in accordance with Annex I (Part-M) or Annex Vb (Part-ML);
- (13) a list of all the commercial operators, where applicable, to which the organisation provides an aircraft maintenance service, and the associated procedures;
- (14) a list of all the subcontracted organisations, where applicable, as specified in point 145.A.75(b);
- (15) a list of all the approved locations, including line stations, where applicable, as specified in point 145.A.75(d);
- (16) a list of all the contracted organisations, where applicable;
- (17) a list of the currently approved alternative means of compliance.
- (b) The initial issue of the MOE shall be approved by the competent authority. The exposition It shall be amended as necessary so that it remains an up-to-date description of the organisation. The exposition and any subsequent amendment shall be approved by the competent authority.
- (c) Amendments to the MOE shall be managed as defined in the procedures referred to in points (10) and (11). Any amendments that are not included in the scope of the procedure referred to in point (10), as well as any amendments related to the changes listed in point 145.A.85(a), shall be approved by the competent authority.

Notwithstanding point (b) minor amendments to the exposition may be approved through an exposition procedure (hereinafter called indirect approval).

[Note: related AMC/GM:

- [AMC1 145.A.70\(a\) Maintenance organisation exposition \(MOE\)](#)
- [GM1 145.A.70\(a\) Maintenance organisation exposition \(MOE\)](#)
- [AMC1 145.A.70\(a\)\(1\) Maintenance organisation exposition \(MOE\)](#)



145.A.75 Privileges of the organisation¹

In accordance with the MOE exposition, the organisation shall be entitled to carry out the following tasks:

- (a) Maintain any aircraft and/or component for which it is approved at the locations identified in the approval certificate and in the MOE exposition;
- (b) Arrange for the maintenance of any aircraft or component for which it is approved at another subcontracted organisation that is working under the quality management system of the organisation. This refers to work being carried out by an organisation not itself appropriately approved to carry out such maintenance under this Part and is limited to the work scope permitted under the procedures laid down in point 145.A.65(b). This work scope and it shall not include a base maintenance check of an aircraft, or a complete workshop maintenance check or overhaul of an engine or an engine module;

[...]

- (f) If specifically approved to do so for aircraft covered by Annex Vb (Part-ML) ELA1 aircraft not involved in commercial operations, and if it has its principal place of business in one of the Member States, it shall perform airworthiness reviews and issue the corresponding airworthiness review certificate under the conditions specified in point ML.A.903 of Annex Vb (Part-ML) to this Regulation.

[Note: related AMC/GM:

- [AMC1 145.A.75\(b\) Privileges of the organisation](#)
- [GM1 145.A.75\(b\) Privileges of the organisation](#)

145.A.80 Limitations on the organisation

The organisation shall only maintain an aircraft or component for which it is approved when all the necessary facilities, equipment, tooling, material, maintenance data and certifying staff are available.

145.A.85 Changes to the organisation

- (a) The following changes to the organisation shall require prior approval:
 - (1) changes that affect the scope of the certificate or the terms of approval of the organisation;
 - (2) changes to the personnel nominated in accordance with points 145.A.30(b), (c) and (ca);
 - (3) changes to the reporting lines between the personnel nominated in accordance with points 145.A.30(b), (c) and (ca), and the accountable manager;
 - (4) the procedure as regards changes not requiring prior approval referred to in point (c);

¹ This amendment is made to the text of 145.A.75 as proposed through Opinion No 06/2016 (<https://www.easa.europa.eu/document-library/opinions/opinion-062016>).



(5) additional locations of the organisation other than those that are subject to point 145.A.75(c).

- (b) For all changes requiring prior approval in accordance with Regulation (EU) 2018/1139 and its delegated and implementing acts, the organisation shall apply for and obtain an approval issued by the competent authority. The application shall be submitted before any such change takes place, in order to enable the competent authority to determine that there is continued compliance with Regulation (EU) 2018/1139 and its delegated and implementing acts, and to amend, if necessary, the organisation certificate and the related terms of approval that are attached to it.

The organisation shall provide the competent authority with any relevant documentation.

The change shall only be implemented upon the receipt of a formal approval from the competent authority in accordance with point 145.B.330.

The organisation shall operate under the conditions prescribed by the competent authority during such changes, as applicable.

- (c) All changes not requiring prior approval shall be managed and notified to the competent authority as defined in the procedure referred to in point 145.A.15(b), which is approved by the competent authority in accordance with point 145.B.310(h).

~~The organisation shall notify the competent authority of any proposal to carry out any of the following changes before such changes take place to enable the competent authority to determine continued compliance with this Part and to amend, if necessary, the approval certificate, except that in the case of proposed changes in personnel not known to the management beforehand, these changes must be notified at the earliest opportunity:~~

- ~~1. the name of the organisation;~~
- ~~2. the main location of the organisation;~~
- ~~3. additional locations of the organisation;~~
- ~~4. the accountable manager;~~
- ~~5. any of the persons nominated under point 145.A.30(b);~~
- ~~6. the facilities, equipment, tools, material, procedures, work scope, certifying staff and airworthiness review staff that could affect the approval.~~

[Note: related AMC/GM:

- [AMC1 145.A.85 Changes to the organisation](#)
- [AMC2 145.A.85 Changes to the organisation](#)
- [GM1 145.A.85 Changes to the organisation](#)
- [GM1 145.A.85\(a\)\(1\) Changes to the organisation](#)
- [GM2 145.A.85\(a\)\(1\) Changes to the organisation](#)
- [GM1 145.A.85\(b\) Changes to the organisation](#)
- [GM1 145.A.85\(c\) Changes to the organisation](#)]



145.A.90 Continued validity

- (a) ~~An approval shall be issued for an unlimited duration. It~~ The organisation's certificate shall remain valid, subject to compliance with all of the following conditions:
1. the organisation remaining in compliance with Regulation (EU) 2018/1139 and its delegated and implementing acts Annex II (Part-145), in accordance with, taking into account the provisions related to the handling of findings as specified under point 145.B.350 ~~145.B.50~~; and
 2. the competent authority being granted access to the organisation as specified in point 145.A.140 ~~to determine continued compliance with this Part~~; and
 3. the certificate not being surrendered or revoked.
- (b) Upon surrender or revocation, the certificate approval shall be returned to the competent authority without delay.

145.A.95 Findings

- (a) After the receipt of a notification of findings according to point 145.B.350, the organisation shall:
- (1) identify the root cause or causes of, and contributing factors to, the non-compliance;
 - (2) define a corrective action plan;
 - (3) demonstrate the implementation of corrective action to the satisfaction of the competent authority.
- (b) The actions referred to in points (a)(1), (a)(2) and (a)(3) shall be performed within the period agreed with that competent authority as defined in point 145.B.350.
- ~~(a) A level 1 finding is any significant non-compliance with requirements laid down in this Annex (Part-145) which lowers the safety standard and hazards seriously the flight safety.~~
- ~~(b) A level 2 finding is any non-compliance with requirements laid down in this Annex (Part-145) which could lower the safety standard and possibly hazard the flight safety.~~
- ~~(c) After receipt of notification of findings according to point 145.B.50, the holder of the maintenance organisation approval shall define a corrective action plan and demonstrate corrective action to the satisfaction of the competent authority within a period agreed with this authority.~~

[Note: related AMC/GM:

- [AMC1 145.A.95 Findings](#)
- [GM1 145.A.95 Findings](#)



145.A.120 Means of compliance

- (a) Alternative means of compliance to the AMC adopted by the Agency may be used by an organisation to establish compliance with Regulation (EU) 2018/1139 and its delegated and implementing acts.
- (b) If an organisation wishes to use an alternative means of compliance, it shall, prior to using it, provide the competent authority with a full description of the alternative means of compliance. The description shall include any revisions to manuals or procedures that may be relevant, as well as an assessment that demonstrates compliance with Regulation (EU) 2018/1139 and its delegated and implementing acts.

The organisation may use these alternative means of compliance subject to receiving a prior approval from the competent authority, and upon receipt of the notification as provided for in point 145.B.120.

[Note: related AMC/GM:

- [AMC1 145.A.120 Means of compliance](#)]

145.A.140 Access

For the purpose of determining compliance with the relevant requirements of Regulation (EU) 2018/1139 and its delegated and implementing acts, the organisation shall grant access at any time to any facility, aircraft, document, records, data, procedures or any other material relevant to its activity subject to certification, whether it is contracted/subcontracted or not, to any person authorised by one of the following authorities:

- (a) the competent authority defined in point 145.1;
- (b) the authority acting under the provisions of point 145.B.300(d) or 145.B.300(e).

145.A.155 Immediate reaction to a safety problem

The organisation shall implement:

- (a) any safety measures mandated by the competent authority in accordance with point 145.B.135;
- (b) any relevant mandatory safety information issued by the Agency.

145.A.200 Management system

- (a) The organisation shall establish, implement, and maintain a management system that includes:
- (1) clearly defined lines of responsibility and accountability throughout the organisation, including a direct safety accountability of the accountable manager;



- (2) a description of the overall philosophies and principles of the organisation with regard to safety, referred to as the safety policy, and the related safety objectives;
 - (3) the identification of aviation safety hazards entailed by the activities of the organisation, their evaluation and the management of the associated risks, including taking actions to mitigate the risks and verify their effectiveness;
 - (4) maintaining personnel trained and competent to perform their tasks;
 - (5) documentation of all management system key processes, including a process for making personnel aware of their responsibilities and the procedure for amending this documentation;
 - (6) a function to monitor the compliance of the organisation with the relevant requirements. Compliance monitoring shall include a system to feed back findings to the accountable manager to ensure the effective implementation of corrective actions as necessary;
 - (7) any additional relevant requirements that are laid down in this Regulation.
- (b) The management system shall correspond to the size of the organisation and the nature and complexity of its activities, taking into account the hazards and the associated risks inherent in these activities.
- (c) If the organisation holds one or more additional organisation certificates within the scope of Regulation (EU) 2018/1139, the management system may be integrated with that required under the additional certificate(s) held.

[Note: related AMC/GM:

- [GM1 145.A.200 Management system](#)
- [AMC1 145.A.200\(a\)\(1\) Management system](#)
- [GM1 145.A.200\(a\)\(1\) Management system](#)
- [GM2 145.A.200\(a\)\(1\) Management system](#)
- [AMC1 145.A.200\(a\)\(2\) Management system](#)
- [GM1 145.A.200\(a\)\(2\) Management system](#)
- [AMC1 145.A.200\(a\)\(3\) Management system](#)
- [GM1 145.A.200\(a\)\(3\) Management system](#)
- [GM2 145.A.200\(a\)\(3\) Management system](#)
- [AMC1 145.A.200\(a\)\(4\) Management system](#)
- [GM1 145.A.200\(a\)\(4\) Management system](#)
- [GM1 145.A.200\(a\)\(5\) Management system](#)
- [AMC1 145.A.200\(a\)\(6\) Management system](#)
- [AMC2 145.A.200\(a\)\(6\) AMC 145.A.65\(c\)\(1\) Management System](#)



- [AMC3 145.A.200\(a\)\(6\) Management System](#)
- [AMC4 145.A.200\(a\)\(6\) AMC 145.A.65\(c\)\(2\) Safety and quality policy, maintenance procedures and quality system Management System](#)
- [GM1 145.A.200\(a\)\(6\) Management system](#)
- [GM2 145.A.200\(a\)\(6\) GM 145.A.65\(c\)\(1\) Safety and quality policy, maintenance procedures and quality system Management system](#)

145.A.202 Internal safety reporting scheme

- (a) As part of its management system, the organisation shall establish an internal safety reporting scheme to enable the collection and evaluation of such occurrences that are to be reported under point 145.A.60.
- (b) The scheme shall also enable the collection and evaluation of those errors, near misses, and hazards reported internally that do not fall under point (a).
- (c) Through this scheme, the organisation shall:
 - (1) identify the causes of, and contributing factors to, any errors, near misses, and hazards reported, and address them as part of their safety risk management process in accordance with point 145.A.200(a)(3);
 - (2) ensure an evaluation of all the known, relevant information relating to errors, the inability to follow procedures, near misses, and hazards, and a method to circulate the information as necessary.
- (d) The organisation shall make arrangements to ensure the collection of any safety issues related to subcontracted activities.
- (e) The organisation shall cooperate on safety investigations with any other organisation that makes a significant contribution to the safety of its own maintenance activities.

[Note: related AMC/GM:

- [AMC1 145.A.202 Internal safety reporting scheme](#)
- [GM1 145.A.202 Internal safety reporting scheme](#)

145.A.205 Contracting and subcontracting

- (a) The organisation shall ensure that when contracting or subcontracting any part of its maintenance activities, or when purchasing equipment or services:
 - (1) these maintenance activities conform to the requirements of this Annex; and
 - (2) any aviation safety hazards associated with such contracting, subcontracting or purchase are considered as part of the organisation's management system.
- (b) If the organisation subcontracts any part of its maintenance activities to another organisation, the subcontracted organisation shall work under the approval of the organisation. The



organisation shall ensure that the competent authority is given access to the subcontracted organisation to determine whether there is continued compliance with the applicable requirements.

[Note: related AMC/GM:

- [GM1 145.A.205 Contracting and subcontracting](#)
- [GM2 145.A.205 Contracting and subcontracting](#)]



[Section B is replaced by:]

SECTION B — AUTHORITY REQUIREMENTS

145.B.005 Scope

This section establishes the administrative and management system requirements to be followed by the competent authority that is in charge of the implementation and enforcement of Section A of this Annex.

145.B.115 Oversight documentation

The competent authority shall provide all the legislative acts, standards, rules, technical publications, and related documents to the relevant personnel in order to allow them to perform their tasks and to discharge their responsibilities.

145.B.120 Means of compliance

- (a) The Agency shall develop Acceptable Means of Compliance ('AMC') that may be used to establish compliance with Regulation (EU) 2018/1139 and its delegated and implementing acts.
- (b) Alternative means of compliance may be used to establish compliance with Regulation (EU) 2018/1139 and its delegated and implementing acts.
- (c) The competent authority shall establish a system to consistently evaluate that all alternative means of compliance used by itself or by organisations under its oversight allow for the establishment of compliance with Regulation (EU) 2018/1139 and its delegated and implementing acts.
- (d) The competent authority shall evaluate all the alternative means of compliance proposed by an organisation in accordance with point 145.A.120 by analysing the documentation provided and, if considered necessary, by conducting an inspection of the organisation.

When the competent authority finds that the alternative means of compliance are in accordance with Regulation (EU) 2018/1139 and its delegated and implementing acts, it shall without undue delay:

- (1) notify the applicant that the alternative means of compliance may be implemented and, if applicable, amend the approval or certificate of the applicant accordingly;
 - (2) notify the Agency of their content, and include copies of all the relevant documentation.
- (e) If the competent authority itself uses alternative means of compliance to achieve compliance with Regulation (EU) 2018/1139 and its delegated and implementing acts, it shall:
 - (1) make them available to all the organisations and persons under its oversight;



(2) notify the Agency without undue delay .

The competent authority shall provide the Agency with a full description of the alternative means of compliance, including any revisions to procedures that may be relevant, as well as an assessment demonstrating that they comply with Regulation (EU) 2018/1139 and its delegated and implementing acts.

[Note: related AMC/GM:

- [GM1 145.B.120 Means of compliance](#)
- [AMC1 145.B.120\(e\) Means of compliance](#)

145.B.125 Information to the Agency

- (a) The competent authority shall notify the Agency without undue delay if there are any significant problems with the application of Regulation (EU) 2018/1139 and its delegated and implementing acts.
- (b) The competent authority shall provide the Agency with any safety-significant information stemming from the occurrence reports it has received pursuant to point 145.A.60.

145.B.135 Immediate reaction to a safety problem

- (a) Without prejudice to Regulation (EU) No 376/2014 and Implementing Regulation (EU) 2015/1018, the competent authority shall implement a system to appropriately collect, analyse, and disseminate safety information.
- (b) The Agency shall implement a system to appropriately analyse any relevant safety information received, and without undue delay, provide to Member States and the Commission any information, including recommendations or corrective actions to be taken, that is necessary for them to react in a timely manner to a safety problem involving products, parts, appliances, persons or organisations that are subject to Regulation (EU) 2018/1139 and its delegated and implementing acts.
- (c) Upon receiving the information referred to in points (a) and (b), the competent authority shall take adequate measures to address the safety problem.
- (d) Measures taken under point (c) shall immediately be notified to all persons or organisations which need to comply with them under Regulation (EU) 2018/1139 and its delegated and implementing acts. The competent authority shall also notify those measures to the Agency and, when combined action is required, to the other Member States concerned.

145.B.200 Management system

- (a) The competent authority shall establish and maintain a management system, including as a minimum:



- (1) documented policies and procedures to describe its organisation, means and methods to achieve compliance with Regulation (EU) 2018/1139 and its delegated and implementing acts. The procedures shall be kept up to date, and serve as the basic working documents within that competent authority for all related tasks;
 - (2) a sufficient number of personnel to perform its tasks and discharge its responsibilities. A system shall be in place to plan the availability of personnel, in order to ensure the proper completion of all tasks;
 - (3) personnel who are qualified to perform their allocated tasks and who have the necessary knowledge, experience, initial and recurrent training to ensure continuing competency;
 - (4) adequate facilities and office accommodation to perform the allocated tasks;
 - (5) a function to monitor the compliance of the management system with the relevant requirements, and the adequacy of the procedures, including the establishment of an internal audit process and a safety risk management process. Compliance monitoring shall include a system to feed back audit findings to the senior management of the competent authority to ensure the implementation of corrective actions as necessary;
 - (6) a person or group of persons ultimately responsible to the senior management of the competent authority for the compliance monitoring function.
- (b) The competent authority shall, for each field of activity, including the management system, appoint one or more persons with the overall responsibility for the management of the relevant task(s).
- (c) The competent authority shall establish procedures for participation in a mutual exchange of all necessary information and assistance with any other competent authorities concerned, including all findings raised and any follow-up actions taken as a result of the oversight of persons and organisations who carry out activities in the territory of a Member State, but certified by the competent authority of another Member State or the Agency.
- (d) A copy of the procedures related to the management system and their amendments shall be made available to the Agency for the purpose of standardisation.

[Note: related AMC/GM:

- [AMC1 145.B.200 Management system](#)
- [AMC2 145.B.200 Management system](#)
- [AMC1 145.B.200\(a\)\(1\) Management system](#)
- [GM1 145.B.200\(a\)\(2\) Management system](#)
- [AMC1 145.B.200\(a\)\(3\) Management system](#)
- [AMC2 145.B.200\(a\)\(3\) Management system](#)
- [AMC3 145.B.200\(a\)\(3\) Management system](#)
- [AMC1 145.B.200\(a\)\(5\) Management system](#)



- [GM1 145.B.200\(a\)\(5\) Management system](#)
- [AMC1 145.B.200\(d\) Management system](#)
- [Appendix IV to AMC3 145.A.30\(e\) and AMC2 145.B.200\(a\)\(3\) ~~145.B.10\(3\) Fuel Tank Safety Training~~](#)

145.B.205 Allocation of tasks to qualified entities

- (a) Tasks related to the initial certification, or to the continuing oversight of persons, or organisations subject to Regulation (EU) 2018/1139 and its delegated and implementing acts, may be allocated only to qualified entities. When allocating tasks, the competent authority shall ensure that it has:
- (1) put a system in place to initially and continuously assess whether the qualified entity complies with Annex VI 'Essential requirements for qualified entities' to Regulation (EU) 2018/1139. This system and the results of the assessments shall be documented;
 - (2) established a documented agreement with the qualified entity, approved by both parties at the appropriate management level, which clearly defines:
 - (i) the tasks to be performed;
 - (ii) the declarations, reports, and records to be provided;
 - (iii) the technical conditions to be met in performing such tasks;
 - (iv) the related liability coverage;
 - (v) the protection given to information acquired in carrying out such tasks.
- (b) The competent authority shall ensure that the internal audit process and safety risk management process required by point 145.B.200(a)(5) cover all the certification and continuing oversight tasks performed on its behalf.

[Note: related AMC/GM:

- [GM1 145.B.205 Allocation of tasks to qualified entities](#)

145.B.210 Changes in the management system

- (a) The competent authority shall have a system in place to identify any changes that affect its capability to perform its tasks and discharge its responsibilities as defined in Regulation (EU) 2018/1139 and its delegated and implementing acts. This system shall enable it to take action as appropriate to ensure that its management system remains adequate and effective.
- (b) The competent authority shall update its management system to reflect any change to Regulation (EU) 2018/1139 and its delegated and implementing acts in a timely manner, so as to ensure its effective implementation.



- (c) The competent authority shall notify the Agency of any changes affecting its capability to perform its tasks and discharge its responsibilities as defined in Regulation (EU) 2018/1139 and its delegated and implementing acts.

145.B.220 Record-keeping

- (a) The competent authority shall establish a system of record-keeping that allows adequate storage, accessibility, and reliable traceability of:
- (1) the management system's documented policies and procedures;
 - (2) the training, qualifications, and authorisation of its personnel;
 - (3) the allocation of tasks, covering the elements required by point 145.B.205, as well as the details of tasks allocated;
 - (4) certification processes and continuing oversight of certified organisations, including:
 - (i) the application for an organisation certificate;
 - (ii) the competent authority's continuing oversight programme, including all the assessments, audits and inspection records;
 - (iii) the organisation certificate, including any changes to it;
 - (iv) a copy of the oversight programme, listing the dates when audits are due and when audits were carried out;
 - (v) copies of all formal correspondence;
 - (vi) details of findings, corrective actions, dates of action closures, any exemptions and enforcement actions;
 - (vii) any assessment, audit and inspection report issued by another competent authority pursuant to point 145.B.300(d);
 - (viii) copies of all organisation MOEs or manuals and any amendments to them;
 - (ix) copies of any other documents approved by the competent authority;
 - (5) the evaluation and notification to the Agency of any alternative means of compliance proposed by organisations, and the assessment of any alternative means of compliance used by the competent authority itself;
 - (6) safety information and follow-up measures in accordance with point 145.B.125;
 - (7) the use of flexibility provisions in accordance with Regulation (EU) 2018/1139.
- (b) The competent authority shall maintain a list of all the organisation certificates that it issued.
- (c) All the records referred to in points (a) and (b) shall be kept for a minimum period of 5 years, subject to applicable data protection law.
- (d) All the records referred to in points (a) and (b) shall be made available upon request to a competent authority of another Member State or the Agency.

[Note: related AMC/GM:



- [AMC1 145.B.220\(a\) Record-keeping](#)
- [AMC1 145.B.220\(a\)\(1\) Record-keeping](#)

145.B.300 Oversight principles

- (a) The competent authority shall verify:
- (1) compliance with the requirements that are applicable to organisations prior to issuing an organisation certificate, as applicable;
 - (2) continued compliance with the applicable requirements of the organisations that it has certified;
 - (3) the implementation of appropriate safety measures mandated by the competent authority as defined in points 145.B.135(c) and (d).
- (b) This verification shall:
- (1) be supported by documentation specifically intended to provide personnel responsible for safety oversight with guidance to perform their functions;
 - (2) provide the organisations concerned with the results of safety oversight activities;
 - (3) be based on assessments, audits and inspections, including unannounced inspections;
 - (4) provide the competent authority with the evidence needed in case further action is required, including the measures provided for in point 145.B.350 'Findings and corrective actions'.
- (c) The scope of the oversight defined in points (a) and (b) shall take into account the results of past oversight activities and the safety priorities.
- (d) If the facilities of an organisation are located in more than one State, the competent authority, as defined in point 145.1, may agree to have oversight tasks performed by the competent authority(ies) of the Member State(s) where the facilities are located, or by the Agency for facilities that are located in a third country. Any organisation that is subject to such an agreement shall be informed of its existence and of its scope.
- (e) For any oversight activities that are performed at facilities located in a Member State other than where the organisation has its principal place of business, the competent authority, as defined in point 145.1, shall inform the competent authority of that Member State before performing any on-site audit or inspection of the facilities.
- (f) The competent authority shall collect and process any information deemed useful for conducting oversight activities, including unannounced inspections.

[Note: related AMC/GM:

- [AMC1 145.B.300\(a\);\(b\);\(c\) Oversight principles](#)
- [AMC1 145.B.300\(f\) Oversight principles](#)



145.B.305 Oversight programme

- (a) The competent authority shall establish and maintain an oversight programme covering the oversight activities required by point 145.B.300.
- (b) The oversight programme shall be developed taking into account the specific nature of the organisation, the complexity of its activities, the results of past certification and/or oversight activities, and it shall be based on the assessment of the associated risks. It shall include within each oversight planning cycle:
- (1) assessments, audits and inspections, including unannounced inspections and, as applicable:
 - (i) management system assessments and process audits;
 - (ii) product audits of a relevant sample of the maintenance carried out by the organisation;
 - (iii) sampling of the airworthiness reviews performed;
 - (2) meetings convened between the accountable manager and the competent authority to ensure that both remain informed of all significant issues.
- (c) For organisations certified by the competent authority, an oversight planning cycle not exceeding 24 months shall be applied.
- (d) Notwithstanding point (c), the oversight planning cycle may be extended to 36 months if the competent authority has established that during the previous 24 months:
- (1) the organisation has demonstrated that it can effectively identify aviation safety hazards and manage the associated risks;
 - (2) the organisation has continuously demonstrated under point 145.A.85 that it has full control over all changes;
 - (3) no level 1 findings have been issued;
 - (4) all corrective actions have been implemented within the time period that was accepted or extended by the competent authority as defined in point 145.B.350.
- Notwithstanding point (c), the oversight planning cycle may be further extended to a maximum of 48 months if, in addition to the conditions provided in points (1) to (4) above, the organisation has established, and the competent authority has approved, an effective continuous system for reporting to the competent authority on the safety performance and regulatory compliance of the organisation itself.
- (e) The oversight planning cycle may be reduced if there is evidence that the safety performance of the organisation has decreased.
- (f) The oversight programme shall include records of the dates when assessments, audits, inspections and meetings are due, and when assessments, audits, inspections and meetings have been effectively carried out.



- (g) At the completion of each oversight planning cycle, the competent authority shall issue a recommendation report on the continuation of the approval, reflecting the results of oversight.

[Note: related AMC/GM:

- [AMC1 145.B.305\(a\);\(b\) Oversight programme](#)
- [AMC1 145.B.305\(b\) Oversight programme](#)
- [AMC2 145.B.305\(b\) Oversight programme](#)
- [AMC1 145.B.305\(b\)\(1\) Oversight programme](#)
- [AMC1 145.B.305\(c\) Oversight programme](#)
- [AMC2 145.B.305\(c\) Oversight programme](#)
- [AMC1 145.B.305\(d\) Oversight programme](#)]

145.B.310 Initial certification procedure

- (a) Upon receiving an application for the initial issue of a certificate for an organisation, the competent authority shall verify the organisation's compliance with the applicable requirements.
- (b) A meeting with the accountable manager of the organisation shall be convened at least once during the investigation for initial certification to ensure that he or she fully understands the significance of the certification process, and the reason for signing the statement specified in point 145.A.70(a)(1).
- (c) The competent authority shall record all findings, closure actions (i.e. actions required to close a finding), and recommendations.
- (d) The competent authority shall confirm to the organisation in writing all the findings raised during the verification. For initial certification, all findings must be corrected to the satisfaction of the competent authority before the certificate can be issued.
- (e) When satisfied that the organisation complies with the applicable requirements, the competent authority shall:
- (1) issue the certificate as established in Appendix III 'EASA Form 3-145' to this Annex;
 - (2) formally approve the MOE.
- (f) The certificate reference number shall be included on the EASA Form 3-145 certificate in a manner specified by the Agency.
- (g) The certificate shall be issued for an unlimited duration. The privileges and the scope of the activities that the organisation is approved to conduct, including any limitations as applicable, shall be specified in the terms of approval attached to the certificate.
- (h) To enable the organisation to implement changes without prior competent authority approval in accordance with point 145.A.85(c), the competent authority shall approve the relevant



MOE procedure that defines the scope of such changes and describes how such changes will be managed and notified.

[Note: related AMC/GM:

- [AMC1 145.B.310 Initial certification procedure](#)
- [AMC1 145.B.310\(a\) Initial certification procedure](#)
- [AMC1 145.B.310\(c\) Initial certification procedure](#)
- [AMC2 145.B.310\(c\) Initial certification procedure](#)
- [AMC1 145.B.310\(d\) Initial certification procedure](#)
- [AMC1 145.B.310\(e\)\(2\) Initial certification procedure](#)
- [Appendix II to AMC2 145.B.310\(c\) ~~AMC 145.B.20\(5\)~~ EASA Form 6](#)]

145.B.330 Changes — organisations

- (a) Upon receiving an application for a change that requires prior approval, the competent authority shall verify the organisation's compliance with the applicable requirements before issuing the approval.
- (b) The competent authority shall establish the conditions under which the organisation may operate during the change unless the competent authority determines that the organisation's certificate needs to be suspended.
- (c) When satisfied that the organisation is in compliance with the applicable requirements, the competent authority shall approve the change.
- (d) Without prejudice to any additional enforcement measures, if the organisation implements changes requiring prior approval without having received the approval of the competent authority pursuant to point (c), the competent authority shall suspend, limit or revoke the organisation's certificate.
- (e) For changes not requiring prior approval, the competent authority shall include the review of such changes in its continuing oversight in accordance with the principles set forth in point 145.B.300. If any non-compliance is found, the competent authority shall:
 - (1) notify the organisation about the non-compliance and request further changes;
 - (2) in the case of level 1 or level 2 findings, act in accordance with point 145.B.350.

[Note: related AMC/GM:

- [AMC1 145.B.330 Changes – organisations](#)
- [GM1 145.B.330 Changes – organisations](#)]

145.B.350 Findings and corrective actions

- (a) The competent authority shall have a system to analyse findings for their safety significance.



(b) A level 1 finding shall be issued by the competent authority when any significant non-compliance is detected with the applicable requirements of Regulation (EU) 2018/1139 and its delegated and implementing acts, with the organisation's procedures and manuals, or with the terms of an approval or certificate which lowers safety or seriously endangers flight safety.

The level 1 findings shall also include:

- (1) any failure to give the competent authority access to the organisation's facilities as defined in point 145.A.140 during normal operating hours and after two written requests;
- (2) obtaining or maintaining the validity of the organisation certificate by falsification of the submitted documentary evidence;
- (3) any evidence of malpractice or fraudulent use of the organisation certificate;
- (4) the lack of an accountable manager.

(c) A level 2 finding shall be issued by the competent authority when any non-compliance is detected with the applicable requirements of Regulation (EU) 2018/1139 and its delegated and implementing acts, with the organisation's procedures and manuals, or with the terms of an approval or certificate which may lower safety or endanger flight safety.

(d) When a finding is detected during oversight or by any other means, the competent authority shall, without prejudice to any additional action required by Regulation (EU) 2018/1139 and its delegated and implementing acts, communicate the finding to the organisation in writing, and request corrective action to address the non-compliance(s) identified. If a finding directly relates to an aircraft, the competent authority shall inform the State in which the aircraft is registered.

(1) If there are any level 1 findings, the competent authority shall take immediate and appropriate action to prohibit or limit the activities of the organisation involved, and, if appropriate, it shall take action to revoke the certificate or to limit or suspend it in whole or in part, depending upon the extent of the level 1 finding, until successful corrective action has been taken by the organisation.

(2) If there are any level 2 findings, the competent authority shall:

- (i) grant the organisation a corrective action implementation period that is appropriate to the nature of the finding, which in any case shall initially not be more than 3 months. The period shall commence from the date of the written communication of the finding to the organisation, requesting corrective action to address the non-compliance identified. At the end of this period, and subject to the nature of the finding and the past safety performance of the organisation, the competent authority may extend the 3-month period provided that a satisfactory corrective action plan has been agreed by the competent authority;
- (ii) assess the corrective action and implementation plan proposed by the organisation, and if the assessment concludes that they are sufficient to address the non-compliance(s), accept these.



- (3) If an organisation fails to submit an acceptable corrective action plan, or to perform the corrective action within the time period accepted or extended by the competent authority, the finding shall be raised to a level 1 finding and action shall be taken as laid down in point (d)(1).
- (4) The competent authority shall record all the findings that it has raised or that have been communicated to it in accordance with point (e) below and, where applicable, the enforcement measures it has applied, as well as all corrective actions and the dates of the action closures for all the findings.
- (e) Without prejudice to any additional enforcement measures, when the authority of a Member State acting under the provisions of point 145.B.300(d) identifies any non-compliance with the applicable requirements of Regulation (EU) 2018/1139 and its delegated and implementing acts by an organisation certified by the competent authority of another Member State or the Agency, it shall inform that competent authority and provide an indication of the level of the finding.

[Note: related AMC/GM:

- [GM1 145.B.350\(b\);\(c\) Findings and corrective actions](#)

145.B.355 Suspension, limitation and revocation

The competent authority shall:

- (a) suspend a certificate on reasonable grounds in the case of a potential safety threat;
- (b) suspend, revoke or limit a certificate pursuant to point 145.B.350; or
- (c) suspend a certificate if the competent authority's inspectors are unable over a period of 24 months to discharge their oversight responsibilities through on-site audit(s) due to the security situation in the State where the facilities are located.

[Note: related AMC/GM:

- [AMC1 145.B.355\(c\) Suspension, limitation and revocation](#)



APPENDICES TO ANNEX II (PART-145)

Appendix II — Class and Ratings System used for the Approval of Part-145 Maintenance Organisations referred to in Annex I (Part-M) Subpart F and Annex II (Part-145)

The provisions of Appendix IV to Annex I (Part-M) apply.

- (a) Except as stated otherwise for the smallest organisations in point (m), the table referred to in point (l) provides the standard system for the approval of Part-145 maintenance organisations and the issuing of the certificate (terms of approval). An organisation must be granted an approval that ranges from a single class and rating with limitations to an approval for all classes and ratings with limitations.
- (b) In addition to the table referred to in point (l), each maintenance organisation is required to indicate its *scope of work* in its MOE. See also point (k).
- (c) Within the approval class(es) and rating(s) established by the competent authority, the scope of work specified in the MOE defines the exact limits of its approval. It is therefore essential that the approval class(es) and rating(s) and the organisation's scope of work match.
- (d) A *category A class rating* means that the maintenance organisation may carry out maintenance on aircraft and components (including engines and/or Auxiliary Power Units (APUs)), in accordance with the aircraft maintenance data or, if agreed by the competent authority, in accordance with the component maintenance data, only while such components are fitted to the aircraft. Nevertheless, such an A-rated maintenance organisation may temporarily remove a component for maintenance in order to improve access to that component, except when its removal generates the need for additional maintenance that is not eligible for the provisions of this point. This is provided that an appropriate control procedure in the MOE has been approved by the competent authority. The limitation section will specify the scope of such maintenance, thereby indicating the extent of the approval.
- (e) *Category A class ratings* are subdivided into 'Base' or 'Line' maintenance categories. Such an organisation may be approved for either 'Base' or 'Line' maintenance, or both. It should be noted that a 'Line' facility located at a main base facility requires a 'Line' maintenance approval.
- (f) A *category B class rating* means that the maintenance organisation may carry out maintenance on uninstalled engines and/or APUs and engine and/or APU components, in accordance with the engine and/or APU maintenance data or, if agreed by the competent authority, in accordance with the component maintenance data, only while such components are fitted to the engine and/or the APU. Nevertheless, such a B-rated approved maintenance organisation may temporarily remove a component for maintenance in order to improve access to that component, except when its removal generates the need for additional maintenance that is not eligible for the provisions of this point. The limitation section will specify the scope of such maintenance, thereby indicating the extent of the approval. A maintenance organisation that is approved with a category B class rating may also carry out



maintenance on an installed engine during 'base' and 'line' maintenance, provided that an appropriate control procedure in the MOE has been approved by the competent authority. The scope of work in the MOE shall reflect these activities if they are permitted by the competent authority.

- (g) A *category C class rating* means that the maintenance organisation may carry out maintenance on uninstalled components (excluding complete engines and APUs) that are intended to be fitted on the aircraft or the engine/APU. The limitation section will specify the scope of such maintenance, thereby indicating the extent of the approval. A maintenance organisation that is approved with a category C class rating may also carry out maintenance on an installed component (other than a complete engine/APU) during base and line maintenance, or at an engine/APU maintenance facility provided that an appropriate control procedure in the MOE has been approved by the competent authority. The scope of work in the MOE shall reflect these activities if they are permitted by the competent authority.
- (h) A *category D class rating* is a self-contained class rating that is not necessarily related to a specific aircraft, engine or other component. The D1 — Non-Destructive Testing (NDT) rating is only necessary for a maintenance organisation that carries out NDT as a particular task for another organisation. A maintenance organisation that is approved with a class rating in the A, B or C category may carry out NDT on products that it maintains without the need for a D1 class rating provided that the MOE contains NDT procedures.
- (i) The *limitation* section is intended to give the competent authorities the flexibility to customise an approval for any particular organisation. Ratings shall only be mentioned on the approval if they are appropriately limited. The table referred to in point (l) specifies the types of limitation that are possible. It is acceptable to stress the maintenance task rather than the type or manufacturer of the aircraft or engine, if this is more appropriate to the organisation (an example could be avionic systems installations and the related maintenance). If that is mentioned in the limitation section, it indicates that the maintenance organisation is approved to carry out maintenance up to and including this particular type/task.
- (j) When a reference is made to the *series, type and group* in the limitation section of class A and B, series means a specific type series such as the Airbus 300, 310 or 319, or the Boeing 737-300 series, the RB211-524 series, the Cessna 150 or Cessna 172, the Beech 55 series, the continental O-200 series, etc. Type means a specific type or model such as the Airbus 310-240 type, the RB 211-524 B4 type, or the Cessna 172RG type. Any number of series or types may be quoted. Group means, for example, Cessna single piston engine aircraft or Lycoming non-supercharged piston engines, etc.
- (k) Notwithstanding point 145.A.85(a)(1), when a component *capability list* is used that could be subject to frequent amendments, then the organisation may propose to include such amendments in the procedure referred to in point 145.A.85(c) for changes not requiring prior approval.

(l) Table

CLASS	RATING	LIMITATION	BASE	LINE
AIRCRAFT	A1 Aeroplanes	[Shall state the aeroplane manufacturer or the group or	[YES/NO] (*)	[YES/NO] (*)



CLASS	RATING	LIMITATION	BASE	LINE
	above 5 700 kg maximum take-off mass (MTOM)	series or type and/or the maintenance tasks <i>Example: Airbus A320 Series</i>		
	A2 Aeroplanes of 5 700 kg MTOM	[Shall state the aeroplane manufacturer or the group or series or type and/or the maintenance tasks] <i>Example: DHC-6 Twin Otter Series</i> State whether the issuing of airworthiness review certificates is authorised (only possible for aircraft covered by Annex Vb (Part-ML))	[YES/NO] (*)	[YES/NO] (*)
	A3 Helicopters	[Shall state the helicopter manufacturer or the group or series or type and/or the maintenance task(s)] <i>Example: Robinson R44</i>	[YES/NO] (*)	[YES/NO] (*)
	A4 Aircraft other than A1, A2 and A3 aircraft	[Shall state the aircraft category (sailplane, balloon, airship, etc.), the manufacturer or group or series or type and/or the maintenance task(s)] State whether the issuing of airworthiness review certificates is authorised (only possible for aircraft covered by Annex Vb (Part-ML))	[YES/NO] (*)	[YES/NO] (*)
ENGINES	B1 Turbine	[Shall state the engine series or type and/or the maintenance task(s)] <i>Example: PT6A Series</i>		
	B2 Piston	[Shall state the engine manufacturer or group or series or type and/or the maintenance task(s)]		
	B3 APU	[Shall state the engine manufacturer or series or type and/or the maintenance task(s)]		
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs	C1 Air Cond & Press	[Shall state the aircraft type or aircraft manufacturer or component manufacturer or the particular component and/or cross refer to a capability list in the exposition and/or the maintenance task(s)] <i>Example: PT6A Fuel Control</i>		
	C2 Auto Flight			
	C3 Comms and Nav			
	C4 Doors — Hatches			
	C5 Electrical Power & Lights			
	C6 Equipment			
	C7 Engine —			



CLASS	RATING	LIMITATION	BASE	LINE
	APU			
	C8 Flight Controls			
	C9 Fuel			
	C10 Helicopter — Rotors			
	C11 Helicopter — Trans			
	C12 Hydraulic Power			
	C13 Indicating — recording system			
	C14 Landing Gear			
	C15 Oxygen			
	C16 Propellers			
	C17 Pneumatic & Vacuum			
	C18 Protection ice/rain/fire			
	C19 Windows			
	C20 Structural			
	C21 Water ballast			
	C22 Propulsion Augmentation			
SPECIALISED SERVICES	D1 Non-Destructive Testing	[Shall state particular NDT method(s)]		
(*) Delete as appropriate				

- (m) A maintenance organisation which employs only one person to both plan and carry out all its maintenance activities can only hold a limited scope of approval rating. The maximum permissible limits are:

CLASS	RATING	LIMITATION
AIRCRAFT	A2	PISTON ENGINE AEROPLANE OF 5 700 KG MTOM OR LESS
AIRCRAFT	A3	SINGLE PISTON ENGINE HELICOPTER OF 3 175 KG MTOM OR LESS
AIRCRAFT	A4	NO LIMITATIONS
ENGINES	B2	LESS THAN 450 HP
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs	C1 TO C22	AS PER CAPABILITY LIST
SPECIALISED SERVICES	D1 NDT	NDT METHOD(S) TO BE SPECIFIED.



It should be noted that such an organisation may be further limited by the competent authority in the scope of approval depending on the capabilities of the particular organisation.



Appendix III — Maintenance Organisation Approval certificate - EASA Form 3-145 referred to in Annex II (Part 145)

[MEMBER STATE (*)]
A Member of the European Union (**)

MAINTENANCE ORGANISATION APPROVAL CERTIFICATE

Reference: [MEMBER STATE CODE(*)].145.XXXX

Pursuant to Regulation (EC) No 216/2008 (EU) 2018/1139 of the European Parliament and of the Council and to Commission Regulation (EU) No 1321/2014 for the time being in force and subject to the condition specified below, the [COMPETENT AUTHORITY OF THE MEMBER STATE (*)] hereby certifies:

[COMPANY NAME AND ADDRESS]

as a maintenance organisation in compliance with Section A of Annex II (Part-145) of Regulation (EU) No 1321/2014, approved to maintain products, parts and appliances listed in the attached approval schedule terms of approval and issue related certificates of release to service using the above references and, when stipulated, to issue recommendations and airworthiness review certificates after an airworthiness review as specified in point M.A.901(I) of Annex I (Part-M) to the same Regulation ML.A.903 of Annex Vb (Part-ML) to Commission Regulation (EU) No 1321/2014 for those aircraft listed in the attached terms of approval schedule.

CONDITIONS:

- 1. This approval is limited to that specified in the scope of work section of the approved maintenance organisation exposition as referred to in Section A of Annex II (Part-145), and
2. This approval requires compliance with the procedures specified in the approved maintenance organisation exposition, and
3. This approval is valid whilst the approved maintenance organisation remains in compliance with Annex II (Part-145) of Regulation (EU) No 1321/2014.
4. Subject to compliance with the foregoing conditions, this approval shall remain valid for an unlimited duration unless the approval has previously been surrendered, superseded, suspended or revoked.

Date of original issue:

Date of this revision:

Revision No:

Signed:

For the competent authority: [COMPETENT AUTHORITY OF THE MEMBER STATE(*)]

EASA Form 3-145 Issue 3 4

(*) Or EASA if EASA is the competent authority

(**) Delete for non-EU Member States or EASA



**MAINTENANCE ORGANISATION
TERMS OF APPROVAL SCHEDULE**

Reference: [MEMBER STATE CODE (*)].145.[XXXX]

Organisation: [COMPANY NAME AND ADDRESS]

CLASS	RATING	LIMITATION	BASE	LINE
AIRCRAFT (**)	(***)	(****)	[YES/NO] (**)	[YES/NO] (**)
	(***)	(****)	[YES/NO] (**)	[YES/NO] (**)
	(***)	(****)	[YES/NO] (**)	[YES/NO] (**)
	(***)	(****)	[YES/NO] (**)	[YES/NO] (**)
ENGINES (**)	(***)	(***)		
	(***)	(***)		
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs (**)	(***)	(***)		
	(***)	(***)		
	(***)	(***)		
	(***)	(***)		
	(***)	(***)		
	(***)	(***)		
SPECIALISED SERVICES (**)	(***)	(***)		
	(***)	(***)		

This approval schedule is limited to those products, parts and appliances and to the activities specified in the scope of work section of the approved maintenance organisation exposition,

Maintenance Organisation Exposition reference:

Date of original issue:

Date of last revision approved: Revision No:

Signed:

For the competent authority: [COMPETENT AUTHORITY OF THE MEMBER STATE (*)]

EASA Form 3-145 Issue 3 4

- (*) Or EASA if EASA is the competent authority
- (**) Delete as appropriate if the organisation is not approved.
- (***) Complete with the appropriate rating and limitation
- (****) Complete with appropriate limitation and, for A2 and A4 ratings, state whether the issue of recommendations and airworthiness review certificates is authorised or not (only possible for EASA aircraft covered by Annex Vb (Part-ML) not involved in commercial operations when the organisation performs the airworthiness review together with the annual inspections contained in the maintenance programme).



Draft AMC & GM to Annex II (Part-145) (Draft EASA decision)

GM1 to Annex II (Part-145) Definitions

For the purpose of the AMC & GM to Part-145, the following definitions are used:

Audit	refers to a systematic, independent, and documented process for obtaining evidence, and evaluating it objectively to determine the extent to which requirements are complied with. <i>Note: audits may include inspections</i>
Alternative Means of Compliance (AltMoC)	Ref. Regulation (EU) No 1321/2014, Article 2 ¹ .
Assessment	in the context of <u>management system</u> performance monitoring, continuous improvement and oversight, this refers to a planned and documented activity performed by competent personnel to evaluate and analyse the achieved level of performance and maturity in relation to the <u>organisation's</u> policy and objectives. <i>Note: an assessment focuses on desirable outcomes and the overall performance, looking at the organisation as a whole. The main objective of the assessment is to identify the strengths and weaknesses to drive continual improvement.</i> <i>Remark: for 'risk assessment', please refer to the definition below.</i>
Base maintenance	Ref. AMC1 145.A.10
Competency	is a combination of individual skills, practical and theoretical knowledge, attitude, training, and experience.
Correction	is the action to eliminate a detected non-compliance.
Corrective action	is the action to eliminate or mitigate the root cause(s) and prevent the recurrence of an existing detected non-compliance, or other undesirable conditions or situations. Proper determination of the root cause(s) is crucial for defining effective corrective actions to prevent reoccurrence.
Error	is an action or inaction by a person that may lead to deviations from accepted procedures or regulations. <i>Note: errors are often associated with occasions when a planned sequence of mental or physical activities either fails to achieve its intended outcome, or is not appropriate with regard to the intended outcome, and when results cannot be attributed purely to chance.</i>

¹ As proposed through Opinion No 06/2016 (<https://www.easa.europa.eu/document-library/opinions/opinion-062016>).



Fatigue	is a physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, the circadian phase, or workload (mental and/or physical activity) that can impair a person's alertness and ability to safely perform safety-related duties.
Hazard	is a condition or an object with the potential to cause or contribute to an aircraft incident or accident.
Human factors	is anything that affects human performance, which means principles that apply to aeronautical design, certification, training, operations and maintenance, and which seek a safe interface between the human and other system components by proper consideration of human performance.
Human performance	refers to human capabilities and limitations which have an impact on the safety, and efficiency of aeronautical operations.
Inspection	in the context of compliance monitoring and oversight, refers to an independent documented conformity evaluation by observation and judgement accompanied, as appropriate, by measurement, testing or gauging, in order to verify compliance with applicable requirements. <i>Note: inspection may be part of an audit (e.g. product audit), but may also be conducted outside of the normal audit plan, for example to verify closure of a particular finding.</i>
Just Culture	Ref. Regulation (EU) No 376/2014, Article 2.
Line maintenance	Ref. AMC1 145.A.10
Near miss	is an event in which an occurrence to be mandatorily reported according to Regulation (EU) No 376/2014 was narrowly averted or avoided. <i>Example: a mechanic on rechecking his or her work at the end of a task realises that one work card step was not properly carried-out.</i>
Organisational factor	is a latent condition that affects the effectiveness of safety risk controls, related to the culture, policies, processes, resources, and workplace of an organisation.
Oversight planning cycle	refers to the time frame within which all areas of the approval and all processes should be reviewed by the competent authority by means of audits and inspections.
Oversight programme	refers to the detailed oversight schedule that defines the number of audits and inspections, the scope and duration of each audit and inspection, including details of product audits and locations, as appropriate, to be performed by the competent authority, and the tentative time frame for performing each audit and inspection.
Preventive action	is the action to eliminate the cause of a potential non-compliance, or other undesirable potential situations.
Risk assessment	is an evaluation based on engineering and operational judgement and/or analysis methods in order to establish whether the achieved or perceived risk is acceptable or tolerable.
Safety culture	is an enduring set of values, norms, attitudes, and practices within an organisation concerned with minimising the exposure of the workforce and the general public to dangerous or hazardous conditions. In a positive safety culture,



	a shared concern for, commitment to, and accountability for safety is promoted.
Safety risk	refers to the predicted probability and severity of the consequences or outcomes of a hazard.
Safety training	<p>refers to dedicated training to support safety management policies and processes, including human factors training.</p> <p><i>Note: the main purpose of the safety training programme is to ensure that personnel at all levels of the organisation maintain their competency to fulfil their safety roles. Safety training should, in particular, consider the safety knowledge derived from hazard identification and risk management processes, and support the fostering of a positive safety culture.</i></p> <p><i>Note: safety management training means specific training for the staff involved in safety management functions in accordance with point 145.A.30(ca) or 145.A.200(a)(3)</i></p>
Working days	refers to days between and including Monday to Friday, not including public holidays.

[Back to implementing rule:

- [145.1 Competent authority](#)]



SECTION A — TECHNICAL AND ORGANISATION REQUIREMENTS

AMC1 145.A.10 Scope

1. Line Maintenance should be understood as any maintenance that is carried out before flight to ensure that the aircraft is fit for the intended flight.
 - (a) Line Maintenance may include:
 - Troubleshooting
 - Defect rectification.
 - Component replacement with the use of external test equipment if required. Component replacement may include components such as engines and propellers.
 - Scheduled maintenance and/or checks, including visual inspections, that will detect obvious unsatisfactory conditions/discrepancies but do not require extensive in-depth inspections. It may also include the internal structure, systems and powerplant items which are visible through quick-opening access panels/doors.
 - Minor repairs and modifications which do not require extensive disassembly, and can be accomplished by simple means.
 - (b) For temporary or occasional cases (ADs, SBs) the Quality Compliance Monitoring Manager may accept base maintenance tasks to be performed by a line maintenance organisation subject to a risk assessment and provided all requirements are fulfilled as defined by the competent authority.
 - (c) Maintenance tasks that falling outside these criteria are considered to be Base Maintenance tasks.
 - (d) Aircraft that are maintained in accordance with 'progressive' type programmes should be individually assessed in relation to this paragraph. In principle, the decision to allow some 'progressive' checks to be carried out should be determined by the assessment that all the tasks within the particular check can be carried out safely and to the required standards at the designated line maintenance station.
2. ~~Where~~ If the organisation uses facilities both inside and outside the Member State, such as satellite facilities, sub-contractors, line stations, etc., such facilities may be included in the approval without being identified on the approval organisation certificate, subject to provided that the maintenance organisation exposition MOE identifies the facilities and containing procedures to control such facilities, and the competent authority is being satisfied that they form an integral part of the approved maintenance organisation.

[Back to implementing rule:

- [145.A.10 Scope](#)]



GM1 145.A.10 Scope

SMALLEST ORGANISATIONS

This Guidance Material (GM) provides guidance on how the smallest organisations satisfy the intent of Part-145:

1. By inference, the smallest maintenance organisations would only be involved in the maintenance of a limited number of light aircraft, or aircraft components, used for commercial air transport. It is therefore a matter of scale; the maintenance of light aircraft does not demand require the same level of resources, facilities or complex maintenance procedures as the maintenance of larger aircraft by large organisations.
2. It is recognised that a Part-145 approval may be required by two quite different types of small organisations. The first being is the a light aircraft maintenance hangar, and the second being is the a component maintenance workshop, e.g. for small piston engines, radio equipment, etc.
3. ~~Where only one person is employed (in fact having the certifying function and others), these o~~ Organisations that only employ one person, who carries out the certification function and other functions, and that are approved under Part-145, may use the alternatives provided in point 3.1, limited to the following:

Class A2 Base and Line maintenance of aeroplanes of 5 700 kg maximum take-off mass (MTOM) or less and below (with piston engines only).

Class A3 Base and Line maintenance of single-engined helicopters of 3 175 kg MTOM or less than 3 175 kg.

Class A4 Aircraft other than A1, A2 and A3 aircraft.

Class B2 Piston engines with maximum output of less than 450 HP.

Class C Components.

Class D1 Non-destructive Testing.

- 3.1. 145.A.30(b): The minimum requirement is for one full-time person who meets the Part-66 requirements for certifying staff and holds the position of 'accountable manager, safety manager, maintenance engineer and is also certifying staff and, if applicable, airworthiness review staff'. No other person may issue a certificate of release to service and therefore if that person if absent, no maintenance may be released during such his or her absence.

- 3.1.1. The quality independent audit element of the compliance monitoring function of ~~145.A.65(c)~~ point 145.A.200(a)(6) may be subcontracted to an appropriate organisation approved under Part-145 or contracted to a person with appropriate technical knowledge and extensive experience of quality audits, working under the management system of the organisation, ~~employed on a part-time basis,~~ with the agreement of the competent authority.

Note: Full-time for the purpose of Part-145 means not less than 35 hrs per week, except during vacation periods.



3.1.2. 145.A.35. In the case of an approval based on one person using an ~~subcontracted quality independent audit monitoring~~ arrangement as referred to in 3.1.1, the requirement for a record of certifying staff is satisfied by the submission to and acceptance by the competent authority of the ~~MOE EASA Form 4~~. With only one person, the requirement for a separate record of authorisation is unnecessary because the EASA Form 3 ~~approval schedule certificate~~ defines the authorisation. An appropriate statement, to reflect this situation, should be included in the exposition.

3.1.3. ~~145.A.65(c)~~ 145.A.200(a)(6). It is the responsibility of the ~~contracted quality monitoring~~ organisation or person referred to in 3.1.1 to make a minimum of 2 ~~on-site audits every year~~ visits per 12 months and it is the responsibility of this organisation or person to carry out ~~such these activities monitoring~~ on the basis of 1 pre-announced visit and 1 ~~not~~ unannounced visit to the maintenance organisation.

It is the responsibility of the Part-145 organisation to ensure that effective implementation of all corrective actions takes place. ~~comply with the findings of the contracted quality monitoring organisation or the person.~~

~~CAUTION: it should be understood that if the contracted organisation or the above mentioned person loses or gives up its approval, then the organisation's approval will be suspended.~~

4. Recommended operating procedure for a Part-145 ~~approved~~ maintenance organisation based upon up to 10 persons involved in maintenance.

4.1. 145.A.30(b) and 145.A.30(c): The normal minimum requirement is for the employment on a full-time basis of two persons who meet the ~~applicable competent authorities'~~ requirements for certifying staff, whereby one holds the position of 'maintenance engineer' and the other holds the position of ~~'quality audit compliance monitoring engineer'~~.

Either person can assume the responsibilities of the accountable manager and safety manager ~~provided~~ that they can comply in full with the applicable elements of ~~points 145.A.30(a) and 145.A.30(ca)~~, but the 'maintenance engineer' should be the certifying person to retain the independence of the ~~'quality audit compliance monitoring engineer'~~ to carry out audits. Nothing prevents either engineer from undertaking maintenance tasks, ~~provided~~ that the 'maintenance engineer' issues the certificate of release to service. This 'maintenance engineer' may also be nominated as airworthiness review staff to carry out airworthiness reviews and to issue the corresponding airworthiness review certificate ~~for ELA1 aircraft not involved in commercial operations~~ in accordance with ~~MLA.903 M.A.901(I)~~.

The ~~'quality audit compliance monitoring engineer'~~ should have similar qualifications and status to the 'maintenance engineer' for reasons of credibility, unless ~~he/she~~ he or she has a proven track record in aircraft ~~compliance monitoring quality assurance~~, in which case some reduction in the extent of his or her maintenance qualifications may be permitted.



~~In cases where~~ If the competent authority agrees that it is not practical for ~~the an~~ organisation to nominate a ~~person as responsible post-holder~~ for the ~~quality independent audit of the compliance monitoring function,~~ this ~~element function~~ may be contracted in accordance ~~to~~ with paragraph 3.1.1.

[Back to implementing rule:

- [145.A.10 Scope](#)]

AMC1 145.A.15 Application for an organisation certificate

~~In a form and in a manner established by the competent authority means that the~~ An application should be made on an EASA Form 2 (refer to Appendix III to AMC to Part-145) or an equivalent form that is acceptable to the competent authority.

EASA Form 2 is valid for the application for M.A. Subpart F, Part-CAO, Part-145 and Part-CAMO organisations. Organisations that apply for several certificates may do so using a single EASA Form 2.

[Back to implementing rule:

- [145.A.15 Application for an organisation certificate](#)]

AMC2 145.A.15 Application for an organisation certificate

GENERAL

- Draft documents should be submitted at the earliest opportunity so that assessment of the application can begin. The initial certification or approval of changes cannot take place until the competent authority has received the completed documents.
- This information, including the results of the pre-audit specified in point 145.A.15(b)(1), will enable the competent authority to conduct its assessment in order to determine the volume of certification and oversight work that is necessary, and the locations where it will be carried out.
- The intent of the internal pre-audit referred to in point 145.A.15(b)(1) is to ensure that the organisation has internally verified its compliance with the Regulation. This should allow the organisation to demonstrate to the competent authority the extent to which the applicable requirements are complied with, and to provide assurance that the organisation management system is established to a level that is sufficient to perform maintenance activities.

[Back to implementing rule:

- [145.A.15 Application for an organisation certificate](#)]

GM1 145.A.15(b) Application for an organisation certificate

PROCEDURE FOR CHANGES NOT REQUIRING PRIOR APPROVAL



The procedure for changes not requiring prior approval should include, as mentioned in point 145.A.70(a)(10), both the scope of those changes and how they will be managed and notified. For applicants for an initial certificate, the scope may be limited by the competent authority for the first period of operation. An extension of such a limited scope may be considered later; see GM1 145.A.85(c).

[Back to implementing rule:

- [145.A.15 Application for an organisation certificate](#)]

AMC1 145.A.25(a) Facility requirements

[...]

5. Subject to a risk assessment and agreement by the competent authority, the organisation may use facilities at the approved location, other than a hangar that encloses the whole aircraft, for certain aircraft base maintenance tasks, provided that those facilities offer levels of weather and environmental protection that are equivalent to those of a hangar, as well as a suitable working environment for the particular work package. This does not exempt an organisation from the requirement to have an aircraft hangar in order to be approved to conduct base maintenance at a given location.

AMC1 145.A.30(a) Personnel requirements

ACCOUNTABLE MANAGER

With regard to the Accountable manager, it is normally intended to mean the chief executive officer of the approved maintenance organisation, who by virtue of his or her position, has overall (including in particular financial) responsibility for running the organisation. The accountable manager may be the accountable manager for more than one organisation, and is not necessarily required to be necessarily knowledgeable on technical matters, as the maintenance organisation exposition MOE defines the maintenance standards. When the accountable manager is not the chief executive officer, the competent authority will need to should be assured that such an the accountable manager has direct access to the chief executive officer and has the necessary a sufficiency of 'maintenance funding' allocation.

[Back to implementing rule:

- [145.A.30 Personnel requirements](#)]

AMC1 145.A.30(b) Personnel requirements

MANAGEMENT STRUCTURE FOR MAINTENANCE

The person or group of persons nominated under point 145.A.30(b) with the responsibility for ensuring compliance should represent the management structure of the organisation, and be responsible for all maintenance functions.



1. Dependent upon the size of the organisation, the Part-145 functions may be subdivided under individual managers or combined in any number of ways. However, the compliance monitoring function should be independent from the other functions.
2. The organisation should have, dependent upon the extent of approval, a base maintenance manager, a line maintenance manager, and a workshop manager, and a quality manager, all of whom should report to the accountable manager, except in small Part-145 organisations where any one manager may also be the accountable manager, as determined by the competent authority, and he/she he or she may also be the line maintenance manager or the workshop manager.
3. The base maintenance manager is responsible for ensuring that all maintenance required to be carried out in the hangar, plus any defect rectification carried out during base maintenance, is carried out to the design and quality standards specified in point 145.A.65(b). The base maintenance manager is also responsible for any corrective action resulting from the quality compliance monitoring of point 145.A.200(a)(6) 145.A.65(c).
4. The line maintenance manager is responsible for ensuring that all maintenance required to be carried out on the line, including line defect rectification, is carried out to the standards specified in point 145.A.65(b), and is also responsible for any corrective action resulting from the quality compliance monitoring of point 145.A.200(a)(6) 145.A.65(c).
5. The workshop manager is responsible for ensuring that all work on aircraft components is carried out to the standards specified in point 145.A.65(b), and is also responsible for any corrective action resulting from the quality compliance monitoring of point 145.A.200(a)(6) 145.A.65(c).
6. (reserved) The quality manager's responsibility is specified in 145.A.30(c).
7. Notwithstanding the example sub-paragraphs 2 - 5 6 titles, the organisation may adopt any titles for the foregoing managerial positions, but it should identify to the competent authority the titles and the persons chosen to carry out these functions.
8. Where if an organisation chooses to appoint managers for all or any combination of the identified Part-145 functions because of the size of the undertaking, it is necessary that these managers should ultimately report to the accountable manager ultimately through either the base maintenance manager, or the line maintenance manager, or the workshop manager, or the quality compliance monitoring manager or the safety manager, as appropriate, to the accountable manager.

NOTE: Certifying staff may report to any of the managers specified, depending upon which type of control the approved maintenance organisation uses (for example, licensed licenced engineers/independent inspection/dual function supervisors, etc.) so as long as the quality independence of the compliance monitoring function is ensured staff specified in 145.A.65(c)(1) remain independent.

[Back to implementing rule:

- [145.A.30 Personnel requirements](#)]



GM1 145.A.30(b) Personnel requirements

RESPONSIBILITY FOR ENSURING COMPLIANCE

For day-to-day functions, the responsibility for ensuring that all maintenance activities are performed in accordance with the applicable requirements and procedures lies with the person(s) nominated in accordance with point 145.A.30(b).

These nominated persons should demonstrate a complete understanding of the applicable requirements, and ensure that the organisation's processes and standards accurately reflect the applicable requirements. It is their role to ensure that compliance is proactively managed, and that any early warning signs of non-compliance are documented and acted upon.

[Back to implementing rule:

- [145.A.30 Personnel requirements](#)]

AMC1 145.A.30(c) Personnel requirements

~~Monitoring the quality system~~ Compliance monitoring may include the need to involve the accountable manager and the nominated persons referred to in point 145.A.30(b) in requesting corrections and corrective remedial actions as necessary by the accountable manager and the nominated persons referred to in 145.A.30(b).

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AMC1 145.A.30(c);(ca) Personnel requirements

SAFETY MANAGEMENT AND COMPLIANCE MONITORING FUNCTION

(a) Safety manager

- (1) The safety manager should act as the focal point for effective safety management processes, and be responsible for their development, administration and maintenance.
- (2) The functions of the safety manager should be to:
 - (i) facilitate hazard identification, risk assessment and management;
 - (ii) monitor the implementation of actions taken to mitigate risks, as listed in the safety action plan, unless action follow-up is addressed by the compliance monitoring function;
 - (iii) provide periodic reports on safety performance to the safety review board;
 - (iv) ensure the maintenance of safety management documentation;
 - (v) ensure that there is safety training available, and that it meets acceptable standards;
 - (vi) provide advice on safety matters; and



- (vii) ensure the initiation and follow-up of internal occurrence investigations.
- (3) If more than one person is designated for the safety management function, the accountable manager should identify the person who acts as the unique focal point (i.e. the 'safety manager').
- (b) The compliance monitoring function should ensure that:
 - (1) the activities of the organisation are monitored for compliance with the applicable requirements and any additional requirements as established by the organisation, and that these activities are carried out properly under the supervision of the nominated persons referred to in points 145.A.30(b) to (ca).
 - (2) any maintenance contracted to another maintenance organisation is monitored for compliance with the contract;
 - (3) an audit plan is properly implemented, maintained, and continually reviewed and improved; and
 - (4) corrections and corrective actions are requested as necessary.
- (c) The compliance monitoring manager should:
 - (1) not be one of the persons referred to in point 145.A.30(b);
 - (2) be able to demonstrate relevant knowledge, background and appropriate experience related to the activities of the organisation, including knowledge and experience in compliance monitoring; and
 - (3) have access to all parts of the organisation, and as necessary, any subcontracted organisation.
- (d) If more than one person is designated for the compliance monitoring function, the accountable manager should identify the person who acts as the unique focal point (i.e. the 'compliance monitoring manager').
- (e) If the functions related to compliance monitoring or safety management are combined with other duties, the organisation should ensure that this does not result in any conflicts of interest.
- (f) If the same person is designated to manage both the compliance monitoring function and safety management-related processes and tasks, the accountable manager, with regard to his or her direct accountability for safety, should ensure that sufficient resources are allocated to both functions, taking into account the size of the organisation, and the nature and complexity of its activities.
- (g) Subject to a risk assessment and agreement by the competent authority, with due regard to the size of the organisation and the nature and complexity of its activities, the compliance monitoring manager role and/or safety manager role may be exercised by the accountable manager, provided that he or she has demonstrated the related competency as defined in point (c)(2).

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GM1 145.A.30(ca) Personnel requirements

SAFETY MANAGER

- (a) Depending on the size of the organisation and the nature and complexity of its activities, the safety manager may be assisted by additional safety personnel in performing all the safety management tasks defined in AMC1 145.A.200(a)(1).
- (b) Regardless of the organisational setup, it is important that the safety manager remains the unique focal point for the development, administration, and maintenance of the organisation's management system.

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AMC1 145.A.30(cc) Personnel requirements

KNOWLEDGE, BACKGROUND AND EXPERIENCE OF NOMINATED PERSON(S)

Persons or group(s) of persons nominated in accordance with points 145.A.30(b), (c) and (ca) should have:

- (a) practical experience and expertise in the application of aviation safety standards and safe operating practices;
- (b) knowledge of:
 - (1) human factors principles;
 - (2) safety management systems based on the EU management system requirements (including compliance monitoring) and ICAO Annex 19.
- (c) 5 years of relevant work experience, of which at least 2 years should be from the aeronautical industry in an appropriate position;
- (d) a relevant engineering degree or an aircraft maintenance technician qualification with additional education that is acceptable to the competent authority. 'Relevant engineering degree' means an engineering degree from aeronautical, mechanical, electrical, electronic, avionic or other studies that are relevant to the maintenance and continuing airworthiness of aircraft/aircraft components;

The above recommendation may be replaced by 5 years of experience in addition to those already recommended by the paragraph (c) above. These 5 years should cover an appropriate combination of experience in tasks related to aircraft maintenance and/or continuing airworthiness management and/or the surveillance of such tasks;
- (e) thorough knowledge of the organisation's MOE;
- (f) knowledge of a relevant sample of the type(s) of aircraft or components gained through a formalised training course. These courses could be provided by a Part-147 organisation, by the manufacturer, by the Part-145 organisation or by any other organisation accepted by the



competent authority. Aircraft/engine type training courses should be at least at a level equivalent to the Part-66 Appendix III Level 1 General Familiarisation.

'Relevant sample' means that these courses should cover typical aircraft or components that are within the scope of work.

For all balloons and any other aircraft of 2 730 kg MTOM or less, the formalised training courses may be replaced by a demonstration of the required knowledge by providing documented evidence, or by an assessment performed by the competent authority. This assessment should be recorded;

(g) knowledge of the relevant maintenance methods;

(h) knowledge of the applicable regulations.

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AMC1 145.A.30(d) Personnel requirements

SUFFICIENT NUMBER OF PERSONNEL

[...]

4. For ~~In the case of~~ aircraft base maintenance, the maintenance man-hour plan should relate to the aircraft hangar visit plan as specified in AMC1 145.A.25(a).
5. For ~~In the case of~~ aircraft component maintenance, the maintenance man-hour plan should relate to the aircraft component planned maintenance as specified in point 145.A.25(a)(2).
6. The ~~quality monitoring~~ man-hours allocated to the compliance monitoring function ~~man-hours~~ should be sufficient to meet the requirement of point 145.A.200(a)(6) ~~145.A.65(e)~~, which means taking into account ~~AMCs to 145.A.200(a)(6) AMC 145.A.65(e)~~. ~~Where~~ If the ~~quality compliance~~ monitoring staff also perform other functions, the time allocated to ~~such those~~ functions needs to be taken into account in determining the number of ~~quality compliance~~ monitoring staff ~~numbers~~.
7. The maintenance man-hour plan should be reviewed at least every 3 months and updated when necessary.
8. Significant deviations from the maintenance man-hour plan should be reported through the ~~departmental~~ responsible manager to the ~~quality compliance~~ monitoring manager, the ~~safety manager~~ and the accountable manager for review, as well as through the internal safety reporting scheme. A ~~S~~significant deviation means that there is more than a 25 % shortfall in the available man-hours during a calendar month for any one of the functions specified in point 145.A.30(d).
9. In addition, as part of its management system in accordance with point 145.A.200, the organisation should have a procedure to assess and mitigate the risks:
 - (1) if the actual number of staff available is less than the planned staffing level for any particular work shift or period;



- (2) if there is a temporary increase in the proportion of subcontracted staff in order to meet specific operational needs.

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AMC1 145.A.30(e) Personnel requirements

COMPETENCY ASSESSMENT

Competence Competency should be defined as a measurable skill or standard of performance, knowledge and understanding, taking into consideration attitude and behaviour.

The referenced procedure requires amongst others that planners, mechanics, specialised services staff, supervisors, certifying staff and support staff, whether employed or contracted, are assessed for competence competency before unsupervised work commences and competence competency is controlled on a continuous basis.

Competence Competency should be assessed by the evaluation of:

- on-the-job performance and/or testing of knowledge by appropriately qualified personnel, and
- records for basic, organisational, and/or product type and differences training, and
- experience records.

Validation of the above could include a confirmation check with the organisation(s) that issued such the document(s). For that purpose, experience/training may be recorded in a document such as a log book, or based on the suggested template in GM3 145.A.30(e).

As a result of this assessment, an individual's qualifications should determine:

- which level of ongoing supervision would be required or and whether unsupervised work could be permitted;
- whether there is a need for additional training.

A record of should be kept such of each individual's qualifications and competence competency assessment should be kept (refer also to point 145.A.55(d)).

This should include copies of all documents that attest to their qualifications, such as the a licence and/or any authorisation held, as applicable.

For a proper competence competency assessment of its personnel, the organisation should consider that:

1. In accordance with the job function, adequate initial and recurrent training should be provided and recorded to ensure continued competence competency so that it is maintained throughout the duration of the employment/contract.
2. All staff should be able to demonstrate knowledge of, and compliance with, the maintenance organisation's procedures, as applicable to their duties.



3. All staff should be able to demonstrate an understanding of the safety management principles, human factors and human performance issues in relation with to their job function, and be trained as per AMC2 145.A.30(e).
4. To assist in the assessment of competence competency and to establish the training needs analysis, job descriptions are recommended for each job function in the organisation. Job descriptions should contain sufficient criteria to enable the required competence competency assessment.
5. Criteria should allow the assessment to establish that, among others aspects (titles might be different in each organisation):
 - Managers are able to properly manage the work output, processes, resources and priorities described in their assigned duties, accountabilities and responsibilities in accordance with the safety policy and objectives and in compliance with the applicable requirements in a safe compliant manner in accordance with regulations and organisation procedures.
 - Planners are able to interpret maintenance requirements into maintenance tasks, and have an understanding that they have no authority to deviate from the maintenance data.
 - Supervisors are able to ensure that all the required maintenance tasks are carried out and, where if they are not completed or where it is evident that a particular maintenance task cannot be carried out according to the maintenance data, then such that these problems will be adequately addressed to eliminate the non-compliance, and reported through the internal safety reporting scheme to prevent their reoccurrence to the 145.A.30(c) person for appropriate action. In addition, for those supervisors, who also carry out maintenance tasks, the assessment should ensure that they understand that such tasks should not be undertaken when if they are incompatible with their management responsibilities.
 - Mechanics are able to carry out maintenance tasks to any standard specified in the maintenance data, and will notify their supervisors of any defects or mistakes that requiring rectification to re-establish required maintenance standards.
 - Specialised services staff are able to carry out specialised maintenance tasks to the standard specified in the maintenance data. They should be able to communicate with their supervisors and report accurately when necessary.
 - Support staff are able to determine that the relevant tasks or inspections have been carried out to the required standard.
 - Certifying staff are able to determine when the aircraft or aircraft component maintenance is ready to be released to service, and when it should not be released to service.
 - Quality audit Compliance monitoring staff are able to monitor compliance with Part-145 this Regulation and to identifying non-compliances in an effective and timely manner so that the organisation may remain in compliance with this Regulation Part-145.



- Staff who have been designated safety management responsibilities are familiar with the relevant processes in terms of hazard identification, risk management, and the monitoring of safety performance.
- All staff are familiar with the safety policy and the procedures and tools that can be used for internal safety reporting.

Competence The competency assessment should be based upon the procedure specified in GM2 145.A.30(e).

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AMC2 145.A.30(e) Personnel requirements

SAFETY TRAINING (INCLUDING HUMAN FACTORS)

Refer to the definition of safety training in GM1 to Annex II (Part-145).

(a) With ~~in~~ respect to the understanding of the application of safety management, human factors and human performance issues, all maintenance organisation personnel should have received an initial and recurrent ~~continuation~~ human factors safety training, appropriate for their responsibilities. This should ~~concern~~ include to a minimum at least the following staff members:

- ~~Post-holders~~ Nominated persons, line managers, supervisors;
- Certifying staff, support staff and mechanics;
- Technical support personnel such as planners, engineers, technical record staff;
- ~~Quality control/assurance staff~~ Persons involved in any compliance monitoring and/or safety management-related processes and tasks, including the application of human factors principles, internal investigations and safety training;
- Specialised services staff;
- ~~Human factors staff/human factors trainers;~~
- Stores department staff, purchasing department staff;
- Ground equipment operators.

The generic term 'line managers' refers to departmental heads or persons responsible for operational departments or functional units that are directly involved in the delivery of the basic maintenance services of the organisation.

(b) ~~1.~~ Initial ~~human factors~~ safety training should cover all the topics of the training syllabus specified in GM1 145.A.30(e) either as a dedicated course or else integrated within other training. The syllabus may be adjusted to reflect the particular nature of the organisation. The syllabus may also be adjusted to ~~meet~~ suit the particular nature of work for each function within the organisation. For example:



- small organisations that do not working in shifts may cover in less depth subjects related to teamwork and communication in less depth;
- planners may cover in more depth the scheduling and planning objectives of the syllabus, and in less depth the objective of developing skills for shift working.

All personnel, including personnel being recruited from any other organisation, should receive initial human factors safety training that is compliant with the organisation's training standards prior to commencing the actual job function, unless their competence competency assessment justifies that there is no need for such a training. Newly directly employed personnel who working under direct supervision may receive training within 6 months after joining the maintenance organisation.

- (c)2. The purpose of human factors continuation recurrent safety training is primarily to ensure that staff remain current in terms of SMS principles and human factors, and also to collect feedback on safety and human factors issues. Consideration should be given to the possibility that such training has the involvement of the quality department compliance monitoring staff and the key safety management personnel in this training. There should be a procedure to ensure that feedback is formally reported by passed from the trainers through the internal safety reporting scheme to the quality department to initiate action where necessary.

Recurrent safety training should be delivered either as a dedicated course or integrated within other training. Human factors continuation training It should be of an appropriate duration in each two-year 2-year period in relation to the relevant compliance monitoring quality audit findings and other internal/external sources of information available to the organisation on safety and human errors factors maintenance issues in maintenance available to the organisation.

- (d)3. Human factors Safety training should be delivered by a competent trainer, and may be conducted by the maintenance organisation itself, or independent trainers, or any training organisations acceptable to the competent authority.
- (e)4. The human factors safety training procedures should be specified in the maintenance organisation exposition MOE.

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AMC3 145.A.30(e) Personnel requirements

Additional training in fuel tank safety, as well as the associated inspection standards and maintenance procedures, should be required for staff for maintenance organisations' technical personnel, especially technical personnel involved in the compliance of CDCCL tasks.

EASA Guidance is provided for the training to of maintenance organisation personnel is provided in Appendix IV to AMC3 145.A.30(e) and AMC2 145.B.200(a)(3) 145.B.10(3).

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AMC4 145.A.30(e) Personnel requirements

Competence Competency assessments should include the verification for the check whether there is a need of for additional EWIS training, if this is when relevant.

EASA Guidance is provided for on EWIS training programmes to for maintenance organisation personnel is provided in AMC 20-22.

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AMC5 145.A.30(e) Personnel requirements

INITIAL AND RECURRENT TRAINING

- (a) Adequate initial and recurrent training should be provided and recorded to ensure that staff remain competent.
- (b) All prospective maintenance staff should be assessed for their competency related to their intended duties (see the definition of competency in GM1 to Annex II (Part-145).
- (c) The organisation should develop a procedure that describes the process for conducting competency assessments of personnel. The procedure should specify:
 - (1) the persons who are responsible for this process;
 - (2) when the assessments should take place;
 - (3) how to give credit from previous assessments;
 - (4) how to validate qualification records;
 - (5) the means and methods to be used for the initial assessment;
 - (6) the means and methods to be used for the continuous control of competency, including to gather feedback on the performance of personnel;
 - (7) the aspects of competencies to be observed during the assessment in relation to each job function;
 - (8) the actions to be taken if the assessment is not satisfactory; and
 - (9) how to record the assessment results.
- (d) Competency may be assessed by having the person work under the supervision of another qualified person for a sufficient time to arrive at a conclusion. Sufficient time could be as little as a few weeks if the person is fully exposed to relevant work. The person need not be assessed against the complete spectrum of their intended duties. If the person has been recruited from another approved maintenance organisation, it is reasonable to accept a written confirmation from the previous organisation.

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GM1 145.A.30(e) Personnel requirements

TRAINING SYLLABUS FOR INITIAL HUMAN FACTORS SAFETY TRAINING

The training syllabus below identifies the topics and subtopics to be addressed during the human factors safety training.

The maintenance organisation may combine, divide, or change the order of any of the subjects of in the syllabus to suit its own needs, as long as all the subjects are covered to a level of detail that is appropriate for the organisation and its personnel.

Some of the topics may be covered in separate training courses (e.g. health and safety, management, supervisory skills, etc.) in which case duplication of the training is not necessary.

Where possible, practical illustrations and examples should be used, especially accident and incident reports.

Topics should be related to existing legislation, where relevant. Topics should be related to existing guidance/advisory material, where relevant (e.g. ICAO HF Digests and Training Manual).

Topics should be related to maintenance engineering where possible; too much unrelated theory should be avoided.

1. General/Introduction to safety management and human factors
 - 1.1. Need to address safety management and human factors
 - 1.2. Statistics
 - 1.3. Incidents
- 1a. Safety risk management
 - 1a.1. Hazard identification
 - 1a.2. Safety risk assessment
 - 1a.3. Risk mitigation and management
 - 1a.4. Effectiveness of safety risk management
2. Safety Culture/Organisational factors
 - 2.1 Just culture
 - 2.2 Reporting culture
 - 2.3 Informed culture
 - 2.4 Flexible culture/learning culture
3. Human Error error
 - 3.1. Error models and theories
 - 3.2. Types of errors in maintenance tasks
 - 3.3. Violations
 - 3.4. Implications of errors



- 3.5. Avoiding and managing errors
- 3.6. Human reliability
- 4. Human performance & limitations
 - 4.1. Vision
 - 4.2. Hearing
 - 4.3. Information-processing
 - 4.4. Attention and perception
 - 4.5. Situational awareness
 - 4.6. Memory
 - 4.7. Claustrophobia and physical access
 - 4.8. Motivation
 - 4.9. Fitness/Health
 - 4.10. Stress
 - 4.11. Workload management
 - 4.12. Fatigue and fatigue risk management
 - 4.13. Alcohol, medication, drugs
 - 4.14. Physical work
 - 4.15. Repetitive tasks/complacency
- 5. Environment
 - 5.1. Peer pressure
 - 5.2. Stressors
 - 5.3. Time pressure and deadlines
 - 5.4. Workload
 - 5.5. Shift Work
 - 5.6. Noise and fumes
 - 5.7. Illumination
 - 5.8. Climate and temperature
 - 5.9. Motion and vibration
 - 5.10. Complex systems
 - 5.11. Other hazards in the workplace
 - 5.12. Lack of manpower
 - 5.13. Distractions and interruptions



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. Critical maintenance tasks and error-capturing methods (independent inspection, reinspection, etc.)
7. Communication
 - 7.1. Shift/Task handover
 - 7.2. Dissemination of information
 - 7.3. Cultural differences
8. Teamwork
 - 8.1. Responsibility
 - 8.2. Management, supervision and leadership
 - 8.3. Decision-making
9. Professionalism and integrity
 - 9.1. Keeping up to date; currency
 - 9.2. Avoiding error-provoking behaviour
 - 9.3. Assertiveness
10. Organisation's HF safety programme
 - 10.1. Safety policy and objectives, just culture principles
 - 10.2. Reporting errors and hazards, internal safety reporting scheme
 - 10.3. Error Occurrence investigation process
 - 10.4. Action to address problems
 - 10.5. Feedback and safety promotion

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GM2 145.A.30(e) Personnel requirements

COMPETENCY ASSESSMENT

The organisation should develop a procedure describing the process of competence assessment of personnel. The procedure should specify:



- persons responsible for this process,
- when the assessment should take place,
- credits from previous assessments,
- validation of qualification records,
- means and methods for the initial assessment,
- means and methods for the continuous control of competence including feedback on personnel performance,
- competences to be observed during the assessment in relation with each job function,
- actions to be taken when assessment is not satisfactory,
- recording of assessment results.

An example of elements that may be considered during a competency assessment according to the job functions and the scope, size and complexity of the organisation, is given in the following table (not exhaustive):

For example, according to the job functions and the scope, size and complexity of the organisation, the assessment may consider the following (the table is not exhaustive):

	Managers	Planners	Supervisor	Certifying staff and support staff	Mechanics	Specialised Service staff	Quality-audit Compliance monitoring staff	Safety manager and key SM personnel
Knowledge of applicable officially recognised standards						X	X	X
Knowledge of auditing techniques: planning, conducting and reporting							X	X
Knowledge of safety management, human factors, human performance and limitations, and just culture	X	X	X	X	X	X	X	X
Knowledge of logistics processes	X	X	X					
Knowledge of organisation capabilities, privileges and limitations	X	X	X	X		X	X	X
Knowledge of Part-M, Part-ML, Part-145 and any other relevant regulations	X	X	X	X			X	X
Knowledge of relevant parts of the maintenance organisation exposition and procedures	X	X	X	X	X	X	X	X
Knowledge of occurrence reporting system (mandatory and voluntary), internal reporting scheme and understanding of the importance of reporting occurrences, incorrect maintenance data and existing or potential defects		X	X	X	X	X		X
Knowledge of safety risks linked to the working environment	X	X	X	X	X	X	X	X
Knowledge of CDCCL when relevant	X	X	X	X	X	X	X	
Knowledge of EWIS when relevant	X	X	X	X	X	X	X	



	Managers	Planners	Supervisor	Certifying staff and support staff	Mechanics	Specialised Service staff	Quality-audit Compliance monitoring staff	Safety manager and key SIM personnel
Understanding of professional integrity, behaviour and attitude towards safety	X	X	X	X	X	X	X	X
Understanding of conditions for ensuring continuing airworthiness of aircraft and components				X			X	
Understanding of his/her own human performance and limitations	X	X	X	X	X	X	X	
Understanding of personnel authorisations and limitations	X	X	X	X	X	X	X	
Understanding critical maintenance tasks		X	X	X	X		X	X
Ability to compile and control completed work cards		X	X	X				
Ability to consider human performance and limitations-	X	X	X	X			X	X
Ability to determine required qualifications for task performance		X	X	X				
Ability to identify and rectify existing and potential unsafe conditions			X	X	X	X	X	X
Ability to manage third parties involved in maintenance activity		X	X					
Ability to confirm proper accomplishment of maintenance tasks			X	X	X	X		
Ability to identify and properly plan performance of critical maintenance tasks		X	X	X				
Ability to prioritise tasks and report discrepancies		X	X	X	X			
Ability to process the work requested by the operator		X	X	X				
Ability to promote the safety and quality policy	X		X				X	X
Ability to properly process removed, uninstalled and rejected parts			X	X	X	X		
Ability to properly record and sign for work accomplished			X	X	X	X		
Ability to recognise the acceptability of parts to be installed prior to fitment				X	X			
Ability to split complex maintenance tasks into clear stages		X						
Ability to understand work orders, work cards and refer to and use applicable maintenance data		X	X	X	X	X	X	
Ability to use information systems	X	X	X	X	X	X	X	X
Ability to use, control and be familiar with required tooling and/or equipment			X	X	X	X		
Adequate communication and literacy skills	X	X	X	X	X	X	X	X
Analytical and proven auditing skills (for example, objectivity, fairness, open-mindedness, determination,							X	X



	Managers	Planners	Supervisor	Certifying staff and support staff	Mechanics	Specialised Service staff	Quality-audit Compliance monitoring staff	Safety manager and key SIM personnel
...)								
Maintenance error investigation skills							X	X
Resources management and production planning skills	X	X	X					
Teamwork, decision-making and leadership skills	X		X					
Ability to encourage a positive safety culture and apply a just culture	X		X				X	X

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GM3 145.A.30(e) Personnel requirements

TEMPLATE FOR RECORDING EXPERIENCE/TRAINING

The following template may be used to record the professional experience gained in an organisation, and the training received and to be considered during the competence competency assessment of the an individual in another organisation.

Aviation Maintenance personnel experience credential		
Name		Given name
Address		
Telephone		E-mail
Independent worker <input type="checkbox"/>		
Trade Group: airframe <input type="checkbox"/> engine <input type="checkbox"/> electric <input type="checkbox"/> avionics <input type="checkbox"/> other (specify) <input type="checkbox"/>		
Employer's details (when applicable)		
Name		
Address		
Telephone		
Maintenance organisation details		
Name		
Address		
Telephone		
Approval Number		
Period of employment		From: To:
Domain of employment		
<input type="checkbox"/> Planning	<input type="checkbox"/> Engineering	<input type="checkbox"/> Technical records
<input type="checkbox"/> Store department	<input type="checkbox"/> Purchasing	
Mechanics/Technician		
<input type="checkbox"/> Line Maintenance	<input type="checkbox"/> Base Maintenance	<input type="checkbox"/> Component Maintenance
<input type="checkbox"/> Servicing	<input type="checkbox"/> Removal/installation	<input type="checkbox"/> Testing/inspection
<input type="checkbox"/> Scheduled Maintenance	<input type="checkbox"/> Inspection	<input type="checkbox"/> Repair



<input type="checkbox"/> Trouble shooting Troubleshooting A/C type	<input type="checkbox"/> Trouble shooting Troubleshooting <input type="checkbox"/> Repair A/C type	<input type="checkbox"/> Overhaul <input type="checkbox"/> Re-treatment <input type="checkbox"/> Reassembly Component type
Certifying Staff and support staff <input type="checkbox"/> Cat. A <input type="checkbox"/> Cat. B1 <input type="checkbox"/> Cat. B2 <input type="checkbox"/> Cat. C <input type="checkbox"/> Component type <input type="checkbox"/> Other (e.g. NDT) A/C Type A/C Type A/C Type A/C Type Component Type Specify		
Certification privileges: Yes <input type="checkbox"/> / No <input type="checkbox"/>		
<input type="checkbox"/> Specialised services Speciality (<i>NDT, composites, welding, etc.</i>):		
<input type="checkbox"/> Skilled personnel Speciality (<i>sheet metal, structures, wireman, upholstery, etc.</i>):		
<input type="checkbox"/> Ground equipment operation		
<input type="checkbox"/> Quality control Supervision	<input type="checkbox"/> Quality assurance Compliance monitoring	<input type="checkbox"/> Training
<input type="checkbox"/> Safety investigation	<input type="checkbox"/> Safety management	
Total number of check boxes ticked: <input type="checkbox"/>		



Details of employment	
Training received from the contracting organisation	
Date	Nature of training
Certified by:	
Name:	Date:
Position:	Signature:
Contact details:	
<p><i>Advisory note: A copy of the present credentials will be kept for at least 3 years from its their issuance by the maintenance organisation.</i></p>	

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GM4 145.A.30(e) Personnel requirements

SAFETY TRAINER

The competency of a trainer to conduct safety training should include:

- (a) an understanding of safety management and human factors in a maintenance environment at a level sufficient to teach the elements of the initial safety training syllabus (see GM1 145.A.30(e));
- (b) a good understanding of training and facilitation techniques, and communication skills that enable the trainer to influence attitudes and behaviours;
- (c) experience within the aviation industry, or a suitable academic background;
- (d) knowledge of the organisation's safety programme (Module 10 of GM1 145.A.30(e)).

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GM5 145.A.30(e) Personnel requirements

COMPETENCY OF THE SAFETY MANAGER

The competency of a safety manager should include, but not be limited to, the following:

- (a) knowledge of ICAO standards and European requirements on safety management;
- (b) an understanding of management systems, including compliance monitoring systems;
- (c) an understanding of risk management;
- (d) an understanding of safety investigation techniques;
- (e) an understanding of human factors;
- (f) understanding and promotion of a positive safety culture;
- (g) operational experience related to the activities of the organisation;
- (h) safety management experience;
- (i) interpersonal and leadership skills, and the ability to influence staff;
- (j) oral and written communications skills;
- (k) data management, analytical and problem-solving skills;
- (l) professional integrity.

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GM6 145.A.30(e) Personnel requirements

SAFETY TRAINING (INCLUDING HUMAN FACTORS)

- (a) The scope of the safety training and the related training programme will vary significantly depending on the size and complexity of the organisation. Safety training should reflect the evolving management system, and the changing roles of the personnel who make it work.
- (b) In recognition of this, training should be provided to management and staff at least:
 - (1) during the initial implementation of safety management processes;
 - (2) for all new staff or personnel recently allocated to any safety management related task;
 - (3) on a regular basis to refresh their knowledge and to understand changes to the management system;
 - (4) when changing roles affect their safety management roles, accountabilities, responsibilities, and authorities; and



NOTE: in the context of safety management, the term 'authority' is used in relation to the level of management in the organisation that is necessary to make decisions related to risk tolerability.

(5) when performing dedicated safety functions in domains such as safety risk management, compliance monitoring, and internal investigations.

(c) Safety training is subject to the record-keeping requirements in point 145.A.55(d).

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AMC1 145.A.30(f) Personnel requirements

[...]

6. It should be noted that new methods are, and will be, developed, such as, but not limited to thermography and shearography, which are not specifically addressed by EN 4179. Until the time this agreed standard is established, such methods should be carried out in accordance with the particular equipment manufacturer's recommendations, including any training and examination process to ensure the competence competency of the personnel in the process.
7. Any maintenance organisation approved under Part-145 that carries out NDT should establish NDT specialist qualification procedures that are detailed in the exposition and accepted by the competent authority.
8. Boroscopy and other techniques such as delamination coin tapping are non-destructive inspections rather than non-destructive testing. Notwithstanding such differentiation, the maintenance organisation should establish an exposition procedure that is accepted by the competent authority to ensure that personnel who carry out and interpret such inspections are properly trained and assessed for their competence competency in the process. Non-destructive inspections, which are not being considered as to be NDT by Part-145, are not listed in Appendix II under class rating D1.

[...]

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AMC1 145.A.30(h) Personnel requirements

In accordance with points 145.A.30(h) and 145.A.35, the qualification requirements (basic licence, aircraft ratings, recent experience and recurrent ~~continuation~~ training) are identical for certifying staff and for support staff. The only difference is that support staff cannot hold certification privileges when performing this role, since during base maintenance, the release to service will be issued by category C certifying staff.

Nevertheless, the organisation may use as support staff (for base maintenance) persons who already hold certification privileges for line maintenance.



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AMC1 145.A.30(j)(4) Personnel requirements

1. For the issue of a limited certification authorisation:
 - (a) the commander should hold either an airline transport pilots licence (ATPL), or a commercial pilots licence (CPL) in accordance with Part-FCL.
 - ~~(b) The flight engineer should hold either an ATPL, CPL or a national flight engineer licence acceptable to the competent authority on the aircraft type.~~
2. In addition, the limited certification authorisation is subject to the ~~maintenance organisation exposition~~ MOE containing procedures to address the personnel requirements of point 145.A.30(e) and the associated AMC and guidance material. The procedures should be accepted by the competent authority and should include as a minimum:
 - (a) Completion of adequate ~~maintenance~~ continuing airworthiness regulation training as related to maintenance.
 - (b) Completion of adequate task training for the specific task on the aircraft. The task training should be of sufficient duration to ensure that the individual has a thorough understanding of the task to be completed, and that it will involve training in the use of the associated maintenance data.
 - (c) Completion of the procedural training as specified in Part-145.
- 2.(i) Typical tasks that may be certified and/or carried out by the a commander who holding an ATPL or CPL are the minor maintenance or simple checks included in the following list:
 - (a) The Replacement of internal lights, filaments and flash tubes.
 - (b) The Closing of cowlings and refitment of quick access inspection panels.
 - (c) Role changes, e.g. stretcher installation fit, dual controls, FLIR, doors, photographic equipment etc.
 - (d) Inspection for, and removal of, de-icing/anti-icing fluid residues, including the removal/closure of panels, cowls or covers that are easily accessible, but that do not requiring the use of special tools.
 - (e) Any check/replacement that involving simple techniques that are consistent with this AMC and that have been as agreed by the competent authority.
- ~~2.(ii) Holders of flight engineer licence acceptable to the competent authority on the aircraft type, may only exercise this limited certification authorisation privilege when performing the duties of a flight engineer.~~

~~In addition to paragraph 2(i)(a) to (e) other typical minor maintenance or simple defect rectification tasks that may be carried out are included in the following list:~~

 - ~~(a) Replacement of wheel assemblies.~~



- ~~(b) — Replacement of simple emergency equipment that is easily accessible.~~
 - ~~(c) — Replacement of ovens, boilers and beverage makers.~~
 - ~~(d) — Replacement of external lights.~~
 - ~~(e) — Replacement of passenger and cabin crew seats, seat belts and harnesses.~~
 - ~~(f) — Simple replacement of overhead storage compartment doors and cabin furnishing items.~~
 - ~~(g) — Replacement of static wicks.~~
 - ~~(h) — Replacement of aircraft main and APU aircraft batteries.~~
 - ~~(i) — Replacement of in-flight entertainment system components other than public address.~~
 - ~~(j) — 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.~~
 - ~~(k) — Re-setting of tripped circuit breakers under the guidance of maintenance control.~~
 - ~~(l) — Any other task agreed by the competent authority as a simple task for a particular aircraft type.~~
3. The validity of the authorisation should be limited to have a finite life of twelve 12 months, and may be renewed subject to if there has been satisfactory re-current recurrent training on the applicable aircraft type.

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

For the holder of a flight engineer licence acceptable to the competent authority appendix 1 to JAR FCL 4.160 Technical Training Course (TTC) details the following subjects:

~~Familiarisation with basic maintenance procedures, to give additional technical background knowledge, especially with respect to the implication of systems malfunctions, and to train the applicant in maintenance related to the Minimum equipment list (MEL).~~

~~— The theoretical knowledge instruction consists of 100 hours and includes the following elements:~~

- ~~1. — Airframe and systems~~
- ~~2. — Electrics~~
- ~~3. — Powerplant and emergency equipment~~
- ~~4. — Flight instruments and automatic flight control systems~~

~~— Practical skills training provided by an organisation approved under Part 145 is given which includes 35 hours practical experience in the following subjects:~~



- ~~— Fuselage and flight controls,~~
- ~~— Engines,~~
- ~~— Instruments,~~
- ~~— Landing gear and brakes,~~
- ~~— Cabin/cockpit/emergency equipment,~~
- ~~— De-icing/anti-icing related maintenance activities;~~
- ~~— Ground handling and servicing,~~
- ~~— Certificate of completion.~~

Following successful completion of the technical training, the training organisation carrying out the theoretical knowledge instruction and/or the practical skill training should provide the applicant with a certificate of satisfactory completion of the course, or part thereof.

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AMC1 145.A.30(j)(5) Personnel requirements

1. For the purposes of this sub-paragraph, 'unforeseen' means that the grounding of the aircraft grounding could not reasonably have been predicted by the operator because the defect was unexpected, due to it being part of a hitherto reliable system.
2. Issuing a one-off authorisation should only be considered for issue under the responsibility of the compliance monitoring manager by the quality department of the contracted organisation after it has made a reasoned judgement was made that such an authorisation requirement is appropriate under the circumstances, and while at the same time that it maintains the required airworthiness standards. The organisation's compliance monitoring personnel quality department will need to should assess each situation individually prior to the issuance of a one-off authorisation, and it may request the safety management personnel to perform a safety risk assessment.
3. A one-off authorisation should not be issued where if the level of certification required could exceed the knowledge and experience level of the person it is issued to. In all cases, due consideration should be given to the complexity of the work involved and the availability of the required tooling and/or test equipment needed to complete the work.

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AMC1 145.A.30(j)(5)(i) Personnel requirements

~~In those situations where the requirement for~~ If a one-off authorisation to issue a CRS for a task on an aircraft type for which certifying staff does not hold a type-rated authorisation ~~has been identified~~ is necessary, the following procedure is recommended:

1. ~~The~~ Flight crew should communicate full details of the defect to the ~~operator's supporting~~ maintenance organisation. If necessary, the ~~supporting~~ maintenance organisation will then request the use of a one-off authorisation from the ~~compliance monitoring personnel~~ quality department.
2. When issuing a one-off authorisation, the ~~compliance monitoring personnel,~~ quality department ~~of the organisation~~ should verify that:
 - (a) Full technical details relating to the work required to be carried out have been established and passed on to the certifying staff.
 - (b) The organisation has an approved procedure in place for coordinating and controlling the total maintenance activity undertaken at the location under the authority of the one-off authorisation.
 - (c) The person to whom a one-off authorisation is issued has been provided with all the necessary information and guidance relating to maintenance data, and any special technical instructions associated with the specific task undertaken. A detailed step-by-step worksheet has been defined by the organisation, and has been communicated to the ~~holder of the one-off authorisation~~ holder.
 - (d) The person holds authorisations of equivalent levels and scopes on other aircraft types that have ~~of~~ similar technology, construction and systems.
3. The ~~holder of the~~ one-off authorisation ~~holder~~ should sign off the detailed step-by-step worksheet when completing the work steps. The completed tasks should be verified by visual examination and/or normal system operation upon return to an appropriately approved Part-145 maintenance facility.

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- [145.A.30 Personnel requirements](#)]

AMC1 145.A.30(j)(5)(ii) Personnel requirements

This paragraph addresses ~~the requirements for~~ staff who are not employed by the maintenance organisation, but who meet the requirements of point 145.A.30(j)(5). In addition to the items listed in AMC 145.A.30(j)(5)(i), ~~paragraph~~ points 1, 2(a), (b) and (c) and 3, the ~~compliance monitoring personnel~~ quality department of the organisation may issue such a one-off authorisation ~~providing~~ provided that full ~~qualification~~ details relating to the qualifications of the proposed certifying personnel are verified by the ~~compliance monitoring personnel~~ quality department and made available at the location.

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- [145.A.30 Personnel requirements](#)]

AMC1 145.A.35(a) Certifying staff and support staff

1. Holding a Part-66 licence with the relevant type/group rating, or a national qualification in the case of components, does not mean by itself that the holder is qualified to be authorised as certifying staff and/or support staff. The organisation is responsible ~~to~~ for assessing the ~~competence~~ competency of the holder for the scope of the maintenance to be authorised.

[...]

4. The ~~satisfactory~~ assessment of the ~~competence~~ competency of the holder should be conducted in accordance with a procedure approved by the competent authority (item 3.4 of the MOE, as described in AMC1 145.A.70(a)).
5. The organisation should hold copies of all the documents that attest to the ~~competence~~ competency and recent experience of the holder for the period described in point 145.A.55(d)(4) ~~145.A.35(j)~~.

Additional information is provided in AMC 66.A.20(b)3.

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- [145.A.35 Certifying staff and support staff](#)]

AMC1 145.A.35(d) Certifying staff and support staff

1. ~~Continuation~~ Recurrent training is a two-way process to ensure that certifying staff remain current in terms of the necessary procedures, safety management, human factors and technical knowledge, and that the organisation receives feedback on the adequacy of its procedures and maintenance instructions. Due to the interactive nature of this training, consideration should be given to the possibility that such training has the involvement of the compliance monitoring staff and the key safety management personnel in this training ~~quality department to ensure that feedback is actioned. Alternatively, there~~ There should be a procedure to ensure that feedback is formally reported by ~~passed from~~ the trainers through the internal safety reporting scheme ~~training department to the quality department~~ to initiate action.
2. ~~Continuation~~ Recurrent training should cover any changes made to in the relevant requirements such as Part-145, changes in to the organisation's procedures, safety policy and objectives, and or to the modification standard of the products being maintained, plus as well as any human factors and safety issues identified from any internal or external analysis of incidents. It should also address any instances where in which staff failed to follow the procedures, and the reasons why particular procedures were ~~are~~ not always followed. In many cases, the ~~continuation~~ recurrent training will reinforce the need to follow the procedures and will ensure that any incomplete or incorrect procedures are identified to the company in order so that they can be corrected. This ~~does not preclude the possible need~~ It may be necessary to carry out an ~~quality~~ audit of such these procedures.



3. ~~Continuation~~ Recurrent training should be of sufficient duration in each 2-year period to meet the intent of point 145.A.35(d) and may be split into a number of separate elements. Point 145.A.35(d) requires such a training to keep certifying staff updated in terms of relevant technology, procedures, safety management and human factors issues which means it is one part of ensuring compliance quality. Therefore, sufficient duration should be related to relevant quality audit findings and other internal / external sources of information available to the organisation on human errors and safety issues in maintenance. This means that in the case of an organisation that maintains aircraft with few relevant quality audit findings, hazards and related safety risks identified, ~~continuation~~ recurrent training could be limited to days rather than weeks, whereas in the case of a similar organisation with a number of relevant quality audit findings, hazards and related safety risks identified, such a training may take several weeks. For an organisation that maintains aircraft components, the duration of ~~continuation~~ recurrent training would follow the same philosophy but should be scaled down to reflect the more limited nature of the activity. For example, certifying staff who release hydraulic pumps may only require a few hours of ~~continuation~~ recurrent training, whereas those who release turbine engines may only require a few days of such a training. The content of ~~continuation~~ recurrent training should be related to relevant quality audit findings, hazards and related safety risks identified. It and it is recommended that such a training is reviewed at least once in every 24-month period.
4. The method of training is intended to be a flexible process, and this training could, for example, ~~be provided by include~~ a Part-147 organisation ~~continuation training course, an aeronautical college courses, by the Part-145 organisation, or by another training or maintenance organisation internal short duration courses, seminars, etc.~~ The elements, general content and length of such a training should be specified in the ~~maintenance organisation exposition MOE unless such training is undertaken by an organisation approved under Part-147 when such details may be specified under the approval and cross referenced in the maintenance organisation exposition.~~

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- [145.A.35 Certifying staff and support staff](#)]

AMC1 145.A.35(e) Certifying staff and support staff

The programme for ~~continuation~~ recurrent training should list all certifying staff and support staff and when the training will take place, the elements of such a training, and an indication that it was carried out reasonably on time as planned. Such information should subsequently be transferred to the certifying staff and to the support staff records as required by point 145.A.55(d)(3) ~~145.A.35(j)~~.

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- [145.A.35 Certifying staff and support staff](#)]



AMC1 145.A.35(f) Certifying staff and support staff

As stated in point 145.A.35(f), except where any of the unforeseen cases of point 145.A.30(j)(5) applies, all prospective certifying staff and support staff should be assessed for their competence competency related to their intended duties in accordance with AMCs 1, 2, 3, and 4 and 5 to point 145.A.30(e), as applicable.

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- [145.A.35 Certifying staff and support staff](#)]

AMC1 145.A.45(c) Maintenance data

1. The referenced procedure should ensure that when maintenance personnel discover inaccurate, incomplete or ambiguous information in the maintenance data, they should record the details as part of the internal safety reporting scheme specified in point 145.A.202. The procedure should then ensure that the Part-145 approved maintenance organisation notifies the problem to the author of the maintenance data in a timely manner. A record of such communications to the author of the maintenance data should be retained by the Part-145 approved organisation until such time as the type certificate holder has clarified the issue by e.g. amending the maintenance data.
2. The referenced procedure should be specified in the ~~maintenance organisation exposition~~ MOE.

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- [145.A.45 Maintenance data](#)]

AMC1 145.A.45(d) Maintenance data

The referenced procedure should address the need for a practical demonstration by the mechanic to the compliance monitoring quality personnel of the proposed modified maintenance instruction. Depending on the nature of the maintenance instruction modification, the safety management personnel may be required to perform a safety risk assessment. When satisfied, the quality compliance monitoring personnel should approve the modified maintenance instruction, and ensure that the type certificate or supplementary type certificate holder is informed of the modified maintenance instruction. The procedure should include a paper/electronic traceability of the complete process from start to finish, and ensure that the relevant maintenance instruction clearly identifies the modification. Modified maintenance instructions should only be used in the following circumstances:

- (a) Where the type certificate / supplementary type certificate holder's original intent can be carried out in a more practical or more efficient manner.
- (b) Where the type certificate / supplementary type certificate holder's original intent cannot be achieved by following the maintenance instructions. For example, where a component cannot be replaced following the original maintenance instructions.



(c) For the use of alternative tools / equipment.

Important Note: Critical Design Configuration Control Limitations (CDCCL) are airworthiness limitations. Any modification of the maintenance instructions linked to CDCCL constitutes an aircraft modification that should be approved in accordance with Part 21.

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- [145.A.45 Maintenance data](#)]

AMC1 145.A.45(e) Maintenance data

1. The maintenance organisation should:
 - accurately transcribe accurately the maintenance data onto such work cards or worksheets, or
 - make precise reference to the particular maintenance task(s) contained in such the maintenance data, which already identifies the task as a CDCCL where applicable.
2. Relevant parts of the organisation means, with regard to aircraft base maintenance, aircraft line maintenance, engine workshops, mechanical workshops and avionic workshops. Therefore, engine workshops, for example, should have a common system throughout such the engine workshops that may be different to from that in the aircraft base maintenance.
3. The workcards work cards should differentiate and specify, when relevant, disassembly, the accomplishment of tasks, reassembly and testing. In the case of a lengthy maintenance task involving a succession of personnel to complete such a task, it may be necessary to use supplementary workcards work cards or worksheets to indicate what was actually accomplished by each individual person.
4. Where required by the operator/CAMO to use their work card or worksheet system, the maintenance organisation should assess the system for compliance with the maintenance organisation procedures, for example, the subdivision of complex maintenance tasks into clear stages.

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- [145.A.45 Maintenance data](#)]

AMC1 145.A.47(b) Production planning

FATIGUE RISK MANAGEMENT

- (a) Human performance can be affected by excessive hours of duty and shift working, particularly with multiple shift periods, additional overtime or night work. Induced fatigue is one of the factors that contributes towards maintenance errors. In accordance with point 145.A.200(a)(3), these risks should be assessed and managed by the organisation, taking into account the size, nature, and complexity of the organisation and its operational working hours.



- (b) In order to manage the risk related to the fatigue of personnel, the organisation should:
- (1) as part of its management system, develop, define and maintain a policy for the management of fatigue-related risks, and the related procedures;
 - (2) define and use work schedules with maximum work and minimum rest hours that comply with the national and, when applicable, EU legislation on working time and taking into account the recommendations of Appendix H to Chapter 3 of ICAO Doc 9824;
 - (3) ensure that existing internal reporting systems enable the identification of fatigue-related hazards;
 - (4) assess and manage the risks raised by these reports in accordance with the organisation's safety risk management procedures (see AMC1 145.A.200(a)(3)), and monitor the effectiveness of the related risk mitigation actions that are implemented;
 - (5) provide training and safety promotion information/briefings on the management of fatigue.
- (c) The work hour limits defined under (b)(2) should not be exceeded merely for management convenience even when staff is willing to work extended hours. Without prejudice to the national and, when applicable, EU legislation on working time, in exceptional circumstances where the maximum work hours are to be exceeded (such as for urgent operational reasons), the organisation should carry out a risk assessment, and with the agreement of the individual staff member, it should be recorded how the increased fatigue risk will be mitigated. This may include:
- (1) additional supervision and independent inspection;
 - (2) limitation of maintenance tasks to non-critical tasks;
 - (3) use of additional rest breaks;
 - (4) permission to nap in accordance with guidelines approved by the organisation.

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- [145.A.47 Production planning](#)]

GM1 AMC 145.A.47(b) Production planning

HUMAN PERFORMANCE AND FATIGUE (see definitions in GM1 to Annex II (Part-145))

- (a) Limitations of human performance, in the context of planning safety related tasks, refers to the upper and lower limits, and variations, of certain aspects of human performance (Circadian rhythm / 24 hours body cycle) which personnel should be aware of when planning work and shifts.
- (b) With regard to fatigue, there are three primary factors that are relevant:
- (1) the amount of proper sleep;
 - (2) the amount of time awake;



(3) the time of day where work is performed.

(c) Fatigue is also impacted by high workloads (mental and/or physical activity) and by the physical and mental health of the staff concerned.

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- [145.A.47 Production planning](#)]

GM1 145.A.47(d) Production planning

'External working team' refers to an organisation that does not belong to the Part-145 organisation in whose facility the maintenance is being carrying out, and which is, for example (this list is not exhaustive):

- contracted by the Part-145 maintenance organisation; or
- subcontracted by the Part-145 maintenance organisation; or
- contracted by the aircraft owner/CAMO.

The objective of this requirement is to manage the risk involved in the actual execution of maintenance by the various organisations at the same location.

Example: the need for one organisation to be informed that they should not put the aircraft in a certain configuration (regarding electrical power, hydraulic power, the flight control configuration, the aeroplane on jacks, etc.) if this is could adversely affect the work performed by another organisation.

Note: please refer to the difference between contracting and subcontracting maintenance activities in GM2 145.A.205.

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- [145.A.47 Production planning](#)]

AMC1 145.A.48(a) ~~AMC 145.A.80 Limitations on the organisation~~ Performance of maintenance

This paragraph is intended to cover the situation where the ~~larger~~ organisation may temporarily not hold all the necessary tools, equipment, etc., for an aircraft type or variant, or component specified in the organisation's ~~scope of work approval~~. This paragraph means that the competent authority need not amend the approval to delete the aircraft type or variants on the basis that it is a temporary situation and there is a commitment from the organisation to re-acquire tools, equipment etc. before maintenance on the type may recommence.

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- [145.A.48 Performance of maintenance](#)]



AMC1 145.A.48(c)(2) ~~AMC1 145.A.48(b)~~ Performance of maintenance

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

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- [145.A.48 Performance of maintenance](#)]

AMC2 145.A.48(c)(2) ~~AMC2 145.A.48(b)~~ Performance of maintenance

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's flight path and attitude, such as the installation, rigging and adjustments of flight controls;
 - (2) aircraft stability control systems (autopilots, fuel transfer);
 - (3) tasks that may affect the propulsive force of the aircraft, including the installation of aircraft engines, propellers and rotors; and
 - (4) the overhaul, calibration or rigging of engines, propellers, transmissions and gearboxes.
- (b) The procedure should describe which data sources are used to identify critical maintenance tasks. Several data sources may be used, such as:
 - (1) information from the design approval holder;
 - (2) accident reports;
 - (3) the investigation and follow-up of incidents;
 - (4) occurrence reporting;
 - (5) flight data analysis, where this is available from the operator/CAMO;
 - (6) the results of audits;
 - (7) monitoring schemes for normal operations ~~monitoring schemes~~, where these are available from the operator/CAMO; and
 - (8) feedback from training.

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- [145.A.48 Performance of maintenance](#)]



AMC3 145.A.48(c)(2) ~~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 that are made when while performing maintenance.
- (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 (e.g. visual inspections, operational checks, functional tests, rigging checks) may be necessary in some cases.

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AMC4 145.A.48(c)(2) ~~AMC4 145.A.48(b)~~ Performance of maintenance

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 to 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 the 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 type of inspection to be performed. The organisation could consider making use of, for example:



- (1) staff who holding a certifying staff, or support staff, or sign-off authorisation or equivalent that is necessary to release or sign off the critical maintenance task;
 - (2) staff who holding a certifying staff, or support staff, or sign-off authorisation or equivalent that is necessary to release or sign off similar tasks in a product of a similar category, and who have~~ing~~ received specific practical training in the task to be inspected; or
 - (3) a commander who holding a limited certification authorisation in accordance with point 145.A.30(j)(4) and have~~ing~~ received adequate practical training and have~~ing~~ enough experience in the specific task to be inspected, and on how to perform independent inspections.
- (c) How to perform an independent inspection

An independent inspection should ensure the correct assembly, locking and sense of operation of the parts involved. 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 their 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 operate~~ing~~ 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: its version, and its compatibility with the aircraft configuration.
- (d) What to do in unforeseen cases when only one person is available

REINSPECTION:

- (1) Reinspection is an error-capturing method that is subject to the same conditions as an independent inspection is, except that the 'authorised person' who perform~~ing~~ the maintenance task is also act~~ing~~ as the '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 to be 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 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.

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- [145.A.48 Performance of maintenance](#)]

AMC1 145.A.48(c)(3) Performance of maintenance

The procedures should be aimed at:

- (a) minimising multiple errors and preventing omissions. Therefore, the procedures should specify:
 - (1) that every maintenance task is signed off only after completion;
 - (2) how the grouping of tasks for the purpose of sign-off allows critical steps to be clearly identified; and
 - (3) that work performed by personnel under supervision (i.e. temporary staff, trainees) is checked and signed off by an authorised person;
- (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)~~ AMC4 145.A.48(c)(2).

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- [145.A.48 Performance of maintenance](#)]

GM1 145.A.48(c)(3) Performance of maintenance

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~~ independent inspection or re-inspection procedures.

[Back to implementing rule:

- [145.A.48 Performance of maintenance](#)]



GM1 145.A.48(c)(4) GM 145.A.48(d) Performance of maintenance — critical design configuration control limitations (CDCCL)

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 the 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 wires, 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 AMC3 145.A.35 145.A.30(e) and AMC2 145.B.200(a)(3) 145.B.10(3).

[Back to implementing rule:

- [145.A.48 Performance of maintenance](#)]

GM1 AMC 145.A.50(a) Certification of maintenance

'Endangers the flight safety' means any instances where safe operation could not be assured, or which could lead to an unsafe condition. It typically includes, but is not limited to, significant cracking, deformation, corrosion or failure of primary structure, any evidence of burning, electrical arcing, significant hydraulic fluid or fuel leakage, and any emergency system or total system failure. An airworthiness directive that is overdue for compliance is also considered to be a hazard to flight safety.

However, the intent is not to require the maintenance organisation to find or become responsible for hidden non-compliances which are not expected to be discovered during the ordered maintenance.

A certificate of release to service issued by a maintenance organisation certifies that the performed maintenance work has been completed in accordance with the applicable regulations and the maintenance organisation's approved procedures. In the case of aircraft maintenance, it does not necessarily mean that the aircraft is in airworthy condition. Ensuring that the aircraft is airworthy before each flight always remains the responsibility of the owner/operator/CAMO.

[Back to implementing rule:

- [145.A.50 Certification of maintenance](#)]

AMC1 145.A.50(b) Certification of maintenance

1. The certificate of release to service should contain the following statement:

'Certifies that the work specified, except as otherwise specified, was carried out in accordance with Part-145 and in respect to that work, the aircraft/aircraft component is considered ready for release to service'.



Reference should also be made to the EASA Part-145 approval number and the identity of the person who issued the release.

[...]

[Back to implementing rule:

- [145.A.50 Certification of maintenance](#)]

AMC1 145.A.50(e) Certification of maintenance

1. Being unable to establish full compliance with ~~point sub-paragraph Part-~~ 145.A.50(a) means that the maintenance required by the aircraft operator could not be completed due to either ~~to~~ running out of available aircraft maintenance downtime for the scheduled check, or by virtue of the condition of the aircraft, requiring additional maintenance downtime.

[...]

[Back to implementing rule:

- [145.A.50 Certification of maintenance](#)]

AMC1 145.A.55 Record-keeping

GENERAL

- (a) The record-keeping system should ensure that all records are accessible within a reasonable time whenever they are needed. These records should be organised in a manner that ensures their traceability and retrievability throughout the required retention period.
- (b) Records should be kept in paper form, or in electronic format, or a combination of the two. Records that are stored on microfilm or in optical disc formats are also acceptable. The records should remain legible throughout the required retention period. The retention period starts when the record is created or was last amended.
- (c) Paper systems should use robust materials which can withstand normal handling and filing. Computer record systems should have at least one backup system, which should be updated within 24 hours of any new entry. Computer record systems should include safeguards to prevent unauthorised personnel from altering the data.
- (d) All computer hardware that is used to ensure the backup of data should be stored in a different location from the one that contains the working data, and in an environment that ensures that the data remains in good condition. When hardware or software changes take place, special care should be taken to ensure that all the necessary data continues to be accessible through at least the full period specified in the relevant provision. In the absence of any such indications, all records should be kept for a minimum period of 3 years.

[Back to implementing rule:

- [145.A.55 Record-keeping](#)]



GM1 145.A.55 Record-keeping

RECORDS

Microfilming or optical storage of records may be carried out at any time. The records should be as legible as the original record, and remain so for the required retention period.

[Back to implementing rule:

- [145.A.55 Record-keeping](#)]

GM1 145.A.55(a)(1) Record-keeping Maintenance and airworthiness review records

MAINTENANCE RECORDS

1. Properly executed and retained maintenance records provide owners, operators and maintenance personnel with information essential in controlling unscheduled and scheduled maintenance, and troubleshooting to eliminate the need for re-inspection and rework to establish airworthiness.

The prime objective is to have secure and easily retrievable records with comprehensive and legible contents. The aircraft record should contain basic details of all serialised aircraft components and all other significant aircraft components installed, to ensure traceability to such installed aircraft component documentation and the associated maintenance data as specified in point 145.A.45.

2. Some gas turbine engines are assembled from modules, and a true total time in service for a total engine is not kept. When owners and operators wish to take advantage of the modular design, then the total time in service and the maintenance records for each module is are to be maintained. The maintenance records as specified are to be kept with the module and should show compliance with any mandatory requirements pertaining to that module.
3. Reconstruction of lost or destroyed maintenance records can be done by reference to other records which reflect the time in service, research of records maintained by repair facilities, and reference to records maintained by individual mechanics etc. When these things have been done and the record is still incomplete, the owner/operator may make a statement in the new record describing the loss, and establishing the time in service based on the research and the best estimate of time in service. The reconstructed records should be submitted to the competent authority for acceptance.

Note: Additional maintenance may be required.

- ~~4. The maintenance record can be either a paper or computer system or any combination of both.~~
- ~~5. Paper systems should use robust material which can withstand normal handling and filing. The record should remain legible throughout the required retention period.~~
- ~~6. Computer systems may be used to control maintenance and/or record details of maintenance work carried out. Computer systems used for maintenance should have at least one backup~~



system which should be updated at least within 24 hours of any maintenance. Each terminal is required to contain programme safeguards against the ability of unauthorised personnel to alter the database.

[Back to implementing rule:

- [145.A.55 Record-keeping](#)]

AMC1 145.A.55(a)(3) ~~AMC 145.A.55(c)~~ Record-keeping Maintenance and airworthiness review records

MAINTENANCE RECORDS

'Associated maintenance data' is specific information such as repair and modification data. This does not necessarily require the retention of all Aircraft Maintenance Manuals, Component Maintenance Manuals, IPC etc. issued by the TC holder or STC holder. Maintenance records should refer to the revision status of the data used.

[Back to implementing rule:

- [145.A.55 Record-keeping](#)]

AMC1 145.A.55(d) ~~AMC 145.A.35(j)~~ Certifying staff and support staff Record-keeping

RECORDS OF CERTIFYING STAFF AND SUPPORT STAFF

1. The following minimum information, as applicable, should be kept on record in respect of each certifying staff and or support staff:
 - (a) Name
 - (b) Date of Birth
 - (c) Basic Training
 - (d) Type Training
 - (e) ~~Continuation~~ Recurrent Training
 - (f) Experience
 - (g) Qualifications relevant to the authorisation
 - (h) Scope of the authorisation
 - (i) Date of first issue of the authorisation
 - (j) If appropriate - expiry date of the authorisation
 - (k) Identification Number of the authorisation
2. The record may be kept in any format but should be controlled by the organisation's compliance monitoring function ~~quality department~~. This does not mean that the compliance monitoring manager ~~quality department~~ should run the record system.



3. The number of persons authorised to access the system should be maintained kept to at a minimum to ensure that records cannot be altered in an unauthorised manner, or and that such confidential records do not become accessible to any unauthorised persons.
4. The competent authority is an authorised person when investigating the records system for initial certification and oversight continued approval or when the competent authority has cause to doubt the competence competency of a particular person.

[Back to implementing rule:

- [145.A.55 Record-keeping](#)]

AMC 145.A.55(d) ~~AMC 145.A.36~~ Record-keeping ~~Records of airworthiness review staff~~

RECORDS OF AIRWORTHINESS REVIEW STAFF

The following minimum information, as applicable, should be kept on record in respect of each airworthiness review staff:

- (a) ~~h~~Name;
- (b) ~~d~~Date of birth;
- (c) ~~e~~Certifying staff authorisation;
- (d) ~~e~~Experience as certifying staff on ~~ELA1~~ aircraft covered by Part-ML;
- (e) ~~q~~Qualifications relevant to the approval (knowledge of relevant parts of Part-ML and knowledge of the relevant airworthiness review procedures);
- (f) ~~s~~Scope of the airworthiness review authorisation and personal authorisation reference;
- (g) ~~d~~Date of the first issue of the airworthiness review authorisation; and
- (h) ~~i~~f appropriate, expiry date of the airworthiness review authorisation.

[Back to implementing rule:

- [145.A.55 Record-keeping](#)]

AMC 145.A.60(b) Occurrence reporting

- ~~1. The aim of occurrence reporting is to identify the factors contributing to incidents, and to make the system resistant to similar errors.~~
- ~~2. An occurrence reporting system should enable and encourage free and frank reporting of any (potentially) safety related occurrence. This will be facilitated by the establishment of a just culture. An organisation should ensure that personnel are not inappropriately punished for reporting or co-operating with occurrence investigations.~~
- ~~3. The internal reporting process should be closed loop, ensuring that actions are taken internally to address safety hazards.~~



4. ~~Feedback to reportees, both on an individual and more general basis, is important to ensure their continued support for the scheme.~~

[Back to implementing rule:

- [145.A.60 Occurrence reporting](#)]

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

The ~~safety and quality policy should as a minimum include a statement committing the organisation to:~~

- ~~— Recognise safety as a prime consideration at all times.~~
- ~~— Apply Human factors principles.~~
- ~~— Encourage personnel to report maintenance related errors/incidents.~~
- ~~— Recognise that compliance with procedures, quality standards, safety standards and regulations is the duty of all personnel.~~
- ~~— Recognise the need for all personnel to cooperate with the quality auditors.~~

[Back to implementing rule:

- [145.A.65 Maintenance procedures](#)]

AMC1 145.A.65(b) ~~Safety and quality policy, Maintenance procedures and quality system~~

GENERAL

1. Maintenance procedures should be ~~held current~~ kept up to date such that they reflect the best practices within the organisation. It is the responsibility of all the organisation's employees to report any differences via their organisation's internal safety ~~occurrence reporting scheme mechanisms~~.
2. All procedures, and changes to those procedures, should be verified and validated before use where practicable.
3. All technical procedures should be designed and presented in accordance with good human factors principles.

[Back to implementing rule:

- [145.A.65 Maintenance procedures](#)]

GM1 145.A.65 Maintenance procedures

HUMAN FACTORS PRINCIPLES



The following key points should be considered when designing and presenting technical procedures in accordance with good human factors principles:

- (a) The design of procedures and changes should involve maintenance personnel who have a good working knowledge of the tasks.
- (b) Ensure that the procedures are accurate, appropriate and usable, and reflect best practices.
- (c) Take account of the level of expertise and experience of the user; where appropriate, provide an abbreviated version of the procedure for use by experienced technicians.
- (d) Take account of the environment in which the procedures are to be used.
- (e) Ensure that all the key information is included without the procedure being unnecessarily complex.
- (f) Where appropriate, explain the reasons for the procedure.
- (g) The order of the tasks and the steps should reflect best practices, with the procedure clearly stating where the order of steps is critical, and where the order is optional.
- (h) Ensure consistency in the design of procedures and the use of terminology, abbreviations, references, etc.
- (i) For documents produced in the English language, use 'simplified English'.

[Back to implementing rule:

- [145.A.65 Maintenance procedures](#)]

GM2 145.A.65(b)(1) Safety and quality policy, Maintenance procedures and quality system

Appendix V to AMC1 CAMO.A.315(c) ~~Appendix XI to AMC M.A.708(c)~~ provides guidance on the elements that need to be considered for the maintenance contract between the CAMO and the maintenance organisation. The Part-145 organisation should take into account these elements to ensure that a clear contract or work order has been concluded before providing maintenance services.

[Back to implementing rule:

- [145.A.65 Maintenance procedures](#)]

AMC1 145.A.65(b)(2) Safety and quality policy, Maintenance procedures and quality system

Specialised services include any specialised activity, such as, but not limited to non-destructive testing, that require particular skills and/or qualification. Point 145.A.30(f) covers the qualifications of personnel but, in addition, there is a need to establish maintenance procedures that cover the control of any specialised process.

[Back to implementing rule:



- [145.A.65 Maintenance procedures](#)]

AMC1 145.A.70(a) Maintenance organisation exposition (MOE)

The following information should be included in the maintenance organisation exposition:

The information specified in ~~point~~ 145.A.70(a) ~~subparagraphs~~ ~~points~~ (6) and (12) to ~~(16)~~ (17) inclusive, whilst a part of the ~~MOE maintenance organisation exposition~~, may be kept as separate documents or on separate electronic data files subject to the management part of said exposition containing a clear cross-reference to such documents or electronic data files.

The ~~MOE exposition~~ should contain the information, as applicable, specified in this AMC. The information may be presented in any subject order as long as all ~~the~~ applicable subjects are covered. Where an organisation uses a different format, for example, to allow the exposition to serve for more than one approval, then the exposition should contain a cross-reference Annex using this list as an index with an explanation as to where the subject matter can be found in the exposition.

The exposition should contain information, as applicable, on how the maintenance organisation complies with ~~the~~ Critical Design Configuration Control Limitations' (CDCCL) instructions.

Small maintenance organisations may combine the various items to form a simple exposition ~~that is~~ more relevant to their needs.

The operator may use electronic data processing (EDP) for ~~the~~ publication of the ~~MOE maintenance organisation exposition~~. The ~~MOE maintenance organisation exposition~~ should be made available to the approving competent authority in a form ~~that is~~ acceptable to the competent authority. Attention should be paid to the compatibility of EDP publication systems with the necessary dissemination of the ~~MOE maintenance organisation exposition~~, both internally and externally.

~~PART 0 GENERAL ORGANISATION (Operators within the European Union)~~

~~This section is reserved for those maintenance organisations approved under Part-145 who are also operators within the European Union.~~

~~PART 1 MANAGEMENT GENERAL~~

- ~~1.1 Corporate commitment Statement~~ by the accountable manager
- ~~1.2 Safety and quality policy and objectives~~
- ~~1.3 Management personnel~~
- ~~1.4 Duties and responsibilities of the management personnel~~
- ~~1.5 Management organisation chart~~
- ~~1.6 List of certifying staff, support staff and airworthiness review staff~~
- ~~1.7 Manpower resources~~
- ~~1.8 General description of the facilities at each address intended to be approved~~



- 1.9 Organisations intended scope of work
- 1.10 ~~Notification procedure for changes requiring prior approval to the competent authority regarding changes to the organisation's activities/approval/location/personnel~~
- 1.11 ~~Procedure for Exposition amendments procedures and changes not requiring prior approval including, if applicable, delegated procedures~~
- 1.12 Procedure for alternative means of compliance (AltMoC)

PART 2 MAINTENANCE PROCEDURES

- 2.1 Supplier evaluation and subcontract control procedure
- 2.2 Acceptance/inspection of aircraft components and material from outside contractors
- 2.3 Storage, tagging and release of aircraft components and material to aircraft maintenance
- 2.4 Acceptance of tools and equipment
- 2.5 Calibration of tools and equipment
- 2.6 Use of tooling and equipment by staff (including alternate tools)
- 2.7 Cleanliness standards of maintenance facilities
- 2.8 Maintenance instructions and relationship to aircraft/aircraft component manufacturers' instructions including updating and availability to staff
- 2.9 Repair procedure
- 2.10 Aircraft maintenance programme compliance
- 2.11 Airworthiness directives procedure
- 2.12 Optional modification procedure
- 2.13 Maintenance documentation in use and its completion
- 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 ~~Occurrence 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 man-hour planning versus scheduled maintenance work
- 2.23 Critical maintenance tasks and error-capturing methods
- 2.24 Reference to specific maintenance procedures such as: -



- Engine running procedures
 - Aircraft pressure run procedures
 - Aircraft towing procedures
 - Aircraft taxiing 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 Airworthiness review procedures and records for aircraft covered by Part-ML ~~ELA1 aircraft not involved in commercial operations~~
- ~~2.30 Development and approval processing for maintenance programmes for ELA2 aircraft not involved in commercial operations~~

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, including inspection for/removal of de-icing/anti-icing fluid residues, etc.
- L2.3 Line maintenance control of defects and repetitive defects
- L2.4 Line procedure for completion of technical logs
- L2.5 Line procedure for pooled parts and loaned parts
- L2.6 Line procedure for return of defective parts removed from aircraft
- L2.7 Line procedure for critical maintenance tasks and error-capturing methods

PART 3 QUALITY MANAGEMENT SYSTEM PROCEDURES

- 3.1 Hazard identification and safety risk management schemes
- 3.2 Internal safety reporting and investigations
- 3.3 Safety action planning
- 3.4 Safety performance monitoring
- 3.5 Management of changes (including organisational changes with regard to safety responsibilities)
- 3.6 Safety training and promotion
- 3.7 Immediate safety action and coordination with the operator's ERP
- 3.8 Compliance monitoring



- 3.8.1 ~~Quality~~ Audit plan and audit of organisation procedures
- 3.8.2 ~~Quality~~ Product audit of aircraft and inspections
- 3.8.3 ~~Audit findings — corrective~~ ~~Quality audit remedial~~ action procedure
- 3.9 ~~4~~ Certifying staff and support staff qualifications and training procedures
- 3.10 ~~5~~ Certifying staff and support staff records
- 3.11 ~~6~~ ~~Quality audit~~ Compliance monitoring and safety management personnel
- 3.12 ~~7~~ Qualifying inspectors
- 3.13 ~~8~~ Qualifying mechanics
- 3.14 ~~9~~ ~~Aircraft or aircraft component maintenance tasks exemption process control~~ Control of the process for exemption from aircraft/aircraft component maintenance tasks
- 3.15 ~~10~~ Concession control for deviations from organisations' procedures
- 3.16 ~~11~~ Qualification procedure for specialised activities such as NDT welding, etc.
- 3.17 ~~12~~ Management of ~~Control of manufacturers' and other maintenance external~~ working teams
- 3.13 ~~Human factors training procedure~~
- 3.18 ~~14~~ ~~Competence~~ Competency assessment of personnel
- 3.19 ~~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).
- 3.20 ~~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 OPERATORS

- 4.1 Contracting operators
- 4.2 Operator procedures and paperwork
- 4.3 Operator record completion

PART 5 SUPPORTING DOCUMENTS

- 5.1 Sample of documents
- 5.2 List of ~~S~~subcontractors as per point 145.A.75(b)
- 5.3 List of line maintenance locations as per point 145.A.75(d)
- 5.4 List of contracted organisations as per point 145.A.70(a)(16)

PART 6 OPERATORS MAINTENANCE PROCEDURES



This section is reserved for those maintenance organisations approved under Part-145 who are also operators.

PART 7 FAA SUPPLEMENTARY PROCEDURES FOR A FAR TITLE 14 CFR PART 145 REPAIR STATION

This section is reserved for those EASA Part-145 approved maintenance organisations approved under EASA Part-145 who are also certificated as an FAA FAR Title 14 CFR Part 145 repair station.

The contents of this Part should be based on the Maintenance Annex Guidance (MAG) issued by EASA and the FAA following the agreement between the United States of America and the European Union on cooperation in the regulation of civil aviation safety.

PART 8 TRANSPORT CANADA CIVIL AVIATION (TCCA) SUPPLEMENTARY PROCEDURES FOR A CAR 573 MAINTENANCE ORGANISATION

This section is reserved for those EASA Part-145 approved maintenance organisations holding a CAR 573 approval.

The content of this Part should be based on the Maintenance Annex Guidance (MAG) issued by EASA and the TCCA following the agreement on civil aviation safety between the European Union and Canada.

PART 9 ANAC SUPPLEMENTARY PROCEDURES FOR AN RBAC 145 MAINTENANCE ORGANISATION

This section is reserved for those EASA Part-145 approved maintenance organisations that hold an RBAC 145 approval.

The contents of this Part should be based on the Maintenance Annex Guidance (MAG) issued by EASA and ANAC following the agreement on civil aviation safety between the European Union and Brazil.

[Back to implementing rule:

- [145.A.70 Maintenance organisation exposition \(MOE\)](#)

GM1 145.A.70(a) Maintenance organisation exposition (MOE)

1. The purpose of the maintenance organisation exposition (MOE) is to set forth the procedures, means and methods of the organisation.
2. Compliance with its contents will assure compliance with the requirements of Part-145, which is a prerequisite to obtaining and retaining a maintenance organisation approval certificate.
3. Points 145.A.70(a)(1) to (a)(11) constitutes the 'general' management part of the MOE and therefore could be produced as one document and made available to the person(s) specified under point 145.A.30(b) who should be reasonably familiar with its contents. The point 145.A.70(a)(6) list of certifying staff and B1 and B2 support staff may be produced as a separate document.



4. Point 145.A.70(a)(12) constitutes the working procedures of the organisation, and therefore as stated in the requirement, may be produced as any number of separate procedures or manuals. ~~It should be remembered that these~~ These documents should be cross-referenced from the management MOE.
5. Personnel are expected to be familiar with those parts of the manuals that are relevant to the maintenance work they carry out.
6. The organisation should specify in the MOE who should amend the exposition, manual particularly in the case where there are several parts.
7. ~~The organisation should define the responsibilities~~ quality manager should be responsible for monitoring and amending the amendment of the MOE, unless otherwise agreed by the competent authority, including the associated procedures manuals and submission of the proposed amendments to the competent authority in accordance with point 145.A.70(c). ~~However the competent authority may agree via a procedure stated in the amendment section of the MOE that some defined class of amendments may be incorporated without prior approval by the competent authority.~~
8. The MOE should cover four main parts:
 - (a) The general part of the management MOE covering the parts elements specified in point (3) earlier;
 - (b) The maintenance procedures covering all aspects of how aircraft components may be accepted from outside sources, and how aircraft will be maintained to the required standard;
 - (c) The quality management system procedures, including the methods of qualifying mechanics, inspectors ~~on~~, certifying staff, compliance monitoring and safety management and quality audit personnel;
 - (d) Contracting operator procedures and paperwork.

[Back to implementing rule:

- [145.A.70 Maintenance organisation exposition \(MOE\)](#)

AMC1 145.A.70(a)(1) Maintenance organisation exposition (MOE)

ACCOUNTABLE MANAGER STATEMENT

Part 1 of the MOE should include a statement signed by the accountable manager (and countersigned by the chief executive officer, if different), confirming that the MOE and any associated manuals will be complied with at all times.

The accountable manager's exposition statement as specified under point 145.A.70(a)(1) should embrace the intent of the following paragraph, and in fact, this statement may be used without amendment. Any modification to the statement should not alter the intent.

This exposition and any associated referenced manuals define the organisation and procedures upon which the (competent authority) Part-145 approval is based as required by 145.A.70.*



These procedures are approved by the undersigned and ~~must should~~ be complied with, as applicable, when work orders are being progressed under the terms of the Part-145 approval.

~~It is accepted that these~~ These procedures do not override the necessity of complying with any new or amended regulation published by the ~~(competent authority*)~~ from time to time where these new or amended regulations are in conflict with these procedures.

~~It is understood that the (competent authority*) will approve this organisation whilst the (competent authority*) is satisfied that the procedures are being followed and work standards maintained. It is further understood that the (competent authority*) reserves the right to suspend, limit or revoke the approval of the organisation if the (competent authority*) has evidence that procedures are not followed or standards not upheld.~~

It is understood that the approval of the organisation is based on the continuous compliance of the organisation with Part-145, and with the organisation's procedures described in this exposition. The competent authority* is entitled to limit, suspend, or revoke the approval if the organisation fails to fulfil the obligations imposed by Part-145 or any conditions according to which the approval was issued.

Signed

Dated

Accountable Manager and..... (quote position).....

Chief Executive Officer ...

For and on behalf of..... (quote organisation's name).....

Note: Where it states ('competent authority*'), please insert the actual name of the competent authority, for example, EASA, the CAA-NL, the LBA, the DGAC, CAA, etc.

Whenever the accountable manager changes, it is important to ensure that the new accountable manager signs the paragraph 9 statement at the earliest opportunity.

~~Failure to carry out this action could invalidate the Part 145 approval.~~

~~When an organisation is approved against any other Part containing a requirement for an exposition, a supplement covering the differences will suffice to meet the requirements except that the supplement should have an index showing where those parts missing from the supplement are covered.~~

If the organisation holds one or more additional organisation certificates within the scope of Regulation (EU) 2018/1139 containing a requirement for an exposition or manual, it may choose to combine the MOE with that exposition or manual in order to avoid duplication. An index that shows where each requirement is addressed should be kept up to date and made available to the competent authority upon request.

[Back to implementing rule:

- [145.A.70 Maintenance organisation exposition \(MOE\)\]](#)



AMC1 145.A.75(b) Privileges of the organisation

1. Working under the quality management system of an organisation appropriately approved under Part-145 (~~sub-contracting~~ subcontracting) refers to the case of one organisation, ~~not itself appropriately whether or not it is approved to under Part-145~~, that carries out aircraft line maintenance or minor engine maintenance or maintenance of other aircraft components or a specialised service as a subcontractor for an organisation appropriately approved under Part-145. To be appropriately approved to subcontract, the organisation should have a procedure for the control of such subcontractors as described below. Any approved maintenance organisation that carries out maintenance for another approved maintenance organisation within its own approval scope is not considered to be subcontracting for the purpose of this paragraph.

~~Note: For those organisations approved under Part-145 that are also certificated by the FAA under FAR Part 145 it should be noted that FAR Part 145 is more restrictive in respect of maintenance activities that can be contracted or sub-contracted to another maintenance organisation. It is therefore recommended that any listing of contracted or sub-contracted maintenance organisations should identify which meet the Part 145 criteria and which meet the FAR Part 145 criteria.~~

2. Maintenance of engines or engine modules other than a complete workshop maintenance check or overhaul, is intended to mean any maintenance that can be carried out without disassembly of the core engine or, in the case of modular engines, without disassembly of any core module.
3. FUNDAMENTALS OF ~~SUBCONTRACTING~~ SUB-CONTRACTING UNDER PART-145
 - 3.1. The fundamental reasons for allowing an organisation approved under Part-145 to ~~sub-contract~~ subcontract certain maintenance tasks are:
 - (a) To permit the acceptance of specialised maintenance services, such as, but not limited to, plating, heat treatment, plasma spraying, fabrication of specified parts for minor repairs / modifications, etc., by organisations without the need for direct approval of those organisations by the competent authority in such cases.
 - (b) To permit the acceptance of aircraft maintenance up to but not including a base maintenance check as specified in point 145.A.75(b) by organisations not appropriately approved under Part-145 when it is unrealistic to expect direct approval of those organisations by the competent authority. The competent authority will determine when it is unrealistic, but in general, it is considered unrealistic if only one or two organisations intend to use the subcontracted ~~sub-contract~~ organisation.
 - (c) To permit the acceptance of component maintenance.
 - (d) To permit the acceptance of engine maintenance up to but not including a workshop maintenance check or overhaul of an engine or engine module as specified in point 145.A.75(b) by organisations not appropriately approved under Part-145 when it is unrealistic to expect direct approval of those organisations by



the competent authority. The determination of unrealistic is as per sub-paragraph (b).

- 3.2. When maintenance is carried out under the ~~sub-contract control~~ management system, it means that for the duration of such maintenance, the Part-145 approval has been temporarily extended to include the ~~sub-contractor~~ subcontractor. It therefore follows that those parts of the ~~sub-contractor~~ subcontractor's facilities personnel and procedures involved with the maintenance organisation's products undergoing maintenance should meet Part-145 requirements for the duration of that maintenance, and it remains the organisation's responsibility to ensure that such requirements are satisfied.
 - 3.3. For the criteria specified in sub-paragraph 3.1, the organisation is not required to have complete facilities for the maintenance that it needs to subcontract, ~~sub-contract~~ but it should have its own expertise to determine ~~that~~ whether the subcontractor ~~sub-contractor~~ meets the necessary standards. However, an organisation cannot be approved unless it has the in-house facilities, procedures and expertise to carry out the majority of maintenance for which it wishes to be approved in terms of the number of class ratings.
 - 3.4. The organisation may find it necessary to include several specialist ~~subcontractors~~ ~~sub-contractors~~ to enable it to be approved to completely certify the release to service of a particular maintenance product. Examples could be specialist for welding, electroplating, painting, etc. To authorise the use of such subcontractors, the competent authority will need to be satisfied that the organisation has the necessary expertise and procedures to control such ~~subcontractors~~ ~~sub-contractors~~.
 - 3.5. An organisation working outside the scope of its approval schedule is deemed to be not approved. Such an organisation may in this circumstance operate only under the ~~sub-contract~~ ~~subcontract~~ control of another organisation approved under Part-145.
 - 3.6. Authorisation to ~~subcontract~~ ~~sub-contract~~ is indicated by the competent authority ~~approving~~ ~~accepting~~ the MOE maintenance organisation ~~exposition~~ containing a specific procedure on the control of sub-contractors.
4. PRINCIPAL PART-145 PROCEDURES FOR THE CONTROL OF ~~SUBCONTRACTORS~~ ~~SUB-CONTRACTORS NOT APPROVED UNDER PART 145~~

- 4.1. ~~A pre-audit procedure should be established whereby the maintenance organisations' subcontract control section, which may also be the 145.A.65(c) quality system independent audit section, should audit a prospective subcontractor to determine whether those services of the subcontractor that it wishes to use meets the intent of Part-145.~~

A pre-audit procedure should be established whereby the maintenance organisation should audit a prospective subcontractor to determine whether those services of the subcontractor that it wishes to use meet the intent of Part-145. This audit should be performed under the responsibility of the compliance monitoring function.



- 4.2. The organisation approved under Part-145 needs to assess to what extent it will use the ~~sub-contractor~~ subcontractor's facilities. As a general rule, the organisation should require its own paperwork, approved data and material/spare parts to be used, but it could permit the use of tools, equipment and personnel from the ~~sub-contractor~~ subcontractor as long as such tools, equipment and personnel meet the requirement of Part-145. In the case of ~~sub-contractors~~ subcontractors who provide specialised services, it may for practical reasons be necessary to use their specialised services personnel, approved data and materials, subject to acceptance by the organisation approved under Part-145.
- 4.3. Unless the ~~sub-contracted~~ subcontracted maintenance work can be fully inspected on receipt by the organisation approved under Part-145, it will be necessary for such organisations to supervise the inspection and release from the subcontractor ~~sub-contractor~~. Such control activities should be fully described in the organisation's procedures. The organisation will need to consider whether to use its own staff or to authorise the ~~sub-contractor~~ subcontractor's staff.
- 4.4. The certificate of release to service may be issued either at the subcontractor's ~~sub-contractor~~ or at the organisation's facility by staff issued a certification authorisation in accordance with point 145.A.30 as appropriate, by the organisation approved under Part-145, but may otherwise be a person from the subcontractor ~~sub-contractor~~ who meets the approved maintenance organisation certifying staff standard, which itself is approved by the competent authority via the MOE ~~maintenance organisation exposition~~. The certificate of release to service and the EASA Form 1 will always be issued under the maintenance organisation approval reference.
- 4.5. ~~The sub-contract control procedure will need to record audits of the sub-contractor, to have a corrective action follow up plan and to know when sub-contractors are being used. The procedure should include a clear revocation process for sub-contractors who do not meet the Part-145 approved maintenance organisation's requirements.~~

The subcontract control procedure will need to address the relevant management system key processes such as hazard identification, safety risk assessment and management, internal safety reporting, and compliance monitoring (see point 145.A.205). The procedure should ensure that records of all subcontractor audits and inspections, and the corresponding actions are kept, and provide information on when subcontractors are used. The procedure should include a clear revocation process for subcontractors who do not meet the Part-145 approved maintenance organisation's requirements.

- 4.6. The Part-145 ~~quality audit~~ compliance monitoring staff will need to audit the subcontract ~~sub-contract~~ control function section and sample audit ~~sub-contractors~~ subcontractors unless this task is already carried out by the ~~quality audit~~ compliance monitoring staff as stated in sub-paragraph 4.1.
- 4.7. The contract between the Part-145 approved maintenance organisation and the ~~sub-contractor~~ subcontractor should contain a provision to grant access to the



subcontractor to any person authorised by the authorities specified in point 145.A.140 for the competent authority and EASA standardisation team staff to have right of access to the sub-contractor.

[Back to implementing rule:

- [145.A.75 Privileges of the organisation](#)]

GM1 145.A.75(b) Privileges of the organisation

SUBCONTRACTING TO A PART-145 APPROVED ORGANISATION

It is not the intent of the rule to prevent a Part-145 organisation from subcontracting certain maintenance activities to another Part-145 approved organisation. In this case, although it is approved under Part-145, such a subcontracted organisation would work under the management system of the contracting Part-145 organisation.

The rule does also not foresee a Part-145 approved organisation working solely as a subcontractor of other Part-145 organisations, such that it would refrain from exercising its privileges.

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- [145.A.75 Privileges of the organisation](#)]

AMC1 145.A.85 Changes to the organisation

APPLICATION TIME FRAMES

- The application for the amendment of an organisation certificate should be submitted at least 30 working days before the date of the intended changes.
- In the case of a planned change of a nominated person, the organisation should inform the competent authority at least 20 working days before the date of the proposed change.
- Unforeseen changes should be notified at the earliest opportunity, in order to enable the competent authority to determine whether there is continued compliance with the applicable requirements, and to amend, if necessary, the organisation certificate and the related terms of approval.

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- [145.A.85 Changes to the organisation](#)]

AMC2 145.A.85 Changes to the organisation

MANAGEMENT OF CHANGES

The organisation should manage the safety risks related to any changes to the organisation in accordance with AMC1 145.A.200(a)(3) point (e). For changes requiring prior approval, it should conduct a safety risk assessment and provide it to the competent authority upon request.

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- [145.A.85 Changes to the organisation](#)

GM1 145.A.85 Changes to the organisation

CHANGES TO THE MOE

Point 145.A.85 also covers changes to the MOE, as explained in point 145.A.70(c).

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- [145.A.85 Changes to the organisation](#)

GM1 145.A.85(a)(1) Changes to the organisation

CHANGES THAT MAY AFFECT THE SCOPE OF THE CERTIFICATE OR THE TERMS OF APPROVAL

Typical examples of such changes are listed below:

- (1) the name of the organisation;
- (2) the organisation's principal place of business;
- (3) the organisation's scope of work;
- (4) the accountable manager referred to in point 145.A.30(a);
- (5) the safety policy;
- (6) the facilities.

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- [145.A.85 Changes to the organisation](#)

GM2 145.A.85(a)(1) Changes to the organisation

CHANGE OF THE NAME OF THE ORGANISATION

A change of the name requires the organisation to submit a new application as a matter of urgency.

If this is the only change to report, the new application can be accompanied by a copy of the documentation that was previously submitted to the competent authority under the previous name, as a means of demonstrating that the organisation complies with the applicable requirements.

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- [145.A.85 Changes to the organisation](#)

GM1 145.A.85(b) Changes to the organisation

CHANGES REQUIRING PRIOR APPROVAL

This GM is a non-exhaustive list of items that require prior approval from the competent authority (other than covered by point 145.A.85(a)) as specified in the applicable implementing rules:



- (a) Alternative means of compliance [145.A.120(b)];
- (b) The MOE procedure for the use of alternative tooling or equipment [145.A.40(a)(i)];
- (c) The use of component maintenance data by an A-rated organisation for the maintenance of components fitted to the aircraft [Appendix II point (d)];
- (d) The MOE procedure to allow an A-rated organisation to temporarily remove a component for maintenance, in order to improve access to that component [Appendix II point (d)];
- (e) The use of component maintenance data by a B-rated organisation for the maintenance of components fitted to the engine and/or APU [Appendix II point (f)];
- (f) The MOE procedure to allow a B-rated organisation to carry out maintenance on an installed engine during 'base' and 'line' maintenance [Appendix II point (f)];
- (g) The MOE procedure to allow a C-rated organisation to carry out maintenance on an installed component (other than a complete engine/APU) during 'base' and 'line' maintenance or at an engine/APU maintenance facility [Appendix II point (g)];
- (h) The Airworthiness Review Staff (ARS) nominated by the organisation [145.A.37(b)];
- (i) The procedures and standards to establish and control the competency of personnel [145.A.30(e)];
- (j) An effective and continuous system for reporting to the competent authority on the safety performance and regulatory compliance of the organisation [145.B.305(d)].

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- [145.A.85 Changes to the organisation](#)]

GM1 145.A.85(c) Changes to the organisation

CHANGES NOT REQUIRING PRIOR APPROVAL

The intention of point 145.A.85(c) is to allow the competent authority to accept certain changes to the organisation (other than where the implementing rule explicitly requires an approval) to be implemented without prior approval, depending on the compliance and safety performance of the organisation, and in particular, on its capability to manage the safety risks related to changes.

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- [145.A.85 Changes to the organisation](#)]

AMC1 145.A.95 Findings

GENERAL

The action plan defined by the organisation should address the effects of the non-compliance, as well as its root cause(s) and contributing factor(s).

Depending on the issues, the action plan should address the correction/containment of the issue, corrective action and preventive action.



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- [145.A.95 Findings](#)]

GM1 145.A.95 Findings

CAUSAL ANALYSIS

(a) It is important that the analysis does not primarily focus on establishing who or what caused the non-compliance, but on why it was caused. Establishing the root cause or causes of a non-compliance often requires an overarching view of the events and circumstances that led to it, to identify all the possible systemic and contributing factors (regulatory, human factors, organisational factors, technical, etc.) in addition to the direct factors.

(b) A narrow focus on single events or failures, or the use of a simple, linear model, such as a fault tree, to identify the chain of events that led to the non-compliance, may not properly reflect the complexity of the issue, and therefore there is a risk that important factors that must be addressed in order to prevent a reoccurrence will be ignored.

Such an inappropriate or partial causal analysis often leads to defining ‘quick fixes’ that only address the symptoms of the non-conformity. A peer review of the results of the causal analysis may increase its reliability and objectivity.

(c) A system description of the organisation that considers the organisational structures, processes and their interfaces, procedures, staff, equipment, facilities and the environment in which the organisation operates, will support both effective causal (reactive) and hazard (proactive) analyses.

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- [145.A.95 Findings](#)]

AMC1 145.A.120 Means of compliance

DEMONSTRATION OF COMPLIANCE

(a) In order to demonstrate that the implementing rules are met, a risk assessment should be completed and documented.

(b) The result of the risk assessment forms an integral part of the management system records to be managed in accordance with point 145.A.55.

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- [145.A.120 Means of compliance](#)]

GM1 145.A.200 Management system

GENERAL



Safety management seeks to proactively identify hazards and to mitigate the related safety risks before they result in aviation accidents and incidents. Safety management enables an organisation to manage its activities in a more systematic and focused manner. When an organisation has a clear understanding of its role and contribution to aviation safety, it can prioritise safety risks and more effectively manage their resources and obtain optimal results.

The principles of the requirements in points 145.A.200, 145.A.202, 145.A.205 and the related AMC constitute the EU management system framework for aviation safety management. This framework addresses the core elements of the ICAO safety management system (SMS) framework defined in Appendix 2 to Annex 19, and it promotes an integrated approach to the management of an organisation. It facilitates the introduction of the additional safety management components, building upon the existing management system, rather than adding them as a separate framework.

This approach is intended to encourage organisations to embed safety management and risk-based decision-making into all their activities, instead of superimposing another system onto their existing management system and governance structure. In addition, if the organisation holds multiple organisation certificates within the scope of Regulation (EU) 2018/1139, it may choose to implement a single management system to cover all of its activities. An integrated management system may not only be used to capture multiple certification requirements, but also to cover other business management systems such as quality, security, occupational health and environmental management systems. Integration will remove any duplication and exploit synergies by managing safety risks across multiple activities. Organisations may determine the best means to structure their management systems to suit their business and organisational needs.

The core part of the management system framework (145.A.200) focuses on what is essential for safety management, by mandating the organisation to:

- (a) clearly define responsibilities and accountabilities;
- (b) establish a safety policy and the related safety objectives;
- (c) implement safety reporting procedures in line with just culture principles;
- (d) ensure the identification of aviation safety hazards entailed by its activities, ensure their evaluation, and the management of the associated risks, including:
 - (1) taking actions to mitigate the risks;
 - (2) verifying the effectiveness of the actions taken to mitigate the risks;
- (e) monitor compliance, while considering any additional requirements that are applicable to the organisation;
- (f) keep their personnel trained, competent, and informed about significant safety issues; and
- (g) document all the key management system processes.

Compared with the previous Part-145 quality system 'framework', the new elements that are introduced are, in particular, those addressed under points (b) to (d). Points (c) and (d)(1) address component 2 'Safety Risk Management' of the ICAO SMS framework. Points (d)(2) and (e) address component 3 'Safety Assurance' thereof.



Point 145.A.200 defines the following as key safety management processes; these are further specified in the related AMC and GM:

- Hazard identification;
- Safety risk management;
- Internal investigation;
- Safety performance monitoring and measurement;
- Management of change;
- Continuous improvement;
- Immediate safety action and coordination with the aircraft operator's Emergency Response Plan (ERP).

It is important to recognise that safety management will be a continuous activity, as hazards, risks and the effectiveness of safety risk mitigations will change over time.

These key safety management processes are supported by a compliance monitoring function as an integral part of the management system for safety. Most aviation safety regulations constitute generic safety risk controls established by the 'regulator'. Therefore, ensuring effective compliance with the regulations during daily operations and independent monitoring of compliance are fundamental to any management system for safety. The compliance monitoring function may, in addition, support the follow-up of safety risk mitigation actions. Moreover, where non-compliances are identified through internal audits, the causes will be thoroughly assessed and analysed. Such an analysis in return supports the risk management process by providing insights into causal and contributing factors, including human factors, organisational factors and the environment in which the organisation operates. In this way, the outputs of compliance monitoring become some of the various inputs to the safety risk management functions. On the other hand, the safety risk management processes may be used to determine focus areas for compliance monitoring. In this way, internal audits will inform the organisation's management of the level of compliance within the organisation, whether safety risk mitigation actions have been implemented, and where corrective or preventive action is required. The combination of safety risk management and compliance monitoring should lead to an enhanced understanding of the end-to-end process and the process interfaces, exposing opportunities for increased efficiencies, which are not limited to safety aspects.

As aviation is a complex system with many organisations and individuals interacting together, the primary focus of the key safety management processes is on the organisational processes and procedures, but it also relies on the humans in the system. The organisation and the way in which it operates can have a significant impact on human performance. Therefore, safety management necessarily addresses how humans can contribute both positively and negatively to an organisation's safety outcomes, recognising that human behaviour is influenced by the organisational environment.

The effectiveness of safety management largely depends on the degree of commitment of the senior management to create a working environment that optimises human performance and encourages personnel to actively engage in and contribute to the organisation's management processes. Similarly, a positive safety culture relies on a high degree of trust and respect between the personnel



and the management, and it must therefore be created and supported at the senior management level. If the management does not treat individuals who identify hazards and report adverse events in a consistently fair and just way, those individuals are unlikely to be willing to communicate safety issues or to work with the management to effectively address the safety risks. As with trust, a positive safety culture takes time and effort to establish, and it can be easily lost.

It is further recognised that the introduction of processes for hazard identification and risk assessment, mitigation and verification of the effectiveness of such mitigation actions will create immediate and direct costs, while related benefits are sometimes intangible, and may take time to materialise. Over time, an effective management system will not only address the risks of major occurrences, but also identify and address production inefficiencies, improve communication, foster a better organisational culture, and lead to a more effective control of contractors and suppliers. In addition, through an improved relationship with the authority, an effective management system may result in a reduced oversight burden.

Thus, by viewing safety management and the related organisational policies and key processes as items that are implemented not only to prevent incidents and accidents, but also to meet the organisation's strategic objectives, any investment in safety should be seen as an investment in productivity and organisational success.

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- [145.A.200 Management system](#)]

AMC1 145.A.200(a)(1) Management system

ORGANISATION AND ACCOUNTABILITIES

- (a) The management system should encompass safety by including a safety manager and a safety review board in the organisational structure. The functions of the safety manager are those defined in AMC1 145.A.30(c);(ca).
- (b) Safety review board
 - (1) The safety review board should be a high-level committee that considers matters of strategic safety in support of the accountable manager's safety accountability.
 - (2) The board should be chaired by the accountable manager and composed of the heads of the functional areas.
 - (3) The safety review board should monitor:
 - (i) safety performance against the safety policy and objectives;
 - (ii) that any safety action is taken in a timely manner; and
 - (iii) the effectiveness of the organisation's management system processes.
 - (4) The safety review board may also be tasked with:
 - (i) reviewing the results of compliance monitoring;
 - (ii) monitoring the implementation of related corrective and preventive actions.



- (c) The safety review board should ensure that appropriate resources are allocated to achieve the established safety objectives.
- (d) The safety manager or any other relevant person may attend, as appropriate, safety review board meetings. He or she may communicate to the accountable manager all information, as necessary, to allow decision-making to be based on safety data.
- (e) Notwithstanding point (a), where justified by the size of the organisation and the nature and complexity of its activities and subject to a risk assessment and agreement by the competent authority, the organisation may not need to establish a formal safety review board. In this case, the tasks normally allocated to the safety review board should be allocated to the safety manager.

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- [145.A.200 Management system](#)]

GM1 145.A.200(a)(1) Management system

SAFETY ACTION GROUP

- (a) A safety action group may be established as a standing group or as an ad hoc group to assist, or act on behalf of the safety manager or the safety review board.
- (b) More than one safety action group may be established, depending on the scope of the task and the specific expertise required.
- (c) The safety action group usually reports to, and takes strategic direction from, the safety review board, and may be composed of managers, supervisors and personnel from operational areas.
- (d) The safety action group may be tasked or assist with:
 - (1) monitoring safety performance;
 - (2) defining actions to control risks to an acceptable level;
 - (3) assessing the impact on safety of organisational changes;
 - (4) ensuring that safety actions are implemented within agreed timescales;
 - (5) reviewing the effectiveness of previous safety actions and safety promotion.

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- [145.A.200 Management system](#)]

GM2 145.A.200(a)(1) Management system

MEANING OF THE TERMS 'ACCOUNTABILITY' AND 'RESPONSIBILITY'

In the English language, the notion of accountability is different from the notion of responsibility. Whereas 'accountability' refers to an obligation which cannot be delegated, 'responsibility' refers to an obligation that can be delegated.



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- [145.A.200 Management system](#)]

AMC1 145.A.200(a)(2) Management system

SAFETY POLICY & OBJECTIVES

(a) The safety policy should:

- (1) reflect organisational commitments regarding safety, and its proactive and systematic management, including the promotion of a positive safety culture;
- (2) include internal reporting principles, and encourage personnel to report maintenance-related errors, incidents and hazards;
- (3) recognise the need for all personnel to cooperate with the compliance monitoring and internal investigations referred to under point (c) of AMC1 145.A.200(a)(3);
- (4) be endorsed by the accountable manager;
- (5) be communicated, with visible endorsement, throughout the organisation; and
- (6) be periodically reviewed to ensure it remains relevant and appropriate for the organisation.

(b) The safety policy should include a commitment to:

- (1) comply with all the applicable legislation, to meet all the applicable requirements, and adopt practices to improve safety standards;
- (2) provide the necessary resources for the implementation of the safety policy;
- (3) apply human factors principles;
- (4) enforce safety as a primary responsibility of all managers; and
- (5) apply 'just culture' principles to internal safety reporting and the investigation of occurrences and, in particular, not to make available or use the information on occurrences:
 - (i) to attribute blame or liability to front-line personnel or other persons for actions, omissions or decisions taken by them that are commensurate with their experience and training; or
 - (ii) for any purpose other than the maintenance or improvement of aviation safety.

(c) Senior management should continually promote the safety policy to all personnel, demonstrate its commitment to it, and provide necessary human and financial resources for its implementation.

(d) Taking due account of its safety policy, the organisation should define safety objectives. The safety objectives should:

- (1) form the basis for safety performance monitoring and measurement;



- (2) reflect the organisation's commitment to maintain or continuously improve the overall effectiveness of the management system;
- (3) be communicated throughout the organisation; and
- (4) be periodically reviewed to ensure they remain relevant and appropriate for the organisation.

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- [145.A.200 Management system](#)]

GM1 145.A.200(a)(2) Management system

SAFETY POLICY

- (a) The safety policy is the means whereby the organisation states its intention to maintain and, where practicable, improve safety levels in all its activities and to minimise its contribution to the risk of an aircraft accident or serious incident as far as is reasonably practicable. It reflects the management's commitment to safety, and should reflect the organisation's philosophy of safety management, as well as being the foundation on which the organisation's management system is built. It serves as a reminder of 'how we do business here'. The creation of a positive safety culture begins with the issuance of a clear, unequivocal policy.
- (b) The commitment to apply 'just culture' principles forms the basis for the organisation's internal rules describing how 'just culture' principles are guaranteed and implemented.
- (c) For organisations that have their principal place of business in a Member State, Regulation (EU) No 376/2014 defines the 'just culture' principles to be applied (refer in particular to Article 16(11) of that Regulation).

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- [145.A.200 Management system](#)]

AMC1 145.A.200(a)(3) Management system

SAFETY MANAGEMENT KEY PROCESSES

- (a) Hazard identification processes
 - (1) Reactive and proactive schemes for hazard identification should be the formal means of collecting, recording, analysing, acting on, and generating feedback about hazards and the associated risks that may affect safety.
 - (2) The organisation should in particular focus on:
 - (i) hazards that may be generated from limitations in human performance; and
 - (ii) hazards that may stem from the organisational set-up or the existence of complex operational and maintenance arrangements (such as when multiple organisations are contracted, or when multiple levels of contracting/subcontracting are included).



(b) Risk management processes

- (1) A formal safety risk management process should be developed and maintained that ensures that there is:
 - (i) analysis (in terms of the probability and severity of the consequences of hazards and occurrences);
 - (ii) assessment (in terms of tolerability); and
 - (iii) control (in terms of mitigation) of risks to an acceptable level.
- (2) The levels of management who have the authority to make decisions regarding the tolerability of safety risks, in accordance with (b)(1)(ii), should be specified.

(c) Internal investigation

- (1) In line with its just culture policy, the organisation should define how to investigate incidents such as errors or near misses, in order to understand not only what happened, but also how it happened, to prevent or reduce the probability and/or consequence of future recurrences (refer to AMC1 145.A.202).
- (2) The scope of internal investigations should extend beyond the scope of the occurrences required to be reported to the competent authority in accordance with point 145.A.60.

(d) Safety performance monitoring and measurement

- (1) Safety performance monitoring and measurement should be the processes by which the safety performance of the organisation is verified in comparison with the safety policy and the safety objectives.
- (2) These processes may include, as appropriate to the size, nature and complexity of the organisation:
 - (i) safety reporting, addressing also the status of compliance with the applicable requirements;
 - (ii) safety reviews, including trend reviews, which would be conducted during the introduction of new products and their components, new equipment/technologies, the implementation of new or changed procedures, or in situations of organisational changes that may have an impact on safety;
 - (iii) safety audits that focus on the integrity of the organisation's management system, and on periodically assessing the status of safety risk controls; and
 - (iv) safety surveys, examining particular elements or procedures in a specific area, such as identified problem areas, or bottlenecks in daily maintenance activities, perceptions and opinions of maintenance management personnel, and areas of dissent or confusion.

(e) Management of change

The organisation should manage the safety risks related to a change. The management of change should be a documented process to identify external and internal changes that may



have an adverse effect on safety. It should make use of the organisation's existing hazard identification, risk assessment and mitigation processes.

(f) Continuous improvement

The organisation should continuously seek to improve its safety performance and the effectiveness of its management system. Continuous improvement may be achieved through:

- (1) audits carried out by external organisations;
- (2) assessments, including assessments of the effectiveness of the safety culture and management system, in particular to assess the effectiveness of the safety risk management processes;
- (3) staff surveys, including cultural surveys, that can provide useful feedback on how engaged personnel are with the management system;
- (4) monitoring the recurrence of incidents and occurrences;
- (5) evaluation of safety performance indicators and reviews of all the available safety performance information; and
- (6) the identification of lessons learned.

(g) Immediate safety action and coordination with the operator's Emergency Response Plan (ERP)

- (1) Procedures should be implemented that enable the organisation to act promptly when it identifies safety concerns with the potential to have an immediate effect on flight safety, including clear instructions on who to contact at the owner/operator/CAMO, and how to contact them, including outside of normal business hours. These provisions are without prejudice to the occurrence reporting required by point 145.A.60.
- (2) If applicable, procedures should be implemented to enable the organisation to react promptly if the ERP is triggered by the operator and it requires the support of the Part-145 organisation.

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- [145.A.200 Management system](#)]

GM1 145.A.200(a)(3) Management system

SAFETY RISK MANAGEMENT — INTERFACES BETWEEN ORGANISATIONS

- (a) Safety risk management processes should specifically address the planned implementation of, or participation of the organisation in, any complex operational and maintenance arrangements (such as when multiple organisations are contracted, or when multiple levels of contracting/subcontracting are included).
- (b) Hazard identification and risk assessment start with the identification of all the parties involved in the arrangement, including independent experts and non-approved organisations. This identification process extends to cover the overall control structure, and assesses in particular the following elements across all subcontract levels and all parties within such arrangements:



- (1) coordination and interfaces between the different parties;
 - (2) applicable procedures;
 - (3) communication between all the parties involved, including reporting and feedback channels;
 - (4) task allocation, responsibilities and authorities; and
 - (5) the qualifications and competency of key personnel with reference to point 145.A.30.
- (c) Safety risk management should focus on ensuring the following aspects:
- (1) clear assignment of accountability and allocation of responsibilities;
 - (2) that only one party is responsible for a specific aspect of the arrangement, with no overlapping or conflicting responsibilities, in order to eliminate coordination errors;
 - (3) the existence of clear reporting lines, both for occurrence reporting and progress reporting;
 - (4) the possibility for staff to directly notify the organisation of any hazard that suggests an obviously unacceptable safety risk as a result of the potential consequences of this hazard.
- (d) The safety risk management processes should ensure that there is regular communication between all the parties involved to discuss work progress, risk mitigation actions, and changes to the arrangements, as well as any other significant issues.

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- [145.A.200 Management system](#)]

GM2 145.A.200(a)(3) Management system

MANAGEMENT OF CHANGE

- (a) Unless they are properly managed, changes in organisational structure, facilities, the scope of work, personnel, documentation, policies and procedures, etc. can result in the inadvertent introduction of new hazards, and expose the organisation to new or increased risk. Effective organisations seek to improve their processes, with conscious recognition that changes can expose the organisation to potentially latent hazards and risks if they are not properly and effectively managed.
- (b) Regardless of the magnitude of a change, large or small, its safety implications should always be proactively considered. This is primarily the responsibility of the team that proposes and/or implements the change. However, a change can only be successfully implemented if all the personnel affected by the change are engaged, are involved and participate in the process. The magnitude of a change, its safety criticality, and its potential impact on human performance should be assessed in any change management process.
- (c) The process for the management of change typically provides principles and a structured framework for managing all aspects of the change. Disciplined application of the management



of change can maximise the effectiveness of the change, engage the staff, and minimise the risks that are inherent in a change.

- (d) The introduction of a change is the trigger for the organisation to perform their hazard identification and risk management processes.

Some examples of change include, but are not limited to:

- (1) changes to the organisational structure;
 - (2) the inclusion of a new aircraft type in the terms of approval;
 - (3) the addition of aircraft of the same or a similar type;
 - (4) significant changes in personnel (affecting key personnel and/or large numbers of personnel, high turn-over);
 - (5) new or amended regulations;
 - (6) competition (e.g. new competitor);
 - (7) changes to the customer base (e.g. loss of major customer);
 - (8) changes to the security arrangements;
 - (9) changes in the financial status of an organisation;
 - (10) new schedule(s), location(s), equipment, and/or operational procedures; and
 - (11) the addition of new subcontractors.
- (e) A change may have the potential to introduce new, or to exacerbate pre-existing, human factor issues. For example, changes in computer systems, equipment, technology, personnel changes, including changes in management personnel, procedures, work organisation, or work processes are likely to affect performance.
- (f) The purpose of integrating human factors (HF) into the management of change is to minimise potential risks by specifically considering the impact of the change on the people within a system.
- (g) Special consideration, including any HF issues, should be given to the 'transition period'. In addition, the activities utilised to manage these issues should be integrated into the change management plan.
- (h) Effective management of change should be supported by the following:
- (1) Implementation of a process for formal hazard identification/risk assessment for major operational changes, major organisational changes, changes in key personnel, and changes that may affect the way maintenance is carried out;
 - (2) Identification of changes that are likely to occur in business which would have a noticeable impact on:
 - (i) resources — material and human;
 - (ii) management direction — policies, processes, procedures, training; and
 - (iii) management control.



- (3) Safety cases/risk assessments that are aviation-safety focused.
- (4) The involvement of key stakeholders in the change management process, as appropriate.
- (i) During the management of change process, previous risk assessments and existing hazards are reviewed for possible effect.

[Back to implementing rule:

- [145.A.200 Management system](#)]

AMC1 145.A.200(a)(4) Management system

COMMUNICATION ON SAFETY

- (a) The organisation should establish communication regarding safety matters that:
 - (1) ensures that all personnel are aware of the safety management activities, as appropriate for their safety responsibilities;
 - (2) conveys safety-critical information, especially related to assessed risks and analysed hazards;
 - (3) explains why particular actions are taken; and
 - (4) explains why safety procedures are introduced or changed.
- (b) Regular meetings with personnel, at which information, actions, and procedures are discussed, may be used to communicate safety matters.

[Back to implementing rule:

- [145.A.200 Management system](#)]

GM1 145.A.200(a)(4) Management system

SAFETY PROMOTION

- (a) Safety training, combined with safety communication and information sharing, forms part of safety promotion.
- (b) Safety promotion activities should support:
 - (1) the organisation's policies, encouraging a positive safety culture, creating an environment that is favourable to the achievement of the organisation's safety objectives;
 - (2) organisational learning; and
 - (3) the implementation of an effective safety reporting scheme and the development of a just culture.
- (c) Depending on the particular safety issue, safety promotion may also constitute or complement risk mitigation actions.



- (d) Qualifications and training aspects are further specified in the AMC and the GM to point 145.A.30.

[Back to implementing rule:

- [145.A.200 Management system](#)]

GM1 145.A.200(a)(5) Management system

MANAGEMENT SYSTEM DOCUMENTATION

- (a) The organisation may document its safety policy, safety objectives and all its key management system processes in a separate manual (e.g. a Safety Management Manual or Management System Manual), or in its MOE (see AMC1 145.A.70(a), Part 3 ‘Management system procedures’). Organisations that hold multiple organisation certificates within the scope of Regulation (EU) 2018/1139 may prefer to use a separate manual in order to avoid duplication. That manual or the MOE, depending on the case, should be the key instrument for communicating the approach to management system for the whole of the organisation.
- (b) The organisation may also choose to document some of the information that is required to be documented in separate documents (e.g. policy documents, procedures). In that case, it should ensure that the manual or the MOE contains adequate references to any document that is kept separately. Any such documents are to be considered as integral parts of the organisation’s management system documentation.

[Back to implementing rule:

- [145.A.200 Management system](#)]

AMC1 145.A.200(a)(6) Management system

COMPLIANCE MONITORING — GENERAL

- (a) The primary objectives of compliance monitoring are to provide an independent monitoring function on how the organisation ensures compliance with the applicable requirements, policies and procedures, and to request action where non-compliances are identified.
- (b) The independence of the compliance monitoring should be established by always ensuring that audits and inspections are carried out by personnel who are not responsible for the functions, procedures or products that are audited or inspected.

[Back to implementing rule:

- [145.A.200 Management system](#)]

AMC2 145.A.200(a)(6) ~~AMC 145.A.65(c)(1)~~ Management system

COMPLIANCE MONITORING — INDEPENDENT AUDIT



1. ~~The primary objectives of the quality system are to enable the organisation to ensure that it can deliver a safe product and that organisation remains in compliance with the requirements.~~
- 1.2. An essential element of the quality system compliance monitoring is the independent audit.
- 2.3. The independent audit is ~~should be~~ an objective process of routine sample checks of all aspects of the organisation's ability to carry out all maintenance to the ~~required~~ standards required by this Regulation, ~~and It should~~ includes some product sampling, as this is the end result of the maintenance process.
3. ~~It represents~~ The independent audit should provide an objective overview of the complete ~~set of~~ maintenance-related activities and is intended to complement the 145.A.50(a) requirement for certifying staff to be satisfied that all required maintenance has been properly carried out before issue of the certificate of release to service. Independent audits ~~It~~ should include a percentage of ~~random~~ unannounced audits carried out on a sample basis ~~when~~ while maintenance is being carried out. This means that some audits should be carried out during the night for those organisations that work at night.
- 3a. The organisation should establish an audit plan to show when and how often the activities as required by this Regulation will be audited.
4. Except as specified in ~~sub-paragraphs~~ points 7 and 9, the independent audit plan should ensure that all aspects of Part-145 compliance are ~~verified every year~~ checked every 12 months, including all the subcontracted activities, and the auditing may be carried out as a complete single exercise or subdivided over the 12-month annual period in accordance with a scheduled plan. The independent audit ~~should~~ does not require each procedure to be ~~verified~~ checked against each product line when it can be shown that the particular procedure is common to more than one product line and the procedure has been ~~verified~~ checked every year 12 months without resultant findings. Where findings have been identified, the particular procedure should be ~~verified~~ rechecked against other product lines until the findings have been rectified, after which the independent audit procedure may revert back to a 1-year interval 12-monthly for the particular procedure.
5. Except as specified otherwise in subparagraphs 7, the independent audit should sample check one product on each product line every year 12 months as a demonstration of the effectiveness of ~~compliance with the~~ maintenance procedures compliance. ~~It is recommended that~~ Procedures and product audits may be combined by selecting a specific product example, such as an aircraft or engine or instrument component, and sample checking all the procedures and requirements associated with the specific product example ~~to ensure that the end result should be an airworthy product.~~

For the purpose of the independent audit, a product line includes any product under an Appendix II approval class rating as specified in the ~~terms of approval schedule~~ issued to the particular organisation.

It therefore follows, for example, that a maintenance organisation approved under Part-145 with a capability to maintain aircraft, repair engines, brakes and autopilots would need to carry out four complete product audits ~~sample checks~~ each year, except as specified otherwise in ~~sub-paragraphs~~ points 5, 7 or 9.



6. The ~~sample check~~ of a product ~~audit~~ means to witness any relevant testing and visually inspect the product and the associated documentation. The ~~sample check product audit~~ should not involve repeated ~~disassembly~~ or testing unless the ~~sample check product audit~~ identifies findings that require such an action.
7. Except as specified otherwise in ~~sub-paragraph point~~ 9, where the smallest organisation, that is an organisation with a maximum of 10 personnel actively engaged in maintenance, chooses to contract the independent audit element of the ~~compliance monitoring, quality system in accordance with 145.A.65(c)(1)~~ it is conditional on the audit being carried out twice in every ~~year 12-month period~~.
8. Except as specified otherwise in ~~sub-paragraph point~~ 9, where the organisation has line stations listed as per ~~point 145.A.75(d)~~, the compliance monitoring documentation ~~quality system~~ should include a ~~describe~~ description of how these line stations are integrated into the ~~function, system~~ and include a plan to audit each listed line station at a frequency consistent with the extent of flight activity at the particular line station ~~and the related safety hazards identified~~. Except as specified otherwise in ~~sub-paragraph point~~ 9, the maximum period between audits of a particular line station should not exceed ~~2 years 24 months~~.
9. Except as specified otherwise in ~~sub-paragraph point~~ 5, ~~provided that there are no safety-related findings, the audit planning cycle specified in this AMC may be increased by up to 100 %, subject to a risk assessment and agreement by the competent authority the competent authority may agree to increase any of the audit time periods specified in this AMC 145.A.65(c)(1) by up to 100% provided that there are no safety related findings and subject to being satisfied that the organisation has a good record of rectifying findings in a timely manner.~~
10. A report should be ~~issued~~ raised each time an audit is carried out describing what was checked and the resulting ~~non-compliance~~ findings against applicable requirements, ~~and procedures and products~~.
11. The independence of the audit should be established by always ensuring that audits are carried out by personnel not responsible for the function, procedure or products being checked.

It therefore follows that a large maintenance organisation approved under Part 145, being an organisation with more than about 500 maintenance staff should have a dedicated quality audit group whose sole function is to conduct audits, raise finding reports and follow up to check that findings are being rectified. For the medium sized maintenance organisation approved under Part 145, being an organisation with less than about 500 maintenance staff, it is acceptable to use competent personnel from one section/department not responsible for the production function, procedure or product to audit the section/department that is responsible subject to the overall planning and implementation being under the control of the quality manager. Organisations with a maximum of 10 maintenance staff actively engaged in carrying out maintenance may ~~subcontract~~ the independent audit element of the ~~quality system compliance monitoring function~~ to another organisation or ~~contract~~ a qualified and competent person ~~approved by, with the agreement of~~ the competent authority.

[Back to implementing rule:



- [145.A.200 Management system](#)]

AMC3 145.A.200(a)(6) Management system

COMPLIANCE MONITORING — CONTRACTING OF THE INDEPENDENT AUDIT

- (a) If external personnel are used to perform independent audits:
- (1) any such audits are performed under the responsibility of the compliance monitoring manager; and
 - (2) the organisation remains responsible for ensuring that the external personnel have the relevant knowledge, backgrounds, and experience that are appropriate to the activities being audited, including knowledge and experience in compliance monitoring.
- (b) The organisation retains the ultimate responsibility for the effectiveness of the compliance monitoring function, in particular for the effective implementation and follow-up of all corrective actions.

[Back to implementing rule:

- [145.A.200 Management system](#)]

AMC4 145.A.200(a)(6) ~~AMC 145.A.65(c)(2) Safety and quality policy, maintenance procedures and quality system~~ Management system

COMPLIANCE MONITORING — FEEDBACK SYSTEM

1. An essential element of the ~~quality system~~ compliance monitoring is the quality feedback system.
2. The quality feedback system ~~may~~ should not be contracted to external ~~outside~~ persons or organisations.
- 2a. When a non-compliance is found, the compliance monitoring function should ensure that the root cause(s) and contributing factor(s) are identified (see GM1 145.A.95), and that corrective actions are defined. The feedback part of the compliance monitoring function should define who is required to address any non-compliance in each particular case, and the procedure to be followed if the corrective action is not completed within the defined time frame. The principal functions of the quality feedback system is ~~are~~ to ensure that all findings resulting from the independent ~~quality~~ audits of the organisation are properly investigated and corrected in a timely manner, and to enable the accountable manager to be kept informed of any safety issues and the extent of compliance with Part-145.
3. The independent quality audit reports referred to ~~referenced~~ in ~~AMC 145.A.65(c)(1)~~ AMC2 145.A.200(a)(6) ~~sub-paragraph 10~~ should be sent to the relevant department(s) for ~~corrective rectification~~ action, giving target rectification dates. ~~Rectification~~ These target dates should be discussed with the relevant ~~such~~ department(s) before the ~~quality department or nominated quality auditor~~ compliance monitoring function confirms ~~such~~ the dates in the report. The relevant department(s) are required by ~~145.A.65(c)(2)~~ to implement the corrective action



rectify findings and inform the compliance monitoring function quality department or nominated quality auditor of the status of the implementation of the action such rectification.

4. The accountable manager should hold regular meetings with staff to check progress on rectification except that in the large organisations such meetings may be delegated on a day to day basis to the quality manager subject to the accountable manager meeting at least twice per year with the senior staff involved to review the overall performance and receiving at least a half yearly summary report on findings of non-compliance.

Unless the review of the results from compliance monitoring is the responsibility of the safety review board (ref. AMC1 145.A.200(a)(1) point (b)(4)), the accountable manager should hold regular meetings with staff to check the progress of any corrective actions. These meetings may be delegated to the compliance monitoring manager on a day-to-day basis, provided that the accountable manager:

- (1) meets the senior staff involved at least twice per year to review the overall performance of the compliance monitoring function; and
- (2) receives at least a half-yearly summary report on non-compliance findings.

5. All records pertaining to the independent quality audit and the quality feedback system should be retained for the period specified in point 145.A.55(c) at least 2 years after the date of closure clearance of the finding to which they refer or for such periods as to support changes to the audit planning cycle in accordance with AMC2 145.A.200(a)(6) AMC 145.A.65(c)(1) sub-paragraph 9 audit time periods, whichever is the longer.

[Back to implementing rule:

- [145.A.200 Management system](#)]

GM1 145.A.200(a)(6) Management system

COMPLIANCE MONITORING FUNCTION

The compliance monitoring function is one of the elements that is required to 'ensure' compliance with the applicable requirements. This means that the compliance monitoring function itself should be subject to independent monitoring of compliance in accordance with 145.A.200(a)(6).

[Back to implementing rule:

- [145.A.200 Management system](#)]

GM2 145.A.200(a)(6) GM 145.A.65(c)(1) Safety and quality policy, maintenance procedures and quality system Management system

COMPLIANCE MONITORING — AUDIT PLAN

- (a)1. The purpose of this GM is to give guidance on just one acceptable working audit plan to meet part of the needs of point 145.A.200(a)(6) 145.A.65(c)1. There is any number of other acceptable working audit plans.



- (b) The audits described in the audit plan are intended to monitor compliance with the applicable requirements, and at the same time to review all areas of the organisation to which those requirements are applicable.
- (c) In order to achieve this objective, as a first element, the organisation needs to identify all the regulatory requirements that are applicable to the activity and the scope of work under consideration, to allow the audit plan to focus on the relevant topics. Each topic (e.g. facilities, personnel, etc.) should be cross-referred with the relevant requirement and the related procedure of the organisation in the exposition that describes the particular topic. If an organisation applies an AMC to demonstrate compliance with the rule, that information may also be stated.
- (d) As a second element, all the functional areas of the organisation in which Part-145 functions are intended to be carried out, including subcontracting, need to be listed in order to identify the applicability of any topic to each functional area.
- (e) A matrix can be used, as shown in the example below, to capture the two elements mentioned above. This matrix is intended to be a living document to be customised by each particular organisation depending on its scope of work and its structure. This matrix should represent the overall compliance of the audit system and needs to be amended, as necessary, based upon any change to the applicable regulations, the procedures of the organisation or the functional areas of the organisation (e.g. a change in the scope of work to include line maintenance, etc.)

Example (to be further completed) of an audit matrix for an organisation involved in aircraft base maintenance that does not hold airworthiness review privilege:

Topic	Requirement	Exposition	Functional areas				
			Base maintenance	Compliance monitoring	Subcontracting	Component workshop	...
Facilities	145.A.25(a)(1)	1.8	X	N/A	X	X	...
	AMC 145.A.25(a)	2.22	X	N/A	N/A	X	...

Personnel	...	...	...	...	...	...	...
	145.A.30(c)	1.4	N/A	X	N/A	N/A	...
	145.A.30(d)	1.7, 2.22	X	X	X	X	...

...	145.A.37	N/A	N/A	N/A	N/A	N/A	...
...
Record-keeping	145.A.55	...	...	...	...	...	...

...

- (f) The audit plan can be presented as a simplified schedule (see below), showing the operational areas of the organisation against a timetable to indicate when each particular area was scheduled for audit and when the audit was completed. The audit plan should include a



number of product audits (depending on the number of product lines), some of which should be unannounced (see AMC2 145.A.200(a)(6)).

Example (to be further completed) of an audit plan for an organisation, mentioned in point (e), that has 2 base maintenance hangars, and hydraulic and electrical workshops:

Operational area	Functional area	Planned	Completed	Remarks
Base maintenance hangar 1	Base maintenance	mmm yyyy	dd mmm yyyy	
Base maintenance hangar 2	Base maintenance	mmm yyyy	dd mmm yyyy	
Hydraulic workshop	Component workshop	mmm yyyy	dd mmm yyyy	
Electrical workshop	Component workshop	mmm yyyy	dd mmm yyyy	
Subcontractor 1	Subcontracting	mmm yyyy	dd mmm yyyy	
Product audit 1	Base maintenance	mmm yyyy	dd mmm yyyy	
Product audit 2	Component workshop	unannounced	dd mmm yyyy	
...	

(g) The audit of each operational area will review all the topics that are applicable to the relevant functional area. For each topic, the audit should check that the particular Part-145 requirement is documented in the corresponding procedure in the exposition and that the procedure is effectively implemented in the operational area that is being audited. In addition, the audit should also identify any practice/process implemented in the operational area which has not been documented in any procedure in the exposition.

2. ~~The proposed plan lists the subject matter that should be covered by the audit and attempts to indicate applicability in the various types of workshops and aircraft facilities. The list should therefore be tailored for the particular situation and more than one list may be necessary. Each list should be shown against a timetable to indicate when the particular item is scheduled for audit and when the audit was completed.~~

PARA	Comment	HANGAR	ENGINE	MECH	AVIONIC
			Workshop	Workshop	Workshop
145.A.25		Yes	Yes	Yes	Yes
145.A.30		Yes	Yes	Yes	Yes
145.A.35		Yes	Yes	Yes	Yes
145.A.36		Yes	No	No	No
145.A.40		Yes	Yes	Yes	Yes
145.A.42		Yes	Yes	Yes	Yes
145.A.45		Yes	Yes	Yes	Yes
145.A.47		Yes	Yes	Yes	Yes
145.A.48		Yes	Yes	if appl	if appl
145.A.50		Yes	Yes	Yes	Yes
145.A.55		Yes	Yes	Yes	Yes
145.A.60		Yes	Yes	Yes	Yes
145.A.65		Yes	Yes	Yes	Yes
2-1	MOE	Yes	Yes	Yes	Yes
2-2	MOE	Yes	Yes	Yes	Yes
2-3	MOE	Yes	Yes	Yes	Yes
2-4	MOE	Yes	Yes	Yes	Yes



PARA	Comment	HANGAR	ENGINE	MECH	AVIONIC
2.5	MOE	Yes	Yes	Yes	Yes
2.6	MOE	Yes	Yes	Yes	Yes
2.7	MOE	Yes	Yes	Yes	Yes
2.8	MOE	Yes	Yes	Yes	Yes
2.9	MOE	Yes	Yes	Yes	Yes
2.10	MOE	Yes	No	No	No
2.11	MOE	Yes	Yes	Yes	Yes
2.12	MOE	Yes	Yes	Yes	Yes
2.13	MOE	Yes	Yes	Yes	Yes
2.14	MOE	Yes	Yes	Yes	Yes
2.15	MOE	Yes	No	No	No
2.16	MOE	Yes	Yes	Yes	Yes
2.17	MOE	if appl	if appl	if appl	if appl
2.18	MOE	Yes	Yes	Yes	Yes
2.19	MOE	Yes	Yes	Yes	Yes
2.20	MOE	Yes	Yes	Yes	Yes
2.21	MOE	if appl	if appl	if appl	if appl
2.22	MOE	Yes	Yes	No	No
2.23	MOE	Yes	Yes	if appl	if appl
2.24	MOE	Yes	Yes	Yes	Yes
2.25	MOE	Yes	Yes	Yes	Yes
2.26	MOE	Yes	Yes	Yes	Yes
2.27	MOE	Yes	Yes	Yes	Yes
2.28	MOE	Yes	Yes	Yes	Yes
2.29	MOE	Yes	No	No	No
2.30	MOE	Yes	No	No	No
L2.1	MOE	if appl	No	No	No
L2.2	MOE	if appl	No	No	No
L2.3	MOE	if appl	No	No	No
L2.4	MOE	if appl	No	No	No
L2.5	MOE	if appl	No	No	No
L2.6	MOE	if appl	No	No	No
L2.7	MOE	if appl	No	No	No
3.9	MOE	if appl	if appl	if appl	if appl
3.10	MOE	if appl	if appl	if appl	if appl
3.11	MOE	if appl	if appl	if appl	No
3.12	MOE	Yes	Yes	No	No
3.13	MOE	Yes	Yes	Yes	Yes
3.14	MOE	Yes	Yes	Yes	Yes
145.A.70		Yes	Yes	Yes	Yes
145.A.75		Yes	Yes	Yes	Yes
145.A.80		Yes	Yes	Yes	Yes
145.A.85		Yes	Yes	Yes	Yes
145.A.95		if appl	if appl	if appl	if appl

Note 1: 'if appl' means 'if applicable or relevant'.



Note 2: — In the case of line stations, all line stations should be audited at the frequency agreed with the competent authority within the limits of AMC 145.A.65(c)(1).

[Back to implementing rule:

- [145.A.200 Management system](#)]

AMC1 145.A.202 Internal safety reporting scheme

- (a) Each internal safety reporting scheme should be confidential and enable and encourage free and frank reporting of any potentially safety-related occurrence, including incidents such as errors or near misses, safety issues and identified hazards. This will be facilitated by the establishment of a just culture.
- (b) The internal safety reporting scheme should contain the following elements:
- (1) clearly identified aims and objectives with demonstrable corporate commitment;
 - (2) a just culture policy as part of the safety policy, and related just culture implementation procedures;
 - (3) a process to:
 - (i) identify those reports which require investigation; and
 - (ii) when so identified, investigate all the causal and contributing factors, including any technical, organisational, managerial, or human factors issues, and any other contributing factors related to the occurrence, incident, error or near miss that was identified;
 - (iii) if adapted to the size and complexity of the organisation, analyse the collective data showing the trends and frequencies of the contributing factors;
 - (4) appropriate corrective actions based on the findings of investigations;
 - (5) initial and recurrent training for staff involved in internal investigations;
 - (6) where relevant, the organisation should cooperate with the owner, operator or CAMO on occurrence investigations by exchanging relevant information to improve aviation safety.
- (b) The internal safety reporting scheme should:
- (1) ensure the confidentiality of the reporter;
 - (2) be closed-loop, to ensure that actions are taken internally to address any safety issues and hazards; and
 - (3) feed into the recurrent training as defined in AMC5 145.A.30(e) whilst maintaining appropriate confidentiality.
- (c) Feedback should be given to staff both on an individual and a more general basis to ensure their continued support of the safety reporting scheme.

[Back to implementing rule:



- [145.A.202 Internal safety reporting scheme](#)]

GM1 145.A.202 Internal safety reporting scheme

GENERAL

- (a) The overall purpose of the internal safety reporting scheme is to use the reported information to improve the level of the safety performance of the organisation, and not to attribute blame.
- (b) The objectives of the scheme are to:
- (1) enable an assessment to be made of the safety implications of each relevant incident (errors, near miss), safety issue and hazard reported, including previous similar issues, so that any necessary action can be initiated; and
 - (2) ensure that knowledge of relevant incidents, safety issues and hazards is shared so that other persons and organisations may learn from them.
- (c) The scheme is an essential part of the overall monitoring function and should be complementary to the normal day-to-day procedures and ‘control’ systems; it is not intended to duplicate or supersede any of them. The scheme is a tool to identify those instances in which routine procedures have failed or may fail.
- (d) All safety reports that are judged to be reportable by the person submitting the report should be retained, as the significance of such reports may only become obvious at a later date.
- (e) Typical occurrences to be reported are those in which aviation safety was, or could have been endangered, or which could have led to an unsafe condition. If, in the view of the reporter, an occurrence did not endanger aviation safety but, if it was repeated in different but likely circumstances, would create an unsafe situation that could lead to an accident or serious incident, then a report should be made. What is judged to be reportable on one class of product, part, or appliance may not be the same for another, and the absence or presence of a single factor, organisational, human, or technical, can transform an occurrence into an accident or serious incident.
- (f) The collection and analysis of timely, appropriate and accurate data will allow the organisation to react to the information that it receives, and to take the necessary action.

[Back to implementing rule:

- [145.A.202 Internal safety reporting scheme](#)]

GM1 145.A.205 Contracting and subcontracting

RESPONSIBILITY WHEN CONTRACTING OR SUBCONTRACTING MAINTENANCE

- (a) Regardless of the approval status of the subcontracted organisations, a Part-145 organisation is responsible for ensuring that all subcontracted activities are subject to hazard identification and risk management, as required by point 145.A.200(a)(3), and to compliance monitoring, as required by point 145.A.200(a)(6).



- (b) A Part-145 organisation is responsible for identifying hazards that may stem from the existence of complex maintenance arrangements (such as when multiple organisations are contracted, or when multiple levels of contracting/subcontracting are included) with due regard to the organisations' interfaces (see GM1 145.A.200(a)(3)). In addition, the compliance monitoring function should at least check that the approval of the contracted maintenance organisation(s) effectively covers the contracted activities, and that it is still valid.
- (c) A Part-145 organisation is responsible for ensuring that interfaces and communication channels are established with the contracted maintenance organisation for occurrence reporting. This does not replace the obligation of the contracted organisation to report to the competent authority in accordance with Regulation (EU) No 1321/2014.

For subcontracted activities, interfaces and communication channels are also needed for the purpose of the internal safety reporting scheme (145.A.202).

[Back to implementing rule:

- [145.A.205 Contracting and subcontracting](#)]

GM2 145.A.205 Contracting and subcontracting

DIFFERENCE BETWEEN 'CONTRACTING MAINTENANCE' AND 'SUBCONTRACTING MAINTENANCE'

- (a) 'Subcontracting maintenance' means subcontracting to a third party under the maintenance organisation management system.

This is the case when a third party carries out certain maintenance tasks on behalf of the Part-145 organisation, and the responsibility remains within the Part-145 organisation (this Part-145 organisation must have the tasks within its scope of approval). Whether the third party is approved or not is not relevant for the designation of subcontracting, since the third party will be working under the management system of the Part-145 organisation and the maintenance will be released under the approval of this organisation. See also GM1 145.A.75(b).

- (b) 'Contracting maintenance' means contracting to another maintenance organisation which will release the maintenance under its own approval.

This is the case when a Part-145 organisation, contracted to carry out maintenance by an owner/operator/CAMO, further contracts certain maintenance tasks to another approved Part-145 organisation, and transfers the responsibility for the release of such tasks to the second Part-145 organisation.

Contracting should only be foreseen when it is allowed by the person or organisation that requests the maintenance.

- (c) In case (a), the subcontracted organisation works under the approval of the contracting organisation, whereas in case (b), the contracted organisation works under its own approval.

[Back to implementing rule:

- [145.A.205 Contracting and subcontracting](#)]





[AMC/GM to Section B are replaced by:]

SECTION B — AUTHORITY REQUIREMENTS

GM1 145.B.120 Means of compliance

ALTERNATIVE MEANS OF COMPLIANCE

Alternative means of compliance that are used by a competent authority, or by a person or organisations under its oversight, may be used by other competent authorities, persons, or organisations only if they are processed again in accordance with points 145.B.120(d) and (e).

[Back to implementing rule:

- [145.B.120 Means of compliance](#)

AMC1 145.B.120(e) Means of compliance

DEMONSTRATION OF COMPLIANCE

In order to demonstrate that the implementing rules are met, a risk assessment should be completed and documented.

[Back to implementing rule:

- [145.B.120 Means of compliance](#)

AMC1 145.B.200 Management system

ORGANISATIONAL STRUCTURE

- (a) In deciding upon the required organisational structure, the competent authority should review:
- (1) the number of certificates to be issued, and the number and size of the potential Part-145 approved maintenance organisations within that Member State;
 - (2) the possible use of qualified entities and of the resources of the competent authorities of other Member States to fulfil the continuing oversight obligations;
 - (3) the level of civil aviation activity, the number and complexity of the aircraft and the size of the Member State's aviation industry; and
 - (4) the potential growth of activities in the field of civil aviation.
- (b) The competent authority should retain effective control of the important surveillance functions and should not delegate them in such a way that Part-145 organisations, in effect, regulate themselves in airworthiness matters.
- (c) The set-up of the organisational structure should ensure that the various tasks and obligations of the competent authority do not solely rely on individuals. The continuous and undisturbed



fulfilment of these tasks and obligations of the competent authority should also be guaranteed in case of illness, accidents or leave of individual employees.

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- [145.B.200 Management system](#)]

AMC2 145.B.200 Management system

GENERAL

- (a) The competent authority designated by each Member State should be organised in such a way that:
- (1) there is specific and effective management authority in the conduct of all the relevant activities;
 - (2) the functions and processes described in the applicable requirements of Regulation (EU) 2018/1139 and its delegated and implementing acts, AMC, Certification Specifications (CSs), and Guidance Material (GM) may be properly implemented;
 - (3) the competent authority's policy, organisation and operating procedures for the implementation of the applicable requirements of Regulation (EU) 2018/1139 and its delegated and implementing acts are properly documented and applied;
 - (4) all the competent authority's personnel who are involved in the related activities are provided with training where necessary;
 - (5) specific and effective provision is made for communicating and interfacing as necessary with EASA and the competent authorities of other Member States; and
 - (6) all the functions related to implementing the applicable requirements are adequately described.
- (b) A general policy in respect of the activities related to the applicable requirements of Regulation (EU) 2018/1139 and its delegated and implementing acts should be developed, promoted, and implemented by the manager at the highest appropriate level; for example, the manager at the top of the functional area of the competent authority that is responsible for such activities.
- (c) Appropriate steps should be taken to ensure that the policy is known and understood by all the personnel involved, and all the necessary steps should be taken to implement and maintain the policy.
- (d) The general policy, whilst also satisfying the additional national regulatory responsibilities, should, in particular, take into account:
- (1) the provisions of Regulation (EU) 2018/1139;
 - (2) the provisions of the applicable implementing rules and their AMC, CSs, and GM;
 - (3) the needs of industry; and
 - (4) the needs of EASA and of the competent authority.



- (e) The policy should define specific objectives for the key elements of the organisation and processes for implementing the related activities, including the corresponding control procedures and the measurement of the achieved standard.

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AMC1 145.B.200(a)(1) Management system

DOCUMENTED POLICIES AND PROCEDURES

- (a) The various elements of the organisation involved with the activities related to Regulation (EU) 2018/1139 and its delegated and implementing acts should be documented in order to establish a reference source for the establishment and maintenance of this organisation.
- (b) The documented procedures should be established in a way that facilitates their use. They should be clearly identified, kept up to date, and made readily available to all the personnel who are involved in the related activities.
- (c) The documented procedures should cover, as a minimum, all of the following aspects:
- (1) policies and objectives;
 - (2) the organisational structure;
 - (3) responsibilities and the associated authority;
 - (4) procedures and processes;
 - (5) internal and external interfaces;
 - (6) internal control procedures;
 - (7) the training of personnel;
 - (8) cross-references to associated documents;
 - (9) assistance from other competent authorities or EASA (where required).
- (d) It is likely that the information may be held in more than one document or series of documents, and suitable cross-referencing should be provided. For example, the organisational structure and job descriptions are not usually in the same documentation as the detailed working procedures. In such cases, it is recommended that the documented procedures should include an index of cross references to all such other related information, and the related documentation should be readily available when required.

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GM1 145.B.200(a)(2) Management system

SUFFICIENT PERSONNEL



- (a) This GM on the determination of the required personnel is limited to the performance of certification and oversight tasks, excluding any personnel who are required to perform tasks that are subject to any national regulatory requirements.
- (b) The elements to be considered when determining who are the required personnel and planning their availability may be divided into quantitative and qualitative elements:
- (1) Quantitative elements
 - (i) the estimated number of initial certificates to be issued;
 - (ii) the number of organisations to be certified by the competent authority;
 - (iii) the estimated number of subcontracted organisations used by certified organisations.
 - (2) Qualitative elements
 - (i) the size, nature, and complexity of the activities of certified organisations, taking into account:
 - (A) the privileges of each organisation;
 - (B) the types of approval and the scopes of approval;
 - (C) possible certification to industry standards;
 - (D) the number of personnel; and
 - (E) the organisational structure and the existence of subsidiaries;
 - (ii) the safety priorities identified;
 - (iii) the results of past oversight activities, including audits, inspections and reviews, in terms of risks and regulatory compliance, taking into account:
 - (A) the number and the levels of findings;
 - (B) the time frame for implementation of corrective actions; and
 - (C) the maturity of the management systems implemented by organisations, and their ability to effectively manage safety risks; and
 - (iv) the size and complexity of the Member State's aviation industry, and the potential growth of activities in the field of civil aviation, which may be an indication of the number of new applications and changes to existing certificates to be expected.
- (c) Based on the existing data from previous oversight planning cycles, and taking into account the situation within the Member State's aviation industry, the competent authority may estimate:
- (1) the standard working time required for processing applications for new certificates;
 - (2) the number of new certificates to be issued for each planning period; and
 - (3) the number of changes to existing certificates to be processed for each planning period.



- (d) In line with the competent authority's oversight policy, the following planning data should be determined:
- (1) the standard number of audits to be performed per oversight planning cycle;
 - (2) the standard duration of each audit;
 - (3) the standard working time for audit preparation, on-site audit, reporting, and follow-up per inspector;
 - (4) the standard number of unannounced inspections to be performed;
 - (5) the standard duration of inspections, including preparation, reporting, and follow-up per inspector; and
 - (6) the minimum number and the required qualifications of the inspectors for each audit/inspection.
- (e) The standard working time could be expressed either in working hours per inspector, or in working days per inspector. All planning calculations should then be based on the same unit (hours or working days).
- (f) It is recommended to use a spreadsheet application to process the data defined under (c) and (d), to assist in determining the total number of working hours/days per oversight planning cycle required for certification, oversight and enforcement activities. This application could also serve as a basis for implementing a system for planning the availability of personnel.
- (g) The number of working hours/days per planning period for each qualified inspector that may be allocated for certification, oversight and enforcement activities should be determined, taking into account:
- (1) purely administrative tasks that are not directly related to certification and oversight;
 - (2) training;
 - (3) participation in other projects;
 - (4) planned absence; and
 - (5) the need to include a reserve for unplanned tasks or unforeseeable events.
- (h) The determination of the working time available for certification, oversight and enforcement activities should also consider, as applicable:
- (1) the use of qualified entities;
 - (2) cooperation with other competent authorities for approvals that involve more than one Member State;
 - (3) oversight activities under a bilateral aviation safety agreement.
- (i) Based on the elements listed above, the competent authority should be able to:
- (1) monitor the dates when audits and inspections are due, and when they were carried out;
 - (2) implement a system to plan the availability of personnel; and



- (3) identify possible gaps between the number and the qualifications of personnel and the required volume of certification and oversight.

Care should be taken to keep planning data up to date in line with changes in the underlying planning assumptions, with particular focus on risk-based oversight principles.

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AMC1 145.B.200(a)(3) Management system

QUALIFICATION AND TRAINING — GENERAL

- (a) It is essential for the competent authority to have the full capability to adequately assess the compliance and performance of an organisation by ensuring that the whole range of activities is assessed by appropriately qualified personnel.
- (b) For each inspector, the competent authority should:
- (1) define the competencies required to perform the allocated certification and oversight tasks;
 - (2) define the associated minimum qualifications that are required;
 - (3) establish initial and recurrent training programmes in order to maintain and to enhance the competency of inspectors at the level that is necessary to perform the allocated tasks; and
 - (4) ensure that the training provided meets the established standards, and is regularly reviewed and updated whenever necessary.
- (c) The competent authority may provide training through its own training organisation with qualified trainers, or through another qualified training source.
- (d) If training is not provided through an internal training organisation, adequately experienced and qualified persons may act as trainers, provided that their training skills have been assessed. If required, an individual training plan should be established that covers specific training skills. Records should be kept of such a training, and of the assessment, as appropriate.

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- [145.B.200 Management system](#)]

AMC2 145.B.200(a)(3) Management system

QUALIFICATION AND TRAINING — INSPECTORS

- (a) Competent authority inspectors should have:
- (1) practical experience and expertise in the application of aviation safety standards and safe operating practices;



- (2) comprehensive knowledge of:
 - (i) the relevant parts of the implementing rules, certification specifications and guidance material;
 - (ii) the competent authority's procedures;
 - (iii) the rights and obligations of an inspector;
 - (iv) safety management systems based on the EU management system requirements (including compliance monitoring) and ICAO Annex 19;
 - (v) continuing airworthiness management;
 - (vi) operational procedures that affect the continuing airworthiness management of the aircraft or its maintenance;
 - (vii) maintenance-related human factors and human performance principles;
 - (3) training on auditing techniques and assessing and evaluating management systems and safety risk management processes;
 - (4) 5 years of relevant work experience for them to be allowed to work independently as inspectors. This may include experience gained during training to obtain the qualifications mentioned below in point (a)(5);
 - (5) a relevant engineering degree or an aircraft maintenance technician qualification with additional education. 'Relevant engineering degree' refers to an engineering degree from aeronautical, mechanical, electrical, electronic, avionics or other studies that are relevant to the maintenance and continuing airworthiness of aircraft/aircraft components.
 - (6) knowledge of a relevant sample of the type(s) of aircraft or components, gained through a formalised training course. Aircraft/engine type training courses should be at least at a level equivalent to a Part-66 Appendix III Level 1 General Familiarisation.

'Relevant sample' refers to courses that cover the typical aircraft or components that are within the scope of work;
 - (7) knowledge of maintenance standards, including fuel tank safety (FTS) training as described in Appendix IV to AMC3 145.A.30(e) and AMC2 145.B.200(a)(3).
- (b) In addition to technical competency, inspectors should have a high degree of integrity, be impartial in carrying out their tasks, be tactful, and have a good understanding of human nature.
- (c) A programme for recurrent training should be developed that ensures that the inspectors remain competent to perform their allocated tasks. As a general policy, it is not desirable for the inspectors to obtain technical qualifications from those entities that are under their direct regulatory oversight.

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AMC3 145.B.200(a)(3) Management system

INITIAL AND RECURRENT TRAINING — INSPECTORS

(a) Initial training programme

The initial training programme for inspectors should include, as appropriate to their role, current knowledge, experience and skills in at least all of the following:

- (1) aviation legislation, organisation, and structure;
- (2) the Chicago Convention, the relevant ICAO annexes and documents;
- (3) Regulation (EU) No 376/2014 on the reporting, analysis and follow-up of occurrences in civil aviation;
- (4) overview of Regulation (EU) 2018/1139 and its delegated and implementing acts and the related AMC, CS, and GM;
- (5) Regulation (EU) No 1321/2014 as well as any other applicable requirements;
- (6) management systems, including the assessment of the effectiveness of a management system, in particular hazard identification and risk assessment, and non-punitive reporting techniques in the context of the implementation of a 'just culture';
- (7) auditing techniques;
- (8) procedures of the competent authority that are relevant to the inspectors' tasks;
- (9) human factors principles;
- (10) the rights and obligations of inspecting personnel of the competent authority;
- (11) on-the-job training that is relevant to the inspector's tasks;
- (12) technical training that is appropriate to the role and tasks of the inspector, in particular for those areas that require approvals.

NOTE: the duration of the on-the-job training should take into account the scope and complexity of the inspector's tasks. The competent authority should assess whether the required competency has been achieved before an inspector is authorised to perform a task without supervision.

(b) Recurrent training programme

Once qualified, the inspector should undergo training periodically, as well as whenever deemed necessary by the competent authority, in order to remain competent to perform the allocated tasks. The recurrent training programme for inspectors should include, as appropriate to their role, at least the following topics:

- (1) changes in aviation legislation, the operational environment and technologies;
- (2) procedures of the competent authority that are relevant to the inspector's tasks;
- (3) technical training that is appropriate to the role and tasks of the inspector; and
- (4) results from past oversight.



- (c) Assessments of an inspector's competency should take place at regular intervals that do not exceed 3 years. The results of these assessments, as well as any actions taken following the assessments, should be recorded.

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AMC1 145.B.200(a)(5) Management system

SAFETY RISK MANAGEMENT PROCESS

- (a) The safety risk management process required by point 145.B.200 should be documented. The following should be defined in the related documentation:
- (1) means for hazard identification, and the related data sources, taking into account data that comes from other competent authorities with which the competent authority interfaces in the State, or from the competent authorities of other Member States;
 - (2) risk management steps including:
 - (i) analysis (in terms of the probability and the severity of the consequences of hazards and occurrences);
 - (ii) assessment (in terms of tolerability); and
 - (iii) control (in terms of mitigation) of risks to an acceptable level;
 - (3) who holds the responsibilities for hazard identification and risk management;
 - (4) who holds the responsibilities for the follow-up of risk mitigation actions;
 - (5) the levels of management who have the authority to make decisions regarding the tolerability of risks;
 - (6) means to assess the effectiveness of risk mitigation actions; and
 - (7) the link with the compliance monitoring function.
- (b) To demonstrate that the safety risk management process is operational, competent authorities should be able to provide evidence that:
- (1) the persons involved in internal safety risk management activities are properly trained;
 - (2) hazards that could impact the authority's capabilities to perform its tasks and discharge its responsibilities have been identified and the related risk assessment is documented;
 - (3) regular meetings take place at appropriate levels of management of the competent authority to discuss the risks identified, and to decide on the tolerability of risks and possible risk mitigations;
 - (4) in addition to the initial hazard identification exercise, the risk management process is triggered as a minimum whenever changes occur that may affect the competent authority's capability to perform any of the tasks required by Part-145;



- (5) a record of the actions taken to mitigate risks is maintained, showing the status of each action and the owner of the action;
- (6) there is a follow-up on the implementation of all risk mitigation actions;
- (7) risk mitigation actions are assessed for their effectiveness;
- (8) the results of risk assessments are periodically reviewed to check whether they remain relevant. (Are the assumptions still valid? Is there any new information?).

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GM1 145.B.200(a)(5) Management system

SAFETY RISK MANAGEMENT PROCESS

The purpose of safety risk management as part of the management system framework for competent authorities is to ensure the effectiveness of the management system. As for any organisation, hazard identification and risk management are expected to contribute to effective decision-making, to guide the allocation of resources and contribute to organisational success.

The safety risk management process required by point 145.B.200 is intended to address the safety risks that are directly related to the competent authority's organisation and processes, and which may affect its capability to perform its tasks and discharge its responsibilities. This process is not intended to be a substitute for the State safety risk management SARPs defined in ICAO Annex 19, Chapter 3, component 3.3. This does not mean, however, that the competent authority may not use information and data that is obtained through its State Safety Programme (SSP), including oversight data and information, for the purposes of safety risk management as part of its management system.

The safety risk management process is also to be applied to the management of changes (145.B.210), which is intended to ensure that the management system remains effective whenever changes occur.

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AMC1 145.B.200(d) Management system

PROCEDURES AVAILABLE TO EASA

- (a) Copies of the procedures related to the competent authority's management system, and their amendments, that should be made available to EASA for the purpose of standardisation, should provide at least the following information:
 - (1) the competent authority's organisational structure for the continuing oversight functions that it undertakes, with a description of the main processes. This information should demonstrate the allocation of responsibilities within the competent authority, and that the competent authority is capable of carrying out the full range of tasks for



the size and complexity of the Member State's aviation industry. It should also consider the overall proficiency and the scope of authorisation of the competent authority's personnel;

- (2) for personnel who are involved in oversight activities, the minimum required professional qualifications and amount of experience, and the principles that are used to guide their appointment (e.g. assessment);
 - (3) how the following are carried out: assessments of applications and evaluations of compliance, the issuing of certificates, continuing oversight activities, the follow-up of findings, enforcement measures and the resolution of safety concerns;
 - (4) the principles used for the management of exemptions and derogations;
 - (5) the processes that are in place to distribute the applicable safety information to enable a timely reaction to a safety problem;
 - (6) the criteria for planning continuing oversight activities (i.e. an oversight programme), including the management of interfaces when conducting continuing oversight activities (of air operations and of continuing airworthiness management, for example);
 - (7) an outline of the initial training of newly recruited oversight personnel (taking future activities into account), and the basic framework for the recurrent training of oversight personnel.
- (b) As part of the continuous monitoring of a competent authority, EASA may request details of the working methods used, in addition to a copy of the procedures of the competent authority's management system (and any amendments). These additional details are the procedures and the related guidance material that describes the working methods for the personnel of the competent authority who conduct oversight activities.
- (c) Information related to the competent authority's management system may be submitted in an electronic format.

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- [145.B.200 Management system](#)]

GM1 145.B.205 Allocation of tasks to qualified entities

CERTIFICATION TASKS

The tasks that may be performed by a qualified entity on behalf of the competent authority include those that are related to the initial certification and to the continuing oversight of persons and organisations as defined in Regulation (EU) No 1321/2014.

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- [145.B.205 Allocation of tasks to qualified entities](#)]



AMC1 145.B.220(a) Record-keeping

GENERAL

- (a) The record-keeping system should ensure that all records are accessible within a reasonable time whenever they are needed. These records should be organised in a manner that ensures their traceability and retrievability throughout the required retention period.
- (b) All records that contain sensitive data regarding applicants or organisations should be stored in a secure manner with controlled access to ensure their confidentiality.
- (c) Records should be kept in paper form, or in an electronic format, or a combination of the two. Records that are stored on microfilm or optical discs are also acceptable. The records should remain legible and accessible throughout the required retention period. The retention period starts when the record is created.
- (d) Paper systems should use robust material which can withstand normal handling and filing. Computer record systems should have at least one backup system, which should be updated within 24 hours of any new entry. Computer record systems should include safeguards against any unauthorised personnel from altering the data.
- (c) All computer hardware that is used to ensure the backup of data should be stored in a different location from the one that contains the working data, and in an environment that ensures that the data remains in a good condition. When hardware or software changes take place, special care should be taken to ensure that all the necessary data continues to be accessible throughout at least the full period specified in point 145.B.220(c).

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- [145.B.220 Record-keeping](#)]

AMC1 145.B.220(a)(1) Record-keeping

COMPETENT AUTHORITY MANAGEMENT SYSTEM

Records that are related to the competent authority's management system should include, as a minimum, and as applicable:

- (a) the documented policies and procedures;
- (b) the personnel files of the competent authority's personnel, with the supporting documents related to their training and qualifications;
- (c) the results of the competent authority's internal audits and safety risk management processes, including audit findings, and corrective, preventive and risk mitigation actions; and
- (d) the contract(s) established with any qualified entities that perform certification or oversight tasks on behalf of the competent authority.

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- [145.B.220 Record-keeping](#)]



AMC1 145.B.300(a);(b);(c) Oversight principles

ASSESSMENT OF THE MANAGEMENT SYSTEM

As part of the initial certification of an organisation, the competent authority should assess the organisation's management system and processes to make sure that all the required enablers of a functioning management system are present and suitable.

As part of its continuing oversight activities, the competent authority should verify that the required enablers remain present, and assess the effectiveness of the organisation's management system and processes.

When significant changes take place in the organisation, the competent authority should determine whether there is a need to review the existing assessment to ensure that it is still appropriate.

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- [145.B.300 Oversight principles](#)]

AMC1 145.B.300(f) Oversight principles

INFORMATION DEEMED USEFUL FOR OVERSIGHT

This information should include, as a minimum:

- any occurrence reports received by the competent authority;
- the reports received following the issuing of any one-off certification authorisations as defined in point 145.A.30(j)(5);
- the results of the following types of inspections and surveys if they indicate an issue that originates from a Part-145 organisation:
 - ramp inspections performed in accordance with Subpart RAMP of Annex II (Part-ARO) to Commission Regulation (EU) No 965/2012 'Air Operations';
 - product surveys of aircraft, pursuant to M.B.303 or ML.B.303;
 - any aircraft sample surveys conducted pursuant to CAMO.B.305(b)(1); and
 - any physical surveys or partial airworthiness reviews performed by the competent authority in line with M.B.901.

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- [145.B.300 Oversight principles](#)]

AMC1 145.B.305(a);(b) Oversight programme

ANNUAL REVIEW

- The oversight planning cycle and the related oversight programme for each organisation should be reviewed annually to ensure that they remain adequate regarding any changes in the nature, complexity or the safety performance of the organisation.



- (b) When reviewing the oversight planning cycle and the related oversight programme, the competent authority should also consider any relevant information collected in accordance with points 145.A.60 and 145.B.300(f).

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- [145.B.305 Oversight programme](#)]

AMC1 145.B.305(b) Oversight programme

SPECIFIC NATURE AND COMPLEXITY OF THE ORGANISATION — RESULTS OF PAST OVERSIGHT

When determining the oversight programme, including the relevant sample of maintenance carried out by the organisation for the product audits, the competent authority should consider in particular the following elements, as applicable:

- (1) the effectiveness of the organisation's management system in identifying and addressing non-compliances and safety hazards;
- (2) the implementation by the organisation of any industry standards that are directly relevant to the organisation's activities subject to this Regulation;
- (3) the procedure applied for and the scope of changes not requiring prior approval;
- (4) any specific procedures implemented by the organisation that are related to any alternative means of compliance used;
- (5) the number of approved locations and the activities performed at each location;
- (6) the number and type of any subcontractors who perform maintenance tasks; and
- (7) the volume of activity for each A, B, C and D class rating, as applicable.

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- [145.B.305 Oversight programme](#)]

AMC2 145.B.305(b) Oversight programme

SUBCONTRACTED ACTIVITIES

If a Part-145 organisation subcontracts maintenance tasks, the competent authority should determine whether the subcontracted organisation needs to be audited and included in the oversight programme, taking into account the specific nature and complexity of the subcontracted activities, the results of previous oversight activities of the approved organisation, and the assessment of the associated risks.

For such audits, the competent authority inspector should ensure that he or she is accompanied throughout the audit by a senior technical member of the Part-145 organisation.

NOTE: if a Part-145 organisation subcontracts maintenance tasks, the competent authority should ensure that the Part-145 organisation manages the risks related to, and that it has sufficient control over, the subcontracted activities (see GM1 145.A.205 and AMC1 145.A.75(b)).



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- [145.B.305 Oversight programme](#)]

AMC1 145.B.305(b)(1) Oversight programme

AUDIT

- (a) The oversight programme should indicate which aspects of the approval will be covered by each audit.
- (b) Part of each audit should concentrate on the audit reports produced by the organisation's compliance monitoring function, to determine whether the organisation has been identifying and correcting its problems.
- (c) At the conclusion of the audit, the auditing inspector should complete an audit report that identifies the areas and processes that were audited, and includes all the findings that were raised.
- (d) At the completion of each oversight planning cycle, a new EASA Form 6 should be issued.

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- [145.B.305 Oversight programme](#)]

AMC1 145.B.305(c) Oversight programme

OVERSIGHT PLANNING CYCLE — AUDIT AND INSPECTION

- (a) When determining the oversight planning cycle and defining the oversight programme, the competent authority should assess the risks related to the activity of each organisation, and adapt the oversight to the level of risk identified and to the effectiveness of the organisation's management system, in particular its ability to effectively manage safety risks.
- (b) The competent authority should establish a schedule of audits and inspections that is appropriate to each organisation. The planning of audits and inspections should take into account the results of the hazard identification and the risk assessment conducted and maintained by the organisation as part of the organisation's management system. Inspectors should work in accordance with the schedule provided to them.
- (c) When the competent authority, having regard to the level of risk identified and the effectiveness of the organisation's management system, varies the frequency of an audit or inspection, it should ensure that all aspects of the organisation's activity are audited and inspected within the applicable oversight planning cycle.

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AMC2 145.B.305(c) Oversight programme

OVERSIGHT PLANNING CYCLE — AUDIT

- (a) For each organisation certified by the competent authority, all processes should be completely audited at periods that do not exceed the applicable oversight planning cycle. The beginning of the first oversight planning cycle is normally determined by the date of issue of the first certificate. If the competent authority wishes to align the oversight planning cycle with the calendar year, it should shorten the first oversight planning cycle accordingly.
- (b) The interval between two audits for a particular process should not exceed the interval of the applicable oversight planning cycle.
- (c) Audits should include at least one on-site audit within each oversight planning cycle. For organisations who carry out their regular activities at more than one site, the determination of the sites to be audited should consider the results of past oversight activities and the volume of activities at each site, as well as main risk areas identified.
- (d) For organisations that hold more than one certificate, the competent authority may define an integrated oversight schedule that includes all the applicable audit items. In order to avoid any duplication of audits, credit may be granted for specific audit items that have already been completed during the current oversight planning cycle, provided that:
 - (1) the specific audit item is the same for all the certificates under consideration;
 - (2) there is satisfactory evidence on record that those specific audit items were carried out, and that all the related corrective actions have been implemented to the satisfaction of the competent authority;
 - (3) the competent authority is satisfied that there is no evidence that standards have deteriorated regarding those specific audit items for which credit is granted;
 - (4) the interval between two audits for the specific item for which credit is granted does not exceed the applicable oversight planning cycle.

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- [145.B.305 Oversight programme](#)]

AMC1 145.B.305(d) Oversight programme

EXTENSION OF THE OVERSIGHT PLANNING CYCLE BEYOND 24 MONTHS

- (a) If the competent authority applies an oversight planning cycle that exceeds 24 months, it should, at a minimum, perform one inspection of the organisation within each 12-month segment of the applicable oversight planning cycle to validate the oversight programme.
- (b) If the results of this inspection indicate a decrease in the safety performance of the organisation, the competent authority should revert back to a 24-month (or less) oversight planning cycle and review the oversight programme accordingly.



- (c) In order to be able to apply an oversight planning cycle of up to 36 months, the competent authority should determine the format and contents of the regular reports to be made by the organisation on its safety performance.
- (d) To enable the competent authority to apply an oversight planning cycle of up to 48 months, the competent authority should establish, implement and maintain a methodology to evaluate the safety performance of the organisation, focusing on the organisation's ability to effectively identify aviation safety hazards and manage the associated risks.

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- [145.B.305 Oversight programme](#)]

AMC1 145.B.310 Initial certification procedure

VERIFICATION OF COMPLIANCE

- (a) In order to verify the organisation's compliance with the applicable requirements, the competent authority should conduct an audit of the organisation, including interviews of the personnel, and inspections carried out at the organisation's facilities.
- (b) The competent authority should only conduct such an audit if it is satisfied that the application and the supporting documentation, including the results of the pre-audit performed by the organisation, are in compliance with the applicable requirements.
- (c) The audit should focus on the following areas:
 - (1) the detailed management structure, including the names and qualifications of personnel as required by points 145.A.30(a), (b), (c) and (ca), and the adequacy of the organisation and its management structure;
 - (2) the personnel:
 - (i) the adequacy of the number of staff, and of their qualifications and experience with regard to the intended terms of approval and the associated privileges;
 - (ii) the validity of any licences and/or authorisations, as applicable;
 - (3) the processes used for safety risk management and compliance monitoring;
 - (4) the facilities and their adequacy regarding the organisation's scope of work;
 - (5) the documentation based on which the certificate should be granted (i.e. the documentation required by Part-145):
 - (i) verification that the procedures specified in the MOE comply with the applicable requirements; and
 - (ii) verification that the accountable manager has signed the exposition statement.
- (d) If an application for an organisation certificate is refused, the applicant should be informed of the right of appeal that exists under national law.

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- [145.B.310 Initial certification procedure](#)]



AMC1 145.B.310(a) Initial certification procedure

- (a) The competent authority should determine how and by whom the audit shall be conducted. For example, it will be necessary to determine whether one large team audit, a short series of small team audits, or a long series of single inspector audits is most appropriate for the particular situation.
- (b) The audit may be structured so as to verify the organisation's processes related to a product line. For example, in the case of an organisation with Airbus A310 and A320 ratings, the audit should concentrate on the maintenance processes of one type only for a full compliance check, and depending upon the result, the second type may only require a sample check against those aspects that were seen to be weak regarding compliance for the first type.
- (c) In determining the scope of the audit and which activities of the organisation will be assessed during the audit, the privileges of the approved organisation should be taken into account, e.g. their approval to carry out airworthiness reviews.
- (d) The competent authority auditing inspector should always ensure that he or she is accompanied throughout the audit by a senior member of the organisation, who is normally the compliance monitoring manager. The reason for being accompanied is to ensure that the organisation is fully aware of any findings made during the audit.
- (e) At the end of the audit, the auditing inspector should inform the senior member of the organisation of all the findings that were raised during the audit.

[Back to implementing rule:

- [145.B.310 Initial certification procedure](#)]

AMC1 145.B.310(c) Initial certification procedure

- (a) There may be occasions when the competent authority inspector is unsure about the compliance of some aspects of the applicant's organisation. If this occurs, the inspector should inform the organisation about the possible non-compliance at the time, and about the fact that the situation will be reviewed within the competent authority before a decision is made. If the review concludes that there is no finding, then a verbal confirmation to the organisation should suffice.
- (b) Any findings should be recorded on the audit report form, each with a provisional categorisation as a level 1 or 2 finding. Subsequent to the on-site audit that identified the particular findings, the competent authority should review the provisional finding levels, adjusting them if necessary, and should change the categorisation from 'provisional' to 'confirmed'.

[Back to implementing rule:

- [145.B.310 Initial certification procedure](#)]



AMC2 145.B.310(c) Initial certification procedure

- (a) The audit should be recorded using the audit report EASA Form 6 (Appendix II to AMC2 145.B.310(c)).
- (b) A review of the EASA Form 6 audit report form should be carried out by a competent independent person nominated by the competent authority. The review should take into account the relevant points of Part-145, the categorisation of the findings levels and the closure action that was taken. A satisfactory review of the audit report should be indicated by a signature on the EASA Form 6.
- (c) The audit reports should include the date when each finding was closed, together with a reference to the competent authority report or letter that confirmed the closure.

[Back to implementing rule:

- [145.B.310 Initial certification procedure](#)]

AMC1 145.B.310(d) Initial certification procedure

All findings should be confirmed in writing to the applicant organisation within 2 weeks of the on-site audit.

[Back to implementing rule:

- [145.B.310 Initial certification procedure](#)]

AMC1 145.B.310(e)(2) Initial certification procedure

- (a) The competent authority should indicate its approval of the MOE in writing.
- (b) Approval of the MOE constitutes the formal acceptance of the personnel specified in points 145.A.30(b), 145.A.30(c), 145.A.30(ca) and 145.A.30(k).
- (c) The competent authority may reject an accountable manager if there is clear evidence that this person previously held a senior position in any organisation that was approved in accordance with Regulation (EU) 2018/1139 and its delegated and implementing acts, and that the person abused that position by not complying with the applicable requirements.

[Back to implementing rule:

- [145.B.310 Initial certification procedure](#)]

AMC1 145.B.330 Changes — organisations

- (a) The competent authority should have adequate control over any changes to the personnel specified in points 145.A.30(a), (b), (c), (ca) and (k). Such changes in personnel will require an amendment to the exposition.



- (b) When an organisation submits the name of a new nominee for any of the personnel specified in points 145.A.30(a), (b), (c), (ca) and (k), the competent authority may require the organisation to produce a written résumé of the proposed person's qualifications. The competent authority should reserve the right to interview the nominee or to call for additional evidence of his or her suitability before deciding upon him or her being acceptable.
- (c) For changes requiring prior approval, in order to verify the organisation's compliance with the applicable requirements, the competent authority should conduct an audit of the organisation, limited to the extent of the changes, and determine whether a safety risk assessment needs to be provided by the organisation.
- (d) If a safety risk assessment is deemed to be necessary, the competent authority should inform the organisation accordingly.
- (e) If the competent authority considers that it is necessary to review the safety risk assessment performed by the organisation, it should request the organisation to provide it, and assess its results.
- (f) If required, the audit may include interviews and inspections carried out at the organisation's facilities.
- (g) The applicable part(s) of the EASA Form 6 should be used to document the assessment of any changes to the Part-145 approval.

[Back to implementing rule:

- [145.B.330 Changes – organisations](#)]

GM1 145.B.330 Changes — organisations

CHANGE OF THE NAME OF THE ORGANISATION

- (a) On receipt of the application and the amendment to the relevant parts of the MOE, the competent authority should reissue the certificate.
- (b) A change of only the name does not require the competent authority to audit the organisation unless there is evidence that other aspects of the organisation have changed.

[Back to implementing rule:

- [145.B.330 Changes – organisations](#)]

GM1 145.B.350(b);(c) Findings and corrective actions

The following is an example of a level 1 finding:

- The calibration control of the equipment specified in point 145.A.40(b) had previously failed on a particular type product line such that most of the 'calibrated' equipment was suspect from that time onwards.

A complete product line is defined as all the aircraft, engines or components of a particular type.

For such a level 1 finding, it may be necessary for the competent authority to ensure that:



- further maintenance and re-certification of all the affected products is accomplished, dependent upon the nature of the finding;
- further training by the organisation is carried out and audited by the competent authority before the activity is resumed, dependent upon the nature of the finding.

In practical terms, if a competent authority inspector finds a non-compliance with Part-145 against one product, it is deemed to be a level 2 finding.

The following are examples of level 2 findings:

- There was a one-time use of a component that did not have a serviceable tag.
- The training documents of the certifying staff are not complete.

[Back to implementing rule:

- [145.B.350 Findings and corrective actions](#)]

AMC1 145.B.355(c) Suspension, limitation and revocation

INFORMATION ON THE SECURITY SITUATION

- (a) The European Commission Security Directorate generally advises against any non-essential travel to a country where hostile conditions, or a combination of the following conditions, reduce the level of security, and pose a high level of threat to personnel, as follows:
- (1) international or internal armed conflict with frequent armed confrontation taking place, numerous casualties, and/or serious damage to infrastructure;
 - (2) a situation that could lead to war, or characterised by high internal or external tension that could escalate into instability in the short term; very poorly functioning institutions;
 - (3) relatively frequent terrorist attacks due to the presence of active terrorist groups, either domestic or transnational, and state authorities that are unable to ensure a satisfactory level of security; and
 - (4) frequent criminal violence that also targets non-nationals. State authorities have a limited ability to counter criminal activities and ensure security.
- (b) Countries where the above conditions apply should not be considered to be compatible with the performance of on-site audits by the competent authority.

[Back to implementing rule:

- [145.B.355 Suspension, limitation and revocation](#)]



APPENDICES TO AMC TO ANNEX II (PART-145)

Appendix I to AMC 145.B.20(1) EASA Form 4

The provisions of Appendix X to AMC M.B.602(a) and AMC M.B.702(a) EASA Form 4 apply.



Appendix II to AMC2 145.B.310(c) ~~AMC 145.B.20(5)~~ EASA Form 6

Part-145 APPROVAL RECOMMENDATION REPORT	EASA FORM 6
Part 1: General	
Name of organisation:	
Approval reference:	
Requested approval rating:	
EASA Form 3 dated*:	
FAA FAR Title 14 CFR Part 145 Certificate No (if applicable):	
TCCA CAR 573 Certificate (if applicable):	
ANAC RBAC 145 Certificate (if applicable):	
Address of facility audited:	
Audit period: From _____ to _____	
Date(s) of audit:	
Audit reference(s):	
Persons interviewed:	
Competent authority inspector(s) surveyor(s) :	Signature(s):
Competent authority office:	Date of EASA Form 6 Part 1 completion:
*delete as appropriate	



Part-145 APPROVAL RECOMMENDATION REPORT		EASA FORM 6				
Part 2: Part-145 Compliance Audit Review						
<p>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 points, 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 if an item is not applicable, or N/R where if it is applicable but it was not reviewed.</p>						
ParaPoint	Subject					
145.A.25	Facility requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.30	Personnel requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.35	Certifying Staff and support staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.376	Records of Airworthiness review staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.40	Equipment, and Tools and material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.42	Acceptance of Components	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.45	Maintenance Data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.47	Production Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.48	Performance of maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.50	Certification of Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.55	Record-keeping Maintenance Records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.60	Occurrence Reporting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.65	Safety and Quality Policy, Maintenance procedures and Quality System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.70	Maintenance Organisation Exposition (MOE) (see Part 3)	<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"/>
145.A.80	Limitations on the organisation	<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"/>
145.A.95	Findings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.120	Means of compliance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.140	Access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.155	Immediate reaction to a safety problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.200	Management system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.202	Internal safety reporting scheme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145.A.205	Contracting, subcontracting and procurement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competent inspector(s) surveyor(s):		Signature(s):				
Competent authority office:		Date of EASA Form 6 Part 2 completion:				



Part-145 APPROVAL RECOMMENDATION REPORT		EASA FORM 6
Part 3: Compliance with 145.A.70 Maintenance organisation exposition		
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 if an item is not applicable; or N/R when if it is applicable but it was not reviewed.		
PART 1 General Management		
1.1	<input type="checkbox"/>	Corporate commitment Statement by the accountable manager
1.2	<input type="checkbox"/>	Safety and Quality policy and objectives
1.3	<input type="checkbox"/>	Management personnel
1.4	<input type="checkbox"/>	Duties and responsibilities of the management personnel
1.5	<input type="checkbox"/>	Management Organisation Chart
1.6	<input type="checkbox"/>	List of Certifying staff, support staff and airworthiness review staff (Note: a separate document may be referenced)
1.7	<input type="checkbox"/>	Manpower resources
1.8	<input type="checkbox"/>	General description of the facilities at each address intended to be approved
1.9	<input type="checkbox"/>	Organisations intended scope of work
1.10	<input type="checkbox"/>	Notification procedure for changes requiring prior approval to the competent authority regarding changes to the organisation's activities/approval/location/personnel
1.11	<input type="checkbox"/>	Procedure for Exposition amendments procedures and changes not requiring prior approval
1.12	<input type="checkbox"/>	Procedure for alternative means of compliance
PART 2 Maintenance Procedures		
2.1	<input type="checkbox"/>	Supplier evaluation and subcontract control procedure
2.2	<input type="checkbox"/>	Acceptance/inspection of aircraft components and material from outside contractors
2.3	<input type="checkbox"/>	Storage, tagging, and release of aircraft components and material to aircraft maintenance
2.4	<input type="checkbox"/>	Acceptance of tools and equipment
2.5	<input type="checkbox"/>	Calibration of tools and equipment
2.6	<input type="checkbox"/>	Use of tooling and equipment by staff (including alternate tools)
2.7	<input type="checkbox"/>	Cleanliness standards of maintenance facilities
2.8	<input type="checkbox"/>	Maintenance instructions and relationship to aircraft/aircraft component manufacturers' instructions including updating and availability to staff
2.9	<input type="checkbox"/>	Repair procedure
2.10	<input type="checkbox"/>	Aircraft maintenance programme compliance
2.11	<input type="checkbox"/>	Airworthiness Directives procedure
2.12	<input type="checkbox"/>	Optional modification procedure



Part-145 APPROVAL RECOMMENDATION REPORT		EASA FORM 6
Part 3: Compliance with 145.A.70 Maintenance organisation exposition		
2.13		Maintenance documentation in use and its completion
2.14		Technical records control
2.15		Rectification of defects arising during base maintenance
2.16		Release to service procedure
2.17		Records for the operator
2.18		Occurrence 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 man-hour planning versus scheduled maintenance work
2.23		Critical maintenance tasks and error-capturing methods
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		Airworthiness review procedures and records for aircraft covered by Part-ML ELA1 aircraft not involved in commercial operations
2.30		Development and approval processing for maintenance programmes for ELA2 aircraft not involved in commercial operations
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 loaned parts
L2.6		Line procedure for return of defective parts removed from aircraft
L2.7		Line procedure for critical maintenance tasks and error-capturing methods
PART 3 Quality Management System Procedures		
3.1		Hazard identification and safety risk management schemes
3.2		Internal safety reporting and investigations
3.3		Safety action planning
3.4		Safety performance monitoring
3.5		Management of change (including organisational changes with regard to safety responsibilities)
3.6		Safety training and promotion
3.7		Immediate safety action and coordination with the operator's ERP
3.8		Compliance monitoring



3.8.1		Quality a Audit plan and audit of organisation procedures
3.8.2		Quality Product audit of aircraft and inspections
3.8.3		Audit findings — corrective Quality audit remedial action procedure
3.94		Certifying staff and support staff qualifications and training procedures



Part-145 APPROVAL RECOMMENDATION REPORT		EASA FORM 6
Part 3: Compliance with 145.A.70 Maintenance organisation exposition		
3.105		Certifying staff records
3.116		Quality audit Compliance monitoring and safety management personnel
3.127		Qualifying inspectors
3.138		Qualifying mechanics
3.149		Aircraft/aircraft component maintenance tasks exemption process control Control of the process for exemption from aircraft/aircraft component maintenance tasks
3.1510		Concession control for deviation from organisation's procedures
3.1611		Qualification procedure for specialised activities such as NDT, welding, etc.
3.1712		Management of Control of manufacturers' and other external maintenance working teams
3.13		Human Factors training procedure
3.1814		Competence Competency assessment of personnel
3.1915		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).
3.2016		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 Operators		
4.1		Contracting operators
4.2		Operator procedures/paperwork
4.3		Operator record completion
PART 5 Appendices Supporting documents		
5.1		Sample Documents
5.2		List of subcontractors
5.3		List of Line maintenance locations
5.4		List of contracted Part-145 organisations
MOE Reference: _____ MOE Amendment: _____ Competent authority audit staff: _____ Signature(s): _____ Competent authority office: _____ Date of EASA Form 6 Part 3 completion: _____		



Part-145 APPROVAL RECOMMENDATION REPORT		EASA FORM 6			
Part 4: Findings — Part-145 Compliance status					
Each level 1 and 2 finding should be recorded, whether it has been rectified or not, and should be identified by a simple cross-reference to the Part 2 requirement. All non-rectified findings should be copied in writing to the organisation for them to take the necessary corrective action.					
Part 2 or 3 reference	Audit reference(s): Findings	LEVEL	Corrective action		
			Date Due	Date Closed	Reference



Appendix III to AMC1 145.A.15 EASA Form 2

The provisions of Appendix IX to AMC M.A.602 and ~~AMC M.A.702~~ EASA Form 2 apply.

[Back to implementing rule:

- [145.A.15 Application for an organisation certificate](#)]



Appendix IV to AMC3 145.A.30(e) and AMC2 145.B.200(a)(3) 145.B.10(3) Fuel Tank Safety Training

This appendix includes general instructions for providing training on fuel tank safety issues.

A. Effectivity:

- Large aeroplanes as defined in Decision 2003/11/RM of the Executive Director of the Agency (CS-25) and certified after 1 January 1958 with a maximum type certified passenger capacity of 30 or more or a maximum certified payload capacity of 7 500 lbs (3 402 kg) cargo or more, and
- Large aeroplanes as defined in Decision 2003/11/RM of the Executive Director of the Agency (CS-25), which contains have CS-25 Amendment 1 or later in their certification basis.

B. Affected organisations:

- Part-145 approved maintenance organisations that are involved in the maintenance of the aeroplanes specified in paragraph A), and fuel system components installed on such aeroplanes when the maintenance data is affected by CDCCL.
- Competent authorities that are responsible as per 145.B.30 for the oversight of the Part-145 approved organisations specified in this paragraph B).

C. Persons from affected organisations who should receive training:

Phase 1 only:

- The group of persons who representing the maintenance management structure of the organisation, the quality compliance monitoring manager, the safety manager and the staff who are directly involved in required to quality monitoring the compliance of the organisation.
- The personnel of the competent authorities who are responsible as per 145.B.30 for the oversight of the Part-145 approved maintenance organisations specified in paragraph B).

Phase 1 + Phase 2 + Continuation recurrent training:

- The personnel of the Part-145 approved maintenance organisation who are required to plan, perform, supervise, inspect and certify the maintenance of the aircraft and fuel system components specified in paragraph A).

D. General requirements of the training courses

Phase 1 – Awareness:

The training should be carried out before the person starts to work without supervision, but not later than 6 months after joining the organisation. The persons who have already attended the Level 1 Familiarisation course in compliance with ED Decision 2007/002/R Appendix IV is already in compliance with Phase 1.



Type: It should provide an awareness of course with the principal elements of the subject. It may take the form of a training bulletin, or any other self-study or informative session. The signature of the reader/trainer is required to ensure that the person has passed the training.

Level: It should be a course at the level of familiarisation with the principal elements of the subject.

Objectives: The trainee should, after the completion of the training:

1. Be familiar with the basic elements of the fuel tank safety issues;
2. Be able to give a simple description of the historical background and the elements requiring a safety consideration, using common words and showing examples of non-conformities;
3. Be able to use typical terms.

Content: The course should include:

- a short background showing examples of FTS accidents or incidents;
- the description of the concept of fuel tank safety and CDCCL;
- some examples of manufacturers documents showing CDCCL items;
- typical examples of FTS defects;
- some examples of TC holders repair data;
- some examples of maintenance instructions for inspection.

Phase 2 — Detailed training

A flexible period may be allowed by the competent authorities to allow organisations to set up the necessary courses and impart provide the training to the personnel, taking into account the organisation's training schemes/means/practices. This flexible period should not extend beyond 31 December 2010.

The persons who have already attended the Level 2 Detailed training course in compliance with ED Decision 2007/002/R Appendix IV either from a Part-145 maintenance organisation or from a Part-147 training organisation are already in compliance with Phase 2 with the exception of recurrent continuation training.

Staff should have received Phase 2 training by 31 December 2010 or within 12 months of joining the organisation, whichever comes later.

Type: It should be a more in-depth internal or external course. It should not take the form of a training bulletin, or any other form of self-study. At the end of the course, the trainees should be required to take an examination should be required at the end, which should be in the form of a multi choice questions, and the pass mark of the examination should be 75 %.

[...]

[Back to implementing rule:



- [145.A.30 Personnel requirements](#)
- [145.B.200 Management system\]](#)

