

Opinion 05/2009 (NPA 2007/07)
Rulemaking task 66-011



Type Rating Training
(Review of Part 66
Appendix III)

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Background

3 rulemaking tasks gave birth to NPA 2007-07.

- ★ 66.006 - Privileges of B1 and B2 Aircraft maintenance licence
- ★ 66.009- Type and group ratings
- ★ 66.011 - Type training (review of Part 66 Appendix III about the Type Rating Training)



Background

Just for records

- ✦ Rulemaking task 66.011; composed of NAA and Industry experts
- ✦ NPA 2007-07 published on 22 June 2007
 - ➔ 409 comments received and around 200 address 66.011.
- ✦ CRD 2007-07 published on 28 September 2009.
 - ➔ A workshop was held on 29 October 2009
 - ➔ Several reactions from 4 CAAs, 12 organisations, 4 individuals.
 - ➔ refer to the attachment of the Opinion (§24 to 34)
- ✦ Opinion 05/2009 was sent to Commission on 15 December 2009.
 - ➔ http://www.easa.europa.eu/ws_prod/r/doc/opinions/Translations/05_2009/Opinion%2005-2009.pdf



Background

- The following slides reflect the main regulatory changes to the current rules.
- ✦ Whenever possible, the changes introduced after the CRD publication are stressed out and show **IN GREEN**.



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Background

Why has the Agency reviewed the requirements applicable to the Type Rating Training?



Background

For two main reasons:

★ **1) Standardisation issue:**

- ➔ Significant variations in length and content (for example, duration of a type course for the same type and model can vary between 100 and 200h) were reported by NAAs and Industry.

★ **2) Poor wording of AMC 66.A.45(d) and confusing concept:**

- ➔ The practical portion of the TRT (no table guidance);
- ➔ The OJT (On the Job Training);
- ➔ GM 66.A.45 (d) was not clarifying the concept.



TRT: current rule states that...

- ★ Current AMC 66.A.45(d)
 - ➔ The practical training must comprise a period of 4 months for applicants with no recent recorded previous practical experience of aircraft of comparable construction and systems, including the engines, but this can be reduced to a minimum of two weeks for applicant with such previous experience.
 - ➔ A programme of structured OJT may be prepared to satisfy the practical training requirement
 - ➔ The practical training should be supported by a detailed syllabus showing its content and duration (no existing guidance so far)



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Part A

Opinion 05 / 2009 (TRT)

Main concept for Training, examination and
experience requirements for aircraft rating
endorsement



Opinion 05 / 2009

- **The Type Rating Training (TRT) is always composed of and limited to:**
 - ★ Theoretical portion + examination, and
 - ★ Practical portion + assessment by designated assessors (except for category C).

Reason: Consistency with forthcoming rulemaking task 21.039 (Operational Suitability Data held by the TCH): **the OJT is not considered to be part of the type rating training.**



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- **The OJT will only be mandatory and additional in the case of the first TRT in an AML (sub) category in addition to the practical training:**
 - ➔ so that the mechanic can gain experience in addition to the practical portion of the TRT in a real maintenance environment;



Aircraft Type training – generalities

- **The Type Rating Training (TRT) is always composed of and limited to:**
 - ✧ Theoretical portion + examination (examiners), and
 - ✧ Practical portion + assessment by designated assessors (except for category C).

- **The TRT shall be conducted by:**
 - ✧ A Part 147 organisation or,
 - ✧ As directly approved by the Competent Authority.



Aircraft Type training – generalities

+ introduction of “Difference training”

- (i) training required in order to cover the differences between two different aircraft type ratings of the same manufacturer, as determined by the Agency;
- (ii) to be defined on a case to case basis taking into account both theoretical and practical elements of the TRT;
- (iii) A type rating shall only be endorsed on a licence after differences training when the applicant also complies with one of the following conditions:
 - ✦ having the aircraft type rating from which the differences are being identified, when already endorsed in the licence, or
 - ✦ having completed the type training requirements for the aircraft from which the differences are being identified.



Aircraft type training levels

★ Aircraft type training level description

- ➔ Level 1, level 2 and level 3 have been reviewed;
- ➔ No major differences between the NPA, the CRD and the opinion;
- ➔ The definitions slightly differ from the ATA 104 ones but they are almost aligned



Aircraft type training standard

Theoretical elements

Theoretical elements of the TRT

- ➔ The current table has been reviewed in coordination with the new B1/B2 privileges.
- ➔ The table does not strictly follow the ATA104 breakdown.
- ➔ Each number of the table is considered to be a peculiar chapter. Examination refers to “chapter”.
- ➔ Introduction of the concept of duration justified by a Training Need Analysis (TNA). A GM material has been developed with the help of the Industry and the EAMTC (refer to the CRD).
 - ➔ The duration represents the “tuition” hours excluding breaks, examination, revision, preparation, aircraft visit
- ➔ The duration only applies to theoretical courses for complete aircraft engine combinations according to the type rating as defined by the Agency



Aircraft type training standard

Theoretical elements

Theoretical elements of the TRT

- ➔ The duration represents the “tuition” hours excluding breaks, examination, revision, preparation, aircraft visit.
 - ➔ **One tuition hour means 60’**
 - ➔ **The number of tuitions per day (24h) shall not exceed 6 hours; in exceptional cases, the competent authority may allow deviation from this standard when properly justified.**
 - ➔ **For consistency, an AMC will be added to 147.A.200(f) (basic training course)**
- ➔ The duration only applies to theoretical courses for complete aircraft engine combinations according to the type rating as defined by the Agency
 - ➔ **It was not possible for split courses to give values**



Aircraft type training standard

Theoretical elements

- **Attendance**
- **(Policy in the case of absenteeism)**
- Minimum participation time is at least 90 percent of the tuition hours for the theoretical training course.
 - ✦ If this criterion is not met, the certificate of recognition shall not be issued.
 - ✦ Additional training may be given by the training organisation in order to meet the minimum participation time.
- For consistency, the Agency recommends to add the same minimum attendance criterion to the basic knowledge training in a Part-147 environment (new AMC 147.A.200 (f)).



Aircraft type training standard

Theoretical elements

➤ How does “the duration” work (theoretical portion of the TRT)?

- First perform the Training Needs Analysis and determine the duration;
- Then verify that the result is not below the minimum duration; if yes the justifications must be accepted by the Competent Authority.

Note: The concept of the duration has been well perceived by the readers of the NPA; even if it does not solve all the difficulties as already explained in the explanatory note of the NPA, the stakeholders have correctly understood that the outcome of NPA 2009-01 (Operational Suitability Data - OSD) should bring more solutions to that concern.



Aircraft type training standard

Theoretical elements

Minimum duration of the theoretical portion of the TRT

For aeroplanes, there are now 3 categories

- Below 5.7T with reduced duration below 2000kg (piston engine equipped – 50%);
- Between 5.7T and 30T;
- Above 30T

For Helicopters, one category

- with reduced duration when in group 2 (when a TR is not required – 50%);



Aircraft type training standard Theoretical elements

➤ Flexibility provisions and Training Needs Analysis

- ★ All type rating training courses will have to be approved in accordance with these new requirements “at the latest 18 months after its publication in the Official Journal of the European Union”.
 - ➔ A training need analysis shall be associated to each course.
- ★ After that date, these courses must fully comply with the requirements of this Regulation amendment, except that there is no need to produce a TNA for existing courses where the duration is already above the minimum duration described in Appendix III to Part-66.



Aircraft type training standard

Practical elements

A table is proposed and :

- ★ **Shall cover the representative tasks of the aircraft and systems;**
- ★ **Is aligned with the table of the theoretical elements;**
- ★ **Is composed of the following tasks:**
 - LOC: Location
 - FOT: Functional / Operational Test
 - SGH: Service and Ground Handling
 - R/I: Removal / Installation
 - MEL: Minimum Equipment List
 - TS: Trouble Shooting
- ★ **Has been alleviated (between the CRD and the Opinion – all reactions received have been considered)**
 - Some tasks were removed
 - Statement: " at least 50% of the crossed items in the table, which are relevant to the particular aircraft type, shall be completed

Rq: Duration of the practical training: the AMC will recommend the minimum duration to be 2 weeks for aeroplanes above 30T.



Type training examination standard

Examination (theoretical portion)

- ★ The total time **is based on the total number of question**
- ★ The time for answering is based upon a nominal **average of 90 seconds per question.**
- ★ The number of questions
 - **must be at least 1 question per chapter;**
 - **Consistent with the effective training hours spent teaching at that chapter and at that level.**
 - **Consistent with the learning objectives that derive from the TNA.**
- ★ The pass mark is 75 % :
 - **The number of questions shall be a multiple of 4.**



Type examination standard

Type examination standard

- When a TR is not required (examination and practical experience only)

→ **No change to the current requirements**



On the Job Training

- **The OJT will only be mandatory and additional in the case of the first TRT in an AML (sub) category in addition to the practical training:**
 - ➔ so that the mechanic can gain experience in addition to the practical portion of the TRT in a real maintenance environment;
 - ➔ **Only set up by an approved maintenance organisation**;
 - ➔ leads to a final assessment by a designated **assessor**

- All these elements shall be acceptable to the Competent Authority responsible for the TR endorsement.



On the Job Training

The OJT (only in a maintenance environment)

- Shall cover an acceptable cross section of tasks accepted by the competent authority.
 - appendix II to AMCs is a guidance (50% to be carried out)
- Must be representative of the aircraft and systems both in complexity and in the technical input required to complete that task.
- While relatively simple tasks may be included, other more complex maintenance tasks shall also be incorporated and undertaken as appropriate to the aircraft type.
- Each task shall be signed off by the student and countersigned by a designated supervisor (daily oversight of tasks). The tasks listed shall refer to an actual job card/work order, etc. (see next slide)
- Leads to a final assessment by a designated assessor.



On the Job Training

➤ **AMC 66.A.45(I)§3 will further detail: Supervision of OJT in approved maintenance organisations.**

- ✦ It is acceptable for confirmation of individual OJT task completion to be undertaken by a direct supervisor. The designated Assessor should then, conduct a final review of the tasks undertaken and provide confirmation of the completion of the required diversity, variety and quantity of OJT.
- ✦ During OJT, the supervision is to oversee the complete process, including task completion and use of manuals and procedures during the performance of maintenance in an appropriately approved maintenance environment.
- ✦ The Supervisor should personally observe the work being performed to ensure it is completed correctly, and should be readily available for consultation, if needed.
- ✦ The Supervisor should:
 - Be competent
 - Be capable to coach or give training
 - Be designated by the approved maintenance organisation to carry out supervision



On the Job Training

★ The following data shall be addressed on the OJT worksheets/ logbook:

- Name of Trainee
- Date of Birth
- Approved Maintenance Organisation
- Location
- Name of Supervisor and/or Assessor, (including licence number if applicable)
- Date of task completion
- Description of task and job card / work order / tech log, etc
- Aircraft type and Aircraft Registration
- Licence Rating applied for



On the Job Training

Question

When OJT is compulsory, on which aircraft type is it permitted to be carried out?

- The OJT can only be performed on the relevant aircraft type and not on any aircraft type relevant to the AML (sub) category being sought.

- ✦ **Reason:** this Part-66 requirement is the basis for granting that particular type rating on the AML of a holder who does not so far have experience in this (sub) category.



Adoption of the rule

Opinion 05/2009 introduces:

- ✧ The obligation to have type ratings for Group 1 aircraft in 66.A.45(c).
- ✧ The need for TRT in 66.A.45(f).
- ✧ The content of TRT in 66.A.45(j).
- ✧ The need and content of OJT in 66.A.45(k).
- ✧ The TRT standard in Appendix III.

This will likely change before adoption of the rule to the following structure (to make consistent with 66.009):

- ✧ The obligation to have type ratings for Group 1 aircraft in 66.A.45.
- ✧ The need for TRT in new 66.A.50.
- ✧ The content and standard of TRT in Appendix III.
- ✧ The need for OJT in new 66.A.50.
- ✧ The content of OJT in Appendix III.



Adoption of the rule

Likely structure of Part 66 Appendix III:

- ★ **§1: Aircraft Type training – generalities**
- ★ **§2: Aircraft type training levels**
- ★ **§3: Aircraft type training standard**
 - 3.1 - Theoretical elements
 - 3.2 – Practical elements
- ★ **§4: Type training examination standard**
- ★ **§5: Type examination standard**
 - When a TR is not required (examination and practical experience only)
- ★ **§6: On the Job Training**



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Additional requirements

NAA - Procedure for the direct approval of the aircraft type rating training

(new – 66.B.130)



Additional requirements

- ★ Several comments showed that the procedures for the approval of aircraft type training directly by the NAA lacked clarity although several Part-147 requirements exist when the course is developed by a Part-147 organisation.
- ★ Therefore 66.B.130 was created, requesting the Competent Authority to have procedures in place in order to ensure that direct approved aircraft type rating course complies with Appendix III to Part-66.
- ★ It is reminded here, that according to article 6 of EC n°2042/2003, these provisions shall apply only for a “one off” approval.



Additional requirements

- A new AMC 66.B.130 will be proposed and will be similar to what is required for a Part 147 organisation developing a course:
 - ✦ The Training Needs Analysis (TNA)
 - ✦ **The duration and content of the course.**
 - ✦ The teaching methods and instructional equipment.
 - ✦ **The material and documentation provided to the student.**
 - ✦ The qualification of instructors, examiners and/or assessors, as applicable.
 - ✦ **The examination and/or assessment procedure, as applicable.**
 - ✦ The documentation and records to be provided to the student to justify the satisfactory completion of the training course and related examination/assessment. This should include:
 - ➔ not only a certificate of completion but ...
 - ➔ enough documentation and records to justify that the content and duration approved has been met;
 - ➔ A statement that the examination/assessments has been successfully passed.



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Additional requirements

Automatic endorsement of the TRT on the maintenance licence

(amended 66.B.115)



Additional requirements

➤ 66.B.115 sub § 2, 3 and 4 (for NAAs)

- ✦ In the case of second or subsequent type ratings within a licence category/sub-category, if all the elements of the training have been performed within a single Part-147 organisation, the OJT is not required.
- ✦ In such a case, the aircraft type shall be endorsed based on the Part-147 Certificate of Recognition.
- ✦ However when the TRT is covered by more than one course (Ex: Airframe, engine – different organisations), the Competent Authority shall be satisfied that the interfaces are correctly addressed.



Additional requirements

Once the TRT is endorsed on the AML...

**Is the type rating training sufficient for
getting the Part-145 certification
privileges?**

The answer is.... NO.

(Amended AMC 145.A.35(a))



Additional requirements

- ★ Several readers were expecting that once the TRT is passed (and endorsed on the Licence), the trainee can immediately exercise his certifying staff privileges due to the fact that the type rating was already composed of practical training and sometimes of the OJT.
- ★ It is not true: the TRT (once endorsed on the AML) is not sufficient for getting the Part-145 certification privileges.
- ★ So why?



Additional requirements

The issuance of the authorisation to the certifying staff on a specific aircraft type (in addition to the passed TRT) within the maintenance organisation should be based on criteria including the assessment of the competency such as:

- ★ The attitude;
- ★ the need for differences training between the generic aircraft type rating training that the person has received and the aircraft configuration of the aircraft (of the customer) to be maintained;
- ★ The knowledge of procedures applicable to the maintenance organisation and the operator / customer;
- ★ the variant difference training (training required to cover the identified differences between variants within an aircraft type rating when the type rating training that the person has received does not cover variants);
- ★ the needs for additional specialised training which are not part of the typical type rating training such as in depth trouble shooting, rigging, engine run-up, extensive structural repair or specialised inspection etc...

New AMC to 145.A.35(a) and AMC 66.A.20 (b)3 achieves the same goal.



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➤ (SUM-UP)

➤ **IMPACT and TRANSITION PERIOD**



IMPACT and TRANSITION PERIOD

➤ a) for Part-147 Maintenance Training Organisations:

- ★ Review of all existing courses: develop and amend course material according the new tables (theoretical and practical – review of the content and level)
- ★ Production of the TNA (with the learning objectives) for all courses except for existing courses below the minimum duration
- ★ Review of examination questions IAW the learning objectives.
- ★ Amendment of MTOE.
- ★ Production of the TNA with the learning objectives for new courses



IMPACT and TRANSITION PERIOD

➤ b) for Part-145 / Part-M Maintenance Organisations:

★ **Amendment of MOE / MOM**

★ **Development of procedures**

- for the practical part of the TRT (when performed by the maintenance organisation);
- For the OJT (programme accepted by the Competent Authority, logbook or worksheets, designation of supervisors / assessors etc)

★ **Review of 145.A.35(a)**

- assessment of the competence before granting the certification staff privileges.



IMPACT and TRANSITION PERIOD

➤ **C) for Competent Authorities:**

★ **Review of:**

- ➔ The content of the existing courses
- ➔ The TNA with the learning objectives for existing courses below the minimum duration

★ **Review of existing procedures**

★ **Develop new procedures for:**

- ➔ the oversight of practical training and assessment;
- ➔ the oversight of the OJT;
- ➔ For the course directly approved by the CA (new 66.B.130);
- ➔ The review of the TNA for new courses.

★ **Training of Surveyors / Inspectors**



IMPACT and TRANSITION PERIOD

➤ d) for trainees:

- ★ **Formal use of logbook (OJT)**



IMPACT and TRANSITION PERIOD

➤ Transition provisions

- ✧ To make it simple, 18 month after the Opinion is approved by the EU commission.
- ✧ Approval is expected end of 2010.
 - ➔ All courses after this date should be amended IAW the regulatory changes.
 - ➔ During the transition phase, new courses can be developed in accordance with the current rules and all certificate of training shall be recognized.



literature

- ★ **Doc 9868 about training (first edition February 2006) (associated to the ICAO annex 1)**

A methodology about ‘training’ is given.

- ➔ Objectives / justification of a training need
- ➔ Task analysis and their formulation in an observable and measurable fashion
- ➔ Continuous evaluation process to ensure the effectiveness of training
- ➔ Indicators for evaluation / Assessment, assessors, performance oriented tests
- ➔ Performance or Criteria to be considered by the examiner when assessing each competency / Definition of competency: a combination of skills, knowledge and attitude to perform a task to the prescribed standard / The tolerances applicable to all competency based tests



**Should you have any question on this
presentation, contact**

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END