



EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT

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SMS for Part-M and Part-145

NPA 2012-25

New 'Organisation Requirements' in Part-M
and Part-145

Rulemaking Directorate
Product Safety Department – Continuing Airworthiness

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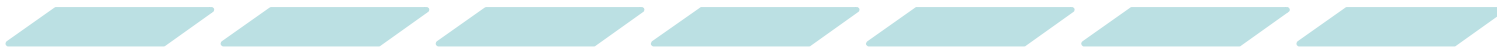


Outline

Changes in Part-M Section A



Changes in Part-145 Section A





Ref. Part-ORX	Title	Part-M rule		Part-145
ORX.GEN.105	Competent authority	M.1		145.B.10
ORX.GEN.115	Application for an organisation certificate	M.A.602	M.A.702	145.A.15
ORX.GEN.120	Means of compliance	M.A.620	M.A.720	145.A.82
ORX.GEN.125	Terms of approval and privileges of an organisation	M.A.603	M.A.703	145.A.20
ORX.GEN.130	Changes to organisations	M.A.617	M.A.713	145.A.85
ORX.GEN.135	Continued validity	M.A.618	M.A.715	145.A.90
ORX.GEN.140	Access	M.A.618	M.A.715	145.A.92
ORX.GEN.150	Findings	M.A.619	M.A.716	145.A.95
ORX.GEN.155	Immediate reaction to a safety problem	M.A.622	M.A.722	145.A.97
ORX.GEN.160	Occurrence reporting	M.A.202		145.A.60
ORX.GEN.200	Management system	M.A.616	M.A.712	145.A.65
ORX.GEN.210	Personnel requirements	M.A.606	M.A.706	145.A.30
ORX.GEN.215	Facility requirements	M.A.605	M.A.705	145.A.25
ORX.GEN.220	Record keeping	M.A.621	M.A.717	145.A.68



Outline

Changes in Part-M Section A



Changes in Part-145 Section A



*** indicates the item is aligned with the corresponding Part-145 item**



New rule & AMC on 'internal safety reporting'

M.A.721 Internal safety reporting scheme*

Collection and evaluation of :

- occurrences to be reported under M.A.202 (external)
- errors, near-misses, hazards that do not fall under M.A.202

Identify adverse trends, ensure information is circulated

AMC1 M.A.721 Internal safety reporting scheme*

- confidentiality should be ensured - need to establish 'just culture' as part of the organisation's safety policy
 - feedback should be provided to reporters
 - follow-up of actions taken to address safety issues and hazards
- etc.....*



Amendment to 'occurrence reporting'

M.A.202 External occurrence reporting*

- *to differentiate from new 'internal safety reporting' provisions*
- *text aligned with ORX.GEN.160 : new provisions for a follow-up report to be provided where relevant, to specify details of actions the organisation intends to take to prevent recurrence.*



New: AMC1 M.A.202 External occurrence reporting*

- *details of what the report should contain*
- *fully aligned with AMC to ORX.GEN.160*





New rules for alternative means of compliance

ORX.GEN.120

M.A.203 Means of compliance

Procedure for requesting approval by the Competent Authority applicable to aircraft owners (persons responsible i.a.w. M.A201(a)) or independent Certifying Staff



M.A.620 Means of compliance*

Procedure applicable to Subpart F organisations



M.A.720 Means of compliance*

Procedure applicable to Subpart G organisations



AMCs to M.A.203/M.A.620*/M.A.720* (same text):

*Demonstration of compliance by means of a **risk assessment**.*





'Application' aligned with ORX.GEN.115

M.A.602 Application for an organisation certificate*

*new element: organisations shall provide a procedure describing **how changes not requiring prior approval will be managed and notified** (linked to the new provisions on 'Changes').*



M.A.702 Application for an organisation certificate*

as above





New rules for approval of changes ORX.GEN.130

M.A.617 Changes to the organisation*

M.A.713 Changes to the organisation*

Now distinguishes between:

- *Changes requiring prior approval*
- *Changes not requiring prior approval*
- **No more reference to 'indirect approval' !**

GM1 to M.A.617/M.A.713 Changes to the organisation

- *List of changes that may affect the certificate and require prior approval*
- *For all other changes, the provisions of the procedure approved upon initial certification will set the specific scope and define how these will be managed and notified to the authority.*
- **Any changes to this procedure require prior approval.**



New rules for approval of changes: 'consequential' amendments



M.A.604 Maintenance organisation manual



M.A.704 Continuing airworthiness management exposition



- *Minor amendments may not require prior approval*
- **No more reference to 'indirect approval' !**





'Findings' aligned with ORX.GEN.150

M.A.619/M.A.716 Findings*

*Definition of **level 1** and **level 2** findings is moved to Section B: it is the competent authority who makes the assessment.*

- The text now defines what is expected from the organisation when the competent authority raises a finding:

1. identify root-cause

2. define corrective action

3. demonstrate implementation within period agreed with the authority

New AMCs and GM to M.A.719/M.A.719*

Corrective action plan needs to address the effects and the root-cause(s) of the non-compliance

Definitions (ISO 9000:2005) added for:

- Preventive action - Corrective action - Correction

- New guidance added on root-cause analysis





New GM on root cause analysis

The focus on establishing the cause should change from **who or what caused the non-compliance** to **why** it was caused. This requires a more holistic approach considering all events and circumstances that lead to the problem.



identify all systemic and contributing factors (regulatory, human factors, organisational, managerial, cultural, technical, etc.) in addition to the direct factors



A narrow focus on single events or failures may not properly reflect the complexity of the issue - important factors required to be addressed in order to prevent reoccurrence will be ignored.



New GM on root cause analysis

M.A.619/M.A.716 Findings

*Definition of **level 1** and **level 2** findings is moved to Section B (it is for the competent authority to make the assessment)*

- The text now defines what is expected from the organisation when the competent authority raises a finding

- Identify root-cause – define corrective action – demonstrate implementation within period agreed with the authority

COMMENTS WELCOME

Corrective action plan needs to address the effects and the non-compliance

Definitions (ISO 9000:2005) added for:

- Preventive action - Corrective action - Correction

- GM2 M.A.619/716 on root-cause analysis





'Management system' aligned with ORX.GEN.200

Subpart G

M.A.712 Quality system

- (a) To ensure that the approved continuing airworthiness management organisation continues to meet the requirements of this Subpart, it shall establish a quality system and designate a quality manager to monitor compliance with, a.....
- (b) The quality system shall monitor M.A. Subpart G activities. It shall at least include the following functions:
 - 1.

M.A.716 Management system

- (a) The organisation shall establish, implement, and maintain a management system that includes:
 - (1)
 -
 - (6) a function to monitor compliance
- (e) Notwithstanding point (a)(6), a small organisation not managing the continuing airworthiness of aircraft used in commercial air transport, and not issuing airworthiness review certificates for a/c > 2 730 kg MTOM other than balloons, **may replace the compliance monitoring function by regular organisational reviews subject to the approval of the competent authority.** In the case where there is no CM function, the organisation shall not contract continuing airworthiness management tasks to other parties.



'Management system' aligned with ORX.GEN.200

M.A.712 Management system*

Point (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 associated risks inherent in these activities.



'Management system' aligned with ORX.GEN.200

M.A.712 Management system

Point (c)

- *Where the organisation holds one or more additional organisation certificates within the scope of Regulation (EC) 216/2008, **the management system may be combined or integrated with that required under the additional certificate (s) held.***



New AMCs and GM related to M.A.712

AMC1 M.A.712 (a)(1);(2);(3);(5) Management system *NON-COMPLEX ORGANISATIONS – GENERAL*

- *Safety risk management may be performed using hazard checklists or similar simple tools.*
- *Identification of a person who will fulfil the role of safety manager.*
- *Identification of responsibilities as related to hazard identification, risk assessment and mitigation.*
- *Need to develop, coordinate and maintain an emergency response plan.*



New AMCs and GM related to M.A.712

AMC1 M.A.712 (a)(1) Management system* *COMPLEX ORGANISATIONS – ORGANISATION & ACCOUNTABILITIES*

- *Organisation should have a Safety Manager and a Safety Review Board (functions are defined in this AMC)*
- *The Safety Review Board should ensure that appropriate resources are allocated to achieve the established safety performance, eventually by recommending the establishment of one or more safety action groups.*



New AMCs and GM related to M.A.712

GM1 and GM2 to M.A.712 (a)(1) Management system*

SAFETY MANAGER

SAEFTY ACTION GROUP (OPTIONAL)

- *Safety manager remains the unique focal point for the development, administration, and maintenance of the organisation's management system as related to safety.*
- *SAG should report to, and take strategic direction from the SRB, and should be comprised of managers, supervisors, and maintenance personnel*
- *The SAG may be tasked with:*
 - *monitoring safety performance*
 - *resolving identified risks*
 - *assessing the impact on safety of organisational changes;*
 - *ensuring that safety actions are implemented within agreed timescales.*



New AMCs and GM related to M.A.712

AMC1 M.A.712 (a)(2) Management system* **GM1 M.A.712 (a)(2) Management system*** *SAFETY POLICY*

- *Provide details on what the policy should contain*
- *'Just culture': The safety policy should include a commitment to ensure that personnel are not inappropriately punished for reporting or cooperating with occurrence investigations*
- *Management should:*
 - *continually promote the safety policy to all personnel, and demonstrate their commitment to it;*
 - *provide necessary human and financial resources for its implementation; and*
 - *establish safety objectives and performance standards.*



New AMCs and GM related to M.A.712

'Management should continually promote the safety policy to all personnel, and demonstrate their commitment to it.'

- *No matter how interested individual employees might be, or how insistent an authority might be - none of these factors will have a significant effect on safety without support from top management.*
- *See SM-ICG Guide on the role of senior management:*
<http://www.skybrary.aero/bookshelf/books/1781.pdf>



New AMCs and GM related to M.A.712

AMC1 M.A.712 (a)(3) Management system*

SAFETY MANAGEMENT KEY PROCESSES

Hazard identification

Risk management

Internal occurrence investigation

Safety performance monitoring and measurement

The management of change

Continual improvement

Emergency response planning



New AMCs and GM related to M.A.712

AMC2 M.A.712 (a)(3) Management system *SAFETY RISK MANAGEMENT*

- Safety risk management processes should specifically address the planned implementation of, or participation in any complex multi-tier contracting/subcontracting arrangements between an operator, one or more continuing airworthiness management organisations and different maintenance organisations.



New GM on complex multi-tier contracting/subcontracting arrangements

Hazard identification to consider in particular:

- coordination and interfaces between the different parties; everyone is clear about the applicable procedures;
- communication between all parties involved, including reporting and feedback channels;
- task allocation and responsibilities are clearly defined; and
- qualifications and competency of key personnel have been checked.

Risk assessment to consider in particular:

- clear assignment of accountability and allocation of responsibilities;
- only one party is responsible for a specific aspect of the arrangement – no overlapping or conflicting responsibilities, in order to eliminate coordination errors;
- existence of clear and un-bureaucratic reporting lines, both for occurrence/safety reporting and progress reporting;
- possibility for 'front-line' staff in any of the parties to directly notify the operator of any safety significant issue.



New GM on complex multi-tier contracting/subcontracting arrangements

Hazard identification to consider in particular:

- coordination and interfaces between the different parties procedures;
- communication between parties including re feedback channels;
- task allocation and responsibilities; and
- qualifications and competency of key personnel.

COMMENTS WELCOME



risk assessment to consider in particular:

- clear assignment of accountability and allocation of responsibilities;
- only one party is responsible for a specific aspect of the arrangement – no overlapping or conflicting responsibilities, in order to eliminate coordination errors;
- existence of clear and un-bureaucratic reporting lines, both for occurrence/safety reporting and progress reporting;
- possibility for front-line staff in any of the parties to directly notify the operator of any safety significant issue.



Other GM on Safety Risk Management (SRM)

GM1 M.A.712 (a)(3) Management system

- SRM can be applied at many levels in an organisation (strategic/operational)
- Identify potential for human error, its influences and sources
- GM provides a link to more detailed guidance on the SRM process which can be found in Part-145 (**GM3 145.A.65(a)(3)**)



Other GM on Safety Risk Management

GM2 M.A.712 (a)(3) Management system*

- The internal safety reporting scheme (M.A.721) may provide both for **reactive** and **proactive** hazard identification.
- Other elements of proactive hazard identification:
 - regular assessment of the management system and processes
 - assessment of any changes, before these become effective (Management of change).



Other GM on Safety Risk Management

GM3 M.A.712 (a)(3) Management system*

- Management of change

GM4 M.A.712 (a)(3) Management system*

- Emergency Response Plan



Emergency Response Planning in a CAMO

EXAMPLES: *breakdown of a computer system that is used to monitor engine reliability or loss of important records on aircraft modifications incorporated or the organisation finds out an ARC was issued after an incomplete review and it may need to 'recall' the aircraft.*
The purpose is mainly to :

identify and manage risks that can be generated when an emergency situation arises (people will get stressed, distracted and may make errors in tasks that are not directly related to the emergency)

raise awareness within the organisation on their exposure to risks (combat complacency).



New AMCs and GM related to M.A.712

AMC1 M.A.712 (a)(4) Management system*

GM1 M.A.712 (a)(4) Management system*

TRAINING AND COMMUNICATION ON SAFETY

- All personnel should receive safety training as appropriate for their safety responsibilities.
- The safety training programme may consist of self-instruction via a media (newsletters, flight safety magazines), classroom training, e-learning, or similar training provided by training service providers.
- The organisation should establish communication about safety matters, convey safety critical information, especially relating to assessed risks and analysed hazards, explains why particular actions are taken, and explain why safety procedures are introduced or changed.



AMCs and GM related to M.A.712

AMC1 M.A.712 (a)(5) Management system

New GM1 M.A.712 (a)(5) Management system

PROCEDURES – MANAGEMENT SYSTEM DOCUMENTATION

- Existing AMC aligned with changes made in M.A.712.
- The organisation may document all management system key processes in a separate Safety Management Manual (SMM) or in its CAME.
- Organisations approved in accordance with other Parts may prefer a separate SMM in order to avoid duplication.
- The Safety Management Manual (SMM) or CAME, depending on the case, should be the key instrument for communicating the approach to safety management.



Changes in the CAME

AMC1 M.A.704 CAME (see also App. V to the AMC)

PART 0

- 0.7 Alternative means of compliance procedure

PART 2 – now 'MANAGEMENT SYSTEM PROCEDURES'

- 2.7 Hazard identification and safety risk management schemes
- 2.8 Safety action planning
- 2.9 Safety performance monitoring
- 2.10 Incident investigation and safety reporting
- 2.11 Emergency response planning
- 2.12 Management of change
- 2.13 Safety promotion
- 2.14 Management system record keeping

PART 5 – now 'SUPPORTING DOCUMENTS'



AMCs and GM related to M.A.712

AMC1 M.A.712 (a)(6) Management system **GM1 M.A.712 (a)(6) Management system** *COMPLIANCE MONITORING*

- Existing AMC has been aligned with changes made in M.A.712, without changing the substance:
 - 'quality manager' changed to 'compliance monitoring manager'
 - 'annual period' changed to '12-month audit planning cycle'
 - Additional locations: possibility to use a 'risk-based' programme to determine the frequency of audits.
 - New GM provides definitions for 'audit' and 'inspection' (based on ISO 9000:2005 definitions).



Quality system ./ Compliance monitoring function

**Safety Management & SMS
should never be thought of
as a substitute for
regulatory compliance and
having the necessary
infrastructure, facilities,
working procedures and
competent personnel.**





AMCs and GM related to M.A.712

AMC1 M.A.712 (b) Management system

SIZE, NATURE AND COMPLEXITY OF THE ACTIVITY

- An organisation should be considered as non-complex when it has no more than **10 full-time equivalents (FTEs) actively engaged in continuing airworthiness management** and it is not involved in the management of continuing airworthiness of CMPA, or aircraft used in CAT.
- Where the organisation holds approvals pursuant to any other Part, this should be taken into consideration to determine whether it is complex or non-complex (e.g. Part-ORO).
- Organisations only involved in the management of continuing airworthiness of balloons or sailplanes are considered 'non-complex' by default.



COMMENTS WELCOME



AMC1 M.A.712 (b) Management system
SIZE, NATURE AND COMPLEXITY OF THE ACTIVITY



Complex / non-complex

Organisation		Reference	Management system	Compliance monitoring
Subpart F organisations with more than 10 maintenance staff (FTEs)		M.A.616 AMCs to M.A.616	Non-complex	CM function (aligned with Part-145)
Subpart F organisations with up to 10 maintenance staff (FTEs)		M.A.616 AMCs to M.A.616 AMC M.A.616(a)(6) point 5	Non-complex	Organisational review
Subpart G organisations approved as part of an AOC – CAT* operator qualifying as 'complex' operator in accordance with AMC1 ORO.GEN.200(b)		M.A.712(d) AMC1 M.A.712(b) point b AMC1 ORO.GEN.200(b)	Complex	CM function
Subpart G organisations approved as part of an AOC – CAT* operator qualifying as 'non-complex' operator in accordance with AMC1 ORO.GEN.200(b)		M.A.712(d) AMC1 M.A.712(b) point b AMC1 ORO.GEN.200(b)	Non complex	CM function
Independent Subpart G organisation involved in continuing airworthiness management (CAM) of CMPA		AMC1 M.A.712(b)	Complex	CM function
Subpart G organisation involved in CAM of aircraft <u>not</u> used in CAT* other than CMPA, except balloons and sailplanes	- issuing ARC for a/c > 2730kg MTOM - more than 10 CAM staff (FTEs)	M.A.712(e) AMC1 M.A.712(b) point a	Complex	CM function
	- issuing ARC for aircraft > 2730kg MTOM - up to 10 CAM staff (FTEs)	M.A.712(e) AMC1 M.A.712(b) point a	Non complex	CM function
	- <u>not</u> issuing ARC for aircraft > 2730kg MTOM - more than 10 CAM staff (FTEs)	M.A.712(e) AMC1 M.A.712(b) point a	Complex	CM function



Complex / non-complex

Organisation		Reference	Management system	Compliance monitoring
Subpart F organisations with more than 10 maintenance staff (FTEs)		M.A.616 AMCs to M.A.616	Non-complex	CM function (aligned with Part-145)
Subpart F organisations with up to 10 maintenance staff (FTEs)		M.A.616 AMCs to M.A.616	Non-complex	Organisational review
Subpart G CAT* operations in accordance with Part-145				
Subpart G CAT* operations in accordance with Part-145				
Independent continuing airworthiness				
Subpart G organisation involved in CAM of aircraft <u>not</u> used in CAT* other than CMPA, except balloons and sailplanes	- issuing ARC for a/c > 2730kg MTOM	M.A.712(e)	Complex	CM function
	- more than 10 CAM staff (FTEs)	AMC1 M.A.712(b) point a		
	- issuing ARC for aircraft > 2730kg MTOM	M.A.712(e)	Non complex	CM function
	- up to 10 CAM staff (FTEs)	AMC1 M.A.712(b) point a		
	- <u>not</u> issuing ARC for aircraft > 2730kg MTOM	M.A.712(e)	Complex	CM function
	- more than 10 CAM staff (FTEs)	AMC1 M.A.712(b) point a		

NPA B will provide a detailed overview of the different criteria proposed for organisational complexity and for the type of compliance monitoring arrangement (full CM function or organisational review).

For the final Decision, we could include this material as a dedicated GM.



Other changes: Personnel requirements

M.A.706 Personnel requirements

- *M.A.706(k) amended to include additional items related to the understanding and application of human factors. AMCs have been reviewed accordingly. New GM on HF trainer profile and terminology.*
- *New GM with clarification: 'Person or group of persons' referred to in M.A.706(c): This includes the **compliance monitoring manager**, as the compliance monitoring function itself is one of the elements to 'ensure' compliance with the applicable requirements.*
- **This means:**
 - an EASA Form 4 should be provided for this person,
 - the compliance monitoring function itself should be subject to monitoring of compliance in accordance with M.A.712(a)(6).



Other changes: Record keeping aligned with ORX.GEN.220

M.A.714: Now 'Continuing airworthiness management record keeping'

- Only the title is changed to differentiate from new M.A.717.

New: M.A.717 Management system record keeping

- The organisation shall establish a system of record keeping that allows **adequate storage and reliable traceability of all management system processes as defined in M.A.712.**
- AMC states: Unless otherwise specified all records should be kept for a **minimum period of 5 years** (same as for ORX.GEN.220).



Other changes: Industry standards

Appendix IX to AMC M.A.708(c) Continuing Airworthiness management

CONTRACTED MAINTENANCE

- For Part-145 approved organisations certified in accordance with industry management system standards, such as ISO 9001 or EN 9110, **the terms of contract should specify if and how the organisation intends to consider this certification for its own surveillance of the contracted organisation.**



Outline

Subpart F Management System



Changes in Part-145 Section A





'Management system' aligned with ORX.GEN.200

Subpart F

M.A.616 Organisational review

To ensure that the approved maintenance organisation continues to meet the requirements of this Subpart, it shall organise, on a regular basis, organisational reviews.

M.A.616 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,
 -
 - (6) a function to monitor compliance of the organisation with the relevant requirements.
 -
- (d) **Notwithstanding point (a)(6), organisations with no more than 10 maintenance staff (FTEs) may replace the compliance monitoring function by regular organisational reviews subject to the approval of the competent authority.**



New AMCs and GM related to M.A.616

New: AMC M.A.616 Management system *SAFETY MANAGEMENT – 'SIMPLIFIED' MEANS OF COMPLIANCE*

- *Safety risk management may be performed using hazard checklists or similar simple tools.*
- *Identification of a person who will fulfil the role of safety manager (instead of having a dedicated function).*
- *Identification of responsibilities as related to hazard identification, risk assessment and mitigation.*



AMCs and GM related to M.A.616

New: AMC1 M.A.616 (a)(3) Management system

- *Internal safety reporting scheme (**same as M.A.721 but as AMC**)*

New: AMC1 M.A.616(a)(4) Management system

TRAINING AND COMMUNICATION ON SAFETY

- *training programme may consist of self-instruction via a media (newsletters, flight safety magazines), classroom training, e-learning, or similar training provided by training service providers.*

New: GM1 M.A.616(a)(5) Management system

MANAGEMENT SYSTEM DOCUMENTATION

- *New safety management processes may be included in a separate manual or be part of the MOM.*



AMCs and GM related to M.A.616

New: AMC1 M.A.616 (a)(6) Management system *COMPLIANCE MONITORING FUNCTION*

- *Compliance monitoring through independent audits.*
- *CM function to correspond to the size, nature and complexity of the organisation.*
- *Audit planning cycle not exceeding 12 months.*
- *Competent authority may agree to extend it by 100%.*
- *Those responsible for the CM function should receive training on this task.*
- ***Organisations with no more than 10 maintenance staff (FTEs) may replace the CM function by organisational reviews.***



Amendments to the AMCs to M.A.616

Reviewed: AMC1 M.A.616 (d) Management system & Appendix VIII to AMC1 M.A.616 *ORGANISATIONAL REVIEW*

- *Editorial changes for consistency with changes in M.A.616 have been made.*
- *A new item has been added to include in the scope of the review the new safety management processes.*



Amendments to the AMCs to M.A.616

New: AMC2 M.A.616 (d) Management system *INDUSTRY STANDARDS*

- *A management system certified in accordance with ISO 9001 or EN 9110 is deemed to meet the intent of organisational review, provided that the organisational review programme under ISO 9001 or EN 9110 does not exceed 12 months.*



Part-M & General Aviation 'Disclaimer'



- All changes proposed to Part-M not related to CAT / CMPA should be considered 'provisional' :
 - *The EASA Management Board General Aviation Strategy Group will recommend further actions to the Agency on how to consider existing rules affecting general aviation.*
 - *Following publication of a first NPA (NPA 2012-17) the Part-M General Aviation Task Force will make further recommendations.*

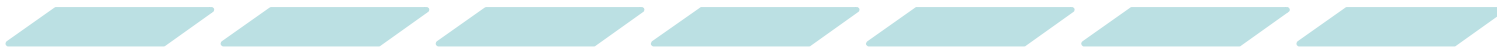


Outline

Changes in Part-M Section A



Changes in Part-145 Section A





Personnel requirements

EASA Part-FCL and ORO.TC

145.A.30 point (e)

*Competence must include an understanding of the application of **safety management principles** (in addition to the HF elements)*

145.A.30 point (j)

*New category of staff that may benefit from a limited certifying staff authorisation : **technical crew members** in Helicopter Emergency Medical Services (**HEMS**) and Helicopter Hoist Operations (**HHO**) as defined in Part-ORO Subpart TC 'Technical Crew'.*

*Reference to '**Flight Engineer**' deleted (Part-FCL no longer defines this qualification). Existing authorisations will remain valid until they expire or they are revoked (see proposed 'grandfathering provision' in the Cover Regulation).*

Related AMCs to 145.A.30(j) have been amended accordingly.



Personnel requirements aligned with ORX.GEN.200 (compliance monitoring manager/safety manager)

AMC1 145.A.30 (c) Personnel requirements

Additional text to clarify the role of the compliance monitoring manager and safety manager respectively.

In the case the same person acts as compliance monitoring manager and as safety manager, the accountable manager, with regard to his/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



Compliance monitoring ./ safety management

Compliance monitoring shall also look into the requirements on identification of aviation safety hazards and management of associated risks.

- **Are policies and procedures in place and adhered to?**
- **Are hazard identified and risks assessed ?**

The verification of the effectiveness of the hazard identification process and mitigation actions is within the remit of the safety management function (safety manager – SRB – SAG)

- **How effectively have risks been mitigated ?**
- **Has overall safety performance increased ?**

If the same person acts as SM and CM, someone else needs to audit the SM processes



Personnel requirements aligned with ORX.GEN.200 training - compliance monitoring/safety

AMC5 145.A.30 (e) Personnel requirements*

Those responsible for managing the compliance monitoring function should receive training on this task.

The allocation of time and resources should be governed by the volume and complexity of the activities concerned.

AMC6 145.A.30(e) Personnel requirements*

All personnel should receive safety training as appropriate for their safety management related responsibilities.

Safety training should be delivered by the safety manager or a competent trainer and may be conducted by the maintenance organisation itself, or independent trainers, or any training organisations acceptable to the competent authority.

Same as in Part-M



Personnel requirements aligned with ORX.GEN.200 (compliance monitoring)

New GM1 145.A.30(c) Personnel requirements*

clarification:

'Person or group of persons' referred to in 145.A.30(c): This also includes the compliance monitoring manager, as the compliance monitoring function itself is one of the elements to 'ensure' compliance with the applicable requirements.

This means:

- an EASA Form 4 should be provided for this person; and*
- the compliance monitoring function itself should be subject to monitoring of compliance in accordance with 145.A.65(a)(6).*

Same as in Part-M



Personnel requirements - additional HF elements

Existing GM reviewed and new GM added



TRAINING SYLLABUS updated
HUMAN FACTORS TRAINER COMPETENCE defined
DEFINITIONS added

Further information will be provided in the next presentation.





145.A.47 Production planning

New AMC1 and AMC2 to 145.A.47(b) Personnel requirements

FATIGUE RISK MANAGEMENT – DUTY TIME SCHEDULE

*As part of its safety policy **the organisation should develop and maintain a policy for the management of fatigue related risk and define the related procedures.***

The organisation should define and use a work schedule scheme with maximum work and minimum rest hours not exceeding the limitations laid down in the Directive 2003/88/EC 'EUROPEAN WORKING TIME DIRECTIVE'.

When the organisation does not apply the maximum work and minimum rest hours laid down in the Directive 2003/88/EC, it should establish as part of its management system a Fatigue Risk Management Scheme (FRMS). AMC2 to 145.A.65(a)(3) defines the elements of such FRMS.

Further information will be provided in the next presentation



145.A.47 Production planning

New GM1 to 145.A.47(b) Personnel requirements FATIGUE RISK MANAGEMENT



*Provides guidance on key terms used in Directive 2003/88/EC
'EUROPEAN WORKING TIME DIRECTIVE' and quotes relevant definitions.*



Further information will be provided in the next presentation



New rule & AMC on 'internal safety reporting'

145.A.62 Internal safety reporting scheme*

Collection and evaluation of occurrences to be reported under M.A.202

Collection and evaluation of :

- occurrences to be reported under 145.A.60
- errors, near-misses, hazards that do not fall under 145.A.60
- identify adverse trends, ensure information is circulated

AMC1 145.A.62 Internal safety reporting scheme*

See also GM1 and GM2 to 145.A.62 (overall purpose and definitions)

- confidentiality should be ensured
 - need to establish 'just culture' as part of the organisation's safety policy
 - feedback should be provided to reporters
 - follow-up of actions taken should be ensured
- etc.....





Internal safety reporting related definitions

Hazard: A condition that could cause or contribute to an aircraft incident or accident.

Error: Non-intentional action or inaction by a person that may lead to deviations from accepted procedures or regulations.

Near-miss: An occurrence which under slightly different circumstances could have led to an aircraft incident or accident.



Amendment to 'occurrence reporting'

145.A.60 External occurrence reporting*

- *to differentiate from new 'internal safety reporting' provisions*
- *text aligned with ORX.GEN.160 : new provisions for a follow-up report to be provided where relevant.*
- *Point (b) of the existing 145.A.60 is now extracted as a 'stand 'alone rule: 'Internal safety reporting'*



New: AMC1 145.A.60 External occurrence reporting*

- *details of what the report should contain*
- *fully aligned with AMC to ORX.GEN.160*



Same as in Part-M



'Management system' aligned with ORX.GEN.200

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 145.A.70.
- (b) The organisation shall establish procedures agreed by the competent authority taking into account human factors and human performance to ensure good maintenance practices

.....

145.A.65 Management system*

- (a) The organisation shall establish, implement, and maintain a management system that includes:
 - (1) Clearly defined lines
 -
 - (6) a function to monitor compliance
- (b) The management system shall correspond to the size of the organisation and the nature and complexity of its activities,

145.A.71 Maintenance procedures

- (a) The organisation shall establish procedures taking into account human factors and human performance to ensure good maintenance practices
- (b) The maintenance procedures established, or to be established by the organisation under (a) shall cover all aspects of carrying out the maintenance activity,



New 145.A.65 'Management system'

145.A.65 Management system*

Point (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 associated risks inherent in these activities.



New 145.A.65 'Management system'

145.A.65 Management system*

Point (c)

- *Where the organisation holds one or more additional organisation certificates within the scope of Regulation (EC) 216/2008, the management system may be combined or integrated with that required under the additional certificate (s) held.*



AMCs and GM related to 145A.65

AMC1 145.A.65 (b) Management system

SIZE, NATURE AND COMPLEXITY OF THE ACTIVITY

- An organisation should be considered as complex **when it has more than 20 maintenance staff.**
- Organisations with up to 20 FTE maintenance staff may also be considered complex based on :
 - the extent and scope of subcontracted activities;
 - the number and variety of aircraft (A), engine (B), component (C) type ratings, and specialised services (D) ratings.
- The following organisations should always be considered as non-complex:
 - organisations only holding a D rating; and
 - organisations only holding three or less of the following C ratings: C2, C3, C4, C5, C6, C9, C12, C13, C14, C15, C17, C18, C19, C20.



COMMENTS WELCOME



AMC1 145.A.65 (b) Management system
SIZE, NATURE AND COMPLEXITY OF THE ACTIVITY



New AMCs and GM related to 145.A.65

AMC1 145.A.65 (a)(1) Management system* **ORGANISATION & ACCOUNTABILITIES: GENERAL**

- *Organisation needs to have a Safety Manager and a Safety Review Board (functions are defined in this AMC)*
- *The safety review board should ensure that appropriate resources are allocated to achieve the established safety performance, eventually by recommending the establishment of one or more safety action groups.*

Same as in Part-M



New AMCs and GM related to 145.A.65

AMC1 145.A.65 (a)(1) Management system

ORGANISATION & ACCOUNTABILITIES: *NON-COMPLEX ORGANISATIONS*

- The AM, the CMM, or one of the persons nominated in accordance with 145.A.30(b) may fulfil the role of Safety Manager.
- The AM should establish safety management responsibilities as related to hazard identification, risk assessment and mitigation.
- The AM 'assumes' the role of the Safety Review Board: ensure that safety performance is reviewed against the safety policy and objectives; ensure that any safety action is taken in a timely manner; ensure the effectiveness of the organisation's safety management processes; and ensure a unique focal point exists for the organisation's management system as related to safety.

**Same as in Part-M
Subpart F**



New AMCs and GM related to new 145.A.65

GM1 and GM2 to 145.A.65 (a)(1) Management system*

SAFETY MANAGER

SAEFTY ACTION GROUP

- *Safety Manager remains the unique focal point for the development, administration, and maintenance of the organisation's management system as related to safety.*
- *SAG should report to, and take strategic direction from the SRB, and should be comprised of managers, supervisors, and maintenance personnel*
- *The SAG may be tasked with:*
 - *monitoring safety performance*
 - *resolving identified risks*
 - *assessing the impact on safety of organisational changes;*
 - *ensuring that safety actions are implemented within agreed timescales.*

Same as in Part-M



AMCs reviewed to align with new 145.A.65

Amended: AMC1 145.A.65(a)(2) Management system
New GM1 145.A.65(a)(2) Management system
SAFETY POLICY

Same as in Part-M

- *'Safety and quality policy' now 'Safety policy'.*
- *Provide details on what the policy should contain.*
- *'Just culture': The safety policy should include a commitment to ensure that personnel are not inappropriately punished for reporting or cooperating with occurrence investigations*
- *Management should:*
 - *continually promote the safety policy to all personnel, and demonstrate their commitment to it;*
 - *provide necessary human and financial resources for its implementation; and*
 - *establish safety objectives and performance standards.*



New AMCs and GM related to 145.A.65

AMC1 145.A.65(a)(3) Management system*

SAFETY MANAGEMENT KEY PROCESSES

Same as in Part-M

Hazard identification

Risk management

Internal occurrence investigation

Safety performance monitoring and measurement

The management of change

Continual improvement

Emergency response planning



New AMCs and GM related to 145.A.65

AMC2 145.A.65 (a)(3) Management system *FATIGUE RISK MANAGEMENT SCHEME*

- *The FRMS should make use of the organisation's general management system processes in terms of hazard identification and safety risk management. It should reflect the size, nature, and complexity of the organisation and its operational working hours.*
- *All personnel involved in maintenance activities under a FRMS should receive FRM training to ensure competence commensurate with the roles and responsibilities of management, certifying engineers, and support staff.*

Further information will be provided in the next presentation



New AMCs and GM related to 145.A.65

GM7 145.A.65(a)(3) Management system *FATIGUE RISK MANAGEMENT SCHEME*

- FRM Policy
- *All personnel involved in maintenance activities under a FRMS should receive FRM training to ensure competence commensurate with the roles and responsibilities of management, certifying engineers, and support staff.*
- Identify potential for human error, its influences and sources.
- GM3 provides detailed guidance on the SRM process.

Further information will be provided in the next presentation



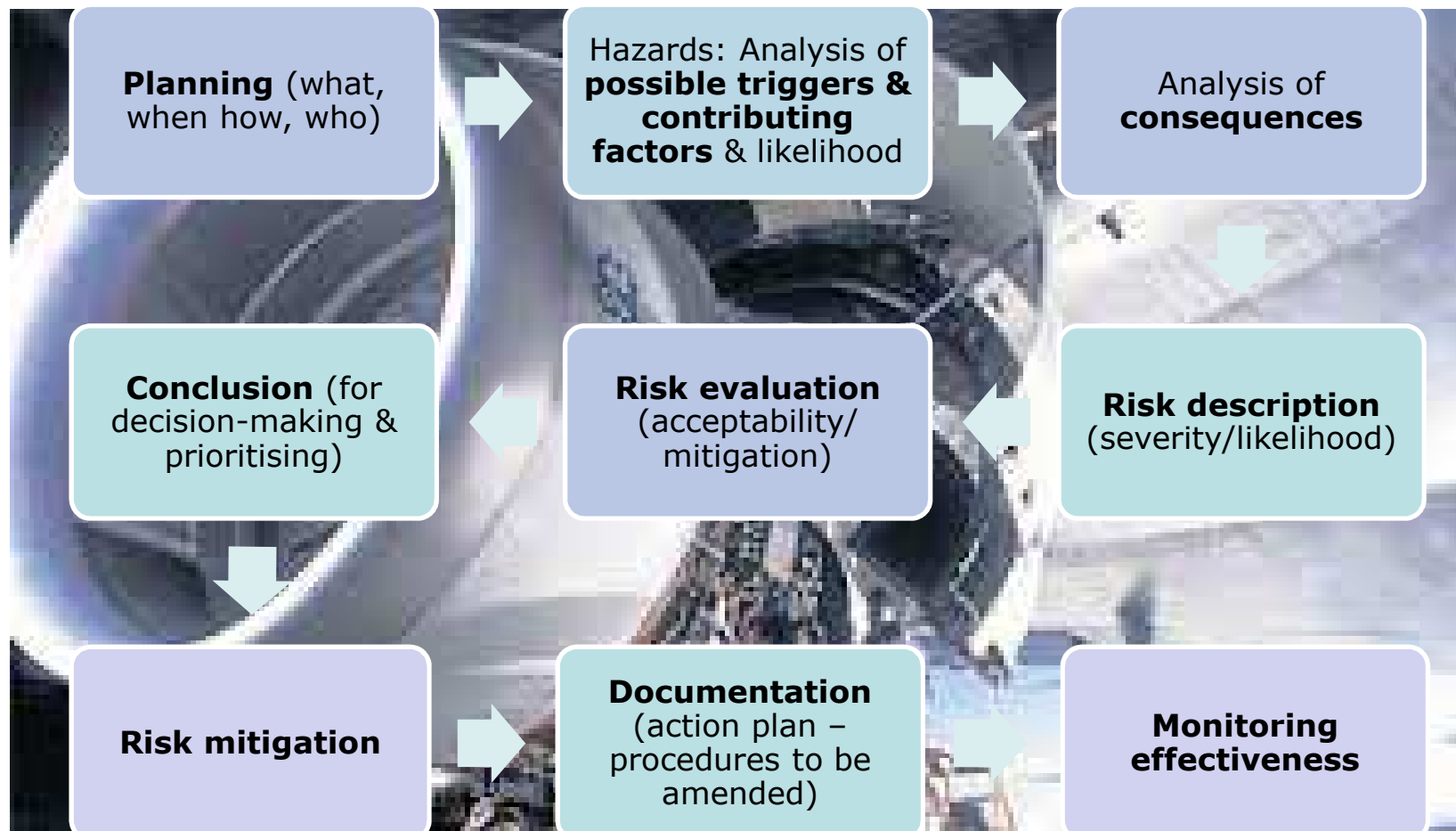
Other GM on Safety Risk Management

GM1, GM2, GM3 145.A.65(a)(3) Management system *SAFETY RISK MANAGEMENT*

- SRM can be applied at many levels in an organisation.
- Identify potential for human error, its influences and sources.
- GM3 provides detailed guidance on the SRM process.



SAFETY RISK MANAGEMENT GUIDANCE





Other GM on Safety Risk Management

GM4 145.A.65 (a)(3) Management system*

MANAGEMENT OF CHANGE

- Change is the catalyst for the organisation to performing the hazard identification and risk management process.
- Some examples of change include, but are not limited to:
 - organisational restructuring
 - acquisition of equipment
 - new software to manage the stores
 - new aircraft type included in the approval
 - significant changes in personnel (affecting key personnel and/or large numbers of personnel, high turnover)
 - new or amended regulations
 - change in customer base
 - change of a safety significant subcontractor
 - Etc.....



Other GM on Safety Risk Management

GM5 & GM6 145.A.65 (a)(3) Management system *EMERGENCY RESPONSE PLAN & PLANNING*

- The ERP typically defines the procedures, roles, responsibilities, and actions of key personnel and third parties that may be affected by an emergency, considering all activities and all locations.
- The ERP needs to be focussed on events which may affect safety of flight.
- The ERP could be documented in a separate manual, or incorporated into the organisation's MOE, or a combination of these.



ERP: examples of 'emergencies'



aircraft maintenance:

- **oxygen fire, or engine major failure during a ground run**

Component maintenance:

- measurement tool(s) found to be out of calibration limits
- need for a documented and formally agreed process to urgently inform owners/operators at risk

requests for **emergency aircraft recovery assistance** from aircraft and/or aerodrome operators in the case of occurrence on or around the airfield where the maintenance services are provided.



New AMCs and GM related to 145.A.65

AMC1 145.A.65 (a)(4) Management system* *COMMUNICATION ON SAFETY*

- The organisation should establish communication about safety matters, convey safety critical information, especially relating to assessed risks and analysed hazards, explains why particular actions are taken, explain why safety procedures are introduced or changed
- Regular meetings with personnel where information, actions and procedures are discussed may be used to communicate safety matters.

Same as in Part-M



AMCs and GM related to 145.A.65

New GM1 145.A.65 (a)(5) Management system*

MANAGEMENT SYSTEM DOCUMENTATION

Same as in Part-M

- The organisation may document all management system key processes in a separate Safety Management Manual (SMM) or in its MOE.
- Organisations approved in accordance with other Parts may prefer a separate SMM in order to avoid duplication.
- The safety management manual (SMM) or MOE, depending on the case, should be the key instrument for communicating the approach to safety management.



AMCs and GM related to 145.A.65

New: AMC1 145.A.65 (a)(6) Management system *COMPLIANCE MONITORING*

- Compliance monitoring through independent audits is an essential element of the management system.
- Independence of the audit:
 - audits and inspections are carried out by personnel not responsible for the function, procedure or products being audited
- Scope of the audit:
 - privileges of the organisation
 - maintenance procedures
 - training standards
 - management system procedures and manuals



AMCs and GM related to 145.A.65

Amended: AMC2 145.A.65 (a)(6) Management system *COMPLIANCE MONITORING*

- Editorial changes for consistency with changes made in 145.A.65
- *Specific elements extracted and included as*
 - **AMC3** focussing on **AUDIT PLANNING CYCLE**
 - **AMC4** focussing on **INDEPENDENCE OF THE AUDIT**
- 12-month audit planning cycle maintained
 - Sample check at least one product on each product line within the audit planning cycle.
 - Organisation should consider the results of its safety risk assessment and past compliance monitoring to adapt audit plan.
 - The provision on increase of the audit planning cycle by 100% as agreed by the competent authority is maintained.
 - The provision for the audit being carried out twice within every 12-month period when the independent audit element is contracted has been removed, as it suggests only one audit per 12 months should be the 'rule'.



AMCs and GM related to 145.A.65

Amended: AMC5 145.A.65 (a)(6) Management system *FEEDBACK SYSTEM OF FINDINGS*

- Former AMC 145.A.65(c)(2) reviewed for consistency.
- Large organisation redefined: 200 maintenance staff (instead of 500): for the meetings with the AM to check progress on corrective actions can be delegated to the CMM.
- Records pertaining to the independent audit and the feedback system of findings should be retained for at least 2 years after the date of closure of the finding (NO CHANGE).



AMCs and GM related to 145.A.65

.AMC2, AMC3, AMC4 & AMC5 to 145.A.65 (a)(6) **.COMPLIANCE MONITORING**

- Editorial changes for consistency with changes made in 145.A.65
- **COMMENTS WELCOMED**
Specific elements extracted and included
 - *AMC2 focussing on AUDIT PLANNING CYCLE*
 - *AMC3 focussing on INDEPENDENCE OF THE AUDIT*

- 12-month audit planning cycle maintained
- Sample check at least one product on each product line within the audit planning cycle.
- Organisation should consider the results of its safety risk assessment and past compliance monitoring to adapt audit plan.
- The provision on increase of the audit planning cycle by 100% as agreed by the competent authority is maintained.
- The provision for the audit being carried out twice within every 12-month period when the independent audit element is contracted has been removed, as it suggests only one audit per 12 months should be the rule.





AMCs and GM related to 145.A.65

New: AMC6 145.A.65 (a)(6) Management system *CONCESSION CONTROL FOR DEVIATIONS FROM ORGANISATION'S PROCEDURES*

- Linked to MOE chapter 3.10 (which has no 'implementing provisions').
- In exceptional situations, it may temporarily be impossible for the organisation to comply with specific conditions stipulated in its procedures. For any deviation from those conditions a concession request should be submitted.
- The Compliance Monitoring Manager, in consultation with the Safety Manager or person having designated safety management responsibilities, should assess the deviation envisaged and compensatory measures proposed to ensure they do not affect compliance with the applicable Part-145 requirements.
- The deviation and compensatory measures should only be implemented upon formal acceptance by the CMM.



AMCs and GM related to 145.A.65

GM 145.A.10 now included as GM1 145.A65(b) *'SMALLEST' ORGANISATION*

- Existing GM reviewed for consistency.
- Definition of 'Full Time Equivalent' extracted as a stand-alone GM:
 - *'Full time' for the purpose of Part-145 means not less than 35 hours per week except during vacation periods.*



Other changes: Record keeping aligned with ORX.GEN.155

New: 145.A.68 Management system record keeping*

New: AMC1 145.A.68 and new GM1 145.A.68

- The organisation shall establish a system of record keeping that allows adequate storage and reliable traceability of all management system processes as defined in 145.A.65.
- AMC states: Unless otherwise specified all records should be kept for a **minimum period of 5 years** (same as for ORX.GEN.220).
- GM addresses microfilm and optical storage.

Same as in Part-M



Other changes: Documentation

145.A.70 Maintenance Organisation Exposition

- Reviewed for consistency with changes made in 145.A.65 and 145.A.85 'Changes to the organisation'.



Changes in the MOE

AMC1 145.A.70(a) Maintenance Organisation Exposition

PART 1

- 1.12 Alternative means of compliance procedure

PART 3 – now 'MANAGEMENT SYSTEM PROCEDURES'

- 3.17 Hazard identification and safety risk management schemes
- 3.18 Safety action planning
- 3.19 Safety performance monitoring
- 3.20 Incident investigation and safety reporting
- 3.21 Emergency response planning
- 3.22 Management of change
- 3.23 Safety promotion
- 3.24 Management system record keeping

Same as in Part-M

PART 4 - now 'EXTERNAL PARTIES'

PART 5 – now 'SUPPORTING DOCUMENTS'



Documentation – Maintenance procedures

New: 145.A.71 Maintenance procedures

- Extracted from existing 145.A.65(b)

AMCs and GM to 145.A.65(b) now included as
AMCs and GM to 145.A.71

NO CHANGES IN SUBSTANCE!



New rules for alternative means of compliance

New: 145.A.82 Means of compliance*

Procedure for requesting approval by the Competent Authority



AMC1 145.A.82 Means of compliance *

Demonstration of compliance through risk assessment



Same as in Part-M



New rules for approval of changes

Amended: 145.A.85 Changes to the organisation*

Now distinguishes between:

- *Changes requiring prior approval*
- *Changes not requiring prior approval*

*- **No more reference to 'indirect approval' !***

Same as in Part-M


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

- *List of changes that always require prior approval*
- *For the other changes, the provisions of the procedure approved upon initial certification will define the specific scope of changes not requiring prior approval.*
- *Any changes to this procedure require prior approval.*




New rule to align with ORX.GEN.140

New: 145.A.92 Access



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 subcontracted or not, to any person authorised by one of the following authorities:

- (a) the competent authority responsible for the certificate; and/or
 - (b) the authority acting under the provisions of 145.B.30(d) (competent authority of the Member State where the facility is located, if agreed with the competent authority responsible for the certificate).
- 



'Findings' aligned with ORX.GEN.150

145.A.95 Findings*

*Definition of **level 1** and **level 2** findings is moved to Section B (it is for the competent authority to make the assessment)*

- The text now defines what is expected from the organisation when the competent authority raises a finding*
- Identify root-cause – define corrective action – demonstrate implementation within period agreed with the authority*

New AMCs and GM to 145.A.95*

Corrective action plan needs to address the effects and the root-cause(s) of the non-compliance

Definitions (ISO 9000:2005) added for:

- Preventive action - Corrective action - Correction*
- **New guidance added on root-cause analysis***

Same as in Part-M



Other changes made: Industry standards

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

PROCEDURES FOR THE CONTROL OF SUBCONTRACTORS NOT APPROVED UNDER PART-145

- In order to determine the pre-audit plan, the organisation **may consider any certificates held by the subcontractor attesting compliance with industry standards directly relevant to the services to be provided, such as ISO 9001 or EN 9110.**
- A risk assessment should be conducted considering the type and complexity of tasks that the organisation intends to subcontract, as well as possible certification in accordance with industry standards.



Other changes made

Part-M requirements applicable under Part-145



Relevant Part-M requirements related to '**Control of unserviceable components**' and '**Performance of Maintenance**' are now duplicated in Part-145, to improve legal certainty: it will ensure Part-145 exhaustively covers all 'technical requirements' for maintenance.

This leads to creating two new rule §§:

145.A.43 'Control of unserviceable components'
145.A.48 'Performance of maintenance'





NPA C will provide detailed information

M.A.402 (a) & M.A.402 (f)	New 145.A.48 'Performance of maintenance' (cf. subparagraphs (a) and (d))
AMC M.A.402(a)	New AMC 145.A.48(b) 'Performance of maintenance'
M.A.403 (b)	New 145.A.48 'Performance of maintenance' (cf. subparagraph (c))
M.A.501 (a)	Incorporated into 145.A.42 'Acceptance of components' as new subparagraph (a)
M.A.501 (c)	Incorporated into 145.A.42 'Acceptance of components' as new subparagraph (g)
M.A.501 (d)	Incorporated into 145.A.42 'Acceptance of components' as new subparagraph (h)
AMC M.A.501(a)	points 1 to 3: New AMC 145.A.42(a) 'Acceptance of components' point 4: New GM 145.A.42(a) 'Acceptance of components' point 6: added to existing AMC 145.A.42(a) (now AMC 145.A.42 (b))
AMC M.A.501(c)	New AMC 145.A.42(g) Acceptance of components
AMC M.A.501(d)	New AMC 145.A.42(h) Acceptance of components
M.A.504 (a),(b),(d), and(e)	New 145.A.43 Control of unserviceable components
AMC M.A.504 (a)	Not required in Part-145.
AMC M.A.504 (b)	New AMC 145.A.43(b) Control of unserviceable components
AMC M.A.504 (d)(2)	New AMC 145.A.43 (c)(2) Control of unserviceable components
AMC M.A.504 (e)	New AMC 145.A.43(d) Control of unserviceable components
Consequential amendments	AMC to 145.A.42 now included as AMC 145.A.43(c)



Key points

Changes are proposed without changing the rule structure (duplication)

The new elements proposed mainly relate to:

- Management system
- Management system key processes
 - Safety risk management
 - Compliance monitoring
- Human Factors
- Fatigue Risk Management
- Internal safety reporting systems



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Thank you for your attention!

Questions?



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