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EMAR 66 practical training and OJT

EMAR 66 defines the requirements practical training, experience, and OJT for technical personnel who want to qualify for a MAML with a category (A, B1, B2 or C) and aircraft type rating. MAA-NOR have received several questions regarding interpretations of EMAR 66 and would like to provide some guidance to the requirements as defined in EMAR 66.

The guidance will only provide an overview, and not an in-depth analysis. When/if specific needs arise during the transition to EMAR, personnel and/or organisations may apply to the MAA-NOR for a temporary exemption to the general rule. The application should detail how the general standard is not significantly lowered when/if the exemption is granted.

For additional details, please refer to EMAR 66.

EMAR 66 requirements

There are 4 main parts of the EMAR 66 practical training requirements:

1. Basic knowledge - Practical training (EMAR 66.A.25/EMAR 147.A.200(d)/(e)/(f))
2. Basic experience (EMAR 66.A.30)
3. Type practical training - Practical element (EMAR 66.A.45)
4. On the job training (EMAR 66.A.45(c))

Basic knowledge - Practical training (EMAR 66.A.25/EMAR 147.A.200(d)/(e)/(f))

The complete basic knowledge consists of a theoretical part (EMAR 66 Appendix I) and a minimum *practical training*. This practical training, usually 960 hours for B1/B2 categories, is obtained partially under a 147 organisation and partially in a EMAR 145 maintenance organisation environment. See the table below. The duration of minimum required practical training for basic training is detailed in Column 4 of EMAR 147 Appendix I.

Basic Experience – Practical maintenance experience (EMAR 66.A.30):

This is experience that you must obtain before you apply for an EMAR 66 Basic Licence, without type rating. The practical maintenance experience can range from 6 months to 5 years in duration depending on the licence category being sought, previous training and previous licence categories held. Typically, the practical maintenance experiences duration is 2 years for B1/B2 categories after the minimum *practical training* is approved.

Type Practical Training (EMAR 66.A.45):

This is training that will be required in order for you to obtain a type rating. A certificate will be issued by an EMAR 147 training organisation on the completion of theoretical training, **type practical training**, and assessment. It takes typically 2-5 weeks to complete a type practical training, depending on aircraft type.

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UK CAA has a fairly comprehensive guidance to Practical training in their [CAP1529 Part 147 Practical Training Guidance.pdf \(caa.co.uk\)](#). The main takeaways, which are also applicable to the EMAR 147 practical training, are:

- Type Practical training is not to be confused or substituted with the practical element of the theory training, (i.e. the aircraft visit). Type practical training is a structured training event which consolidates the knowledge gained during the theoretical phase of type training and as such, may be performed after or integrated within the theory training. However, it must not be performed before theoretical training (AMC to section 1 of Appendix III of EMAR 66 refers).
- The purpose of the Type practical training is not to include all the maintenance tasks associated with a particular type, but a representative sample of them that will allow the student to acquire the required knowledge, attitude and skills to safely carry out maintenance on that type.
- Practical training should:
 - o Address the different parts of the aircraft and engines, which are representative of the structure, the systems/components installed and the cabin.
 - o Include the use of technical manuals, maintenance procedures and the operational interfaces with the aircraft (e.g. FMC, electronic flight bag, etc).
 - o Include common maintenance and ground handling activities.
 - o Cover both type specific and generic safety elements of the aircraft's maintenance.
 - o Develop the student's competence in performing safe maintenance, prior to the practical assessment.

Type Practical training should not be confused with On the Job Training (OJT), which forms part of the first type rating application process. OJT is carried out by a suitable approved EMAR 145 organisation, and not within the EMAR 147 organisation

On the Job Training (OJT):

This is the experience that will be required in order for you to obtain your first type rating in a particular category (note that this is not a requirement for subsequent type ratings, but the MAA-NOR may also require additional OJT in other cases). It must be approved by the authority (MAA) and carried out in an **EMAR 145 maintenance organisation**. The OJT may take about 6 months to complete, depending on the complexion of the OJT program. Up to 50% of the required OJT can be undertaken before the aircraft theoretical type training starts.

Therefore, your first type rating will require:

- Basic theory and *practical training*
- Basic *maintenance practical experience*
- Type course theory, *type practical training* and assessment
- *OJT*

UK CAA has a fairly comprehensive guidance to OJT in their [CAP1530 Part 145 Licensed Engineer OJT Guidance.pdf \(caa.co.uk\)](#). The main takeaways, which also applies to EMAR 145 OJT, are:

- OJT may only be carried out under the control of a maintenance organisation appropriately approved to maintain the particular type concerned. It is not mandatory for a maintenance organisation to deliver OJT but in either case, the Maintenance Organisation Exposition (MOE) must indicate applicability.
- The maintenance organisation should detail their procedure in Section 3.15 of the MOE, how they will plan their tasks around the maintenance of the aircraft and availability of the accepted Supervisors, considering, as a minimum:
 - o Human Factors
 - o Workload

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- Any critical tasks being performed
- At least 50% of the tasks contained in Appendix II to AMC to EMAR 66, shall be completed where relevant to the particular aircraft type and licence subcategory applied for. Tasks other than those in appendix II can be considered as replacements when they are relevant.
- Tasks should be chosen for their variety, complexity, diversity, frequency, safety and novelty etc. (AMC to section 6 of Appendix III to EMAR 66 item 4).



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EMAR ref	Details	Name / «Training»	Responsible organisation	Duration	Description
66.A.25	EMAR 147.A.200(d)/(e)/(f)	Basic knowledge requirements	EMAR 147	960 hours practical training (B1/B2), of which	Practical training completed as part of the Basic training course (in accordance with EMAR 147 appendix I) may give reduction in Basic experience requirement as detailed in EMAR 66A.30(a)1.(iii) and/or EMAR 66A.30(a)2.(iii).
	EMAR 147 appendix I			300 hours is at a 145 organisation	
66.A.30 2.	GM 66.A.30 (a)3./5.	Basic experience requirements	EMAR 147	Minimum 2 years (B1/B2) of maintenance experience as a technician at an approved EMAR 145 organisation (depending on the basic knowledge of the candidate).	May be combined with EMAR 147 approved training as required under EMAR 66.A.25 (Basic knowledge), so that periods of training can be intermixed with periods of experience, similar to an apprenticeship.
66.A.45	EMAR 66 appendix III, 1	Type practical training	EMAR 147	Normally 2-5 weeks at a 145 organisation, in accordance with program defined by 147 MTO.	Where the practical element of the Military Aircraft Type Training is performed concurrently with the OJT element and both are performed on the same military aircraft type and in a real maintenance environment, this can count towards the experience requirements detailed in EMAR 66.A.30.
66.A.45(c)	EMAR 66 appendix III, 6	On the job training (OJT)	EMAR 145	4-6 months at an approved EMAR 145 organisation (depending on the candidate's previous experience).	Required in order to obtain an aircraft type MAML. Always required for the first aircraft type of the applicable aircraft rating.
					Up to 50% of the OJT may be completed before type training.
145.A.35(a)		Authorisation training	EMAR 145	As defined in the EMAR 145 Maintenance Organisation Exposition	Practical maintenance training required by an approved EMAR 145 organisation in order to qualify for an authorization.

References:

1. [Frequently Asked Questions \(iaa.ie\)](#)
2. [CAP1529 Part 147 Practical Training Guidance V3 SEPTEMBER 2019.pdf \(caa.co.uk\)](#)
3. [CAP1530 Part 145 Licensed Engineer OJT Guidance V4 SEPTEMBER 2019.pdf \(caa.co.uk\)](#)

Questions may be sent to maa-nor@mil.no.