



MINISTERO DELLA DIFESA

**Segretariato Generale della Difesa e Direzione Nazionale degli Armamenti
Direzione degli Armamenti Aeronautici e per l'Aeronavigabilità**

AIRCRAFT MAINTENANCE TRAINING ORGANISATIONS

Edition 9 April 2018

LIST OF EFFECTIVE PAGES

NOTE: This regulation is valid if it is made of the pages listed below, duly updated.

Copy of this regulation may be found at the address:

http://www.difesa.it/SGD-DNA/Staff/DT/ARMAEREO/Biblioteca/Pagine/default_.aspx

The issue dates of the original and amended pages are:

Original..... 0..... 9 April 2018

This regulation consists of a total of N° 68 pages as specified below:

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1. INTRODUCTION

Italian Presidential Decree no. 90 of 15 March 2010, Article 119, establishes that the Directorate of Aeronautical Armaments and Airworthiness (DAAA), in accordance with Article 745 of the Italian Navigation Code, shall be responsible for certifying, registering and authorizing Military Aircraft for air navigation.

The DAAA, as National Military Airworthiness Authority (NMAA), takes part in the Military Airworthiness Authority Forum (MAWA Forum) of the European Defence Agency (EDA). The aim of the Forum is to establish a common regulatory framework among the European Military Airworthiness Authorities in order to harmonize military airworthiness requirements, processes and procedures across Europe. The MAWA developed a set of European Military Airworthiness Requirements (EMARs), published by the EDA, to be implemented by each participant Member State (pMS) in its own domestic regulation framework, for the purposes of managing the initial, continued and continuing airworthiness.

1.1 PURPOSE

The purpose of this Technical Publication (TP) is to transpose the requirements prescribed by EMAR 147 “AIRCRAFT MAINTENANCE TRAINING ORGANISATIONS” and to define administrative procedures and technical requirements to be met by an Organisation seeking approval as a Maintenance Training Organisation (MTO) to conduct training and examination as specified in AER(EP).P-66.

This publication includes 2 Annexes:

- Annex 1: EMAR 147 Section A “Technical Requirements”;
- Annex 2: EMAR 147 “Acceptable Means of Compliance (AMC) and Guidance Material (GM)”, for all requirements listed in Annex 1.

1.2 APPLICABILITY

The present TP applies to all Organisations performing training and examination activities to the personnel appointed to carry out maintenance activities on military aircraft and related components.

1.3 VALIDITY AND TRANSITIONAL PROVISIONS

The present TP shall enter into force on the date of its approval. The TP AER(EP).P-2147 remains applicable in order to manage the approval requests already received until the related processes will be concluded.

Approval certificates issued according to the above-mentioned TP shall be considered valid until 30th June 2020. MTOs approved i.a.w. AER(EP).P-2147 shall apply for the approval against the present TP not later than 30th June 2019.

As per AER(EP).P-66 § 1.4, in order to enable MTOs to revise the education and training programmes according to the requirements specified in AER(EP).P-66 (Attachments I and III), a transitional period has been established, during which it will still be possible to start teaching courses complying with the previous Armed Forces/State Corps directives.

1.4 DEFINITIONS AND ACRONYMS

For the purposes of the present TP, all the acronyms, definitions and terms listed in the TP AER.Q-2010 shall apply, along with the terms and acronyms defined in EMAD 1, also available at the Web page:

<http://www.eda.europa.eu/experts/airworthiness/mawa-documents>.

1.5 REFERENCE STANDARDS AND REQUIREMENTS

- AER(EP).P-66;
- AER(EP).P-145;
- AER(EP).P-2005;
- AER(EP).P-1-2;
- AER(EP).P-2147;
- EMAD 1;
- EMAR 147.

2. MEANS OF ADOPTION

The present TP is issued in order to adopt EMAR 147 - Section A requirements, contained in Annex 1. Refer to this TP where stated “EMAR 147”.

2.1 ADOPTION TABLE

The following table contains all the means of adoption used in order to implement EMAR 147 requirements.

Table 1: Adoption Table

Note(s)	Requirement(s)	Paragraph(s)
Intend “DAAA” where stated “NMAA”	All requirements	-
Intend “Attachment A” to the present TP where stated “EMAR Form 12” (application)	All requirements	-
Intend “Attachment B” to the present TP where stated “EMAR Form 4” (approval of personnel)	All requirements	-

Intend “Attachment G” to the present TP where stated “EMAR Form 11” (Certificate of Approval)	All requirements	-
Where stated “EMAR 66”, refer to AER(EP).P-66.	EMAR 147.A.05	(a)
	EMAR 147.A.120	(a)
	EMAR 147.A.145	(a)
		(d)
	EMAR 147.A.200	(b)
		(d)
	EMAR 147.A.205	(a)
		(c)
	EMAR 147.A.300	-
	EMAR 147.A.305	-
Where stated “EMAR 147.B.130”, refer to the Section 3.2.1 of AER(EP).P-147. (findings)	EMAR 147.A.155	-
	EMAR 147.A.160	-

In addition, the table in “Appendix I - Basic Training Course Duration and Minimum Practical Training Hours” of the EMAR 147 Section A, which contains the duration and minimum number of practical training hours to be completed on a basic training course, is tailored as follows:

Table 2: Basic Training Course Duration and Minimum Practical Training Hours - Tailored

Basic Course	Duration (Theory)	Duration (Practical)	Minimum Practical Training Hours for maximum reduction in experience requirements (See Note)
A1	280	180	520
A2	230	140	420
A3	280	180	520
A4	280	180	520
B1.1	1440	320	960
B1.2	1200	270	800
B1.3	1440	320	960
B1.4	1440	320	960
B2	1440	320	960
A (Module 50-55 Extensions)	80	30	80

B1 (Module 50-55 Extensions)	120	50	150
B2 (Module 50-55 Extensions)	120	50	150

Note: The above are the minimum practical training hours required for an individual to be able to claim reductions in the experience requirements as detailed in EMAR 66.A.30(a)1A(iii), 66.A.30(a)1B(iii) and EMAR 66.A.30(a)2(iii).

Furthermore, the Certificates of Recognition in “Appendix III - Examples of Training Certificates” are tailored with the ones reported in Attachment “H”.

3. **PROCEDURE FOR ISSUING, CONTINUING, CHANGING, SUSPENDING OR REVOKING OF MAINTENANCE TRAINING ORGANISATION APPROVALS**

3.1 APPLICATION

Organisations specified in § 1.2 shall submit an application to DAAA for the issue or change of an approval¹, using the DAAA EMAR Form 12, in Attachment “A”.

The application shall contain a declaration, specifying:

- use of the requirements of this regulation;
- site(s) where the training activities will be performed;
- list of the course(s) will be conducted.

In addition the applicant Organisation shall enclose the following documents:

- Maintenance Training Organisation Exposition (MTOE), edited in accordance with requirement 147.A.140;
- Procedures specified in MTOE.

Provided the Applicant Organisation complies with the requirements, DAAA will formally communicate their decision and will nominate an audit team, adequate to the size of the Organisation, according to AER(EP).P-1-2.

The Team will verify that²:

- MTOE, and the related procedures, are compliant with Annex 1 of this regulation;

¹ The application and all the related documentation shall be sent by a cover letter addressed to Ministero della Difesa – Direzione degli Armamenti Aeronautici e per l’Aeronavigabilità.

² This phase is defined as “Stage 1”.

- the commitment statement, presented in the MTOE, is signed by the Accountable Manager³;
- the applicant Organisation complies with the requirements of Annex 1 of this regulation.

3.2 AUDIT ACTIVITIES

Surveyors will prepare an audit plan and send it to the applicant at least 7 days before the audit visit.

The plan will specify:

- a scheduling of the activities to be performed;
- a reference of all the organisation processes to be verified;
- a reference to Annex 1 requirements.

The applicant shall guarantee free access to all the facilities and documents related to the approval.

During the audit visit the applicant's Quality Manager, or equivalent designated personnel, shall always assist Auditing Team. This will ensure that any findings will be well understood and agreed upon.

A meeting between the Auditing Team and the Accountable Manager shall be convened at least once during the audit to ensure that he/she fully understands the significance of the approval and the reason for signing the exposition commitment of the organisation for compliance with the procedures specified in the exposition.

DAAA will notify the applicant all findings, if any, identified during the audit.

Audit activities shall be carried out according to the check-list (Attachment "C").

The findings identified during the audit shall be substantiated with objective evidences gathered and they shall be reported on the Audit Report (Attachment "D") by the Surveyors.

3.2.1 FINDINGS

The findings will be classified in:

Level 1 finding is one or more of the following:

- Any significant non-compliance with the examination process which would invalidate the examination(s);
- Failure to give the DAAA access to the MTO's facilities during normal operating hours after two written requests;
- The lack of an Accountable Manager;
- A significant non-compliance with the training process.

Level 2 finding is any non-compliance with the training process other than level 1 finding.

Remarks are findings that do not compromise the training process or type of findings that should be considered like an improvement to the system.

³ For Military/Government Maintenance Training Organisations this person is normally the Chief of Organisation.

Within 15 days from receiving the Audit Report, Organisation shall send to DAAA the Corrective Action Plan (PAC - Attachment "E").

3.3 ISSUE OF APPROVAL

Surveyors will prepare the Verification Visit Report (Attachment "F") within 15 days of the end of the audit visit. Check List and Audit Report (see § 3.2) shall be attached to the Verification Visit Report.

The Verification Visit Report can show one of the following final results:

- Positive when:
 - applicant meets Annex 1 requirements;
 - MTOE and procedures are well known and applied by the applicant;
 - no level 1 findings are identified;
 - no level 2 findings are identified.
- Conditional when:
 - applicant meets Annex 1 requirements;
 - MTOE and procedures are well known and applied by the applicant;
 - no level 1 findings are identified;
 - level 2 findings are identified.

In this last case the Auditing Team shall verify the effectiveness of the corrective actions taken by the applicant in order to solve the level 2 findings. The Team shall verify if the applicant is following up the corrective action plan as scheduled in the PAC within three months from the audit visit.

If the final result is positive, DAAA will formally approve the MTOE and issue an approval certificate (Attachment "G") signed by the Director of DAAA or his/her delegate.

Conditions of the approval will be listed in the certificate.

- Negative when:
 - applicant does not meet Annex I requirements;
 - level 1 findings are identified;
 - the applicant does not solve all level 2 findings.

In case of negative result, the applicant can resubmit a new application only when all findings will be solved.

3.4 CONTINUATION OF AN APPROVAL

Each Approved Maintenance Training Organisation (AMTO) must be reviewed for compliance with this regulation at periods not exceeding 24 months using the same procedures described in § 3.2 and § 3.3. This shall include the monitoring of at least one training course and one examination performed by the AMTO.

DAAA can anytime perform extra audits.

In addition, DAAA will keep and update a database with the Approved Maintenance Training Organisations under their supervision, the dates when audit visits are due and when such visits were carried out.

3.5 CONTINUED VALIDITY OF APPROVAL

An approval is issued on the date of the end of a positive audit visit for an unlimited duration and it remains valid subject to:

- MTO remaining in compliance with this regulation;
- DAAA being granted access to the MTO to determine continued compliance with this regulation;
- the certificate not being surrendered or revoked;
- MTO not changing its approved facilities.

Management changes, during the validity of approval, shall be communicated to DAAA and will be eventually evaluated throughout a new audit visit. Upon surrender or revocation, the approval shall be returned to DAAA.



MINISTERO DELLA DIFESA

**SEGRETARIATO GENERALE DELLA DIFESA E DIREZIONE NAZIONALE DEGLI ARMAMENTI
DIREZIONE DEGLI ARMAMENTI AERONAUTICI E PER L'AERONAVIGABILITÀ**

EMAR Form 12	Application for AER(EP).P-147 Initial* / Change* of approval
<p>Registered name and address of applicant:</p> <p>Trading name (if different):</p> <p>Addresses requiring approval:</p> <p>Tel. Fax E-mail</p>	
<p>Scope of AER(EP).P-147 approval relevant to this initial*/change of* application (see EMAR Form 11 or AER(EP).P-147 Attachment "G" for training course designators to be used):</p> <p>Basic Training:</p> <p>Military Aircraft Type Training:</p> <p>State here any existing approvals:</p> <p style="text-align: right;">*delete as applicable</p>	
<p>Name & position of Accountable Manager:</p> <p>Signature of Accountable Manager:</p> <p>Date of application:</p> <p>On completion, please send this form under confidential cover to the: SGD/DNA – Direzione degli Armamenti Aeronautici e per l'Aeronavigabilità Vice Direzione Tecnica – 2° Ufficio Via di Centocelle 301 – 00175 Roma</p>	

EMAR Form 12 (EMAR 147 AMC & GM edition 1.1)



MINISTERO DELLA DIFESA

SEGRETARIATO GENERALE DELLA DIFESA E DIREZIONE NAZIONALE DEGLI ARMAMENTI
DIREZIONE DEGLI ARMAMENTI AERONAUTICI E PER L'AERONAVIGABILITÀ

Details of Management Personnel required to be accepted as specified in AER(EP).P-.....

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:
SGD/DNA – Direzione degli Armamenti Aeronautici e per l'Aeronavigabilità
Vice Direzione Tecnica – 2° Ufficio
Via di Centocelle 301 – 00175 Roma

DAAA use only

IL VICE DIRETTORE TECNICO DELLA DAAA

Name:

Signature:

Date:

**DAAA- VDT - 2° UFFICIO
AER(EP).P-147
CHECK LIST FOR AUDIT ACTIVITIES**

Organisation: _____

ID	Requirement ID	Requirement	Compliant	Not compliant
1	147.A.100	Check if the size and structure of facilities ensure protection from the prevailing weather elements, proper operation of all planned training and examinations and if the environmental conditions (e.g.: temperature, humidity, ...) are adequate.		
2		Check if the appropriate accommodation is provided for the instruction of theory and the conduct of knowledge examinations, while the accommodation environment is such that students are able to concentrate on their studies or examination as appropriate.		
3		Check if the maximum number of students undergoing knowledge training during any training session does not exceed a level conducive to an effective learning environment.		
4		Check if the size of accommodation for examination purposes is be such that no student can read the paperwork or computer screen of any other student from his/her position during examinations.		
5		Check if basic training workshops and/or maintenance facilities separate from training classrooms are be provided for practical instruction appropriate to the planned training course, in the case of a basic training course. If, however, the MTO has arrangements with another organisation to provide such workshops and/or maintenance facilities, check if a written agreement exists with such organisation specifying the conditions of access and use thereof and if the accessibility of DAAA to those structures is regulated.		
6		In the case of a Military Aircraft Type/Task Training course, check if access is provided to appropriate facilities containing examples of aircraft type. Synthetic training devices may be used when such synthetic training devices ensure adequate training standards.		
7		Check if the maximum number of students undergoing practical training during any training session does not exceed 15 (fifteen) per supervisor or assessor.		
8		Check if office accommodation is provided for instructors, knowledge examiners and practical assessors of a standard to ensure that they can prepare for their duties without undue distraction or discomfort.		
9		Check if secure storage facilities are provided for examination papers and training records and electronic media. The storage environment shall be such that documents remain in good condition for a retention period of 20 (twenty) years following completion of the particular student's course.		
10		Check if a library is provided containing all technical material appropriate to the scope and level of training undertaken.		

11	147.A.105	Check if the MTO has appointed an Accountable Manager with the corporate authority for ensuring that all training commitments can be carried out to the standard required by AER(EP).P-147.		
12		Check if the MTO has nominated a person or a group of persons with the responsibilities of ensuring that the MTO is in compliance with the requirements of this TP.		
13		Check if the MTO has contracted/appointed sufficient staff to plan/perform knowledge and practical training, conduct knowledge examinations and practical assessments in accordance with the approval.		
14		Check if the experience and qualifications of instructors, knowledge examiners and practical assessors is established in accordance with officially recognized criteria.		
15		Check if the instructors, knowledge examiners and practical assessors are specified in the MTO Exposition (MTOE) for the acceptance of such staff.		
16		Check if instructors and knowledge examiners undergo updating training at least every 24 months relevant to current technology, practical skills, human factors and the latest training techniques appropriate to the knowledge being trained or examined.		
17	147.A.110	Check if the MTO maintains a record of all instructors, knowledge examiners and practical assessors for a minimum period of 5 years after termination of their employment or assignment within the MTO. These records shall reflect the experience and qualification, training history and any subsequent training undertaken. Terms of reference shall be drawn up for all instructors, knowledge examiners and practical assessors.		
18	147.A.115	Check if each classroom has appropriate presentation equipment of a standard that ensures students can easily read presentation text/drawings/diagrams and figures from any position in the classroom. Presentation equipment may include representative synthetic training devices to assist students in their understanding of the particular subject matter where such devices are considered beneficial for such purposes.		
19		Check if the basic training workshops and/or maintenance facilities shall have all tools and equipment necessary to perform the approved scope of training.		
20		Check if the basic training workshops and/or maintenance facilities has an appropriate selection of aircraft, engines, aircraft parts, avionic equipment, armaments, escape systems and other relevant military-specific systems.		
21	147.A.120	Check if maintenance training course material is provided to the student and cover, as applicable, the basic knowledge syllabus specified in AER(EP).P-66 (EMAR 66) for the relevant Military Aircraft Maintenance Licence (MAML) category or subcategory and/or the type course content required by AER(EP).P-66 (EMAR 66) for the relevant aircraft type and MAML category or subcategory.		
22		Check if students have access to examples of maintenance documentation and technical information in the library as specified in requirement 147.A.100.		

23	147.A.125	Check if the MTO keeps all student training, examination and assessment records for at least 20 (twenty) years following completion of the particular student's course.		
24	147.A.130	Check if the MTO establishes procedures to ensure proper training standards and compliance with all relevant requirements in this TP (EMAR 147).		
25		Check if the MTO has a quality system with an independent audit function to monitor training standards, the integrity of knowledge examinations and practical assessments, compliance with and adequacy of the procedures.		
26		Check if the MTO has a quality system with a feedback system of audit findings to the person(s) and ultimately to the Accountable Manager to ensure, as necessary, preventive and corrective actions.		
27	147.A.135	Check if the examination staff shall ensure the security of all questions.		
28	147.A.140	Check if the MTO has an exposition for use by the MTO describing the organisation and its procedures and containing the information as specified in the requirement 147.A.140.		

**DAAA- VDT - 2° UFFICIO
AER(EP).P-147
AUDIT FINDINGS REPORT**

Organisation: _____

ID	Requirement	Finding	Finding Lvl	Due date

**DAAA- VDT - 2° UFFICIO
AER(EP).P-147
CORRECTIVE ACTION PLAN**

Organisation: _____

ID Audit Report	Requirement	Finding description, in date _____	Finding Lvl	Due date	Corrective Action



**MINISTERO DELLA DIFESA
SEGRETARIATO GENERALE DELLA DIFESA E DIREZIONE NAZIONALE DEGLI ARMAMENTI
DIREZIONE DEGLI ARMAMENTI AERONAUTICI E PER L’AERONAVIGABILITÀ
VICE DIREZIONE TECNICA – 2° UFFICIO
ROMA**

**VERIFICATION VISIT REPORT
FOR MAINTENANCE TRAINING ORGANISATION APPROVALS
AER(EP).P-147**

1. APPLICANT ORGANISATION
2. LOCATION
3. CLASS [Basic, Type/task]
4. MAML CATEGORIES
5. AUDIT STARTING DATE
6. RESULTS FROM PREVIOUS AUDIT
7. REASON FOR AUDIT
8. AUDIT TEAM
 - *Lead Surveyor*
 - *Surveyor*
 - *Surveyor*
9. KEY PERSONS OF THE ORGANISATION/PROCESS OWNER
 -
 -
 -
 -

-
-
-
-

10. AUDIT DESCRIPTION

(detailed description of the audit)

11. DOCUMENTATION EVALUATED

(all the documents evaluated, e.g. the Exposition, and the evidences gathered during the audit)

12. CHECK LIST

The audit team has verified the application of the requirements requested by the AER(EP).P-147, using the check list (Attachment “1” to this Report).

13. FINDINGS

(detailed description of the findings)

14. BEST PRACTICES

(list the positive procedures, practices, documents, forms, etc.)

15. AUDIT RESULT

16. CORRECTIVE ACTIONS

(include the required corrective actions)

17. APPROVED ACTIVITIES

(report the approved activities, in detail, and not only a reference to the Exposition/any other document. It is necessary that the activities listed in this section match the ones reported in the Exposition and in the request of approval “EMAR Form 2”. This section shall be together with the audit team and DAAA signature)

Place and date

Surveyors

Lead Surveyor

MINISTERO DELLA DIFESA

D.A.A.A.

Vice Direzione Tecnica

Roma

IT IS

Acknowledged: ----- approved

IT IS NOT

IL VICE DIRETTORE TECNICO



MINISTERO DELLA DIFESA
SEGRETARIATO GENERALE DELLA DIFESA E DIREZIONE NAZIONALE DEGLI ARMAMENTI
DIREZIONE DEGLI ARMAMENTI AERONAUTICI E PER L'AERONAVIGABILITÀ

MAINTENANCE TRAINING ORGANISATION APPROVAL
N° _____

Pursuant to national regulation for the time being in force and subject to the conditions specified below, the DAAA hereby certifies:

Organisation Name

Address

as a Maintenance Training Organisation in compliance with Annex A of AER(EP).P-147 (EMAR 147) approved to provide training and conduct examinations listed in the attached approval schedule and issue related certificates of recognition to students using the above references.

CONDITIONS

1. This approval is limited to that specified in the scope of work section of the approved Maintenance Training Organisation Exposition as referred to in the Section A of EMAR 147, and
2. This approval requires compliance with the procedures specified in the EMAR 147 approved Maintenance Training Organisation Exposition, and
3. This approval is valid whilst the approved Maintenance Training Organisation remains in compliance with EMAR 147.
4. Subject to compliance with the forgoing 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:

IL DIRETTORE
(or his delegate)

MAINTENANCE TRAINING AND EXAMINATION ORGANISATION APPROVAL SCHEDULE				
Reference: AER(EP).P-147				
Organisation name:		[MAINTENANCE TRAINING ORGANISATION]		
CLASS	MAML CATEGORY	LIMITATION		
BASIC ^(note 2)	B1 ^(note 2)	TB 1.1 ^(note 2)	AEROPLANES TURBINE ^(note 2)	
		TB 1.2 ^(note 2)	AEROPLANES PISTON ^(note 2)	
		TB 1.3 ^(note 2)	HELICOPTERS TURBINE ^(note 2)	
		TB 1.4 ^(note 2)	HELICOPTERS PISTON ^(note 2)	
		TB1 MIL ^(note 2)	MODULES 50-55 (OR SUB-MODULES) ^{(note 1)(note 2)}	
	B2 ^(note 2)	TB2 ^(note 2)	AVIONICS ^(note 2)	
		TB2 MIL ^(note 2)	MODULES 50-55 (OR SUB-MODULES) ^{(note 1) (note 2)}	
	A ^(note 2)	TA 1 ^(note 2)	AEROPLANES TURBINE ^(note 2)	
		TA 2 ^(note 2)	AEROPLANES PISTON ^(note 2)	
		TA 3 ^(note 2)	HELICOPTERS TURBINE ^(note 2)	
		TA 4 ^(note 2)	HELICOPTERS PISTON ^(note 2)	
		TA MIL ^(note 2)	MODULES 50-55 (OR SUB-MODULES) ^{(note 1) (note 2)}	
	TYPE/TASK ^(note 2)	C ^(note 2)	T4 ^(note 2)	[Quote aircraft type] ^(note 3)
		B1 ^(note 2)	T1 ^(note 2)	[Quote aircraft/component type] ^(note 3)
		B2 ^(note 2)	T2 ^(note 2)	[Quote aircraft/component type] ^(note 3)
A ^(note 2)		T3 ^(note 2)	[Quote aircraft type] ^(note 3)	
<p>This approval schedule is limited to the training and examinations specified in the scope of work of the approved Maintenance Training Organisation Exposition as referred to in section A of EMAR 147.</p> <p>MTOE Reference:</p> <p>Date of original issue:</p> <p>Date of last revision approved:</p> <p>Revision No:</p> <p style="text-align: right;">IL DIRETTORE (or his delegate)</p>				

Note 1: Military-specific systems modules/sub-modules that are within the scope of the approval shall be listed.

Note 2: Delete as appropriate if the organisation is not approved

Note 3: Complete with the appropriate rating and limitation

AER(EP).P-147
(EMAR 147) MTO
logo



CERTIFICATE OF RECOGNITION
AER(EP).P-147 (EMAR 147) APPROVED MILITARY AIRCRAFT TYPE TRAINING COURSE

This Certificate of Recognition is issued to:

[FULL NAME]
[DATE AND PLACE OF BIRTH]

By:

[MTO NAME AND ADDRESS]
AER(EP).P-147 (EMAR 147) APPROVAL REFERENCE

a Maintenance Training Organisation approved to provide training and conduct examinations within its approval schedule and in accordance with the requirements of EMAR 147.

This certificate confirms that the above named person either successfully passed the approved basic training course(*) or the basic examination(*) stated below in compliance with the EMAR requirements:

[BASIC TRAINING COURSE(*)] AND/OR [BASIC EXAMINATION(*)]
[LIST OF EMAR 66 MODULES/ SUB MODULES/DATE OF EXAMINATION PASSED]

Certificate Number:

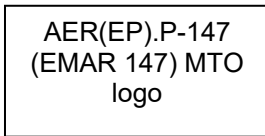
Date:

Signed:

For: [MTO Name]

(*) – delete as appropriate

The MTO is allowed to customise the graphical content of this certificate



CERTIFICATE OF RECOGNITION
AER(EP).P-147 (EMAR 147) APPROVED MILITARY AIRCRAFT BASIC TRAINING COURSE OR
BASIC EXAMINATION

This Certificate of Recognition is issued to:

[FULL NAME]
[DATE AND PLACE OF BIRTH]

By:

[MTO NAME AND ADDRESS]
AER(EP).P-147 (EMAR 147) APPROVAL REFERENCE

a Maintenance Training Organisation approved to provide training and conduct examinations within its approval schedule and in accordance with the requirements of EMAR 147.

This certificate confirms that the above named person either successfully passed the theoretical (*) and/or practical (*) elements of the approved Military Aircraft Type Training course stated below and the related examinations in compliance with the EMAR requirements.

[MILITARY AIRCRAFT TYPE TRAINING COURSE(*)]
[START AND END DATES]
[SPECIFY THEORETICAL ELEMENTS OR PRACTICAL ELEMENTS]

Certificate Number:

Date:

Signed:

For: [MTO Name]

(*) – delete as appropriate

The MTO is allowed to customise the graphical content of this certificate

ANNEX 1



EUROPEAN MILITARY AIRWORTHINESS REQUIREMENTS

EMAR 147

AIRCRAFT MAINTENANCE TRAINING ORGANISATIONS

Edition Number	1.1
Edition Date	23 Sept 2014
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**MILITARY AIRWORTHINESS
AUTHORITIES FORUM**

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Approved: The document is approved by the participating Member States.

EDITION

Edition will have the following template: **Edition X.Y**

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

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NOTE:

EMAR 147 Section A & B Edition 1.0 was approved by the MAWA Forum on 14 Jun 2012. During the development of EMAR 66 and EMAR 147 AMC & GM (which were based on the corresponding Commission Regulation 2042/2003 at amendment state M7) it became necessary to revisit EMAR 147 Edition 1.0 to bring it up to the same amendment state. In doing so, Task Force 3 has maintained a clear link to the principles of EASA Part 147, making changes where necessary for use within a military airworthiness context.

In accordance with the direction received from the MAWA Forum, all amended paragraphs from EMAR 147 Edition 1.0 are indicated by the use of a 'sidebar' in the margin. This can be readily cross-referenced using the table at the end of the document which details each change.

This EMAR relies on definitions laid down in EMAD 1.

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SECTION A

TECHNICAL REQUIREMENTS

SUBPART A – GENERAL

147.A.05 Scope

This section establishes the requirements to be met by an Organisation seeking approval as a Maintenance Training Organisation (MTO) to conduct training and examination as specified in EMAR 66.

147.A.10 General

An MTO shall be a legal entity, a part of a legal entity or part of a military organisation.

147.A.15 Application

(a) An application for an approval or for the amendment of an existing approval shall be made to the National Military Airworthiness Authority (NMAA) in an agreed form and manner.

(b) An application for or for the change to an approval shall include the following information:

1. The registered name and address of the applicant;
2. The address of the MTO requiring the approval or change to the approval;
3. The intended scope of approval or change to the scope of approval;
4. The name and signature of the Accountable Manager;
5. The date of application.

SUBPART B - ORGANISATIONAL REQUIREMENTS**147.A.100 Facility requirements**

- (a) The size and structure of facilities shall ensure protection from the prevailing weather elements and proper operation of all planned training and examination.
- (b) Fully enclosed appropriate accommodation shall be provided for the instruction of theory and the conduct of knowledge examinations.
1. The maximum number of students undergoing knowledge training during any training session shall not exceed a level conducive to an effective learning environment.
 2. The size of accommodation for examination purposes shall be such that no student can read the paperwork or computer screen of any other student from his/her position during examinations.
- (c) The paragraph (b) accommodation environment shall be maintained such that students are able to concentrate on their studies or examination as appropriate, without undue distraction or discomfort.
- (d) In the case of a basic training course, basic training workshops and/or maintenance facilities separate from training classrooms shall be provided for practical instruction appropriate to the planned training course. If, however, the MTO is unable to provide such facilities, arrangements may be made with another organisation to provide such workshops and/or maintenance facilities, in which case a written agreement shall be made with such organisation specifying the conditions of access and use thereof. The NMAA shall require access to any such organisation and the written agreement shall specify this access.
- (e) In the case of a Military Aircraft Type/Task Training course, access shall be provided to appropriate facilities containing examples of aircraft type as specified in [EMAR 147.A.115\(d\)](#).
- (f) The maximum number of students undergoing practical training during any training session shall not exceed 15 per supervisor or assessor.
- (g) Office accommodation shall be provided for instructors, knowledge examiners and practical assessors of a standard to ensure that they can prepare for their duties without undue distraction or discomfort.
- (h) Secure storage facilities shall be provided for examination papers and training records. The storage environment shall be such that documents remain in good condition for the retention period as specified in [EMAR 147.A.125](#). The storage facilities and office accommodation may be combined, subject to adequate security. The requirements of this paragraph are equally applicable to other storage media (e.g. electronic etc.)
- (i) A library shall be provided containing all technical material appropriate to the scope and level of training undertaken.

147.A.105 Personnel requirements

(a) The MTO shall appoint an Accountable Manager who has corporate authority for ensuring that all training commitments can be carried out to the standard required by EMAR 147. The Accountable Manager shall:

1. Ensure that all necessary resources are available to accomplish training commitments in accordance with [EMAR 147.A.130 \(a\)](#) to support the organisation approval.
2. Establish and promote the quality policy specified in [EMAR 147.A.130\(b\)](#).
3. Demonstrate a basic understanding of this EMAR.

(b) A person or group of persons, whose responsibilities include ensuring that the MTO is in compliance with the requirements of this EMAR, shall be nominated. Such person(s) shall be responsible to the Accountable Manager. The senior person or one person from the group of persons may also be the Accountable Manager subject to meeting the requirements for the Accountable Manager as defined in paragraph (a).

(c) The MTO shall contract/appoint sufficient staff to plan/perform knowledge and practical training, conduct knowledge examinations and practical assessments in accordance with the approval.

(d) By derogation to paragraph (c), when another organisation is used to provide practical training and assessments, such other organisation's staff may be nominated to carry out practical training and assessments.

(e) Any person may carry out any combination of the roles of instructor, knowledge examiner and practical assessor, subject to compliance with paragraph (f).

(f) The experience and qualifications of instructors, knowledge examiners and practical assessors shall be established in accordance with criteria published by the NMAA or in accordance with a procedure and to a standard agreed by the NMAA.

(g) The instructors, knowledge examiners and practical assessors shall be specified in the MTO Exposition (MTOE) for the acceptance of such staff.

(h) Instructors and knowledge examiners shall undergo updating training at least every 24 months relevant to current technology, practical skills, human factors and the latest training techniques appropriate to the knowledge being trained or examined.

147.A.110 Records of instructors, examiners and assessors

(a) The MTO shall maintain a record of all instructors, knowledge examiners and practical assessors for a minimum period of 5 years after termination of their employment or assignment within the MTO. These records shall reflect the experience and qualification, training history and any subsequent training undertaken.

(b) Terms of reference shall be drawn up for all instructors, knowledge examiners and practical assessors.

147.A.115 Instructional equipment

- (a) Each classroom shall have appropriate presentation equipment of a standard that ensures students can easily read presentation text/drawings/diagrams and figures from any position in the classroom. Presentation equipment may include representative synthetic training devices to assist students in their understanding of the particular subject matter where such devices are considered beneficial for such purposes.
- (b) The basic training workshops and/or maintenance facilities as specified in [EMAR 147.A.100\(d\)](#) shall have all tools and equipment necessary to perform the approved scope of training.
- (c) The basic training workshops and/or maintenance facilities as specified in [EMAR 147.A.100\(d\)](#) shall have an appropriate selection of aircraft, engines, aircraft parts, avionic equipment, armaments, escape systems and other relevant military-specific systems.
- (d) The Military Aircraft Type Training organisation as specified in [EMAR 147.A.100\(e\)](#) shall have access to the appropriate aircraft type. Synthetic training devices may be used when such synthetic training devices ensure adequate training standards.

147.A.120 Maintenance training material

- (a) Maintenance training course material shall be provided to the student and cover as applicable:
 - 1. The basic knowledge syllabus specified in EMAR 66 for the relevant Military Aircraft Maintenance Licence (MAML) category or subcategory; and
 - 2. The type course content required by EMAR 66 for the relevant aircraft type and MAML category or subcategory.
- (b) Students shall have access to examples of maintenance documentation and technical information in the library as specified in [EMAR 147.A.100\(i\)](#).

147.A.125 Records of students

The MTO shall keep all student training, examination and assessment records for at least twenty years following completion of the particular student's course.

147.A.130 Training procedures and quality system

- (a) The MTO shall establish procedures acceptable to the NMAA to ensure proper training standards and compliance with all relevant requirements in this EMAR.
- (b) The MTO shall establish a quality system including:
 - 1. An independent audit function to monitor training standards, the integrity of knowledge examinations and practical assessments, compliance with and adequacy of the procedures; and
 - 2. A feedback system of audit findings to the person(s) and ultimately to the Accountable Manager referred to in [EMAR 147.A.105\(a\)](#) to ensure, as necessary, preventive and corrective actions.

147.A.135 Examinations

- (a) The examination staff shall ensure the security of all questions.
- (b) Any student found during a knowledge examination to be cheating or in possession of material pertaining to the examination subject other than the examination papers and associated authorised documentation shall be disqualified from taking the examination. In such a case the student shall not take any examination for at least 12 months after the date of the incident unless the NMAA approves otherwise. The NMAA shall be informed of any such incident together with the details of any enquiry within one calendar month.
- (c) Any examiner found during a knowledge examination to be providing question answers to any student being examined shall be disqualified from acting as an examiner and the examination declared void. The NMAA shall be informed of any such occurrence within one calendar month.

147.A.140 Maintenance Training Organisation Exposition (MTOE).

- (a) The MTO shall provide an exposition for use by the MTO describing the organisation and its procedures and containing the following information:

1. A statement signed by the Accountable Manager confirming that the MTOE and any associated manuals define the MTO's compliance with this EMAR and shall be complied with at all times. Where the Accountable Manager is not the Chief Executive Officer or the senior military commander of the organisation, the Chief Executive Officer or the senior military commander of the organisation shall countersign that statement.
2. The title(s) and name(s) of the person(s) nominated in accordance with [EMAR 147.A.105\(b\)](#).
3. The duties and responsibilities of the person(s) specified in subparagraph (a) 2, including matters on which they may deal directly with the NMAA on behalf of the MTO.
4. A MTO chart showing associated lines of responsibility of the person(s) specified in subparagraph (a)2.
5. A list of the instructors, knowledge examiners and practical assessors.
6. A general description of the training and examination facilities located at each address specified in the MTO's approval certificate, and if appropriate any other location, as required by [EMAR 147.A.145\(b\)](#).
7. A list and details of the maintenance training courses which form the extent of the approval.
8. The MTO's exposition amendment procedure.
9. The MTO's procedures, as required by [EMAR 147.A.130\(a\)](#).
10. The MTO's control procedure, as required by [EMAR 147.A.145\(c\)](#), when authorised to conduct training, examination and assessments in locations different from those specified in [EMAR 147.A.145\(b\)](#).
11. A list of the locations pursuant to [EMAR 147.A.145\(b\)](#).

EMAR 147 - AIRCRAFT MAINTENANCE TRAINING ORGANISATIONS

12. A list of organisations, if appropriate, as specified in [EMAR 147.A.145\(d\)](#).

(b) The MTO's exposition and any subsequent amendments shall be approved by the NMAA.

(c) Notwithstanding paragraph (b) minor amendments to the exposition may be approved through an exposition procedure (also called indirect approval).

(d) Where an MTO has an extant EASA Part 147 approval, those parts of the organisation's EASA Part 147 exposition that are equally applicable to satisfy the EMAR 147 requirements will generally be accepted by the NMAA as equivalent in respect of the EMAR 147 exposition. In this case it is permissible that only those regulations that are military specific need be addressed in the EMAR 147 exposition; those regulations covered by read-across of the sections of the EASA exposition document shall be identified and the EASA document clause reference quoted.

147.A.145 Privileges of the Maintenance Training Organisation

(a) The MTO may carry out the following as permitted by and in accordance with the MTOE:

1. Basic training courses to the EMAR 66 syllabus, or part thereof.
2. Aircraft type/task training courses in accordance with EMAR 66, or part thereof.
3. The examinations on behalf of the NMAA, including the examination of students who did not attend the basic or Military Aircraft Type Training course at the MTO. (The procedures for examinations are detailed in EMAR 66.B.200).
4. the issue of certificates in accordance with Appendix III following successful completion of the approved basic or Military Aircraft Type Training courses and examinations specified in subparagraphs (a)(1), (a)(2) and (a)(3), as applicable.

(b) Training, knowledge examinations and practical assessments may only be carried out at the locations identified in the approval certificate and/or at any location specified in the MTOE.

(c) By derogation to paragraph (b), the MTO may only conduct training, knowledge examinations and practical assessments in locations different from the paragraph (b) locations in accordance with a control procedure specified in the MTOE. Such locations need not be listed in the MTOE.

- (d)
1. The MTO may subcontract the conduct of basic theoretical training, Military Aircraft Type Training and related examinations to a non MTO only when under the control of the MTO quality system.
 2. The subcontracting of basic theoretical training and examination is limited to EMAR 66 Appendix I modules 1,2,3,4,5,6,8,9 and 10.
 3. The subcontracting of Military Aircraft Type Training and examination is limited to powerplant, avionics systems, armaments, escape systems and other relevant military-specific systems.

(e) An organisation shall not be approved to conduct examinations unless approved to conduct the corresponding training.

(f) NOT APPLICABLE.

147.A.150 Changes to the Maintenance Training Organisation

(a) The MTO shall notify the NMAA of any proposed changes to the organisation that affect the approval before any such change takes place, in order to enable the NMAA to determine continued compliance with this EMAR and to amend if necessary the MTO approval certificate.

(b) The NMAA may prescribe the conditions under which the MTO may operate during such changes unless the NMAA determines that the MTO approval must be suspended.

(c) Failure to inform the NMAA of such changes may result in suspension or revocation of the MTO approval certificate backdated to the actual date of the changes.

147.A.155 Continued validity of approval

(a) An approval shall be issued for an unlimited duration. It shall remain valid subject to:

1. The MTO remaining in compliance with this EMAR, in accordance with the provisions related to the handling of findings as specified under [EMAR 147.B.130](#); and
2. The NMAA being granted access to the MTO to determine continued compliance with this EMAR; and
3. The certificate not being surrendered or revoked.

(b) Upon surrender or revocation, the approval shall be returned to the NMAA.

147.A.160 Findings of non-compliance

(a) A level 1 finding is one or more of the following:

1. Any significant non-compliance with the examination process which would invalidate the examination(s),
2. Failure to give the NMAA access to the MTO's facilities during normal operating hours after two written requests,
3. The lack of an Accountable Manager,
4. A significant non-compliance with the training process.

(b) A level 2 finding is any non-compliance with the training process other than level 1 finding.

(c) After receipt of notification of findings according to [EMAR 147.B.130](#), the holder of the MTO approval shall define a corrective action plan and demonstrate corrective action to the satisfaction of the NMAA within a period agreed with this authority.

SUBPART C - APPROVED BASIC TRAINING COURSE**147.A.200 The approved basic training course**

- (a) The approved basic training course shall consist of knowledge training, knowledge examination, practical training and a practical assessment.
- (b) The knowledge training element shall cover all subjects of the relevant MAML category as specified in EMAR 66.
- (c) The knowledge examination element shall cover a representative cross section of all subjects from the paragraph (b) training element.
- (d) The practical training element shall cover the practical use of common tooling/equipment, the disassembly/assembly of a representative selection of aircraft parts and the participation in representative maintenance activities being carried out relevant to the particular EMAR 66 complete module.
- (e) The practical assessment element shall cover the practical training and determine whether the student is competent at using tools and equipment and working in accordance with maintenance manuals.
- (f) The duration and minimum number of practical training hours to be completed on basic training courses shall be in accordance with Appendix I.
- (g) The duration of conversion courses between (sub)categories shall be determined by the MTO through an assessment of the basic training syllabus and the related practical training needs.

147.A.205 Basic knowledge examinations

Basic knowledge examinations shall:

- (a) Be in accordance with the standard defined in EMAR 66.
- (b) Be conducted without the use of training notes.
- (c) Cover a representative cross section of subjects from the particular module of training completed in accordance with EMAR 66.

147.A.210 Basic practical assessment

- (a) Basic practical assessments shall be carried out during the basic maintenance training course by the nominated practical assessors at the completion of each visit period to the practical workshops/maintenance facility.
- (b) The student shall achieve an assessed pass with respect to [EMAR 147.A.200\(e\)](#).

SUBPART D - AIRCRAFT TYPE/TASK TRAINING**147.A.300 Aircraft type/task training**

An MTO shall be approved to carry out EMAR 66 aircraft type and/or task training or part thereof, subject to compliance with the standard specified in EMAR 66.A.45.

147.A.305 Aircraft type examinations and task assessments

An MTO approved in accordance with [EMAR 147.A.300](#) to conduct Military Aircraft Type Training or part thereof, shall conduct the related aircraft type examinations or aircraft task assessments specified in EMAR 66 subject to compliance with the aircraft type and/or task standard specified in EMAR 66.A.45.

Appendix I - Basic Training Course Duration and Minimum Practical Training Hours

1. The duration and minimum number of practical training hours to be completed on a basic training course shall be as follows:

Basic Course	Duration (Theory) (See Note 1)	Duration (Practical) (See Note 1)	Minimum Practical Training Hours for maximum reduction in experience requirements (See Note 2)
A1	-	-	520
A2	-	-	420
A3	-	-	520
A4	-	-	520
B1.1	-	-	960
B1.2	-	-	800
B1.3	-	-	960
B1.4	-	-	960
B2	-	-	960
A (Module 50- 55 Extensions)	-	-	(See Note 1)
B1 (Module 50- 55 Extensions)	-	-	(See Note 1)
B2 (Module 50- 55 Extensions)	-	-	(See Note 1)

Notes:

1. To be specified by the NMAA (if req'd).

2. These are the minimum practical training hours required for an individual to be able to claim reductions in the experience requirements as detailed in EMAR 66.A.30(a)1(iii) and EMAR 66.A.30(a)2(iii).

Appendix II – Maintenance Training Organisation Approval

EMAR Form 11 is contained in the EMAR Forms document.

Appendix III - Examples of Training Certificates

1. Basic Training/Examination

The information contained within the example of a basic training certificate detailed below is to be used for recognition of completion of either the basic training, the basic examination or both the basic training and basic training examinations.

A training certificate shall clearly identify each individual module or sub-module examination by date passed together with the corresponding version of Appendix I to EMAR 66.

CERTIFICATE OF RECOGNITION

EMAR 147 APPROVED BASIC TRAINING COURSE OR BASIC EXAMINATION

This Certificate of Recognition is issued to:

[FULL NAME]

[DATE AND PLACE OF BIRTH]

By:

[MTO NAME AND ADDRESS]

EMAR 147 APPROVAL REFERENCE

a Maintenance Training Organisation approved to provide training and conduct examinations within its approval schedule and in accordance with the requirements of EMAR 147.

This certificate confirms that the above named person either successfully passed the approved basic training course(*) or the basic examination(*) stated below in compliance with the EMAR requirements:

[BASIC TRAINING COURSE(*)] AND/OR [BASIC EXAMINATION(*)]

[LIST OF EMAR 66 MODULES/ SUB MODULES/DATE OF EXAMINATION PASSED]

Certificate Number:

Date:

Signed:

For: [MTO Name]

(*) – delete as appropriate

2. Military Aircraft Type Training

The information contained within the example of a Military Aircraft Type Training certificate as detailed below is to be used for recognition of completion of either the theoretical elements, the practical elements or both the theoretical and practical elements of the Military Aircraft Type Rating training course.

The appropriate references should be deleted as applicable and the course type box shall detail whether only the theoretical elements or the practical elements were covered or whether theoretical and practical elements were covered.

The training certificate shall clearly identify if the course is a complete course or a partial course (such as an airframe or powerplant or avionic/electrical or military specific systems only) or a difference course based upon the applicant's previous experience (e.g. A400M course for C295M technicians). If the course is not a complete one, the certificate shall identify whether the interface areas have been covered or not.

EMAR 147 - AIRCRAFT MAINTENANCE TRAINING ORGANISATIONS**CERTIFICATE OF RECOGNITION****EMAR 147 APPROVED MILITARY AIRCRAFT TYPE TRAINING COURSE**

This Certificate of Recognition is issued to:

[FULL NAME]

[DATE AND PLACE OF BIRTH]

By:

[MTO NAME AND ADDRESS]

EMAR 147 APPROVAL REFERENCE

a Maintenance Training Organisation approved to provide training and conduct examinations within its approval schedule and in accordance with the requirements of EMAR 147.

This certificate confirms that the above named person either successfully passed the theoretical (*) and/or practical (*) elements of the approved Military Aircraft Type Training course stated below and the related examinations in compliance with the EMAR requirements.

[MILITARY AIRCRAFT TYPE TRAINING COURSE(*)]

[START AND END DATES]

[SPECIFY THEORETICAL ELEMENTS OR PRACTICAL ELEMENTS]

Certificate Number:

Date:

Signed:

For: [MTO Name]

(*) – delete as appropriate

ANNEX 2



EUROPEAN MILITARY AIRWORTHINESS REQUIREMENT

EMAR 147

AMC & GM

Edition Number	1.1
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**MILITARY AIRWORTHINESS
AUTHORITIES FORUM**

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EDITION

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NOTE:

This EMAR AMC/GM relies on definitions laid down in EMAD 1.

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ACCEPTABLE MEANS OF COMPLIANCE

SECTION A -

TECHNICAL REQUIREMENTS

AMC 147.A.15 Application

The application form should contain the information required in the EMAR Form 12 (see Appendices to AMC Appendix IV).

AMC 147.A.100(b) Facility requirements

1. The maximum number of students undergoing knowledge training during any training session should not normally exceed 28. In cases where it is necessary to exceed this number, the NMAA is to be informed and the MTO should submit evidence of how an 'effective learning environment' is being maintained with this larger number of students.

AMC 147.A.100(d) Facility requirements

1. In the context of this paragraph, 'another organisation' means any other organisation with which the MTO has a formal agreement for the provision of practical training facilities. This organisation's details should be included in Section 2.8 of the MTOE.

AMC 147.A.100(i) Facility requirements

1. For approved basic maintenance training courses this means holding and ensuring reasonable access to copies of all national military aviation legislation, examples of typical aircraft maintenance manuals and service bulletins and Airworthiness Directives (or their national equivalents), aircraft and component records, release documentation, procedures manuals and aircraft maintenance programmes.

2. Except for the national military aviation regulations, the remainder of the documentation should represent typical examples of military aircraft and cover both aeroplanes and helicopters as appropriate for the nation. Avionic and armaments documentation should cover a representative range of available equipment that will be encountered within the pMS. All documentation should be reviewed and updated on a regular basis.

AMC 147.A.105 Personnel requirements

1. The larger MTO (an organisation with the capacity to provide training for 50 students or more) should appoint a training manager with the responsibility of managing the MTO on a day-to-day basis. Such person could also be the Accountable Manager. In addition, the MTO should appoint a quality manager with the responsibility of managing the quality system as specified in EMAR 147.A.130(b) and an examination manager with the responsibility of managing the relevant EMAR 147 Subpart C or Subpart D examination system. Such person(s) may also be an instructor and/or examiner.

2. The smaller MTO (an organisation with the capacity to provide training for less than 50 students) may combine any or all of the subparagraph (1) positions subject to the NMAA verifying and being satisfied that all functions can be properly carried out in combination.
3. When the organisation is also approved against other EMARs which contain some similar functions, then such functions may be combined.

AMC 147.A.105(b) Personnel requirements

With the exception of the Accountable Manager, an EMAR Form 4 should be completed for each person nominated to hold a position required by EMAR 147.A.105(b). EMAR Form 4 is contained within the EMAR Forms document.

AMC 147.A.105(c) Personnel requirements

The MTO should have a core of permanently employed staff to undertake the minimum amount of maintenance training proposed but may contract, on a part-time basis, instructors for subjects which are only taught on an occasional basis.

AMC 147.A.105(f) Personnel requirements

1. Any person currently accepted by the NMAA in accordance with the national military aviation regulations in force prior to a date established in national regulation for the implementation of the requirements of EMAR 147 may continue to be accepted in accordance with EMAR 147.A.105(f).

Paragraph 3 of Appendix III to AMC of EMAR 66 provides criteria to establish the qualification of assessors.

2. Examiners should demonstrate a clear understanding of the examination standard required by EMAR 66 and have a responsible attitude to the conduct of examinations such that the highest integrity is ensured.

AMC 147.A.105(h) Personnel requirements

1. Updating training should normally be of 35 hours duration but may be adjusted to the scope of training of the MTO and particular instructor/examiner.
2. Records should show for each instructor/knowledge examiner when the updating training was scheduled and when it took place.

AMC 147.A.110 Records of instructors, examiners and assessors

1. The following minimum information relevant to the scope of activity should be kept on record in respect of each instructor, knowledge examiner and practical assessor:

- (a) Full Name;
- (b) Rank/Grade (if applicable);
- (c) Date of birth;

- (d) Service/Personnel number;
- (e) Experience;
- (f) Qualifications;
- (g) Training history (before entry);
- (h) Subsequent training;
- (i) Scope of activity;
- (j) Starting date of employment/contract/posting into MTO;
- (k) If appropriate – ending date of employment/contract/posting out of MTO;
- (l) Security clearance (where appropriate).

2. The record may be kept in any format but should be under the control of the MTO's quality system.

3. Persons authorised to access the system should be maintained at a minimum to ensure that records cannot be altered in an unauthorised manner or that such confidential records become accessible to unauthorised persons.

4. The NMAA, or qualified entity acting on behalf of the NMAA, is to be considered as an 'authorised person' when investigating the records system for initial and continued approval or when the NMAA has cause to doubt the competence of a particular person.

AMC 147.A.115(c) Instructional equipment

1. An appropriate selection of aircraft parts means appropriate in relation to the particular subject module or submodule of EMAR 66 being instructed. For example, the turbine engine module should require the provision of sufficient parts from different types of turbine engine to show what such parts look like, what the critical areas are from a maintenance viewpoint and to enable disassembly/assembly exercises to be completed.

2. 'Appropriate aircraft, engines, aircraft parts, avionic equipment, armaments, escape systems and other relevant military-specific systems' means appropriate in relation to the particular subject module or submodule of EMAR 66 being instructed. For example, Category B2 avionic training should require, amongst other equipment, access to different navigation systems such that maintenance and system functioning can be observed and therefore more fully understood by the student in the working environment.

3. Moved to AMC 147.A.115(d).

AMC 147.A.115(d) Instructional equipment

"Access" should be interpreted to mean, in conjunction with the facilities requirement of EMAR 147.A.100(d), that there may be an agreement with an EMAR 145 Approved Maintenance Organisation to access the aircraft type, related parts, etc.

AMC 147.A.120(a) Maintenance training material

Training course notes, diagrams and any other instructional material should be accurate. Where an amendment service is not provided, a written warning to this effect should be given.

AMC 147.A.125 Records of students

In addition to each student's training, examination and assessment records, the content of the course(s) undertaken by each student (eg syllabus, together with the amendment state of the course content as detailed in the MTOE Item 4.2) should also be retained.

AMC 147.A.130(b) Training procedures and quality system

1. The independent audit procedure should ensure that all aspects of EMAR 147 compliance should be checked at least once in every 12 months and may be carried out as one complete single exercise or subdivided over a 12-month period in accordance with a scheduled plan.

2. In a small MTO (an organisation with the capacity to provide training for less than 50 students) the independent audit function may be contracted to another MTO approved under EMAR 147 by an arrangement acceptable to the NMAA, or to a competent person acceptable to the NMAA. Where the small MTO chooses to contract the audit function, the NMAA should specify the audit periodicity.

3. Where the MTO is part of an organisation that is also approved to another EMAR requiring a quality system, then such quality systems may be combined.

4. When training or examination is carried out under the 'subcontract control system' (see EMAR 147.A.145):

(i) a pre-audit procedure should be established whereby the EMAR 147 MTO should audit a prospective subcontractor to determine whether the services of the subcontractor meet the intent of EMAR 147. The pre-audit procedure should focus on establishing compliance with the training and examination standards set out in EMAR 147 and EMAR 66.

(ii) a renewal audit of the subcontractor should be performed at least once every 12 months to ensure continuous compliance with the EMAR 147 standard.

(iii) the subcontract control procedure should record audits of the subcontractor and have a corrective action follow-up plan.

5. The independence of the audit system should be established by always ensuring that audits are carried out by personnel not responsible for the function or procedure being checked.

AMC 147.A.135 Examinations

1. Examinations may be computer- or hard-copy-based or a combination of both.

2. The actual questions to be used in a particular examination should be determined by the examiners.

AMC 147.A.135(b) Examinations

If the NMAA approves a period of less than 12 months, this approval should be provided in writing to the MTO and kept within the student's records as detailed in EMAR 147.A.125.

AMC 147.A.140 Maintenance Training Organisation Exposition (MTOE)

1. The information detailed in Appendix I to the AMCs should be included in the MTOE.
2. When the MTO, or organisation it is part of, is approved in accordance with any other EMAR or EASA approval which also requires an exposition, the exposition required by the other EMAR or EASA approval may form the basis of the MTOE in a combined document, as long as the other exposition contains the information required by EMAR 147.A.140 and a cross-reference index is included based upon Appendix I.
3. When training or examination is carried out under the 'subcontract control system' (see EMAR 147.A.145), the MTOE should contain a specific procedure on the control of subcontractor(s) as per Appendix I item 2.18 plus a list of subcontractor(s) as required by EMAR 147.A.140(a)12 and detailed in Appendix I item 1.7.
4. NOT APPLICABLE.

AMC 147.A.145(d) Privileges of the Maintenance Training Organisation

1. When training or examination is carried out under the 'subcontract control system', it means that for the duration of such training or examination, the EMAR 147 approval has been temporarily extended to include the subcontractor. It therefore follows that those parts of the subcontractor's facilities, personnel and procedures involved with the EMAR 147 MTO's students should meet the requirements of EMAR 147 for the duration of that training or examination and it remains the EMAR 147 MTO's responsibility to ensure such requirements are satisfied.
2. The MTO approved under EMAR 147 is not required to have complete facilities and personnel for training that it needs to subcontract but it should have its own expertise to determine that the subcontractor meets the EMAR 147 standards. Particular attention should be given to ensuring that the training that is delivered also meets the requirements of EMAR 66 and that the aircraft technologies are appropriate.
3. The contract between the MTO approved under EMAR 147 and the subcontractor should contain:
 - a provision for the NMAA to have right of access to the subcontractor;
 - a provision that the subcontractor must inform the EMAR 147 approved MTO of any change that may affect its EMAR 147 approval, before any such change takes place.

AMC 147.A.145(f) Privileges of the Maintenance Training Organisation

NOT APPLICABLE.

AMC 147.A.155(a)2 Continued validity of approval

In addition to being granted access to the MTO to determine continued compliance, the NMAA should also be granted access to any organisation carrying out training (and, if applicable, examination) on behalf of the MTO under the 'subcontract control system' as specified at AMC 147.A.145(d).

AMC 147.A.200(b) The approved basic training course

Each MAML category or subcategory basic training course may be subdivided into modules or submodules of knowledge and may be intermixed with the practical training elements subject to the required time elements of EMAR 147.A.200 (f) and (g) being satisfied.

AMC 147.A.200(d) The approved basic training course

1. NOT APPLICABLE.
2. At least 30% of the practical training element should be carried out in a realistic maintenance working environment.

AMC 147.A.200(f) The approved basic training course

1. In order to follow pedagogical and human factors principles, the maximum number of training hours per day for the theoretical training should not be more than 6 hours. A training hour means 60 minutes of tuition excluding any breaks, examination, revision, preparation and aircraft visits. In exceptional cases, the NMAA may allow deviation from this standard when it is properly justified that the proposed number of hours follows pedagogical and human factors principles. These principles are especially important in those cases where:
 - Theoretical and practical training are performed at the same time;
 - Training and normal maintenance duty/apprenticeship are performed at the same time.

2. The minimum participation time for the student to meet the objectives of the course should not be less than 90 % of the tuition hours. Additional training may be provided by the MTO in order to meet the minimum participation time. If the minimum participation defined for the course is not met, a certificate of recognition (see example at EMAR 147 Appendix III) should not be issued.

AMC 147.A.200(g) The approved basic training course

NOT APPLICABLE.

AMC 147.A.205 Basic knowledge examinations

The NMAA may accept that the MTO approved under EMAR 147 can conduct examination of students who did not attend an approved basic course at that MTO.

AMC 147.A.210(a) Basic practical assessment

NOT APPLICABLE.

AMC 147.A.210(b) Basic practical assessment

An assessed pass for each student should be granted when the practical assessor is satisfied that the student meets the criteria of EMAR 147.A.200(e). This means that the student has demonstrated the capability to use relevant tools/equipment/test equipment as specified by the tool/equipment/test equipment manufacturer and the use of maintenance manuals, and the student can carry out the required inspection/testing without missing any defects, can readily identify the location of components and is capable of correct removal/fitment/adjustment of such components. The student is only required to carry out enough inspection/testing and component removal/fitment/adjustments to prove capability. The student should also show an appreciation of the need to ensure clean working conditions and the observance of safety precautions for the student and the product. In addition, the student should demonstrate a responsible attitude in respect to flight safety and the airworthiness of the aircraft.

Appendix III to AMC to EMAR 66 provides criteria for the competence assessment performed by the designated assessors (and their qualifications).

AMC 147.A.300 Military Aircraft Type/Task Training

Military Aircraft Type Training may be subdivided into airframe and/or powerplant and/or avionics/electrical systems and/or armaments/escape systems/other relevant military-specific systems type training courses. An MTO approved under EMAR 147 may be approved to conduct airframe type training only, powerplant type training only, avionics/electrical systems type training only, armaments/escape systems/other relevant military-specific systems type training only or any combination thereof.

1. Airframe type training course means a type training course including all relevant aircraft structure and electrical and mechanical systems excluding the powerplant.
2. Powerplant type training course means a type training course on the bare engine, including the build-up to an engine change unit.
3. The interface of the engine/airframe systems should be addressed by either airframe or powerplant type training course.
4. Avionics/electrical systems type training course means type training on avionics and electrical systems as determined by the NMAA.
5. Armaments/escape systems/other relevant military-specific systems type training means type training on all other military-specific systems not covered in sub-paragraphs 1-4 above, as determined by the NMAA.

AMC to Appendix II to EMAR 147 “Maintenance Training Organisation Approval”

AMC to EMAR Form 11 is contained in the EMAR Forms document.

AMC to Appendix III to EMAR 147 “Examples of Training Certificates”

A Certificate of Recognition for an EMAR 147 Basic Training Course or Basic Examination should be issued after completion of either basic training, basic examination or both basic training and basic examination.

Some examples of cases where a Certificate of Recognition should be issued are the following:

After successful completion of a full basic course in one MAML (sub) category including successful completion of the examinations of all the corresponding modules.

After successful completion of a full basic course in one MAML (sub) category without performing examinations. The examinations may be performed at a different EMAR 147 MTO (this MTO will issue the corresponding Certificate of Recognition for those examinations) or at the NMAA.

After successful completion of all module examinations corresponding to a MAML (sub) category.

After successful completion of certain modules/sub-modules/subjects.

It must be noted that “successful completion of a course” (without the module examinations) means successful completion of the theoretical and practical training including the corresponding practical assessment.

APPENDICES TO AMC to EMAR 147

Appendix I - Maintenance Training Organisation Exposition (MTOE)

1. The following subject headings form the basis of the MTOE required by EMAR 147.A.140.
2. Whilst this format is recommended, it is not mandatory to assemble the MTOE in this manner as long as a cross-reference index is included in the MTOE as an Appendix and the Part 1 items remain in Part 1.
3. Part 2, 3 and 4 material may be produced as separate detailed manuals subject to the main exposition containing the Part 2, 3 and 4 fundamental principles and policy on each item. It is then permitted to delegate the approval of these separate manuals to the senior person but this fact and the procedure for doing so should be specified in paragraph 1.10.
4. Where an MTO is approved in accordance with any other EMARs which require an exposition, it is acceptable to combine the exposition requirements by merging the Part 1 items and adding the Parts 2, 3 and 4. When this method is used, it is essential to include the cross-reference index of Part 4 item 4.3.

PART 1 – MANAGEMENT

- 1.1. Corporate commitment by Accountable Manager
- 1.2. Management personnel
- 1.3. Duties and responsibilities of management personnel, instructors, knowledge examiners and practical assessors
- 1.4. Management personnel organisation chart
- 1.5. List of instructional and examination staff

Note: A separate document may be referenced

- 1.6. List of approved addresses
- 1.7. List of subcontractors as per EMAR 147.A.145(d)
- 1.8. General description of facilities at paragraph 1.6 addresses
- 1.9. Specific list of courses and type examinations approved by the NMAA
- 1.10. Notification procedures regarding changes to MTO
- 1.11. MTOE and associated manuals amendment procedure

PART 2 – TRAINING AND EXAMINATION PROCEDURES

- 2.1. Organisation of courses
- 2.2. Preparation of course material

- 2.3. Preparation of classrooms and equipment
- 2.4. Preparation of workshops/maintenance facilities and equipment
- 2.5. Conduct of theoretical training & practical training (during basic knowledge training and type/task training)
- 2.6. Records of training carried out
- 2.7. Storage of training records
- 2.8. Training at locations not listed in paragraph 1.6
- 2.9. Organisation of examinations
- 2.10. Security and preparation of examination material
- 2.11. Preparation of examination rooms
- 2.12. Conduct of examinations (basic knowledge examinations, type/task training examinations and type examinations)
- 2.13. Conduct of practical assessments (during basic knowledge training and type/task training)
- 2.14. Marking and record of examinations
- 2.15. Storage of examination records
- 2.16. Examinations at locations not listed in paragraph 1.6
- 2.17. Preparation, control & issue of basic training course certificates
- 2.18 Control of subcontractors

PART 3 – TRAINING SYSTEM QUALITY PROCEDURES

- 3.1. Audit of training
- 3.2. Audit of examinations
- 3.3. Analysis of examination results
- 3.4. Audit and analysis remedial action
- 3.5. Accountable Manager annual review
- 3.6. Qualifying the instructors
- 3.7. Qualifying the examiners and the assessors
- 3.8. Records of qualified instructors & examiners

PART 4 – APPENDICES

- 4.1. Example of documents and forms used
- 4.2. Syllabus of each training course
- 4.3. Cross-reference index - if applicable

Appendix II – EMAR Form 4

EMAR Form 4 is contained in the EMAR Forms document.

Appendix III - EMAR Form 22

EMAR Form 22 is contained in the EMAR Forms document.

Appendix IV - EMAR Form 12

EMAR Form 12 is contained in the EMAR Forms document

GUIDANCE MATERIAL

SECTION A

TECHNICAL REQUIREMENTS

GM 147.A.10 General

Such an MTO may conduct its activity from more than one address.

GM 147.A.100(i) Facility requirements

Where the organisation has an existing library of regulations, manuals and documentation required by another EMAR, it is not necessary to duplicate such a facility subject to student access being under controlled supervision.

GM 147.A.105(f) Personnel requirements

It is recommended that potential instructors be trained in instructional techniques.

GM 147.A.105 (g) Personnel requirements

Moved to AMC 147.A.105(f).

GM 147.A.105(h) Personnel requirements

1. Moved to AMC 147.A.105(h)2.
2. The updating training may be subdivided during the 24 months into more than one element and may include such activities as attendance at relevant lectures and symposiums.

GM 147.A.110 Records of instructors, examiners and assessors

Instructors, knowledge examiners and practical assessors should be provided with a copy of their terms of reference.

GM 147.A.115(a) Instructional equipment

1. Synthetic training devices are working models of a particular system or component and include computer simulations.
2. NOT APPLICABLE.

GM 147.A.130(b) Training procedures and quality system

1. The primary objective of the quality system is to enable the MTO to satisfy itself that it can deliver properly trained students and that the MTO remains in compliance with EMAR 147.

2. The independent audit is a process of routine sample checks of all aspects of the MTO's ability to carry out all training and examinations to the required standards. It represents an overview of the complete training system and does not replace the need for instructors to ensure that they carry out training to the required standard.
3. A report should be raised each time an audit is carried out describing what was checked and any resulting findings. The report should be sent to the affected department(s) for rectification action giving target rectification dates. Possible rectification dates may be discussed with the affected department(s) before the quality department confirms such dates on the report. The affected department(s) should rectify any findings and inform the quality department of such rectification.
4. A large MTO (an organisation with the capacity to provide training for 50 students or more) should have a dedicated quality audit group whose sole function is to conduct audits, raise finding reports and follow-up to ensure that findings are being rectified. For the small MTO (an organisation with the capacity to provide training for less than 50 students) it is acceptable to use competent personnel from one section/department not responsible for the function or procedure to check the section/department that is responsible, subject to the overall planning and implementation being under the control of the quality manager.
5. The management control and follow-up system should not be contracted to outside persons. The principal function is to ensure that all findings resulting from the independent audit are corrected in a timely manner and to enable the Accountable Manager to remain properly informed of the state of compliance. Apart from rectification of findings, the Accountable Manager should hold routine meetings to check progress on rectification, except that in the large MTO such meetings may be delegated on a day-to-day basis to the quality manager as long as the Accountable Manager meets at least once per year with the senior staff involved to review the overall performance.

GM 147.A.135(c) Examinations

The NMAA will determine when or if the disqualified examiner may be reinstated.

GM 147.A.140(c) Maintenance Training Organisation Exposition (MTOE)

The quality manager should be responsible for monitoring the amendment of the MTOE, unless otherwise agreed by the NMAA, including associated procedures manuals and submission of the proposed amendments to the NMAA. However, the NMAA may agree via a procedure stated in the amendment section of the MTOE that some defined class of amendments may be incorporated without prior approval by the NMAA.

GM 147.A.145(d) Privileges of the Maintenance Training Organisation

1. Moved to AMC 147.A.130(b) paragraph 4(i).
2. The fundamental reason for allowing an MTO approved under EMAR 147 to subcontract certain basic theoretical training courses is to permit the approval of MTOs which may not have the capacity to conduct training courses on all EMAR 66 modules.

3. The reason for allowing the subcontracting of only training modules 1 to 6 and 8 to 10 of Appendix I to EMAR 66 is that most of the related subjects can generally also be taught by training organisations not specialised in aircraft maintenance and the practical training element as specified in EMAR 147.A.200 does not apply to them. However, training modules 7, 11 to 17 and 50 to 55 of Appendix I to EMAR 66 are specific to aircraft maintenance and include the practical training element as specified in EMAR 147.A.200. The intent of the “limited subcontracting” option as specified in EMAR 147.A.145 is to grant EMAR 147 approvals only to those organisations having themselves at least the capacity to teach on-aircraft maintenance specific matters.

GM 147.A.145(d)3 Privileges of the Maintenance Training Organisation

In the case of Military Aircraft Type Training and examination, the reason for restricting subcontracting to powerplant, avionic systems, armaments, escape systems and other relevant military-specific systems is that the related subjects can generally also be imparted by certain organisations specialised in these domains such as the (Military) Type Certificate Holder of the powerplant or the OEMs of these avionic systems, armaments, escape systems and other relevant military-specific systems. In such a case, the Military Aircraft Type Training course should make clear how the interfaces with the aircraft are addressed and by whom (the subcontracted organisation or the EMAR 147 MTO itself).