

EUROPEAN MILITARY AIRWORTHINESS REQUIREMENT EMAR 145 Section B AMC

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DOCUMENT CONTROL

DOCUMENT APPROVAL

The following table identifies the persons who have approved this document

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1.1	Prepared by	Task Force 3	Col R Hebmann TF3 Chairman	6 Sep 2012
1.1	Approved by	MAWA Forum 16	Mr Jan Plevka MAWA Forum Chairman	25 Sep 2012

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DOCUMENT CHANGE RECORD

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1.1	25 Sep 2012	Approved	Initial Issue	All

STATUS

The Status of the document can take 3 values:

Working Draft: First version provided during the elaboration of the document by Task Force.

Draft: Draft version when issued by Task Force and proposed to MAWA Forum.

Approved: The document is approved by the participating Member States at the MAWA Forum for release.

EDITION

Edition will have the following template: Edition X.Y

The value of **X** will change after a **major** modification of the document

The value of **Y** will change after a **minor** modification of the document

NOTE:

EMAR 145 Section A & B Edition 1.0 was approved by the MAWA Forum on 19 Jan 2011. At the 12th MAWA Forum (21/22 September 2011), Task Force 3 were directed to develop the associated AMC & GM.

On 17 Apr 2012, the MAWA Forum approved 'EMAR 145 Section B AMC' to proceed to Step 3 of the MAWA Rulemaking process for pMS consultation. The consultation finished 18 Jun 2012, and MAWA Forum 16 approved the amended document on 25 September 2012.

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ACCEPTABLE MEANS OF COMPLIANCE SECTION B

PROCEDURES FOR NATIONAL MILITARY AIRWORTHINESS AUTHORITIES

AMC 145.B.10 (a) NMAA – General

- 1. In deciding upon the required organisational structure, the NMAA should review the number of certificates to be issued, the number and size of potential EMAR 145 AMOs within that pMS, as well as the level of military aviation activity, number and complexity of aircraft and the size of the pMS's aviation industry.
- 2. The NMAA should retain effective control of important surveillance functions and not delegate them in such a way that EMAR 145 organisations, in effect, regulate themselves in airworthiness matters.
- 3. The set-up of the organisational structure should ensure that the various tasks and obligations of the NMAA are not relying on individuals. That means that a continuing and undisturbed fulfilment of these tasks and obligations of the NMAA should also be guaranteed in case of illness, accident or leave of individuals.

AMC 145.B.10 (c) NMAA - Qualification and training

- 1. NMAA surveyors should have:
 - 1.1 practical experience and expertise in the application of aviation safety standards and safe operating practices;
 - 1.2 comprehensive knowledge of:
 - a. relevant parts of national implementing rules/regulations, certification specifications, airworthiness codes and guidance material;
 - b. the NMAA's procedures;
 - c. the rights and obligations of a surveyor;
 - d. quality systems;
 - e. continuing airworthiness management;
 - f. operational procedures when affecting the continuing airworthiness management of the aircraft or the maintenance.
 - 1.3 training on auditing techniques.

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- 1.4 five years relevant work experience to be allowed to work as a surveyor independently. This may include, but should not be limited to, experience gained during training to obtain the sub-paragraph 1.5 (below) qualification.
- 1.5 a relevant engineering degree or an aircraft maintenance technician qualification with appropriate additional education. 'relevant engineering degree' means an engineering degree from aeronautical, mechanical, electrical, electronic, avionic or other studies relevant to the maintenance and continuing airworthiness of aircraft/aircraft components.
- 1.6 knowledge of maintenance standards, including Fuel Tank Safety (FTS) training as described in "Appendix IV to EMAR AMC 145.A.30(e) and EMAR AMC 145.B.10(c)".
- 1.7 knowledge and understanding of Human Factors, as described in EMAR 145.
- 2. In addition to technical competency, surveyors should have a high degree of integrity, be impartial in carrying out their tasks, be tactful, and have a good understanding of human nature.
- 3. A programme for continuation training should be developed ensuring that the surveyors remain competent to perform their allocated tasks.

AMC 145.B.10 (d) NMAA - Procedures

The documented procedures should contain the following information:

- (a) The pMS' designation of the NMAA.
- (b) The title(s) and name(s) of the manager(s) of the NMAA and their duties and responsibilities.
- (c) Organisation chart(s) showing associated chains of responsibility of the senior persons.
- (d) A procedure defining the qualifications for staff together with a list of staff authorised to sign certificates.
- (e) A general description of the facilities.
- (f) Procedures specifying how the NMAA ensures compliance with EMAR 145.

AMC 145.B.20 (a) Initial approval (*)

1. Formally indicated by the NMAA in writing means that the EMAR Form 4 should be used for this activity. With the exception of the Accountable Manager, an EMAR Form 4 should be completed for each person nominated to hold a position as required by EMAR 145.A.30 (b).

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- 2. Formal indication of acceptance should be by use of the EMAR Form 4 or in the case of the Accountable Manager via approval of the Maintenance Organisation Exposition containing the Accountable Manager's commitment statement.
- 3. The NMAA may reject an Accountable Manager where there is clear evidence that they previously held a senior position in any other approved Organisation and abused that position by not complying with the particular requirements in force.
- * See Appendix I to EMAR AMC 145.B.20(a): EMAR Form 4

AMC 145.B.20 (b) Initial approval

Verification that the organisation complies with the exposition procedures should be established by the NMAA approving the MOE.

AMC 145.B.20 (c) Initial approval

- 1. The NMAA should determine by whom, and how the audit should be conducted. For example, for a large organisation, it will be necessary to determine whether one large team audit or a short series of small team audits or a long series of single man audits are most appropriate for the particular situation.
- 2. It is recommended that the audit is carried out on a product line type basis in that, for example, in the case of an organisation with A400M and C-130 ratings, the audit be concentrated on one type only for a full compliance check and dependent upon the result, the second type may only require a sample check against those activities seen to be weak on compliance for the first type.
- 3. The NMAA auditing surveyor should always ensure that he/she is accompanied throughout the audit by a senior technical member of the organisation. Normally this is the quality manager. The reason for being accompanied is to ensure the organisation is fully aware of any findings during the audit.
- 4. The auditing surveyor should inform the senior technical member of the organisation at the end of the audit visit on all findings made during the audit.

AMC 145.B.20 (e) Initial approval (*)

- 1. The audit report form should be the EMAR Form 6.
- 2. A quality review of the EMAR Form 6 audit report form should be carried out by a competent independent person nominated by the NMAA. The review should take into account the relevant paragraphs of EMAR 145, the categorisation of finding levels and the closure action taken. Satisfactory review of the audit form should be indicated by a signature on the audit form.
- * See Appendix II to EMAR AMC 145.B.20 (e): EMAR Form 6

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AMC 145.B.20 (f) Initial approval

- 1. The reports should include the date each finding was cleared together with reference to the NMAA report or letter that confirmed the clearance.
- 2. There may be occasions when the NMAA surveyor may find situations in the applicant's organisation on which he/she is unsure about compliance. In this case, the organisation should be informed about possible non-compliance at the time and the fact that the situation will be reviewed within the NMAA before a decision is made. If the decision is a finding of being in compliance then a verbal confirmation to the organisation will suffice.
- 3. Findings should be recorded on the audit report form with a provisional categorisation as a level 1 or 2. Subsequent to the audit visit that identified the particular findings, the NMAA should review the provisional finding levels, adjusting them if necessary and change the categorisation from "provisional" to "confirmed".
- 4. All findings should be confirmed in writing to the applicant organisation within 2 weeks of the audit visit.

AMC 145.B.25 (a) Issue of approval

- 1. NOT APPLICABLE
- 2. NOT APPLICABLE
- 3. The NMAA should indicate approval of the exposition in writing.

AMC 145.B.25 (b) Issue of approval

The validity of the EMAR 145 approval should be of unlimited duration.

AMC 145.B.25 (c) Issue of approval

The numeric sequence should be unique to the particular Approved Maintenance Organisation.

AMC 145.B.30 (a) Continuation of an approval

Credit may be claimed by the NMAA surveyor(s) for specific item audits completed during the preceding 23 month period subject to four conditions:

- the specific item audit should be the same as that required by EMAR 145 latest amendment, and
- there should be satisfactory evidence on record that such specific item audits were carried out and that all corrective actions have been taken, and
- the NMAA surveyor(s) should be satisfied that there is no reason to believe standards have deteriorated in respect of those specific item audits being granted a back credit, and

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- the specific item audit being granted a back credit should be audited not later than 24 months after the last audit of the item.

AMC 145.B.30 (b) Continuation of an approval

- 1. Where the NMAA has decided that a series of audit visits are necessary to arrive at a complete audit of an organisation, the program should indicate which aspects of the approval will be covered on each visit.
- 2. It is recommended that part of an audit concentrates on two on-going aspects of the EMAR 145 approval, namely the organisation's internal self-monitoring quality reports produced by the quality monitoring personnel to determine if the organisation is identifying and correcting its problems and secondly the number of concessions granted by the quality manager.
- 3. At the successful conclusion of the audit including approval of the exposition, an audit report form should be completed by the auditing surveyor including all recorded findings, closure actions and recommendation. An EMAR Form 6 should be used for this activity.
- 4. The Accountable Manager should be seen at least once every 24 months to ensure he/she fully understands the significance of the approval.
- 5. In the case of line stations the NMAA can adopt a sampling program based upon the number of line stations and their complexity.

AMC 145.B.35 Changes

The NMAA should have adequate control over any changes to the management personnel specified in EMAR 145.A.30 (a) and (b) and such changes in personnel will require an amendment to the MOE.

AMC 145.B.35 (a) Changes

The applicable part(s) of the EMAR Form 6 should be used for the changes to the EMAR 145 approval.

AMC 145.B.35 (b) Changes

The primary purpose of this paragraph is to enable the organisation to remain approved if agreed by the NMAA during negotiations about any of the specified changes. Without this paragraph the approval would automatically be suspended in all cases.

AMC 145.B.40 MOE amendments

1. It is recommended that a simple exposition status sheet is maintained which contains information on when an amendment was received by the NMAA and when it was approved.

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- 2. The NMAA may define some class of amendments to the MOE which may be incorporated without prior authority approval. In this case a procedure should be stated in the amendment section of the MOE. The MOE chapter dealing with scope of work/approval should not be subject to this procedure.
- 3. The organisation should submit each MOE amendment to the NMAA whether it is an amendment for approval or a delegated approval amendment. Where the amendment requires approval by the NMAA, the NMAA should indicate its approval in writing when satisfied. Where the amendment has been submitted under the delegated approval procedure the NMAA should acknowledge receipt in writing.

AMC 145.B.50 (a) Findings

In practical terms a level 1 finding is where a NMAA finds a significant non-compliance with EMAR 145. The following are examples of level 1 findings:

- Failure to gain access to the organisation during normal operating hours of the organisation in accordance with EMAR 145.A.90(2) after two written requests.
- If the calibration control of equipment as specified in EMAR 145.A.40 (b) had previously broken down on a particular type product line such that most "calibrated" equipment was suspect from that time then that would be a level 1 finding.

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

For a level 1 finding it may be necessary for the NMAA to ensure that further maintenance and re-certification of all affected products is accomplished, dependent upon the nature of the finding.

In practical terms where a NMAA surveyor finds a non-compliance with EMAR 145 against one product, it is deemed to be a level 2 finding. The following are examples of level 2 findings:

- One time use of a component without any serviceable tag.
- The training documents of the certifying staff are not completed.

AMC 145.B.50 (b) Findings

Where the organisation has not implemented the necessary corrective action within that period it may be appropriate to grant a further period of up to three months, subject to the NMAA notifying the Accountable Manager. In exceptional circumstances and subject to a realistic action plan being in place, the NMAA may specifically vary the maximum 6 month corrective action period. However, in granting such a change the past performance of the organisation should be considered.

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AMC 145.B.55 Record-keeping

- 1. The record-keeping system should ensure that all records are accessible whenever needed within a reasonable time. These records should be organised in a consistent way throughout the NMAA (chronological, alphabetical order, etc.).
- 2. All records containing sensitive data regarding applicants or organisations should be stored in a secure manner with controlled access to ensure confidentiality of this kind of data.
- 3. All computer hardware used to ensure data backup should be stored in a different location from that containing the working data in an environment that ensures they remain in good condition. When hardware or software changes take place special care should be taken to ensure that all necessary data continues to be accessible at least through the full period specified in EMAR 145.B.55.

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APPENDICES TO AMCs

Appendix I to AMC 145.B.20 (a): EMAR Form 4

NATIONAL MILITARY AIRWORTHINESS AUTHORITY
Details of Management Personnel required to be accepted as specified in EMAR
1. Name:
2. Position:
3. Qualifications relevant to the item (2) position:
4. Work experience relevant to the item (2) position:
Signature: Date:
On completion, please send this form under confidential cover to the NMAA
NIMAA uga anku
NMAA use only
Name and signature of authorised NMAA staff member accepting this person:
Signature: Date:
Name: Office:

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Appendix II to AMC 145.B.20 (e): EMAR Form 6

EMAR 145 APPROVAL REC	OMMENDATION REPORT	EMAR FORM 6
Part 1: General		
Name of organisation:		
Approval reference:		
Requested approval rating/		
EMAR Form 3 dated*:		
EASA Part-145 Cert No (if application)	able):	
Address of Facility Audited:		
Audit period: From	to	
Date(s) of Audit:		
Audit reference(s):		
Persons interviewed:		
NMAA surveyor:	Signature(s):	
NMAA office:		
Date of Form 6 part 1 completion	:	
		*delete where applicable

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EMAR 145 APPROVAL RECOMMENDATION REPORT

EMAR FORM 6

Part 2: EMAR 145 Compliance Audit Review

The five columns may be labelled and used as necessary to record the approval class and/or product line reviewed. Against each column used of the following EMAR 145 sub-paragraphs please either tick ($\sqrt{}$) the box if satisfied with compliance or cross (X) the box if not satisfied with compliance and specify the reference of the Part 4 finding next to the box, or enter N/A where an item is not applicable, or N/R when applicable but not reviewed.

Para	Subject				
145.A.25	Facility requirements				
145.A.30	Personnel requirements				
145.A.35	Certifying Staff and Category B1, B2 and B mil support staff				
145.A.40	Equipment, Tools and material				
145.A.42	Acceptance of Components				
145.A.45	Maintenance Data				
145.A.47	Production Planning				
145.A.50	Certification of Maintenance				
145.A.55	Maintenance Records				
145.A.60	Occurrence Reporting				
145.A.65	Safety and Quality Policy, maintenance procedures and Quality System				
145.A.70	Maintenance Organisation Exposition (See Part 3)				
145.A.75	Privileges of the organisation				
145.A.80	Limitations on the organisation				
145.A.85	Changes to the organisation				
145.A.95	Findings				
Competent s	urveyor(s):	;	Signature(s):	

Competent surveyor(s).	Signature(s).
NMAA office:	Date of Form 6 part 2 completion:

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EMAR 145 APPROVAL RECOMMENDATION REPORT

EMAR FORM 6

PART 3: Compliance with EMAR 145.A.70 Maintenance Organisation Exposition

Please either tick ($\sqrt{}$) the box if satisfied with compliance; or cross (X) if not satisfied with compliance and specify the reference of the Part 4 finding; or enter N/A where an item is not applicable; or N/R when applicable but not reviewed.

Part 1	Management
1.1	Corporate commitment by the Accountable Manager
1.2	Safety and Quality Policy
1.3	Management personnel
1.4	Duties and responsibilities of the management personnel
1.5	Management Organisation Chart
1.6	List of Certifying staff and B1, B2 and B mil support staff (Note: a separate document may be referenced)
1.7	Manpower resources
1.8	General description of the facilities at each address intended to be approved
1.9	Organisation's intended scope of work
1.10	Notification procedure to the NMAA regarding changes to the organisation's activities/approval/location/personnel
1.11	Exposition amendment procedures including, if applicable, delegated procedures.
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 alternative 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 procedures
2.10	Aircraft maintenance programme compliance
2.11	Airworthiness Directives procedure
2.12	Optional modification procedure
2.13	Maintenance documentation in use and completion of same

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EMAR 14	5 APPROVAL	RECOMMENDATION REPORT EMAR FORM 6
Part 3: Co	mpliance with I	EMAR 145.A.70 Maintenance Organisation Exposition
2.14		Technical record control
2.15		Rectification of defects arising during base maintenance
2.16		Release to service procedure
2.17		Maintenance records for the CAMO
2.18		Reporting of defects to the NMAA/CAMO/(military) TC/STC holder
2.19		Return of defective aircraft components to store
2.20		Management of defective components with outside contractors/organisations
2.21		Control of computer maintenance record systems
2.22		Control of man-hour planning versus scheduled maintenance work
2.23		Control of critical tasks
2.24		Reference to specific maintenance procedures
2.25		Procedures to detect and rectify maintenance errors
2.26		Shift/task handover procedures
2.27		Procedures for notification of maintenance data inaccuracies and ambiguities to the NMAA/ (military) TC/STC holder
2.28		Production planning procedures
Part L2	Additional L	Line Maintenance Procedures
L2.1		Line maintenance control of aircraft components, tools, equipment, etc.
L2.2		Line maintenance procedures related to servicing/fuelling/de-icing, etc.
L2.3		Line maintenance control of defects and repetitive defects
L2.4		Line procedure for completion of technical log
L2.5		Line procedure for pooled parts and loan parts
L2.6		Line procedure for return of defective parts removed from aircraft
L2.7		Line procedure for control of critical tasks
Part 3	Quality Syst	em Procedures
3.1		Quality audit of organisation procedures
3.2		Quality audit of aircraft and components
3.3		Quality audit remedial action procedure
3.4		Certifying staff and category B1, B2 and B mil support staff qualification and training procedures
3.5		Certifying staff records
3.6		Procedure(s) for qualifying of quality audit personnel

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EMAR 145 A	PPROVAL RECOMMENDATION REPORT EMAR FORM 6				
Part 3: Compliance with EMAR 145.A.70 Maintenance Organisation Exposition					
3.7	Procedure(s) for qualifying of inspectors				
3.8	Procedure(s) for qualifying of maintenance personnel				
3.9	Aircraft/aircraft component maintenance tasks exemption process control				
3.10	Concession control for deviation from organisation's procedures				
3.11	Qualification procedure for specialised activities such as NDT, welding etc.				
3.12	Control of manufacturers' and other maintenance working teams				
3.13	Human Factors training procedure				
3.14	Competence assessment of personnel				
Part 4					
4.1	Contracting/tasking CAMO				
4.2	CAMO procedures/paperwork				
4.3	CAMO record completion				
Part 5 Ap	pendices				
5.1	Sample Documents				
5.2	List of subcontractors				
5.3	List of Line maintenance locations				
5.4	List of EMAR 145 organisations				
MOE Referenc	e: MOE Amendment:				
NMAA audit sta	aff: Signature(s):				
NMAA office:	Date of Form 6 part 3 completion:				

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EMAR 145 APPROVAL RECOMMENDATION REPORT

EMAR FORM 6

Part 4: Findings EMAR 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 the necessary corrective action.

Part 2 or 3	Audit reference(s): Findings	L e v	Corrective action		
ref.		e I	Date Due	Date Closed	Reference
FMAR Form 6 (issue FMAR 145 S					

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EMAR 145 APPROVAL RECOMMENDATION REPORT	EMAR FORM 6	
Part 5: EMAR 145 Approval or continued approval or change recommen	dation*	
Name of organisation:		
Approval reference:		
Audit reference(s):		
The following EMAR 145 scope of approval is recommended for this organisa	ntion:	
Or, it is recommended that the EMAR 145 scope of approval specified in EMA referenced be continued.	AR Form 3	
Name of recommending NMAA surveyor:		
Signature of recommending NMAA surveyor:		
NMAA office:		
Date of recommendation:		
EMAR Form 6 review (quality check):	Date:	
	* d	lelete where applicable