COMMENT RESPONSE DOCUMENT (CRD) TO NOTICE OF PROPOSED AMENDMENT (NPA) 2007-07

for amending Commission Regulation (EC) No 2042/2003 of 20 November 2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks

and

for amending the Executive Director Decision No 2003/19/RM of 28 November 2003 on Acceptable Means of Compliance and Guidance Material to Commission Regulation (EC) No 2042/2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks

Privileges of B1 and B2 aircraft maintenance licences
AND
Type and group ratings
AND
Type training.

Explanatory Note

I. General

1. The purpose of the Notice of Proposed Amendment (NPA) 2007-07 was to propose an amendment to:

   - Commission Regulation (EC) No 2042/2003[1] of 20 November 2003 laying down implementing rules for the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks, and to
   - Decision of the Executive Director of the Agency N° 2003/19/RM of 28 November 2003[2].

   The corresponding rulemaking tasks were 66.006, 66.009 and 66.011.

   This NPA proposed:

   - An amendment to the privileges of B1 and B2 licence holders.
   - An amendment to type ratings and group ratings.
   - An amendment to the Type Training requirements.

II. Consultation

2. The NPA 2007-07 was published on 28 June 2007 on the web site of the Agency at: (http://www.easa.europa.eu/ws_prod/r/r_archives.php).

   By the closing date of 28 October 2007, the European Aviation Safety Agency ("the Agency") had received 409 comments from National Aviation Authorities, professional organisations and private companies.

III. Publication of the CRD

3. All comments received have been acknowledged and incorporated into this Comment Response Document (CRD) with the responses of the Agency.

4. In responding to comments, a standard terminology has been applied to attest the Agency's acceptance of the comment. This terminology is as follows:

   - **Accepted** – The comment is agreed by the Agency and any proposed amendment is wholly transferred to the revised text.
   - **Partially Accepted** – Either the comment is only agreed in part by the Agency, or the comment is agreed by the Agency but any proposed amendment is partially transferred to the revised text.
   - **Noted** – The comment is acknowledged by the Agency but no change to the existing text is considered necessary.

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[1] Regulation (EC) No 2042/2003 of 20 November 2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks, OJ L 315, 28.11.2003, p. 1. Regulation as last amended by Commission Regulation (EC) No 1056/2008 of 27 October 2008 (OJ L 283, 28.10.2008).

[2] Decision No 2003/19/RM of the Executive Director of the European Aviation Safety Agency of 28 November 2003 on acceptable means of compliance and guidance material to Commission Regulation (EC) No 2042/2003 of 20 November 2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations an personnel involved in these tasks. Decision as last amended by Decision 2009/008/R of 24 March 2009.

- **Not Accepted** - The comment or proposed amendment is not shared by the Agency

NOTE: The resulting text placed at the end of the document highlights the changes as compared to the current rule.

5. The Agency Opinion will be issued at least two months after the publication of this CRD to allow for any possible reactions of stakeholders regarding possible misunderstandings of the comments received and answers provided.

6. Such reactions should be received by the Agency not later than **5 December 2009** and should be submitted using the Comment Response Tool (CRT) at http://hub.easa.europa.eu/crt.

IV. Main changes introduced after the NPA in relation to task 66.006: Privileges of B1 and B2 Aircraft Maintenance Licences.

7. The "Entry into Force" provisions have been introduced as a new paragraph 9 to Article 7 of EC 2042/2003 (Cover Regulation), with paragraphs 7 and 8 being reserved for other opinions which will likely lead to the adoption of amendments earlier or at the same time. In addition to the provisions introduced in the NPA 2007-07 it has been made clear in item 9(a) that persons holding a valid Part-66 licence in a given category/subcategory shall automatically obtain the new privileges described in 66.A.20(a), with no need for re-examination. This will be further explained below.

8. Point 145.A.30(g) has been amended adding the words "as appropriate" to further support the change introduced in AMC 145.A.30(g), paragraph 4, where the competent authority may approve an organisation with only B1 or only B2 certifying staff if the scope of work clearly justifies it.

9. In Appendix IV to Part-145 it has been introduced the obligation for certifying staff to pass examination after type training.

10. Point 66.A.20(a)1, regarding the privileges of the category A licence, has been amended to keep it as in the current rule. However, AMC 145.A.30(g) has been amended to give guidance related to troubleshooting, deferment of defects and closure of deferred defects by category A certifying staff.

11. Point 66.A.20(a)2, regarding the privileges of the category B1 licence, has been amended to remove the reference to Module 7.7. Instead, it has been included in the definition of "Electrical System" in AMC 66.A.20(a) the typical areas covered by Module 7.7.

12. Point 66.A.20(a)2 and (a)3(i) have been amended in order to make the privileges also effective for B1 and B2 support staff. It is clear that, although support staff does not have certification privileges, the systems where they are entitled to exercise their privileges are the same as for certifying staff.

13. Point 66.A.20(a)3(i) has been amended in order to extend the privileges of the B2 licence to maintenance on electrical and avionics parts within powerplant and mechanical systems, requiring simple tests to prove their serviceability (not only on air conditioning systems, fire warning systems, ice & rain protection systems and fuel system indications as was proposed in the NPA). Appendixes I, II and III have been amended in order to introduce an increase of knowledge, training and examination requirements and the B2 basic course duration has been increased to 2400 hours from the 2000 hours proposed in the NPA.

14. As it was already mentioned above and in the NPA these new privileges of the B2 licence holder will be obtained automatically. This has been further supported by the introduction in 66.A.20(b)3 of a provision stating that certify staff cannot exercise

privileges unless they are competent to certify maintenance on the corresponding aircraft. AMC 66.A.20(b)3 has been created to give further guidance. This provision is applicable to all certifying staff, not only those working for Part-145 organisations, which were already covered by the requirement for the Part-145 organisation to assess the competence of all their personnel.

15. In point 66.A.20(a)3 it has been made explicit that the B2 licence does not include any A subcategory. As a consequence, the privileges contained in 66.A.20(a)3(ii) are privileges contained within the B2 licence, and justified by a number of compensating measures described in 66.A.20(a)3(ii) and 66.A.45(b).

16. Appendix I to Part-66 has been amended in order to:

- Introduce additional basic knowledge requirements in Module 5 linked to new technology.
- Further describe the subject that needs to be covered by the sub-modules corresponding to new technology (Integrated Modular Avionics, Cabin Systems and Information Systems).
- Expand Modules 13 and 14 in order to cover the extension of privileges for the B2 licence contained in 66.A.20(a)3(i).

17. Appendix II to Part-66 has been amended in order to:

- Adapt the number of questions to the changes introduced in Appendix I.
- Make sure that the number of questions for each Module is divisible by 4, so a 75% score can be obtained.

18. Appendix III to Part-66 has been amended in order to adapt it to the changes introduced in Appendix I.

19. AMC 145.A.20 has been amended to include new ATA chapters to the table of "category C component ratings".

20. In AMC 145.A.30(g), the list of typical tasks for category A certifying staff has been amended in order to:

- Remove the examples provided in paragraph 2.n. in relation to replacement of in-flight entertainment system components.
- Provide guidance related to troubleshooting, deferment of defects and closure of deferred defects.
- Amend paragraph 2.q. to allow the competent authority to agree on specific simple tasks instead of requiring the agreement of the Agency. This text has been aligned with that contained in AMC 145.A.30(j)4, paragraph 2.(ii), item l.

21. AMC 66.A.20(a) has been amended in order to further clarify the concepts of "Electrical System", "Avionics System", "Simple Test" and "Troubleshooting".

22. AMC 66.A.20(b)3 has been created in order to clarify the sentence "has the adequate competence to certify maintenance on the corresponding aircraft" introduced in 66.A.20(b)3.

23. AMC 66.A.45(a) & (b) has been amended to clarify what is an "appropriately approved Part-145 or Part-147 organisation" for the purpose of providing tasks training and examination for category A certifying staff.

24. AMC 66.A.45(b) has been introduced to provide further guidance for the additional privilege of the B2 licence holder to perform minor scheduled line maintenance and simple defect rectification (see 66.A.20(a)3(ii) and 66.A.45(b)).

25. A new GM 66.A.20(b)2 has been created to clarify that if a licence holder has met the provisions for the issue of the appropriate privileges within the last two years, then he/she does not need to comply with the six months of recent experience requirement.

V. Main changes introduced after the NPA in relation to task 66.009: Type and Group Ratings.

26. The policy that will be followed by the Agency to classify an aircraft in Group 1 (those requiring an individual type rating and type training) will be the following:

A non complex motor-powered aircraft requires individual type rating based on type training when defined by the Agency according to the following criteria:

a) when the maintenance procedures require specialised training (meaning when one of its features is not adequately covered by the Basic syllabus of Appendix I of Part-66), or

b) the maximum certified operating altitude exceeds FL 290, or

c) it is a multiple engine helicopter, or

d) it is equipped with fly by wire systems

This policy has slightly changed in relation to that contained in the "Explanatory Note" to NPA2007-07.

27. The "Entry into Force" provisions that have been introduced as a new paragraph 9 to Article 7 of EC2042/2003 (Cover Regulation) contain in item (h) the provisions that were described in 66.A.47 in the NPA2007-07. In addition, provides for the possibility to maintain existing individual ratings, even if they belong to aircraft that now would be classified as Group 2 or Group 3.

28. A point 66.A.20(b)3 and associated AMC have been introduced to ensure the competence of personnel to certify maintenance on the particular aircraft. Having the licence is not enough. This provision is applicable to all certifying staff, not only those working for Part-145 organisations, which were already covered by the requirement for the Part-145 organisation to assess the competence of all their personnel.

29. Point 66.A.42 has been amended to present the new structure of aircraft groups for the purpose of Part-66 maintenance licences. The following changes have been introduced after the NPA:

- In Group 1 the concept of "large aircraft" has been replaced by "complex motor-powered aircraft".
- Former Sub-group 2a (multiple turbo-propeller engine aeroplanes) has been moved to Group 1.

30. Point 66.A.45 is amended in order to:

- Provide the possibility to obtain individual type ratings for all the Groups and licence categories. In the case of Group 2 and Group 3 aircraft these ratings may be obtained either through:
  1. type training plus, where applicable, On the Job Training, or
  2. type examination plus, where applicable, practical experience
- Provide the possibility for B1 and C licence holders, for Group 2 aircraft, to endorse "Full Sub-group ratings".
- To have limitations only for Group 3 aircraft and only for B1.2 licence holders. This will be explained further below.

31. In order to simplify the proposed licensing system:

a) The limitations of the B1 licence (for Group 3 aircraft) linked to aircraft systems have been removed, keeping only the limitations related to the structure material of the aircraft and to pressurized aircraft. In the particular case of the limitation "pressurized aircraft", the limitation covers the entire aircraft because a pressurized aircraft is more complex not only on the pressurisation system itself but also in other aspects affecting the entire aircraft, such as:

- Special procedures for structural repairs in pressurised areas (riveting, sealing, etc)
- Special procedures for routing wire bundles through pressure bulkheads.

b) The limitations of the B2 and C licences have been removed.

This amendment has been coordinated with the group 66.022 (B3 and L licence), and a similar amendment has been introduced in CRD 2008-03, keeping only limitations related to the structure material of the aircraft for the B3 licence.

The reasons for removing the limitations related to systems (retractable landing gear, variable pitch propeller, turbocharged engine, FADEC, helicopter autopilots, aeroplane autopilots and EFIS) are the following:

- It could be argued why these systems had been selected and not others.
- The system for endorsing and removing limitations may create a significant burden for competent authorities and licence holders.
- Nevertheless, the licence holder still has to cover all the basic knowledge and experience requirements.

As a compensating measure, a provision has been introduced in 66.A.20(b)3, with additional AMC material, in order to make very clear that the certifying staff cannot exercise privileges unless he/she is competent on the particular aircraft. This reinforces the current responsibility of the maintenance organisation or of the independent certifying staff to ensure this competence prior to releasing an aircraft.

32. 66.B.125 has been amended to provide instructions to the competent authorities on how conversions of existing national will be converted to the new ratings described in 66.A.45.

33. AMC 66.A.45(h) has been added to provide guidance regarding the granting of full sub-group ratings and manufacturer sub-group ratings of group 2 aircraft for B1 and C licences.

34. GM 66.A.45 is modified accordingly to the changes introduced in this CRD for aircraft groups, limitations and training requirements.

VI. Main changes introduced after the NPA in relation to task 66.011: Type Training.

35. Task 66.011 of NPA 2007-07 aimed at clarifying the type rating training and its elements as well as the requirements to be fulfilled in order to get the type rating endorsed on the aircraft maintenance licence.

Around 200 comments on the type rating training were received, many of them showing that confusion still reigned between the practical portion of the type rating training and the OJT from previous AMC 66.A.45(d) and its GM.

The final text reflects the following major topics:

36. **What is a type rating training? What is the OJT? Is OJT part of the type rating training?**

The type rating training is always composed of:

- Theoretical portion;

- Practical portion.

For consistency reason with forthcoming rulemaking task 21.039 (Operational Suitability Certificate where the minimum syllabus provided by the TCH will be limited to the theoretical and the practical elements), the OJT is not considered to be part of the type rating training. The OJT will only be mandatory and additional in the case of the first type training 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 type rating training.

The OJT is an additional practical training to the practical portion of the type rating training and shall remain under the supervision of a supervisor: it means that a programme shall be set up only by an approved maintenance organisation and imparted under the oversight of a designated supervisor; in addition this OJT training leads to an assessment. All these elements shall be acceptable to the Competent Authority responsible for the type rating training endorsement.

For all these reasons, the type rating training is now described in sub-paragraph 66.A.45 (k), apart from the OJT depicted in a separate sub-paragraph (66.A.45(l)).

(Reminder: At the stage of the NPA, the fixed practical content was introduced to address the ongoing issue with different course length on the practical training side. The proposed NPA allowed the practical training to be either hands on or demonstration or a combination. Mandatory OJT was introduced only for the 1st type rating; OJT in addition to practical training would be acceptable for subsequent types but is not specifically addressed in the CRD. Mixing practical training and OJT or replacing practical training by OJT does not solve the inconsistencies (course length and content) discovered in the current practices (this was the reason why this rulemaking task was requested). This concept was again broadly discussed within the rulemaking group at the stage of the CRD and was subsequently rejected on the basis of difficulties with standardisation. At the stage of the CRD, it was again concluded that theoretical and practical portion of the type rating training should be always compulsory; in addition the OJT should be made mandatory only for the 1st type rating in the (sub) category.)

37. **Which aircraft type is relevant to the OJT when compulsory in addition to the type rating training?**

The OJT can only be performed on the relevant aircraft type and not on any aircraft type relevant to the AML (sub) category to be sought because this Part-66 requirement is the basis for granting that particular type rating on the AML of an holder who does not have so far experience in this (sub) category and not the basis for the certifying staff authorisation within a maintenance organisation. It is also obvious that, as he is likely to get the certifying staff privileges on that peculiar aircraft type for the first time, therefore the OJT should be performed on that aircraft type and not on any other aircraft type pertaining to the (sub)category.

38. **Is the type rating training (once endorsed on the AML) sufficient for getting the Part-145 certification privileges?**

All along the comments received, there was a need for re-explaining the differences between practical training and the OJT and the assessment of the competency by the maintenance organisation: several organisations were expecting that once the type rating training is passed (and endorsed on the Aircraft Maintenance Licence - AML), 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.

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

- The attitude;

- The general practical experience (that may differ from the practical portion imparted during the type rating training)
- The knowledge of procedures applicable to the maintenance organisation and the operator / customer;
- the need for a difference training between the generic aircraft type rating training that the person has received and the aircraft configuration of the aircraft to be maintained
- 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 a variant(s));
- 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…

This is why AMC 145.A.35(a) has been reviewed and now better explains what kind of assessment the maintenance organisation should perform before granting the certifying privileges even when the candidate already passed the type rating training. This is of very importance, on particular for temporary contracted personal.

Paragraph 145.A.35 is considered to be the very last safety net as an ultimate verification of the competency of the AML holder on the aircraft type.

Note: in the course of task 66.009, paragraph 66.A.20 (b)3 about the "privileges" has been also amended towards the same achievement (adequate competency to be ensured before exercising the certification privileges). New AMC 66.A.20 (b)3 gives more explanations in line with new AMC 145.A.35(a).

39. **Engine ground running**

In the past it was commonly accepted by the Industry that the engine run up was not part of the type training because it should be addressed through a very specific training.

Some of the justifications given were that:

- starting and operating the engines, skills for checking engine performance characteristics, normal and emergency engine operation, associated safety precautions and procedures is very demanding and requires specific competency;
- all the training providers do not have adequate simulators and/or permanent access to real aircraft to train people adequately.
- the maintenance organisation's responsibility is to train a person to a specific maintenance task before an authorisation is issued.

ATA 104 has been built that way and confirms that:

- a specialised level of training was required for this kind of training (level IV IAW ATA104)
- Prerequisites for the trainees attending this level of training shall be determined by airframe/engine manufacturers and operators.
- at the completion of engine run-up training the trainee will be able to safely operate engine after a major repair and/or replacement of engine components.

For these reasons, it is left to the maintenance organisation to select restricted certifying staff (experience, base maintenance etc) for which they want further training about the engine run –up to be given. Such policy was generally described through an internal procedure pertaining to the MOE. It means that in accordance with 145.A.35(a), the maintenance organisation is responsible for checking the competency of their

certifying staff before granting the privileges. Therefore this issue was not considered to be part of a standard type training.

In addition, no safety records or occurrence reporting adversely contradict the current industrial practices since years.

The economic impact will be of significant importance if an amendment to the rules will make the engine run-up compulsory for all the certifying staff.

The results of this consultation contained in this document confirms that there is no need for making the engine run up training part of the full type training (see comments n°118; 135, 42, 412, 38, 201 202 411 277).

For that purpose, AMC 145.A.35 has been re-written in order to specifically reflect the issue of the specific trainings when needed, in particular for the engine run-up.

40. **Theoretical portion of the type rating training: minimum duration**

The concept of the duration for the theoretical portion of the type rating training has been well perceived by the readers; 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 certificate) will bring more solutions to that concern. Therefore the principles have been kept and improved.

There are now 3 categories:

- Below 5.7T
- Between 5.7T and 30T
- Above 30T

For consistency reasons, the figures have been reviewed and adjusted

In addition, special attention was given to the aircraft types that are below 2T (light aircraft): for the non –pressurised piston engine aeroplane below 2000kg MTOM, the minimum duration can be reduced by 50%.

For helicopters pertaining to group 2 (single turbine or single piston engine other than complex motor-powered aircraft and requiring no aircraft type rating- refer to task 66.006), the minimum duration may be reduced by 30%.

41. **Content of the theoretical and the practical portion of the type rating training. Examination**

All the technical comments received have been considered and the content of the tables of appendix III to Part-66 have been properly adjusted; in addition the same template has been used for both tables, so that the layout of the tables are the same and eases consistency between the theoretical and the practical elements when the training organisation sets up the content of the type rating training.

The level for each element of the syllabus has been also reviewed in accordance with the new privileges of the B1/B2 AML (task 66.006).

The layout of the table does not strictly follow the ATA104 breakdown and each number of the tables is considered to be a peculiar chapter.

Concerning the examination, there is no more minimum number of questions per chapter as previously proposed because some stakeholders commented there was no need for having systematically one question per chapter when the nature of the issue remains simple: therefore the number of questions must be at least 1 question per hour of instruction and shall be consistent with:

- the effective training hours spent when teaching at that chapter and level;
- the learning objectives as given by the training need analysis.

In addition, the minimum examination pass mark is 75%. It means that, when the type training examination is split in several examinations, each examination must be passed with at least a 75% mark. In order to be possible to achieve exactly a 75% pass mark, the number of questions in the examination must be a multiple of 4.

The organisation running the course shall propose the distribution of questions and level according to the rule. The competent authority of the Member State will assess the number and the level of questions when approving the course, in particular when the duration of the instruction is less than one hour for a specific chapter.

42. **Maximum number of training hours per day**

Several organisations or NAAs requested more instructions about the "regular" duration of a training day.

For the sake of the "training" efficiency, the number of tuition hours per day for the theoretical training shall not exceed 8 hours, which shall be performed during regular office hours; in exceptional cases, deviation from this standard may be envisaged when justified. This maximum number of hours is also applicable for the combination of theoretical and practical training, when they are performed at the same time.

The resulting text has been adjusted in Part-66 appendix III (type training) and will become mandatory for all type training provided by a Part-147 organisation or in the case of a direct approved course).

For consistency, an AMC has been added to 147.A.200(f) (basic training course)

43. **Attendance**

Several organisations or NAAs requested to have a general 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. It is not an Agency responsibility to regulate

The resulting text has been adjusted in Part-66 appendix III (type training) and will become mandatory for all type training provided by a Part-147 organisation or in the case of a direct approved course).

For consistency, the Agency recommends to add the same minimum attendance criterion to the basic knowledge training in a Part-147 environment (see new AMC 147.A.200 (f)).

44. **Flexibility provisions and training need analysis**

Based on the elements here above explained, all existing type rating training (contents, examination and duration if applicable) will have to be reviewed.

Existing type training courses that are already below the minimum duration as proposed in Appendix II of Part-66 will have to comply with that minimum duration or to be above that minimum duration. Deviations below the minimum duration will only be permissible under justifications in exceptional circumstances. These justifications will have to be recorded, approved by the Competent Authority and archived for standardisation purposes. In order to approve these justifications, a training need analysis (TNA) should demonstrate that a course of a shorter duration continues to satisfy the requirements and its objectives. Therefore guidance has been developed, so that the Competent Authority may review the content and therefore the duration of the course with the help of the TNA (refer to new GM to appendix III to Part-66).

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. 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

courses which duration is already above the minimum duration described in Appendix III to Part-66.

45. **Procedure for the direct approval of the aircraft type training**

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.

New AMC 66.B.130 recommends that the following aspects are properly covered:

- The duration and content of the theoretical and/or practical elements, as applicable, in accordance with Appendix III to Part-66.
- 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 and that the examination/assessments has been successfully passed.

The procedure should also indicate how the competent authority is going to audit the proper performance of the approved course.

It is reminded here, that according to article 6 of EC n°2042/2003, these provisions shall apply only for a "one off" approval.

NOTE: The final proposed text, identifying the differences with the current text, is contained in the Appendix A at the end of this document, after the replies and comments.

VII. CRD table of comments, responses and resulting text

(General Comments)	-

comment	*4* comment by: *FlightSafety International* FlightSafety International opposes the proposal of minimum course durations as established in Appendix III. All course durations should be determined by a Task Analysis. 150 hours of training for aircraft the category of Cessna Citations, Dassault Falcons and others would require the instructors to go in to such trivial detail to cover the time. The course would not be of higher quality, only longer.
response	*Partially accepted* The justifications for the need to add a minimum duration into the rules are explained in the explanatory note of this NPA. This concept is kept at the level of the CRD for the same reasons. In addition no adverse comments to this concept were received during the consultation process. This CRD proposes an additional category in order to cover the category of business aircraft such as the Cessna citations, Dassault aircraft etc. In addition, a Training Need Analysis Guidance Material (TNA GM) has been developed in order to go below the minimum duration, only when justified (exceptional cases). This TNA GM explains which kinds of justifications are needed. It is also worthwhile mentioning that a rulemaking task is undertaken by EASA which one purpose is to define a "minimum syllabus for certifying staff type training. The working group number is 21.039. As an option, this minimum syllabus should also contain a minimum duration proposed by the TCH when a type rating is needed. This in the future will replace the policy mentioned in the NPA.

comment	*23* comment by: *SAMA Swiss Aircraft Maintenance Association* a) SAMA welcomes the proposed changes and clarifications related to to Part-66. This should also reduce the interpretation differences of ithe requirements between NAAs, which several of our members report and criticize. b) In the context of clarification and standardisation, we emphasize the need for a unified question data bank for basic knowledge examinations. Such a 'question pool' would not only be helpful to authorities, but also to SAMA in its efforts to provide widely compatible web based training modules for Part-66 licences, for example. c) The RIA does not consider the differences between Part-66 and FAA licence requirements. The evaluation of such differences should not be left to individual entities. This aspect is significant where (mutual) recognition of qualifications/licences is seeked, as is the case e.g. at the present, world wide high demand for qualified personnel.
response	*Noted* The Question data bank that EASA has proposed in the task 66-007 is planned to be submitted based on the study made to propose a methodology for creating questions and managing the bank.

The FAA requirements for obtaining an aircraft mechanic licence have not been considered in the RIA because the two systems are very different.

comment *126* comment by: *Dassault Aviation*

I am Edward Fleming employed by Dassault Falcon Jet Corp. I am responsible for coordinating training for Dassault. These comments are being submitted on behalf of Dassault Aviation.

response *Noted*

Looking forward for the other comments related to this introduction.

comment *164* comment by: *BCAA - DAE - Certification*

Consolidated versions of the basic regulation, the AMC and GM as well as the ED should be available. A consolidated version including all modifications is more readable than a basic document and his revisions (and multiple insertions).

response *Noted*

It is the principle of the EU institutions that the opinions amending the EU regulation 2042/2003 always refer to the original document. The same principle applies for Decisions amending the Decision of the Execuive Director of the Agency 2003/19/RM.

However regarding the Decisions, the Agency intends to publish in the future a consolidated version of the Decisions related to each Annex of EU regulation 2042/2003.

comment *171* comment by: *johnKELLY*

To whom it concerns.
My name is John Kelly, and I am a line maintenance engineer with Aer Arann in Dublin airport. My query is concerning NPA 2007/07. I currently have a b1/b2 license, but I only have a type rating on the b2 at the moment. Does AMC 66.A.45(g)1(iii) therefore affect me in that I will have to show base maintenance experience when applying to put a type course on my b1 license, if you could clear this up for me it would be gratefully appreciated.
Kind regards
John Kelly

response *Noted*

To be endorsed a type rating on your B1 licence, you will need to show satisfactory completion of a relevant category B1 aircraft type training and examination approved by the competent authority or conducted by a Part-147 maintenance training organisation. If this is the first aircraft within the category B1, the NPA mandates an On Job Training corresponding to the category of aircraft.
The NPA 2007-07 proposes conversions for licences into new groups of aircraft.

comment *174* comment by: *CAA-Norway*

The NPA No 2007-07 has been issued based on three EASA rulemaking groups. The Draft Opinions and Draft Decisions, specially to Part-66 and AMC 66 reflects this.

The content of the NPA is in general positive, but the NPA is not appropriatly coordinatet to ensure consistency between the changes introduced by each working group.

There are several areas where there are mismatches between different propsed changes, which again leads to a severe need for comments and changes.

response *Partially accepted*

The Agency has reviewed the text proposed to ensure consistency between the 3 groups and with NPA 2008-03 on B3 and L licences. Each comment has been reviewed accordingly.

comment *200* comment by: *ECOGAS*

We have reviewed this document and make the following comments.
ECOGAS are pleased with the proposed changes for the vast majority of this document. However, there is one element which may give many organisations a practical problem when issuing approvals. The requirement to demonstrate practical experience when issuing first approval in an organisation is not feasible. In the case of contractors that practical experience may well have been gained in other organisations and it will not be possible to show that experience within the approved organisation.
The other problem area is with the introduction of first aircraft type in an organisation. In most cases it will not be practical to show six months practical experience. Therefore the local NAA should have discretion to approve first to type applications as they do today.

response *Partially accepted*

In this NPA the practical experience is called by 66.A.45(g) for large aircraft and (h) for non-large aircraft. Practical type training and assesment may be taught and conducted by 147 organisations, or :
- for large aircraft, may be conducted by any organisation when the training programme is approved by the authority,
- for non-large aircraft, the examination may be conducted by the authority.
These 2 solutions should give the flexibility to get such training. This can be achieved by working on aircraft in other organisations under the supervision of an authorise staff.

Regarding the introduction of a first aircraft type, 66.A.20 (b) 2 states the following:

"The holder of an AML may not exercise certification privileges unless in the preceding 2 year period, he has either 6 months of maintenance experience IAW the privileges granted by the AML or met the provision for the issue of the appropriate privileges."

The second part of the sentence means that anybody that has just received a type rating course (theoretical and practical) and passed the examination may be allowed by the Part-145 organisation to exercise its privileges (145.A.35(a)) without demonstrating 6 month of recent experience, provided the type rating

has been endorsed on the AML and the person has been considered "competent".

comment

341 comment by: *Association of Dutch Aviation Technicians*

This NPA will increase the operationality of the certifying category B1 and B2.

However, this NPA will also diminish the operationality of the certifying category A

response

Noted

The intent of this was to re-balance correctly the privileges of B1 and B2 staff, category A staff activity should not be very affected.

comment

351 comment by: *Panasonic Avionics Corporation*

We are lead to believe that the intention of these limited changes to 66.A.20.(a)1 is to clarify the intent of the current rule. We strongly disagree that this is merely a clarification of the existing position. It is not a clarification because there is no rule, anywhere in Part-145 or Part-66 denying the ability of engineers of any category (including category A) to raise and certify maintenance deferrals. One cannot clarify a rule that does not exist. The proposal thus represents a new rule and is therefore a fundamental change to existing rules and practice. Panasonic (and other Part-145 approval holders) have permitted Category 'A' licence holders to raise and certify deferrals within the strict limits of their authorisation. There is no basis in Part-145 or Part-66 for denying this. Most significantly, this certification privilege was written into our procedures and approved by our competent authority (UK-CAA).

The proposed change is, therefore, a new rule removing a certification privilege, Thus, the absence of an impact assessment is a fundamental flaw. We believe that an impact assessment would have shown that this change would have a serious adverse impact on maintenance providers and their customers and also that it is unnecessary and would give rise to no compensating benefits.

In conclusion, there is an unfortunate lack of drafting clarity and consistency in the NPA. Key terms are not defined and the proposed amendments in relation to the issues referred to above are not properly considered in relation to their practical application and real impact or otherwise on safety.

In summary, taking the above into account it would suggest that no specific consideration was given in the regulatory impact assessment when these changes were drafted; a suggestion supported by the lack of any impact statement in this regard. If these changes are adopted they will have a significant adverse effect on our business, the service we can offer to our customers and our staff, with no positive benefit.

Panasonic are committed to making a positive contribution to aviation safety and the continued airworthiness of our customers' aircraft. We therefore request that the EASA Rulemaking Directorate revise the NPA to correct the anomalies raised in this response.

Failure by EASA to take account of these considerations would certainly result in serious damage to our business and that of similar organisations.

response

Accepted

66.A.20(a) has been kept as in the current rule. AMC 145.A.30(g), item 2 now explains that tasks requiring troubleshooting should not be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).

comment

355 comment by: *FAA*

The FAA has reviewed NPA 7/2007 and has no comments.

response

Noted

comment

400 comment by: *SNMSAC Syndicat National des Mécaniciens Sol de l'Aviation Civile*

NPA 2007-07

Page 0
General Comment

General comment N°1: this NPA is very confused it has to be separate in two NPA one concerning basic training and another one for the Type training.

General comment N° 2 from **SNMSAC S**yndicat **N**ational des **M**écaniciens de l'**A**viation **C**ivile (France): extension of privileges for B2 is not a problem for LAME whose got a conversion process witch issue a Licence B2 + B1 scope limited to electric and avionics task in mechanical systems but for whose got a Licence after studying under the syllabus since the introduction of JAR 66 in 1998, reinforced by the R2042-2003 they didn't received enough basic knowledge.

It means that the B2 only shall have an addition of basic training following by an experience period before getting the new added privilege.

response

Not accepted

It is to ensure consistency and proper coordination between 3 groups that the NPA collects all results in one document.
As stated in the proposed Article 7, paragraph 9(a), persons holding a valid Part-66 licence shall automatically obtain the new privileges. However, 66.A.20(b) has been modified by adding a new paragraph 3 that makes clear that the person cannot exercise certification privileges it he/she does not have the adequate competence. This is further clarified in the new AMC 66.A.20(b)3.

comment

403 comment by: *SITEMA – Sindicato dos Técnicos de Manutenção de Aeronaves*

Attachments #1 #2 #3 #4

SITEMA understands the need for extending the B2 privileges to CAT. A, and we are in favour, in a general way. However, some considerations must be made and precautions taken, for safety issues.
We provide in this comment a file we believe to be correct, but it should be confirmed by EASA group. The file is intended to review the differences from A basic training to B2 basic training, as a departure point.
Yet, some organizations have performed along the years basic training

to B2 which include some or all of the A basic training (and this should be taken into account).
Ideally, the Part-147 would supply a list of those non-performed CAT.A items to the candidate or NAA, in order to check for basic training.

1. If the B2 candidate to A would have performed those items referred in the list, he (or the Part-145) would only have to prove compliance for type training in those items. In this case, it is not likely that a B2 would have type training and experience in changing wheels, changing brakes, oil check (both generator and engine), structure inspection and others, but it is very likely that he would have experience (even without type training) in most of B1's ATA like for example 26, 21, 73 or 77.
2. There would also be the opposite example, a B2 without CAT.A basic training, but for years performing some of CAT. A or B1 duties, after having performed the type training and experience time those items imply.
3. Both cases may very well happen simultaneously within the same Part-147/Part-145 organization.

Therefore, we believe the Part-147 and/or Part-145 (or the candidate himself when working as an individual certifier) should complete those trainings and then supply its representative NAA those elements, for License ammendments.
We also believe that in the future, the need for sub-categories for B2 will arise (we can start working in it now and save some time then), due to new aircraft generation.

response *Not accepted*

The Agency proposal in 66.A.20(a)3(ii) and 66.A.45(b) allows the B2 engineer to have cat A privileges of those aircraft already endorsed on the B2 licence, even if there are some items of the cat A basic training that have not been covered. However, the following compensating measures have been introduced:

- It is limited to the ratings already endorsed on the licence.
- It requires task training.
- It requires six months experience on the particular tasks.
- Both the training and the experience must be obtained in the Part-145 organisation where the person is employed.

The Agency also notes that if a B2 licence holder has already completed some additional Basic Knowledge corresponding to the A category, this may be taking into account by the competent authority in order to get examination credits. These credits may be used in order to get a cat A licence.

comment *422* comment by: *Rockwell Collins*

The stated NPA makes reference to the proposed restriction and removal to license privileges for Cat A Licensed Holders. The draft Opinion and Decision Document makes no assessment of the change in the Regulatory Impact Statement and therefore it is very difficult for an organisation such as ours (Approval Number CAA 00237) involved in the maintenance of In-flight Entertainment Systems on board aircraft to make a timely and detailed response.

However, Rockwell Collins believe that EASA intend to make considerable

changes to both 145.A.30 and 66.A.20 reducing the privileges for Cat A licensed engineers which will have a major effect on the way we perform business and our cost base. We would strongly recommend a formal discussion with EASA, ourselves and other EASA 145 Limited A1 Approval Holders in order to mitigate risks and enable EASA to understand cost and process effects to our business. NPA 07-2007 could potentially result in our On-board maintenance business becoming no longer financially viable with major consequences and I would therefore advise caution before making such changes.

response *Accepted*

66.A.20 has been kept as in the current rule. However, this has been explained in AMC 145.A.30(g), item 2.
No tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).

TITLE PAGE p. 1

comment *198* comment by: *Silhan Vladimir*

I think that the proposed Part M is difficult to use in range of sport and recreational fying It is too complicated for "hobby"operations. It can make flying very expansive for middle class people. Aplication of this document can start non legal flying with microlights. Much more usefull is Czech or German and best is the French system of ML operation and maintanace and airwhortness certification system. It is cheep and geting full functionality without any problems in operation.
Let me tell you one remain. Only english language in this system is not fair for non english nationality and I think, it is not in accordance with the law. It is discrimination of milions people. System shall be in all nationals languages of EU.
Dr. Vladimir Silhan

response *Noted*

This NPA is not linked to Part-M directly, but to some categories of Part-66 licences. Regarding Part-M, since your comment was written, the EC rule 1056/2008 was published to amend Part-M for recreational aircraft. If no change to the rule had been made, the full Part-M would have applied to general aviation, without any alleviation for general aviation.

The EC regulation which takes over an Opinion submitted by the Agency are translated in all languages of the EU further to its publication by the Commission.
Only the Decisions of the Agency which modify the AMC and GM are not translated by the Agency. However it is up to each Member State to ensure their translation.

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comment *203* comment by: *British Airways Engineering*

Attachment #5

	This NPA should be withdrawn in its entirety. **This NPA should be broken down into separate proposals and reissued. This would enable the positive proposals to be introduced and the negative issues to be rejected on a case-by-case basis.** **A NPA of this magnitude and complexity should never have been published.** **Some of these proposals will have a major affect on our (British Airways) business and therefore we strongly contest them until such changes are made more realistic and practical. We understand the need to standardise and streamline the EASA licence process but this NPA, in its current form does not achieve this aim.**
response	*Not accepted* The NPA is complex because the Agency has coordinated 3 rulemaking tasks: 66-006 (Privileges of B1 and B2 AML), 66-009 (Type and group ratings) and 66-011 (Type training). It's to ensure the consistency of the global proposition and an adequate coordination between the works of each group that they are grouped. It would have been unreasonable to have separate proposals taking the risk of generating improper coordination between the tasks. These rulemaking tasks were proposed and priorities were made with the help of SSCC and AGNA which represent stakeholders and competent authorities. These groups submitted the tasks for the establishment of the rulemaking program, giving priorities to the tasks and validating the progress of work made by the Agency for each task. Your proposal to add a paragraph 66.A.20 in your attached document to clear Acceptable Deferred Defects (ADDs) relating to the tasks identified as non-airworthiness items by category A personnel cannot be accepted because there is no definition of airworthiness items. Only the terms of "critical system" exists in 145.A.65 to require maintenance organisations to have a procedure to capture maintenance errors. In addition, this paragraph 66.A.20 relates to the privileges of category A license which give privileges for simple tasks authorisations only, they are normally not linked to critical systems and cannot be linked to airworthiness items either. Regarding your second proposal in the attached letter on Troubleshooting, we agree with your definition of the word, however this definition was referring to B2 licensed engineer, while the paragraph 66.A.20(a)2 refers to B1 licensed engineer. Troubleshooting on avionics systems is the privilege of B2 licensed holders only, not B1, because the basic knowledge for B1 license does not include knowledge on avionics at level 3. This is why the introduction of your proposal to include avionics troubleshooting for license B1 cannot be accepted. Regarding your third proposal in the attached letter to extend the privilege of B2 license holders to include deal with wiring and electrical components in all electro-mechanical systems is accepted and the paragraph 66A.20(a)3 on category B2 AML is modified accordingly. Regarding the fourth proposal in the attached letter about the B1 engineer level of training in Appendix III ATA chapter 73A (Engine FADEC systems), the Agency proposes not to modify it, because the knowledge of this system is required to perform inspections and monitoring. This does not prevent from reporting to a B2 engineer for further investigation.

The last proposal in your letter about practical training is not in contradiction with the NPA itself and the very last version as proposed by the CRD. However the compulsory need for the OJT (new 66.A.45(l)) shall not be mixed with the option to cover the practical elements of the type rating training by some real maintenance tasks (new 66.A.45(k)). The mandatory need for the OJT and the practical portion of the type rating training are considered to be two different things. The way the practical elements of the type rating training are covered is part of the approval of the course itself, whether directly by the Competent Authority or as part of the Part 147 scope of approval for the organisation.
It may also happen that such practical maintenance activities in Appendix III require a CRS for the release of the aircraft (both for the practical elements of the type rating training and the OJT), but this was already true with the requirements before the issuance of the NPA (current rules).
In the case of mandatory OJT, new AMC 66.A.45(l) sub-paragraph 3 states that up to 50% of the required OJT may be undertaken before the theoretical part of the type rating training starts.

A. Explantory Note - IV. Content of the draft opinion and draft decision in relation to Task 66.006 - Background information p. 5-6

comment *268* comment by: *Esko HIETANEN*

Item 11. The B2 training is more complicate than B1 training.

response *Noted*

The basic knowledge requirement for B1 and B2 is described in Appendix I and is adapted to their tasks. The duration of the B2 basic course has been maintained in 2400 hours.

There is a proposal from SSCC to modify the basic knowledge for B2 staff to adapt it more to the needs of general aviation. We suggest you to follow the future task 66.027 related to this subject.

A. Explantory Note - IV. Content of the draft opinion and draft decision in relation to Task 66.006 - Envisaged changes p. 6-7

comment *1* comment by: *David Beech*

In view of the statement " To increase the capability of the B2 certifying staff to include electrical troubleshooting and electrical defect rectification in some mechanical systems"

The above statement does not fully address the issues raised in regards to the previous additional feedback and the on going situation of the Coverted BCAR section L Avionic/Electrical engineer having a major advantage over the new JAR-66 B2 engineer in regards to certifying privelages on electrical componants in all mechanical systems (previously limitation 8 and now B1 type with limitations 10 + 11)

In my view the above statement should be changed to the put both sets of avionic/electrical engineers old and new on par with one

another and for all to have a clearer view to privilages and erase any current grey areas that are present. A B2 avionic engineer should really have the privilage to certify all aircraft electrical systems, in the past and present we have always worked in these systems, though with the JAR66 coming into effect it seems we have lost the privilage to certify such systems, this is by far the largest restriction placed on the B2 engineer at present as the work has to be certifyed by a full B1 type holder or by a a BCAR section L converted engineer. In essence it really defies any logic to take electrical systems away from an engineer that has trained and gained valuable experience in all avionic and electrical systems.
I believe the statement should be changed to:

"**To increase the capability of the B2 certifying staff to include electrical troubleshooting, electrical defect rectification, electrical modification and all other such electrical tasks in all aircraft mechanical systems inclusive of chapter 25"**

B2 licence holders are involved and carry out the tasks similar to that of a BCAR converted avionic/electronic engineer involving electrical componants within all mechanical systems it was covered not only in the basic licence exams but the type courses as well. such items are then certified by section L B2 holders with limited B1 type or engineers with full B1 type inclusive of electrics.

Due to the JAR-66 B2 licence currently being heavily restricted when compared against BCAR section L Avionic engineers, Some form of continuity has to be established between the old section L and the new JAR-66 rather then the current situation, where by everyone seems to hold varying privilages.

I have included chapter 25 in the above statment because simple tasks like oven,boiler,fridge and defib replacement is not currently covered under the B2 licence, considering these are simple tasks and in many cases of an electrcial nature a B2 engineer does not hold the privilage to sign for them. Also in flight entertainment systems (IFE) partly comes under chapter 25 and although covered in both the B2 basic licence exams and the type courses the B2 engineer still does not hold the privilage to cover such work, the B1 type holder does.

Another point to note is a pure JAR-66 B2 Engineer who also holds a full B1 licence and who has carried out type courses in the past inclusive of B1 electrical systems (to cover the privlages of the post BCAR licence holder) is unable to gain the same privilages as the BCAR avionic/electrical converted engineers. This According to CAA/EASA is because the JAR-66 licence system does not allow for limited type to be endorsed on them, although if you were lucky to convert from BCAR section L to JAR-66 through grandfather rights you can hold a limited type rating, to me this is discrimination against newly licensed engineers, the only way to hold the same privilages is to hold the full B1 type (i.e complete the mechanical aspects of the course to gain your electrical privilages, this really does not seem logical and has to be addressed).

It may also be of interest that a large void is starting to unfold between B1 and B2 engineers in regards of electrical coverage, currently the B2 engineers have in effect lost Aircraft systems electrical coverage to the B1 engineer, though converted BCAR section L airframe and engine engineers who have not and do not wish to carry out the extra academic and experience side to obtain the

extra electrical modules, cannot sign aircraft electrical systems either. So the bottom line now is due to the JAR-66 removing the electrical privilages from the avionic/electrical engineer, there are now many circumstances where no one can now sign for aircraft electrical systems.

I look forward to your response

response *Accepted*

Refer to new paragraph 66.A.20(a)3(i) and new training requirements of Module 13 of Appendix I.

comment *2* comment by: *David Beech*

The statement " Include the possibility for the competent authority to issue a part 145 maintenance organisation approval for the line maintenance having only B1 or B2 certifying staff, subject to the limitations in the scope of the work"

I think this statement will dramatically **decrease the safety of the aviation industry and put either the B1 or B2 licence holders out of employment.** Especially if the 145 maintenance organisations decides to employ just one licence holder instead of both. although its an option the companies will opt for this as they will only need one license signature per aircraft not two, hence saving money at the expense of safety. This is due to the fact that full cover may not be present on the input by a single B1 or B2 licence holder, If a defect lies out of the scope of the individual engineer it will place the industry in the mind of over seeing certain defects maybe even of an airworthiness matter untill such cover is available if at all.

Having both B1 and a B2 engineers or an engineer with dual licences and dual type cover in a line enviroment both signing towards the CRS of each and every aircraft maintains the maintenance to a high and professional standard to maintain the safety of not only the aeroplane but the passengers and crew on board. This is due to full cover and privilages being available eliminating the possibility of an airworthiness or not item being over seen due to the lack of licence cover.

I think this move is taking both the proffesional standards away from the engineer licensing system and will take the specialties away from maintenance inputs, this is sure to decrease the standards of aviation.

response *Not accepted*

AMC 145.A.30(g), paragraph 4, very clearly states that this is only possible if the scope of work of the organisation justifies that there is no need for a certain category of certifying staff, including not only the scheduled maintenance but also the non-scheduled line maintenance (defect rectification).

comment *3* comment by: *AlexanderMARTIN*

Increasing the scope of the B2 licence very much welcomed to someone that is a B2 holder myself. But the ammendment does not seem to go far enough in providing clarity of the scope, i.e 'some mechanical systems' this statment will

only continue the uncertanty of the B2 engineers scope of privellage.

A concise list of the electro/mechanical systems that are to be included in this NPA is required or the text be changed to read 'Increase the capabillity of the B2 certifiing staff to include electrical troubleshooting and electrical defect rectification in **all** mechanical systems' deleting the 'such as' paragraph.

This would then reflect the actual industry reality as alluded to in the third paragraph.

response

Accepted

Refer to new paragraph 66.A.20(a)3(i) and new training requirements of Module 13 of Appendix I.

comment *113* comment by: *CASA*

Proposal 66-006

Further AMC material to clarify what is an electrical system and what is an avionic system; Further AMC material to clarify what is a simple test in relation to avionic tasks; increase the capability of the B2 certifying staff to include electrical troubleshooting and electrical defect rectification in some mechanical systems, such as air conditioning, fire warning systems, ice & rain protection and fuel system indications.

CASA fully supports the proposed expansion of the role of the B2. The clarification of what is termed avionic and what is electrical is also supported.

EASA has used: "***avionics system* is** defined as any analogue or digital data line and relevant connectors plus all components belonging to the following systems."

CASA prefers the following description of avionics. The reader will see changes to the introductory paragraph to provide a more expansive description of the transmission medium. CASA could not see that the EASA group of words '*analogue and digital data line and relevant connectors*' included wireless connections or even data transferred by wet-line.

avionics system means an aircraft system that transfers or stores analogue or digital data using a wireless, data line or other data transmission medium, and includes the system's components and connectors. Examples of avionics systems include the following:

(a) autoflight systems;

(b) communication or navigation systems;

(c) instrument systems;

(d) in-flight entertainment systems;

(e) integrated modular avionics (IMA) systems;

(f) cabin intercommunication data systems;

(g) cabin network service systems;

(h) on-board maintenance systems;

(i) information systems such as air traffic and information management systems and network server systems;

(j) fly-by-wire systems;

(k) fibre optic control system.

The classification and subsequent delineation of a system as being either mechanical or avionic is a process which will be subject to continual review as technology changes. Even a clearly mechanical ATA chapter may have electrical and avionic aspects – eg Doors have avionics (instruments, digital data lines, data storage aspects, cautions and warnings, sensors) and the avionics are supplied by electrical power.

EASA appears to have restricted the B2 to avionics systems (specifically nominated eg autoflight), electrical systems (specifically nominated eg lighting) and the electrical troubleshooting/defect rectification of some mechanical systems (air-conditioning, fire warning, ice and rain, and fuel systems).

Table showing certificate of release to service privilege – B1 and B2 – as understood by CASA

ATA Chap	Topic Area	B1	B2	B2 – electrical Test & Troubleshoot
21	Pressurisation, Airconditioning & Equipment Cooling Systems	Y	N	Y
22	Autopilot	N	Y	NA
23	Communications	N	Y	NA
24	Electrical Power Supply Systems Generator Constant Speed Drive	Y	Y	NA

	/IDG			
25	Equipment, Furnishings & Emergency Equipment	Y	N	NA
25 (63–75)	Equipment Furnishing – ELT, Avionics Bay and Racks, relay panels, underwater locating beacon	N	Y	NA
26	Fire, Smoke, O/H Detecting & Exiting Systems	Y	N	Y
27	Flight Control Systems	Y	N	NA
27	Flight Control Systems – system operation – fly by wire	N	Y	NA
28	Fuel Systems	Y	N	Y
29	Hydraulic Power Systems, including RAT	Y	N	NA
30	Ice & Rain Protection Systems	Y	N	Y

31	Indicating & Recording Systems	N	Y	NA
32	Landing Gear	Y	N	NA
32–40	Wheels & Brakes	Y	N	NA
33	Lighting (Operation)	Y	Y	NA
34	Navigation Systems: General Radio Interface ACARS, SELCAL, LARP, INS/IRS Compass Flight Management System	N	Y	NA

	Doppler Systems Flight Management System			
35	Oxygen System	Y	N	NA
36	Pneumatic System	Y	N	NA
37	Vacuum	Y	N	NA
38	Waste Water	Y	N	NA
42	Cabin intercom data and network systems	N	Y	NA
44	Cabin Systems	N	Y	NA
45	Central Maintenance System	N	Y	NA
46	Information System ATIMS	N	Y	NA

	Network server			
49	APU	Y	N	NA
52	Doors	Y	N	NA
53	Fuselage	Y	N	NA
55	Stabilisers	Y	N	NA
56	Windows	Y	N	NA
57	Wings	Y	N	NA
60	Propeller - Rotor	Y	N	NA
61	Propeller - Propulsion	Y	N	NA
62	Rotor	Y	N	NA
63	Transmission Drive Shaft	Y	N	NA
64	Tail Rotor	Y	N	NA
66	Folding Blades & Pylon	Y	N	NA

67	Rotor Flight Control	Y	N	NA
72 & 83	Accessory Drives	Y	N	NA
73	Carburation/ Injection System	Y	N	NA
74	Ignition & Starting System	Y	N	NA
75	Air Systems & Control	Y	N	NA
76	Engine Control System	Y	N	NA
77	Engine Indicating System	Y	N	NA
78	Thrust Reverser	Y	N	NA
79	Lubrication System	Y	N	NA
82	Power Augmentation	Y	N	NA
81	Supercharging System	Y	N	NA

It may be more useful and provide a safer outcome to provide the B2 with full ATA level III training on all ATA chapters that have an aspect of electrical and avionics rather than rely on the B1.

CASA believes that unless the type training for a B2 includes ATA such as those below the B2 will have an artificial restriction place on their avionics privileges

(as provided by the avionic definition).

The basic knowledge syllabus includes avionics training for the B2 (irrespective of whether the avionics is included in a mechanical system eg Module 13.19 of the Basic Knowledge Syllabus) – the same cognisance of avionics aspects of mechanical systems needs to be included in the B2 type training syllabus.

Examples of ATA chapters that have an avionic/electrical aspect that could be released to service by a B2 holder (if the maintenance work required was electrical or avionic related) include:

29 Hydraulic Power
32 Landing Gear
35 Oxygen
36 Pneumatic
37 Vacuum
38 Water Waste
49 APU
50 Cargo and Accessory Compartments
52 Doors
76 Engine Controls
78 Exhaust
80 Starting

Simple test is defined as a test described in approved maintenance data, not involving more than 10 steps (not including those required to configure the aircraft prior to the test, i.e. jacking, flaps down, etc.), and meeting all the following criteria: The serviceability of the system can be verified using aircraft controls, switches, Built-in Test Equipment (BITE) or external test equipment not involving special training. The outcome of the test is a unique go – no go indication or parameter. No interpretation of the test result or interdependence of different values is allowed.

CASA believes it is important to allow the B1 licence holder to use the Central Maintenance Computer for serviceability checks of avionic LRU replacements. CASA also considers the term 'operational check' to be more useful than the terminology 'aircraft controls, switches'. So as not to be misconstrued consider using the words:

correct functioning and serviceability have been demonstrated by use of:

(i) an operational check; or

(ii) built-in test equipment; or

(iii) the aircraft's central maintenance system;

CASA does not agree with the equation of relating the number of steps with the simplicity or complexity of a test.

Increase the capability of the B2 certifying staff to include the possibility for the Part-145

organisation to authorise a B2 license holder to certify category A tasks. The category A privilege will be limited to the aircraft types already endorsed on the

B2 license;

In principle CASA supports the expansion of the B2 role to include A category. CASA has conducted some work to quantify the knowledge differential from the existing B2 basic knowledge syllabus to that of the A category. CASA present intention is to allow the B2 to sit and pass the delta of training required and then receive an A category endorsement. In the Australian context (knowledge syllabus incorporated within a competency based training package) a full time student could possible gain the required competencies in six weeks of theoretical training and practical work (competency training).

Revise the basic knowledge requirements shown in Appendix I in order to include some new technology such as:

a) Integrated Modular Avionics (ATA42);

b) Cabin Intercommunication Data Systems (ATA44);

c) Cabin Network Service (ATA44);

d) Information Systems such as Air Traffic and Information Management Systems and Network Server Systems (ATA46).

CASA fully supports this proposal. CASA has incorporated the new technology training with its type course syllabus and intends to incorporate the same changes with the basic knowledge syllabus (competency based training package).

Clarify that category A privileges do not include troubleshooting nor deferment of defects. Revise the list shown in AMC 145.A.30(g) of typical tasks that can be performed by category A certifying staff, in order to include some tasks typical for helicopters.

CASA fully supports this proposal.

response *Accepted*

AMC 66.A.20(a) has been amended accordingly.

comment *117* comment by: *NHAF Technical committee*

The increase of a B2 capability should be clearly limited to a specified list of mechanical systems. The word "such" in the text is to much open ended.

response *Accepted*

The privilege has been increased to maintenance on electrical and avionics parts within all mechanical systems.
Refer to 66.A.20(a)3(i) and new syllabus of Module 13 of Appendix I.

comment *130* comment by: *Aircraft Engineers International (AEI)*

Comment:

Although AEI supports the intent of the NPA, we are concerned about the extension of the B2 privileges relating to electrical components within

	mechanical systems. Personnel holding B2 licenses must complete conversion training before the full certifying privileges can be granted. Reason: AEI consider that all B2 licenses issued in accordance with JAR's since June 2001 have not met the fundamental training requirements.
response	*Partially accepted* As stated in the proposed Article 7, paragraph 9(a), persons holding a valid Part-66 licence shall automatically obtain the new privileges. However, 66.A.20(b) has been modified by adding a new paragraph 3 that makes clear that the person cannot exercise certification privileges it he/she does not have the adequate competence. This is further clarified in the new AMC 66.A.20(b)3.

comment	*131* comment by: *Aircraft Engineers International (AEI)* • Clarify that category A privileges do not include troubleshooting no~~t~~r deferment of defects. Editorial comment: Replace ~~t~~ with r
response	*Accepted* Your comment has been accepted. Nevertheless, this statement has been reworded and transferred to AMC 145.A.30(g), item 2. No tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).

comment	*154* comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)* **Content of the draft opinion and the draft decision in relation to task 66.006 – Envisaged changes** The Swedish CAA considers it being questionable to extend the privileges for Cat B2 personnel to Cat A tasks. The reason for this is that according to the suggested amendment, it is limited to types already endorsed in the holders' licence, and for that reason already within the licence holders privileges. Although if one considers possible work on mechanical systems, we feel that that it will lessen the importance of a Cat A licence. One must also consider that this NPA suggests that the basic training for Cat B2 should be shortened from 2400 to 2000 hours.
response	*Partially accepted* The training requirements have been kept for the B2 in 2400 hours. The extension of privileges to cat A tasks is based on the following compensating measures: • It is limited to the ratings already endorsed on the licence. • It requires task training. • It requires six months experience on the particular tasks. • Both the training and the experience must be obtained in the Part-145 organisation where the person is employed.

comment	*155* comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)* **Content of the draft opinion and the draft decision in relation to task 66.006 – Envisaged changes** The Swedish CAA disagrees to suggestion that there can be a need to approval of maintenance organisation according to Part-145 having only B1 or B2 certifying staff. We believe that there is a need for both B1 and B2 certifying staff in such an organisation due to the complexity of modern aircraft.
response	*Not accepted* AMC 145.A.30(g), paragraph 4, very clearly states that this is only possible if the scope of work of the organisation justifies that there is no need for a certain category of certifying staff, including not only the scheduled maintenance but also the non-scheduled line maintenance (defect rectification).

comment	*162* comment by: *Irish Aviation Authority* General comment in relation to the reduction in the training hours required for B2. This reduction is based on a 'detailed analysis' of the syllabus content. The details of the analysis would be very helpful to the industry and competent authorities because, up to now, it was generally agreed that the Part-66 syllabus was very vague in relation to many of the topics. Up to now there is no guidance on the number of hours training required/recommended for each module. Similarly there is no guidance on how the total number of questions for a module examination are distributed to each topic. A detailed analysis of the syllabus content should be useful in establishing a better level of standardisation. Has this analysis provided a better understanding of the syllabus content? Did the analysis include the B1 category to establish that the 2400 hours is adequate? Is there a breakdown of the hours allocated to the various topics within each module or at least allocated to each module?
response	*Partially accepted* The study was based on the total number of subjects and level of training contained in Appendix I. However, since this CRD has further modified 66.A.20(a)3(i) in order to include for the B2 licence holder the privilege to perform maintenance on electrical and avionics parts within a mechanical system, as long as the test is simple, the syllabus in Appendix I has been increased slightly further and the total number of hours has been kept in the current 2400. Making a full analysis of the ours recommended or required for each module/sub-module was not in the scope of the task.

comment	*172* comment by: *Carole Milani* Working for a cargo airline I wondered about the cargo loading system in the list of systems added for B2 certifying staff. On aircraft like the 747 the cargo

loading system is an electro-mechanical system.
Due to new technologies, the cargo loading systems are mostly electronically controlled. Due to the complexity of the system, in our company it has always been B2 staff performing the troubleshooting and repair of the system. Today we are however not authorized to issue a release to service anymore.
Could the board consider adding the cargo loading system to our capabilty as B2 certifying staff?

response *Noted*

Refer to new paragraph 66.A.20(a)3(i) and new training requirements of Module 13 of Appendix I.

comment *180* comment by: *CAA-NL*

The proposal to allow the B2 to perform and release category A tasks is supported. However, the limited way it is proposed, now creates unnecessary complications. Limiting the category A tasks, to the aircraft for which the holder has a B2 on his AML, creates a complicated difference with the category A AML's: For a certain task: Categroy A needs AML **without** type rating and B2 **with** type rating. **Propose to issue full category A** (1, A2, A3 or A4) to B2

response *Not accepted*

A full category A licence cannot be issued automatically to B2 licence holders because the basic knowledge requirements are not met.
The privilege proposed by the Agency is based on some compensating measures. In particular:

- It is limited to the ratings already endorsed on the licence.
- It requires task training.
- It requires six months experience on the particular tasks.
- Both the training and the experience must be obtained in the Part-145 organisation where the person is employed.

comment *181* comment by: *CAA-NL*

B2 does not require additional basic knowledge for the category A tasks.
Why does the Cat A require more basic knowledge than the B2 for the same task?
Furthermore it raises questions on the content of existing basic knowledge requirements for category A: Why is (e.g.) module 17 required, if there are no tasks related to propellers in the Part-145 list?

response *Not accepted*

Specifically addressing the typical cat A tasks shown in AMC 145.A.30(g), there is lack of Basic Training on the following items:

- a) and b): Lack of Landing Gear System Basic Knowledge
- c): Equipment and Furnishing training is limited to electronic emergency equipment and cabin entertainment equipment. See 11.7 for cat A.
- d) Replacement of ovens, boilers and beverage makers is not covered. This is covered in 11.7 for cat A, as galley installations.
- g) Seats, belts and harnesses. Not covered. 11.7 for cat A.
- i) Waste components. Not covered. 11.17 for cat A.
- j) and k): No basic training for composite damage detection and repair.

6.3.1(b) for cat A.

Besides, one of the items included in AMC 145.A.30(g), paragraph 1, is an inspection / check up to a weekly check. This may include many items for which the B2 has no Basic Training:

- Inspections for leaks and structural damage.
- Routine lubrication of components, bearings, etc.
- Inspection of pneumatic systems, waste, etc.

comment *182* comment by: *CAA-NL*

Troubleshooting and deferment of defects can be performed by Cat A (within their scope).

1. On 17 june 2005 during the 145 workshop, EASA answered that: Cat A **can** defer defects within their scope.
2. Troubleshooting is not defined, every decision will involve a certain amount of troubleshooting, even in the case of 'simple defect rectification'
3. Appendix III includes (minor) troubleshooting for level 2 and many sub-modules for cat A require level 2 or 3.

response *Partially accepted*

66.A.20(a)1 has been modified in order to remain as in the current rule. However, AMC 145.A.30(g), item 2, has been modified to make clear that no tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).
The Agency notes that performance of troubleshooting requires a deeper level of basic knowledge to that typically required for the cat A licence.

comment *192* comment by: *CAA-NL*

Category A task training for B2, can also be done by other 145 organisation or by 147 organisation (as with category A personnel).

response *Not accepted*

It is true that category A task training can also be done by Part-147 organisations or by other Part-145 organisations, but only in the case of a cat A licence holder.
The privilege introduced by the Agency is part of the B2 privileges and does not mean that the person complies with the requirements to hold a Cat A licence. As a consequence, the compensating measures are meant to put the full responsibility on the Part-145 which employs that person, knowing the previous experience of the B2 licence holder on mechanical tasks, and providing the task training and the 6 months experience exactly on the tasks and on the aircraft model for which they are going to issue the certifying staff authorisation.

comment *193* comment by: *CAA-NL*

1. Reference to experience <u>in the scope</u> of the authorisation, that will be issued, is more strict than usual (e.g. for cat A authorisation for wheel change, half year experience spread over different cat A tasks would be sufficient, not necessarily only wheel changes). Furthermore it could be read as an obligation to have an additional six month if new tasks or

types are added.
2. It is not necessary to have 6 month experience to add a different type rating to the Cat A authorisation. (see also page 26)

response *Accepted*

The new AMC 66.A.45(b) has been modified accordingly.

comment *194* comment by: *CAA-NL*

1. In the attempt to clarify the scope, reference is made to module 7.7. Reference to module 7.7. gives only details in a certain area but does not cover all electrical tasks (e.g. switches and lights) Furthermore the term 'electrical systems' is still not defined.
2. Propose to replace Electrical system by '**Electrics**'.

response *Accepted*

The reference to sub-module 7.7 has been removed from 66.A.20.

The term "electrical systems" has been defined in AMC 66.A.20(a), including the typical practices contained in Sub-module 7.7.

comment *195* comment by: *CAA-NL*

1. CAA-NL favors a different approach, where privileges to perform the work are related to skills rather than systems. Privileges to release systems are related to skills and knowledge of the systems ic level 3 training. Note that the proposed change in 66.A.20(a)3(i) already refers to tasks of electrical nature.
2. B1.1 can perform tasks of mechanical and electrical nature, including tasks on avionic systems which require simple tests to prove their serviceability. B1 can release those systems for which Appendix III indicates level 3 training for B1.
3. B2 can perform *tasks of electrical and electronic nature*, including tasks on Powerplant and mechanical systems. B2 can release those systems for which Appendix III indicates he has received level 3 training. Electric and electronic parts are being introduced in virtually all over the aircraft. The B1.1 should be capable of performing installation connecting and simple tests of electrical nature. This will involve some avionica troubleshooting as well. However in case of more complicated troubleshooting of electronics the B2 should be involved. This is independent of the nature of the system. To be able to release the system the system should be trained at level 3 to ensure full understanding of the functioning of the system. In case activities have been carried out beyond there own skills assistance from an authorized colleague of the other skill is required.
4. The task to define electrical and avionic systems has not sufficiently been accomplished. Is an antiskid unit with all the electronics in it an avionic system? Is the indicating system for landing gear up an electrical system? What about fuel quantity.
5. Page 6 B) third bullet.

   i) It is not evident from the existing rule that 'electrical tasks' can

only be certified by B1 since 'electrical systems' is not defined and is part of B2 as well.

ii) Avionic tasks in mechanical systems should also be covered, many B2 staff are already certifying these tasks as well.

6. 66.A.20(a)3(i). For B2: Electronic (or avionic) troubleshooting and defect rectification should be added to electrical trouble shooting.
7. Definition of electrical systems should include simple electrical circuits such as position transmitters and switches.(AMC 66.A.20(a))

response *Accepted*

66.A.20 has been amended to allow to the B2 licence holder the performance of maintenance on electrical and avionic parts within mechanical systems, as long as the tests are simple.

"Electrical Systems" and "Avionics Systems" have been further defined in AMC 66.A.20(a).

comment *269* comment by: *Esko HIETANEN*

The reduction in hours from 2400 to 2000 for the B2 education is unacceptable.
The general impacts of the NPA 2007-07 are too heavy especially on the B2 education. It is the general opinion that this NPA is imposing a lot of Type related training imposed on the basic training. It was also the general opinion that it will be difficult to find relevant generic education material and to find ways of doing practical tasks in the "new" ATA chapters (42, 44 and 46). This can say more clear way, there are nearly impossible to find the company for practical tasks for ATA chapters to above-named.

The proposal to change:

- The new sub-modules (11.19. 11.20, 11.21, 11.22, 12.17, 12.19, 13.15, 13.16, 13.17 and 13.18) should not be level 2 and 3 but only level 1

response *Partially accepted*

The number of hours for the B2 basic training has been amended to maintain the current 2400 hours.

The Agency does not agree with the proposal to reduce to Level 1 the mentioned sub-modules.
This type of technology is likely to spread (or may even be part already) to other aircraft in the very near future.
It is the intention of the Agency that Appendix I covers also new technology.
As a consequence, the proposed levels are not modified.

comment *294* comment by: *NB/BPvL*

BPvL seems the extension of B2 licence holders privileges to electrical components in mecanical systems to far.
Before the full certifying privileges of B2 licens holders can be granted complete conversion training should be mandatory.

Reason:
BPvL concider that B2 licence holder not met the fundamental training requirements and are not adequate familiar with the complete mechanical system.

response

Not accepted

As stated in the proposed Article 7, paragraph 9(a), persons holding a valid Part-66 licence shall automatically obtain the new privileges. However, 66.A.20(b) has been modified by adding a new paragraph 3 that makes clear that the person cannot exercise certification privileges it he/she does not have the adequate competence. This is further clarified in the new AMC 66.A.20(b)3.

comment

311 comment by: *Association of Dutch Aviation Technicians*

According the Rulemaking Frequently Asked Questions (F.A.Q.) on the EASA side.

A category A certifying staff was or is allowed to perform any trouble shooting a to defer a defect in his scope of their Part-145 certification authorisation.

According Part-M a pilot is also allowed to dispatch the aircraft according the MEL .

This NPA showes that a category A certifying staff is not allowed to perform any trouble shooting or to defer any defect.

Is that correct or not and why is this been altered?

Rulemaking
Frequently Asked Questions (F.A.Q.)

Question 3. As stated, 'only' Certifying staff can decide which defect has to be rectified or could be deferred in relation to flight safety. Which category certifying staff does the EASA mean by this, A/B1,B2/C? (30/11/2004)

EASA answer (30/11/2004) The category of certifying staff that can decide what defect must be rectified immediately depends on the environment: - In Part-145 base maintenance category C licence holders have the final decision; - In Part-145 line maintenance and in Part-M Subpart F independent category B licence holder have the final decision; - In Part-145 line maintenance, in some specific cases such as implementing the MEL category A licence holder can have the final decision.

Question 4. Can the particular certifying staff A/B1,B2/C decide which defect has to be rectified or could be deferred in relation to flight safety when those defects are not in the scope of their 145 certification authorisation? (30/11/2004)

EASA answer (30/11/2004) Certifying staff can of course decide which defect has to be rectified before further flight. Certifying staff must refuse to release an aircraft if there is a known un-airworthy condition whether in the scope of their Part-145 certification authorisation or not.

Question 36. Part-145.A.50. Should any trouble shooting be performed by Certifying staff?

EASA answer (08/07/2005) Part-145 does not require certifying staff to carry out trouble shooting. Nonetheless, it does require B1 or B2 certifying staff to release maintenance after such trouble shooting.

After the performance of trouble shooting, a CRS shall be issued by appropriately authorised certifying staff after performing correction activities. The same applies for defect rectification.

response *Noted*

A category A certifying staff was in the original issue of the NPA not authorised to troubleshoot systems and defer maintenance actions related to their category. The limitations regarding cat A troubleshooting and defect deferment have been transferred to AMC 145.A.30(g).

The FAQ will need to be revised to make clear these provisions.

comment *340* comment by: *Association of Dutch Aviation Technicians*

response *Noted*

Mishap of CRT tool probably.

A. Explantory Note - V. Content of the draft opinion and draft decision in relation to Task 66-009 - Background information p. 8-9

comment *57* comment by: *Premiair Aircraft Engineering*

Page 9, B) Envisaged Changes, 19. The NPA states that the criteria to decide on how a type rating is to be defined will be part of a EASA internal procedure.
It is important that these criteria apply not only to type ratings under part-66, but also to Part-145, to ensure that there is no discrepancies between Part-66 type ratings and those aircraft types specified on Part-145 organisations schedule of approval.

response *Partially accepted*

A rulemaking task is undertaken by EASA which one purpose is to to define a "minimum syllabus for certifying staff type training as well as the syllabus for type differences courses". The working group number is 21.039. This should also define when a type rating is created or extended. This in the future will replace the internal policy mentioned in the NPA.

Regarding ensuring coordination between type ratings between Part-66 and Part-145, this is out of the scope of this TOR.

Regarding changes in the list of Part-66 type ratings, the Agency has issued an NPA 2009-05 which introduces a cross-reference between ratings and type of aircraft in the TCDS, this for group 1 and sub-groups 2 of aircraft and groups 11 to 13 for helicopters.

comment 253 comment by: CAA-NL

Ad b)

- AMC 66 Appendix II.a) Appendix II gives a list of required practical experience for non-complex, other than large aircraft. Existing AMC 66.A.45(h) requires 50% of the tasks for the first aircraft. For second a/c 30% is minimum. Note that subsequent a/c (20%) is not relevant, due to sub-group ratings.
- AMC 66.A.45(j) inserted. (page 65) In case it is intentional, to remove the existing AMC with 30% and 20%, this should be mentioned in the NPA.

response *Not accepted*

In the NPA, AMC66.A.45(j) refers to how to demonstrate the experience necessary to obtain certain groups for which it is not required type examination. As a consequence, the 50% is applicable.
However, it is in AMC 66.A.45(m) of the CRD where the provision for a reduction to 30% and 20% is retained, but this is applicable to those cases where type examination and practical experience is required.

comment 307 comment by: CAA-NL

1) New (sub-group-)ratings are too complex. However industry will get used to it, more complex systems will increase the resik of mis-interpretation.
2) Text on the License should be unambiguously;
a) *Intuitively lead to the correct aircraft.*
Fokker 50 covers all Fokker 50 models.
Falcon 50 does not cover the Falcon 50-EX therefore it is better to use Falcon 50-B.
b) *Text should be standardized.*
All AML's should use the same words, should or should not refer to the groups, Manufacturer group-ratings should be identical in all member states AML's.
c) *Text should be selfexplanatory.*
The need to check a cross reference to determine whether a rating covers a certain aircraft should be minimized.
d) *Manufacturer sub-group rating* is a group-rating within one of the subgroups 2a,b,c,d. e.g two Eurocopter types: Eurocopter AS 350 (Turbomeca Arriel 1) & Eurocopter SA 316 B/SA 316 C (Turbomeca Artouste)on the AML will lead to the 'sub-group type-rating':
"All Eurocopter (in group 2c), single turbine helicopters, below MTOW 5700, that are not determined to be complex by EASA"
Just "Eurocopter single turbine helicopters" would have included Eurocopter helicopters (if any) that are considered complex or are above 5700kg.
e) '*Limitations*' can as well be understood as being the 'not-allowed part' as the 'allowed part'. To avoid confusion "limited to…" or "excluding…" should be used; e.g.'limited to landing gear' or 'excluding landing gear', rather than just 'limitation landing gear'.
f) *Text of limitation should be clear* from the information printed on the AML. Limitations in group 2 or 3 "except aircraft equipped with…". It should be made clear on the license, that complete aircraft are excluded, including other systems. (ref 66.A.45k). Example: "Aircraft types equipped with retractable landing gear or variable pitch propeller are excluded."
3) Grey area's should be eliminated;

Before publication of the decision special attention needs to be paid to the evaluation of the standardized and selfexplanatory wording. By preparing actual practical examples, grey area's can be found. Self-explanatory standardised wording on the licences assists organisations in determining the required type rating for specific maintenance on specific aircraft. This will lead to safer and more efficient maintenance. Furthermore verification by the authorities and the issuance of AML's will be easier.
4) Exact scope;
a) Text printed on the AML should make clear what exactly is the scope of the privilege:
Example 1: B2 typerating for sub-group 2a should not be misinterpreted to include large

or complex aircraft in group 1. This means that EASA needs to include the text for group ratings in the list of type ratings to standardize.
In this case B2 for
"All multi turboprop aeroplanes, other than large or determined complex by EASA, except aircraft equipped with Aeroplane autopilots, EFIS and/or FADEC."
"All single turboprop aeroplanes, other than large or determined complex by EASA, except aircraft equipped with Aeroplane autopilots, EFIS and/or FADEC."
"All piston engine aeroplanes, other than large or determined complex by EASA, except aeroplanes equipped with Aeroplane autopilots, EFIS and/or FADEC."
Wxample 2: B1.1 for Pilatus PC-7 (PWC PT6) en Pilatus PC-9 (PWC PT6) lead to B1.1 for: "All Pilatus single turboprop aeroplanes (in group 2b), below MTOW 5700, that are not determined to be complex by EASA" & "All piston aeroplanes below MTOW 5700, that are not determined to be complex by EASA".

5) What is included?
a) Does a rating (or more manufacturer) ratings from group 1 automatically include the comparable sub-group rating in group 2? Eg Fokker 50 includes 2a multi turboprop (+2b and 3)?
b) Does a type rating in group 1, in combination with a type rating in a group 2 sub-group, lead to manufacturer group rating in group 2. E.g. Piper 31 and Piper 42?
c) Automatically included (sub)groups and category A sub-category, should be printed on the AML. This to avoid any doubt. Ref 66.A.45(i)&(j). [CAA-NL puts cat A on AML.] Although the meaning of typeratings can be looked up inn the rule we at this stage can use the opportunity to define clear, standard, self-explanatory type ratings.
d) 'Representative' needs clarification: every type rating in a group, should be able to represent the group. If not, EASA should publish a list of all groups with aircraft that can and cannot represent the group. The words representative and relevant might cause confusion.

6) Training and examination
a) Cat B should have examination to obtain group 2 (full group rating). This to have the same approach for both category B2 and B1.
b) For group 2 and 3 part 147 should be amended to allow for type-examinations only without approval for training. [Part-147.a.145 e]
c) To remove limitations, practical experience might be difficult to get, example; introduction of new aircraft. It makes sense to accept type training and/or examination as alternative. This applies to cat B1, B2 and C.
i) Please create possibility to get type rating in group group 2 and 3 - similar to group 1 - after successful completion of theoretical and practical training. This might be quicker than completing the experience task list.
ii) What is the rationale to copy the B1 limitations to the Cat C and not the B2 limitations? Propose to give category C unlimited types within Group 3 and sub-groups in group 2. The assistance of type rated Base maintenance support staff with safeguard the correct level of knowledge and experience. This will increase transparency of the system.

7) Typeratings
a) Cat C should be allowed to have the same type ratings as B1 and B2 because both lead to Cat C with either experience as B1 or B2 (66.A.30(3 and 4)). If category C cannot have full sub-group rating, what type ratings will a B2 with a 'full subgroup' get in category C?

b) Page 31. 66.A.47 Please number the group and list the groups in the same order as in decision 2007_09_R.
Name of group (short) Group
— helicopter single piston engine 13
— helicopter single turbine engine 12
— aeroplane single piston engine — metal structure 6
— aeroplane multiple piston engines — metal structure 5
— aeroplane single piston engine — wooden structure 8
— aeroplane multiple piston engines — wooden structure 7
— aeroplane single piston engine — composite structure 10
— aeroplane multiple piston engines — composite structure 9
— aeroplane turbine — single engine 4
— aeroplane turbine — multiple engine 3

Old Group Name of old group (long):
3Aeroplanes multiple turbine engines (AMTE) of 5700kg and below, eligible for type examinations and manufacturer group ratings.
4 Aeroplanes single turbine engine (ASTE) of 5700kg and below, eligible for type examinations and group ratings.
5 Aeroplane multiple piston engines – metal structure (AMPE-MS), eligible for type examinations and group ratings.
6 Aeroplane single piston engine – metal structure (ASPE-MS), eligible for type examinations and group ratings.
7 Aeroplane multiple piston engines – wooden structure (AMPE-WS), eligible for type examinations and group ratings.
8 Aeroplane single piston engine – wooden structure (ASPE-WS), eligible for type examinations and group ratings.
9 Aeroplane multiple piston engines – composite structure (AMPE-CS), eligible for type examinations and group ratings.
10 Aeroplane single piston engine – composite structure (ASPE-CS), eligible for type examinations and group ratings

11 Multi-engine helicopters (MEH), requiring type training and individual type rating.
12 Helicopters – Single turbine engine (HSTE), eligible for type examinations and group ratings.
13 Helicopters – Single piston engines (HSPE), eligible for type examinations and group ratings.

d) 66.A.47 Manufacturer group ratings should be standardized by EASA. EASA should provide list with specified ratings, including manufacturer group ratings. (66.B.115b).

e) For Cat C type ratings, subsequent type training might be Cat C training. B1 training would also be acceptable because it covers Cat C requirements. Cat B2 type training however does not cover the cat C requirements. This conflicts with the acceptance of the first type training at B2 level. Propose to change the requirement to always include B1 or C training (or examination).

example of typerating list with details for possible limitations:

	B1						**B2**			
	pressur-isation	retractable landing gear	variable pitch propeller	turbo-charged piston engine	FADEC	Structures (Metal / Composite / Wood)	helicopter autopilots (only applicable to sub-groups 2c) and 2d))	aeroplane autopilots	EFIS	FADEC
Cessna 208 Series (PWC PT6)	**P**	**P**	**P**	**-**	**-**	Alluminium		**P**	**P**	**-**
Grob G 520 (Honeywell TPE331)	**-**	**P**	**P**	**-**	**-**	composite		**P**	**P**	**-**

response *Partially accepted*

1) The Agency has reduced the number of categories of type ratings from 13 to 3. This should simplify the management of ratings.

2)
a) Reference to types in TCDS in further list of type ratings should simplify the understandings as Fokker 50 and Falcon 50 (see CRD2009-05)

b) In the future the Appendix will show the standard designation also for

manufacturer sub-groups, full sub-groups and limitations

c) The reference to TCDS as proposed for next Decisions, should avoid this burden.

d) The comment is not understood.

e) The Agency has clarified the definition of limitations in 66.A.45(j);

f) same response than e).

3) Noted.

4) It is the responsibility of the competent authority to make clear the scope of the licence.

5) (a), (b) and (c): The new sub-groups 2a, 2b and 2c are mutually excluded. Non of them contains one of the other. In addition, in AMC 66.A.45(h) it has been clarified that an aircraft in Group 1 may be used as representative in order to get a manufacturer Subgroup 2.

5) (d): AMC 66.A.45(h) clarifies the term "representative".

6) In the final text, the requirement for being granted a type rating has been modified, and all categories B1, B2 and C for group 2 and 3 aircraft need having a training or pass an examination.
As a consequence:
6.a) Category B2 personnel may get an individual type rating for an aircraft based on examination, like category B1 and C, but may get also the type rating based on training,

6.b) There is no plan to modify the privileges of 147 organisations to allow examination only.

6.c) The principle of limitations has been modified, keeping only limitations for pressurised aircraft and on the structural material of aircraft in group 3 for the B1.2 licence. When not granting a full group: the granting of a type rating based on examination or on training has been added for group 2 and group 3 aircraft for all categories.

7.a) Full sub-group ratings have been added for categories B1 and C in group 2 of aircraft;

7.b) The groups described in 66.A.47 have been transferred to the "Entry into Force" provisions in Article 9 of EC2042/2003. However, it cannot be referred in the rule to the numbers described in an AMC.

7.d) This may be done in future Decisions related to Appendix I to the AMC to Part-66 (List of Type Ratings)

7.e) EASA is not in a position to create a table like the one requested. Anyway, limitations have been modified and no more limitations on systems can be endorsed.

comment 345 comment by: *Panasonic Avionics Corporation*

Attachment #6

Panasonic Avionics Corporation wish to make the the following comments, please see the attached document.

response *Partially accepted*

Response to paragraph 1 of the letter:
66.A.20(a)1 has been kept as in the current rule. However, this has been explained in AMC 145.A.30(g), item 2.
No tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).
Response to paragraph 2 of the letter:
These limitations only affect the B2 licence holder in relation to his cat A privileges. Obviously, if the same privilege is already contained in the B2 licence, this one supersedes the limitation of the cat A. Nevertheless, 66.A.20(a)3(ii) has been amended to make it more clear.
Response to paragraph 3 of the letter:
The sentence has been amended.
Response to paragraph 4 of the letter:
Large aircraft are already defined in Article 2 "Definitions" of EC regulation 2042/2003.

Response to paragraph 5 of the letter:
A more clear definition of "10 steps" has been provided. Nevertheless, the Agency believes that it is necessary to limit the length of the test

comment 397 comment by: *CAA-NL*

page 8,9 inconsistency
- o 19 refers to criteria in RIA
- o 20 lists criteria from RIA
- o 21 no reference

response *Noted*

This is correct, the paragraphs 18, 19, 20 and 21 of the NPA have been developed further to the RIA made by the group, as explained in paragraph 17. These have been made in respect of the Rulemaking procedure defined in the NPA page 3.

A. Explantory Note - V. Content of the draft opinion and draft decision in relation to Task 66-009 - Envisaged changes p. 9-13

comment 58 comment by: *Premiair Aircraft Engineering*

The table of proposed group ratings on page 12 suggests that there will no longer be a full group rating for single piston or single turbine helicopter - only manufacturers group ratings.
This is not acceptable, as it will mean extra financial burdens for those maintenance providers which can afford it least - small to medium companies. These companies face the prospect of needing to have additional certifying staff.

response *Accepted*

Further to the comments in the CRD and other consultations, the Agency has introduced for B1 and C categories the possibility to be endorsed with category 2 aircraft full sub-group rating in addition to the individual type ratings and the manufacturers group ratings.
However B2 licence holders may be endorsed either with full sub-groups or individual type ratings only.

comment *114* comment by: *CASA*

Proposal 66-009

CASA has no comment on the proposal.

Note: CASA has not utilised Group and Type ratings for small or non complex aircraft. In the CASA model the holder of a category eg B1.1 may work on all small and non-complex aeroplanes turbine (where an engine may be fitted to either a large or small aircraft the turbine rating is still required).

response *Noted*

comment *163* comment by: *BCAA - DAE - Certification*

The wording of the limitations should stick to the wording in use in the basic knowledge requirements for a better understanding.

Current designation	Proposed designation
Retractable landing gear	Landing gear – extension and retraction systems (see sub modules 11.13 of 12.14)
Variable pitch propeller	Propeller – Pitch control (see sub module 17.3)
Turbo charged piston engine	Piston engine – Supercharging/turbocharging
FADEC	Piston engine – Electronic engine control

response *Noted*

Limitations to such systems are removed from the text, therefore the comment does not apply anymore.

comment *307* ❖ comment by: *CAA-NL*

1) New (sub-group-)ratings are too complex. However industry will get used to it, more complex systems will increase the resik of mis-interpretation.
2) Text on the License should be unambiguously;
a) *Intuitively lead to the correct aircraft.*
Fokker 50 covers all Fokker 50 models.
Falcon 50 does not cover the Falcon 50-EX therefore it is better to use Falcon

50-B.
b) *Text should be standardized.*
All AML's should use the same words, should or should not refer to the groups, Manufacturer group-ratings should be identical in all member states AML's.
c) *Text should be selfexplanatory.*
The need to check a cross reference to determine whether a rating covers a certain aircraft should be minimized.
d) *Manufacturer sub-group rating* is a group-rating within one of the subgroups 2a,b,c,d. e.g two Eurocopter types: Eurocopter AS 350 (Turbomeca Arriel 1) & Eurocopter SA 316 B/SA 316 C (Turbomeca Artouste)on the AML will lead to the 'sub-group type-rating':
"All Eurocopter (in group 2c), single turbine helicopters, below MTOW 5700, that are not determined to be complex by EASA"
Just "Eurocopter single turbine helicopters" would have included Eurocopter helicopters (if any) that are considered complex or are above 5700kg.
e) '*Limitations'* can as well be understood as being the 'not-allowed part' as the 'allowed part'. To avoid confusion "limited to…" or "excluding…" should be used; e.g.'limited to landing gear' or 'excluding landing gear', rather than just 'limitation landing gear'.
f) *Text of limitation should be clear* from the information printed on the AML. Limitations in group 2 or 3 "except aircraft equipped with…". It should be made clear on the license, that complete aircraft are excluded, including other systems. (ref 66.A.45k). Example: "Aircraft types equipped with retractable landing gear or variable pitch propeller are excluded."

3) Grey area's should be eliminated;

Before publication of the decision special attention needs to be paid to the evaluation of the standardized and selfexplanatory wording. By preparing actual practical examples, grey area's can be found. Self-explanatory standardised wording on the licences assists organisations in determining the required type rating for specific maintenance on specific aircraft. This will lead to safer and more efficient maintenance. Furthermore verification by the authorities and the issuance of AML's will be easier.

4) Exact scope;

a) Text printed on the AML should make clear what exactly is the scope of the privilege:
Example 1: B2 typerating for sub-group 2a should not be misinterpreted to include large or complex aircraft in group 1. This means that EASA needs to include the text for group ratings in the list of type ratings to standardize.
In this case B2 for
"All multi turboprop aeroplanes, other than large or determined complex by EASA, except aircraft equipped with Aeroplane autopilots, EFIS and/or FADEC."
"All single turboprop aeroplanes, other than large or determined complex by EASA, except aircraft equipped with Aeroplane autopilots, EFIS and/or FADEC."
"All piston engine aeroplanes, other than large or determined complex by EASA, except aeroplanes equipped with Aeroplane autopilots, EFIS and/or FADEC."
Wxample 2: B1.1 for Pilatus PC-7 (PWC PT6) en Pilatus PC-9 (PWC PT6) lead to B1.1 for:
"All Pilatus single turboprop aeroplanes (in group 2b), below MTOW 5700, that are not determined to be complex by EASA" & "All piston aeroplanes below MTOW 5700, that are not determined to be complex by EASA".

5) What is included?

a) Does a rating (or more manufacturer) ratings from group 1 automatically include the comparable sub-group rating in group 2? Eg Fokker 50 includes 2a

multi turboprop (+2b and 3)?
b) Does a type rating in group 1, in combination with a type rating in a group 2 sub-group, lead to manufacturer group rating in group 2. E.g. Piper 31 and Piper 42?
c) Automatically included (sub)groups and category A sub-category, should be printed on the AML. This to avoid any doubt. Ref 66.A.45(i)&(j). [CAA-NL puts cat A on AML.] Although the meaning of typeratings can be looked up inn the rule we at this stage can use the opportunity to define clear, standard, self-explanatory type ratings.
d) 'Representative' needs clarification: every type rating in a group, should be able to represent the group. If not, EASA should publish a list of all groups with aircraft that can and cannot represent the group. The words representative and relevant might cause confusion.

6) Training and examination

a) Cat B should have examination to obtain group 2 (full group rating). This to have the same approach for both category B2 and B1

b) For group 2 and 3 part 147 should be amended to allow for type-examinations only without approval for training. [Part-147.a.145 e]
c) To remove limitations, practical experience might be difficult to get, example; introduction of new aircraft. It makes sense to accept type training and/or examination as alternative. This applies to cat B1, B2 and C.
i) Please create possibility to get type rating in group group 2 and 3 - similar to group 1 - after successful completion of theoretical and practical training. This might be quicker than completing the experience task list.
ii) What is the rationale to copy the B1 limitations to the Cat C and not the B2 limitations? Propose to give category C unlimited types within Group 3 and sub-groups in group 2. The assistance of type rated Base maintenance support staff with safeguard the correct level of knowledge and experience. This will increase transparency of the system.

7) Typeratings

a) Cat C should be allowed to have the same type ratings as B1 and B2 because both lead to Cat C with either experience as B1 or B2 (66.A.30(3 and 4)). If category C cannot have full sub-group rating, what type ratings will a B2 with a 'full subgroup' get in category C?

b) Page 31. 66.A.47 Please number the group and list the groups in the same order as in decision 2007_09_R.
Name of group (short) Group
— helicopter single piston engine 13
— helicopter single turbine engine 12
— aeroplane single piston engine — metal structure 6
— aeroplane multiple piston engines — metal structure 5
— aeroplane single piston engine — wooden structure 8
— aeroplane multiple piston engines — wooden structure 7
— aeroplane single piston engine — composite structure 10
— aeroplane multiple piston engines — composite structure 9
— aeroplane turbine — single engine 4
— aeroplane turbine — multiple engine 3

Old Group Name of old group (long):
3Aeroplanes multiple turbine engines (AMTE) of 5700kg and below, eligible for type examinations and manufacturer group ratings.
4 Aeroplanes single turbine engine (ASTE) of 5700kg and below, eligible for type examinations and group ratings.

5 Aeroplane multiple piston engines – metal structure (AMPE-MS), eligible for type examinations and group ratings.
6 Aeroplane single piston engine – metal structure (ASPE-MS), eligible for type examinations and group ratings.
7 Aeroplane multiple piston engines – wooden structure (AMPE-WS), eligible for type examinations and group ratings.
8 Aeroplane single piston engine – wooden structure (ASPE-WS), eligible for type examinations and group ratings.
9 Aeroplane multiple piston engines – composite structure (AMPE-CS), eligible for type examinations and group ratings.
10 Aeroplane single piston engine – composite structure (ASPE-CS), eligible for type examinations and group ratings.
11 Multi-engine helicopters (MEH), requiring type training and individual type rating.
12 Helicopters – Single turbine engine (HSTE), eligible for type examinations and group ratings.
13 Helicopters – Single piston engines (HSPE), eligible for type examinations and group ratings.

d) 66.A.47 Manufacturer group ratings should be standardized by EASA. EASA should provide list with specified ratings, including manufacturer group ratings. (66.B.115b).

e) For Cat C type ratings, subsequent type training might be Cat C training. B1 training would also be acceptable because it covers Cat C requirements. Cat B2 type training however does not cover the cat C requirements. This conflicts with the acceptance of the first type training at B2 level. Propose to change the requirement to always include B1 or C training (or examination).

example of typerating list with details for possible limitations:

	B1						**B2**			
	pressur-isation	retractable landing gear	variable pitch propeller	turbo-charged piston engine	FADEC	Structures (Metal / Composite / Wood)	helicopter autopilots (only applicable to sub-groups 2c) and 2d))	aeroplane autopilots	EFIS	FADEC
Cessna 208 Series (PWC PT6)	**P**	**P**	**P**	**-**	**-**	Allumininum		**P**	**P**	**-**
Grob G 520 (Honeywell TPE331)	**-**	**P**	**P**	**-**	**-**	composite		**P**	**P**	**-**

response *Noted*

This comment is duplicated and answer has been provided in the first publication of the comment.

comment *312* comment by: *UK CAA*

Paragraph:
Part-66.A.42 and GM 66.A.45 (p12, p26,p81 of NPA)

Comment:
The proposed grouping of type ratings requiring type training is not acceptable.

Justification:

The complexity and work practices required to maintain a turbo-prop aircraft and a gas turbine powered helicopter are in fact greater than those of the CAT B line maintenance personnel.

Proposed Text:
All turbo-prop aeroplanes and gas turbine powered helicopters added to Group 1 with course length adjusted to reflect the rest of the aircraft complexity.

response

Partially accepted

Multiple turbo-prop aeroplanes have been moved to Group 1 since they are complex motor-powered aircraft according to the Basic Regulation.

However, it is not the intention to have non complex motor-powered aircraft in Group 1, unless they Agency decides so on a case-by-case basis following the criteria included in the Explanatory Note of the CRD.

comment

364 comment by: *CAA-NL*

Above all, theoretical training should address important maintenance aspects of the aircraft; not only procedures but pitfalls as well.

i) It is not necessary to cover significant features of all variants. If practical training is not covering all variants and if the student is not working on a particular variant it will be forgotten quickly and might even confuse students. **Propose to require only one representative type of the range.** (As was indicated by EASA before)

ii) It is not clear what is meant by…"and variant" in last sentence of 1. "Theoretical type training should.…….whereas it is not required that all possible customer options and variant under the same type ratings are covered."……

iii) Ad 4, 5 and 6. change 'should' in 'shall' see 66.a.45(g)1.(ii)I. page 27.

iv) Ad 5. assessment by competent authority should be introduced in the rule instead of AMC.

v) Ad 6. Because it is in AMC for Part-66, "the issue of a type rating" must mean ädding the type rating to the Part-66 AML by the NAA". The applicant meets the criteria: licence with the basic category and the right Part-147 certificate of recognition. The NAA should not verify the elements mentioned under 6. These elements are part of the training course and assessment and will be verified before succesfull completion of the course. For a 147 this is before the issue of a certificate of recognition, for approved maintenance organisations there is not a standard defined (yet). Ad 6. [c] insert 'of' in demonstrate the correct use of all technical literature.

Ad 7 and 8. These subjects are covered by appendix III.

response

Noted

i) **Noted**
The proposed text does not introduce clarification to the current text. Although it is not clear in the rule whether the type rating should cover the variants or options of the aircraft, it is however the responsibility of 145 approved organisations to ensure that the personnel is competent on the aircraft he is intended to work on. Which means that in case of variants, variant courses

may need to be conducted.
This is however not the subject of this NPA and should be covered by task 21.039 related to OSC.
ii)**Noted**
No text proposed by the commenter
iii) **Rejected**
"Should" shall stay because the text is an AMC.
iv) **Accepted**
The text in the requirements has been changed accordingly.
v) **Partially accepted**
Similar wording to the requirement (66.A.45(g)) is used for this AMC.
Ad6: **accepted**
Text changed
Ad7 and 8: **noted**

comment

365 comment by: *CAA-NL*

AMC 66.A.45[g][1][iv] indirectly states that type training also covers additional manufacturer designations. It should be sufficient to cover one type representative of the range of aircraft within the type rating.
Part-66 licences should be kept Standard, Simple and Transparant; with as little variations or limitations as we can affort. It is not practicle (if possible) to cover all (customer) modifications by courses. And more important it is not necessary to use the AML to ensure that all details are covered. The professional maintainers are very well capable to cope with minor differences. Furthermore, approved maintenance organisations have a resposibility to ensure their staff is properly trained in customer specific detailes and is up to date.

Within a type rating, differences between one type and the others should be small enough to cover with dedicated instruction or training by the AMO. In the case of aircraft types which can be maintained by independent certifying staff, just maintenance manualsshold be sufficient.
For type ratings that are modified after the certificates of recognition are issued, there is no requirement for a new course or a new AML.
It is not practical to refer to the content of the original course. NAA's in general will only have the certificate of recognition in their files.

response

Noted

The comment does not introduce clarification to the current proposal.

Here "difference training" means training to cover the differences between two different aircraft type ratings.

For variants within the same type rating, refer to answers n°364 and 307 where, currently, the 145 organisations are responsible for the variant courses.

As you stated, within one type rating, differences between variants (inside a rating) should be small (the internal procedure refers to courses od less than 3 days for non large aircraft and 5 days for large aircraft).
This is subject of task related to OSC, where this definition may be refined.

A. Explantory Note - VI. Content of the draft opinionand draft decisionin p. 14

relation to Task 66-011 - Background information

comment

418 comment by: *Yveline MERRIEN*

A programme of structured **On the Job Training** (OJT) may be prepared to satisfy the practical training requirement. **The practical training** must comprise a period of four 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.

response

Noted

The comment does not bring any proposal as it is a copy of the current AMC.

A. Explantory Note - VI. Content of the draft opinionand draft decisionin relation to Task 66-011 - Envisaged changes p. 15-19

comment

38 comment by: *KLM Royal Dutch Airlines*

Task 66-011: Type Training- item (42)
Other

A reaction is asked for the following items with discrepant opinions within the rulemaking group:

1. Check of pre-requisites of individuals to adapt the syllabus to the competence of the trainee.
   We agree with the group members arguments to reject this proposal.
2. Engine running practical task mandatory.
   We agree with the group members argument to reject this proposal.

response

Noted

Thanks for the feedback

comment

59 comment by: *Premiair Aircraft Engineering*

On pages 15 & 16, the NPA discusses imposing certain minimum durations on theoretical training., then goes on to say that this issue will be addressed by working group 21.039.
It seems pointless for this NPA to introduce limits when it is clear that these limits will change in the near future.

response

Not accepted

Whatever the outcome of task 21-039 is, the work performed by 66.011 and therefore the outcome of this NPA will have to be kept for the following reasons:

- All the Part-66 elements will not be transferred into Part 21: the requirements for the approval of a Part-147 course will remain; another typical justification is the course directly approved by the Competent authority.
- Even if this point is still under discussion, it is likely that task 21.039

will only be applicable for new aircraft types. Existing aircraft types will have to comply with Part-66. TCHs will not be required to retroactively produce the minimum syllabus for existing certified aircraft types.
- It does not mean that the course proposed by the Part-147 organisation will be solely composed of that minimum syllabus proposed by the TCH, even if the minimum syllabus proposes a minimum duration: further elements could be considered such as the operational experience of the aircraft type (ADs, SBs etc), major new variants, the background / knowledge of the trainee, instructional equipments, logical sequence of learning…
- The outcome of NPA 2007-07 will be ready before the outcome of task 21.039. A special mechanism will be further proposed in order to adjust the outcome of NPA 2007-07 to task 21.039, if necessary.

comment

115 comment by: *CASA*

Proposal 66-011

Except as otherwise specified in paragraph (h), type ratings shall be granted following satisfactory completion of the relevant category B1, B2 or C aircraft type training approved by the competent authority or conducted by an appropriately approved Part-147 maintenance training organisation. The applicant is required to comply with the applicable type training requirement. The type training requirement consists of:

theoretical training and examination and practical training and assessment and mandatory additional OJT and assessment, in the case of first type rating within a subcategory

CASA supports this proposal. CASA does not endorse ratings on licences until the completion of both the theoretical and practical/OJT (new terminology) aspects of type training.

CASA currently utilises a training regime known as Practical Consolidated Training (PCT). EASA may care to review this program as an acceptable means of compliance to satisfy both practical and OJT training requirements. CASA is happy to provide details of the PCT program if requested.

http://casa.gov.au/ame/download/pct_212b.pdf

Note: CASA has not commented on the EASA proposals affecting duration of training and numbers of questions as Australia's competency based training regime does not warrant the use of those proposed standards.

response

Noted

Thanks a lot for the support, the link and the piece of information

comment

118 comment by: *NHAF Technical committee*

Ref page 19, § 42: Engine running practical task/examination should be a defined part of the Part-66 type rating, appendix III.

response

Noted

Thanks for the piece of information.

comment

132 comment by: *Aircraft Engineers International (AEI)*

34. Based on the above described analysis, it is proposed that the following elements/changes should be

introduced in Part-66:

• A definition of the elements a type training shall consist of;

• A minimum duration of theoretical training with flexibility provisions;

• An improvement of the existing content of theoretical training to address new systems,

technology, etc; (based on ATA chapter numbering)

• A new definition of practical training;

Comment: Insert new

Reason: The current 2.2 Practical Element Training objectives give a detailed description to base the practical assessment on, the new proposed text: "*The objective of practical training is to gain competence in performing safe maintenance.*" Does not, and is certainly not based on any "described analysis, and should be better explained and justified in the EN.

response

Noted

Only the explanatory note sent to the EC will be corrected at the final stage of the document (Opinion).
Thanks for the comment that will be properly considered at the final stage.

comment

133 comment by: *Aircraft Engineers International (AEI)*

36. Minimum duration of theoretical training

Since it is impossible to cover all the diversity of aircraft and since Appendix III, where such

duration is proposed, is of mandatory compliance (hard rules), any deviation would require the use

of Article 10 from the Basic Regulation 1592/2003. In order to avoid this situation the group

decided that it was worthwhile to add flexibility provisions in this project. These flexibility cases
have to be justified, reported and approved by the relevant competent authority.

Editorial comment:

Add the word competent

Reason:

The same term should be used throughout the regulation.

response

Noted

Only the explanatory note sent to the EC will be corrected at the final stage of the document (Opinion).
Thanks for the comment that will be properly considered at the final stage.

comment

134 comment by: *Aircraft Engineers International (AEI)*

40. Responsibilities of the NAA related to type endorsement

Proposal:

The EASA 147 Certificate of Recognition (CoR) should be changed to reflect that Type Training will not be recognised if obtained prior to completion of the required Basic Modules or proven basic knowledge.

Reason: The reason for not granting credits is that AEI has serious doubts about the ability of persons without the appropriate basic knowledge, gaining and retaining the necessary knowledge and understanding of the specific category they wish to be licensed on.

response

Not accepted

The Part-147 CoR concerns a statement regarding the successful completion of the type training and is not a statement regarding other (previous) education.
There is not reason to challenge the knowledge of the trainee if she/he passes the examination.
Nevertheless chances are high that the trainee will fail the examination if she/he has not the sufficient level of knowledge in order to understand the type training.
In addition, article 11 of EC n°216/2008 states that Member States shall, without further technical requirements or evaluation, recognise certificates issued in accordance with this regulation.

comment

135 comment by: *Aircraft Engineers International (AEI)*

42. Discrepant opinions within the group

One member suggested that the engine running practical task, presently optional within Part-66 appendix III should be a mandatory practical training task. This concept was subsequently rejected by the remainder of the group on the basis that this was not required as this is addressed by the certifying staff authorisation issued by an approved maintenance organisation.

Comment:

This is an invalid and very unsatisfactory argument.

Reason:

The Approved Maintenance Organisation authorises all certifying privileges and consequently, if accepted, this kind of argument can render a variety of type

	training subjects superfluous, and in the end there will be no common standard in the future.
response	*Noted* In the past it was commonly accepted by the Industry that the engine run up was not part of the type training because it should be addressed through a very specific training. Some of the justifications given were that: • starting and operating the engines, skills for checking engine performance characteristics, normal and emergency engine operation, associated safety precautions and procedures is very demanding and requires specific competency; • all the training providers do not have adequate simulators and/or permanent access to real aircraft to train people adequately. • the maintenance organisation's responsibility is to train a person to a specific maintenance task before an authorisation is issued. ATA 104 has been built that way and confirms that: • a specialised level of training was required for this kind of training (level IV IAW ATA104) • Prerequisites for the trainees attending this level of training shall be determined by airframe/engine manufacturers and operators. • at the completion of engine run-up training the trainee will be able to safely operate engine after a major repair and/or replacement of engine components. For these reasons, it was left to the maintenance organisation to select restricted certifying staff (experience, base maintenance etc) for which they wanted further training about the engine run –up to be given. Such policy was generally described through an internal procedure pertaining to the MOE. It means that in accordance with 145.A.35(a), the maintenance organisation is responsible for checking the competency of their certifying staff before granting the privileges. Therefore this issue was not considered to be part of a standard type training. In addition, no safety records or occurrence reporting adversely contradict the current industrial practices since years. The economic impact will be of significant importance if an amendment to the rules will make the engine run-up compulsory for all the certifying staff. During the meetings held by group 66-011, this position was confirmed by all the members except by one pertaining to the organisation here commenting, based on the fact that it will increase the level of safety although that, practically speaking, there is no need to train every personnel. Nevertheless, due to the insistence of the member rejecting the common position of group 66-011, it has been decided to seek the opinion of the stakeholders during the consultation process. The results of this consultation contained in this document confirms that there is no need for systematically making the engine run up training part of the full type training (see comments n°118; 135, 42, 412, 38, 201 202 411 277). For that purpose, AMC 145.A.35 has been re-written in order to specifically reflect the issue of the specific trainings when needed, in particular for the engine run-up.

comment 158 comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)*

Point 42. Discrepant opinions within the group

Upon request from EASA, the Swedish CAA wishes to express the following concerning pre-requisites for entering a training room (page 18/19). We feel that it is a part of the Part-147 quality system, to ensure that there will be no undue disturbance from any unqualified attendant. However, we believe that there should only be a certificate of attendance given out to such an attendant (not a certificate of recognition).

response *Noted*

A certificate of attendance will have no value.
See comment n°135

comment 159 comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)*

Point 42. Discrepant opinions within the group

Upon request from EASA, the Swedish CAA wishes to express the following concerning mandatory engine running practical task. Our opinion is, as always have been, that if a maintenance manual prescribes engine running as part of a maintenance task, this is a mandatory part of the training and examination. We believe that text in this NPA emphasize that this is how the requirements should be interpreted. Namely page 43, Appendix III, Type Training and Examination Standard, Level 3 (b) ”Perform system, engine, component and functional checks as specified in the aircraft maintenance manual”. Also on Page 52, Type training standard, 2.2 Practical element, it is prescribed that Functional and Operational Test (FOT) for Power Plant is required.

response *Noted*

The Type Training and Examination Standard as referred to at page 43 is a course objective, not a required item in the course.
Furthermore, as stated in the “Content” (Page 49 – paragraph §2.2(b) of Appendix III Part-66), tasks ticked represent subjects that are mandatory for the practical training in order the trainee to gain experience in the sense of “training”. It does not mean that the trainee will be competent to perform engine run-up just after having received the type training.
It is left to the maintenance organisation to further train and check the competency before granting the privileges as certifying staff (145.A.35(a)).
For that purpose, AMC 145.A.35 has been re-written in order to specifically reflect the issue of the engine run-up training and the check of the competency.

Refer also to comment n°135 where more explanations are given.

comment 201 comment by: *SAS Technical Traning*

- Ref item 42 - SAS Technical Training support the opinion that prerequisites should **not** be checked before entering a course.
- Ref item 42 - SAS Technical Training support the opinion that engine

start is **not** part of the practical training on a B1 type training.

response *Noted*

Thanks for the comments

comment *224* comment by: *Snecma Services*

TCH has to create the syllabus, what about engine versus aircraft?
Does engine OEM has to create engine syllabus or it will belong to aircraft manufacturer to create engine /aircraft sillabus?

response *Noted*

This comment is not part of the 66-011's remit and will passed to task 21.039. In reality, the concern has been already identified by task 21.039 and will be further replied, based on the comments collected in the course of the public consultation for task 21.039.

comment *226* comment by: *Airbus*

NPA Page 19 of 116
Explanatory Note, Paragraph 44.Transition provisions, 2nd bullet:
Remove "of the provisions of amendments to Appendix I and Appendix II to Part-66."

Justification:
Ensure a smooth transition - Consistency with Draft Opinion, NPA Page 22 of 116, Paragraph 2.(c) and (f)

response *Accepted*

The provisions for the entry into force have been improved.

comment *277* comment by: *EAMTC*

Point 42: EAMTC very much appriciates the group opinion that eligibility requirements should not be required.
EAMTC feels the same way concerning engine run in an approved course!

response *Noted*

Thanks for the comments

comment *295* comment by: *NB/BPvL*

36. Minimum duration of theoretical training
Since it is impossible
to cover all the diversity of aircraft and since Appendix III, where such duration is proposed, is of mandatory compliance (hard rules), any deviation would require th use of article 10 from the Basic regulation 1592/2003. In order to avoid this situation the group decidet that ist was worthwile to add flexiblility provisions in this project. These flexibility cases have been justified, reported and approved by the competent authority.
Editorial comment: add the word competent

Reason: The same terme sould be used throughout the regulation

40. Responsibilities of the NAA related to type endorsement

Proposal:
The EASA 147 Certificate of Recognition (CoR) should be changed to reflect that Type Training will not be recognised if obtained prior to completion of the required Basic Modules of proven basic Knowledge.

Reason; BPvL has legitimate doubts aboute the ability of canditates without the necessary basic knowledge and understanding of the specific category they whis to be licensed on.

41. Additional small amendments to fit to the overall ahanges

Add following amendment: When OJT and practical training conducted by a approved maintenance organisation the person who wants to be licenced of has to pass an examination accomplished in responsibility of NAA.

Reason: The knowledge of theoretical training may be evidenced by an examition; the abilitity of canditates in respect of proper workmanship due technical and flight savety standarts as well as correct use of environment and special equipment and the knowledge of acceptable Troubleshouting must also be confirmed.

response

Noted

36 - Accepted
see comment 133
40 – Not Accepted
see comment 134
41 Not Accepted
The assessment included in the NPA suits the intended purpose.

comment

313 comment by: *UK CAA*

Paragraph:
Page 19 item 43

Comment:
Although reference is made to inclusion of questions of various levels, no mention is made of the proportion of these "lower" level questions.

Justification:
Process open to ambiguity and abuse.

Proposed Text:
"Although it is recognised that not all type training questions can meet the level III requirements of Part-66 Appendix III, at least 75% of any single examination should comprise such level III questions."

response

Not accepted

The intent of the regulator was to suggest a rule with some flexibility as it has to be adapted to each case in term of:

- Number of questions

- Level of examination
- Duration of the training versus the level of teaching

Therefore it was proposed that the examination question level per chapter shall be in proportion to the level of training.
Appendix III subpart 3 was developed in that sense:
a) The number of questions must be at least 1 question per hour of instruction,. The competent authority of the Member State will assess number and level of questions when approving the course. The number of questions for each chapter and level shall be consistent with;
- the effective training hours spent teaching at that chapter and level;
- the learning objectives specified in the detailed training needs analysis.

b) It is accepted that during a level 3 examination, level 1 and 2 questions may be used to examine the full scope of the course material. However, during the examination it is not acceptable to use an excessive number of questions at any lower level such that the intention of the higher examination level is reduced.

It is felt that these recommendations adequately describe the ratio of the level of the questions in an examination and that a too far prescriptive rule would have been detrimental to a certain extend for certain cases.

comment

358 comment by: *CAA-NL*

Training Needs Analysis

a) Guidance on the generation of course profile is excluded (see item 36). Referring to detailed TNA is good suggestion but many organisations will wish to have more guidance on how to perform it. AMC can list some elements of it.
b) Is it possible to get the details of the EU wide review of approved courses? [66-011].

c) If the training is based on a TNA, probably the conclusion would be that no training is required for simple tasks e.g. location task for wings. A proper training needs analysis would reduce the task lists.

d) It is essential that in the design-phase the consequences for training/examinations/licensing are considered for maintenance (and operator alike). This applies also to STC's etc. If this is done, courses can be updated easily and Part-66 **type ratings defined before certification.**

response

Noted

a) Accepted
A TNA guidance has been developed. Refer to GM to Appendix III to Part-66 (final text for the CRD to NPA 2007-07)
b) **Not accepted**
The group in charge of this rulemaking task had access to such data; however these data are not Agency property and therefore such data cannot be published under EASA responsibility.
c) Noted
d) Noted
This comment is passed to rulemaking task 21-039.

comment

360 comment by: *CAA-NL*

Instructor

a) Clarification on instructor's requirements. Explanatory note to decision 2003/11/r contains requirement for NAA to publish criteria. [as officially recognized standard]

b) New AMC 66.A.45(g)(1)(ii) Type/task training and ratings gives option of 'assessor led' training in approved organisation. Title suggests that the purpose is assessing rather than instructing. Suggest to change in "practical instructor led". Whether the Part-147, 145 or subpart F organisation conducts the practical training it always needs to involve instruction and assessment.

c) "full type-rating course" is not very precise and it is not clear what other case are and why there is a difference. Manufacturer (or rather manufacturing) environment leaves to many options open. Suggest to only state that the "majority of practical training should be conducted on real aircraft reflecting actual maintenance situations".

d) List of criteria for the Supervisor is subjective. Approved organisations will look for the right person to do the practical training. One of the most important qualities is lacking...: the ability to coach or give training.

response

Partially accepted

a) Not Accepted
Wrong reference of Decision 2003/11/r which is about Products Parts and appliances (CS to Part 21) The right reference is Opinion 04/2006 and it is better not to mix this NPA with the Opinion according to the EASA legal service recommendation (no consolidated version at the level of the NPA when the opinion's approval is pending)
b) Accepted
The text has been amended accordingly
c) Accepted
The text has been amended accordingly
d) Accepted
The text has been amended accordingly

comment

412 comment by: *SNMSAC Syndicat National des Mécaniciens Sol de l'Aviation Civile*

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42
42. Discrepant opinions within the group
One member suggested that the engine running practical task, presently optional within Part-66 appendix III should be a mandatory practical training task. This concept was subsequently rejected by the remainder of the group on the basis that this was not required as this is addressed by the certifying staff authorisation issued by an approved maintenance organisation.
Our comment:
We cannot accept this argument as valid because if it's upon of the AMO it will never exist a common standard.

response

Noted

Noted
see comment 135.

comment

414 comment by: *SNMSAC Syndicat National des Mécaniciens Sol de*

	l'Aviation Civile 40. Responsibilities of the NAA related to type endorsement When the type training is conducted in different organisations (PART 147 and/or approved maintenance organisations or direct course approval) the **competent** authority shall be satisfied that the interfaces are appropriately handled. Add COMPETENT *reason :* the same reference to **the competent authority** must be used in all parts of the regulation.
response	*Noted* Thanks for the comment: the explanatory note will be corrected at the stage of the Opinion.

comment	*419* comment by: *Yveline MERRIEN* *Practical training is now composed of a fixed content, based upon a specific list of practical tasks, from a table within Part-66, Appendix III.* It's already the case for the OJT Does it mean that a technician with no significant experience must follow a practical training (during or after the theoretical training) plus a part of OJT before and also after the theoretical training ? In this case what is the difference between those trainings ? ??????
response	*Noted* This paragraph explains that: • In the current regulation, there is no list or practical tasks. • This NPA proposes a list of tasks through the table contained in Appendix III paragraph 2.2. No confusion shall be done between the practical elements of the training and the OJT. The OJT will only be mandatory in the case of the first type training in an AML (sub)category in addition to the practical training. Practical elements of the training can be provided by a Part-147 training provider. The OJT will be always provided in a maintenance environment (by a Part-145 or a Part M subpart F organisation). It does not make sense that the practical training be performed before the theoretical training. The OJT is generally performed after the practical training. According to AMC 66.A.45(g) as proposed by this NPA, up to 50% of the required OJT may be undertaken before the aircraft theoretical type training starts. As a summary, this NPA aims at clarifying the type rating training and its elements as well as the requirements to be fulfilled in order to get the type rating endorsed on the aircraft maintenance license. The type rating training is always composed of:

- theoretical portion
- practical portion

The OJT is not considered to be part of the type rating training: the OJT will only be mandatory and additional in the case of the first type training 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 type rating training.

B. Draft Rules - I. Draft Opinion (EC) No 2042/2003 - 145.A.30 p. 23

comment *66* comment by: *Irish Aviation Authority*

Appendix IV paragraph 1 (c) The person shall demonstrate he has received training and passed examination on human factors and airworthiness regulations as detailed in Part-66.
Comment;

This implies that the examinations must be based on Modules 9 and 10 with a pass mark of 75%.

Module 10 is titled aviation legislation and not airwothiness regulations.

Who can conduct such examinations.

response *Accepted*

The paragraph 1© has been kept as in the current rule.

comment *186* comment by: *CAA-NL*

Sub-part F organisations can equally use Category A certifying staff.

response *Not accepted*

Subpart F maintenance organisations cannot use category A certifying staff for the following reasons:

- There is no concept of Line or Base Maintenance within Subpart F.
- There is no concept of Line Stations within Subpart F.
- There is no requirement for a Quality System to control such type of qualifications and authorisations.

comment *187* comment by: *CAA-NL*

To further emphasize this, it is not required that on a line station B1 or B2 authorized personnel is available; one person with a Category A authorisation is the minimum to release the aircraft after the performance of minor scheduled line maintenance and simple defect rectification he performs himself. The MOE should have a procedure how to deal with defects requiring B1 or B2 certifying staff.

response

Accepted

AMC 145.A.30(g) has been modified (paragraph 3).

comment

387 comment by: *CAA-NL*

145.A.30 Reference to articles is more difficult to read than repeating the subject. Alternative:..use "appropriately *Cat A or Cat B2* task trained certifying staff. [ref 66.A.20(a)(1) and 66.A.20(a)(3)(ii)]".
See Also 66.A.45(a)&(b) Page 23, 57, 80 ref 66-006)

response

Not accepted

The text has been written with references in order to be accurate. Please note that 66.A.20(a)3(ii) is not just category B2 personnel, but category B2 personnel with some privileges similar to category A (but they are not either category A personnel).

B. Draft Rules - I. Draft Opinion (EC) No 2042/2003 - Appendix IV Conditions for the use of staff not qualified to Part-66 in accordance with 145A.30(j)1 and 2 p. 23-24

comment

94 comment by: *ENAC, Italy, Production and Maintenance Directorate*

Appendix IV

- Add new paragraph b1) to cover situations where local licences do not cover some aircraft types, or when the organisation is not locally approved on a specific aircraft:

b1) authorisations on aircraft not included in national scope of work are granted on the basis of a Part-147 theoretical and practical approved type rating, if this would meet 66.A.45 excluding the fact of holding a Part-66 AML.

response

Not accepted

The autorisation granted to certifying staff by 145 approved organisations located in foreign countries is based on their national licences. If such national licence does not cover an aircraft type, it is impossible that the certifying staff authorisation could include this particular aircraft. The same problem exists when the organisation approval scope of work do not include a particular aircraft type.

comment

136 comment by: *Aircraft Engineers International (AEI)*

Appendix IV

Conditions for the use of staff not qualified to Part-66 in accordance with 145A.30(j)1 and 2

1. Certifying staff in compliance with all of the following conditions will meet the intent of 145.A.30(j)(1)

and (2):

Comment: Add all of X to the sentence.

Reason:

To ensure that ALL of the conditions are applicable, and that organisations/people are not led to believe that only some conditions have to be applied/satisfied.

response *Accepted*

Text modified accordingly.

comment *250* comment by: *CAA-NL*

Ad 1(c) In App IV a new requirement for a Part-66 human factors examination is introduced.

- Ad 1(c). part-66 has the option of examination only. Training, in that case, is not mandatory.
- For Certifying Staff within the European community, examination on Human Factors is not required. (145.A.30(e) Experience requirement, requires for 'normal' certifying staff 'understanding human factors principles'.) Certifying staff qualified before(date of entry into force) only have to demonstrate they received training. Existing certifying staff have not demonstrated examination. Based on JAA recommendation, most existing personnel received a Human factors training following the syllabus of Part-66 or Human Factors working group but not necessarily passed examinations.
- For the transition; examination or training should both be acceptable until the end of the opt-out date. [large aircraft sept 2006, other aircraft sept 2008]. From the end of the opt-out date part-66 licence requires examination [previous training is optional]. For certifying staff outside the eu community the same rule should be applied.
- For other than large or complex aircraft type training is - within the EU - not mandatory. Outside the EU it should not be different.
- Separate requirements for Base maintenance are not necessary …page 24 (f) can be deleted if combined with (e)..

response *Accepted*

Examination on Human Factors in organisations outside the EU is no more required, since it is not required for european organisations.

comment *251* comment by: *CAA-NL*

e & f) make reference to appendix III level 3 or 1, this is not a good reference. There is no such thing as "a" level 3 for Appendix III; it differs between categories and subjects.
'For every aircraft' should be 'for every aircraft type'.

(e) Certifying staff and base maintenance support staff shall ~~receive~~ meet requirements that are equivalent to the Part-66 requirements the level of the training shall correspond to the applicable training indicated as in Part-66

Appendix III. ~~type training and passed examination at a level corresponding to Part-66 Appendix III level 3 for every aircraft type on which they are authorised to make certification.~~ However those persons, whose authorised tasks do not exceed those of a Part-66 category A certifying staff, may receive task training in lieu of complete type training. In case of aircraft not requiring type training, requirements equivalent to the part-66 requirements for examination and experience shall be met.

response *Partially accepted*

The text has been corrected to suit the requirement of certifying staff in the foreign countries to a requirement similar to those certifying staff in organisations within the EU.
See resulting text.

comment *344* comment by: *AgustaWestland*

with reference to (e) is not clear how such person can demonstrate training and passed examination in accordance with appendix III of part 66 if currently at part 147 can not issue to them an EASA compliant certificate of recognition under 147.A.300

response *Noted*

When the training organisation is approved in accordance with Part-147, they have the privilege to issue certificates of conformance in accordance with Appendix III of Part-147.
Note: the text of Appendix IV of Part-145 regarding the "Conditions for the use of staff not qualified to Part-66 in accordance with 145.A.30(j) 1 and 2" has been modified with regard to the level of knowledge for type training. See resulting text.

comment *413* comment by: *SNMSAC Syndicat National des Mécaniciens Sol de l'Aviation Civile*

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Appendix IV

Conditions for the use of staff not qualified to Part-66 in accordance with 145A.30(j)1 and 2

1. Certifying staff in compliance with **ALL** the following conditions will meet the intent of 145.A.30(j)(1)

and (2):

(a) The person shall hold a licence or a certifying staff authorisation issued under the country's National regulations in compliance with ICAO Annex 1.**and,**

(b) The scope of work of the person shall not exceed the scope of work defined by the National licence/certifying staff authorisation **and,**

(c) The person shall demonstrate he has received training and passed examination on human factors and airworthiness regulations as detailed in Part-66 **and,**

(d) The person shall demonstrate five years maintenance experience for line maintenance certifying staff and eight years for base maintenance certifying staff. However, those persons whose authorised tasks do not exceed those of a Part-66 category A certifying staff, need to demonstrate three years maintenance experience only **and,**

(e) Line maintenance certifying staff and base maintenance support staff shall receive type training and passed examination at a level corresponding to Part-66 Appendix III level 3 for every aircraft on which they are authorised to make certification.

However those persons whose authorised tasks do not exceed those of a Part-66 category A certifying staff may receive task training in lieu of complete type training.

(f) Base maintenance certifying staff must receive type training and examination at a level corresponding to at least Part-66 Appendix III level 1 for every aircraft on which they are authorised to make certification.

*Add **"all"** & **"and"** as notified over here to prevent that organization and/or staff shall think that just some of these conditions are enough. All the conditions must be required.*

response *Partially accepted*

The wording of the first paragraph of Appendix IV has been corrected accordingly by adding "in compliance with **all**"
This means that the "and" in each further sub-paragraphs is not needed.

B. Draft Rules - I. Draft Opinion (EC) No 2042/2003 - B) Part-66 p. 25

comment *151* comment by: *Lufthansa Technik AG*

Category B2 AML should permit the holder to issue CRS after maintenance on all (!) ATA-Chapters as far as electrical work is effected.

response *Accepted*

The text of 66.A.20 on "Privileges of the B2 licence holder" has been modified to include "to isse CRS following:
- maintenance on avionics and electrical systems and,
- electrical and avionics trouble shooting and defect rectification on mechanical systems requiring simple tests to prove their serviceability."

B. Draft Rules - I. Draft Opinion (EC) No 2042/2003 - 66.A.20 p. 25-26

comment *6* comment by: *SAMCO*

66.A.20(a)(1) proposes to exclude deferment of maintenance by A licensed staff
AMC.145.A.30(g) allows however A licensed staff to defer defects or de-activation of systems as per MEL provided the deactivation is a simple task

This seems contradictive.

response *Partially accepted*

AMC to 145.A.30(g) on scope of category A tasks has been modified to state that this includes « defect deferment not needing troubleshooting , the task is in MEL and the maintenance action required by MEL is agreed by the competent authority to be simple".
This is in line with the new text of 66A.20(a)1.

comment *7* comment by: *SAMCO*

The difference between B1 and B2 scope of approval should be technology based only iirespective of ATA chapters
The current and proposed description of the difference is partially technology based and partially ATA chapter based and is therefore not clear.
For instance the proposed B2 scope of approval definition does not seem to include landing indicating systems.
However based on Appendix I and III requiring level 3 training on (landing gear) indicating systems for B2 one can conclude that it is included in the B2 scope of approval.
Furthermore, when using (partially) ATA chapters to specify the scope of approval the following problem occurs: Not all TC holders use ATA chapters in the same way.
For instance fuel indication can be described in ATA 28 or in ATA 31 depending on the TC holder
This is also shown in Part-66:
The basic B1/B2 training requirements as specified in Appendix I ATA 31 specifies Instrument systems (speed, altitude, etc) only whereas indicating systems are listed under there applicable ATA chapter such as 26, 28, 32
However in the type training requirements (NPA 2007-07 page 47) all instruments and indicating is listed under ATA 31

With the new aircraft types more and more electrical/electronic indicating and/or control (sub)systems are integrated into predominant mechanical ATA chapters.
This could lead to the situation that maintenance on an electronic (sub)system cannot be released by B1 as the technology falls outside his scope of license/approval and it cannot be released by B2 as the applicable predominant mechanical ATA chapter was not included in his type training to the correct level

Suggest to divide/specify B1 and B2 scope of approval based on technology only irrespective of the ATA chapter.
This would provide clear definitions of the B1 and B2 scope of approval and is not affected by future new ATA chapters or aircraft designs
As a consequence of the above B1 and B2 basic training and type training should basically cover all ATA chapters but focus for B1 on mechanical, structural, electrical and power plant (sub)systems and focus for B2 on the electrical and avionic/electronic (sub)systems

response *Accepted*

66.A.20 has been amended to allow to the B2 licence holder the performance of maintenance on electrical and avionic parts within mechanical systems, as long as the tests are simple.

"Electrical Systems" and "Avionics Systems" have been further defined in AMC 66.A.20(a).

comment 9 comment by: *SAMCO*

B1 scope of approval should include non electronic (electro-mechanical and pitot-static) instrument and indication systems.
Appendix III (type training) requires level 3 training regarding indicating and recording systems for B1 staff
Recommend to increase the basic training level for instruments (Appendix I module 11.5) to level 3 in order to correspond to the level specified in Appendix III and to the level of module 13.8 for B2

response *Partially accepted*

Refer to the change introduced in AMC 66.A.20(a), in the note added just after the definition of "Avionic System".

comment 13 comment by: *Barry Lewis*

Paragraph 66.A.20 Privileges.

(a) 3. (i) Paragraph may be to restrictive. Propose should read:
"including electrical troubleshooting and electrical defect rectification on **all systems such as** air conditioning systems, fire warning systems, **hydraulic systems,oxygen systems, power plant water/waste systems**, ice & rain protection systems and fuel system indications.

response *Partially accepted*

The text has been modified to extend the privileges of B2 licence holder. See resulting text.

comment 14 comment by: *Air Berlin Technik*

The term "troubleshooting", which is being used various times in the proposed changes, needs to be clarified/defined. For definition purposes, the related AMC should be used.
A clear definition is particularly required because, especially for the admissible work scope of a Cat. A, it is not clear where the line should be drawn between an "inspection" to determine the necessary maintenance action and complex troubleshooting. Example: Is an inspection of a passenger seat which had been declared "inop" (in order to find out which maintenance action is required for rectification) already "troubleshooting"? Is it at all possible that "troubleshooting" could lead to "simple defect rectification", in other words, isn't it a duplication anyway to allow only simple defect rectification and in the same moment specifically exclude "troubleshooting"?

response *Partially accepted*

The scope of work of category A personnel does not include tasks where troubleshooting is required. The Appendix I on Basic knowledge for category A includes training of tasks at a level which does not permit this personnel to carry out any troubleshooting. The AMC to 145.A.30(j) has been corrected to reflect this.
Regarding Part-66, the word "troubleshooting" has been defined. This is in AMC

66.A.20(a).

comment

15 comment by: *Air Berlin Technik*

It is being proposed to specifically exclude deferments from a Cat. A's admissable scope of work. Although the background intention is being understood, this general exclusion goes too far. It is not acceptable that a Cat. A could rectify a defect - because it would be a simple rectification - but not defer it (for example in case of lack of spare parts). Where is the logic that a Certifying Mechanic could fix a passenger seat or an exterior light but is not allowed to carry it forward when the required actuator or bulb is not available? Many examples for such problems could be found in MELs under ATA chapters 25 and 33. Another problem might arise in case of just purely "cosmetic" deferrals. If a flight crew would for example complain about a dirty carpet in the tech log, a Cat. A could not defer it but would either have to replace the carpet immediately or call for a B1.
After all, there are also MEL-deferrals which require maintenance actions which in themselves are only "simple in nature" which need to be covered by a Cat. A licence.
We suggest to cancel the following phrase:
"Certification privileges do not include either troubleshooting or deferment of maintenance actions.".
Instead, the first phrase of Part-66.A.20 (a) 1. should be amended to:
"A category A aircraft maintenance licence permits the holder to issue certificates of release to service following minor scheduled line maintenance and simple defect rectification, including deferment of such defects as well as defect deferment if required maintenance action is only simple in nature, within the limits of tasks specifically endorsed on the authorisation."

response

Partially accepted

AMC to 145.A.30(g) on scope of category A tasks has been modified to state that this includes « defect deferment not needing troubleshooting , the task is in MEL and the maintenance action required by MEL is agreed by the competent authority to be simple”.
This is in line with the new text of 66A.20(a)1.

comment

18 comment by: *Air Berlin Technik*

The suggested phrase "Clearance of deferred maintenance actions is limited to tasks included in their certification authorisation as long as there is no need for testing other than the functional check of the component replaced." in Part-66.A.20 (a) 1. and Part-66.A.20 (a) 3 (ii) is a senseless duplication and should be cancelled. After all, a deferred defect is still a defect and in the first phrase it is specifically stated which kinds of defects might be rectified.

response

Partially accepted

AMC to 145.A.30(g) on scope of category A tasks has been modified to state that this includes « defect deferment not needing troubleshooting , the task is in MEL and the maintenance action required by MEL is agreed by the competent authority to be simple”.
This is in line with the new text of 66A.20(a)1.

This doesn't contradict 66.A.20(a)3 which refers to category B2 staff.

comment	*19* comment by: *Maurizio Alfieri* point 2. A cat B1 ..... The wording : "Work on avionic system" instead of replacement of avionic LRU is too generic and will lead to more confusion among the competence of B1 and B2 . Following limitation when stated that " Avionic troubleshooting is not allowed " is unrealistic when simple removal and replacement of LRU's could be considered "troubleshooting". Text suggestion: A category B1 aircraft maintyenance licence shall permit the holder to issue CRS following maintenance including aircraft structure ,powerplane,mechanical and electrical system and avionionic system as well as maintenace practices covered in Module 7.7 (Appendix I.Part-66) Maintenance on avionic system should be limited to rettification of simple malfunction including LRU's replacement when no need of ausilliary test equipments is required and simple test is sufficient to prove the serviseability of the system/component . Point 3. A category B2 It is hard to see a B2 personnel with their nose up attitude to work on Cat A tasks. Your proposed amendment is unrealistic. Cat B2 should be limited to base maintenance only when solutions for the discrepancies have reach a level of "science ". Line maintenance should be based on B1 + Cat A only B2 to be focused on hi complex system only and rettification of wird problem. Text should reflect this vision of the B1/B2 work competence completelly revised. See Option 2a (but more expanded)
response	*Not accepted* The term "replacement of LRUs" was too restrictive. However, your proposal of including "simple malfunctions" brings immediately the question of what it is a "simple malfunction". The Agency believes that the text proposed in this CRD is clear enough, once the term "simple test" has been further defined in AMC 66.A.20(a). Regarding the second comment, the Agency does not enter on discussing the attitude of B2 licence holders and whether they will be wishing or not to perform Category A tasks. This will depend on each particular individual.

comment	*25* comment by: *Air Berlin Technik* The suggested change to be introduced by Part-66.A.20 (a) 3. (i) clarifies that a B2's certification privileges also include "electrical troubleshooting and electrical defect rectification on air conditioning systems, fire warning systems, ice & rain protection systems and fuel system indications". In our opinion, this clarification in itself again bears problems by the limitation of "electrical troubleshooting and defect rectification" to a specific range of other systems (ATAs 21, 26, 28, 30 only). There are by far more systems where "electrical troubleshooting and defect rectification" might be necessary! The most simple example, which still would not be covered by the new text, is "lights" (ATA 33), although this is just one example. According to the new

regulation text, discussions would still be possible whether a B2 is allowed to change a light bulb or not. To ensure the success of the legislator's approach (which in our opinion is aimed at deliminating such discussions), Part-66.A.20 (a) 3. (i) should only read:
"(i) to issue certificates of release to service following maintenance on avionic and electrical systems."
Further detailing is not necessary, because the term "electrical systems" is being defined in the new definitions as per AMC 66.A.20 (a) in a very appreciable way ("Electrical system is defined as the aircraft electrical power supply source, plus the distribution system to the different components contained in the aircraft and relevant connectors. Lighting systems are also included in this defintion."). There is no need for further amending the regulation's text. The definition gives a very good wording for what is usually "electrics" in the perception of maintenance staff: "everything that has electrical cables, wiring and connectors".
Contradiction between a - limiting - regulation and an - open - definition in the AMC must be avoided.

response

Accepted

66.A.20 has been amended to allow to the B2 licence holder the performance of maintenance on electrical and avionic parts within mechanical systems, as long as the tests are simple.

"Electrical Systems" and "Avionics Systems" have been further defined in AMC 66.A.20(a).

comment

26 comment by: *Air Berlin Technik*

The suggested change by introducing Part-66.A.20 (a) 3. (ii) clarifies that a Cat. B2 licence holder may be given the same certification privileges as a Cat. A licence holder. This in principle is very much appreciated.
Nevertheless, we think that problems are being created by simply "copying" the (new) text under Part-66.A.20 (a) 1. to Part-66.A.20 3. (ii). For example, the mentioned paragraph now generally excludes troubleshooting and deferrals, which for electrical and avionic system is specifically allowed in paragraph (i) above. Although we are convinced that the legislator does not mean that, we still think that the wording is not accurate enough and contradictive, which could result in interpretative problems sooner or later.

response

Partially accepted

The limitations regarding cat A troubleshooting and defect deferrement have been transferred to AMC 145.A.30(g).

These limitations only affect the B2 licence holder in relation to his cat A privileges. Obviously, if the same privilege is already contained in the B2 licence, this one supersedes the limitation of the cat A.

Nevertheless, 66.A.20(a)3(ii) has been modified to make it more clear.

comment

27 comment by: *Air Berlin Technik*

The suggested change to Part-66.a.20 (a) 3., especially paragraph (ii), deals with the certification privileges of a Certifying Technician Cat. B2 regarding work packages.

We generally appreciate this clarification in itself, because it finally specifically says that a B2 is allowed to release a complete work package AT ALL (which is currently doubted by at least one NAA). Nevertheless, we think that limiting a Cat. B2's privilege for releasing a work package to "minor scheduled line maintenance" (as for a Cat. A) does not meet a Cat. B2's level of education and training. A B2 is a "Certifying Technician" just as a B1 and should be entitled to release any scheduled line maintenance work package (such as an A-Check). As in base maintenance, where a Cat. C issues the release to service mainly on the basis of the paperwork completed by others, this should be possible in line maintenance as well (just "one level below", if you like). Checking whether a certain task had been carried out by a properly qualified person, as it is supposed to be done by a "Certifying ENGINEER" in BASE maintenance, should be done by a "Certifying TECHNICIAN" level licenced person in LINE maintenance. It is not justified that a Cat. B2 should not be allowed to release work performed by others. So, in this context no distinction should be made according to the specialisation (which in troubleshooting and defect rectification doubtlessly makes sense), because it rather requires a higher level of overview knowledge which both B1s and B2s have by virtue of their education.
Therefore, the text of Part-66.A.20 (a) 3. (ii) should be amended to:
"to issue certificates of release to service following maintenance. The certification privilege includes simple defect rectification on mechanical systems that the licence holder has personally performed in a Part-145 organisation."

response

Not accepted

According to the Agency proposal, a category B2 licence engineer can release a full work package as long as it contains only tasks described in 66.A.20(a)3(i) and (ii). This means that the work package may include any maintenance action on electrical and avionic systems, plus minor scheduled line maintenance and simple defect rectification on any system.
There is no need to further modify the text.

Now, if the intention of the comment is to include cat. B1 tasks (outside the cat. A privileges), this is not supported by the Agency, because the B2 licence holder does not have the appropriate Basic Knowledge.

comment

33 comment by: *KLM Royal Dutch Airlines*

66.A.20 (3) (ii)

Category A privileges for B2 certifying staff:

We fully agree to increase the privileges of the category B2 certifying staff to include the category A privileges. However we disagree with the proposal not to extend the Part-66 AML of the category B2 certifying staff with the category A.

Apparently the basic knowledge training of the category B2 is considered to be sufficient to include the category A privileges. The NPA does not require additional exam(s) for any basic knowledge (sub)module, nor does the NPA specify any change to the basic knowledge training required for the category B2 in this respect.

The majority of category A privileges are of a mechanical nature. The privileges

of the category B2 concern avionics and electrical systems that's why the B2 type training is oriented towards the avionics and electrical systems only. The required category A task training for each individual aircraft type concerned is mechanical activities oriented and mostly practical training driven. Therefore, after having performed the appropriate task training for a type, it does not seems to be logical to limited the category A privileges to be issued to aircraft types already endorsed on the B2 license.

Since it's not clear that every individual category B2 certifying staff has worked on mechanical systems, we do agree that proposed increase of privileges should not be automatic. And yes, initially six (6) months of documented appropriate practical experience covering the category A privileges are required. This requirement already exists under current experience requirements for extending a Part-66 AML category B2 to add the category A (Appendix IV to Part-66).

It was understood that the NPA does not recommend the National Authorities to issue a category A Part-66 AML for those category B2 certifying staff meeting the requirements of the NPA. At present there are (lots of) category B2 certifying staff holding a Part-66 AML including the category A privileges. Either from conversion or based on basic knowledge exams and appropriate experience. It is highly undesirable to have certifying staff authorized to certify the same activity but having a different Part-66 AML, with or without having the category A on the AML. Therefore and based on the above motivation we strongly recommend the Agency to reconsider the proposed amendment and adjust the proposal to let the National Authorities issue a category A Part-66 AML for those category B2 certifying staff submitting six (6) months of documented appropriate practical experience covering the category A privileges only.

response

Not accepted

The B2 Basic Knowledge is not sufficient to hold a category A licence.
Specifically addressing the typical cat A tasks shown in AMC 145.A.30(g), there is lack of Basic Training on the following items:

- c): Equipment and Furnishing training is limited to electronic emergency equipment and cabin entertainment equipment. See 11.7 for cat A.
- d) Replacement of ovens, boilers and beverage makers is not covered. This is covered in 11.7 for cat A, as galley installations.
- g) Seats, belts and harnesses. Not covered. 11.7 for cat A.
- j) and k): No basic training for composite damage detection and repair. 6.3.1(b) for cat A.

Besides, one of the items included in AMC 145.A.30(g), paragraph 1, is an inspection / check up to a weekly check. This may include many items for which the B2 has no Basic Training:

- ☐ Inspections for leaks and structural damage.
- ☐ Routine lubrication of components, bearings, etc.
- ☐ Inspection of pneumatic systems, waste, etc.

That is why the category A has not been automatically given to the B2 licence holder.

However, 66.A.20(a)3(ii) gives category A privileges to the B2 licence holder, but the following compensation

measures have been taken:

- Limited to the aircraft type already endorsed on the B2 licence.
- Task training and 6 months of experience are required in the Part-145 organisation which is going to issue the authorisation.
- The task training and the experience must fully cover the cat A tasks that are going to be authorised.

comment

39 comment by: *KLM Royal Dutch Airlines*

66.A.20 (3) (i)

NPA page 6 & 25

Increase capability of the B2 to include electrical troubleshooting and electrical defect rectification in some mechanical systems:

We fully agree with the proposal to include electrical troubleshooting and electrical defect rectification in mechanical systems, such as air conditioning, fire warning systems, ice & rain protection and fuel system indications. However because of the privileges of the category B2 (avionics and electrical systems), we feel that the expansion of the B2 privileges should not be limited to electrical trouble shooting and defect rectification only, but should also include avionics troubleshooting and avionics defect rectification in these mechanical systems.
Because of new technologies used, mechanical systems such as air conditioning, fire warning systems, ice & rain protection and fuel system indications more oftenly consists of avionics components and uses analogue and digital data lines.

response

Accepted

66.A.20(a)3(i) has been amended accordingly to allow maintenance on electrical and avionic parts within a mechanical system as long as the test is simple.

comment

40 comment by: *Irish Aviation Authority*

The privileges of B1 includes 'maintenance practices covered in Module 7.7 (Appendix 1 Part-66)'. This sentence, intended to add clarification, actually adds to the confusion because it is not included in the B2 privileges to which it equally applies.

Options
1. Delete the sentence from the B1 privileges.
2. Add to B2 privileges.

response

Accepted

The reference to module 7.7 has been removed from 66.A.20.
In AMC 66.A.20(a) it has been further defined what is an electrical system, including the typical practices covered by module 7.7. This applies to both B1 and B2.

comment 64 comment by: *Rockwell Collins*

Having reviewed NPA # 2007-07 we (RCUK) have concerns over the impact (if approved) these changes may have on our Business, specifically for 'A' Licensed Engineers.
Referring to page 25, category 'A' aircraft maintenance Licence certification privileges do not include either troubleshooting or deferment of maintenance actions, other pages including 7, 8-13, 23, 57, 86-93 also make some reference to this restriction.
Currently Rockwell Collins UK Limited have various contracts to maintain 'In Flight Entertainment Systems', for which RCUK employe various EASA Licensed Engineers including 'A', which at this time I believe are permitted to complete limited tasks referenced above.
However, It is my understanding that this NPA would for example include deferral restrictions (for A License holders) of IFE Seat Screens and any other IFE system parts, and possibly require a B2 to make any deferrals in the future.

response *Accepted*

66.A.20(a)1 has been kept as in the current rule. However, this has been explained in AMC 145.A.30(g), item 2.
No tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).

comment 77 comment by: *CAA-Norway*

2.
The proposed added text will lead to misunderstandings

Remove the two proposed sentences: *"as well as maintenance practices covered in Module 7.7 (Appendix I, Part-66)" and "Avionics troubleshooting is not allowed"*

It will make it easier to understand the content, and the proposed AMC.66.20 clearifies well the privileges limitation for avionic systems for the category B1 certifying staff.

3.
The proposed added text will lead to misunderstandings

(i)
Remove the proposed text "*including electrical troubleshooting and electrical defect rectification etc....."*

The listed systems are not in compliance with the proposed changes to Appendix I.

response *Accepted*

The reference to module 7.7 has been removed from 66.A.20.
In AMC 66.A.20(a) it has been further defined what is an electrical system, including the typical practices covered by module 7.7. This applies to both B1 and B2.

comment 104 comment by: *CAA CZ*

Paragraph 66.A.20, 3ii, page 25 (Draft Opinion No2042/2003) proposes augmentation of privileges for category B2 holders. Part-147, page 56, Basic Training Course Duration proposes volume basic training reduction for category B2. Therefore we do not consider the reduction concerning 400 hours adequate to the augmentation of privileges of the category B2.

response *Accepted*

The duration has been maintained in 2400 hours.

comment *119* comment by: *NHAF Technical committee*

Ref page 25, § 1, A "functional check" must be limited as long as a functional check could be very different from manufacturer to manufacturer. A clear definition of a functional check is required.

Ref page 25, § 3, A person which held a B2 licence should not be automatically granted the new privileges as mentioned without a proper basic education and OJT.

response *Partially accepted*

66.A.20(a)1 has been kept as in the current rule. However, this has been explained in AMC 145.A.30(g), item 2.
No tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).
At the end of AMC 145.A.30(g), item 2, the reference to "functional check of the component replaced" has been removed because the text already says "as long as the task is listed above", which may include functional and operational checks.

Regarding the increase of privileges of the B2 licence holder, as stated in the proposed Article 7, paragraph 9(a), persons holding a valid Part-66 licence shall automatically obtain the new privileges. However, 66.A.20(b) has been modified by adding a new paragraph 3 that makes clear that the person cannot exercise certification privileges it he/she does not have the adequate competence. This is further clarified in the new AMC 66.A.20(b)3.

comment *120* comment by: *Dassault Aviation*

66.A.20 Privileges

Category B1 Privileges
Dassault agrees with the increased privileges of the B1 and B2 license holder. However, we would request that the B1 privileges be expanded further than currently proposed to enable the release of an aircraft after electrical/avionics tasks have been carried out i.a.w aircraft manufacturer maintenance data, including simple troubleshooting of electrical / avionics systems. The B1 privileges should also include troubleshooting the aircraft systems and when digital technology allows for easy testing of avionics where the serviceability of the system can be established during troubleshooting and after work has been carried out.

Category B2 Privileges
Dassault agrees with the increased capabilities for the B2 license holder to include privileges for electrical troubleshooting and electrical defect rectification

in some mechanical systems, such as air conditioning, fire warning systems, ice & rain protection and fuel system indications.

Dassault agrees with the Working Group's comments in their justification for increasing the training level for category B2 to match the training level for category B1, and allowing the B2 license holders to get this privilege automatically without requiring the performance of a course covering those changes.

The Working Group is correct that in many cases, category B2 certified staff also worked on mechanical systems although they were not certifying such work for release to service. This change to the B1 and B2 privileges brings these privileges closer to everyday jobs the technicians are actually performing.

response *Noted*

The Agency notes the comments from Dassault. However, the Agency does not agree in including avionics troubleshooting within the B1 privileges because the Basic Knowledge does not support it.

comment *128* comment by: *Juan Ramon MATEOS CASADO*

It is necessary to define the privileges for B1 and B2 AML holders working in a base maintenance environment as 'support staff'

response *Accepted*

66.A.20 has been modified accordingly.

comment *137* comment by: *Aircraft Engineers International (AEI)*

66.A.20 Privileges

(a) Subject to compliance with paragraph (b), the following privileges shall apply:

1. A category A aircraft maintenance licence permits the holder to issue certificates of release to service following minor scheduled line maintenance and simple defect rectification within the limits of tasks specifically endorsed on the authorisation. The certification privileges shall be restricted to work that the licence holder has personally performed in a Part-145 organisation. Certification privileges do not include either troubleshooting or deferment of maintenance actions. Clearance of deferred maintenance actions is limited to tasks included in their certification authorisation as long as there is no need for testing other than the ~~functional~~ operational check of the component replaced.

Comment:

Replace ~~functional~~ with operational.

Reason:

A functional check means by most definitions a check involving measuring

values/limits/ranges etc. This is not part of the category A Certifying Staff's area of responsibilities. Accordingly the word operational should be used, which by most definitions means a check to establish if the system operates correctly.

response

Not accepted

66.A.20(a)1 has been kept as in the current rule. However, this has been explained in AMC 145.A.30(g), item 2.
No tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).
At the end of AMC 145.A.30(g), item 2, the reference to "functional check of the component replaced" has been removed because the text already says "as long as the task is listed above". Those tasks may include a functional check or an operational check depending on the task (for example, a brake replacement may need an antiskid system functional check).

comment

138 comment by: *Aircraft Engineers International (AEI)*

3. A category B2 aircraft maintenance licence shall permit the holder:

(i) to issue certificates of release to service following maintenance on avionic and electrical

systems, including electrical troubleshooting and electrical defect rectification on air

conditioning systems, fire warning systems, ice & rain protection systems and fuel system

indications. Category B2 may also include limited A sub category privileges, which entitle the holder:

(ii) to issue certificates of release to service ……."

Comment:

Add Category B2 may also include limited A sub category privileges, which entitle the holder:

Reason:

AEI found the way these sub paragraphs (i) & (ii) were presently written very confusing. To make it easier to understand, and read the above change is proposed.

response

Partially accepted

66.A.20(a)3 has been reworded in order to make it more clear. However, reference to cat A privileges has been avoided on purpose in order to make clear that the B2 licence does not include any cat. A subcategory. It has been chosen instead to state those privileges.

comment

139 comment by: *Aircraft Engineers International (AEI)*

3. A category B2 aircraft maintenance licence shall permit the holder:

(ii) to issue certificates of release to service following minor scheduled line maintenance and

simple defect rectification within the limits of tasks specifically endorsed on the

authorisation. This certification privilege shall be restricted to work that the licence holder

has personally performed in a Part-145 organisation, and limited to ratings already endorsed

in the B2 license. Certification privileges do not include either troubleshooting or deferment

of maintenance actions. Clearance of deferred maintenance actions is limited to tasks

included in their certification authorisation as long as there is no need for testing other than

the ~~functional~~ operational check of the component replaced.

Comment:

The same as for comment # 137

Reason:

The same as for comment # 137

response

Not accepted

See reply to comment 137.

comment

160 comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)*

66.A.20 3 (i) Privileges

The Swedish CAA suggests that the systems under paragraph 66.A20 3 (i) should not be the only ones mentioned. In the future there may be others that could come into question under this paragraph. These systems mentioned could be expressed as examples.

response

Accepted

This paragraph has been modified to include all mechanical systems.

comment

165 comment by: *BCAA - DAE - Certification*

The privileges of B2 licence holder do not include the certificate of release to service for indication and warnings for hydraulic systems, oxygen, landing gear and pneumatic/vacuum although the level of the basic knowledge for these subjects is 3. It seems to us that indication and warning should be a privilege of the B2 licence holder. If not, what is the interest to teach these subjects to

	such a high level ?
response	*Accepted* This paragraph has been modified to include all mechanical systems.

comment	*183* comment by: *CAA-NL* 66.A.20(a)1 and 2 need not to be changed.
response	*Partially accepted* 66.A.20(a)1 has been kept as in the current rule. However, AMC 145.A.30(g) is now clarifying the question of troubleshooting and defect rectification performed by cat A personnel. 66.A.20(a)2 need to be changed in order to allow to the category B2 the performance of category A tasks..

comment	*184* comment by: *CAA-NL* All maintenance (by category A) is limited to tasks within the authorisation. The limitations are given in the first part of this paragraph [66.A.20[a]1 and need not to be repeated in 66.A.20 [3][ii]: minor scheduled maintenance and simple defect rectification within the tasks….
response	*Partially accepted* Please note that reference to cat A privileges has been avoided on purpose in 66.A.20(a)3(ii) in order to make clear that the B2 licence does not include any cat. A subcategory. It has been chosen instead to state those privileges. Nevertheless, the limitations have been moved to AMC 145.A.30(g).

comment	*189* comment by: *CAA-NL* To avoid confusion, I recommend to always list the Cat A subcategory on the AML.
response	*Partially accepted* In the case of the B1 licence, the rule says that the corresponding subcategory A is automatically included. As a consequence, the NAA may endorse the subcategory A in the licence, but it is not necessary. In the case of the B2 licence it is not possible to endorse any A subcategory because it is not automatically included. The cat A privileges may be granted to the B2 licence holder under specific conditions (see 66.A.20(a)3(ii) and 66.A.45(b))

comment	*190* comment by: *CAA-NL* In addition it makes sense to allow the independent B2 [Part M.A.801(b)(2)] certifying staff to have the same privileges. This implies for B1 and B2 that 'category A tasks' are always allowed for the aircraft types on the licence (provided authorisation and compliance with experience criteria). As a

	consequence the regulation need to be amended to indicate that cat A tasks are also privileges for the type ratings on the B2 or alternatively part-M needs to be changed to include category A in sub-part F en sub-part H
response	*Not accepted* Subpart F maintenance organisations cannot use category A certifying staff for the following reasons: • There is no concept of Line or Base Maintenance within Subpart F. • There is no concept of Line Stations within Subpart F. • There is no requirement for a Quality System to control such type of qualifications and authorisations.

comment	*191* comment by: *CAA-NL* 3(ii) By adding the limitation for the A tasks, unintentionally, the text limits all B2 tasks to tasks personally performed (in a part-145 organisation), which is contradictory with 3.(i)e.
response	*Partially accepted* The limitations regarding cat A troubleshooting and defect deferment have been transferred to AMC 145.A.30(g). These limitations only affect the B2 licence holder in relation to his cat A privileges. Obviously, if the same privilege is already contained in the B2 licence, this one supersedes the limitation of the cat A. Nevertheless, 66A.20(a)3(ii) has been modified in order to make it more clear.

comment	*197* comment by: *CAA-NL* Sub-part F organisations can use C certifying staff as well. Part-145.A.30(h) 2. Can be read in such a way, that this applies to any approved organisation, despite 66.A.20(a). If this is supported, 'part-145 organisation' need to be changed in 66.A.20(a) 4. into 'approved maintenance organisation'.
response	*Not accepted* Subpart F maintenance organisations cannot use category C certifying staff for the following reasons: • There is no concept of Base Maintenance within Subpart F. • There is no concept of B1 and B2 support staff within Subpart F. • There is no requirement for a Quality System to control such type of qualifications and authorisations.

comment	*204* comment by: *British Airways Engineering* Our (BA) Procedures outline the privileges of an A3 authorised Engineer follows: "May clear Acceptable Deferred Defects (ADDs) relating to the tasks identified

above and raise ADDs relating to non-airworthiness items suitable for recording in the Aircraft Maintenance Log Part 2 (Cabin)."

NPA PROPOSAL

NPA 2007-07 Page 25
66.A.20 privileges

"Certification privileges do not include either troubleshooting or deferment of maintenance actions.

Clearance of deferred maintenance actions is limited to tasks included in their certification authorisation as long as there is no need for testing other than the function check of the of the component replaced."

SUGGESTED AMENDMENT

Suggest adding the words "non-airworthiness items" to troubleshooting or deferment of defects.

66.A.20 privileges

"Certification privileges include troubleshooting and deferment of maintenance actions for non-airworthiness items.

Clearance of deferred maintenance actions is limited to tasks included in their certification authorisation as long as there is no need for testing other than the function check of the of the component replaced."

The current B2 licenced engineer privileges and limitations are severely limited. The B2 privileges should include ALL mechanical systems.

By including all mechanical systems you enable the B2 engineer to deal with wiring and electrical components in electro-mechanical systems.

NPA PROPOSAL

66.A.20 Privileges

3. A category B2 aircraft maintenance licence shall permit the holder:

(i) to issue certificates of release to service following maintenance on avionic and electrical systems, including electrical troubleshooting and electrical defect rectification on air conditioning systems, fire warning systems, ice & rain protection systems and fuel system indications.

SUGGESTED AMENDMENT

66.A.20 Privileges

3. A category B2 aircraft maintenance licence shall permit the holder:

(i) to issue certificates of release to service following maintenance on avionic and electrical systems, including electrical troubleshooting and electrical defect

rectification on **airframe and engine systems**. ~~air conditioning systems, fire warning systems, ice & rain protection systems and fuel system indications.~~

response

Partially accepted

66.A.20(a)1 has been kept as in the current rule. However, this has been explained in AMC 145.A.30(g), item 2.
No tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).
At the end of AMC 145.A.30(g), item 2, the reference to "functional check of the component replaced" has been removed because the text already says "as long as the task is listed above". Those tasks may include a functional check or an operational check depending on the task (for example, a brake replacement may need an antiskid system functional check).

Regarding the privileges of the B2 licence holder, 66.A.20(a)3(i) has been amended to include maintenance on electrical and avionic parts within powerplant and mechanical systems.

comment

205 comment by: *British Airways Engineering*

What is Avionic Troubleshooting?

When working on avionic systems in accordance with the relevant airplane manuals (fault isolation manual, MEL, maintenance manual) to rectify or defer a defect, or declare the defect is outside the limitations of the engineers license, the engineer is performing “troubleshooting”.

Troubleshooting in most cases is simple and on the rare occasion complex. This term should be avoided or very clearly defined.

NPA PROPOSAL

NPA 2007-07 Page 25
66.A.20 Privileges

2. A category B1 aircraft maintenance licence shall permit the holder to issue certificates of release to service following maintenance, including aircraft structure, powerplant and mechanical and electrical systems, as well as maintenance practices covered in Module 7.7 (Appendix I, Part-66).

Replacement of avionic line replaceable units, work on avionic systems requiring simple tests to prove their serviceability shall also be included in the privileges. Avionics troubleshooting is not allowed.

Category B1 shall automatically include the appropriate A subcategory

SUGGESTED AMENDMENT

66.A.20 Privileges

2. A category B1 aircraft maintenance licence shall permit the holder to issue certificates of release to service following maintenance, including aircraft structure, powerplant and mechanical and electrical systems, as well as maintenance practices covered in Module 7.7 (Appendix I, Part-66).

	Replacement of avionic line replaceable units and work on avionic systems requiring simple tests to prove their serviceability shall also be included in the privileges. Category B1 shall automatically include the appropriate A subcategory
response	*Accepted* A definition of «troubleshooting» has been added in AMC to 66.A.20(a) Privileges to define better the word.

comment	*210* comment by: *DGAC France* The scope of the privileges of category B2 is basically defined by theoretical and practical type training as required through the link to appendix III in existing 66.A.45 (d) and proposed 66.A.45(g)(1). By specific reference, the proposed 66.A20 basically limits the scope of category B2 to four ATA chapters only (21, 26, 28, 30). We consider that there are no reason to introduce such a limitation and that a category B2 engineer should be entitled to release avionic and electrical tasks in all ATA systems. We therefore propose to 1) modify 66.A.20(a)(3)(i) as follows: **"(**i) to issue certificates of release to service following maintenance on avionic and electrical systems~~, including electrical troubleshooting and electrical defect rectification on air conditioning systems, fire warning systems, ice & rain protection systems and fuel system indications~~**."** 2) Update table within appendix 1 to Part-66 to include appropriate training to cover electrical troubleshooting and electrical defect rectification on all ATA chapters. In addition, in order to ease the transition phase, we would recommend adding a statement in the rule recognising that no additional training is required from personnel already certified according existing Part-66 to have access to the full scope of category B2.
response	*Accepted* Regarding the privileges of the B2 licence holder, 66.A.20(a)3(i) has been amended to include maintenance on electrical and avionic parts within powerplant and mechanical systems. Module 13 of Appendix I has been modified accordingly. Regarding the increase of privileges of the B2 licence holder, as stated in the proposed Article 7, paragraph 9(a), persons holding a valid Part-66 licence shall automatically obtain the new privileges. However, 66.A.20(b) has been modified by adding a new paragraph 3 that makes clear that the person cannot exercise certification privileges it he/she does not have the adequate competence. This is further clarified in the new AMC 66.A.20(b)3.

comment	*245* comment by: *Nayak Aircraft Services*

It must be clearly defined that a CAT-A can do deferments of maintenance actions acc. to the MEL in conjunction with the Operators MCC. Otherwise it is not possible to have only CAT-A personnel on a line station allown. This is a daily requirement.

response *Accepted*

66.A.20(a)1 has been kept as in the current rule. However, this has been explained in AMC 145.A.30(g), item 2.
No tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).
At the end of AMC 145.A.30(g), item 2, the reference to "functional check of the component replaced" has been removed because the text already says "as long as the task is listed above". Those tasks may include a fuctional check or an operational check depending on the task (for example, a brake replacement may need an antiskid system functional check).

comment *262* comment by: *TYROLEAN AIRWAYS*

66.A.20 Privileges
at (a) 3. (i) amend the new sentence as follows:

..., incl. electrical troubleshooting and electrical defect rectification on all mechanical systems.

There is no reason why a B2 should not be able to troubleshoot and repair electrical installations/appliancies in e.g. hydraulic, landing gear, pneumatic, etc. systems, if he is able to do it in (air conditioning, fire warning, etc).

response *Accepted*

Regarding the privileges of the B2 licence holder, 66.A.20(a)3(i) has been amended to include maintenance on electrical and avionic parts within powerplant and mechanical systems.

Module 13 of Appendix I has been modified accordingly.

comment *278* comment by: *EAMTC*

Part-66.A.20(a)3: - Workgroup 66.006 To issue CRS following minor scheduled maintenance. This is a positive expansion for the Cat B2 but are to be considered as limited Cat A1 addition to the Cat B2 privileges.
However to get a limitation on Cat A1, as suggested in the Part-66.
A.20(a)3 is not workable. Just provide the Cat B2 licensed personnel with a full Cat A1 authorization, after accomplishment of the Cat A1 training either by a Part-147 or a Part-145 training.

response *Not accepted*

The B2 Basic Knowledge is not sufficient to hold a category A licence. That is why the following compensating measures have been introduced:

- The authorisation is limited to the ratings already endorsed on the B2 licence.
- The task training and 6 month experience has to be provided by the Part-145 organisation emplying the person and must fully cover the

tasks being authorised.

comment

296 comment by: *NB/BPvL*

66.A.20 Privileges
(a) Subject to compliance with paragrapf (b), the following privileges shall apply:

1. .....need for testing other than the functional check ot the component replaced.

Replace *functional* with *simple*
Functional check mostly is defined as a check involving measuring values/limits/ ranges/interpretationof results etc. This can not be part of category A Certifying Staff´s responsibiliies. The definition of simple check means a check carried out as go/no go task.

response

Partially accepted

66.A.20(a)1 has been kept as in the current rule. However, this has been explained in AMC 145.A.30(g), item 2.
No tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).
At the end of AMC 145.A.30(g), item 2, the reference to "functional check of the component replaced" has been removed because the text already says "as long as the task is listed above". Those tasks may include a functional check or an operational check depending on the task (for example, a brake replacement may need an antiskid system functional check).

comment

297 comment by: *NB/BPvL*

3. A. category B2 aircraft maintenance licence shall permit the holder:
(i) to issue certificates of release to service folowing maintenance on avionic and electrical systems, including electrical troubleshooting and electrical defect rectification on air cionditioning systems, fire warning systems, ice & rain protection systems and fuel system indications. Category b2 may also include limited Cat A sub category privileges, whitch entitle the holder:

(ii) to issue certificates of releas to service.....

Add: Categrory B2 may also include limited A sub category privileges, which entitle the holder:
Reason: The present sub paragraphs (i) and (ii) ar presently nor clearly written. The new sentence make it easier to understand.

response

Not accepted

Please note that reference to cat A privileges has been avoided on purpose in 66.A.20(a)3(ii) in order to make clear that the B2 licence does not include any cat. A subcategory. It has been chosen instead to state those privileges.

comment

298 comment by: *NB/BPvL*

3. A category B2 aircraft maintenance licence shall permit the holder:

(ii) to issue certificates of release to service following.....

.....as long as there is no need for testing other than the functional check of the component.

Comment: replace *funktional* with *simple*

Reason; the same as for comment 295

response

Partially accepted

The limitations have been transferred to AMC 145.A.30(g), item 2.
No tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).
At the end of AMC 145.A.30(g), item 2, the reference to "functional check of the component replaced" has been removed because the text already says "as long as the task is listed above". Those tasks may include a functional check or an operational check depending on the task (for example, a brake replacement may need an antiskid system functional check).

comment

300 comment by: *European Regions Airline Association*

66.A.20 (a) 3. (i) - amend the new sentence as follows:

..., including electrical troubleshooting and electrical defect rectification on all mechanical systems.

ERA can see no reason why a B2 licensed engineer should not be able to troubleshoot and repair electrical installations/appliancies in other systems such as hydraulics, landing gear, pneumatic systems etc. as well as those already defined in the amended sentence.

response

Accepted

Regarding the privileges of the B2 licence holder, 66.A.20(a)3(i) has been amended to include maintenance on electrical and avionic parts within powerplant and mechanical systems.

Module 13 of Appendix I has been modified accordingly.

comment

317 comment by: *Walter Gessky*

66.A.20(a) 2. Second sentence (page 25)

Change the following:

2. … Work on avionic systems requiring **only** simple tests to prove their serviceability **and replacement of avionic line replaceable units** shall also be included in the privileges. Avionics troubleshooting is not allowed.

Justification:

Editorial change, add "only" to give a stronger advice that only simple tests to provide serviceability are accepted.

The scope of the privilege has changed for the B1 because it now does not

contain anymore the replacement of avionic LRUs. It also specifies now to "work": Work can be done by any person under supervision as specified in the respective MOE of a maintenance organisation. The privilege is "certification of maintenance" - so why that is then mentioned here, or is it understood that certification after work is also included in the privileges; or is a B2 needed? This is not clear! In addition to that this change is not explained in the explanatory note.

response

Partially accepted

The word "only" has been included.

"Replacement of LRUs" has not been included because it is already part of "work on avionic systems".

Finally, the text has been modified to show "Certification of work on avionic systems....."

comment

318 comment by: *Walter Gessky*

66.A.20(a) 3.(i) (page 25

Change the following:

(i) to issue certificates of release to service following maintenance on avionic and electrical systems, including electrical troubleshooting and electrical defect rectification on air conditioning systems, fire warning systems, ice & rain protection systems, **flight control systems,** fuel **control systems and fuel** system indications.

Justification:

Electrical parts of the flight control systems if no FADEC system is installed and fuel control systems should be included.

response

Accepted

Regarding the privileges of the B2 licence holder, 66.A.20(a)3(i) has been amended to include maintenance on electrical and avionic parts within powerplant and mechanical systems.

Module 13 of Appendix I has been modified accordingly.

comment

347 comment by: *Panasonic Avionics Corporation*

1 Part-66: 66.A.20 (a) 1 (Working Group 66.006)

Regarding the prohibition of a category A licence holder to certify for the deferment of maintenance actions, Panasonic maintains that such a change would have no impact on the continued airworthiness of an aircraft. An understanding and consideration of airworthiness practice and procedures in relation to deferment actions would show this proposed change to be unnecessarily restrictive, having no safety or airworthiness justification but having a significant adverse effect on Panasonic and similar organisations and their airline customers.

Deferments made by category A licence holders within the limits of the tasks endorsed on their authorisation (which they have been trained to perform) and permitted within the rules of the approved maintenance data are a safe and proper way in which to maintain and operate aircraft.

This specific prohibition will have significant impact on Panasonic's ability to perform its business and provide our customers with a full level of service under our limited Part-145 approval.

2 Part-66: 66.A.20 (a) 3 ii (Working Group 66.006)

This paragraph does not define the restriction as applying only to the Cat 'A' part of the Cat 'B2' Licence.

It appears that the authorisation certificate has to define the Cat 'B2' tasks as well, and limit these to work done ONLY by those Cat "B2" authorised persons.

Part-145.A.30(g) Paragraph 9 requires an organisation carrying out aircraft line maintenance to have appropriately type-rated Cat 'B1/B2' licence holders, but these licence holders do not need to be on site at times of scheduled minor maintenance.

This does not correspond with the above Part-66.A.20 changes, which do not permit the deferral of defects by;

a. The Cat A licence holder, if 66.A.20(a) 1, or,

b. If 66.A.20 (a) 3 ii applies, a B2 licence holder.

Under the new provisions of **Part-66: 66.A.20 (a) 1 and Part-66: 66.A.20 (a) 3 ii**, neither an appropriately type rated Cat 'B2' licence holder or a task-trained Cat A licence holder may defer defects, thus the aircraft may not fly with deferrals, creating an impossible operational situation for our organisation and the aircraft operator. The implications of such a situation arising would have far reaching consequences for Panasonic and our customers, and could encourage bad practice by some.

response

Partially accepted

66.A.20(a)1 has been kept as in the current rule. However, this has been explained in AMC 145.A.30(g), item 2.
No tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).
At the end of AMC 145.A.30(g), item 2, the reference to "functional check of the component replaced" has been removed because the text already says "as long as the task is listed above". Those tasks may include a functional check or an operational check depending on the task (for example, a brake replacement may need an antiskid system functional check).

Regarding you comment on 66.A.20(a)3(ii), these limitations only affect the B2 licence holder in relation to his cat A privileges. Obviously, if the same privilege is already contained in the B2 licence, this one supersedes the limitation of the cat A.

comment *385* comment by: *CAA-NL*

Continued experience requirements

The are different requirements for continued experience; to get, to have and to demonstrate.

- the **holder** shall ensure, when signing a release, that the experience condition is met. (See ICAO Annex I and Part-66)
- the **part-145** organisation shall ensure, each two years, that certifying Staff will get sufficient experience.
- The **sub-part** F organisation shall ensure, when the holder signs a release, that the holder is able to demonstrate that the experience condition is met.

The responsibility of the holder continues with every release, although Certifying Staff might realise this every release.

The responsibility of the 145 organisation is periodic and commonly is covered by a two-yearly authorisation process. Organisation deal different with this requirement, some explicitly verify continued experience for each type, others assume that continued employment ensures the experience. A two yearly authorisation renewal does not guarantee that the holder will meet the experience requirements until the end of the authorisation period.

The Part-145 does not have a requirement to be able to demonstrate the experience in the preceding two years. This should be added to Part-145. Add to 145.A.35 Certifying staff and category B1 and B2 support staff:

(c) ii: "The organisation shall ensure that certifying staff can demonstrate their six month experience in the 24 month preceding any release to service or have met the provision for the issue of the appropriate privileges"

Sub-part F organisations are not explicitly required to issue authorisations, this should be added to M.A.606.

Sub-part F M.A.607 does not make clear whether the Sub-part F organisation has a responsibility to ensure that Certifying staff will accumulate sufficient experience (as in 145) or only has to facilitate the demonstration of the experience. Sub-part F better would copy the requirement of Part-145.

Change M.A.607: "(a)i In addition to M.A.606(g), the organisation shall ensure that all certifying staff are involved in at least six months of actual relevant aircraft or component maintenance in any consecutive two year period. For the purpose of this paragraph 'involved in actual relevant aircraft or component maintenance' means that the person has worked in an aircraft or component maintenance environment and has either exercised the privileges of the certification authorisation and/or has actually carried out maintenance on at least some of the aircraft type systems specified in the particular certification authorisation."

(a)ii : "The organisation shall ensure that certifying staff can demonstrate their six month experience in the 24 month preceding any release to service or have met the provision for the issue of the appropriate privileges".

Resposibilities are for the holder short term CRS), for organisations intermediate term (Authorisation) and for the authority long term(AML).

Page 26 NPA 2007-07 proposal to change 66.A. 45 (b) mixes privileges and authorisations. There are no privileges for authorisations that **will** be issued. The **authorisation** can only be issued after six month experience

(b) The holder of a category B2 aircraft maintenance license may only **receive an authorisation** for the certification privileges described in 66.A.20(a)(3)(ii), following the satisfactory completion of the relevant category A aircraft task training and six months of documented practical experience covering the scope of the authorisation that will be issued. The task training shall include practical hands on training and theoretical training as appropriate for each task authorised. Satisfactory completion of training shall be demonstrated by an examination and/or by workplace assessment. Task training and examination/assessment as well as the practical experience shall be performed by the Part-145 organisation issuing the certifying staff authorisation.

ICAO Annex I Personnel licensing 4.2.2.2

c) on condition that, within the preceding 24 months, the licence holder has either had experience in the inspection, servicing or maintenance of an aircraft or components in accordance with the privileges granted by the licence held for not less than six months, or has met the provision for the issue of a licence with the appropriate privileges, to the satisfaction of the Licensing Authority.

M.A.607 Certifying staff

(a) In addition to M.A.606(g), certifying staff can only exercise their privileges, if the organisation has ensured:

1. that certifying staff can demonstrate that in the preceding two-year period they have either had six months of relevant maintenance experience or, met the provision for the issue of the appropriate privileges; and,

M.A.801 Aircraft certificate of release to service

(b) A certificate of release to service shall be issued before flight at the completion of any maintenance. When satisfied that all maintenance required has been properly carried out, a certificate of release to service shall be issued:

2. Except for complex maintenance tasks listed in Appendix 7, by certifying staff in compliance with the requirements of Part-66; or

66.A.20 Privileges

(b) The holder of an aircraft maintenance licence may not exercise certification privileges unless:

2. in the preceding two-year period he/she has, either had six months of maintenance experience in accordance with the privileges granted by the aircraft maintenance licence or, met the provision for the issue of the appropriate privileges.

AMC 66.A.20(b)2 Privileges.

The required 6-month experience should be on aircraft structure, systems as

appropriate to the Category or subcategory and relevant rating held.

Experience should be supported by documentary evidence.

145.A.35 Certifying staff and category B1 and B2 support staff

(c) The organisation shall ensure that all certifying staff and category B1 and B2 support staff are involved in at least six months of actual relevant aircraft or component maintenance experience in any consecutive two year period. For the purpose of this paragraph 'involved in actual relevant aircraft or component maintenance' means that the person has worked in an aircraft or component maintenance environment and has either exercised the privileges of the certification authorisation and/or has actually carried out maintenance on at least some of the aircraft type systems specified in the particular certification authorisation.

Another dilemma is the interpretation of "or have met the provision for the issue of the appropriate privileges".

Many interpret the rule as meaning that always 6 month experience is required. This will not always be possible, nor realistic, nor necessary. An licence holder will get his type rating upon demonstration of type training, including at least 2 weeks or 4 month practical training, simple types even quicker. When the holder does not meet the experience requirements he should not be required to meet requirements more stringent (6 month) than initial. Available alternatives are: six month experience as assistant, full course, theory course, on the job program, continuation training, refreshment course, assessment.

response

Partially accepted

The Agency notes that the comments are related to the continued experience requirements and in particular to the 6 months of experience required within every 2 years. This is outside the ToR of the task.

The Agency also notes that the meaning of 66.A.20(b)2 is that the person meets **any one** of the following provisions:

- 6 months of maintenance experience in the last 2 years, or
- meeting the requirements for the issuance of the privileges, which means, for a new type rating, between 2 weeks and 4 months.

Nevertheless, GM66.A.20(b)2 has been created to clarify it.

comment

389 comment by: *CAA-NL*

Part M and 145 use the words deferred 'defect' instead of deferred 'maintenance', please change 66.A.20[a]1.

response

Accepted

The wording has been changed to "deferred defects".

Please note that 66.A.20(a)1 has been maintained as in the current rule and the clarification regarding troubleshooting and defect deferment has been transferred to AMC 145.A.30(g)2.

comment	*401* comment by: *Liam SISK* The NPA deletes the sentence "Replacement of avionic line replaceable units" from 66.A.20(a)2. This deletion reduces the scope of the category B1 AML. What is the rationale and justification for this deletion?
response	*Noted* The Agency notes that the sentence "replacement of avionics line replaceable units" has been replaced by "work on avionics systems", which includes the replacement of line replaceable units.

comment	*417* comment by: *Yveline MERRIEN* *A category A aircraft maintenance licence permits the holder to issue certificates of release to service following minor scheduled line maintenance and simple defect rectification within the limits of tasks specifically endorsed on the authorisation. The certification privileges shall be restricted to work that the licence holder has personally performed in a Part-145 organisation.* ***Certification privileges do not include either troubleshooting or deferment of maintenance actions. Clearance of deferred maintenance actions is limited to tasks included in their certification authorisation as long as there is no need for testing other than the functional check of the component replaced.*** Does it mean that the certification privilege of a technician with a category A aircraft maintenance licence does not allow to defer defects as those foreseen in the Minimum Equipment List ? This point has to be clarify because a lot of MRO consider that it is in the scope of certification privilege of a category A aircraft maintenance licence holder. This modification could have a real impact on the employment of this personnel. ?????? The difference between On the Job Training (OJT) and the practical Training is not clear
response	*Accepted* 66.A.20(a)1 has been kept as in the current rule. However, this has been explained in AMC 145.A.30(g), item 2. No tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC). At the end of AMC 145.A.30(g), item 2, the reference to "functional check of the component replaced" has been removed because the text already says "as long as the task is listed above". Those tasks may include a functional check or an operational check depending on the task (for example, a brake replacement may need an antiskid system functional check).

comment *314* comment by: *UK CAA*

Paragraph:
66.A.42

Comment:
The definition of a simple aircraft as described I Part-21.A.14 (b) 2

Justification:
Standardisation across all EC Regulations.

Proposed Text:
Group 3 Piston engined aircraft as defined in Part-21.A.14 (b) 2.

Group 2 All aircraft not covered in group 1 or group 3.

response *Not accepted*

21.A.14 will probably be amended as a result of task MDM.032 (NPA2008-07). This introduces the concept of ELA1 and ELA2.
Licences adapted to ELA1 aircraft plus some ELA2 aircraft have been already proposed in CRD 2008-03 (B3 and L licences) with some variants for airships.

As a result, we propose to keep the definition of Group 3 for the B1.2, B2 and C licences as it is.

Group 2 cannot be all aircraft "not covered in group 1 or 3" as group 2 and group 3 as the are: other aircraft than group 1 (those requiring only an individual type rating).

comment *349* comment by: *Panasonic Avionics Corporation*

4 Part-66: new paragraph 66.A.42 Aircraft Groups (Working Group 66.009)

Please define a 'large aircraft' and 'non-large aircraft'.

response *Noted*

This is a repetition of a previous comment from the letter QL0713 from Panasonic in comment 345 and already answered.

B. Draft Rules - I. Draft Opinion (EC) No 2042/2003 - 66.A.45 p. 26-30

comment *10* comment by: *SAMCO*

AMC 66.A.45(g)(1)(iii) item 2 requires OJT for the first type rating in the subcategory
As for subsequent types in the same category OJT is not required we would suggest that the OJT can also be performed on any type or a mix of type(s) within the subcategory and not necessarily only on the first type for which the license is sought.

This would make the completion of the OJT less dependent on the availability of a specific aircraft type for which the license is sought.
As OJT on subsequent types is not required it stands to reason that OJT is

intended to provide experience in the subcategory rather than on the actual aircraft type.

response

Not accepted

The comment is understood but the purpose of this requirement is different. Due to the fact that existing AMC 66.A.45 (d) and its GM allows the practical training to be between 2 weeks and 4 months (on the relevant aircraft type) without clear guidance how to achieve it, a content based practical training was introduced in App III. In addition to that it was felt by the group that, for the relevant type rating, additional OJT on the 1st type rating - content defined in APP III of this NPA - should be introduced to follow a similar principle as in the existing AMC 66.A.45 (d) and to ensure that hands on training is part of the 1st type rating. This OJT should be performed on the type relevant to the type rating application to avoid confusion for the applicant.
The last sentence of the comment is understood but is considered to be more valid for the basic training rather than for the type training.
In addition to that, it has to be clearly understood that this Part-66 requirement is the basis for granting the type rating on the AML and not the basis for the certifying staff authorisation within a maintenance organisation.
Therefore the suggestion is not taken into account.

comment

11 comment by: *SAMCO*

In 66.A.45(b) B2 staff is required to show 6 months experience for category A level authorizations per aircraft type.
Suggest to change 66.A.45(b) in requiring the 6 months experience for first type in the applicable A category only.

response

Partially accepted

AMC 66.A.45(b) has been amended to show the following:

When a B2 licence holder already has a certifying staff authorization containing minor scheduled line maintenance and simple defect rectification for a particular aircraft type, new tasks can be added to that type without requiring another 6 months of experience. Still, task training for those tasks is required.

When the certifying staff authorization is going to cover several aircraft types, the experience may be combined within a single 6 month period.
For the addition of new types to the certifying staff authorisation, another 6 months should be required unless the aircraft is considered similar per AMC 66.A.20(b)2 to one already held.

comment

12 comment by: *SAMCO*

66.A.45(k) provides advantage for B2 in obtaining full C license
Category C license can be obtained by having more than 3 years experience as either B1 or B2 certifying staff.
66.A.45(k)(1) specifies limitations for B1.2 and C
When a B1.2 with limitations applies for a C license in group 2 and/or 3 he is faced with the same limitations on his C license (as mentioned on his B1.2) However this is not the case regarding a B2 with limitations applying for a C license

C license scope of approval is identical irrespective whether the C license was

issued based on 3 years as B1or based on 3 years as B2
Both C licenses should therefore have the identical requirements.
C license does not authorize staff to perform any maintenance, it only authorizes the issue of the release to service after base maintenance
The limitations as specified in 66.A.45(k)(1) should therefore not apply for the category C license
If EASA is of the opinion that the limitations specified in 66.A.45(k)(1) do applyf or a category C license than the limitations as specified in 66.A.45(k)(2) should also apply for category C license

response *Accepted*

The limitations for the category C licence have been removed.

comment *24* comment by: *Ian Wilson*

There are several instances in rotary-wing aircraft where the same type certificated engine is installed to a number of differing type certificated aircraft for example Allison Model 250 C20 is installed in Bo105, AS355, A109 & several Bell & MD aircraft. The training on the engine is delivered in the UK for instance by a single RR-Allison approved company and does not include installation differences, the installation differences are included in the aircraft type rating course, therefore there should be some recognition of this circumstance in the NPA such that when the engine type is already listed on the Part-66 or pre-existing NAA type rated licence there should be no need to re-qualify for the same engine variant when adding additional aircarft types to the Part-66 licence. In effect this recognises the existing engine type certification for "Grandfather rights"

response *Accepted*

This has been addressed by AMC 66.A.45(k). If a person has completed the "powerplant" portion of the type training, it is not necessary to repeat it later for another aircraft type as long as the engine interface is addressed in the airframe course.

comment *65* comment by: *Irish Aviation Authority*

Part-66.A.45 (h) 1
Comment; The requirement that the type examination must consist of a mechanical examination for B1 and a mechanical and avionics examination for Category C should be deleted because it conflicts with the following paragraph which states that the type examinations shall comply with Appendix III.

Appendix III lists the same topics, mechanical and avionic, for B1 and C categories although at different levels.

response *Accepted*

The proposed text has been deleted.

comment *67* comment by: *Irish Aviation Authority*

66.A.45 paragraph (b); The last sentence states 'Task training and examination/assessment as well as the practical experience shall be performed by the Part-145 organisation..... Practical experience cannot be performed by a

	Part-145 organisation; it could be performed in a Part-145 organisation but perhaps the intent is that the practical experience assessment shall be performed by the Part-145 organisation. In that case the sentence should be amended to read 'Task training and examination assessment as well as the practical experience assessment shall be performed by the Part-145 organisation issuing the certifying staff authorisation.
response	*Accepted* The text has been modified accordingly.

comment	*78* comment by: *ENAC, Italy, Production and Maintenance Directorate* 66.A.45(h): it is still not clear when, and under which circumstances the Competent Authorithy can approve "directly" the courses to organisations that dont hold a Part-147 approval. From current practice this is reserved only to uncommon aircraft or one-off courses. In case of applicability to organisations involved with the training of personnel there is a lack of consistency with art. 6 of regulation 2042/2003. Also the issue of mutual recognition of the courses is unresolved. General comment: the new text of the regulation doesnt simplify the process, and doesnt help to armonize the difference of interpretation of the different authorities. In addition there are too many subjects involved in the practical element (NAA, Part-145, Part-147, other organisations) This creates a lot of comfusion, and the role of each subject is not clear. We beleive that this new draft of the regulation really doesnt help in the direction of mutual recognition.
response	*Not accepted* The referenced requirement has not been changed during this rulemaking task and was not part of the term of reference. As mentioned in the comment, current practises show that a course directly approved by the competent authority is mainly reserved to uncommon aircraft, old aircraft or one-off courses where no Part-147 organisation have developed such a type rating course, mainly for economic reason because it is a niche-market. There is no inconsistency with article 6 of EC n°2042/2003: article 6 addresses approved training organisations although a course directly approved by the Competent Authority only addresses an approved training programme that does not need to be imparted by an approved training organisation (Part-147 organisation): in this last case, only the course is approved and not the organisation.

comment	*80* comment by: *ENAC, Italy, Production and Maintenance Directorate* 66.A.45(g)1.(ii)II. is is not clear what is meaning of "maintenance organisation": Part-145 approved? Part M sub F? FAA or other maintenance approvals? Part 21 or foreign approved manufacturer environment?

We suggest to specify "part 145 approved AMO"
for large aircraft we suggest to restrict "only to part 145 approved organisations"

66.A.45(g)1.(ii)IV
it is not clear who is eliglble to be approved as an assessor.
What are the requirements for the authority to approve such assessors?
Are there any standards or experience requirements?
What is the minimum qualification standard?
The approval is linked to a specific organisation?
The approval is subject to periodical renewal?

response *Not accepted*

- **Not Accepted** 1st part: it is written in 66.A.45(g)1.(ii)II that "Where practical training is conducted by an appropriately approved maintenance organisation under its own responsibility, the practical training shall be approved by the competent authority." So this is the NAA's responsibility to say which maintenance organisation is acceptable. Otherwise the maintenance organisation is under the quality system of the Part-147 organisation. Therefore there is no reason to restrict to Part-145 organisations.
- **Not Accepted** 2nd part: refer to 147.A.105 (f) modified by Opinion 04/2006 : "the experience and qualifications of practical assessors shall be established IAW criteria published by the competent authority" Establishing criteria are out of the remit of 66.011.

comment *81* comment by: *ENAC, Italy, Production and Maintenance Directorate*

66.A.45(g)1.(ii)IV: the obligation to audit may constitue an additional burden for the authority

response *Partially accepted*

There is no more specific requirement for auditing: it will remain under the course of the oversight; however new 66.B.130 and its AMC have been created (requirement for the Autority in the case of the direct approval).

comment *82* comment by: *ENAC, Italy, Production and Maintenance Directorate*

66.A.45.(g)3
is un unrealistic that the competent authority has the competency to perform an examination on each aircraft rating in the decision.
it is not clear if it is possibile a mixed configuration with the course performed at an organisation, follwed by an examination performed by the authority.
Anyway we suggest to have a clear standard for these examinations.

response *Not accepted*

- This paragraph already exists in the current regulation (66A45f). The referenced requirement has not been changed during this rulemaking task and was not part of the term of reference. Examination standards are sufficiently described in the current regulation.
- The "mixed configuration" described is not relevant to the current regulation, in addition it is unlikely to happen.
- 66.B.200 (b) authorises the Competent Authority to appoint examiners.

comment	*83* comment by: *ENAC, Italy, Production and Maintenance Directorate* 66.A.45(h)2 why the approval is restricted only to part 147 organisations and the authority?
response	*Noted* This is the approval to perform examinations without type training, and this text is the same as the current rule.

comment	*84* comment by: *ENAC, Italy, Production and Maintenance Directorate* 66.A.45(k) 1 and 2. it seems that the limitations should be quoted on the AML. This is a big complication, specially if it is possible to remove it one by one, on request of the applicant. What are the minimum standards in terms of contents and documentation to remove these limitations? We suggest to put these limitations in the AMC, otherwise it is not easy to change it without changing the regulation. With new technologies or systems this may create problemes. 66.A.45(k)2 the real meaning of the last statement is not completely clear.
response	*Not accepted* These limitations are not aircraft type specific. So, the number of limitations to be introduced in the licence is small. Introducing the limitations in the AMC would compromise standardisation and each authority may decide to introduce further limitations making also more difficult to fit them in the licence. If the technology of these aircraft changes, the regulation can be amended the same as it is amended for the Basic Knowledge requirements (Appendix I). We agree that the guidance produced to standardise the way limitations are written in the licence should include a sentence saying that M.A.803(b) tasks (shown in Appendix VIII) can be performed even with limitations.

comment	*95* comment by: *ENAC, Italy, Production and Maintenance Directorate* 66.A.45(g) difference training; sdd new line: the difference training shall be completed after the training for the aircraft from which the differences are being identified (II) Category C type training for persons holding academic degree: certificates of recognition for courses passed before the first relevant B1 or B2 course may be accepted by the competent authorithy if issued within the 5 years preceiding the date of application to amend the AML. (III) last line : remove "training organisation" and replace with "organisation"
response	*Partially accepted* • **Not Accepted** 1st part: the new line to be added for the difference training is already written in 66.A.45(g) 1 (iv) III. • **Noted** 2nd part: This suggestion is part of task 66-004 ; refer to CRD to NPA 2007-02 that has been issued

- **Accepted** 3rd part: removal of "training" accepted because a maintenance organisation may perform such a training in the case of a course directly approved by the Competent Authority.

comment

96 comment by: *ENAC, Italy, Production and Maintenance Directorate*

Page 29, (h)1 for group 2 aircraft: we suggest to include "electrical and mechanical" examination for B1. for C category "electical, mechanical and avionic"

We suggest also to specify: the practical experience on the specific aircraft shall be recent and documented in a way acceptable to the competent authorithy. For the purpose of this paragraph recent means gained within the 18 months preceding the application for the amendment of the AML. Only for the first rating, satisfactory completion of the experience will be demonstrated by a final practical assessment conducted by a Part-147 approved organisation or by the competent authorithy.

response

Partially accepted

Paragraph (h)1 has been deleted because the requirements described in (h)2 which make reference to Appendix III are clear enough.

comment

97 comment by: *ENAC, Italy, Production and Maintenance Directorate*

Page 30, (k)1 for group 2 aircraft: we suggest to add: satisfactory completion of the experience will be demonstrated by a final practical assessment conducted by a Part-147 approved organisation or by the competent authorithy.

response

Not accepted

AMC 66.A.45(k) already describes how the practical experience should be demonstrated. It includes supervision and signature by certifying staff. This is considered sufficient and there is not need for a further assessment by a Part-147 or by the authority.
This is also the criteria in the current rule to show appropriate practical experience after type examination.

comment

108 comment by: *CAA-Norway*

(d)
It must be possible for category B1 and C to have full sub-group rating, not only manufacturer sub-group rating, and category B2 must follow the same criterias as category B1 and C

Add "*full sub-group rating / manufacturer sub-group rating*"

For those who have full group rating on their current AML, it will be nearly impossible to endorse all manufacturer sub-group ratings to a new AML.

(g)
Bullet point 3.
The OJT must be mandatory for a new category or sub-category
New text:
"mandatory additional OJT and assessment, in the case of first type rating

within a category / sub-category"

1.(ii) Practical training
I
Same as above.
"relevant to the category / sub-category"
1.(ii)
IV.
The text can be read as a requirement for the competent authority to audit all practical training. Including practical training in an approved Part-147 organisation which is audited on a regular basis.
To clearify add new text:
"*Practical training shall be assessed by approved assessors, and when direct approved, be audited by the competent authority"*
(iii)
I
".....any category / sub-category"

IV. Who shall supervise OJT?

New text:
"OJT shall be supervised by nominated persons, and shall be assessed by approved assessors. When direct approved, the OJT shall be audited by the competent authority"
V.
Remove the first sentence. Moved to IV.
Makes it similar to the requirements for practical training.

(h)
Since the privileges for category B2 has been extended, it is not acceptable to give full group rating for group 2 aircrafts for category B2 following demonstration of practical experience.
The same requirements as for category B1 and C must apply.

New text:
.....subject to satisfactory completion of the relevant category B1, B2 or C aircraft type examination and., in the case of B1 or B2 category, demonstration of practical experience on the aircraft type.
1.
Category B1, B2 and c approved type examinations must consist of a mechanical and electrical examination for category B1, an avionic and electrical examination for category B2 and a mechanical, electrical and avionic examination for category C.

(i)
Since the privileges for category B2 has been extended, it is not acceptable to give full group rating for group 2 aircrafts for category B2 following demonstration of practical experience.
The same requirements as for category B1 and C must apply.

Full sub-group for group 2 aircrafts must be possible for category B1 B2 and C.
New text:
"For group 2 aircrafts full sub-group ratings for category B1,B2 and C licence holders shall be granted after complying with the type rating requirements of at least three aircraft types from different manufacturers of the applicable sub-

	group, and manufacturer sub-group rating after complying with the type rating requirements of at least two aircraft types from the same manufacturer of the applicable sub-group. *For category B1 and C* *A full sub-group or manufacturer sub-group 2a automatically includes the corresponding full sub-group or manufacturer sub-group 2b.* *For category B2* • *Full sub- group or manufacturer sub- group 2a automatically includes the full sub- group or manufacturer sub- group 2b* • *Full sub- group or manufacturer sub- group 2c automatically includes the full sub- group or manufacturer sub- group 2d* • *Full sub-group 2a or 2b automatically includes full group 3* (j) Group 3 aircrafts In the proposed text full group rating shall be granted following demonstration of practical experience. That means that the group rating can be granted following documented experience on one aircraft type in the group, and this can't be right. New text: "*Full group rating for group 3 aircrafts for category B1, B2 and C shall be granted following demonstration of practical experience on aircraft from at least three different manufacturers.* *The experience shall include a representative cross section of maintenance activities relevant to the licence category and to the applicable aircraft group."*
response	*Partially accepted* (d) Accepted: In addition to manufacturer sub-group ratings, the option has been included to have full sub-group ratings. Accepted: full subgroup rating will be possible. • **Accepted (g)** the resulting text will be: "mandatory additional OJT and assessment, in the case of first type rating within a the same category and sub-category • **Accepted** 1.(ii) the resulting text will be: Aircraft type practical training and assessment shall include a representative cross section of maintenance activities relevant to the aircraft type. • **Partially accepted** for "practical training": the resulting text is "Practical training shall be assessed by designated assessors" and in the case of a course directly approved by the competent authority, 66.B.130 has been created. • **Noted** for the OJT supervision: AMC 66.A.45 (g) 1(ii) and 1(iii) already provides means of compliance on this subject and the resulting text has been adapted • **Accepted:** the text for OJT has been aligned with the text for the assessment and the acceptance of the practical training in 66.A.45 (g) 1 (iii). All these paragraphs have been renumbered. (h) and (i): 66.A.45(h)3 already says that the experience must include a

representative cross-section of maintenance activities and the corresponding AMC 66.A.45(h)3 & (i) further explains it. In addition, it is the responsibility of the maintenance organisation and of the individual (see new 66.A.20(b)3) to ensure that the person is competent for the particular aircraft before certification privileges can be exercised.

(i) 66.A.45(i) already says that the experience must include a representative cross-section of maintenance activities and the corresponding AMC 66.A.45(h)3 & (i) further explains it. This AMC says that the experience may cover one or several aircraft if it is relevant.

comment *121* comment by: *Dassault Aviation*

Type rating granted by Part-147 MTO
Dassault agrees with the updated Appendix III matrix for theoretical knowledge. By defining the training elements and level required helps to provide guidance when building task analysis and objectives to build course material.

Practical training A problem with some of our Part-147 – Approved Training Organizations providing training for business aircraft technicians is that they are authorized only to conduct theoretical training. This is because the Part-147 approved facilities lack the equipment (aircraft) to perform hands-on maintenance procedures or practical task training.

Practical training programs at the Part-145 Repair Stations are constrained by the type of aircraft that may be available or accessible for training.
Dassault recommends using actual maintenance documents and/or work procedure cards to specify practical training tasks to ensure the tasks are standardized, comprehensive and, above all, verifiable. Reference to these tasks should be included in the detailed syllabus, practical worksheets, or logbook showing content and duration of the training.

Use of Simulators / Simulation in Practical Training
Dassault agrees with the proposal to allow the use of simulators, simulation and system trainers.

It is now possible for Part-147 training organizations to complete some selected tasks of this practical training that was previously completed on actual aircraft. This could now be performed in the theoretical portion of the technical training. This could reduce the practical training workscope and resulting costs.

Differences Training
Dassault agrees that difference training between aircraft type ratings from the same manufacturer is acceptable.

The problem technicians' encounter is not the requirements for their initial license, but the difficulty, and burden, associated with completion of task/type training and certification requirements for additional type ratings within a family of aircraft from the same aircraft manufacturer.

This impacts for example; the implementation of cross-training and certification for Dassault personnel, Falcon Service Centers and Falcon Customers operating several Falcon models. Differences training could be completed as efficiently and cost effectively as possible in a step by step

process, while providing quality training and meeting training course objectives.

response *Noted*

Thanks for the comments.
The group was not in a position to identify any proposal to change the NPA text.

comment *150* comment by: *Lufthansa Technik AG*

66.A.45 (g) practical training with assessment and (!) OJT with assessment is overdone. We feel OJT should not required from the rule

response *Not accepted*

Assessment is a key element for safety, in particular for a new aircraft type within a category / subcategory. The objective of OJT to gain the required competence implies the competence of the candidate should be assessed.

comment *156* comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)*

66.A.45 (k) 2

The Swedish CAA wishes a clarification to 66.A.45 (k) 2, page 30. ”The limitations shall be removed following demonstration of appropriate experience”. Can that experience be gained within another category? Ie can a licence endorsed with eg Airbus A340 (CFM56) remove the limitation ”Retractable landing gear” in Full Group 3 B1.2?

response *Noted*

The limitations for the B2 licence have been eliminated. However, some limitations have been maintained for the B1 licence and in that case AMC 66.A.45(j) explain that the limitations may be removed based on experience on one aircraft.

comment *161* comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)*

66.A.45 (h) 3 Type / task training and ratings

The Swedish CAA thinks that this is a too vague description of the required practical experience. Compared to the practical elements required in a type training, this is very much up to ”anyone” to determine the content of the practical experience required.

response *Noted*

This requirement has not changed from the current rule. The AMC has not changed either.
It is reasonable that the content of the practical element of the type training is more detailed than the practical experience obtained afterwards. The experience can be obtained in many different ways.

comment	*166* comment by: *BCAA - DAE - Certification* Following the new proposition, the practical training for B1 and B2 does not necessarily need to result in actual servicing or repair. This possibility may lead to a misunderstanding of the real conditions of troubleshooting: e.g. environment, human factor, by using only aircraft documentation and approximate training devices. The effective use of specific tools should also be encouraged. On the other hand the category A tasks training needs practical hands on training.
response	*Noted* The group was not in a position to identify any proposal to change the NPA text. For cat A, the training is a task by task training (practical hands on training).

comment	*167* comment by: *BCAA - DAE - Certification* It is often difficult for the competent authority to be aware of the organization of a practical training before it takes place, moreover for the organization of trainings outside the country. So it might be difficult for the competent authority to audit the practical training. We believe that the approval of the practical training is a sufficient condition, irrespective of the moment the competent authority was informed.
response	*Noted* The group was not in a position to identify any proposal to change the NPA text. However in new AMC 66.B.130, the procedure for the direct approval of aircraft type rating training by the competent authority requests to contain how the competent authority is going to audit the proper performance of the approved course and will favour the approval of the course itself.

comment	*208* comment by: *DGAC France* 1) For some aircraft type, only a few Part-147 organisations may be approved to provide type training in accordance with 66.A.45(g) in addition existing type training courses may only be provided in a national language and not be accessible to any licence engineer. It is thus considered necessary to establish a system whereby interested parties may be informed of available courses, language of the course, … so an applicant would be able to easily find if within its country or close in Europe, he would be able to find a course. (list available on the EASA website for example.) However, there may be some cases where no course would be available. An alternative should be proposed such as a structured course acceptable to the authority, even if not taught by a part 147 organisation. 2) 66.A.45(g) includes mandatory on the job training (OJT). If OJT is something which is possible in the case of young personnel, we fear that, in some cases, for experienced personnel, such provision may be difficult if not impossible to implement. In fact, it means that if an organisation wishes to expand its scope of work it will have to send its personnel to another organisation. In a competitive market this may prove very difficult or event impossible, as either the 2nd organisation may refuse to train the personnel of a possible competitor, or may recruit for his own benefice the personnel sent

	for OJT.
response	*Noted* • **Noted** 1st part: Approved courses delivered by 147 organisations located within Europe are under the direct oversight of the Member States and are not under the EASA oversight. It means that the NAAs would have to report to EASA and at the previous AGNA meetings, they were not in favour of reporting it. Nevertheless the Agency has sent a letter to every NAA in order to encourage such information to be disclosed on a voluntary basis. So far, no system has been implemented and the construction is still under discussion. • **Noted** 2nd Part: the group was not in a position to identify any proposal to change the NPA text.

comment	*209* comment by: *DGAC France* For consistency with what is proposed for a category A licence, it shall be proposed that the task training for a cat B2 licence shall be performed by either a Part-145 or 147 organisation. We therfore propose to add at the end of 66.A.45(b): "**or by an approved Part-147 training organisation**"
response	*Not accepted* It is true that category A task training can also be done by Part-147 organisations or by other Part-145 organisations, but only in the case of a cat A licence holder. The privilege introduced by the Agency is part of the B2 privileges and does not mean that the person complies with the requirements to hold a Cat A licence. As a consequence, the compensating measures are meant to put the full responsibility on the Part-145 which employs that person, knowing the previous experience of the B2 licence holder on mechanical tasks, and providing the task training and the 6 months experience exactly on the tasks and on the aircraft model for which they are going to issue the certifying staff authorisation.

comment	*211* comment by: *DGAC France* The list of limitations is unclea. It seems that they refer to what the licence holder is not entitled to release than rather to what he is limited to. For example we understand that "pressurisation" means that he is not entitled to work on pressurised aircraft. We would recommend that limitations are written as what the licence holder is limited and not refer to what is not entitled to do, e.g. - non pressuirsed aicraft - aircraft with fixed landing gear etc.
response	*Partially accepted* Refer to 66.A.45(j), where it has been stated that limitations are exclusions from the certification privileges.

comment	*227* comment by: *Airbus* **NPA Page 26 of 116** **Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66** **New 66.A.45 (a), 2nd sentence:** Replace "Practical hands on training" by "On Job Training" **Justification:** **Consistency with the practical training definition used elsewhere in the NPA**
response	*Not accepted* The concept of "On the Job Training" is more linked to Type Ratings, with a content that is well defined (Appendix II to AMC). In the case of category A task training, the practical hands-on training can be adapted to each particular task that is going to be authorised (the text says "as appropriate")

comment	*228* comment by: *Airbus* **NPA Page 27 of 116 Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66** **New 66.A.45 (g) 1. (ii) II** **We suggest to define the minimum duration (2 weeks) for practical training.** **Justification:** **Consistency with the fact that minimum duration exists for theoretical training.**
response	*Partially accepted* As a safety net, it has been accepted to recommend a minimum duration for the practical training that would be expected to last two weeks unless a shorter duration meeting the objectives is justified to the competent authority. This proposal has been given at the level of an AMC (refer to new AMC 66.A.45(k)(2)) Type/task training and ratings)

comment	*252* comment by: *Air France* 66.A.45 (b) page 26 : The last sentence specifies only the Part-145 organisation. The task training and examination/assessment as well as the practical experience should be performed by Part-145 or Part-147 organisation (same as 66.A.45 (a) for category A).
response	*Not accepted* It is true that category A task training can also be done by Part-147 organisations or by other Part-145 organisations, but only in the case of a cat A licence holder. The privilege introduced by the Agency is part of the B2 privileges and does not mean that the person complies with the requirements to hold a Cat A licence. As a consequence, the compensating measures are meant to put the full responsibility on the Part-145 which employs that person, knowing the

previous experience of the B2 licence holder on mechanical tasks, and providing the task training and the 6 months experience exactly on the tasks and on the aircraft model for which they are going to issue the certifying staff authorisation.

comment *256* comment by: *Air France*

66.A.45 (g) page 27 : The paragraph should be modified because the category C is not concerned by the practical training and assessment, and mandatory additional OJT and assessment.

response *Not accepted*

It is already specified in 66.A.45 (g) 2 that is renumbered 66.A.45 (k) at the stage of the CRD.

comment *257* comment by: *Air France*

66.A.45 g (2) page 29 : "Practical training is not required" should be modified in "Practical training and mandatory additional OJT and assessment are not required".

response *Partially accepted*

The text has been rewritten.

comment *260* comment by: *ENAC, Italy, Production and Maintenance Directorate*

it is not completely clear how is possible to amend an AML when the certificate of Recognition is older than 3 years (ref NPA 2007-2, page 119, point f).
If, after 3 yers, a certificate of recognition can be considered valid with demonstration of recent experience, it will be very hard to have a common standard on this subject.
One option could be to specify in the AMC what is the nature and the duration of this experience.
In addition we suggest, anyway to put a time limit (this process is also possible by 20 years?)

response *Noted*

Opinion 05/2008 when it is approved by the EU Commision will solve that issue. This opinion states that after 3 years the certificate of recognition is not valid.
Refer to http://www.easa.europa.eu/ws_prod/g/rg_opinions_main.php#2008.

comment *263* comment by: *TYROLEAN AIRWAYS*

66.A.45 (g) 1. (ii) I.

Amend sentence as follows:

..... a representative cross section of maintenance activities relevant to the aircraft type

Since the practical training is the one which has to be carried out at every type

rating it makes more sense to train the student relevant to the type than to the sub category. Otherwise it is not assured that the candidate receives adequate practical type training at the 2nd, 3rd type, because there is no OJT.

response *Accepted*

The resulting text will be: Aircraft type practical training and assessment shall include a representative cross section of maintenance activities relevant to the aircraft type.

comment *264* comment by: *TYROLEAN AIRWAYS*

66.A.45 (g) 1. (ii) IV.

Delete or clarify sentence since its intention is not clear for following reasons:

a) What and to which standard should the authority audit??? How is equal treatment assured?
b) The training is defined and approved with item II. in the organisations exposition and therefore audited like all other procedures and requirements by the authorities audit program - so why require auditing here additionally?
c) or is it the student (each?) who shall be audited? - in this case it would be likely an authority examination. But then there is no reason for the organisation to assess the student. Additional administrative burden is implied and organisational flexibility lost by coordinating examination dates with authorities.
d) It is the organisations responsibility (not the authority's) to assure via its internal quality auditing system the adherence to its approved procedures of the MOE/MTOE.

response *Accepted*

The sentence has been reviewed and will state: "Practical training shall be assessed by designated assessors". Either the assessors will be designated by the Part-147 organisation according to its procedures or the assessors will be part of the approval in the case of a course directly approved by the competent authority.
There is no more specific requirement for auditing: it will remain under the course of the oversight; however new 66.B.130 and its AMC have been created (requirement for the Authority in the case of the direct approval).

comment *265* comment by: *TYROLEAN AIRWAYS*

66.A.45 (g) 1. (iii) V.

Delete first sentence

a) What and to which standard should the authority audit??? How is equal treatment assured?
b) The OJT is defined and approved with item IIi. in the organisations exposition and therefore audited like all other procedures and requirements by the authorities audit program - so why require auditing here additionally?
c) or is it the student (each?) who shall be audited? - in this case it would be likely an authority examination. But then there is no reason for the organisation to assess the student. Additional administrative burden is implied and organisational flexibility lost by coordinating examination dates with

	authorities. d) It is the organisations responsibility (not the authority's) to assure via its internal quality auditing system the adherence to its approved procedures of the MOE/MOM.
response	*Accepted* The sentence has been reviewed and will state: "OJT shall be assessed by designated assessors".

comment	*279* comment by: *EAMTC* Part-66.A.45 (g)(iii)V: - Workgroup 66.006 & 011 Individual records of OJT must be retained by the organization for at least 5 years. The personal record retainment is not a Part-147 responsibility but for the Part-145 organization. The Part-147 should retian only a copy of the master OJT.
response	*Accepted* The Part-147 organisation has no responsibility in archiving the OJT performance evidences. The sentence has been deleted. Demonstration of the OJT (records) will have to be shown at the time of the verification by the competent authority (refer to new text of Appendix III to Part-66).

comment	*291* comment by: *EAMTC* Part-66.A.45(g (ii) (III)) states for practical training: "This training does not necessarily need to result in actual servicing or repair". We propose to change this text to: "This training *should* not result in actual servicing or repair" as training should never be the reason to perform maintenance on operational aircraft.
response	*Accepted* The sentence has been taken out. The implementation of the practical training is left to the organisation performing the training.

comment	*301* comment by: *European Regions Airline Association* 66.A.45 (g) 1. (ii) I. Amend sentence as follows: ..... a representative cross section of maintenance activities relevant to the aircraft type ERA feels that , since practical training has to be carried out for every type rating, it would make more sense to train the student relevant to the type than to the sub category. Otherwise it is not assured that the candidate receives adequate practical type training at the 2nd, 3rd type, because there is no On Job Training.
response	*Accepted* The proposal has been accepted.

The resulting text will be: Aircraft type practical training and assessment shall include a representative cross section of maintenance activities relevant to the aircraft type.

comment

302 comment by: *European Regions Airline Association*

66.A.45 (g) 1. (ii) IV.

ERA feels that this sentence should be deleted or clarified as its intention is not clear for following reasons:

- To which standard will the authority audit?
- How will equal treatment assured?
- The training is defined and approved with item II. in the organisations exposition and therefore audited like all other procedures and requirements by the authorities audit program - so why should additional auditing be required here?
- Perhaps it is the student who shall be audited. If this is the case it would likely be via an authority examination. If this is so, there is no reason for the organisation to assess the student. This would cause additional administrative burden and some organisational flexibility lost by coordinating examination dates with authorities.
- It is the organisations responsibility (not the authority's) to assure via its internal quality auditing system the adherence to its approved procedures of the Maintenance Organisation Exposition/Maintenance Training Organisation Exposition

response

Accepted

The sentence has been reviewed and will state: "Practical training shall be assessed by designated assessors". Either the assessors will be designated by the Part-147 organisation according to its procedures or the assessors will be part of the approval in the case of a course directly approved by the competent authority.
There is no more specific requirement for auditing: it will remain under the course of the oversight; however new 66.B.130 and its AMC have been created (requirement for the Authority in the case of the direct approval).

comment

303 comment by: *European Regions Airline Association*

66.A.45 (g) 1. (iii) V.
ERA believe the first sentence should be deleted.

- To which standard will the authority audit?
- How will equal treatment assured?
- The training is defined and approved with item II. in the organisations exposition and therefore audited like all other procedures and requirements by the authorities audit program - so why should additional auditing be required here?
- Perhaps it is the student who shall be audited. If this is the case it would likely be via an authority examination. If this is so, there is no reason for the organisation to assess the student. This would cause additional administrative burden and some organisational flexibility lost by coordinating examination dates with authorities.

	• It is the organisations responsibility (not the authority's), to assure via its internal quality auditing system, the adherence to its approved procedures of the MOE/MOM.
response	*Accepted* The sentence has been reviewed and will state: "OJT shall be supervised and assessed by designated assessors".

comment	*315* comment by: *UK CAA* **Paragraph:** 66.A.45 (g)(ii) **Comment:** Clarification of requirement regarding the ability of an approved BASIC training organisation to subcontract the practical element of the course. **Justification:** Current requirement material does not clearly define options. **Proposed Text:** An approved basic training organisation can subcontract the practical element of the approved course providing that the facilities, standard of training, standard of practical assessment and retention of records of the subcontracted organisation meets the requirement of Part-147 and is overseen by the approved Part-147 training organisations quality system.
response	*Noted* The Agency was not in a position to identify any proposal to change the NPA text. The comment is referring to basic training which was not within the term of reference of this NPA (task 66.011).

comment	*316* comment by: *UK CAA* **Paragraph:** 66.A.30 & 66.A.45 (g) 1 **Comment:** It should be possible gain a new restricted category B1 or B2 licence and add restricted type ratings. (For use by manufacturing industry providing maintenance support to operators) **Justification:** Beneficial to industry particularly where an organisation such as a manufacturer is contracted to maintain/rectify equipment for an operator. For example a licence engineer working for an engine manufacturer will never gain experience on the whole aircraft to allow unrestricted licence issue. **Proposed Text:** A new category B1 or B2 basic licence may be issued with limitations applied subject to the appropriate modular examinations being completed and experience gained to issue that restricted licence. The restricted basic licence may be extended with an appropriate type rating subject to completion of the relevant type training and type examination.

response

Not accepted

There is no provision in Part-66 for restricted category or type rating. The NPA does not affect the issue of a basic licence: it does not redefine the B1 category.

comment

319 comment by: *Walter Gessky*

66.A.45(a) Type / task training and ratings (page 26)

Change the following:

(a) The holder of a category A aircraft maintenance licence may only exercise certification **privileges described in 66.A.20(a)(1)** on a specific aircraft type following the satisfactory completion of the relevant category A aircraft task training carried out by an appropriately approved Part-145 or Part-147 organisation.

Justification:

To be consistent with (b) to clarify the privileges of category A aircraft maintenance licences.

response

Not accepted

The reason for introducing in 66.A.45(b) the reference to 66.A.20(a)3(ii) is because 66.A.45(b) only refers to a part of the privileges of the B2 licence holder, and as a consequence, it is necessary to specify which privileges are affected.
In the case of 66.A.45(a) it is not necessary because it refers to all the privileges of the A licence holder.

comment

321 comment by: *UK CAA*

Paragraph:
Part-66.A.45(g) (ii) p27

Comment:
The assessment activity is not clearly defined and ambiguity exists which could lead to a two tier system whether practical training is carried out by an Part-147 training organisation or a Part-145 maintenance organisation.

Justification:
Where a requirement exists in two entities there will be an inevitable conflict of interests as to which takes precedence.

Proposed Text:
Where practical training is to be conducted in a Part-145 organisation, this training must fall under the oversight of the Part-147 element of the competent authority. (May even require to be approved to Part-147 standard.)

response

Not accepted

This intention of the NPA is to keep the options to conduct the practical training either within a Part-145 or a Part-147 organisation.
Several courses directly approved by the competent authority are conducted by a maintenance organisation because no Part-147 organisation offers to run

this course.
In other hands, some Part-147 organisations are not in a position to conduct the practical portion.
For all these reasons, both options are kept.

comment

323 comment by: *UK CAA*

Paragraph:
66.A.45 (g)(ii)(IV)

Comment:
Qualification for approved assessor should include the attendance of a formal approved course of training.

Justification:
Requirement to ensure a common standard of assessment.

Proposed Text:
All assessor staff are required to successfully complete a formal approved course of training in the discipline of task assessment.

response

Not accepted

- This would impose an additional burden on the regulator.
- Today Opinion 04/2006 (147A 105(f)) leaves the criteria for assessors to be defined by the Competent Authority.

comment

325 comment by: *UK CAA*

Paragraph:
66.A.45 (g) (iii)

Comment:
The option of OJT for second and subsequent types should be retained.

Justification:
Individual rights, with the extent of the OJT required approved by the competent authority.

Proposed Text:
No change to current text.

response

Noted

Due to the fact that the existing requirement allows the practical training to be between 2 weeks and 4 months without clear guidance how to achieve it, a content based practical training was introduced in App III. In addition to that it was felt by the group that, for the relevant type rating, additional OJT on the 1st type rating - content defined in APP III of this NPA - should be introduced to follow a similar principle as in the existing AMC 66.A.45 (d) and to ensure that hands on training is part of the 1st type rating. This OJT should be performed on the type relevant to the type rating application to avoid confusion for the applicant.
Then the Agency envisaged as an option that the OJT could be also compulsory for the 2nd type rating but the Agency came to the conclusion that this option was too demanding whereas most of the attendees were experienced enough

on the same category of aircraft: it would have been a waste of time with no safety benefits although the costs would have remained very high. Experience in the past shows that the training was limited to the theoretical and the practical elements of the type training without exceeding two weeks for the practical part. No safety records justify such a decision and the comment here does not bring justifications doing so.
The same concept applies for the flight standards where the training can be reduced for experienced pilots.
In addition to that, it has to be clearly understood that the Part-66 requirements are the basis for granting the type rating on the AML and are not the basis for the certifying staff authorisation within a maintenance organisation. This means that the maintenance organisation will have to check the competency before granting the privileges as certifying staff: 145.A.35 is considered to be the safety net.
Therefore the suggestion is not taken into account.

comment *327* comment by: *UK CAA*

Paragraph:
66.A.45 (g) 2

Comment:
Delete second sentence of paragraph 66.A.45 (g) 2.

Justification:
Delete reference to manufacturers group ratings only for twin turbine aircraft as aircraft may not be of greater complexity.

Proposed Text:
Text deleted.

response *Not accepted*

Twin turbopropeller aeroplanes **have been transferred to Group 1** to be consistent with the future introduction of the concept "complex motor-powered aircraft" instead of "large aircraft" from the Basic Regulation 216/2008.

Other group 2 aircraft are eligible for full sub-group ratings. The option for manufacturer sub-group ratings has been retained.

comment *330* comment by: *UK CAA*

Paragraph:
Part-66.A.45 (h) and GM 66.A.45 p29 & p81

Comment:
Individual type ratings should be included in Group 3 of the aircraft type rating list.

Justification:
Individual type rating required to qualify for group rating in accordance with Part-66.A.45(g)

Proposed Text:
Add all “simple” aircraft type ratings to group 3 type rating list.

response | *Accepted*

Individual type ratings have been introduced as an option for Group 3 aircraft.

comment | *331* comment by: *UK CAA*

Paragraph:
Part-66.A.45 (j) p30

Comment:
Consideration should be given to creating B2 type ratings based on Equipment installations for aircraft in the smaller spectrum. For example Primus 1000 integrated avionic system.

Justification:
Although avionic fits in larger aircraft are reasonably standard per aircraft type, there is a plethora of equipment fits and mixes in the light aircraft spectrum.

response | *Not accepted*

This proposal was considered initially by the working group as one possible option but it was not retained.
The different fits and mixes do not need to be covered at the level of the licence but at the level of the organisation.

comment | *332* comment by: *UK CAA*

Paragraph:
Part-66.A.45(k) and GM 66.A.45 p30 & p81

Comment:
The application of limitations against the B1.2 licence is impractical.

Justification:
Using the eight limitations listed would produce 255 (Two Hundred and Fifty Five) variations of the B1.2 licence. Would believe the B3 licence would be a better route.

Proposed Text:
Delete reference to limitations from Group 3 of the Aircraft ratings requirements.

response | *Partially accepted*

Only limitations on the material of the structure and for pressurised aircraft have been retained.

comment | *346* comment by: *AgustaWestland*

with reference to V the 5 years retaining period seems to be conflictual with the one indicated in the NPA 2007-02 147.A.145

response | *Noted*

There was a conflict with 147.A.125 where the Agency proposes 10 years (Opinion 05/2008) . However the practical training is not always performed by a Part-147 organisation but may be run through the direct approval by the

competent authority; in such a case, it will be the applicant's responsibility to show the evidences that he has been properly trained.
Therefore the sentence has been removed in order to avoid any conflict with 147.A.125.

comment 362 comment by: CAA-NL

1) Type Training 66.A.45(g) 1.ii.I I.

a) I & II & IV & VI can be replaced by two articles.

b) Practical training and OJT both require an instructor. The instructor is not necessarily the same as the practical training assessor or the OJT assessor. Furthermore the instructors should receive a clear instruction on their tasks.

c) Practical training shall meet criteria of appendix III (reference to minimum content and minimum duration is redundant.)

i) The "/" in content /duration can better be replaced by "and".

d) 66.A.45(g) 1.ii.II. Practical training now is explicitly possible by sub-part F organisation and possible through indirect approval. MOE or MTOE needs to have a procedure. AMC material should be amended accordingly (AMC 66.A.45(d)5).

e) Page 26 (b). Practical training can also be provided by other Approved maintenance organisations or a Part-147 organisation.

f) The use of a matrix (ref GM.66.A.45.d.2.) provided by the Part-147 school that did the theoretical part should ensure that theory and practical training are matched.

g) 66.A.45(g) 1.ii.IV. This implies that it should be **part of the Part-145 or Sub-part F approval** and should be introduced in Part-145 and sub-part F as well. A requirement for a procedure in the MOE for practical training and assessment should be included in part-145 and sub-part F. This might also incorporate flight crew training as explained by GM 145.A.30(j)(4) Personnel requirements (Flight crew).

i) Part-66.A.45 Auditing by the competent authority is already covered by 66.B.115.

h) 66.A.45(g)1.iii "practical training alone" should be "type training with a theoretical and practical part alone". Theoretical training should be mentioned.

i) I. Delete acceptable in "acceptable OJT"; the acceptance of OJT is discussed in III

ii) 66.A.45(g)1.ii IV & iii IV. Propose to accept approval of Practical training Assessors and OJT assessors through **indirect approval**. Within Part-145 and Sub-part F organisations, these functions are comparable with Certifying Staff for which also no form 4 is required. Acceptance can be done through a list of names *in* the MOE or by referring in the MOE to such a list. See also page 64 AMC 66.A.45[g][1][iii]. The AMO is in a better position to select assessors than the competent authority. The tasks of assessors require personal skills that are difficult to demonstrate in a form 4. Furthermore the amount of work involved

cannot be justified.

iii) 66.A.45(g)1.iii V. Auditing by AMO not included as is in 66.A.45(g)1.ii IV, in both cases auditing by AMO should be in Part-145 and Subpart-F.

response

Noted

a) **Not Accepted** To force the articles in two articles will not clarify the text.
b) **Not Accepted** A training program for practical training instructors/assessors and OJT supervisors is advised. To name all roles "instructor" will be confusing with the official Part-147 instructor. See also comment 323.
c) **Accepted** the word "duration" is removed and the minimum duration of two weeks is now introduced in an AMC.
d) **Not Accepted** Part of the comment about the use of "indirect approval" is not understood: outside a Part-147 organisation environment, the course has to be approved by the Competent Authority, whatever the organisation which run the course is..
e) **Noted** It is right.
f) **Not Accepted** It is impossible to achieve this suggestion.
g) **Not Accepted:** IAW article 6 of EC n°2042/2003, only Part-147 organisations are allowed to conduct type training courses unless the course is directly approved by the competent authority (irrespective of the organisation who is going to run the course): it means that no training privileges could be given to a maintenance organisation.
h) **Noted** Auditing is covered by 66.B.115 and new 66.B.130.
i) **Accepted** "theroritical and" has been added to the text
j) Accepted the word "acceptable" is removed.
ii) **Partially accepted**
The comment is not 100% valid because the list of certifying staff shall be approved according to a certain procedure.
However the text has been reviewed and the practical training as well as the OJT shall be supervised and assessed by designated assessors according to the procedure described in the exposition manual or as part of the direct approval by the competent authority.
iii) **Not accepted**: see g)

comment

363 comment by: *CAA-NL*

i) 66.A.45(h)1. The statement, that B1 requires a mechanical Examination and C a Mechanical and Avionic examination, should be moved to appendix III or deleted or introduced in other groups as well.

response

Accepted

Already answered in response to comment 96 from ENAC.
The paragraph 66.A.45(h)(1) of the NPA is removed because (h)(2) is clear enough.

comment

366 comment by: *CAA-NL*

Page 29 66.A.45(g)1.iv.II . …. 'Only differences training between aircraft types ratings from the same manufacturer'…… training based on the same 'engine manufacturer' should also be possible.

response | *Not accepted*

The text in the NPA is correct and allows difference training for an airframe with another engine. The comment suggest to allow difference training for an engine with another airframe, which is not acceptable.

comment | *386* comment by: *CAA-NL*

(b) Alternatively training can be performed by an approved Part-147 organisation or another Part-145 organisation. Experience can be gained in anotehr organisation.

response | *Noted*

Experience and training are two different things.
It was unclear to understand to which part of the NPA this comment refers to.

comment | *392* comment by: *CAA-NL*

Page 29. 66.A.45(g)1.iv 3. …last sentence…."or the training organisation conducting the approved type training course"… this refers to a course individually approved by the NAA. This is better reflected if it is changed in "…. or the training organisation conducting an approved type training course" or by inserting 'individual'.

response | *Noted*

The paragraph has been deleted.

B. Draft Rules - I. Draft Opinion (EC) No 2042/2003 - 66.A.47 p. 31

comment | *86* comment by: *ENAC, Italy, Production and Maintenance Directorate*

66.A.47: please delete the obligation to redefine the type and group ratings on the existing licences.
This will not change the protected rights of licence holders.
The redefinition of the licences is an extremely high burden for the authorities.
It is not clear the reason for this requirement and the legal reason for this requirement.

AMLs coming from conversion of national licences pre-part 147 already contain limitations and ratings that are not standardised throughout europe. Should we also consider to armonise it?

It is really a useless work, without any added value, apart from the complication of the work of the authorities.

response | *Not accepted*

The proposal only requires the change to the new format when the licence come to the end of its validity date or when there is a need to amend the licence. If this is not done, the competent authority would need to keep two systems for issuing licences (one for new licences, another one for existing licences).

This should not be a high burden because the existing limitations (conversion from national systems) will be maintained and 66.A.125 already defines how to transfer the current group ratings.

comment 98 comment by: *ENAC, Italy, Production and Maintenance Directorate*

Page 31 66.A.47 and page 33 66.B.125: limited validity of existing licence:

This will be a very big burden for competent ahtorithies: we suggest to keep the possibility to leave the existing licences as they are. This will not affect the privileges of the licence holders.

response *Not accepted*

The licences can stay unchanged until their expiration or amendment. Indefinite validity is not possible for the reasons explained in the comment 86.

comment 308 comment by: *CAA-NL*

Please add 'single' in helicopter group piston/turbine ratings to avoid confusion that group 1 or 2 aircraft are included.

response *Not accepted*

Not accepted. Adding the word "single" would imply to recall the existing licences upon entry into force of the new rule. In addition, it says "engine" (not "engines") and in any case, it is the continuation of the existing system and will disappear as soon as all licences expire or are revised.

B. Draft Rules - I. Draft Opinion (EC) No 2042/2003 - 66.B.100 p. 31-32

comment 169 comment by: *Irish Aviation Authority*

66.B.100 Paragraph (c)

The requirement for the competent authority to verify the applicant's identity and date of birth is a new requirement and there is no corresponding requirement in Section A for the applicant to provide verification of identity and date of birth.

Recommendations;
1. Amend Section A to require an applicant to provide verification of identity and date of birth.

2. Provide guidance on acceptable type methods of verification.

response *Not accepted*

66.A.15 already exists and asks the applicant for being at least 18 years old.
It means that the competent authority will have to check the identity of the AML applicant when delivering the AML and when endorsing the sub-sequent type ratings.
The Agency does not feel there is a need for giving more implementation details how to verify this requirement.

comment	*261* comment by: *ENAC, Italy, Production and Maintenance Directorate* we suggest to add some explanations on how to interpret AMC 66.A.30(a)2 for the purpose of this paragraph, and 66.B110
response	*Not accepted* The subject of Basic Experience requirements for category C personnel is outside the Terms of Reference of the tasks covered by this NPA.

comment	*373* comment by: *CAA-NL* (c) When Identity has been verified, date of birth does not need to be verified. (d) Should be moved to section A. Further more it the application cannot ensure compliance; it is the applicant who can ensure that the application is in compliance (instead of application).
response	*Noted* **(c) Noted** The verification of the date of birth is part of the identity check necessary for the process IAW 66.A.15 **(d) Not Accepted** See comment n°169 The word "application" is acceptable.

B. Draft Rules - I. Draft Opinion (EC) No 2042/2003 - 66.B.115 p. 32

comment	*60* comment by: *Irish Aviation Authority* Comment; 66.B.115 paragraph 2 makes a reference to 'in the case where the complete type training is not conducted by an approved Part-147 organisation...' It is not clear if 'complete type training' refers to airframe, engine or avionics theoretical training, or to theoretical and practical training.
response	*Partially accepted* An additional AMC 66.A.45 (k) has been created: the aircraft type training may be sub-divided in airframe type training, power plant type training, or avionic systems type training. A maintenance training organisation approved under Part-147 may be approved to conduct airframe type training only, power plant type training only or avionics systems type training. In fact AMC 147.A.300 has been imported from Part-147 into Part-66. Furthermore, 66.B.115 §4 states that the competent authority shall ensure that the interfaces have been correctly addressed. Once all these criteria are fulfilled, the competent authorities shall be in a position to endorse the type rating on the AML.

comment	*61* comment by: *Irish Aviation Authority* Comment; 66.B.115 paragraph 3 In the case of a second and subsequent type rating within a sub category the type rating will be granted without further

showing....

The intent of 'without further showing' is not clear.

response

Partially accepted

Article 2 §3 (b) of Basic Regulation EC n°216/2008 states that certificates, licences approvals or other documents granted to products, personnel and organisations issued in accordance with EC n°216/2008 shall be recognised without additional requirements.
In addition, Article 11 "Recognition of certificates" of the same regulation states that Member States shall, without further technical requirements or evaluation, recognise certificates issued in accordance with this Regulation. When the original recognition is for a particular purpose or purposes, any subsequent recognition shall cover only the same purpose or purposes.
The word "requirement" has been preferred to "showing".

comment

62 comment by: *Irish Aviation Authority*

66.B.115 paragraph 8.
Comment; This paragraph is unclear. Does it mean that the practical training and OJT shall be assessed and shall be audited by the competent authority in the state in which the practical training and OJT is conducted or by the competent authority of the state of the applicant.

Is the competent authority required to audit each practical training course and each OJT period.

Who will audit the Practical training and OJT where they are conducted in a Part-145 organisation in a non EASA State.

response

Partially accepted

The paragraph has been deleted.
If the type training is provided by a Part-147 organisation, the competent authority responsible for the oversight is defined in 147.1.
In the case of a direct course approved by the competent authority, the competent authority itself will be responsible for the oversight and therefore for auditing. Therefore new paragraph 66.B.130 has been created.

comment

109 comment by: *CAA-Norway*

7.
Just a comment.
Will the aircraft type ratings be specified by the Agency as a part of the regulation, or still be issued as an appendix to AMC 66?
If it is an appendix to AMC it will not be mandatory?????

8.
It can't be the intention that the competent authority shall audit all practical training and OJT. If the practical training and OJT is conducted in a Part-147 organisation or in a maintence organisation iaw procedures in the MOE /MOM the audit will be conducted as a part of the regular audits of the organisation.

New text:
"Practical training shall be assessed by approved assessors, and in the case of

	a direct approved type training course, the practical training and OJT shall be audited by the competent authority wherever it is undertaken"
response	*Noted* Comment to sub-paragraph 7. **Noted** Refer to http://www.easa.europa.eu/ws_prod/r/r_faq_the5.php where the role played by an AMC is explained. Comment to sub-paragraph 8 **Partially accepted** The sub paragraph has been deleted; see above comment n°62

comment	*122* comment by: *Dassault Aviation*
response	*Noted* There is no response because there is no comment.

comment	*215* comment by: *Luftfahrt-Bundesamt* "Practical training & OJT shall be assessed and shall be audited by the competent authority wherever it is undertaken." For the already authorized process the assessment of one sample is completely sufficient.
response	*Partially accepted* The paragraph has been deleted. If the type training is provided by a Part-147 organisation, the competent authority responsible for the oversight is defined in 147.1. In the case of a direct course approved by the competent authority, the competent authority itself will be responsible for the oversight and therefore for auditing. Therefore new paragraph 66.B.130 has been created.

comment	*221* comment by: *Snecma Services* AMC 147.A.300 refer to power plant course when the NPA refer to engine course, the interface are not the same between engine and aircraft and between power plant and aircraft. Is there an evolution in the course content/syllabus?
response	*Noted* "Power plant" should be the word used throughout the rules If technically there is a difference between "powerplant" and "engine" course (CS25 subpart E shows that "engine" is part of the "power plant"), in reality both terms are fully understood by the stakeholders as the interfaces between the airframe and the engine are correctly addressed in Appendix III of Part-66: the undertakings know exactly the areas to be taught. In fact AMC 147.A.300 has been imported from Part-147 into Part-66. (see AMC 66.A.45 (k)) and clarifies the situation.

comment	*266* comment by: *TYROLEAN AIRWAYS* 66.B.115 Amend item 8. as follows: 8. Practical training and OJT shall be approved via the organisations expositions MOE/MTOE/MOM as applicable. Justification as under para 66.A.45 (g) 1. (ii) IV. and (iii) V. see comment 264 + 265
response	*Partially accepted* The paragraph has been deleted. If the type training is provided by a Part-147 organisation, the competent authority responsible for the oversight is defined in 147.1. In the case of a direct course approved by the competent authority, the competent authority itself will be responsible for the oversight and therefore for auditing. Therefore new paragraph 66.B.130 has been created.

comment	*280* comment by: *EAMTC* **Point8**: Proposed Text:"*Practical training and OJT shall be assessed and shall be audited by the competent authority on a sampling basis"* For an authority it is not workable to audit every Practical or OJT
response	*Partially accepted* The paragraph has been deleted. If the type training is provided by a Part-147 organisation, the competent authority responsible for the oversight is defined in 147.1 and shall audit according to an annual audit program. In the case of a direct course approved by the competent authority, the competent authority itself will be responsible for the oversight and therefore for auditing. Therefore new paragraph 66.B.130 has been created.

comment	*304* comment by: *European Regions Airline Association* 66.B.115 Amend item 8. as follows: 8. Practical training and OJT shall be approved via the organisations expositions MOE/MTOE/MOM as applicable. Justification as under para 66.A.45 (g) 1. (ii) IV. and (iii) V. see comment 264 + 265
response	*Partially accepted* The sentence has been deleted. However 66.A.45(k) (ex 66.A.45(g) at the stage of the NPA) has been reviewed and will state: "Practical training shall be assessed by designated assessors". Either the assessors will be designated by the Part-147 organisation according to its procedures or the assessors will be part of the approval in the case of a course directly approved by the competent authority.

Same attention was paid for the OJT
In addition new 66.B.130 and its AMC have been created (requirement for the Authority in the case of the direct approval).

B.Draft Rules - I. Draft Opinion (EC) No 2042/2003 - 66.B.125 p. 33-34

comment *87* comment by: *ENAC, Italy, Production and Maintenance Directorate*

66.B.125 : in some countries the simple declaration of the date of birth and of the idenity is enough for the national authority, so we suggest to delete the obligation from the regulation. it is also unclear what kind of check is requested.

response *Not accepted*

The purpose of the change is to make sure that the competent authority verifies the identity of the applicant and the age (otherwise, the requirement of 18 years of age can not be ensured). The authority must keep a copy of the identification in records.

comment *110* comment by: *CAA-Norway*

The conversion table must be updated. Refer to the proposed changes in 66.A.45

response *Accepted*

The table has been modified.

comment *320* comment by: *Walter Gessky*

4) 66.B.125 1) (page 33)

Change the following:

For conversion instructions change "limitation" to "restriction" and add **"excluding"**

Sample:

(converted to full group 3 with the following **restriction**: **excluding** pressurisation, FADEC, composite & wood structures)

"Limitation" should be changed to **"restriction**" in the other paragraphs when used.

Justification:
Editorial change, to clarify wording. The license privilege is restricted and excludes certain technologies.

response *Accepted*

66.A.45(j) has been modified to make clear that limitations are exclusions from the certification privileges.

comment	*333* comment by: *Walter Gessky* **66.B.125, Page 33 / 34:** Add at the end: For group 2 and group 3 aircraft, aircraft maintenance licenses issued, where the type rating does not comply with 66.A.45(i) to grant a manufacturer sub-group rating, the limitation to the type rating should remain. **Justification:** A clear requirement/procedure/guidance is necessary in case of transferring an existing licence with a single entry (Cessna 150). 66.A.45(i) has to be followed in the conversion process: (i) For group 2 aircraft, manufacturer sub-group ratings for category B1 and C license holders shall be granted after complying with the type rating requirements of at least two aircraft types from the same manufacturer representative of the applicable sub-group.
response	*Accepted* In this CRD it has been introduced to have individual ratings also for Group 2 and Group 3 aircraft (see 66.A.45(d), (e) and (f)). In addition, and Article 7, paragraph 9(h) has been introduced in EC2042/2003, stating that individual ratings contained in national licences shall remain on the licence and will not be subject to the conversion procedure.

comment	*356* comment by: *CAA-NL* a) This article describes conversion of part-66 licences issued before entry into force of this change. Licences issued before this date are unlimited although there is a review date. To solve this the title can be changed in conversion of Part-66 licences issued prior to date of entry into force. b) Ad 3) Will conversion of cat C type ratings in group 1 lead to Groupratings for group 2 and 3? c) In case of other-than-large aircraft. Will Cat C 'aeroplane or helicopter' conversion also include full group 3?
response	*Partially accepted* a) The title of 66.B.125 has been amended. b) There is no conversion for group 1 aircraft. c) Only accepted for aeroplanes since Group 3 does not apply to helicopters. This is stated in the revised 66.B.125.

B. Draft Rules - I. Draft Opinion (EC) No 2042/2003 - Part-66 - Appendix I - Basic Knowledge Requirements p. 34

comment	*105* comment by: *CAA CZ*

	We recommend to complete program with the item Glass cockpit in the Module 11A as well in the Module 11B (page 35).
response	*Accepted* "Glass cockpit" has been added to Module 11A.

comment	*112* comment by: *CAA-Norway*
response	*Noted* No response because there is no comment.

comment	*152* comment by: *Lufthansa Technik AG* We do not understand why Basic Training of B2 does not include Modules 11.19., 11.20., 11.21., 11.22.
response	*Noted* Modules 11A and 11B are not applicable to the B2 licence, for which Module 13 applies. These subject are covered in Sub-modules 13.20, 13.21 and 13.22.

comment	*188* comment by: *CAA-NL* In this proposal, the activities are insufficiently supported by basic knowledge requirements. i) It would be better to require the B2 to meet the knowledge requirements for the sub-modules of appropriate A sub-category. (7;11A; 11B; 12; 15 and 17). ii) Standard could be, to include the A1 sub-modules (7,11A,17) because most B2's will work on turbine aircraft.
response	*Partially accepted* The syllabus for the B2 licence (Module 13) has been modified in order to cover all the systems, because of the increase of privileges contained in 66.A.20(a)3(i).

comment	*246* comment by: *Nayak Aircraft Services* For B2 personnel the theoretical part will be increase. At the same time the total hours will be reduced to 2000. We see a conflict in this situation.
response	*Accepted* As it was already explained in the Explanatory Note of the NPA, the duration of the B2 basic course was reduced to 2000 hours because an analysis showed that the number of subjects and levels was higher for the B1. Nevertheless, since this CRD has increased the privileges of the B2 licence holder to perform maintenance on electrical and avionics parts within powerplant and mechanical system (requiring simple tests), the Module 13 has been amended and the total duration for the B2 course has been maintained in

2400 hours.

B.Draft Rules - I. Draft Opinion (EC) No 2042/2003 - Part-66 - Appendix I - Module 11A. Turbine aeroplane aerodynamics, structures and systems p. 34-35

comment *63* comment by: *Irish Aviation Authority*

Appendix 1

Comment; This is an opportunity to change applicability of Module 6.3.2 Wooden structures and 6.3.3 Fabric covering from B1 to B1.2 because it does not apply to large aircraft anymore.

response *Not accepted*

This would require to completely change the structure of Module 6, to include columms for the different licence subcategories.
This is outside the ToR and may affect existing courses.

comment *79* comment by: *Link & Learn Aviation Training*

11.19. Integrated Modular Avionics (ATA 42) The system described represents A380 technology and terminology. We agree that it would be beneficial that every mechanic and technician gets an introduction about this new technology, however, this can be done on a level 1 for A1 and B1.1 with the information available. A level 2 requires a detailed description and for the applicant to apply the knowledge in a practical manner. With this technology being restricted to a new generation aircraft the detailed systems information is at present, and will not be in the near future, readily available to non-A380 operators and training organizations. As a result the practical application can also not be performed. It is therefore our view that any training above level 1 has to be performed as part or introduction to a type training course for this type of aircraft.

11.20. Cabin Intercommunication Data System (ATA 44) The system described represents A380 technology and terminology. We agree that it would be beneficial that every mechanic and technician gets an introduction about this new technology, however, this can be done on a level 1 for A1 and B1.1 with the information available. A level 2 requires a detailed description and for the applicant to apply the knowledge in a practical manner. With this technology being restricted to a new generation aircraft the detailed systems information is at present, and will not be in the near future, readily available to non-A380 operators and training organizations. As a result the practical application can also not be performed. It is therefore our view that any training above level 1 has to be performed as part or introduction to a type training course for this type of aircraft.

11.21. Cabin Network Service (ATA 44) The system described represents A380 technology and terminology. We agree that it would be beneficial that every mechanic and technician gets an introduction about this new technology, however, this can be done on a level 1 for A1 and B1.1 with the information available. A level 2 requires a detailed description and for the applicant to apply the knowledge in a practical manner. With this technology being restricted to a new generation aircraft the detailed systems information is at present, and will not be in the near future, readily available to non-A380

operators and training organizations. As a result the practical application can also not be performed. It is therefore our view that any training above level 1 has to be performed as part or introduction to a type training course for this type of aircraft.

11.22. Information Systems such as Air traffic and Information Management Systems and Network Server Systems (ATA 46) The system described represents A380 technology and terminology. We agree that it would be beneficial that every mechanic and technician gets an introduction about this new technology, however, this can be done on a level 1 for A1 and B1.1 with the information available. A level 2 requires a detailed description and for the applicant to apply the knowledge in a practical manner. With this technology being restricted to a new generation aircraft the detailed systems information is at present, and will not be in the near future readily available to non-A380 operators and training organizations. As a result the practical application can also not be performed. It is therefore our view that any training above level 1 has to be performed as part or introduction to a type training course for this type of aircraft.

response

Not accepted

This type of technology is likely to spread (or may even be part already) to other aircraft in the very near future.
It is the intention of the Agency that Appendix I covers also new technology.
As a consequence, the proposed levels are not modified.

comment

147 comment by: *CAA-Norway*

Module 11A.

11.19 Integrated Modular Avionics (ATA 42)

The explanation of what the system is, and the listing of functions should not be used.
It says *may be*, *among others* and ends with *etc.*
New text:

11.19 Integrated Modular Avionics (ATA 42)
Fundamentals of system lay-out and function.

11.20 & 11.21
11.20 and 11.21 belongs to the same ATA chapter, and should therefore not be separated.

They also explains what the systems are, and list some of the functions.

New text:

11.20 Cabin systems

11.20.1 Cabin intercommunication Data Systems
"Fundamentals of system lay-outs and functions"

11.20.2 Cabin Network Service
"Fundamentals of system lay-outs and functions"

response

Partially accepted

These sub-modules have been revised in order to clearly indicate the subject to be covered.

comment

225 comment by: *tec aviation*

The sub module 11.19, 11.20, 11.21 and 11.22 should not be level 2 but only level 1

The same for sub module 12.17 and 12.19.

sub module 13.15, 13.16, 13.17 and 13.18 should not be at level 3 but also level 1

instead of having the above module in respective level 2 and level 3 the "basic" contents of the above sub modules should be moved to module 5. The aircraft Network / ETHERNET should be placed in modul 5.4 and 5.15

The surgested new sub modules in module 11, 12 and 13 have a more typerelated contents. Also, it is difficult to conduct any practical training in these sub modules in the basic training contex..that can only be done when conducting typetraining...

ref. page 56 in this NPA...

adding more airframe training into the B2 category and increasing sub module 13.8 from level 2 to level 3 is not possible when at the same time decreasing the number of hours from 2400 H to 2000 H.

response

Partially accepted

This type of technology is likely to spread (or may even be part already) to other aircraft in the very near future.
It is the intention of the Agency that Appendix I covers also new technology.
As a consequence, the proposed levels are not modified.

The duration of the B2 basic course has been fixed at 2400 hours.

comment

270 comment by: *Esko HIETANEN*

The proposal to change:

- The new sub-modules (11.19. 11.20, 11.21 and 11.22) should not be level 2 but only level 1
- The general knowledge about ATA 42, 44 and 46 should be moved to Module 5.
- Aircraft Network / ETHERNET should be added to sub-Module 5.4 and 5.15.

The text in the above mentioned sub-modules has to be in more general terms, more generic.

response

Partially accepted

This type of technology is likely to spread (or may even be part already) to

other aircraft in the very near future.
It is the intention of the Agency that Appendix I covers also new technology.
As a consequence, the proposed levels are not modified.

Nevertheless, these sub-modules have been modified in order to clearly indicate the subjects that have to be covered.

Module 5 has been amended.

comment

376 comment by: *CAA-NL*

Part-66 Appendix I (Basic Modules)

a) Descriptions should list subjects that need to be addressed rather than explain typical system characteristics, examples or explanations of the functions. (see terms as 'typically, may include, such as…'11.19, 11.20, 11.22, 13.15 etc).

b) Some sub-modules do not have underlying subjects to be taught (e.g. 11.22, 12.19, 13.18.)

c) Module 11A. propose to raise level of **11B.14 for B1.2 to level 3**. To prepare the B1.2 for maintenance of mechanical systems with advanced electronic components, the level of training on integrated en logic circuits (module 5) should be increased to the B2 level

response

Accepted

These sub-modules have been amended to clearly indicate the subjects that have to be covered.

comment

393 comment by: *CAA-NL*

Part-66 Appendix I Basic Knowledge Module 11A and 11B.
Inside the table the 'A' and 'B' are left out. Suggest to consequently use '11A' and '11B'.

response

Not accepted

This request is outside the ToR and may affect existing courses.

comment

404 comment by: *Bodø Aviation College*

Module 11.19-11.20-11.21-11.22 may be of information interest for basic education and should be on level 1 for B1.1

Title: System layout and introduction.

response

Not accepted

This type of technology is likely to spread (or may even be part already) to other aircraft in the very near future.
It is the intention of the Agency that Appendix I covers also new technology.
As a consequence, the proposed levels are not modified.

B. Draft Rules - I. Draft Opinion (EC) No 2042/2003 - Part-66 - Appendix I - Module 11B. Piston aeroplane aerodynamics, structures and systems p. 35

comment *43* comment by: *Irish Aviation Authority*

'Glass cockpit' is added to the syllabus in Module 11B but it is not included in Module 11A.

Solution; Add 'Glass cockpit' to Module 11A syllabus.

response *Accepted*

"Glass cockpit" has been added to Module 11A.

B. Draft Rules - I. Draft Opinion (EC) No 2042/2003 - Part-66 - Appendix I - Module 12. Helicopter aerodynamics, structures and systems p. 35-36

comment *85* comment by: *Link & Learn Aviation Training*

12.17. Integrated Modular Avionics (ATA 42) The system described represents A380 technology and terminology. We agree that it would be beneficial that every mechanic and technician gets an introduction about this new technology, however, this can be done on a level 1 for A1 and B1.1 with the information available. A level 2 requires a detailed description and for the applicant to apply the knowledge in a practical manner. With this technology being restricted to a new generation aircraft the detailed systems information is at present, and will not be in the near future readily available to non-A380 operators and training organizations with helicopter background. As a result the practical application can also not be performed. It is therefore our view that any training above level 1 has to be performed as part or introduction to a type training course for this type of aircraft.

12.19. Information Systems such as Air traffic and Information Management Systems and Network Server Systems (ATA 46) The system described represents A380 technology and terminology. We agree that it would be beneficial that every mechanic and technician gets an introduction about this new technology, however, this can be done on a level 1 for A1 and B1.1 with the information available. A level 2 requires a detailed description and for the applicant to apply the knowledge in a practical manner. With this technology being restricted to a new generation aircraft the detailed systems information is at present, and will not be in the near future readily available to non-A380 operators and training organizations with helicopter background. As a result the practical application can also not be performed. It is therefore our view that any training above level 1 has to be performed as part or introduction to a type training course for this type of aircraft.

response *Not accepted*

This type of technology is likely to spread (or may even be part already) to other aircraft in the very near future.
It is the intention of the Agency that Appendix I covers also new technology.
As a consequence, the proposed levels are not modified.

comment *148* comment by: *CAA-Norway*

12.17
The same comment as for 11.19

response *Partially accepted*

These sub-modules have been revised in order to clearly indicate the subject to be covered.

comment *271* comment by: *Esko HIETANEN*

The proposal to change:

- The new sub-modules (12.17 and 12.19) should not be level 2 but only level 1
- The general knowledge about ATA 42, 44 and 46 should be moved to Module 5.
- Aircraft Network / ETHERNET should be added to sub-Module 5.4 and 5.15.

The text in the above mentioned sub-modules has to be in more general terms, more generic.

response *Partially accepted*

This type of technology is likely to spread (or may even be part already) to other aircraft in the very near future.
It is the intention of the Agency that Appendix I covers also new technology.
As a consequence, the proposed levels are not modified.

Nevertheless, these sub-modules have been modified in order to clearly indicate the subjects that have to be covered.

Module 5 has been amended.

comment *405* comment by: *Bodø Aviation College*

Module 12.17-12.18-12.19-may be of information interest for basic education and should be on level 1 for B1.1
Title: System layout and introduction,

The basic tecnical principles may be teached in Module 5.

response *Not accepted*

This type of technology is likely to spread (or may even be part already) to other aircraft in the very near future.
It is the intention of the Agency that Appendix I covers also new technology.
As a consequence, the proposed levels are not modified.

Nevertheless, these sub-modules have been modified in order to clearly indicate the subjects that have to be covered.

B. Draft Rules - I. Draft Opinion (EC) No 2042/2003 - Part-66 - Appendix I - Module 13. Aircraft aerodynamics, structures and systems p. 36-40

comment	*91* comment by: *Link & Learn Aviation Training* **13.15. Integrated Modular Avionics (ATA 42)** The system described represents A380 technology and terminology. We agree that it would be beneficial that every mechanic and technician gets an introduction about this new technology, however, this can be done on a level 1 for A1 and B1.1 with the information available. A level 2 requires a detailed description and for the applicant to apply the knowledge in a practical manner. With this technology being restricted to a new generation aircraft the detailed systems information is at present, and will not be in the near future readily available to non-A380 operators and training organizations. As a result the practical application can also not be performed. It is therefore our view that any training above level 1 has to be performed as part or introduction to a type training course for this type of aircraft. **13.16. Cabin Intercommunication Data System (ATA 44)** The system described represents A380 technology and terminology. We agree that it would be beneficial that every mechanic and technician gets an introduction about this new technology, however, this can be done on a level 1 for A1 and B1.1 with the information available. A level 2 requires a detailed description and for the applicant to apply the knowledge in a practical manner. With this technology being restricted to a new generation aircraft the detailed systems information is at present, and will not be in the near future readily available to non-A380 operators and training organizations. As a result the practical application can also not be performed. It is therefore our view that any training above level 1 has to be performed as part or introduction to a type training course for this type of aircraft. **13.17. Cabin Network Service (ATA 44)** The system described represents A380 technology and terminology. We agree that it would be beneficial that every mechanic and technician gets an introduction about this new technology, however, this can be done on a level 1 for A1 and B1.1 with the information available. A level 2 requires a detailed description and for the applicant to apply the knowledge in a practical manner. With this technology being restricted to a new generation aircraft the detailed systems information is at present, and will not be in the near future readily available to non-A380 operators and training organizations. As a result the practical application can also not be performed. It is therefore our view that any training above level 1 has to be performed as part or introduction to a type training course for this type of aircraft. **13.18. Information Systems such as Air traffic and Information Management Systems and Network Server Systems (ATA 46)** The system described represents A380 technology and terminology. We agree that it would be beneficial that every mechanic and technician gets an introduction about this new technology, however, this can be done on a level 1 for A1 and B1.1 with the information available. A level 2 requires a detailed description and for the applicant to apply the knowledge in a practical manner. With this technology being restricted to a new generation aircraft the detailed systems information is at present, and will not be in the near future readily available to non-A380 operators and training organizations. As a result the practical application can also not be performed. It is therefore our view that any training above level 1 has to be performed as part or introduction to a type training course for this type of aircraft.
response	*Not accepted* This type of technology is likely to spread (or may even be part already) to

other aircraft in the very near future.
It is the intention of the Agency that Appendix I covers also new technology.
As a consequence, the proposed levels are not modified.

comment

149 comment by: *CAA-Norway*

13.15
Same comment as for 11.19 & 12.17

13.16 & 13.17

Same comments as for 11.20 & 11.21

13.19

It is proposed to include some aircraft systems limited to indication and warnings. This is not reflected in 66.A.20, Privileges.

Control is missing in the text, and the control function for these systems in modern aircrafts are typically electronic.

New text:
13.19 Control, indications and warnings

Hydraulic systems
Landing gear
Oxygen
Pneumatic/Vacuum

Add system general overview with level 1

response

Partially accepted

These sub-modules have been revised in order to clearly indicate the subject to be covered.

66.A.20(a)3(i) has been modified in order to increase the privileges of the B2 licence holders to maintenance on electrical and avionic parts within powerplant and mechanical systems.

Module 13 of Appendix I has been modified accordingly.

comment

185 comment by: *CAA-NL*

Basic Module '13.19 Indications and warnings' is added for B2, however neither the indicating systems nor the mechanical systems are in the scope of the B2.

response

Accepted

66.A.20(a)3(i) has been modified in order to increase the privileges of the B2 licence holders to maintenance on electrical and avionic parts within powerplant and mechanical systems.

Module 13 of Appendix I has been modified accordingly.

comment	*216* comment by: *Luftfahrt-Bundesamt* As the B2 get new privileges, a reduction of the complete number of hours from 2400 to 2000 makes no sense.
response	*Accepted* The number of hours has been amended to stay in 2400.

comment	*272* comment by: *Esko HIETANEN* The proposal to change: • The new sub-modules (13.15, 13.16, 13.17 and 13.18) should not be level 3 but only level 1
response	*Not accepted* This type of technology is likely to spread (or may even be part already) to other aircraft in the very near future. It is the intention of the Agency that Appendix I covers also new technology. As a consequence, the proposed levels are not modified. Nevertheless, these sub-modules have been modified in order to clearly indicate the subjects that have to be covered.

comment	*334* comment by: *UK CAA* **Paragraph:** Part-66.A.45(g)(iii) II p38 to p44 **Comment:** Disagree with the proposal that no OJT is required for a type rating for a second type in the same category. **Justification:** The Learjet 45 and the Airbus A380 are both B1.1 aircraft but are vastly different in maintenance practices. **Proposed Text:** The length and depth of the OJT required should be predicated on the complexity of the aircraft held on licence and the new aircraft type. (The aircraft type list in AMC 66 Appendix I should define in detail which aircraft fall into which category)
response	*Not accepted* The Agency understands the nature of the comment: the case here depicted is not very common and the regulation cannot cover every particular case. The intend of the rule is the following: due to the fact that the existing requirement allows the practical training to be between 2 weeks and 4 months without clear guidance how to achieve it, a content based practical training was introduced in App III. In addition to that it was felt by the Agency that, for the relevant type rating, additional OJT on the 1st type rating - content defined in APP III of this NPA - should be introduced to follow a similar principle as in the existing AMC 66.A.45 (d) and to ensure that hands on training is part of the 1st type rating. This OJT should be performed on the type relevant to the type

rating application to avoid confusion for the applicant.

Then the Agency envisaged as an option that the OJT could be also compulsory for the 2nd type rating but the Agency came to the conclusion that this option was too demanding whereas most of the attendees were experienced enough on the same category of aircraft: it would have been a waste of time with no safety benefits although the costs would have remained very high. Experience in the past shows that the training was limited to the theoretical and the practical elements of the type training without exceeding two weeks for the practical part. No safety records justify such a decision.
The same concept applies for the flight standards where the training can be reduced for experienced pilots.
In addition to that, it has to be clearly understood that the Part-66 requirements are the basis for granting the type rating on the AML and are not the basis for the certifying staff authorisation within a maintenance organisation. This means that the maintenance organisation will have to check the competency before granting the privileges as certifying staff: 145.A.35 is considered to be the safety net.

comment *406* comment by: *Bodø Aviation College*

Module 13.7 (b) - 13.8 - 13.10: Level 3 is too heavy for basic training. We propose level 2.

response *Not accepted*

These are core activities for a B2 licence holders and the opinion of the Agency is that they should be covered at level 3.

comment *407* comment by: *Bodø Aviation College*

Module

response *Noted*

We don't provide a response because there is no comment.

comment *408* comment by: *Bodø Aviation College*

Module 13.11.1 - 13.11.2 - 13.11.3 - should be on level 1. There is no need for a B2 to have detailed knowledge like B1.
If the basic for B2 is reduced down to 2000 hrs, this will in addition increase the problem with level 3. Level 1 will be acceptable for these systems.
Title: System layout and introduction.

13.11.4 must remain on level 3.

response *Partially accepted*

The level of knowledge for Sub-module 13.11 has been further analysed and amended.

The duration of the B2 course has been changed to 2400 hours.

comment *409* comment by: *Bodø Aviation College*

Module 13.12.a must remain on level 3.
13.13 - 13.14: The elctrical part of these systems should be on level 3. The mecanical part of the systems should be on level 1.

13.15 : These are type related items, and should not be in basic training. Some of the principles could be teached in Module 5.

13.19: Indication and warnings **and control (added).**
These should contain all aircraft systems and not only Landing Gear, Oxygen and Pneumatic/Vacuum. (Why is only these systems on the list, we dont understand)
The level should be 3.

response *Partially accepted*

66.A.20(a)3(i) has been modified in order to increase the privileges of the B2 licence holders to maintenance on electrical and avionic parts within powerplant and mechanical systems.

Module 13 of Appendix I has been further analysed and modified accordingly.

B. Draft Rules - I. Opinion (EC) No 2042/2003 - Part-66 - Appendix II - Basic Examination Standard p. 40-41

comment *44* comment by: *Irish Aviation Authority*

It is noted that the numbers of questions required for the modified modules are divisible by four which makes it possible to achieve an exact 75% (pass mark).

At present many of the modules require a total number of questions that are not divisible by four and therefore a mark of 76% (for 50 questions) or 77% (30 questions) is required.
Suggestion; avail of the opportunity to change the total number of questions required for all modules to numbers that are divisible by four.

response *Accepted*

All the modules have been revised as necessary in order for the questions to be multiple of 4.

comment *273* comment by: *Esko HIETANEN*

The proposal to change:

- The new sub-modules (13.15, 13.16, 13.17 and 13.18) should not be level 3 but only level 1
- The general knowledge about ATA 42, 44 and 46 should be moved to Module 5.
- Aircraft Network / ETHERNET should be added to sub-Module 5.4 and 5.15.

The text in the above mentioned sub-modules has to be in more general

terms, more generic.
The rise in numbers of Exams Question in the different modules is acceptable if the suggested subjects in the NPA-basic part are coming in to force.

response

Partially accepted

This type of technology is likely to spread (or may even be part already) to other aircraft in the very near future.
It is the intention of the Agency that Appendix I covers also new technology.
As a consequence, the proposed levels are not modified.

Nevertheless, these sub-modules have been modified in order to clearly indicate the subjects that have to be covered.

Module 5 has been amended.

comment

360 ❖ comment by: *CAA-NL*

Instructor
a) Clarification on instructor's requirements. Explanatory note to decision 2003/11/r contains requirement for NAA to publish criteria. [as officially recognized standard]

b) New AMC 66.A.45(g)(1)(ii) Type/task training and ratings gives option of 'assessor led' training in approved organisation. Title suggests that the purpose is assessing rather than instructing. Suggest to change in "practical instructor led". Whether the Part-147, 145 or subpart F organisation conducts the practical training it always needs to involve instruction and assessment.

c) "full type-rating course" is not very precise and it is not clear what other case are and why there is a difference. Manufacturer (or rather manufacturing) environment leaves to many options open. Suggest to only state that the "majority of practical training should be conducted on real aircraft reflecting actual maintenance situations".

d) List of criteria for the Supervisor is subjective. Approved organisations will look for the right person to do the practical training. One of the most important qualities is lacking...: the ability to coach or give training.

response

Noted

a) Not Accepted
Wrong reference of Decision 2003/11/r which is about Products Parts and appliances (CS to Part 21) The right reference is Opinion 04/2006 and it is better not to mix this NPA with the Opinion according to the EASA legal service recommendation (no consolidated version at the level of the NPA when the opinion's approval is pending)
b) Accepted
The text has been amended accordingly
c) Accepted
The text has been amended accordingly
d) Accepted
The text has been amended accordingly

comment

377 comment by: *CAA-NL*

	Appendix II Basic Examination Standard Page 41 2.11 Number of questions is increased. Propose to use round numbers only; e.g. 108 should be 110 or 105.
response	*Not accepted* Your proposed 110 is not divisible by 4, making it impossible to obtain a 75% score. All the modules have been revised as necessary in order to be divisible by 4.

B. Draft Rules - I. Opinion (EC) No 2042/2003 - Part-66 - Appendix III - Type Training and Examination Standard - 1.Type training levels p. 41-43

comment	*35* comment by: *KLM Royal Dutch Airlines* *Part-66 Appendix III – Type training levels – Level 2, first paragraph.* ***Type training level description*** The proposed text for training level 2 state (Appendix III.1): "Basic system overview of controls, indicators, principal components including their location and purpose, servicing and troubleshooting". This should state "… *minor* troubleshooting" as troubleshooting is a level 3 item.
response	*Accepted* The word "minor" is added to "troubleshooting.

comment	*45* comment by: *Irish Aviation Authority* Appendix III, paragraph 1.(b). Identify aircraft manuals, maintenance practices important to the airframe, its systems and powerplant. As written, the intent of this sentence is unclear. Should the words 'aircraft manuals' be deleted?
response	*Not accepted* It is expected that for level 1 a detailed knowledge is not required but the manuals should be identified.

comment	*123* comment by: *Dassault Aviation* **Type training levels** Dassault agrees with the new definitions for each type training level in Appendix III. The new course objectives will assist training providers to better perform a task analysis and training objectives. Dassault is very involved with determining technical training standards, and Falcon training provided by Dassault-approved Part-147 organizations. As an Original Equipment Manufacturer (OEM), Dassault expects this training to provide all technicians with adequate knowledge including up-to-date techniques and technologies to ensure aircraft safety, airworthiness, reliability and dispatchability. Dassault expects and requires maintenance technical training to be:

- High Quality,
- Realistic,
- Comprehensive,
- Achievable; and,
- Verifiable.

In defining training standards, Dassault uses a task analysis process to define comprehensive training specifications. The training elements are cross referenced to Dassault maintenance procedures or tasks described in related Dassault documentation. These training specifications are then used to develop theoretical and practical training objectives and training content to the appropriate training level.

To prevent any ambiguities in the level of training defined in training objectives for a specific aircraft type, Dassault would urge the Agency to mandate the responsibility for training specifications to the applicable OEM. Such specifications would be developed on behalf of the Regulatory Authorities for use in setting training standards for each aircraft type to the appropriate training level.

response

Noted

This subject deals with task 21.039 under progress.

comment

207 comment by: *British Airways Engineering*

Appendix III 2.2 & 2.3 Practical experience and on job training (page 49 to 53)

To complete Practical training as required by the NPA proposal is unachievable as some of the practical elements necessitate the issue of a CRS.

If Practical Training (PT) *could be* substituted by OJT then the proposal becomes more realistic. Practical Training could then be On-Job-Training (actual maintenance experience) carried out before during and after the theoretical element of the training. PT could also be instuctor led in on the aircraft and in a Ground Maintenance Simulator.

Actual supervised aircraft maintenance should be considered OJT and can also be considered part of the practical element of the course.

The engineers could then complete a structured PT/OJT matrix in order to meet the requirements of the practical element. For the first aircraft type further OJT experience would have to be gained as suggested by the proposal.

Our (BA engineering) experience is that engineers struggle on the theoretical element of the course if they have not had any previous experience on type beforehand. Therefore up to 50 % of the PT/OJT should be allowed before the Theoretical course.

The fixed content and duration also causes concern because of the availability of aircraft and the access available in a maintenance environment. This will vary dependant upon the routine maintenance and defects being addressed.

The proposed PT matrix could then be realistically achieved by a combination of OJT (before and after a course) Instructor led aircraft visits and Ground

Maintenance Simulator (GMS) sessions.

NPA PROPOSAL

II. Practical training shall be of fixed content / duration and can be conducted by either Part-147 organisations or appropriately approved maintenance organisations or can be directly approved by the competent authority. Where practical training is conducted by an appropriately approved maintenance organisation under its own responsibility, the practical training shall be approved by the competent authority. The practical training shall be supported by either a detailed syllabus, or practical worksheets / logbook showing content and duration.

SUGGESTED AMENDMENT

II. Practical training shall ~~be of fixed content / duration~~ conducted by either Part-147 organisations or appropriately approved maintenance organisations or can be directly approved by the competent authority. Where practical training is conducted by an appropriately approved maintenance organisation under its own responsibility, the practical training shall be approved by the competent authority. The practical training shall be supported by either a detailed syllabus, or practical worksheets / logbook showing content and duration.

response

Not accepted

The fixed practical content is introduced to address the ongoing issue with different course length on the practical training side. The proposed NPA allows the practical training to be either hands on or demonstration or a combination. Mandatory OJT is introduced only for the 1st type rating; OJT in addition to practical training would be acceptable for subsequent types but is not specifically addressed in the NPA. Mixing practical training and OJT or replacing practical training by OJT does not solve the inconsistencies (course length and content) discovered in the current practices (this was the reason why this rulemaking task was requested). This concept was broadly discussed within the rulemaking group and was subsequently rejected on the basis of difficulties with standardisation. However the issuance of the authorisation to the certifying staff within the maintenance organisation should be based on criteria including assessment of the competency. This is why AMC 145.A.35 has been reviewed.
The issuance of the CRS is regulated by Part M and Part-145 and has to be followed.

comment

212 comment by: *DGAC France*

In appendix III, Chapter 1 - Type training levels, it is proposed to delete item (c) in Level 3 as this is already covered by item (h) in Level 2, and as it is clear that Level 3 objectives include level 1 and level 2 objectives.

response

Partially accepted

The text has been adjusted in coordination with comments n'229 and 258

comment

229 comment by: *Airbus*

NPA Pages 42 and 43 of 116

Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66 Appendix III 1. Type training levels

Level 2 (h), Level 3 (c)

We suggest to delete SRM
Justification:
This is a level 3 issue, which is already identified in level 3 definition.

response *Partially accepted*

The text has been adjusted in coordination with comments n'212 and 258

comment *258* comment by: *Air France*

Appendix III Level 3 page 43 : Paragraph (c) should be canceled because already included in Appendix III Level 2 (h) page 42.

response *Partially accepted*

The text has been adjusted in coordination with comments n'212 and 258

comment *281* comment by: *EAMTC*

Level 2 point (h) structural repair manual should not be part of the level 2 training. It is not required for the B2 guy and is covered in level 3 for the B1

response *Accepted*

The text has been adjusted in coordination with comment n°212

comment *282* comment by: *EAMTC*

The proposed text for training level 2 state (Appendix III.1): "Basic system overview of controls, indicators, principal components including their location and purpose, servicing and troubleshooting". This should state "… *minor* troubleshooting" as troubleshooting is a level 3 item.

response *Accepted*

The word "minor" is added to "troubleshooting.

comment *337* comment by: *UK CAA*

Paragraph:
Part-66 Appendix III Practical Task List

Comment:
Add Flotation Equipment to task list.

Justification:
Major subject missing.

Proposed Text:
Add "Flotation Equipment " FOT and R/I to B1 listing.

response *Accepted*

"Emergency equipment" has been added in the practical training matrix.

comment 378 comment by: CAA-NL

Fundamental change in definition of levels seems to have taken place. ATA 104 is no longer followed, relation with maintenance is dropped. Title of levels is deleted. This means that the difference between levels in type training and basic training is even more confusing. Propose to redefine levels to have same meaning, both in type and basic training and enable the use of one set of definitions in type and basic training. (Level 1: general; Level 2: fundamentals; level 3: detailed knowledge)

response *Not accepted*

The objectives to be achieved for the basic knowledge and the type training are not the same and it was not possible to harmonise the definitions.

comment 379 comment by: CAA-NL

a) Level 1 (a): safety precautions can also be related to Avionic systems (e.g. RADAR). Propose to delete text after safety precautions.
b) Many clauses refer to aircraft, systems and powerplant. This however is not always done (see under level 1 (e). Furthermore there is a risk that part of the aircraft is missed e.g avionic systems. It is better to refer to the aircraft and systems in the aircraft. See also under 2.1(a) objectives of theoretical trainig refer to aircraft's applicable systems, structure etc…without specifying any system, not even Powerplant.

response *Noted*

The text is considered to be clear enough for both parts of the comment.

comment 380 comment by: CAA-NL

Level 2: (b) delete 'powerplant and systems' in 'Recall the safety precautions to be observed when working on or near the aircraft, powerplant and systems'..

response *Not accepted*

The text is considered to be clear enough.

comment 381 comment by: CAA-NL

Level 3 (a) Same comment on in consequent use of different elements of the aircraft such as 'aircraft systems', 'structures' etc.
a) In (a) also replace 'with other systems' by 'between systems':…knowledge of the aircraft and systems in the aircraft and interrelationships between the systems….

b) In (b) replace 'engine' by Powerplant to be consistent with level 1 and because a functional check of the engine involves the powerplant.

c) (c) Duration. Reference to the training needs analysis should be moved to (d) Justification and reference 'to support the application' should be in 147.A.15 Application.

response | *Partially accepted*

The text is considered to be clear enough for the three parts of the comment. Nevertheless, for consistency, the word "powerplant" has been retained

comment | *394* comment by: *CAA-NL*

Trouble shooting one word: troubleshooting (level 2(h) and level 3(c))

response | *Accepted*

Thanks for the comment - accepted and corrected

comment | *396* comment by: *CAA-NL*

Page 43 Appendix III Type Training and Examination Standard: level 3. change 'removal/installation' by 'removal and installation'
In "…bite and troubleshooting procedures …" insert hyphen: "...bite- and troubleshoot procedures...".

response | *Noted*

The Agency believes that the convention is well understood.

B. Draft Rules - I. Opinion (EC) No 2042/2003 - Part-66 - Appendix III - Type Training and Examination Standard - 2. Type training standard p. 43-53

comment | *36* comment by: *KLM Royal Dutch Airlines*

Part-66 Appendix III –2.2 Practical elements.

Practical training

KLM strongly opposes that servicing, removal/installation and troubleshooting tasks need to be performed on an operational aircraft for practical training. Practical training should, as much as possible, be performed in a simulated environment.

In Appendix III.2.2 a table is proposed which states the tasks to be completed in the practical training. The tasks include a.o. "Servicing and Ground Handling", "Removal / Installation" and "Trouble Shooting". The content description suggests that the practical training tasks should be performed in the real maintenance environment.

The practical training tasks are mostly competency, with minor differences between aircraft types in the actual performance of those tasks. The practical element to get competent for these tasks is covered by the OJT for the first type rating. Demonstration and/or simulation is sufficient for the second and higher type rating. In addition, simulation is much more efficient.
The NPA would require that an aircraft is available for the duration of the practical training. However, it can not be guaranteed an aircraft is available for a period (of minimum of two weeks), which would imply that the practical training can not be scheduled in a continuous period.

Part-66.A.45(g (ii) (III)) states for practical training: "This training does not

necessarily need to result in actual servicing or repair". We propose to change this text to: "This training *should* not result in actual servicing or repair" as training should never be the reason to perform maintenance on operational aircraft.

response

Noted

The proposed NPA allows the practical training to be either hands on or demonstration or a combination. Refer also to comment n°207 where the differences between practical training and the OJT is clearly explained
Simulation is recognised to be efficient and should be encouraged but it does not cover all the training needs. It would also not make sense that the trainee is fully trained on Synthetic Training Devices (STD) without having been trained on the aircraft itself.
In addition, STDs are not available for all aircraft types.

Regarding the last part of the comment, the full sentence ("This training does not necessarily need to result in actual servicing or repair") has been taken out.
The implementation of the practical training is left to the organisation performing the training.

comment

46 comment by: *Irish Aviation Authority*

Appendix III paragraph 2.1 (a) Objective:

The reference, in the Objective, to detailed knowledge implies that it should apply to level 3 only.

Suggestion; Change the first paragraph to 'On completion of the theoretical training course the student shall be able to demonstrate, to the levels identified in the Appendix III syllabus, theoretical knowledge of the aircraft's applicable systems .....p

response

Accepted

The suggestion has been retained and the text accordingly amended.

comment

47 comment by: *Irish Aviation Authority*

Appendix III paragraph 2.1 (e) Syllabus.

In the Appendix III syllabus the topic 'Instruments Systems' appears before chapter 22.
Comment: Instrument systems is part of chapter 31.

Solution: Delete reference to Instrument Systems.

response

Accepted

The tables have been corrected.

comment

48 comment by: *Irish Aviation Authority*

Appendix III paragraph 2.1 (e) Syllabus.

	Type training for B1 category, in respect of chapter 31 Indicating/Recording systems, is at level 3 whereas the B1 has no privileges in respect of chapter 31, except in the case where simple tests only are required to establish serviceability. Solution; Change B1 requirement from level 3 to level 2
response	*Not accepted* Refer to AMC 66.A.20(a), in the note just behind the definition of Avionics System, where it is made clear that electro-mechanical and pitot-static instruments are part of the B1 privileges.

comment	*49* comment by: *Irish Aviation Authority* Appendix III paragraph 2.3 (b) The second paragraph would be more effective if the wording was changed to read; Each task shall be signed by the student and countersigned by the direct supervisor or by an appropriately approved assessor.
response	*Accepted* The proposal has been retained and the text accordingly amended.

comment	*99* comment by: *ENAC, Italy, Production and Maintenance Directorate* Page 44: level of the training: the statement is vague and leave space to different interpretations. We strongly suggest to specify a threshold of acceptability (10%), and to specify that the "majority of the material must be at the higher level" is "for each subject of the syllabus"
response	*Not accepted* The NPA statement is designed to provide a standard to be considered when approving the course: the NAAs shall satisfy themselves that the level of the training is acceptable.

comment	*116* comment by: *CAA-Norway* (c) Duration Bullet point 2. Aircraft visit to visualize theoretical elements should be a part of the tution hours. (e) Content The table showing the syllabus uses numbers. The text above the table. New text: *"The numbers used are ATA chapters"* To avoid any possible misunderstandings

ATA 25A
Replace *"Electronic emergency equipment"* with *"electronic equipment"*
Electronics related to equipment and furnishing is not only emergency equipment.

ATA 74 Ignition
The training level for B2 is proposed to level 3 for ignition systems, but this is not a part of B2 basic training.

Add "Ignition systems" to Appendix I, module 14.

2.2 Practical element
(b) Content
If at least one maintenance task from all ticked item (both rows and columns in the table) shall be completed and assessed, a type training program for B1 on a Turboprop airplane will require 161 assessments, and this can't be the intention.

New text:
"At least one maintenance task from all ticked item (both rows and coloumns in the table below) shall be completet and signed off by an instructor.
4 to 8 of the completed maintenance tasks shall be assessed and signed off by an approved assessor.The assessments shall represent a cross section of the training completed "
2.3 On the Job Training

(b) Content

Remove the text "The assessment of the OJT is mandatory"
This is explained in 66.A.45

response

Noted

Not accepted Duration: The visualisation is understood in this context as component location, which is part of the practical training and does not impact the duration of the theoretical training.
Noted ATA classification: the table is based upon ATA104 but the Agency has developed its own specification
Accepted for ATA25A and ATA74

- **Not accepted** Assessment of the practical training: refer to proposed AMC 66.A.45(k)(2) and (l) Type/task training and ratings: "The assessment may be performed task by task or conducted as a final assessment at the end of the practical training and/or OJT".

Not accepted Assessment of the OJT: It is repeated for clarification; it does not detract.

comment

124 comment by: *Dassault Aviation*

Theoretical element duration
Dassault disagrees with the proposal for setting theoretical training minimum tuition hours.

It is Dassault's position that setting minimum hours for theoretical training duration is arbitrary and counter productive. Training standards should be

driven by sound educational principles that are objective based. Objectives should drive training content; and content will drive training duration.

As proposed, the Envisaged Changes specify a minimum duration for theoretical training and provides an exception process to allow approval of training with shorter than the regulatory minimum. It is Dassault's opinion that training approved under these exceptions will become the standard, and those meeting the regulatory minimum would become the exceptions.

Administration of all of the exceptions would be burdensome and inconsistent with training intent and requirements.

Justification of course duration
With aircraft becoming more integrated and complex, the primary technical source of information and guidance to assist EASA in establishing maintenance technician type rating training should be the OEM. To accurately, and precisely, define maintenance type rating requirements, the source of decision and responsibility for developing training specifications should be vested with the OEM.

It is crucial, that the OEM's establish training guidelines and standards for the aircraft they are responsible for under the aircraft type certificate. This would shift the burden of determining maintenance type ratings and related maintenance training to the OEM with EASA's support.

Dassault agrees with the Work Groups comments that Training hours will be based on a detailed training needs analysis (TNA). However, if the training needs analysis (TNA) demonstrates that a course of a shorter duration satisfies the specific training objectives, then make this the standard for training development.

Dassault would urge the Agency to require the training analysis process become the standard for developing training objectives, and that minimum tuition hours should not be set under these regulations.

Dassault's position is that the duration of the theoretical training should be based on Course Content established by specific objectives for the subject being taught. Dassault does agree that training should be based on competency, and should contain an examination / assessment in order to confirm that the objectives are reached. If the technician successfully completes the objective, as validated by an examination, then competency has been achieved.

Content
This updated Appendix III provides better comprehension and defines the theoretical training elements and requirements the Agency is proposing.

It is essential that the Regulatory Authority rely on OEM's to be responsible for the aircraft they produce. This assigned responsibility would assist the Agency in defining Task Analysis (TA) for the theoretical and practical parts of the type training and to evaluate the training providers training objectives. The OEM's could also provide guidance TA for model differences and additional specialty training.

Shifting the burden of determining related maintenance training specifications to the OEM as delegated by EASA would ensure the most appropriate aircraft

type and model training to each applicable level.

This would alleviate some of the Agency's workload in trying to define training standards by relying on the OEM's as a primary authority for training specification information, and promote standardization, and consistency for such training throughout the Agency's area of responsibility.

Practical element
Dassault agrees with the nature of these requirements. This updated Appendix III provides better comprehension and defines the practical training elements and requirements the Agency is proposing. In addition, the Glossary helps in defining the elements the technician is required to perform while completing the assigned tasks. However, the specific tasks, or the method of selecting the tasks, to be accomplished is still not addressed.

To further define assigned maintenance tasks required for the technician's type rating, Dassault would urge the use of a task analysis process to define comprehensive practical training tasks. For example; in the practical training program developed by Dassault for a new aircraft, the training tasks are referenced to Dassault procedure cards or tasks described in related Dassault documentation. In this manner, the tasks can be accurately defined and validated showing the tasks were completed using current maintenance documentation.

The practical tasks elements to be accomplished should be comprehensive and verifiable. In the past, tasks were presented in a non-specific generic format that could be used for any business aircraft.

In Dassault's development of practical training for new aircraft types, Dassault matched the intent of the old generic task to the actual related Dassault maintenance documentation to allow the practical training tasks to be specific to that Falcon model. This limits the uncertainty or misunderstanding of what practical training tasks the technician would be required to perform for a Falcon model type rating.

It is Dassault's position that each aircraft manufacturer should be responsible for developing a core set of practical task training objectives for guidance and use by the Regulatory Agencies.

response

Noted

The agency thanks Dassault for the long and fruitful comment

As explained in the explanatory note, the NPA is the result of a compromise between safety, harmonisation, abuses from certain undertakings etc: the Agency accepts the fact that this NPA is not the more elegant solution but it remains the best compromise.

Since it is impossible to cover all the diversity of aircraft and since Appendix III, where such duration is proposed, is of mandatory compliance (hard rules), any deviation would require the use of Article 14 from the Basic Regulation 216/2008. In order to avoid this situation the group decided that it was worthwhile to add flexibility provisions in this project. These flexibility cases have to be justified, reported and approved by the relevant authority.

The final proposal is to introduce a "minimum duration" and include flexibility provisions to allow justified deviations, both above and below from the defined

minimum hours.

Training hours will be based on a detailed training needs analysis (TNA). Course lengths may be below the proposed minimum though based upon detailed justification, or longer that the proposed minimum where this is required to satisfy the required teaching points.
A TNA guidance has been also proposed and explains how to go below the minimum duration when necessary and when justified.

The minimum duration for theoretical type training has been determined based on generic categories of aircraft and minimum standard equipment fit.

Deviation below the minimum duration is only permissible under exceptional circumstances. Training programme reductions for a particular aircraft type must be approved by the competent authority on a case-by-case basis appropriate to the type. For example, while it would be exceptional for a theoretical knowledge course to be below the minimum duration shown for a large transport category aircraft such as an A330 or B757, it would not necessarily be exceptional in the case of a General Aviation (GA) business aircraft such as a Learjet 45 or similar. Typically the training needs analysis (TNA) for a General Aviation aircraft course will demonstrate that a course of a shorter duration satisfies the requirement.

Minimum duration for a category of type training has been determined by reviewing a cross section (EU wide) of existing approved Part-147 courses.

A definition of tuition hour and minimum attendance has been proposed in this document.

The outcome of 21.039 (minimum maintenance syllabus) will help in setting the minimum duration.

comment

129 comment by: *Juan Ramon MATEOS CASADO*

OJT is not clearly justified to be necessary for experienced mechanics, with high skill on maintenance, even for the first type rating endorsement.

Inclusion of this requirement may has a very negative impact on industry:

- Already approved 147 courses, with only theoretical and practical elements, should be revised to include OJT.
- For new aircraft types in a company, experienced mechanics with no previous type rating endorsement cannot be entitled as certifiying staff until 4 months after the entry of the new aircraft.
- Most of small Part-145 approved maintenance organisations are not able to conduct OJT training and OJT assesments for its personnel, and this kind of training cannot be performed at a Part-147 approved maintenance traininig organisations.

response

Noted

Due to the fact that the existing requirement allows the practical training to be between 2 weeks and 4 months without clear guidance how to achieve it, a content based practical training was introduced in App III. In addition to that it was felt by the Agency that, for the relevant type rating, additional OJT on the

1st type rating - content defined in APP III of this NPA - should be introduced to follow a similar principle as in the existing AMC 66.A.45 (d) and to ensure that hands on training is part of the 1st type rating. This OJT should be performed on the type relevant to the type rating application to avoid confusion for the applicant.
The safety benefit is obvious, by doing so.
Then the Agency envisaged as an option that the OJT could be also compulsory for the 2nd type rating but the Agency came to the conclusion that this option was too demanding whereas most of the attendees were experienced enough on the same category of aircraft: it would have been a waste of time with no safety benefits although the costs would have remained very high. Experience in the past shows that the training was limited to the theoretical and the practical elements of the type training without exceeding two weeks for the practical part. No safety records justify such a decision.
The same concept applies for the flight standards where the training can be reduced for experienced pilots.
In addition to that, it has to be clearly understood that the Part-66 requirements are the basis for granting the type rating on the AML and are not the basis for the certifying staff authorisation within a maintenance organisation. This means that the maintenance organisation will have to check the competency before granting the privileges as certifying staff: 145.A.35 is considered to be the safety net.

Specific comment to the second bullet: the combination of 66.A.20 (b) §2 and 66.A.45(k) allows the certifying staff that have already endorsed an aircraft type of the same category on their license to exercice their privilege (if authorised by the maintenance organisation) as soon as they have passed the type training on the new brand aircraft type of the same category.

comment *140* comment by: *Aircraft Engineers International (AEI)*

2.2 Practical element

(a) Objective:

~~The objective of practical training is to gain competence in performing safe maintenance.~~

The objective of practical training is to gain the required competence in performing safe maintenance, inspections and routine work according to the maintenance manual and other relevant instructions and tasks as appropriate for the type of aircraft, for example trouble shooting, repairs, adjustments, replacements, rigging and functional checks. Correctly demonstrate the use of all technical literature and documentation for the aircraft, demonstrate the use of specialist/special tooling and test equipment for performing removal and replacement of components and modules unique to type, including any on-wing maintenance activity.

Proposal: Replace the ~~red stricken through~~ text with the green underline one

Reason:

The practical training objective described in App. III should be used to the highest possible extent as a guideline for the assessment, checking that the course objectives have been met. The Practical Training List described under

	2.2 Practical Element together with the current proposed text (one general line) cannot and will not fully substitute the objective description required.
response	*Accepted* The text has been slightly adjusted.

comment *141* comment by: *Aircraft Engineers International (AEI)*

Engine Monitoring and Ground Operation	**X / -**	**X** - - - -	- - - - -

Comment: Add an **X** to the table as indicated above.

Reason:

AEI is of the opinion that Engine ground running should be a mandatory part of the practical Type Training (see AEI's comment # 135 on this subject). Therefore it follows that a B1 Certifying Staff should be trained in FOT of engine operation in this table, as a logical consequence.

response *Not accepted*

In the past it was commonly accepted by the Industry that the engine run up was not part of the type training because it should be addressed through a very specific training.
Some of the justifications given were that:

- starting and operating the engines, skills for checking engine performance characteristics, normal and emergency engine operation, associated safety precautions and procedures is very demanding and requires specific competency;
- all the training providers do not have adequate simulators and/or permanent access to real aircraft to train people adequately.
- the maintenance organisation's responsibility is to train a person to a specific maintenance task before an authorisation is issued.

ATA 104 has been built that way and confirms that:

- a specialised level of training was required for this kind of training (level IV IAW ATA104)
- Prerequisites for the trainees attending this level of training shall be determined by airframe/engine manufacturers and operators.
- at the completion of engine run-up training the trainee will be able to safely operate engine after a major repair and/or replacement of engine components.

For these reasons, it was left to the maintenance organisation to select restricted certifying staff (experience, base maintenance etc) for which they wanted further training about the engine run –up to be given. Such policy was generally described through an internal procedure pertaining to the MOE. It means that in accordance with 145.A.35(a), the maintenance organisation is responsible for checking the competency of their certifying staff before granting the privileges. Therefore this issue was not considered to be part of a standard type training.

In addition, no safety records or occurrence reporting adversely contradict the current industrial practices since years.
The economic impact will be of significant importance if an amendment to the rules will make the engine run-up compulsory for all the certifying staff.
During the meetings held by group 66-011, this position was confirmed by all the members except by one pertaining to the organisation here commenting, based on the fact that it will increase the level of safety although that, practically speaking, there is no need to train every personnel.
Nevertheless, due to the insistence of the member rejecting the common position of group 66-011, it has been decided to seek the opinion of the stakeholders during the consultation process.
The results of this consultation contained in this document confirms that there is no need for systematically making the engine run up training part of the full type training (see comments n°118; 135, 42, 412, 38, 201 202 411 277).
For that purpose, AMC 145.A.35 has been re-written in order to specifically reflect the issue of the specific trainings when needed, in particular for the engine run-up.

comment *142* comment by: *Aircraft Engineers International (AEI)*

Engine Storage and ~~Ground~~ ~~Operation~~ Preservation	**X / -**	-	**X**	-	-	-	-	-	-	-

Editorial comment:

Replace the ~~red stricken through text~~ with the green underlined one.

Reason:

Presumably Preservation was meant, since storage is mentioned here.

response *Accepted*

The proposal has been accepted.

comment *199* comment by: *James Pryor*

From my experience I don't believe the levels go far enough for B2 license holders for ATA 49. We have to learn FADEC and indications for ATA 73 and 77 to level three but an APU to only level one. The problem with this is that a B2 holder will not be able to certify tasks on an APU such as a ECB change or an Thermocouple. There is very little logic in classing an APU any differently from a main engine as effectively they are the same. I would suggest that the levels for APU be reviewed so that a similar level of certification for ATA 49 is available for a B2 certifiers as there is for various engine controls and indication on main engines.

response *Partially accepted*

The type rating training alone does not determine the competence of a certifying person. Refer to AMC 145.A.35 (a) where further guidance is now given.
The syllabus for the B2 has been increased to level 2 for all electrical and avionics systems in a mechanical system as long as the test remains simple.

comment	*202* comment by: *SAS Technical Traning* Power Plant has LOC, FOT and SGH ticked in the table. Glossary for FOT is Functional/Operational and there is a risk that organizations or authorities interpret this as a demand to include engine start in the practical training. Please clarify the intent.
response	*Noted* Engine run up is not part of the type training. In the past it was commonly accepted by the Industry that the engine run up was not part of the type training because it should be addressed through a very specific training. Some of the justifications given were that: • starting and operating the engines, skills for checking engine performance characteristics, normal and emergency engine operation, associated safety precautions and procedures is very demanding and requires specific competency; • all the training providers do not have adequate simulators and/or permanent access to real aircraft to train people adequately. • the maintenance organisation's responsibility is to train a person to a specific maintenance task before an authorisation is issued. ATA 104 has been built that way and confirms that: • a specialised level of training was required for this kind of training (level IV IAW ATA104) • Prerequisites for the trainees attending this level of training shall be determined by airframe/engine manufacturers and operators. • at the completion of engine run-up training the trainee will be able to safely operate engine after a major repair and/or replacement of engine components. For these reasons, it was left to the maintenance organisation to select restricted certifying staff (experience, base maintenance etc) for which they wanted further training about the engine run –up to be given. Such policy was generally described through an internal procedure pertaining to the MOE. It means that in accordance with 145.A.35(a), the maintenance organisation is responsible for checking the competency of their certifying staff before granting the privileges. Therefore this issue was not considered to be part of a standard type training. In addition, no safety records or occurrence reporting adversely contradict the current industrial practices since years. The economic impact will be of significant importance if an amendment to the rules will make the engine run-up compulsory for all the certifying staff. During the meetings held by group 66-011, this position was confirmed by all the members except by one pertaining to the organisation here commenting, based on the fact that it will increase the level of safety although that, practically speaking, there is no need to train every personnel. Nevertheless, due to the insistence of the member rejecting the common position of group 66-011, it has been decided to seek the opinion of the stakeholders during the consultation process. The results of this consultation contained in this document confirms that there

is no need for systematically making the engine run up training part of the full type training (see comments n°118; 135, 42, 412, 38, 201 202 411 277).
For that purpose, AMC 145.A.35 has been re-written in order to specifically reflect the issue of the specific trainings when needed, in particular for the engine run-up.

comment *206* comment by: *British Airways Engineering*

In proposed *appendix III*, Type Training and Examination Standard, reference syllabus table, turbine engines (Pages 41 to 55) it states that the B1 engineer level of training should be to Level 3. (Page 48)

NPA PROPOSAL

Appendix III ATA chapter 73A, (Engine FADEC systems) states that the B1 engineer level of training should be to Level 3. (NPA 2007-07 , page 48)

SUGGESTED AMENDMENT

We suggest that this should be set to level 2

This would enable the B1 engineer to:

Change, test and perform duplicate inspections on FADEC/FAFC engine systems including input monitoring testing.

Any non-mechanical fault found during testing must be referred to appropriately authorised B2 engineer for further investigation.

response *Not accepted*

The B1 privileges include the certification of the complete engine.

comment *213* comment by: *DGAC France*

The fact that type training courses duration should vary from short to very long courses is recognized by DGAC France. However, the proposed NPA gives the same number of minimum theoretical training tuition duration for all aircraft above 5700 kg. We believe that the training duration should be more detailed and thus propose in Appendix III, Chapter 2 - Type training standard, 2.1(c), the following table :

Aeroplanes with 100 passenger seats or more	
T1	150 H

Aeroplanes with more than 20 passenger seats and less than 100 passenger seats	
T1	120 H
T2	90 H
T4	25 H
Aeroplane with 20 passenger seats or less and Multi engine helicopter and helicopters where type training is required	
T1	90 H
T2	60 H
T4	25 H
Non large non complex aircraft (**training not required**)	
T1	30 H 25 H 18 H

response *Partially accepted*

The "seat" discriminant is not accepted.
However there are now 3 categories:

- Below 5.7T
- Between 5.7T and 30T

- Above 30T

comment

217 comment by: *Luftfahrt-Bundesamt*

A greater distinction between the model groups would be more helpful to determine the

necessary training (for example Do.228 200 etc.)

There should be a recommendation for the maximum upper limit of the training hours per day.

90% presence is mandatory. What happens, if there aren't 90%? Guidelines are required.

response

Accepted

1) Partially Accepted
More categories for the minimum duration
There are now 3 categories:

- Below 5.7T
- Between 5.7T and 30T
- Above 30T

2) Accepted
Maximum number of training hours per day
The regular number of training hours per day is generally between 6 and 8 hours during regular office hours; in exceptional cases, deviation from this standard may be envisaged under the control of the quality system of the training organisation and according to a procedure described in the MTOE. This standard was added to Appendix III to Part-66.
For consistency, an AMC has been added to 147.A.200(f) (basic training course)

3) Accepted
Attendance
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.
The resulting text has been adjusted in Part-66 appendix III (type training) and will become mandatory for all type training provided by a PART 147 organisation or in the case of a direct approved course).
For consistency, the Agency recommends to add the same minimum attendance criterion to the basic knowledge training in a PART 147 environment (see new AMC 147.A.200 (f)).

comment

220 comment by: *Snecma Services*

According to AMC 147.A.300, Training may be sub divided in airframe type training, power plant type training or avionic type training. Could you provide in the chart for each sub course the minimum tuition hours ?

response

Not accepted

It is impossible to go to that level of details as technology varies from one aircraft to another.
The course design will take into account the Training Need Analysis and this would determine the tuition hours relevant for any complete or part course.

comment

222 comment by: *Snecma Services*

Could you provide the definition of FADEC Systems, for practical training R/I, which parts replacement have to be train (ECU, HMU, Sensors...)?
Why Air and Oil have to be train for R/I, and not the Fuel.
For Exhaust there is not R/I, but Thrust Reverser inhibition and de-activation are part of safety topics and should appeared.

For TS the Ignition chapter and the Engine Monitoring and ground Operation should be tic

response

Not accepted

The list is not exhaustive and should be used as a reference point.

comment

230 comment by: *Airbus*

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Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66

Appendix III 2.1 (e) Introduction

Replace "Introduction Module Title" by "Introduction Module".

Replace "All subjects must be trained …." By "This subject must be trained at a minimum to level 1 and is applicable to all type training courses instead of all subjects…"

Justification:
The introduction module is one subject.

response

Accepted

The table has been reformatted and corrected, so that no confusion exists anymore.
The numbers used are now called "chapters" and for the type training examination standard has been adjusted.

comment

231 comment by: *Airbus*

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Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66

Appendix III 2.1 (e) , 52 Doors

Doors: Remove ATA levels.

Justification:
Part of structure chapter.

response

Accepted

The table has been corrected.

comment

232 comment by: *Airbus*

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Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66

Appendix III 2.1 (e)

Instrument System: Remove line

Justification:
Already covered in ATA chapter 31

response

Accepted

The tables have been corrected: "instrument systems" is now chapter 31A.

comment

233 comment by: *Airbus*

NPA Pages 46/47 of 116

Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66

Appendix III 2.1 (e), Section Turbine Engines

70 Standard practices engines: remove line.

Justification:
Already included in module title.

Should be level 1 to be consistent with other standard practices.

response

Not accepted

"Standard practices" has been adopted for each module as the first issue to be taught in the table and sometimes the level may differ from one module to another.

comment

234 comment by: *Airbus*

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Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66

Appendix III 2.1 (e), Section Turbine Engines
Fire Protection System: Remove line

Justification:
Already included in ATA 26 .

response *Accepted*

The line has been removed.

comment 235 comment by: *Airbus*

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Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66

Appendix III 2.1 (e), Section Turbine Engines

Engine monitoring and ground operation.; Remove line

Justification:
Already included in ATA 77 & 31.

response *Accepted*

The line has been removed.

comment 236 comment by: *Airbus*

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Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66

Appendix III 2.1 (e), Section Turbine Engines

Engine storage & preservation: Remove line

Justification:
Already covered in ATA 70.

response *Accepted*

The line has been removed.

comment 237 comment by: *Airbus*

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Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66

Appendix III 2.2 Practical element, (b) Content , "Safety and warning devices"

"Safety and warning device"

For B1: remove LOC and FOT

For B2: Keep only LOC and SGH

Justification:
Already covered

response *Partially accepted*

The table has been adjusted.

comment *238* comment by: *Airbus*

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Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66

Appendix III 2.2 Practical element, (b) Content, "Hydraulic Power "

Hydraulic power for B2: remove LOC and SGH

Justification:
No consistency with appendix 3.

response *Not accepted*

The privileges of the B2 category staff will be extended to the electrical and avionic part of the mechanical systems.

comment *239* comment by: *Airbus*

NPA Page 51 of 116 Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66 Appendix III 2.2 Practical element, (b) Content , "Landing Gear "

Landing Gear: For B2, remove LOC.

Justification:
No consistency with appendix 3

response *Not accepted*

The privileges of the B2 category staff will be extended to the electrical and avionic part of the mechanical systems.

comment *240* comment by: *Airbus*

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Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66

Appendix III 2.2 Practical element, (b) Content , "Auxilliary Power Unit (APU)"

APU: remove FOT and SGH

Justification:
no consistency with appendix 3

response *Accepted*

The table has been adjusted.

comment *241* comment by: *Airbus*

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Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66

Appendix III 2.2 Practical element, (b) Content , "Engine Turbine / Turbo Prop /…"

Engine turbine…. For B2 remove FOT

Justification:
no consistency with appendix 3

response *Accepted*

The table has been adjusted.

comment *242* comment by: *Airbus*

NPA Page 52 of 116

Draft Opinion to Commission Regulation (EC) 2042/2003, Annex III Part-66

Appendix III 2.2 Practical element, (b) Content , "Engine Monitoring and Ground Operation" and "Engine storage and Ground operation"

Engine monitoring and Ground operation: Remove line

Engine storage and Ground operation: Remove line

Justification:
No consistency with appendix 3

response *Accepted*

The line has been removed.

comment *247* comment by: *Nayak Aircraft Services*

p. 44 Duration
Minimum participation time will be at least 90%…….. It is not noteed what happens if the student does not reach this 90%, which consecquences will follow ?

response *Accepted*

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.
The resulting text has been adjusted in Part-66 appendix III (type training) and will become mandatory for all type training provided by a Part-147 organisation or in the case of a direct approved course).
For consistency, the Agency recommends to add the same minimum attendance criterion to the basic knowledge training in a Part-147 environment (see new AMC 147.A.200 (f)).

comment *248* comment by: *Nayak Aircraft Services*

p. 44 Duration
We request also a recommendation about the MAXIMUM tutation hours a day.

response *Accepted*

Maximum number of training hours per day
The regular number of training hours per day is generally between 6 and 8 hours during regular office hours; in exceptional cases, deviation from this standard may be envisaged under the control of the quality system of the training organisation and according to a procedure described in the MTOE. This standard was added to Appendix III to Part-66.
For consistency, an AMC has been added to 147.A.200(f) (basic training course)

comment *259* comment by: *Air France*

Appendix III paragraph 2.2 (b) page 51 : The complexity of tasks for the scope of B2 is not in accordance with the change of privileges of B2 (see 66.A.20 3 (i) page 25).

response *Accepted*

Appendix III has been reviewed and revised as necessary.

comment *275* comment by: *Esko HIETANEN*

To enchance training for ATA 42, 44 and 46 for A/C types where are needed.

response *Noted*

ATA 42/44 and 46 have been added in both the basic knowledge training and the type training: therefore the comment is not understood.

comment *283* comment by: *EAMTC*

Clarification of consequences when student are absent more than 10 %? Today several Part-147 organizations have procedures in place for absent students, for instance self-study to cover missed topics. 10 % absence is equal to 2-3 days on a course, normaly no problem to cover with self study. Possible with the new 90 % rule?
What happened if somebody misses more than 10%? Not allowed to take the exam.? If there are phase examinations in place it would be difficult to follow the rule when 2 exams are already passed!

	Clarification on that point is highly appreciated
response	*Accepted* 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. The resulting text has been adjusted in Part-66 appendix III (type training) and will become mandatory for all type training provided by a Part-147 organisation or in the case of a direct approved course). For consistency, the Agency recommends to add the same minimum attendance criterion to the basic knowledge training in a Part-147 environment (see new AMC 147.A.200 (f)).

comment	*286* comment by: *EAMTC* We would vry much appriciate a recommendation limiting the daily tuition hours to six.
response	*Accepted* The regular number of training hours per day is generally between 6 and 8 hours during regular office hours; in exceptional cases, deviation from this standard may be envisaged under the control of the quality system of the training organisation and according to a procedure described in the MTOE. This standard was added to Appendix III to Part-66. For consistency, an AMC has been added to 147.A.200(f) (basic training course)

comment	*287* comment by: *EAMTC* (d) Justification of course duration:All course applications must be supported by detailed training needs analysis. Comment:The intent must be for Part-147 org to analyze and prepare the course and lessons. The TNA must not be a paper product when developing the course; the outcome of the TNA must be a product useable by the instructor to conduct the lesson. Information based on approved type design, if necessary. **Comment:** The wording "approved type design" will in a Part-147 organization create confusion. We assume the intent of the rule is to narrow the course contents and duration, to the documentation describing the aircraft type. If this is the intent it will be advisable to change wording to "information based on approved manuals, if necessary".
response	*Noted* The Agency cannot change the wording to “approved manuals” because all the documents derived from the Instructions for Continued Airworthiness are not formally approved such as AMM, TSM etc.

comment	*288* comment by: *EAMTC* 70A Constructional arrangement and operation (Installation Inlet, Compressors, Combustion Section, Turbine Section, Bearings and Seals,

Lubrication Systems)
Comment: With current contents for subject, difficult to implement in training. What to teach when giving L1 and arrangement and operation is mentioned? Compare also with 70B.

response

Not accepted

General description of engine construction from the operational point of view has to be addressed at level 1 (e.g. basis for better understanding of necessary safety precaution).

comment

289 comment by: *EAMTC*

(b) Content:
At least one maintenance task from all ticked item (both rows and columns in the table below) shall be completed and assessed as part of the approved practical training.
Comment: This text could be interpreted as mandatory to assess (by the approved assessor) each task. Re-write to

"……..be completed ~~and assessed~~ as part of the approved practical training."

A practical training list today hold hundreds of maintenance task, it will be practically impossible to conduct a relevant assessment for each task. The student signs each task when he has performed and is confident with the task particulars.

The assessment of the student should be conducted as a final assessment at the end of practical training. This is supported by new AMC 66.A.45(g)(1)(ii) and (g)(1)(iii) (Working Group 66.011)

AMC 66.A.45(g)(1)(ii) and (g)(1)(iii) Type/task training and ratings (page 63)

response

Not accepted

Assessment of the practical training: refer to statement proposed in AMC 66.A.45(k)(2) and (l) Type/task training and ratings: "The assessment may be performed task by task or conducted as a final assessment at the end of the practical training and/or OJT".

comment

290 comment by: *EAMTC*

well done!

response

Noted

Noted

comment

299 comment by: *NB/BPvL*

2.2 Practical element

(a) Objective:

~~the objective of practiscal training is to gain competence in performing safe maintenance~~

	The objective of practical training is to gain the required competence in performing safe maintenance, inspections and routine work according the applicable manuals, instructions or task for the relevant type of aircraft. The Use off all technical literature and documantation for the aircraft, the use of special tooling and test equipment for removal and installation an performing functional checks including any on-wing maintenance as well as proper troubleshooting shall be demonstrated. Proposal: replace the striken text with the underline one Reason: The new text discribes the objective more exactely.
response	*Accepted* The text has been slightly adjusted.

comment	*322* comment by: *Walter Gessky* **Appendix III, 2.1(c) duration (page 44):** **a)** Change the minimum tuition hours for level C for a MTOW of more than 5700kg from 25 to **"30** hrs". **Justification:** The minimum tuition hours for level C for aeroplanes of a MTOW of more than 5700kg are too low. The minimum should be 5 days a 6 hours (= 30 hrs). **b)** The minimum tuition hours for level B1.1 and B1.2 for aeroplanes with an MTOW of 5700kg and below: Change B1.1 to **100 hrs** and B1.2 to **80 hrs** **Justification:** The minimum tuition hours for aeroplanes with an MTOW of 5700kg or below seams to be too high. Proposed average duration of training: B1.1: Minimum 17 days a 6 hours = 102 hrs including technical simulator session, B1.2: Minimum 14 days a 6 hours = 84 hrs including technical simulator session.
response	*Accepted* **Theoretical portion of the type rating training: minimum duration** There are now 3 categories: • Below 5.7T • Between 5.7T and 30T • Above 30T For consistency reasons, the figures have been sometimes adjusted In addition, for the non –pressurised piston engine aeroplane below 2000kg MTOM, the minimum duration can be reduced by 50%. For helicopters pertaining to group 2 (single turbine or single piston engine

other than complex motor-powered aircraft and requiring no aircraft type rating, the minimum duration may be reduced by 300%.

comment

324 comment by: *Walter Gessky*

Appendix III, 2.1(e) content (page 45):

change the following:

Time limit/maintenance checks and levelling and weighing must be trained at a minimum to **level 3**

Justification:

Time limitations/maintenance checks and levelling and weighing are very important for B1/B2 personal.

response

Partially accepted

- The reasons to train this issue at level 3 are not fully understood.
- For time limit and maintenance check, the trainee shall need to know the general principles addressed.
- For levelling and weighing, level 3 could be feasible for B1 staff. the table has been adjusted.

comment

352 comment by: *AgustaWestland*

Just to be sure, for the multi-engine helicopters list we interpretate your reference to B1.1 as B1.3 and B1.2 as B1.4.
However we would not recommend the theoretical element to exceed 100 hours.
In our opinion the cost for Company sending personnels to attend type rating courses has a remarkable difference between 100 and 120 hours (it means that they have to stay an extra week).
While 20 hours of difference in theoretical knowledge in a type training course does not make such a big difference in therms of contents.
Instead we would strongly recommend the implementation of some home study before the course start, supported by for example distance learning or self-study, as sime times recommended by FAA in their sample course curriculum.

response

Partially accepted

(first part) Accepted (clerical error B1-3)

(second part) Not Accepted
It is to the training organisation to provide an efficient training to its customers. In addition, for helicopters for which the maintenance is very sensitive due to the inherent specific technology, the training is of importance. Training duration should not be based on costs but on safety objectives and the Training Need Analysis should be the tool to set the duration. In addition flexibility provisions for the duration are described in Appendix III sub-paragraph 2.1(d) when justifications allow to go below that minimum

comment

358 ❖ comment by: *CAA-NL*

Training Needs Analysis

a) Guidance on the generation of course profile is excluded (see item 36). Referring to detailed TNA is good suggestion but many organisations will wish to have more guidance on how to perform it. AMC can list some elements of it.
b) Is it possible to get the details of the EU wide review of approved courses? [66-011].

c) If the training is based on a TNA, probably the conclusion would be that no training is required for simple tasks e.g. location task for wings. A proper training needs analysis would reduce the task lists.

d) It is essential that in the design-phase the consequences for training/examinations/licensing are considered for maintenance (and operator alike). This applies also to STC's etc. If this is done, courses can be updated easily and Part-66 **type ratings defined before certification.**

response

Noted

a) Accepted
A TNA guidance has been developed. Refer to GM to Appendix III to Part-66 (final text for the CRD to NPA 2007-07)
b) **Not accepted**
The group in charge of this rulemaking task had access to such data; however these data are not Agency property and therefore such data cannot be published under EASA responsibility.
c) Noted
d) Noted
This comment is passed to rulemaking task 21-039.

comment

367 comment by: *CAA-NL*

Practical training and AMC 66 Appendix II.

a) The difference between practical training, practical experience and OJT is not explained. Before publication of this NPA, App II was a list of tasks to be included in experience, without assessment. Now the list of tasks is referred to, as OJT with assessment. Suggest to delete "experience" from 2.3(b). Suggest to make a clear difference between training and experience. In training, special attention can (and should) be drawn to rare occurrences, where practical experience usually is limited to common occurrences. OJT is a specific way of performing practical training. It requires a plan, a trainer (coach) and an assessment. Practical experience only requires a list of tasks and evidence that they have been performed. Practical training and OJT requires a plan, an instructor and an assessor.

b) Part-66 Appendix III 2.2 Practical element: introduce two sub chapters:

i) 2.2.1 Practical training

ii) 2.2.2 On The Job training

c) In order to facilitate quick processing CAA NL prefers to leave the documentary evidence within the approved organisation ready for audits and receive only a certificate or statement, based on that evidence, from the quality manager.

d) 147 organisation doing theoretical training only, should provide a matrix with practical training elements to be covered. Ref GM66.45(d). this would ensure that interfaces are covered and can be verified during audits.

response

Noted

- a) **Noted**
  The NPA brings a clearer definition between the practical training and the OJT and the confusion introduced by the former AMC 66.A.45 (d) does not exist anymore.
  In the case of a first type training where a type training is required, the list will be used to compose the OJT's scope with assessment
  When the type training is not required for general aviation (non complex aircraft), this list will be used to demonstrate adequate experience without assessment; in this case, there will be a final examination according to 66.A.45 (m)
  Refer also to comment n°207
- **b) Not Accepted**
  Subparagraph 2.2 only deals with the practical training. The OJT is addressed in sup-paragraph 2.3
- **c) Noted**
  This proposal is already described in 66.A.45 (k) 2
  Practical training is done in a Part-147 organisation or an organisation accepted by the competent authority (in the case of a course directly approved - it could be a maintenance organisation) although OJT is only performed in a maintenance organisation.
- **d) Not accepted**
  It is the responsibility of the practical training provider to design the practical training and to make sure it is based on the theoretical training. The practical training provider will have to ensure appropriate coordination with the theoretical elements.
  66.B.115 sub-paragraph 5 states that where the aircraft type training is covered by more than one course, the competent authority shall be satisfied prior to the type rating endorsement that the content and the length of the courses fully satisfy the scope of the license category and that the interface areas have been adressed.
  The new table about the content of the practical portion (appendix III to Part-66, sub-paragraph 2.2, should help as well as AMC 66..45(k)(2) (recommended duration).

comment

368 comment by: *CAA-NL*

Practical training and AMC 66 Appendix II.

a) The difference between practical training, practical experience and OJT is not explained. Before publication of this NPA, App II was a list of tasks to be included in experience, without assessment. Now the list of tasks is referred to, as OJT with assessment. Suggest to delete "experience" from 2.3(b). Suggest to make a clear difference between training and experience. In training, special attention can (and should) be drawn to rare occurrences, where practical experience usually is limited to common occurrences. OJT is a specific way of performing practical training. It requires a plan, a trainer (coach) and an assessment. Practical experience only requires a list of tasks and evidence that they have been performed. Practical training and OJT requires a plan, an

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response *Noted*

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- **d) Not accepted**
  It is the responsibility of the practical training provider to design the practical training and to make sure it is based on the theoretical training. The practical training provider will have to ensure appropriate coordination with the theoretical elements.
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  The new table about the content of the practical portion (appendix III to Part-66, sub-paragraph 2.2, should help as well as AMC 66..45(k)(2) (recommended duration).

comment *382* comment by: *CAA-NL*

a) Minimum participation time (90%) is Part-147 issue and should be moved to Part-147.
Probalby the same can be introduced for basic training.

b) The minimum hours are too high; most 147 schools will try to justify lower numbers. Optimum as defined By EAMTC some years ago with hours per subject has proven to be helpful in ensuring the correct duration. For lower end of B1.1 above 5700 kg this rarely ends above 100 hours. B1.2 above 5700 kg lists mainly old and simple aircraft (DC3, DC4, Catalina) hence 120 hours is often too much.

response

Partially accepted

1) Accepted

Attendance

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.
The resulting text has been adjusted in Part-66 appendix III (type training) and will become mandatory for all type training provided by a PART 147 organisation or in the case of a direct approved course).
For consistency, the Agency recommends to add the same minimum attendance criterion to the basic knowledge training in a PART 147 environment (see new AMC 147.A.200 (f)).

2) Partially Accepted

Minimum duration

There are now 3 categories:

- Below 5.7T
- Between 5.7T and 30T
- Above 30T

For consistency reasons, the figures have been sometimes adjusted
In addition, for the non –pressurised piston engine aeroplane below 2000kg MTOM, the minimum duration can be reduced by 50%.
For helicopters pertaining to group 2 (single turbine or single piston engine other than complex motor-powered aircraft and requiring no aircraft type rating, the minimum duration may be reduced by 30%.
For B1.1 between 5.7T and 30T MTOM, the duration has been reduced to 80h. B1.2 was reduced to 60h for the same category of aircraft.
In addition, the Training Need Analysis should help in determining the appropriate duration of the type training and justify any need to go below the proposed duration without impairing the objectives of the course.
A methodology through a GM has been proposed in the resulting text.

comment

383 comment by: *CAA-NL*

a) Page 45 (e) Content Table: the first row was in TGL 40 called "Introduction module" and contained also "Engine ground running, B2 module-safety items/mechanical interface, B1 module-safety items/avionics interface". General safety items and interface aspect should be included. The wording however could be improved. Engine ground running is not necessarily included. Standard practices can be referred to as ATA chapter 20.
b) Reference is made to ATA chapters. ATA chapters are defined in ATA iSpec 2200. Where is the use of A, B and C defined or explained? (see page 46 ATA 21 A, 21 B etc.)

response

Partially accepted

- **A) Partially accepted**

This proposal should be covered by "standard practices"
Chapter 20 has been added to "standard practices"

- **B) Not Accepted**

The table is based upon ATA104 but the Agency has developed its own specification.

comment

402 comment by: *Liam SISK*

On page 46, "Instrument Systems" is listed between 21C and 22 with no ATA chapter associated with it. ATA 31 "Indicating/Recording Systems" is also included on page 47. There is a lack of clarity as to what is required with reference to ATA chapters. B1 AML holders have to complete both areas at Level 3. This would require B1 AML holders to complete Aural Warning, Master Caution, Clocks and Flight Data Recorders at Level 3 - should this not be at Level 1?

response

Accepted

The tables have been corrected: "instrument systems" is now chapter 31A.

comment

421 comment by: *Eurocopter*

Chapter 2.1. Theorical element - e) Content (page 46)
(Helicopter scope)

Modify B2 column to take in account **Monitoring and Indicating** for Hydraulic power, Landing Gear, Rotors and transmissions (ATA 29, 32, 62, 63, 64, 65) as the following

										B2
29	Hydraulic power									1
29A	Hydraulic power Monitoring and Indicating									3
32	Landing Gear									1
32A	Landing Gear Monitoring and Indicating									3
62	Rotors									1
62A	Rotors Monitoring and Indicating									3
63	Rotor Drives									1
63A	Rotor Drives Monitoring and Indicating									3
64	Tail Rotor									1
64A	Tail Rotor Monitoring and Indicating									3
65	Tail Rotor drive									1

65A	Tail Rotor drive Monitoring and Indicating												3

Justification:

- B2 basic training encompass the scope of electronic, elect rical and electro-mechanic systems

- To take in account helicopter specificity

- Tasks currently being performed by most of the B2 license holders

- Helicopter training programs are already covering the level 3 in those chapters

response *Accepted*

All the suggestions have been accepted and the table has been adjusted.

B. Draft Rules - I. Opinion (EC) No 2042/2003 - Part-66 - Appendix III - Type Training and Examination Standard - 3. Type training examination standard p. 53-54

comment *37* comment by: *KLM Royal Dutch Airlines*

Part-66 Appendix III – 3. Type training examination standard (a)

Type training examination

It is stated to allow an average of 90 seconds for examination questions. In addition, the requirement to use multiple choice questions is maintained.

We propose not to include a time per question, but the maximum time allowed for the complete examination (e.g. 1 hour for a five day training). In addition, we propose not to restrict the type of questions used.
Reason is that the multiple choice type is less suitable for level 3 questions. Level 3 questions test the understanding and application of the subject and often the use of technical documentation during the examination is required. In these cases a time of 90 seconds per question is not sufficient.

response *Partially accepted*

"The total time is based on the total number of questions" has been added to the text.
It does not mean that the question should "disappear" from the "screen" after 90s.
Some examinations are still based on paper print-outs.

comment *50* comment by: *Irish Aviation Authority*

Appendix III paragraph 3 (b).

The intent of this paragraph is the same as Appendix II paragraph 1.1 and Appendix III paragraph 4 (e) but the wording in all three are not the same.

Solution; for uniformity, use the wording in Appendix II paragraph 1.1

response *Accepted*

Now the requirements are the same for Appendix II §1.1 and Appendix III §3, using the same wording.

comment *100* comment by: *ENAC, Italy, Production and Maintenance Directorate*

Page 53: OJT: we suggest to specify the minimum duration of the mandatory OJT for each subcategory. We propose 2 months for B1.1, B1.3 and B2

response *Not accepted*

The OJT should be based on the scope of activities to be performed (content). The duration depends on the availability of the aircraft.

comment *101* comment by: *ENAC, Italy, Production and Maintenance Directorate*

Page 53; type training examination standard:

For level III courses we suggest to specify a limit for the number of questions concerning the introduction module, in order to avoid to affect the general level of the examination.

Page 54: type training examination standard:

f) we suggest to remove "on a sampling basis"

j) the statement is vague; we strongly suggest to specify a limit for the number of question of lower level

response *Partially accepted*

Not accepted

- (page 53) The syllabus itself prescribes a duration ratio between the level 3 and the level 1 training scope, which includes also the scope of the introduction module. As the number of questions is directly linked to the number of tuition hours, a detailed prescription of number of questions would not be appropriate.

Accepted

- (page 54) The word "sampling basis" has been deleted.

Not Accepted

- j) The syllabus itself prescribes a duration ratio between the level 3 and the level 1 training scope. As the number of questions is directly linked to the number of tuition hours, a detailed percentage would not be appropriate; therefore it is felt that flexibility should be left to the organisation

comment *125* comment by: *Dassault Aviation*

Examination standard
Dassault disagrees with defining a number of test questions on a per training hour basis where the number of test questions could, in fact, be 1 examination question for one hour of instruction.

It is Dassault's position that the current regulation that specifies the number of questions must be subject to no less than a minimum of two questions per Syllabus subject is more effective in determining student competence.

For examination purposes, it is recommended that Part-147 organizations should build a database of test questions developed from each objective in each module of instruction. Part-147 organizations can then generate random test questions developed from course objectives in examinations that meet the intent of the existing Regulation Part-66, Appendix III – 3.3 Type training examination standard.

Module phase examinations

Technicians that successfully pass an end of module phase examinations should not be tested over the same material on a final examination. The students have demonstrated competency for the module taught by successfully passing the end of module examination based on specific objectives defined for that module.

Once a technician has passed a module phase examination, it is not necessary for the technician to be retested with a final exam.

Dassault would like clarification in the final rule regarding examination procedures. Students should be given either module phase examinations or a final examination, but not both.

response

Partially accepted

A) Partially Accepted (for examination standard)

- The text now introduces the learning objectives:
  "The number of questions must be at least 1 question per hour of instruction, The competent authority of the Member State will assess number and level of questions when approving the course. The number of questions for each chapter and level shall be consistent with;
  - the effective training hours spent teaching at that chapter and level;
  - the learning objectives specified in the detailed training needs analysis."

B) Not Accepted (for Module phase examinations)

- According to Appendix III sub-paragraph 3 (i) states that no final examination is requested as soon as the module phase examination contains the correct number and level of question required.

comment

214 comment by: *DGAC France*

The NPA proposed text introduces the possibility to use questions at a lower level than the intended exam in order to test all subjects of the course. However, it limits that number of questions of a lower level not to be at an "excessive" number. And it speaks of a reason to lower the level of the exam.

DGAC France understands that the case where lower level questions are used is to cover some basis within the course, where ther are no higher level questions. The intent is not to lower the level of the exam, but to cover all aspects. But what is "excessive" or not appears to be very subjective and might lead to discrepancies in the Member States.

We thus consider that a minimum percentage of level 3 questions should be

prescribed in the rule, between 50% (at least half of the questions at the appropriate level) and 75% (in parallel with the minimum examination pass mark).
We therefore propose to modify Appendix III, Chapter 3 - Type training examination standards, item (j) along the following lines:
"(j) It is accepted that during a level 3 examination, level 1 and 2 questions may be used to examine the full scope of the course material. However, during the examination it is not acceptable to use ~~an excessive number~~ **less than xx%** of questions **at the required level** ~~any lower level such that the intention of the higher examination level is reduced~~."

response *Not accepted*

It is confirmed that the intent of is not to lower the level of the exam, but to cover all aspects.
Appendix III sub-paragraph (f) clearly states that the number of questions for each level shall be consistent with the effective training hours spent teaching at that level and should constitute the main driver.
Furthermore Appendix III sub-paragraph (j) clarifies that level 1 and 2 may be used to examine the full scope of the course material based on the TNA, which can prevent from the reduction of examination level without defining exact percentage.
Setting a percentage of questions at level 3, for instance 50%, is going to make the life complicated when the number of question is not divisible by 2. At this stage, too much prescriptive material may contradict the need for having flexibility.

comment *223* comment by: *Snecma Services*

Could you give the definition of a chapter ,refer to § (f) one question per chapter. according to the chart page 47, chapters 70B, 71,72,73,75,76,78,79,80,82,83,84 has to be consider as one chapter or as 12 chapters?

response *Accepted*

The Agency recognises the need for clarification.
Therefore the text has been clarified:

> "The number of questions must be at least 1 question per hour of instruction, The competent authority of the Member State will assess number and level of questions when approving the course. The number of questions for each chapter and level shall be consistent with;
> - the effective training hours spent teaching at that chapter and level;
> - the learning objectives specified in the detailed training needs analysis."

In addition in Appendix III sub-paragraph 2.1 (b) (table), every chapter is introduced by a number (example: 71 is a chapter)

comment *411* comment by: *SNMSAC Syndicat National des Mécaniciens Sol de l'Aviation Civile*

Page 52

X crosses to be added in the table, line for B1 & for B2 in FOT line for Engine Monitoring and Ground Operation.

The reason is that after an engine component replacement it is mandatory to do a functional check by Engine run up.

response

Not accepted

The engine run up training is too demanding to be part of the type training; it should be part of a specific training (provided by Part-145 or Part-147 organisations).
Refer to comment n°135.

comment

420 comment by: *Yveline MERRIEN*

It is accepted that during a level 3 examination, level 1 and 2 questions may be used to examine the full scope of the course material. However, during the examination it is not acceptable to use an excessive number of questions at any lower level such that the intention of the higher examination level is reduced.

How many level 1 or 2 questions will be acceptable for a level 3 examination ?

It's acceptable that examination take place in several parts (if each examination is in accordance with the regulation) :

The number acceptable of level 1 or 2 questions is for part of examination or for the full examination ?

response

Noted

Appendix III sub-paragraph (f) clearly states that the number of questions for each level shall be consistent with the effective training hours spent teaching at that level and should constitute the main driver.

B. Draft Rules - I. Opinion (EC) No 2042/2003 - Part-66 - Appendix III - Type Training and Examination Standard - 4. Type examination standard p. 54-55

comment

51 comment by: *Irish Aviation Authority*

Appendix III paragraph 4 (d) Examinations must be on a sample of chapters drawn from paragraph 2 type training/examination syllabus, at the indicated level.

The term 'sample' is subjective and will not aid standardisation.

Solution; Examinations should be on a minimum of 75% of the applicable chapters drawn from paragraph 2 type training/examination syllabus at the required level.

response

Not accepted

This paragraph only addresses the examination where a type training is not required.
The scope of the sample should be driven by the needs to ensure that the objectives of the knowledge required per level are met
The examination shall be conducted up to the point the examiner is capable of making a conclusion. Therefore any percentage might be too prescriptive.

comment	*52* comment by: *Irish Aviation Authority* Appendix III paragraph 4 (h). A written report should be made by the examiner to explain why the candidate has passed or failed. Comment; this should apply to practical and oral examinations only.
response	*Noted* In all cases, the written examination shall be part of the report needed to justify whether the candidate passes or fails.

B. Draft Rules - I. Opinion (EC) No 2042/2003 - 147.B.120 p. 56

comment	*53* comment by: *Irish Aviation Authority* 147.B.120 (b) Notwithstanding (a), the competent authorities shall attend to an examination conducted by the approved Part-147 organisation at least once every 24 months. Suggestion; the term 'monitor' would be more explicit than 'attend to'
response	*Accepted* The comment is fully understood; the text has been corrected.

comment	*106* comment by: *CAA CZ* We recommend to complete ”training or examinations” in the supplemented paragraph 147.B.120 (b), page 56, to ensure check either executing of examinations or training at least once every 24 months. The reason is that the examinations can take place in one day which do not have to be suit for check. There is not mentioned in here the fact how is possible to fulfill mentioned paragraph in case when the organization will not carry out examinations (neither training) during this period.
response	*Not accepted* The requirement concerning the process and the product audits is applicable to all organisation introduced by EC n.2042/2003. If the organisation has not performed any activities in preceding 24 months, there is no evidence of continued compliance with the applicable Part.

comment	*274* comment by: *Esko HIETANEN* Keep B2 2400 hours. (Look at comment from page 5)
response	*Accepted* The B2 duration has been maintained in 2400 hours.

B. Draft Rules - I. Opinion (EC) No 2042/2003 - Appendix I p. 56

comment

92 comment by: *Link & Learn Aviation Training*

Appendix I Course duration With addition of higher levels in 13.7 (b), 13.8, 13.10 and the "9" new sub chapters 13.11,thru 13.19 it is already difficult to stay within the present 2400 hrs course duration for a B2 course. We therefore, strongly oppose the proposed 400 hr reduction to 2000 hrs since the B2 training can never be performed at the required levels in a similar timeframe as the B1.2.

response

Partially accepted

As it was already explained in the Explanatory Note of the NPA, the duration of the B2 basic course was reduced to 2000 hours because an analysis showed that the number of subjects and levels was higher for the B1.
Nevertheless, since this CRD has increased the privileges of the B2 licence holder to perform maintenance on electrical and avionics parts within powerplant and mechanical system (requiring simple tests), the Module 13 has been amended and the total duration for the B2 course has been maintained in 2400 hours.

comment

153 comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)*

Appendix I

The Swedish CAA suggests that there should not be an amendment of the duration for the Basic training for Cat B2 from 2400 to 2000 hours. We think that this is particularly important since it is suggested that Cat B2 should be increased with several ATA´s. This is also of importance if the suggestion that she scope for Cat B2 personnel should be extended with Cat A tasks (which we are questioning being appropriate), and thus presumably subject for increased training.

response

Partially accepted

As it was already explained in the Explanatory Note of the NPA, the duration of the B2 basic course was reduced to 2000 hours because an analysis showed that the number of subjects and levels was higher for the B1.
Nevertheless, since this CRD has increased the privileges of the B2 licence holder to perform maintenance on electrical and avionics parts within powerplant and mechanical system (requiring simple tests), the Module 13 has been amended and the total duration for the B2 course has been maintained in 2400 hours.

Finally, the Agency notes that the B2 licence has not been changed to include any subcategory A and the basic syllabus has not been amended as a consequence of it. The increase of privileges has been done based on a number of compensating measures described in 66.A.20(a)3(ii) and 66.A.45(b).

comment

276 comment by: *CAA-Norway*

The proposed reduction on the duration of B2 Basic Training Course from 2400

hours to 2000 hours is not acceptable.

With the new content and level raising proposed in Part-66 Appendix I, the duration must be kept on 2400 hours.

The B2 basic course should also include the basic requirements for category A.

response *Partially accepted*

As it was already explained in the Explanatory Note of the NPA, the duration of the B2 basic course was reduced to 2000 hours because an analysis showed that the number of subjects and levels was higher for the B1.
Nevertheless, since this CRD has increased the privileges of the B2 licence holder to perform maintenance on electrical and avionics parts within powerplant and mechanical system (requiring simple tests), the Module 13 has been amended and the total duration for the B2 course has been maintained in 2400 hours.

Finally, the Agency notes that the B2 licence has not been changed to include any subcategory A and the basic syllabus has not been amended as a consequence of it. The increase of privileges has been done based on a number of compensating measures described in 66.A.20(a)3(ii) and 66.A.45(b).

comment *338* comment by: *UK CAA*

Paragraph:
Part-147 Appendix I (p56 of NPA)

Comment:
Proposed reduction of B2 basic course length to 2000 hrs unreasonable.

Justification:
It is agreed that the course of 2400hrs was too great for the syllabus of old. Now however extra systems are to be added and there is a quantum leap in the avionic technology used in aircraft such as A380 and B787.

Proposed Text:
No change to B2 basic course hours of 2400.

response *Accepted*

As it was already explained in the Explanatory Note of the NPA, the duration of the B2 basic course was reduced to 2000 hours because an analysis showed that the number of subjects and levels was higher for the B1.
Nevertheless, since this CRD has increased the privileges of the B2 licence holder to perform maintenance on electrical and avionics parts within powerplant and mechanical system (requiring simple tests), the Module 13 has been amended and the total duration for the B2 course has been maintained in 2400 hours.

comment *410* comment by: *Bodø Aviation College*

The duration in hours for B2 should remain 2400 hrs. This is already too few hrs for the B2 of today. Should there be more tecnical items added, the time will for sure be a big problem.

response *Accepted*

As it was already explained in the Explanatory Note of the NPA, the duration of the B2 basic course was reduced to 2000 hours because an analysis showed that the number of subjects and levels was higher for the B1.
Nevertheless, since this CRD has increased the privileges of the B2 licence holder to perform maintenance on electrical and avionics parts within powerplant and mechanical system (requiring simple tests), the Module 13 has been amended and the total duration for the B2 course has been maintained in 2400 hours.

B. Draft Rules - II. Draft Decision AMC to Part-145 p. 57

comment *348* comment by: *Panasonic Avionics Corporation*

3 Part-145: AMC 145.A.30(g)2 Personnel Requirements (Working Group 66.006)

The wording of item 'n', in the list of typical tasks permitted by 66.A.20 (a) (1) or the 66.A.20(a) (3)(ii) personnel for the purpose of issuing an aircraft certificate of release to service is too restrictive. Panasonic maintains that all In Flight Entertainment (IFE) components are considered to be Line Replaceable. Fault diagnosis is simple and usually only requires general visual inspection. All IFE systems have BITE capability allowing maintenance technicians to quickly identify failed components when visual inspection is insufficient to identify the cause of failure. IFE components can be replaced quickly with a minimum of disturbance normally requiring only the removal of quick release panels. As long as serviceability can be established with simple functional tests or BITE, all IFE line replaceable components should be within the certification capability of appropriately task trained and authorised personnel.

The inclusion of the statement 'such as screens and passenger control units' unnecessarily limits the tasks that a Cat A task trained and authorised person may carry out. Such a statement of limitations must be removed.

response *Partially accepted*

The words "such as screens and Passenger Control Units" has been removed in order not to give the impressions that it is only possible for these systems. However, we remind you that the text still says "replacement of in-flight entertainment system **simple** components..."

B. Draft Rules - II. Draft Decision AMC to Part-145 - AMC 145.A.30 p. 57-58

comment *28* comment by: *Air Berlin Technik*

The suggested change to AMC 145.A.30 (g) contains a contradiction because it says that a Cat. B2 Certifying Technician ("66.A.20 (a) (3) (ii) personnel") may NOT replace public address system components. Although we expect that this is just an inaccuracy in wording and not the purpose, the contradiction is there and clarification by accurate language is required.

response *Accepted*

66.A.20(a)3(ii) has been amended to make it clear.

comment	*29* comment by: *Air Berlin Technik* The "list of typical tasks" (AMC 145.A.30 (g)), although the AMC is suggested to be amended, still remains unchanged. In our opinion, the opportunity of amending this AMC should have been used to extend this list. Although it is being claimed that this list only contains examples and that it is subject to negotiation with the NAA to add tasks as "simple", in fact most NAAs refuse to even discuss about going any further than the AMC. So in fact, this AMC had become de facto regulatory and EASA should research extension of the list. In our opinion, there are many more defect rectification tasks which are, regarding complexity and safety impact, comparable to wheel/brake/battery replacement. Working Group 66.006 should be tasked to extend the list before an amended AMC is published.
response	*Partially accepted* Paragraph q has been amended to require the agreement of the competent authority instead of the agreement of the Agency. The Agency notes that the list has been extended for the particular case of helicopters.

comment	*30* comment by: *Air Berlin Technik* It is completely unclear why public address system component replacements are and will be excluded from the list of typical "simple" defect rectification tasks. Removal/installation of a flight attendant PA handset for example is a VERY simple task. Everybody in our modern world does that on his/her own telephone (plug out/in)! The system test (to try if someone hears you ...) is also more than simple and is even being performed by flight attendants before each flight. So either cancel the sub-phrase "... but excluding public address" or clarify which components of PA may be replaced by a Cat. A and which not.
response	*Partially accepted* It is not possible to go in the AMC into such level of detail as to which items of the Public Address system can be performed by a category A and which cannot. This depends on each particular system and will have to be agreed with the competent authority following the amended item "q" contained in AMC 145.A.30(g), paragraph 2.

comment	*102* comment by: *ENAC, Italy, Production and Maintenance Directorate* Page 58: AMC 145.A.30(g)4: this should be limited to non large aircraft
response	*Not accepted* There may be cases where an organisation maintaining large aircraft may not need both licence categories. For example, an organisation maintaining only In-flight Entertainment Systems (on-board).

comment	*170* comment by: *BCAA - DAE - Certification* Concerning the AMC 145 A 30 (g) 4., a revised interpretation of the regulation is presented. This interpretation is a real change to the regulation rather than a revised interpretation. The AMC must never change the content of

	the implementing rules.
response	*Accepted* 145.A.30(g) has been modified to read "category B1 and B2, **as appropriate**..."

comment	*173* comment by: *Avionica SpA (Part-145 maintenance organization)* Gentlemen, Avionica SpA is a Part-145 and Part 21 certified maintenance/design organization, duly rated to release base and line maintenance on avionic systems. As far as line maintenance is concerned we would like to comment the proposed changes regarding the AMC 145 A 30(g) *Personnel Requirements* on the possibility for a Part-145 maintenance organization of *"having only B1 or B2 Certifying Staff as applicable, provided the competent authority is satisfied that the scope of work, as defined in the Maintenance Organisation Exposition, does not need the availability of both B1 and B2 certifying staff".* During line maintenance tests on avionic systems for which we are rated we need to perform only very simple mechanical tasks such as removing/reinstalling avionic equipment and/or panels. These tasks, elementary in nature, can be released and performed by B2 Certifying Staff well inside the perimeter of their competences and background. Therefore, we fully agree and support the implementation of the proposed change. In fact this would allow us, when previously authorised by our National Authority, to act without the permanent availability of a B1 C.S.
response	*Noted* The Agency welcomes your comment.

comment	*176* comment by: *CAA-NL* 145.A.30(s) Hoist is excluded but can safely be installed or removed by properly task-trained cat A. 145.A.30(u) Remark: some floatation bags require complicated tasks as well as testing of retractable landing gear. These might be necessary to exclude.
response	*Partially accepted* If the task of removing the hoist is simple for a particular aircraft type, this can be agreed with the competent authority following the amended item "q" contained in AMC 145.A.30(g), paragraph 2. In general, removal and installation of emergency float bags is a simple task. As for any other system, it is possible that for some very particular aircraft types the task is more complicated. This would require deeper task training for the particular task but it is not a reason for excluding the task as a general rule.

comment	*326* comment by: *Walter Gessky*

AMC 145.A.30(g) 2. (page 57)

Change the following:

Typical tasks permitted after appropriate task training to be carried out by the ~~category A~~ 66.A.20(a)(1) or the 66.A.20(a)(3)(ii) personnel for the purpose of ~~the category A~~ them issuing an aircraft certificate of release to service as specified in 145.A.50 as part of minor scheduled line maintenance or simple defect rectification **where no troubleshooting for defect rectification is required** are contained in the following list:

Justification:
Paragraphs 66.A.20(a)(1) and(3)(ii) include in the third sentence the following restriction:

"Certification privileges do not include either troubleshooting or deferment of maintenance

actions."

response *Noted*

66.A.20(a)1 has been modified in order to remain as in the current rule. However, AMC 145.A.30(g), item 2, has been modified to make clear that no tasks requiring troubleshooting should be allowed and defect deferment should only be allowed in some very specific cases (described in this AMC).
The Agency notes that performance of troubleshooting requires a deeper level of basic knowledge to that typically required for the cat A licence.

comment *390* comment by: *CAA-NL*

'Typical' means that they are examples, AMC 145.A.30(g) item q refers to agreement by agency that means the list is exhaustive; they are not examples!

response *Accepted*

Paragraph q. has been amended.

B. Draft Rules - III. Draft Decision AMC to Part-66 - AMC 66.A.20(a) p. 59-60

comment *5* comment by: *SAMCO*

AMC66.A.20
Definition of Avionics system includes Instrument systems
This would mean that electro-mechanical and pitot static instruments are part of avionic system
This is not correct as electro-mechanical and pitot static instruments should not be part of avionics systems
Only electronic components/systems should be included in the Avionic system definition.
Electro-mechanical and pitot static instruments should (also) be part of the B1 scope of approval

response *Accepted*

The definition of "Avionics system" contained in AMC 66.A.20(a) has been

amended.

comment 31 comment by: *Air Berlin Technik*

The definition of the term "electrical system" is very good and should rather be referred to instead of the (partial) extension as suggested for Part-66.A.20 (a) 3.) (i), which is limiting, contradictory and therefore misleading. See above.

response *Accepted*

66.A.20(a)3(i) has been amended to include maintenance on electrical and avionics parts within powerplant and mechanical systems.

comment 32 comment by: *Air Berlin Technik*

The term "troubleshooting" is used various times both in the regulation as well as in the AMC. Nevertheless, a definition is missing. Does "troubleshooting" start with the application of the FIM (Fault Isolation Manual)? Although this would be a good interpretation, clear guidance is still missing, especially to determine where the line has to be drawn between "troubleshooting" and "inspection". It might also be a good idea to distinguish between "simple" and "complex" troubleshooting. Finding out why a pax seat recline mechanism does not work and which part needs to be replaced in order to fix it would then be "simple troubleshooting", while finding the reason for "duct split" for example would be classified as "complex troubleshooting". See above.

response *Accepted*

A definition of "troubleshooting" has been introduced in AMC 66.A.20(a).

comment 41 comment by: *Irish Aviation Authority*

The criteria specified for a simple test are adequate without the reference to the number of steps.

In some instances the number of steps involved depends on the results found during the test and the total number of steps could exceed 10. In such a case the B1 would have to hand over to a B2 to complete the test.

Solution; remove the reference to the number of steps.

response *Partially accepted*

A more clear definition of "10 steps" has been provided. Nevertheless, the Agency believes that it is necessary to limit the length of the test.

comment 90 comment by: *CAA-Norway*

The definition of electrical systems is too wide, and will lead to different interpretation. spesially since Light systems is mentioned as included.

New proposed text:
Electrical systems is defined as all aircraft systems with electrical signals, exept from avionic systems.

Under the definition of Avionic systems a lot of systems are listed. When the systems are listed, it will require update of the regulation every time a new system is approved and installed in an aircraft, e.g new "on board systems".

New proposed list:

- Autoflight
- Communication & Navigation
- Instruments
- Fly By Wire systems
- Fibre Optic Control systems
- All on board systems with electronic signals

response *Partially accepted*

The definition of "electrical system" has been made more precise.

comment *196* comment by: *CAA-NL*

The number of 10 steps is not directly related to the complexity of the test. It does not define steps and furthermore it might lead to organisations combining steps in order to make complex tasks (apear) simple.

response *Partially accepted*

A more clear definition of "10 steps" has been provided. Nevertheless, the Agency believes that it is necessary to limit the length of the test.

comment *218* comment by: *Luftfahrt-Bundesamt*

"Simple test is defined …not involving more than 10 steps"
How are these 10 steps defined? What is the first step?

response *Partially accepted*

A more clear definition of "10 steps" has been provided. Nevertheless, the Agency believes that it is necessary to limit the length of the test.

comment *249* comment by: *Nayak Aircraft Services*

Simple test - If we have to follow a test procedure with example via the MCDP a have to push 10 times abutton on the MCDP, is this what the AMC material will mean ?

We need a clear definition.

response *Partially accepted*

A more clear definition of "10 steps" has been provided. Nevertheless, the Agency believes that it is necessary to limit the length of the test.

comment *292* comment by: *EAMTC*

Simple test is defined as a test described in approved maintenance data, not involving more than 10

steps (not including those required to configure the aircraft prior to the test, i.e. jacking, flaps down,

etc.), and meeting all the following criteria...
Comment: Define steps (i.e, is each push on a MCDU button counted as one step?)

response

Partially accepted

A more clear definition of "10 steps" has been provided. Nevertheless, the Agency believes that it is necessary to limit the length of the test.

comment

293 comment by: *EAMTC*

Avionic System:

- Fly by Wire Systems

Comment: From our point of view Fly by Wire System are only these ones concerning primary flight controls such as ailerons, rudders and elevators.

This should be defined in this AMC

response

Accepted

The text has been amended accordingly.

comment

342 comment by: *Association of Dutch Aviation Technicians*

The statement on page 59 of "*Line maintenance* is any maintenance that is carried out before flight to ensure that the aircraft is fit for the intended flight" is to our point of view incorrect.

This statement belongs by an accomplished Pre-flight inspection according Part-M. and is not related to any maintenance see *Article 2* Definitions (j) and (h) in COMMISSION REGULATION (EC) No 2042/2003

(j) 'pre-flight inspection' means the inspection carried out before flight to ensure that the aircraft is fit for the intended flight.

(h) 'maintenance' means any one or combination of overhaul, repair, inspection, replacement, modification or defect rectification of an aircraft or component, with the exception of pre-flight inspection;

response

Not accepted

The Agency does not agree with the comment.
This definition of "Line Maintenance" has nothing to do with the "Pre-Flight Inspection".
As a matter of fact, in order to make sure that an aircraft is fit for the intended flight there are more things to do than just a "pre-flight inspection". This additional things are considered maintenance and are defined as "Line Maintenance".

comment

350 comment by: *Panasonic Avionics Corporation*

5 AMC 66.A.20 (a) Privileges (Working Group 66.006)
The definition of 'simple test' now includes a limitation to 'no more than 10 steps'. An imposition of an arbitrary number of stages does not make a test any more simple or complex. Such a generalised requirement is a meaningless concept and will lead to confusion, misinterpretation and conflict in application across different maintenance organisations.

response *Partially accepted*

A more clear definition of "10 steps" has been provided. Nevertheless, the Agency believes that it is necessary to limit the length of the test.

comment *395* comment by: *CAA-NL*

Trouble shooting one word: troubleshooting

response *Accepted*

Text amended.

comment *399* comment by: *CAA-NL*

finition of electrical systems should include simple electrical circuits such as position transmitters and switches.

response *Partially accepted*

The definition of "electrical system" has been amended. Electrical circuits such as position transmitters and switched are considered "electrical systems" as long as they meet the definition provided.

B. Draft Rules - III. Draft Decision AMC to Part-66 - AMC 66.A.45(a) & (b) p. 60

comment *361* comment by: *CAA-NL*

a) AMC 66.A.45 (a)&(b) 2 is not changed and still does not help to make clear what 'appropriately' approved means. The organisations need to meet many other criteria as well. Part-145 and subpart F do not cover practical training aspects.

response *Accepted*

The text has been amended.

B. Draft Rules - III. Draft Decision AMC to Part-66 - AMC 66.A.45 (g) p. 60-61

comment *157* comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)*

AMC 66.A.45 (g) Type / task training and ratings

The Swedish CAA believes it should be more emphasized that integration of practical and theoretical elements should not be made on the expense of total training time. We have in some cases experienced that practical training has

	been performed during the evenings after full days of theoretical training, just to cut the time for a type course over all. We believe that this can jeopardize the quality of the training in some cases
response	*Accepted* The regular number of training hours per day is generally between 6 and 8 hours during regular office hours; in exceptional cases, deviation from this standard may be envisaged under the control of the quality system of the training organisation and according to a procedure described in the MTOE. This standard was added to Appendix III to Part-66. For consistency, an AMC has been added to 147.A.200(f) (basic training course) However this standard has been only added in the theoretical portion of the type rating training. It is clear that it does not make sense to start the practical training after 8 hours of theoretical training.

comment	*353* comment by: *AgustaWestland* In case that the practical training follows the theoretical in a part 147, for example 6 weeks after the end of the theretical portion, how can the practical be certified? Currently our interpretation is that a part 147 can only issue a theoretical and practical single certificate or a theoretical only, but not a practical only.
response	*Noted* According to the current regulation, a Part-147 organisation cannot only provide the practical elements. According to the new proposal with this NPA (refer to 66.A.45 (k) 2 (ii)), a Part-147 organisation will be authorised to issue a certificate of practical training only but in any cases, coordination shall be ensured between the theoretical and the practical elements The back of the type training certificate has been review to better reflect what king (theoretical or practical or both) of training was imparted. Last but the least, before endorsing the type rating on the license, the NAA shall be satisfied that all interfaces have been properly handled (66.B.115). Therefore it would be the responsibility of the practical training provider to design the practical training and to make sure it is based on the theoretical training. The practical training provider will have to ensure appropriate coordination with the theoretical elements. 66.B.115 sub-paragraph 5 states that where the aircraft type training is covered by more than one course, the competent authority shall be satisfied prior to the type rating endorsement that the content and the length of the courses fully satisfy the scope of the license category and that the interface areas have been addressed. The new table about the content of the practical portion (appendix III to Part-66, sub-paragraph 2.2, should help as well as AMC 66..45(k)(2) (recommended duration).

B. Draft Rules - III. Draft Decision AMC to Part-66 - AMC 66.A.45(g)(1)(i)& (g)(1)(ii) p. 61-62

comment	*88* comment by: *ENAC, Italy, Production and Maintenance Directorate* AMC 66.A.45(g)(1)(i) & (g)(1)(ii) same comment already made for the regulation. at least in the AMC we suggest to have a clear qualification standard for the assessors.
response	*Not accepted* Refer to 147.A.105 (f) modified by Opinion 04/2006 : "the experience and qualifications of practical assessors shall be established IAW criteria published by the competent authority" Establishing criteria are out of the remit of 66.011

comment	*284* comment by: *CAA-Norway* 7. Remove the last part of the sentence ...."*as the B1 privileges include the replacement of avionic line replaceable units"* This definition is removed in 66.A.20 Privileges
response	*Partially accepted* The sentence has been changed to read as: "Limited avionics system training should be included in the category B1 type training as the B1 privileges include work on avionic systems requiring simple tests to prove their serviceability."

comment	*328* comment by: *Walter Gessky* **AMC 66.A.45(g)(1)(i) & (g)(1)(ii) 1.(e) & (h) (page 61)** Change the following: (e) Use of type specific generic documentation, (…..tool handbook, **CDL, CMR and MRB document,)** (h) Significant and critical tasks from the MMEL, AMM, MPD, SRM, **CDL, CMR and MRB document** **Justification:** Certifying staff should be informed about the Configuration Deviation List (CDL), the certification maintenance requirements (CMR) and the MRB document .
response	*Partially accepted* Paragraph (h) now reads as: Significant and critical tasks from the MMEL, CDL, ALI including CDCCL, CMR, MRB, MPD, SRM, AMM, etc.

comment	*343* comment by: *DASSAULT FALCON SERVICE* Form comment : - in AMC 66.A.45(g)(1)(i)&(g)(1)(ii) §4 : there is a reference to the Appendix III ... of the Part-66 - in AMC 66.A.45(g)(1)(III) §2 : there is a reference to Appendix II ... of the AMC The two references are not coherents. General comment : the entire CE 2042/2003 and 2003/19/RM are becoming

	illisible with all the decisions added. Do you plan to reissue them ?
response	*Noted* **(First part)Accepted** Text corrected in both AMCs **(Second part) Noted**

comment	*364* ❖ comment by: *CAA-NL* Above all, theoretical training should address important maintenance aspects of the aircraft; not only procedures but pitfalls as well. i) It is not necessary to cover significant features of all variants. If practical training is not covering all variants and if the student is not working on a particular variant it will be forgotten quickly and might even confuse students. **Propose to require only one representative type of the range.** (As was indicated by EASA before) ii) It is not clear what is meant by…"and variant" in last sentence of 1. "Theoretical type training should.…….whereas it is not required that all possible customer options and variant under the same type ratings are covered."…… iii) Ad 4, 5 and 6. change 'should' in 'shall' see 66.a.45(g)1.(ii)I. page 27. iv) Ad 5. assessment by competent authority should be introduced in the rule instead of AMC. v) Ad 6. Because it is in AMC for Part-66, "the issue of a type rating" must mean ädding the type rating to the Part-66 AML by the NAA". The applicant meets the criteria: licence with the basic category and the right Part-147 certificate of recognition. The NAA should not verify the elements mentioned under 6. These elements are part of the training course and assessment and will be verified before succesfull completion of the course. For a 147 this is before the issue of a certificate of recognition, for approved maintenance organisations there is not a standard defined (yet). Ad 6. [c] insert 'of' in demonstrate the correct use of all technical literature. Ad 7 and 8. These subjects are covered by appendix III.
response	*Noted* i) **Noted** The proposed text does not introduce clarification to the current text. Although it is not clear in the rule whether the type rating should cover the variants or options of the aircraft, it is however the responsibility of 145 approved organisations to ensure that the personnel is competent on the aircraft he is intended to work on. Which means that in case of variants, variant courses may need to be conducted. This is however not the subject of this NPA and should be covered by task 21.039 related to OSC. ii)**Noted** No text proposed by the commenter iii) **Rejected** "Should" shall stay because the text is an AMC.

iv) **Accepted**
The text in the requirements has been changed accordingly.
v) **Partially accepted**
Similar wording to the requirement (66.A.45(g)) is used for this AMC.
Ad6: **accepted**
Text changed
Ad7 and 8: **noted**

B. Draft Rules - III. Draft Decision AMC to Part-66 - AMC 66.A.45(g)(1)(ii) p. 62

comment *103* comment by: *ENAC, Italy, Production and Maintenance Directorate*

Page 62 point 7: inconsistent with new amened syllabus of appendix III; suggest to remove it or to rephrase.

response *Accepted*

The text has been corrected in coordination with task 66-006.

comment *243* comment by: *Airbus*

NPA Page 62 of 116

Draft Decision AMC and GM to Part-66,

New AMC 66.A.45 (g) (1) (ii) "Type / task training and ratings"

In the 3rd sentence, replace "majority" by "a part of"

Justification:
For same practical task the devices are more efficient tool than the aircraft itself

response *Accepted*

The text has been corrected accordingly.

B. Draft Rules - III. Draft Decision AMC to Part-66 - AMC 66.A.45(g)(1)(iii) p. 62-63

comment *54* comment by: *Irish Aviation Authority*

This paragraph requires that OJT shall include line and base maintenance tasks.

Comment; The B1 and B2 categories are entitled to issue certificates of release to service for line maintenance whereas they don't have that privilege in base maintenance. Therefore it should be possible to get the type rating by doing line maintenance tasks only. From a practical point of view the requirement, as written, will mean that an applicant who works in a line maintenace only organisation will have to go to a base maintenance organisation in order to get training in base maintenance tasks. It will always be possible for an applicant who works in a base maintenance organisation to get line maintenance task training in that base maintenance organisation.

response *Accepted*

The text has been changed accordingly.

comment *55* comment by: *Irish Aviation Authority*

AMC 66.A.45(g) (1) (iii) paragraph 2.

The second paragraph refers to 'type experience should be demonstrated by the submission of OJT records.....'

The use of the term 'type experience' is misleading. It is not type experience but type OJT.

Solution; Change 'experience' to 'OJT'

response *Accepted*

The text has been changed accordingly.

comment *219* comment by: *Nayak Aircraft Services*

we did'nt find any futher statment about the Assessor requirments, there is only stated "trained" but not more. It should be defined.

response *Noted*

Refer to 147.A.105 (f) modified by Opinion 04/2006 : "the experience and qualifications of practical assessors shall be established IAW criteria published by the competent authority" Establishing criteria are out of the remit of 66.011

comment *285* comment by: *CAA-Norway*

The text must be changed to match the requirenments in 66.A.45

response *Noted*

The comment was discarded after confirmation by the CAA Norway that it can be ignored.

comment *358* ❖ comment by: *CAA-NL*

Training Needs Analysis

a) Guidance on the generation of course profile is excluded (see item 36). Referring to detailed TNA is good suggestion but many organisations will wish to have more guidance on how to perform it. AMC can list some elements of it.
b) Is it possible to get the details of the EU wide review of approved courses? [66-011].

c) If the training is based on a TNA, probably the conclusion would be that no training is required for simple tasks e.g. location task for wings. A proper training needs analysis would reduce the task lists.

d) It is essential that in the design-phase the consequences for

training/examinations/licensing are considered for maintenance (and operator alike). This applies also to STC's etc. If this is done, courses can be updated easily and Part-66 **type ratings defined before certification.**

response

Noted

a) Accepted
A TNA guidance has been developed. Refer to GM to Appendix III to Part-66 (final text for the CRD to NPA 2007-07)
b) **Not accepted**
The group in charge of this rulemaking task had access to such data; however these data are not Agency property and therefore such data cannot be published under EASA responsibility.
c) Noted
d) Noted
This comment is passed to rulemaking task 21-039.

comment

360 ❖ comment by: *CAA-NL*

Instructor
a) Clarification on instructor's requirements. Explanatory note to decision 2003/11/r contains requirement for NAA to publish criteria. [as officially recognized standard]

b) New AMC 66.A.45(g)(1)(ii) Type/task training and ratings gives option of 'assessor led' training in approved organisation. Title suggests that the purpose is assessing rather than instructing. Suggest to change in "practical instructor led". Whether the Part-147, 145 or subpart F organisation conducts the practical training it always needs to involve instruction and assessment.

c) "full type-rating course" is not very precise and it is not clear what other case are and why there is a difference. Manufacturer (or rather manufacturing) environment leaves to many options open. Suggest to only state that the "majority of practical training should be conducted on real aircraft reflecting actual maintenance situations".

d) List of criteria for the Supervisor is subjective. Approved organisations will look for the right person to do the practical training. One of the most important qualities is lacking...: the ability to coach or give training.

response

Noted

a) Not Accepted
Wrong reference of Decision 2003/11/r which is about Products Parts and appliances (CS to Part 21) The right reference is Opinion 04/2006 and it is better not to mix this NPA with the Opinion according to the EASA legal service recommendation (no consolidated version at the level of the NPA when the opinion's approval is pending)
b) Accepted
The text has been amended accordingly
c) Accepted
The text has been amended accordingly
d) Accepted
The text has been amended accordingly

comment 362 ❖ comment by: CAA-NL

1) Type Training 66.A.45(g) 1.ii.II.

a) I & II & IV & VI can be replaced by two articles.

b) Practical training and OJT both require an instructor. The instructor is not necessarily the same as the practical training assessor or the OJT assessor. Furthermore the instructors should receive a clear instruction on their tasks.

c) Practical training shall meet criteria of appendix III (reference to minimum content and minimum duration is redundant.)

i) The "/" in content /duration can better be replaced by "and".

d) 66.A.45(g) 1.ii.II. Practical training now is explicitly possible by sub-part F organisation and possible through indirect approval. MOE or MTOE needs to have a procedure. AMC material should be amended accordingly (AMC 66.A.45(d)5).

e) Page 26 (b). Practical training can also be provided by other Approved maintenance organisations or a Part-147 organisation.

f) The use of a matrix (ref GM.66.A.45.d.2.) provided by the Part-147 school that did the theoretical part should ensure that theory and practical training are matched.

g) 66.A.45(g) 1.ii.IV. This implies that it should be **part of the Part-145 or Sub-part F approval** and should be introduced in Part-145 and sub-part F as well. A requirement for a procedure in the MOE for practical training and assessment should be included in part-145 and sub-part F. This might also incorporate flight crew training as explained by GM 145.A.30(j)(4) Personnel requirements (Flight crew).

i) Part-66.A.45 Auditing by the competent authority is already covered by 66.B.115.

h) 66.A.45(g)1.iii "practical training alone" should be "type training with a theoretical and practical part alone". Theoretical training should be mentioned.

i) I. Delete acceptable in "acceptable OJT"; the acceptance of OJT is discussed in III

ii) 66.A.45(g)1.ii IV & iii IV. Propose to accept approval of Practical training Assessors and OJT assessors through **indirect approval**. Within Part-145 and Sub-part F organisations, these functions are comparable with Certifying Staff for which also no form 4 is required. Acceptance can be done through a list of names *in* the MOE or by referring in the MOE to such a list. See also page 64 AMC 66.A.45[g][1][iii]. The AMO is in a better position to select assessors than the competent authority. The tasks of assessors require personal skills that are difficult to demonstrate in a form 4. Furthermore the amount of work involved cannot be justified.

iii) 66.A.45(g)1.iii V. Auditing by AMO not included as is in 66.A.45(g)1.ii IV, in both cases auditing by AMO should be in Part-145 and Subpart-F.

response *Noted*

a) **Not Accepted** To force the articles in two articles will not clarify the text.
b) **Not Accepted** A training program for practical training instructors/assessors and OJT supervisors is advised. To name all roles "instructor" will be confusing with the official Part-147 instructor. See also comment 323.
c) **Accepted** the word "duration" is removed and the minimum duration of two weeks is now introduced in an AMC.
d) **Not Accepted**
Part of the comment about the use of "indirect approval" is not understood: outside a Part-147 organisation environment, the course has to be approved by the Competent Authority, whatever the organisation which run the course is..
e) **Noted** It is right.
f) **Not Accepted** It is impossible to achieve this suggestion.
g) **Not Accepted:** IAW article 6 of EC n°2042/2003, only Part-147 organisations are allowed to conduct type training courses unless the course is directly approved by the competent authority (irrespective of the organisation who is going to run the course): it means that no training privileges could be given to a maintenance organisation.
h) **Noted** Auditing is covered by 66.B.115 and new 66.B.130.
i) **Accepted** "theoretical and" has been added to the text
j) **Accepted** the word "acceptable" is removed.
ii) **Partially accepted**
The comment is not 100% valid because the list of certifying staff shall be approved according to a certain procedure.
However the text has been reviewed and the practical training as well as the OJT shall be supervised and assessed by designated assessors according to the procedure described in the exposition manual or as part of the direct approval by the competent authority.
iii) **Not accepted**: see g)

comment *369* comment by: *CAA-NL*

AMC 66.A.45(g)(1)(iii). When practical training is 'assessor-led' the assessor is acting as an instructor. It should be clearer use in both situations the term instructor and assessor. In instructor led practical training the instructor will do the assessment which implies that he need to be accepted as practical assessor.

i) Instructor-led practical training in classroom has limited practical value.

ii) Part-66 and 147 uses comparable terms;

(1) AMC 147.A.200 [d] actual maintenance environment

(2) 66.A.30 and App IV maintenance experience on operating aircraft

(3) new AMC 66.A.45[g][1][iii] real maintenance or manufacturer environment

(4) In some cases NAA's accept simulated maintenance environment as actual maintenance environment. Propose to distinguish two possible environments; the environment that can be simulated ['actual' or 'environment that meets the requirements of part-66'] and an environment that cannot be simulated

[experience on operating aircraft].

response *Noted*

The comment is not understood except the first part which refers in fact to AMC 66.A.45(g)(1)(ii) (renumbered AMC 66.A.45(k)(2) at the stage of the CRD to NPA 2007-07): this AMC has been corrected in accordance with comment n°360.

comment *370* comment by: *CAA-NL*

a) To facilitate easy verification of the practical OJT meeting the requirements the application should be accompanied by a statement or verification report demonstrating how the OJT meets the requirement. The NAA then only needs to sample check the statements. The approved maintenance organisation needs to have proper procedures to perform OJT. These procedures will be covered by normal audit procedures. [Under 3] the approved assessor is to confirm completion, diversity, variety and quantity of OJT. If the confirmation is not supported by some analysis it is difficult to verify; alternatively an overview could be requested to account for the tasks per ATA chapter, per maintenance category line base, type of task; location, test, replacement etc, and the percentage in relation to app II] Also applicable to AMC 66.A.45[j] page 65.

b) The supervisor should also be tasked [and selected] to do training. Especially safety precautions, pitfalls and difficulties should be explained. The student should be coached throughout his OJT this is not necessarily done by the supervisor who has to release the work done.

response *Accepted*

a) Accepted
A statement has been added at the level of Appendix III to Part-66.
b) Accepted
Refer comment n°360 subpart d) where more details have been added to the criteria for the supervisor
In addition 66.A.45 (g) already defines that the OJT is part of the type training and has to be supervised.

B. Draft Rules - III. Draft Decision AMC to Part-66 - AMC 66.A.45(g)(1)(ii) and (g)(1)(iii) p. 63-64

comment *111* comment by: *Irish Aviation Authority*

An EASA Form 4 should be completed for each assessor.
Comment; This may be an opportunity to clarify the requirements for Form 4s.

AMC 147.A.105(b) and (g) curently states that 'with the exception of the accountable manager, an EASA Form 4 should be completed for each person nominated to hold a position required by 147.A.105 (b).
147.A.105 (b) refers to management personnel only.

Whilst the heading on this paragraph refers to (b) and (g) the text only refers to (b). This implies that Form 4s are not required for knowlege examiners and practical assessors.

If the intention is that Form 4s are required for examiners and assessors the

	text should be revised to include a reference to (b) and (g). If this is not done then there will be an anomaly whereby practical assessors for type and task training will require Form 4s whereas the practical assessors for basic training and all knowledge examiners will not require them.
response	*Not accepted* The sentence "An EASA form 4 should be completed for each assessor" has been deleted. This issue had been debated during the AGNA meeting held on 9-10 September 2008 and it was clearly accepted that the knowledge examiners and practical assessors shall be specified in the MTOE for the acceptance of such staff by the competent authority (145.A.105) as the examination and the assessment is considered to be one of the key elements of the training. However for consistency with Part-145 where a form 4 is not required for the certifying staff, the need for an EASA F4 was considered to be controversial. For consistency, GM to 147.B.115 will have to be clarified along with the adoption of Opinion 05/2006.. See also comment n° 267 and 305 (just here below).

comment	*267* comment by: *TYROLEAN AIRWAYS* AMC 66.A45(g)1(ii) and (g)1(iii) Delete 3rd para for Pt-145 organisations: ~~An EASA Form4 should be completed for each assessor~~ The nomination and position of an assessor is not comparable with those of "Senior personnel" in the organisation. Therfore the approval of an assessor should be handled like any other authority approved change/revision to the MOE as described in the exposition.
response	*Accepted* The sentence "An EASA form 4 should be completed for each assessor" has been deleted.

comment	*305* comment by: *European Regions Airline Association* AMC 66.A45(g)1(ii) and (g)1(iii) Delete 3rd para for Pt-145 organisations: ~~An EASA Form4 should be completed for each assessor~~ The nomination and position of an assessor is not comparable with those of "Senior personnel" in the organisation. Therefore the approval of an assessor should be handled like any other authority approved change/revision to the MOE as described in the exposition.
response	*Accepted* The sentence "An EASA form 4 should be completed for each assessor" has been deleted.

comment	*371* comment by: *CAA-NL*

….'should be entered into a logbook….countersigned by an approved assessor'….this is contradictory with the text earlier on the page 63.

under 2] on the same page OJT records suffice….

under 3] on the same page a supervisor is sufficient for individual task and the assessor carries out a final review.
It is not sensible to let the approved assessor countersign all tasks in the end. Also AMC 66.A.45[j] page 65.

response *Partially accepted*

AMC 66.A.45(l) sub-paragraph 3 gives clarification about the role of the supervisor versus the one for the assessor. The OJT remains a training period during which the trainee remains under the supervision where the complete process of the task completion is overseen.
"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. "
Therefore the assessor shall be the one who countersigned the OJT records. It does not prevent the supervisor for also signing off the tasks undertaken. Nevertheless, for the sake of clarity, it has been decided to correct Appendix III to part 66, §2.3 (b) and now only the assessor should countersign the tasks.

B. Draft Rules - III. Draft Decision AMC to Part-66 - AMC 66.A.45(g)(1)(iv) p. 64

comment *42* comment by: *Irish Aviation Authority*

It is not clear what the second sentence is trying to achieve. As it is written it is stating the obvious. Perhaps the intention was to say that differences training is required between aircraft types where additional manufacturers designations are added to an existing type rating designation, unless the original type rating course included the additional designations.

response *Partially accepted*

The reference to Appendix I to the AMCs of Part-66 has been added in in new renumbered AMC 66.A.45 (k) (3).

comment *89* comment by: *ENAC, Italy, Production and Maintenance Directorate*

AMC 66.A.45(g) & (h) de facto this in unrealistic. how can the authority approve a translator?

response *Accepted*

The sentence has been deleted.

comment *365* ❖ comment by: *CAA-NL*

AMC 66.A.45[g][1][iv] indirectly states that type training also covers additional manufacturer designations. It should be sufficient to cover one type representative of the range of aircraft within the type rating.

	Part-66 licences should be kept Standard, Simple and Transparant; with as little variations or limitations as we can affort. It is not practicle (if possible) to cover all (customer) modifications by courses. And more important it is not necessary to use the AML to ensure that all details are covered. The professional maintainers are very well capable to cope with minor differences. Furthermore, approved maintenance organisations have a resposibility to ensure their staff is properly trained in customer specific detailes and is up to date. Within a type rating, differences between one type and the others should be small enough to cover with dedicated instruction or training by the AMO. In the case of aircraft types which can be maintained by independent certifying staff, just maintenance manualsshold be sufficient. For type ratings that are modified after the certificates of recognition are issued, there is no requirement for a new course or a new AML. It is not practical to refer to the content of the original course. NAA's in general will only have the certificate of recognition in their files.
response	*Partially accepted* The comment does not introduce clarification to the current proposal. Here "diference training" means training to cover the differences between two different aircraft type ratings. For variants within the same type rating, refer to answers n°364 and 307 where, currently, the 145 organisations are responsible for the variant courses. As you stated, within one type rating, differences between variants (inside a rating) should be small (the internal procedure refers to courses of less than 3 days for non large aircraft and 5 days for large aircraft). This is subject of task related to OSC, where this definition may be refined.

B. Draft Rules - III. Draft Decision AMC to Part-66 - AMC 66.A.45(g) and (h) p. 64

comment	*244* comment by: *Airbus* **NPA Page 64 of 116** **Draft Decision AMC and GM to Part-66,** **New AMC 66.A.45 (g) and (h) "Type / task training and ratings"** **Revise the 2nd sentence to read as follows:** **The translator shall be approved to a national standard acceptable to the competent authority or be a native speaker of the language concerned.** **<u>Justification</u>:** **The added condition also matches the intent of the AMC.**
response	*Noted* The sentence has been deleted.

comment	*354* comment by: *AgustaWestland* this AMC seems to be conflictual with 66.A.20. How can a certifying staff become familiar with applicable litterature language if the type training is performed with translator ? Language proficency and document interpretation in our view is crucial for flight safety.
response	*Noted* The nature of the comment is understood but it is a legal issue when the national language has to be used according to the national law: the applicant may claim the help of a translator. English is not binding for certain Member States

comment	*372* comment by: *CAA-NL* **Language translator** AMC 66.A.45(g) and (h). However I agree a language translator would be useful, it is important to prepare the minimum training material in a language that the student can read and understand.
response	*Noted* The comment is understood. Refer to comment n°354 (just above)

B. Draft Rules - III. Draft Decision AMC to Part-66 - AMC 66.A.45(i) p. 65

comment	*310* comment by: *CAA-NL* …'the number of aircraft types' … can be replaced by;…'at least two different aircraft types from the manufacturer sub-group. All aircraft in the manufacturer sub –group should be considered representative. If EASA does not consider all aircraft within a sub-group representative for that group, EASA should redefine the groups to reflect and standardize this. Group-ratings should be listed by EASA.
response	*Partially accepted* Partially accepted: Criteria have been introduced in AMC 66.A.45(i) and (j) following the current AMC66.A.45(g)

B. Draft Rules - III. Draft Decision AMC to Part-66 - AMC 66.A.45(k) p. 65

comment	*398* comment by: *CAA-NL* C 66.A.45(k) requires an annual inspection. This is not practical because not all maintenance organisations will perform the annual inspections and annual inspections do not take place frequently enough.
response	*Accepted* AMC 66.A.45(k) has been revised to indicate that these should cover the tasks applicable to the limitations which are typical of an annual inspection. It does not mean that an annual inspection must be carried out

B. Draft Rules - III. Draft Decision AMC to Part-66 - AMC 66.B.115 p. 65-66

comment

56 comment by: *Irish Aviation Authority*

Typo in paragraph (a)The word 'approved' appears twice.

Solution; remove the word 'approved' where it appears after the word 'organisation'.

response

Accepted

The whole paragraph has been reworded.

comment

143 comment by: *Aircraft Engineers International (AEI)*

AMC 66.B.115 Procedure for the amendment of an aircraft maintenance licence to include an aircraft type or group

(a) Where the approved maintenance organisation ~~approved~~ conducts the practical training, it must confirm to the competent authority that the trainee has been assessed and has successfully completed the practical elements of type training to satisfy the requirements of 66.A.45(c). The competent authority is required to approve the practical elements and its assessment, typically by a procedure as agreed by the competent authority or on a case-by-case basis.

Editorial comment:

Remove ~~approved~~ from the sentence.

Reason: Printing error.

response

Accepted

The whole paragraph has been reworded.

comment

374 comment by: *CAA-NL*

66.B.115 Procedure for the amendment of an aircraft maintenance licence to include an aircraft type or group.

a) The title suggests that it is applicable to amendment only but through the reference in B100, it also is applicable for initial type rating. Suggest "**66.B.115 Procedure to include an aircraft type or group"**

b) Criteria for combination of courses are not mentioned in section A.

c) To enable the verification of the duration of courses, in case courses are combined, it is essential to state the duration on the certificate of recognition.

d) Preferably the Approved maintenance organisation develops and conducts the practical training according to approved procedures and gives a single statement upon completion. The competent authority can audit the system and verify statements whenever necessary. This is more efficient because procedures have not to be verified for each applicant and is less time

consuming for the authorities.

e) AMC 66.A.45(k) the **experience record**, preferably should be a condensed statement of the experience, which upon request can be substantiated by details. To enable verification of the certification by certifying staff, details of company and licence should be in the statement.

f) 5. Semantics; …..”or a course directly approved by the competent authority, for difference straining is acceptable” change in …..”or a course directly approved by the competent authority for difference straining, is acceptable” or …..”or a course for differences training, directly approved by the competent authority, is acceptable”

g) 8. Obligation for practical training and OJT to be assessed can be deleted because it is in section A.

h) 8. “Wherever undertaken”. Better to delete last part because it suggests a relation with the place where it is better to include auditing of Practical training and OJT by NAA’s in Part-145 and part M. (Auditing will take place - as usual – on a sample base.)

response

Noted

a) Not Accepted
The title is considered to be clear enough.
b)Noted
The comment is not valid for this section of the CRD.
In addition, the NPA in Appendix III to Part-66 (§2 (d)) states that it is left to the Competent Authority to check the justifications of the duration in the case of a combined course.
c) Not accepted
The duration of the course shall be verified before the course is approved. Once the Part-147 course is approved, according to Article 2 §3(b) of EC n°216/2008, the certificate of recognition shall be automatically recognised by any Member State. New 66.B.130 gives more explanations.
d) Noted
The comment is not valid for this section of the CRD and do not refer to 66.B.115. Nevertheless 66.B.130 has been developed for that purpose.
(e) Noted
(f) **Accepted**
The whole paragraph has been reworded.
(g) **Not accepted**
It has to be kept in section B because this requirement is also applicable to the Authorities.
(h) **Accepted**
The last part of the sentence has been deleted.

comment

375 comment by: *CAA-NL*

AMC 66.B.115 Page 66.

i) ad (a) move the second ‘approved’ to ‘approved practical training’..

ii) Certification by approved maintenance organisations now is free format. Better to require a standard **certificate of recognition for practical training**. This would facilitate acceptance by all NAA’s.

iii) Ad [b] the requirements for partial training need to be placed in Section A.

iv) Ad [b] 4. please add ATA 42 and 44. the avionic systems training should cover interfaces as well.

v) Certificates should be required to specify details of the coverage of systems and interfaces.

response *Noted*

i) Accepted
The paragraph has been reworded.
ii) Not accepted
The AMC is written in order to give the maximum flexibility to the maintenance organisation and in addition the practical training should be approved according to a procedure agreed by the Competent Authority (new 66.B.130)
iii) Partially Accepted
The text has been transferred to AMC 66.A45 (k)
iv) Accepted
ATA 42 and ATA 44 have been added.
v) Not accepted
The certificate is not the right document to specify the content of the training.

B. Draft Rules - III. Draft Decision AMC to Part-66 - Appendix I p. 66

comment *335* comment by: *UK CAA*

Paragraph:
Part-66 Appendix I

Comment:
Modules 11A, 11B, 12 and 13 should be reviewed and re-written to better define the basic training requirements for aircraft systems ensuring that all currently "in use" systems are included.

Justification:
Training requirement ill defined and the opportunity exists to rectify this issue as Module 13 is required to be re-written to incorporate systems into the B2 syllabus.

response *Not accepted*

The Agency notes that this change falls outside the ToR and a new Rulemaking Task may be required.

comment *336* comment by: *UK CAA*

Paragraph:
Part-66 Appendix I

Comment:
Intention to add certain technologies to Module 13 is not supported by underpinning knowledge in modules 4 and 5

Justification:
New technology basic knowledge not included in current basic syllabus.

Proposed Text:
Add to Part-66 Appendix I Module 5.15

Modular avionic Systems

Cabin Network Service

Air Traffic Information Management Systems.

response *Accepted*

Submodule 5.15 has been amended.

B. Draft Rules - III. Draft Decision AMC to Part-66 - Appendix II p. 67-79

comment *254* comment by: *CAA-NL*

Change of oil, is for many aircraft a rare task, furthermore is it not clear whether it means replacing the oil by the same type or replacing it by a different type of oil..

response *Noted*

This appendix is an AMC and serves as a guidance.
It does not mean that the applicant has to perform the change of the oil: the OJT should cover at least 50% of the Appendix II tasks (AMC to Part-66), though type specific tasks may be used in place of those in Appendix II (AMC to Part-66), as applicable to the aircraft type concerned and licence category. Significantly, OJT should demonstrate a variety and cross section of tasks both in terms of aircraft systems experience and in the complexity of the tasks performed.
Refer to AMC 66.A.45 (l) Type/task training and ratings.

comment *255* comment by: *CAA-NL*

In many cases, making adjustments is as relevant as replacing; suggest to change 'replace' for 'replace or adjust'.

response *Noted*

When necessary, the words "replace" or "adjust" should be understood as "replace and/or adjust".
In fact the OJT should be under the supervision of a person checking the performance of the tasks.
OJT should demonstrate a variety and cross section of tasks both in terms of aircraft systems experience and in the complexity of the tasks performed.
Refer to AMC 66.A.45(g)(l) Type/task training and ratings.
This list of tasks has to be adapted to the need of the requirements.

comment *339* comment by: *UK CAA*

Paragraph:

	AMC Part-66 Appendix II (p72 of NPA) **Comment:** Flotation Equipment missing from list. **Justification:** Major subject not included. **Proposed Text:** Add "Flotation Equipment" to "Landing Gear" list.
response	*Accepted* The proposal has been added to the list.

B. Draft Rules - IV. Draft Decision GM to Part-66 - GM 66.A.20(a) p. 80

comment	*127* comment by: *Irish Aviation Authority* GM 66.A.20(a) Comment; paragraph 1 refers to the list of tasks as specified in Part-145 and agreed by the competent authority. This is the same as the current GM. Problem; AMC 145.A.30(g) lists the tasks but makes no reference to 'and agreed by the competent authority' except in relation to deactivation of subsystem and components where the competent authority agrees that the task is simple. In fact the replacement of any component not listed can be only be authorised when it is agreed by the Agency where it is agreed that the task is simple. Suggestion; To remove any ambiguity remove the reference to 'and agreed by the competent authority' from GM 66.A.20 (a) paragraph 1.
response	*Partially accepted* GM 66.A.20(a), paragraph 1 is kept with the reference to "and agreed by the competent authority". However, AMC 145.A.30(g) is amended to remove the need for agreement by the Agency and replace it by agreement by the competent authority.

comment	*329* comment by: *Walter Gessky* **GM 66.A.20(a) 3. (page 80)** **Change the following:** **"**The category B1 licence also permits to certification of work on avionic systems involving **only** simple tests…" **Justification:** **Editorial to give a stronger advice that only simple tests to provide serviceability are accepted.**
response	*Accepted*

	Text changed.

comment	*388* comment by: *CAA-NL* Change 66.A.20(a)(3)(b) in 66.A.20(a)(3)(ii).
response	*Accepted* Text changed.

B. Draft Rules - IV. Draft Decision GM to Part-66 - GM 66.A.45 p. 80-82

comment	*107* comment by: *CAA CZ* We do not consider implementing of the new rating groups suitable (Draft Decision GM to Part-66) - page 81. Actual status of 13 groups is satisfactory, because the scope for the record of the qualification into the licence is exactly defined e.g. SEP-MS. By proposed entry it would be therefore necessary to indicate the limitations, e.g. metal structure. Proposed groups and sub-groups do not consider the difference between single engine piston and multi engine piston aeroplanes. Current groups enable to cover several types under group rating. In reference to above mentioned we suggest to determine so-called "representative types" from each of the rating. We consider as more acceptable instead of thinking out of the new manners of entries to concentrate on definition of these representative types. For definition of aeroplanes representative types we propose following characteristics: a) pressurized cabin b) retractable landing gear c) variable pitch propeller d) turbo-charged piston engine e) de-icing system f) electronic control FADEC Every representative type would have to have at least characteristics b) and c). In the type list of every representative type would be indicated its characteristics (in this case are enough a,d,e, f)¨. Applicant for group rating would have to fulfill the requirement of three types from three various manufacturers at least two of them would have to be the representative types. Both representative types would have to include minimally three of the stated characteristics. For the group rating of manufacturer one of two types shall represent manufacturer technology level, i.e. type of the latest development series.
response	*Noted*

It was one of the principal objectives of the task to simplify the number of groups and adapt them to the qualifications of each type of license. So, the groups/sub-groups proposed in the NPA are retained.
Regarding the definition of "representative aircraft", AMC 66.A45(i) and (j) will introduce criteria. However, it is not the intention to define which particular aircraft within a group/sub-group are representative.

comment *307* ❖ comment by: *CAA-NL*

1) New (sub-group-)ratings are too complex. However industry will get used to it, more complex systems will increase the resik of mis-interpretation.
2) Text on the License should be unambiguously;
a) *Intuitively lead to the correct aircraft.*
Fokker 50 covers all Fokker 50 models.
Falcon 50 does not cover the Falcon 50-EX therefore it is better to use Falcon 50-B.
b) *Text should be standardized.*
All AML's should use the same words, should or should not refer to the groups, Manufacturer group-ratings should be identical in all member states AML's.
c) *Text should be selfexplanatory.*
The need to check a cross reference to determine whether a rating covers a certain aircraft should be minimized.
d) *Manufacturer sub-group rating* is a group-rating within one of the subgroups 2a,b,c,d. e.g two Eurocopter types: Eurocopter AS 350 (Turbomeca Arriel 1) & Eurocopter SA 316 B/SA 316 C (Turbomeca Artouste)on the AML will lead to the 'sub-group type-rating':
"All Eurocopter (in group 2c), single turbine helicopters, below MTOW 5700, that are not determined to be complex by EASA"
Just "Eurocopter single turbine helicopters" would have included Eurocopter helicopters (if any) that are considered complex or are above 5700kg.
e) '*Limitations*' can as well be understood as being the 'not-allowed part' as the 'allowed part'. To avoid confusion "limited to…" or "excluding…" should be used; e.g.'limited to landing gear' or 'excluding landing gear', rather than just 'limitation landing gear'.
f) *Text of limitation should be clear* from the information printed on the AML. Limitations in group 2 or 3 "except aircraft equipped with…". It should be made clear on the license, that complete aircraft are excluded, including other systems. (ref 66.A.45k). Example: "Aircraft types equipped with retractable landing gear or variable pitch propeller are excluded."
3) Grey area's should be eliminated;
Before publication of the decision special attention needs to be paid to the evaluation of the standardized and selfexplanatory wording. By preparing actual practical examples, grey area's can be found. Self-explanatory standardised wording on the licences assists organisations in determining the required type rating for specific maintenance on specific aircraft. This will lead to safer and more efficient maintenance. Furthermore verification by the authorities and the issuance of AML's will be easier.
4) Exact scope;
a) Text printed on the AML should make clear what exactly is the scope of the privilege:
Example 1: B2 typerating for sub-group 2a should not be misinterpreted to include large or complex aircraft in group 1. This means that EASA needs to include the text for group ratings in the list of type ratings to standardize.
In this case B2 for
"All multi turboprop aeroplanes, other than large or determined complex by EASA, except aircraft equipped with Aeroplane autopilots, EFIS and/or FADEC."

”All single turboprop aeroplanes, other than large or determined complex by EASA, except aircraft equipped with Aeroplane autopilots, EFIS and/or FADEC.”
“All piston engine aeroplanes, other than large or determined complex by EASA, except aeroplanes equipped with Aeroplane autopilots, EFIS and/or FADEC.”
Wxample 2: B1.1 for Pilatus PC-7 (PWC PT6) en Pilatus PC-9 (PWC PT6) lead to B1.1 for:
”All Pilatus single turboprop aeroplanes (in group 2b), below MTOW 5700, that are not determined to be complex by EASA” & ”All piston aeroplanes below MTOW 5700, that are not determined to be complex by EASA”.

5) What is included?

a) Does a rating (or more manufacturer) ratings from group 1 automatically include the comparable sub-group rating in group 2? Eg Fokker 50 includes 2a multi turboprop (+2b and 3)?
b) Does a type rating in group 1, in combination with a type rating in a group 2 sub-group, lead to manufacturer group rating in group 2. E.g. Piper 31 and Piper 42?
c) Automatically included (sub)groups and category A sub-category, should be printed on the AML. This to avoid any doubt. Ref 66.A.45(i)&(j). [CAA-NL puts cat A on AML.] Although the meaning of typeratings can be looked up inn the rule we at this stage can use the opportunity to define clear, standard, self-explanatory type ratings.
d) ‘Representative’ needs clarification: every type rating in a group, should be able to represent the group. If not, EASA should publish a list of all groups with aircraft that can and cannot represent the group. The words representative and relevant might cause confusion.

6) Training and examination

a) Cat B should have examination to obtain group 2 (full group rating). This to have the same approach for both category B2 and B1

b) For group 2 and 3 part 147 should be amended to allow for type-examinations only without approval for training. [Part-147.a.145 e]
c) To remove limitations, practical experience might be difficult to get, example; introduction of new aircraft. It makes sense to accept type training and/or examination as alternative. This applies to cat B1, B2 and C.
i) Please create possibility to get type rating in group group 2 and 3 - similar to group 1 - after successful completion of theoretical and practical training. This might be quicker than completing the experience task list.
ii) What is the rationale to copy the B1 limitations to the Cat C and not the B2 limitations? Propose to give category C unlimited types within Group 3 and sub-groups in group 2. The assistance of type rated Base maintenance support staff with safeguard the correct level of knowledge and experience. This will increase transparency of the system.

7) Typeratings

a) Cat C should be allowed to have the same type ratings as B1 and B2 because both lead to Cat C with either experience as B1 or B2 (66.A.30(3 and 4)). If category C cannot have full sub-group rating, what type ratings will a B2 with a 'full subgroup' get in category C?

b) Page 31. 66.A.47 Please number the group and list the groups in the same order as in decision 2007_09_R.
Name of group (short) Group
— helicopter single piston engine 13

— helicopter single turbine engine 12
— aeroplane single piston engine — metal structure 6
— aeroplane multiple piston engines — metal structure 5
— aeroplane single piston engine — wooden structure 8
— aeroplane multiple piston engines — wooden structure 7
— aeroplane single piston engine — composite structure 10
— aeroplane multiple piston engines — composite structure 9
— aeroplane turbine — single engine 4
— aeroplane turbine — multiple engine 3

Old Group Name of old group (long):
3Aeroplanes multiple turbine engines (AMTE) of 5700kg and below, eligible for type examinations and manufacturer group ratings.
4 Aeroplanes single turbine engine (ASTE) of 5700kg and below, eligible for type examinations and group ratings.
5 Aeroplane multiple piston engines – metal structure (AMPE-MS), eligible for type examinations and group ratings.
6 Aeroplane single piston engine – metal structure (ASPE-MS), eligible for type examinations and group ratings.
7 Aeroplane multiple piston engines – wooden structure (AMPE-WS), eligible for type examinations and group ratings.
8 Aeroplane single piston engine – wooden structure (ASPE-WS), eligible for type examinations and group ratings.
9 Aeroplane multiple piston engines – composite structure (AMPE-CS), eligible for type examinations and group ratings.
10 Aeroplane single piston engine – composite structure (ASPE-CS), eligible for type examinations and group ratings.
11 Multi-engine helicopters (MEH), requiring type training and individual type rating.
12 Helicopters – Single turbine engine (HSTE), eligible for type examinations and group ratings.
13 Helicopters – Single piston engines (HSPE), eligible for type examinations and group ratings.

d) 66.A.47 Manufacturer group ratings should be standardized by EASA. EASA should provide list with specified ratings, including manufacturer group ratings. (66.B.115b).

e) For Cat C type ratings, subsequent type training might be Cat C training. B1 training would also be acceptable because it covers Cat C requirements. Cat B2 type training however does not cover the cat C requirements. This conflicts with the acceptance of the first type training at B2 level. Propose to change the requirement to always include B1 or C training (or examination).

example of typerating list with details for possible limitations:

	B1						**B2**			
	pressur-isation	retractable landing gear	variable pitch propeller	turbo-charged piston engine	FADEC	Structures (Metal / Composite / Wood)	helicopter autopilots (only applicable to sub-groups 2c) and 2d))	aeroplane autopilots	EFIS	FADEC
Cessna 208 Series (PWC PT6)	**P**	**P**	**P**	**-**	**-**	Allumininum		**P**	**P**	**-**
Grob G 520 (Honeywell TPE331)	**-**	**P**	**P**	**-**	**-**	composite		**P**	**P**	**-**

response *Noted*

This comment is a repetition from another section. Already answered.

comment *364* ❖ comment by: *CAA-NL*

Above all, theoretical training should address important maintenance aspects of the aircraft; not only procedures but pitfalls as well.

i) It is not necessary to cover significant features of all variants. If practical training is not covering all variants and if the student is not working on a particular variant it will be forgotten quickly and might even confuse students. **Propose to require only one representative type of the range.** (As was indicated by EASA before)

ii) It is not clear what is meant by…"and variant" in last sentence of 1. "Theoretical type training should.....whereas it is not required that all possible customer options and variant under the same type ratings are covered."……

iii) Ad 4, 5 and 6. change 'should' in 'shall' see 66.a.45(g)1.(ii)I. page 27.

iv) Ad 5. assessment by competent authority should be introduced in the rule instead of AMC.

v) Ad 6. Because it is in AMC for Part-66, "the issue of a type rating" must mean ädding the type rating to the Part-66 AML by the NAA". The applicant meets the criteria: licence with the basic category and the right Part-147 certificate of recognition. The NAA should not verify the elements mentioned under 6. These elements are part of the training course and assessment and will be verified before succesfull completion of the course. For a 147 this is before the issue of a certificate of recognition, for approved maintenance organisations there is not a standard defined (yet). Ad 6. [c] insert 'of' in demonstrate the correct use of all technical literature.

Ad 7 and 8. These subjects are covered by appendix III.

response *Noted*

i) **Noted**
The proposed text does not introduce clarification to the current text. Although it is not clear in the rule whether the type rating should cover the variants or options of the aircraft, it is however the responsibility of 145 approved organisations to ensure that the personnel is competent on the aircraft he is intended to work on. Which means that in case of variants, variant courses may need to be conducted.
This is however not the subject of this NPA and should be covered by task 21.039 related to OSC.

ii)**Noted**

No text proposed by the commenter
iii) **Rejected**
"Should" shall stay because the text is an AMC.
iv) **Accepted**
The text in the requirements has been changed accordingly.

v) **Partially accepted**
Similar wording to the requirement (66.A.45(g)) is used for this AMC.
Ad6: **accepted**
Text changed
Ad7 and 8: **noted**

comment

365 ❖ comment by: *CAA-NL*

AMC 66.A.45[g][1][iv] indirectly states that type training also covers additional manufacturer designations. It should be sufficient to cover one type representative of the range of aircraft within the type rating.
Part-66 licences should be kept Standard, Simple and Transparant; with as little variations or limitations as we can affort. It is not practicle (if possible) to cover all (customer) modifications by courses. And more important it is not necessary to use the AML to ensure that all details are covered. The professional maintainers are very well capable to cope with minor differences. Furthermore, approved maintenance organisations have a resposibility to ensure their staff is properly trained in customer specific detailes and is up to date.

Within a type rating, differences between one type and the others should be small enough to cover with dedicated instruction or training by the AMO. In the case of aircraft types which can be maintained by independent certifying staff, just maintenance manualsshold be sufficient.
For type ratings that are modified after the certificates of recognition are issued, there is no requirement for a new course or a new AML.
It is not practical to refer to the content of the original course. NAA's in general will only have the certificate of recognition in their files.

response

Noted

The comment does not introduce clarification to the current proposal.

Here "difference training" means training to cover the differences between two different aircraft type ratings.

For variants within the same type rating, refer to answers n°364 and 307 where, currently, the 145 organisations are responsible for the variant courses.

As you stated, within one type rating, differences between variants (inside a rating) should be small (the internal procedure refers to courses od less than 3 days for non large aircraft and 5 days for large aircraft). This is subject of task related to OSC, where this definition may be refined.

B. Draft Rules - IV. Draft Decision GM to Part-66 - GM 66.A.45(g)(1) p. 82

comment

391 comment by: *CAA-NL*

Recommend to avoid the use of the wordt exceptional for circumstances that are continuously present e.g. GA aircraft.

response

Noted

The intention of this GM is to explain the meaning of “exceptional” as used in

Appendix III to part 66 (sub-paragraph 2.1 (d)). The use of the word "exceptional" is on purpose when the training provider would like to go below the minimum duration of the course.
This GM does not only address the GA.
In addition, special reduction to the minimum duration is now proposed in Appendix III §2 for:

- Non pressurised piston engine aeroplanes below 2000kg MTOM
- Helicopters pertaining to group 2.

B. Draft Rules - V .Draft Decision AMC to Part-147 - AMC. 147.B.120(a) p. 84

comment *384* comment by: *CAA-NL*

Sampling time of three hours is not a necessary requirement. In many situations audit time can be spend more effectively on other subjects than on auditing three hours continuously actual classroom training.

response *Noted*

This proposal is an AMC; the competent authority may propose something equivalent if it is felt to be more efficient. The intend here is to ensure that at least one basic and one type training course is sufficiently audited in order to establish that the training is conducted in an appropriate manner.

Attachments - 1. RIA 66.006 - 1. Purpose and Intended Effect p. 87

comment *20* comment by: *Maurizio Alfieri*

Purpose and Inteded effect :
a) Issue which the NPA is intended to address:

Comment:
Your NPA assumption is based on the fact that there are two distint figures on the field: B1 and B2 and feed back suggested that there is conflict is between B1 and B2 competence . This assumption in my understading is uncorrect and purely theoretical. If no statistic are pubblished in how many B1 and B2 licences have been issued , it is difficult to take position.
However it is easy to verify that all the old licenses issued before Part-66 have been communted automatically into B1/B2 capability. Only newly issued certifications may have distint Category .
All companies are looking for figure with B1/B2 combined for cost saving and market is distorted by large presence of "grand father's" certification.
That's why this dispute is accademic only. In realty Companies are forced to have B1 and B2 combined in the same person for the sake of lime maintenance where two man for one job is too much.

response *Noted*

We note you comment. However, we believe that it is far from the reality your affirmation that most of the national qualifications have been converted to B1+B2 Part-66 licence.

comment *21* comment by: *Maurizio Alfieri*

3: Impacts
ii Economic

Option 2a) Expand B1 privileges :

Comment:
Negative impact due to increase of training is largely compensated by a more flexible work foce . Flexible utilization of B2 personnel can be achieved by reducing the number and fully occupied on base maintenance only. Line maintenace base on B1 + Cat A only.

Option 2b)Expand B2 privileges.

Comment:
Companies will appreciate the better utilization of B2 personnel when they would became a full B1 . Line maintenace: two man for one job is too much . Eventually for Line Maintenance only option 5) Single B licence would be the case. B2 to be highly utilized and preciouse in Base Maintenance.

response *Noted*

The Agency takes note of your comments.

Attachments - 1. RIA 66.006 - 2. Options p. 87-89

comment *22* comment by: *Maurizio Alfieri*

2. Option .

Add Option
Option 7) Line Maintenance & Base Maintenace distint level

Line Maintenance performed by B1 expanded (see option 2a or 5)
Base Maintenance Performed by B1 expanded + B2 expanded (see option 2c)

response *Not accepted*

The Agency takes note of your proposal. However, this would mean to increase the knowledge requirements of the B1 to cover the current B1 + B2 requirements.

Attachments - 1. RIA 66.006 - 4. Summary and Final Assessment p. 92-93

comment *144* comment by: *Aircraft Engineers International (AEI)*

4. Summary and Final

Assessment

Option 2c) Further expansion of B2 privileges:

Comment:

AEI favours Option 2c).

Reason:

With the new high-tech aircraft under production, such as the B787 / A380 / A350 we need more and more B2 skill and competence in the industry, and one way to cover the industry current need and prepare for the next generation technology need is to expand the B2 privileges and thereby increase the overall number of B2 certifiers in European aviation industry. The B2 Certifiers have to be able to solve defects in mechanical/electrical systems without the involvement of a B1 certifier. Therefore the basic training of the B2 should be expanded to that extent. This also has the advantage of greater flexibility for the 145 AMOrganisation.

Proposal:

EASA should form a Working Group soonest that has this expansion as its specific task.

response

Noted

The Agency recommends AEI to formally request a Rulemaking Action through the appropriate channels.

comment

415 comment by: *SNMSAC Syndicat National des Mécaniciens Sol de l'Aviation Civile*

Page 93 of 116

4. Summary and Final Assessment

Because of the intended effect of the ToR, option 2b) has been selected over option 3.

SNMSAC is convinced that with the quick increase of new technology type of aircraft and rotorcraft as well as the issue of NPA 2007-01 it shall be an increased of B2 needed. Specially for trouble shooting that the A/C computer system is not able to determine by just showing "test failed" or "test not pass" on MCDU when B1 are checking after a component replacement or a normal functional check scheduled.

In consequence we think that another ESAS W/G shall have to be schedule on agenda soon.

response

Noted

The Agency recommends SNMSAC to formally request a Rulemaking Action through the appropriate channels.

Attachments - 2. RIA 66.009 - 2. Options p. 96-100

comment

145 comment by: *Aircraft Engineers International (AEI)*

The preferred option selected (if possible):

Option b.2)

Comment:

This is also the AEI preferred option

Reason:

In our opinion the best solution.

response *Noted*

Attachments - 3. RIA 66.011 - 2. Options p. 109-112

comment *146* comment by: *Aircraft Engineers International (AEI)*

c. If possible, the preferred option selected:

Option 4 (combination of theoretical elements based on a minimum duration and a fixed content for practical elements, with mandatory OJT for the first type training in the sub-category) comes to be the more realistic option, waiting for the TCH minimum training requirements to be in place.

Comment:

Option 4 is also the AEI preferred option

Reason:

In our opinion the best solution.

response *Noted*

Thanks for the comment

Appendix A: Resulting text after CRD

B. DRAFT OPINIONS AND DRAFT DECISIONS.

NOTE:

The text of the amendment is arranged to show deleted text, new text or new paragraphs as shown below:

1. ~~Text to be deleted is shown with a line through it and with grey shading.~~
2. New text to be inserted is highlighted with grey shading.
3. ….

Indicates that remaining text is unchanged in front of or following the reflected amendment.

….

I. Draft Opinion (EC) No 2042/2003

Regulation (EC) 2042/2003 is amended as follows:

In Article 7 the following paragraphs 7, 8 and 9 are added:

…

Article 7

Entry into force

…

7. Reserved.

8. Reserved.

9.

(a) Persons holding a valid Part-66 licence in a given category/sub-category upon entry into force of this Regulation amendment shall automatically obtain the new 66.A.20(a) privileges corresponding to such category/sub-category.

(b) Amendments introduced in Appendix I and Appendix II to Part-66 shall apply as of **(15 months after the date of entry into force)**, except as provided in paragraph (c) below.

(c) Applications for Part-147 approval of basic training courses, submitted to the competent authority after the date of entry into force of this Regulation amendment, shall be subject to the new requirements of Appendix I and Appendix II of Part-66.

(d) Organisations applying for Part-147 approval of new type training courses may elect not to apply this Regulation amendment until **(15 months after the date of entry into force)**. Partial implementation of selective items of this Regulation amendment is not allowed.

(e) The provisions of paragraph (d) above shall also apply to organisations applying to the competent authority for approval of type training courses not imparted by Part-147 approved maintenance training organisations.

(f) Type training courses approved in accordance with the requirements applicable prior to the entry into force of this Regulation amendment can only be imparted until **(15 months after the date of entry into force)**. After that date, these courses must comply with the requirements of this Regulation amendment, except that there is no need to produce a training needs analysis for courses which duration is above the minimum duration described in Appendix III to Part-66.

(g) Certificates for type training courses specified in paragraph (f) above, which have been issued not later than **(15 months after the date of entry into force)** shall be considered as issued in accordance with this Regulation amendment.

(h) By derogation to paragraph 66.A.45, for group 2 and group 3 aircraft, the holder of a category B1, B2 or C aircraft maintenance licence issued, last renewed or last amended prior to the date of entry into force of this Regulation amendment may continue to exercise certification privileges when the aircraft maintenance licence is endorsed with the appropriate aircraft type rating, full group rating or manufacturer group rating, within the groups listed below:

(1) for category B1 or C:
— helicopter piston engine
— helicopter turbine engine
— aeroplane single piston engine — metal structure
— aeroplane multiple piston engines — metal structure
— aeroplane single piston engine — wooden structure
— aeroplane multiple piston engines — wooden structure
— aeroplane single piston engine — composite structure
— aeroplane multiple piston engines — composite structure
— aeroplane turbine — single engine
— aeroplane turbine — multiple engine

(2) for category B2 or C:
— aeroplane
— helicopter

These aircraft maintenance licences shall have the full group ratings and manufacturer group ratings converted to the new ratings defined in 66.A.45 following the procedure described in 66.B.125 at the first amendment or renewal of the licence performed after the date of entry into force of this Regulation amendment. Individual aircraft type ratings already endorsed on these licences are not subject to conversion and shall remain on the licence.

This Regulation amendment shall enter into force 90 days after its publication in the *Official Journal of the European Union*.

A) PART 145

Regulation (EC) 2042/2003 Annex II (Part-145) is amended as follows:

Point 145.A.30 is amended as follows (Working Groups 66.006 and 66.011):

145.A.30 Personnel requirements

...

(g) Any organisation maintaining aircraft, except where stated otherwise in paragraph (j), shall in the case of aircraft line maintenance, have appropriate aircraft ~~type~~ rated certifying staff qualified as category B1 and B2, as appropriate, in accordance with Part-66 and 145.A.35.

In addition such organisations may also use appropriately 66.A.20(a)(1) and 66.A.20(a)(3)(ii) task trained certifying staff qualified ~~as category A~~ in accordance with Part-66 and 145.A.35 to carry out minor scheduled line maintenance and simple defect rectification. The availability of such ~~category A~~ 66.A.20(a)(1) and 66.A.20(a)(3)(ii) certifying staff shall not replace the need for Part-66 category B1 and B2 certifying staff to support them ~~category A certifying staff~~. However, such Part-66 category B1 and B2 staff need not always be present at the line station during minor scheduled line maintenance or simple defect rectification.

...

Appendix IV is amended as follows (Working Group 66.006):

Appendix IV

Conditions for the use of staff not qualified to Part-66 in accordance with 145A.30(j)1 and 2

1. Certifying staff in compliance with all the following conditions will meet the intent of 145.A.30(j)(1) and (2):

   (a) The person shall hold a licence or a certifying staff authorisation issued under the country's National regulations in compliance with ICAO Annex 1.

   (b) The scope of work of the person shall not exceed the scope of work defined by the National licence/certifying staff authorisation.

   (c) The person shall demonstrate he has received training on human factors and airworthiness regulations as detailed in Part-66.

   (d) The person shall demonstrate five years maintenance experience for line maintenance certifying staff and eight years for base maintenance certifying staff. However, those persons whose authorised tasks do not exceed those of a Part-66 category A certifying staff, need to demonstrate three years maintenance experience only.

   (e) Line maintenance certifying staff and base maintenance support staff shall receive type training and pass examination at ~~a~~ the category B1 or B2 level ~~corresponding to~~ , as applicable, of Part-66 Appendix III ~~level 3~~ for every aircraft type on which they are authorised to make certification.

   However those persons whose authorised tasks do not exceed those of a Part-66 category A certifying staff may receive task training in lieu of complete type training.

   (f) Base maintenance certifying staff must receive type training and pass examination at ~~a~~ the category C level ~~corresponding to at least~~ of Part-66 Appendix III ~~level 1~~ for every aircraft type on which they are authorised to make certification, except that for the first aircraft type, the training and examination shall be at the category B1 or B2 level of Part-66 Appendix III.

2. ….

B) PART 66

Regulation (EC) 2042/2003 Annex III (Part-66) is amended as follows:

Point 66.A.20 is amended as follows (Working Group 66.006):

66.A.20 Privileges

(a) Subject to compliance with paragraph (b), the following privileges shall apply:

1. A category A aircraft maintenance licence permits the holder to issue certificates of release to service following minor scheduled line maintenance and simple defect rectification within the limits of tasks specifically endorsed on the authorisation. The certification privileges shall be restricted to work that the licence holder has personally performed in a Part-145 organisation.

2. A category B1 aircraft maintenance licence shall permit the holder to issue certificates of release to service and to act as B1 support staff following maintenance, including aircraft structure, powerplant and mechanical and electrical systems. ~~Replacement of avionic line replaceable units,~~ Certification of work on avionic systems requiring only simple tests to prove their serviceability~~,~~ shall also be included in the privileges. Troubleshooting on avionic systems is not allowed. Category B1 shall automatically include the appropriate A subcategory.

3. A category B2 aircraft maintenance licence shall permit the holder:

   (i) to issue certificates of release to service and to act as B2 support staff following:
   - maintenance on avionic and electrical systems; and
   - maintenance on electrical and avionics parts within powerplant and mechanical systems, requiring simple tests to prove their serviceability;

   and

   (ii) for cases not already covered by paragraph 3(i) above, to issue certificates of release to service following minor scheduled line maintenance and simple defect rectification within the limits of tasks specifically endorsed on the authorisation. This certification privilege shall be restricted to work that the licence holder has personally performed in a Part-145 organisation, and limited to ratings already endorsed in the B2 licence.

   The category B2 licence does not include any A subcategory.

4. A category C aircraft maintenance licence shall permit the holder to issue certificates of release to service following base maintenance on aircraft. The privileges apply to the aircraft in its entirety in a Part-145 organisation.

(b) The holder of an aircraft maintenance licence may not exercise ~~certification~~ privileges unless:

1. in compliance with the applicable requirements of Part-M and/or Part-145.

2. in the preceding two-year period he/she has, either had six months of maintenance experience in accordance with the privileges granted by the aircraft maintenance licence or, met the provision for the issue of the appropriate privileges.

3 he/she has the adequate competence to certify maintenance on the corresponding aircraft.

~~3.~~ 4. he/she is able to read, write and communicate to an understandable level in the language(s) in which the technical documentation and procedures necessary to support the issue of the certificate of release to service are written.

A new point 66.A.42 is added as follows (Working Group 66.009):

66.A.42 Aircraft groups

For the purpose of maintenance licences, aircraft shall be classified in the following groups:

- Group 1: all complex motor-powered aircraft and those non complex motor-powered aircraft requiring an aircraft type rating. A non complex motor-powered aircraft requires an aircraft type rating when defined by the Agency.

- Group 2: aircraft other than those in Group 1, which belong to the following subgroups,:
  - sub-group 2a: single turbo-propeller engine aeroplanes
  - sub-group 2b: single turbine engine helicopters
  - sub-group 2c: single piston engine helicopters

- Group 3: piston engine aeroplanes other than those in Group 1.

Point 66.A.45 is replaced as follows (Working Groups 66.006, 66.009 and 66.011):

66.A.45 Type / task training and ratings

(a) The holder of a category A aircraft maintenance licence may only exercise certification privileges on a specific aircraft type following the satisfactory completion of the relevant category A aircraft task training carried out by an appropriately approved Part-145 or Part-147 organisation. The training shall include practical hands on training and theoretical training as appropriate for each task authorised. Satisfactory completion of training shall be demonstrated by an examination or by workplace assessment carried out by an appropriately approved Part-145 or Part-147 organisation.

(b) The holder of a category B2 aircraft maintenance licence may only exercise the certification privileges described in 66.A.20(a)(3)(ii) following the satisfactory completion of the relevant category A aircraft task training and six months of documented practical experience covering the scope of the authorisation that will be issued. The task training shall include practical hands on training and theoretical training as appropriate for each task authorised. Satisfactory completion of training shall be demonstrated by an examination or by workplace assessment. Task training and examination/assessment shall be performed by the Part-145 organisation issuing the certifying staff authorisation. The practical experience shall be also obtained within such Part-145 organisation.

(c) For group 1 aircraft, the holder of a category B1, B2 or C aircraft maintenance licence, except as otherwise specified in paragraph (n), shall only exercise certification privileges on a specific aircraft type when the aircraft maintenance licence is endorsed with the appropriate aircraft type rating.

The Agency shall be responsible for defining what airframe/engine combinations are included in each particular aircraft type rating.

(d) For group 2 aircraft, the holder of a category B1 or C aircraft maintenance licence, except as otherwise specified in paragraph (n), shall only exercise certification privileges on a specific aircraft type when the aircraft maintenance licence is either:
- endorsed with the appropriate aircraft type rating, or
- endorsed with the appropriate manufacturer sub-group or full sub-group rating.

The Agency shall be responsible for defining what airframe/engine combinations are included in each particular aircraft type rating.

(e) For group 2 aircraft, the holder of a category B2 aircraft maintenance licence, except as otherwise specified in paragraph (n), shall only exercise certification privileges on a specific aircraft type when the aircraft maintenance licence is either:
- endorsed with the appropriate aircraft type rating, or
- endorsed with the applicable full sub-group rating.

The Agency shall be responsible for defining what airframe/engine combinations are included in each particular aircraft type rating.

(f) For group 3 aircraft, the holder of a category B1, B2 or C aircraft maintenance licence, except as otherwise specified in paragraph (n), shall only exercise certification privileges on a specific aircraft type when the aircraft maintenance licence is either:
- endorsed with the appropriate aircraft type rating, or
- endorsed with the full group 3 rating.

The Agency shall be responsible for defining what airframe/engine combinations are included in each particular aircraft type rating.

(g) Aircraft type ratings shall be granted as follows:
1. For group 1 aircraft, after satisfactory completion of the relevant category B1, B2 or C aircraft type training described in 66.A.45(k) and, where applicable, after satisfactory completion of the corresponding On the Job Training described in 66.A.45(l)
2. For group 2 and group 3 aircraft, after either:
   - satisfactory completion of the relevant category B1, B2 or C aircraft type training described in 66.A.45(k) and, where applicable, after satisfactory completion of the corresponding On the Job Training described in 66.A.45(l), or
   - satisfactory completion of the relevant category B1, B2 or C aircraft type examination described in 66.A.45(m) and, in the case of B1 and B2 category, demonstration of practical experience on the aircraft type as described in 66.A.45(m). In the case of a category C rating, for a person qualified by holding an academic degree as specified in 66.A.30(a)(5), the first relevant aircraft type examination shall be at the category B1 or B2 level.

(h) For group 2 aircraft:
1. manufacturer sub-group ratings for category B1 and C licence holders shall be granted after complying with the aircraft type rating requirements of at least two aircraft types from the same manufacturer which combined are representative of the applicable manufacturer sub-group.
2. full sub-group ratings for category B1 and C licence holders shall be granted after complying with the aircraft type rating requirements of at least three aircraft types from different manufacturers which combined are representative of the applicable sub-group.
3. full sub-group ratings for category B2 licence holders shall be granted following demonstration of practical experience which shall include a representative cross section of maintenance activities relevant to the licence category and to the applicable aircraft sub-group.

For category B2 and C licence holders:

- full sub-group 2a automatically includes full group 3,
- full sub-group 2b automatically includes full sub-group 2c.

(i) For group 3 aircraft, full group rating for category B1, B2 and C licence holders shall be granted following demonstration of practical experience which shall include a representative cross section of maintenance activities relevant to the licence category and to the group 3.

(j) Unless the applicant provides evidence of appropriate experience, the group 3 rating granted to B1 licence holders as per above paragraph (j), is subject to the following limitations, which shall be endorsed on the licence:

- pressurized aeroplanes
- metal structure aeroplanes
- composite structure aeroplanes
- wooden structure aeroplanes
- metal tubing and fabric aeroplanes

These limitations are exclusions from the certification privileges and affect the aeroplane in its entirety. Nevertheless, the holder of a B1 aircraft maintenance licence with a group 3 rating is also entitled to issue certificates of release to service for M.A.803(b) Pilot-owner maintenance tasks on all group 3 aeroplanes, regardless of the limitations endorsed on the licence.

Limitations shall be removed following demonstration of appropriate experience or after having successfully completed training and examination at a Part-147 approved organisation or as approved by the competent authority. The examination may also be conducted by the Competent Authority.

(k) The aircraft type training required in 66.A.45(g) shall consist of:

- theoretical training and examination, and
- except for the category C ratings, practical training and assessment

1. Theoretical training and examination shall be conducted by appropriately approved Part-147 organisations or as directly approved by the competent authority. Theoretical training and examination shall comply with Appendix III to this Part, except as permitted by the differences training described in paragraph 66.A.45(k)3. In the case of a category C person qualified by holding an academic degree as specified in 66.A.30(a)(5), the first relevant aircraft type theoretical training shall be at the category B1 or B2 level.

2. Practical training and assessment

(i) Practical training shall include a representative cross section of maintenance activities relevant to the aircraft type. The practical training shall comply with Appendix III to this Part, except as permitted by the differences training described in paragraph 66.A.45(k)3.

(ii) Practical training and assessment shall be conducted by appropriately approved Part-147 organisations or as directly approved by the competent authority.

(iii) Practical training and assessment can be performed by demonstrations using equipment, components, simulators, other training devices or aircraft.

(iv) Practical training shall be assessed by designated assessors.

3. Differences training

(i) Differences training is the training required in order to cover the differences between two different aircraft type ratings of the same manufacturer determined by the Agency.

(ii) Differences training has to be defined on a case to case basis taking into account Appendix III in respect of both theoretical and practical elements of type training.

(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 already endorsed in the licence, or
- having completed the type training requirements for the aircraft from which the differences are being identified.

(l) On the Job Training (OJT)

1. In addition to the theoretical and practical training required by 66.A.45(k), the applicant must complete OJT for the endorsement of the first type rating within a given aircraft maintenance licence category/sub-category.

2. OJT shall be conducted at and under the control of a maintenance organisation appropriately approved for the particular aircraft type. The OJT programme shall be approved by the competent authority who has issued the licence.

3. OJT shall be supervised and assessed by designated assessors.

4. OJT shall comply with Appendix III to this Part.

(m) The aircraft type examination and aircraft type practical experience required in 66.A.45(g) shall meet the following criteria:

1. The examination shall comply with Appendix III to this Part. The examination shall be conducted by training organisations appropriately approved under Part-147 or by the competent authority.

2. Aircraft type practical experience shall include a representative cross section of maintenance activities relevant to the category.

Point 66.B.100 is amended as follows (Working Group 66.011):

66.B.100 Procedure for the issue of an aircraft maintenance licence by the competent authority

(a) On receipt of EASA Form 19 and any supporting documentation, the competent authority shall verify EASA Form 19 for completeness and ensure that the experience claimed meets the requirement of this Part.

(b) The competent authority shall verify an applicant's examination status and/or confirm the validity of any credits to ensure that all required modules of Appendix I have been met as required by this Part.

(c) When having verified the identity and date of birth of the applicant and being satisfied that the applicant meets the standards of knowledge and experience required by this Part, the competent authority shall issue the relevant aircraft maintenance licence to the applicant. The same information shall be kept on competent authority ~~file~~ records.

(d) In the case where aircraft types or groups are endorsed at the time of the first aircraft maintenance licence issuance, the application shall ensure compliance with 66.B.115.

Point 66.B.115 is amended as follows (Working Group 66.011):

66.B.115 Procedure for the amendment of an aircraft maintenance licence to include an aircraft type or group

1. On receipt of a satisfactory EASA Form 19 and any supporting documentation demonstrating compliance with the applicable type rating and/or group rating requirements and the accompanying aircraft maintenance licence, the competent authority shall either endorse the applicant's aircraft maintenance licence with the aircraft type or group or reissue the said licence to include the aircraft type or group. The competent authority records shall be amended accordingly.

2. In the case where the complete type training is not conducted by an approved Part-147 organisation, the competent authority must be satisfied that the type training requirements are complied with before the type rating is issued.

3. 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 On the Job Training is not required. In such a case, the aircraft type shall be endorsed based on the Part-147 Certificate of Recognition.

4. Where the aircraft type training is covered by more than one course, airframe and / or engine courses and/or avionics course, the competent authority shall be satisfied prior to the type rating endorsement that the content and length of the courses fully satisfy the scope of the licence category and that the interface areas have been addressed.

5. In the case of differences training for a similar type, the competent authority shall be satisfied that the applicant's previous qualification, supplemented by either a Part-147 course or a course directly approved by the competent authority, is acceptable for type rating endorsement.

6. Determination of compliance with the practical elements shall be demonstrated by the provision of detailed practical training records or a logbook provided by an appropriate approved maintenance organisation or, where available, by a Part-147 training certificate covering the practical training element.

7. Aircraft type endorsement shall use the aircraft type ratings as specified by the Agency.

A new point 66.B.125 is added as follows (Working Group 66.009):

66.B.125 Procedure for the renewal/amendment of licences described in Article 7, paragraph 9(h) of EC2042/2003.

The conversion of licences referred to in Article 7.9(h) of this regulation to the ratings described in 66.A.45 shall be performed in accordance with the following conversion table:

1) for category B1 or C:

— helicopter piston engine, full group:
- Converted to "full sub-group 2c" plus the aircraft type ratings for those single piston engine helicopters which are in group 1

— helicopter piston engine, manufacturer group:
- Converted to the corresponding "manufacturer sub-group 2c" plus the aircraft type ratings for those single piston engine helicopters of that manufacturer which are in group 1

— helicopter turbine engine, full group:
- Converted to "full sub-group 2b" plus the aircraft type ratings for those single turbine engine helicopters which are in group 1

— helicopter turbine engine, manufacturer group:
- Converted to the corresponding "manufacturer sub-group 2b" plus the aircraft type ratings for those single turbine engine helicopters of that manufacturer which are in group 1

— aeroplane single piston engine — metal structure, either full group or manufacturer group:
- Converted to "full group 3". For the B1 licence the following limitations must be included: pressurized aeroplanes, composite structure aeroplanes, wooden structure aeroplanes and metal tubing and fabric aeroplanes

— aeroplane multiple piston engines — metal structure, either full group or manufacturer group:
- Converted to "full group 3". For the B1 licence the following limitations must be included: pressurized aeroplanes, composite structure aeroplanes, wooden structure aeroplanes and metal tubing and fabric aeroplanes

— aeroplane single piston engine — wooden structure, either full group or manufacturer group:
- Converted to "full group 3". For the B1 licence the following limitations must be included: pressurized aeroplanes, metal structure aeroplanes, composite structure aeroplanes and metal tubing and fabric aeroplanes

— aeroplane multiple piston engine — wooden structure, either full group or manufacturer group:
- Converted to "full group 3". For the B1 licence the following limitations must be included: pressurized aeroplanes, metal structure aeroplanes, composite structure aeroplanes and metal tubing and fabric aeroplanes

— aeroplane single piston engine — composite structure, either full group or manufacturer group:
- Converted to "full group 3". For the B1 licence the following limitations must be included: pressurized aeroplanes, metal structure aeroplanes, wooden structure aeroplanes and metal tubing and fabric aeroplanes

— aeroplane multiple piston engine — composite structure, either full group or manufacturer group:
- Converted to "full group 3". For the B1 licence the following limitations must be included: pressurized aeroplanes, metal structure

aeroplanes, wooden structure aeroplanes and metal tubing and fabric aeroplanes

— aeroplane turbine — single engine, full group:
- Converted to "full sub-group 2a" plus the aircraft type ratings for those single turboprop aeroplanes which didn't require an aircraft type rating in the previous system and are in group 1

— aeroplane turbine — single engine, manufacturer group:
- Converted to the corresponding "manufacturer sub-group 2a" plus the aircraft type ratings for those single turboprop aeroplanes of that manufacturer which didn't require an aircraft type rating in the previous system and are in group 1

— aeroplane turbine — multiple engine, full group:
- Converted to the aircraft type ratings for those multiple turboprop aeroplanes which didn't require an aircraft type rating in the previous system.

(2) for category B2:

— aeroplane

Converted to include "full sub-group 2a" and "full group 3", plus the aircraft type ratings for those aeroplanes which didn't require an aircraft type rating in the previous system and are in group 1

— helicopter

Converted to include "full sub-groups 2b and 2c", plus the aircraft type ratings for those helicopters which didn't require an aircraft type rating in the previous system and are in group 1

(3) for category C:

— aeroplane

Converted to include "full sub-group 2a" and "full group 3", plus the aircraft type ratings for those aeroplanes which didn't require an aircraft type rating in the previous system and are in group 1

— helicopter

Converted to include "full sub-groups 2b and 2c", plus the aircraft type ratings for those helicopters which didn't require an aircraft type rating in the previous system and are in group 1

If the licence was subject to technical limitations following the 66.A.70 conversion process, these limitations should remain on the licence, unless they are removed under the conditions defined in the 66.B.300 conversion report.

A new point 66.B.130 is added as follows (Working Group 66.011):

66.B.130 Procedure for the direct approval of aircraft type training

According to Part-66.A.45 the competent authority may approve aircraft type training not conducted by a Part-147 organisation. In such a case the competent authority shall have a procedure in place to ensure the approved aircraft type training complies with Appendix III of this Part.

In Appendix I the following modules/sub-modules are added or amended as follows (Working Group 66.006):

Appendix I
Basic Knowledge Requirements

MODULE 5. DIGITAL TECHNIQUES / ELECTRONIC INSTRUMENT SYSTEMS

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	LEVEL			
	A	B1-1 B1-3	B1-2 B1-4	B2
5.4 Data Buses Operation of data buses in aircraft systems, including knowledge of ARINC and other specifications. Aircraft Network / Ethernet	-	2	-	2

…

	LEVEL			
	A	B1-1 B1-3	B1-2 B1-4	B2
5.15 Typical Electronic / Digital Aircraft Systems General arrangement of typical electronic/digital aircraft systems and associated BITE (Built In Test Equipment) testing such as: ACARS-ARINC Communication and Addressing and Reporting System ECAM-Electronic Centralised Aircraft Monitoring EFIS-Electronic Flight Instrument System EICAS-Engine Indication and Crew Alerting System FBW-Fly by Wire FMS-Flight Management System GPS-Global Positioning System IRS-Inertial Reference System TCAS-Traffic Alert Collision Avoidance System Integrated Modular Avionics Cabin Systems Information Systems	-	2	2	2

MODULE 11A. TURBINE AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS

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	Level		
	A2	B1.1	B2
11.5.1. Instrument Systems (ATA31)	1	2	-

Pitot static: altimeter, air speed indicator, vertical speed indicator; Gyroscopic: artificial horizon, attitude director, direction indicator, horizontal situation indicator, turn and slip indicator, turn coordinator; Compasses: direct reading, remote reading; Angle of attack indication, stall warning systems; Glass cockpit; Other aircraft system indication.			

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	Level		
	A1	B1.1	B2
11.19. Integrated Modular Avionics (ATA42) *Functions that may be typically integrated in the Integrated Modular Avionic (IMA) modules are, among others:* • *Bleed Management, Air Pressure Control, Air Ventilation and Control, Avionics and Cockpit Ventilation Control, Temperature Control, Air Traffic Communication, Avionics Communication Router, Electrical Load Management, Circuit Breaker Monitoring, Electrical System BITE, Fuel Management, Braking Control, Steering Control, Landing Gear Extension and Retraction, Tyre Pressure Indication, Oleo Pressure Indication, Brake Temperature Monitoring, etc.* Core System; Network Components;	1	2	-
11.20. Cabin Systems (ATA44) *The units and components which furnish a means of entertaining the passengers and providing communication within the aircraft (Cabin Intercommunication Data System) and between the aircraft cabin and ground stations (Cabin Network Service). Includes voice, data, music and video transmissions.* *The Cabin Intercommunication Data System provides an interface between cockpit/cabin crew and cabin systems. These systems support data exchange of the different related LRU's and they are typically operated via Flight Attendant Panels.* *The Cabin Network Service typically consists on a server, typically interfacing with, among others, the following systems:* • *Data/Radio Communication, In-Flight Entertainment System.* *The Cabin Network Service may host functions such as:* • *Access to pre-departure/departure reports,* • *E-mail/intranet/internet access,* • *Passenger database,* Cabin Core System; In-flight Entertainment System; External Communication System;	1	2	-

Cabin Mass Memory System; Cabin Monitoring System; Miscellaneous Cabin System;			
11.21. Information Systems (ATA46) *The units and components which furnish a means of storing, updating and retrieving digital information traditionally provided on paper, microfilm or microfiche. Includes units that are dedicated to the information storage and retrieval function such as the electronic library mass storage and controller. Does not include units or components installed for other uses and shared with other systems, such as flight deck printer or general use display.* *Typical examples include Air Traffic and Information Management Systems and Network Server Systems* Aircraft General Information System; Flight Deck Information System; Maintenance Information System; Passenger Cabin Information System; Miscellaneous Information System;	1	2	-

MODULE 11B. PISTON AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS

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	Level		
	A2	B1.2	B2
11.5.1. Instrument Systems (ATA31) Pitot static: altimeter, air speed indicator, vertical speed indicator; Gyroscopic: artificial horizon, attitude director, direction indicator, horizontal situation indicator, turn and slip indicator, turn coordinator; Compasses: direct reading, remote reading; Angle of attack indication, stall warning systems; Glass cockpit; Other aircraft system indication.	1	2	-

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	Level		
	A2	B1.2	B2
11.14. Lights (ATA33) External: navigation, anti collision, landing, taxiing, ice; Internal: cabin, cockpit, cargo; Emergency	2	~~2~~ 3	-

MODULE 12. HELICOPTER AERODYNAMICS, STRUCTURES AND SYSTEMS

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	Level		
	A3 / A4	B1.3 / B1.4	B2
12.7.1. Instrument Systems (ATA31) Pitot static: altimeter, air speed indicator, vertical speed indicator; Gyroscopic: artificial horizon, attitude director, direction indicator, horizontal situation indicator, turn and slip indicator, turn coordinator; Compasses: direct reading, remote reading; Vibration indicating systems - HUMS; Glass cockpit; Other aircraft system indication.	1	2	-

…

	Level		
	A3 / A4	B1.3 / B1.4	B2
12.17. Integrated Modular Avionics (ATA42) *Functions that may be typically integrated in the Integrated Modular Avionic (IMA) modules are, among others:* • *Bleed Management, Air Pressure Control, Air Ventilation and Control, Avionics and Cockpit Ventilation Control, Temperature Control, Air Traffic Communication, Avionics Communication Router, Electrical Load Management, Circuit Breaker Monitoring, Electrical System BITE, Fuel Management, Braking Control, Steering Control, Landing Gear Extension and Retraction, Tyre Pressure Indication, Oleo Pressure Indication, Brake Temperature Monitoring, etc.* Core System; Network Components;	1	2	-
12.18. On Board Maintenance Systems (ATA45) Central maintenance computers; Data loading system; Electronic library system; Printing; Structure monitoring (damage tolerance monitoring)	1	2	-
12.19. Information Systems (ATA46) *The units and components which furnish a means of storing, updating and retrieving digital information traditionally provided on paper, microfilm or microfiche. Includes units that are*	1	2	-

dedicated to the information storage and retrieval function such as the electronic library mass storage and controller. Does not include units or components installed for other uses and shared with other systems, such as flight deck printer or general use display. *Typical examples include Air Traffic and Information Management Systems and Network Server Systems* Aircraft General Information System; Flight Deck Information System; Maintenance Information System; Passenger Cabin Information System; Miscellaneous Information System;			

MODULE 13. AIRCRAFT AERODYNAMICS, STRUCTURES AND SYSTEMS

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	Level		
	A	B1	B2
13.7. Flight Controls (ATA27)			
(a) Primary controls: aileron, elevator, rudder, spoiler; Trim control; Active load control; High lift devices; Lift dump, speed brakes; System operation: manual, hydraulic, pneumatic; Artificial feel, Yaw damper, Mach trim, rudder limiter, gust locks; Stall protection systems	-	-	1
(b) System operation: electrical, fly by wire	-	-	~~2~~ 3
13.8. Instrument Systems (ATA 31) Classification; Atmosphere; Terminology; Pressure measuring devices and systems; Pitot static systems; Altimeters; Vertical speed indicators; Airspeed indicators; Machmeters;	-	-	~~2~~ 3

Altitude reporting/alerting systems; Air data computers; Instrument pneumatic systems; Direct reading pressure and temperature gauges; Temperature indicating systems; Fuel quantity indicating systems; Gyroscopic principles; Artificial horizons; Slip indicators; Directional gyros; Ground Proximity Warning Systems; Compass systems; Flight Data Recording systems; Electronic Flight Instrument Systems; Instrument warning systems including master warning systems and centralised warning panels; Stall warning systems and angle of attack indicating systems; Vibration measurement and indication.			

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	Level		
	A	B1	B2
13.10. On Board Maintenance Systems (ATA45) Central maintenance computers; Data loading system; Electronic library system; Printing; Structure monitoring (damage tolerance monitoring)	-	-	~~2~~ 3
13.11. Air Conditioning and Cabin Pressurisation (ATA21)			
13.11.1. *Air supply*	-	-	2
Sources of air supply including engine bleed, APU and ground cart;			
13.11.2. *Air Conditioning*			
Air conditioning systems;	-	-	2
Air cycle and vapour cycle machines;	-	-	3
Distribution systems;	-	-	1
Flow, temperature and humidity control system;	-	-	3
13.11.3. *Pressurisation*			

Pressurisation systems; Control and indication including control and safety valves; Cabin pressure controllers; 13.11.4. *Safety and warning devices* Protection and warning devices.	- -	- -	3 3
13.12. Fire Protection (ATA 26) (a) Fire and smoke detection and warning systems; Fire extinguishing systems; System tests. (b) Portable fire extinguisher	 - -	 - -	 3 1
13.13. Fuel Systems (ATA 28) System lay-out; Fuel tanks; Supply systems; Dumping, venting and draining; Cross-feed and transfer; Indications and warnings; Refuelling and defuelling; Longitudinal balance fuel systems;	 - - - - - - - -	 - - - - - - - -	 1 1 1 1 2 3 2 3
13.14. Hydraulic Power (ATA 29) System lay-out; Hydraulic fluids; Hydraulic reservoirs and accumulators; Pressure generation: electrical, mechanical, pneumatic; Emergency pressure generation; Pressure control; Power distribution; Indication and warning systems; Interface with other systems;	 - - - - - - - - -	 - - - - - - - - -	 1 1 1 3 3 3 1 3 3
13.15. Ice and Rain Protection (ATA 30) Ice formation, classification and detection; Anti-icing systems: electrical, hot air and chemical; De-icing systems: electrical, hot air, pneumatic, chemical; Rain repellent; Probe and drain heating;	 - - - - -	 - - - - -	 2 2 3 1 3

Wiper Systems;	-	-	1
13.16. Landing Gear (ATA 32)			
Construction, shock absorbing;	-	-	1
Extension and retraction systems: normal and emergency;	-	-	3
Indications and warnings;	-	-	3
Wheels, brakes, antiskid and autobraking;	-	-	3
Tyres;	-	-	1
Steering;	-	-	3
13.17. Oxygen (ATA 35)			
System lay-out: cockpit, cabin;	-	-	1
Sources, storage, charging and distribution;	-	-	1
Supply regulation;	-	-	1
Indications and warnings;	-	-	3
13.18. Pneumatic/Vacuum (ATA 36)			
System lay-out;	-	-	2
Sources: engine/APU, compressors, reservoirs, ground supply	-	-	2
Pressure control;	-	-	3
Distribution;	-	-	1
Indications and warnings;	-	-	3
Interfaces with other systems;	-	-	3
13.19. Water/Waste (ATA 38) Water system lay-out, supply, distribution, servicing and draining; Toilet system lay-out, flushing and servicing;	-	-	2
13.20. Integrated Modular Avionics (ATA42) *Functions that may be typically integrated in the Integrated Modular Avionic (IMA) modules are, among others:* • *Bleed Management, Air Pressure Control, Air Ventilation and Control, Avionics and Cockpit Ventilation Control, Temperature Control, Air Traffic Communication, Avionics Communication Router, Electrical Load Management, Circuit Breaker Monitoring, Electrical System BITE, Fuel Management, Braking Control, Steering Control, Landing Gear Extension and Retraction, Tyre Pressure Indication, Oleo Pressure Indication, Brake Temperature Monitoring, etc.* Core System; Network Components;	-	-	3
13.21. Cabin Systems (ATA44) *The units and components which furnish a means of entertaining the passengers and providing communication within the aircraft (Cabin Intercommunication Data System) and between the aircraft cabin and ground stations (Cabin*	-	-	3

Network Service). Includes voice, data, music and video transmissions. *The Cabin Intercommunication Data System provides an interface between cockpit/cabin crew and cabin systems. These systems support data exchange of the different related LRU's and they are typically operated via Flight Attendant Panels.* *The Cabin Network Service typically consists on a server, typically interfacing with, among others, the following systems:* • *Data/Radio Communication, In-Flight Entertainment System.* *The Cabin Network Service may host functions such as:* • *Access to pre-departure/departure reports,* • *E-mail/intranet/internet access,* • *Passenger database,* Cabin Core System; In-flight Entertainment System; External Communication System; Cabin Mass Memory System; Cabin Monitoring System; Miscellaneous Cabin System;			
13.22. Information Systems (ATA46) *The units and components which furnish a means of storing, updating and retrieving digital information traditionally provided on paper, microfilm or microfiche. Includes units that are dedicated to the information storage and retrieval function such as the electronic library mass storage and controller. Does not include units or components installed for other uses and shared with other systems, such as flight deck printer or general use display.* *Typical examples include Air Traffic and Information Management Systems and Network Server Systems* Aircraft General Information System; Flight Deck Information System; Maintenance Information System; Passenger Cabin Information System; Miscellaneous Information System;	-	-	3

MODULE 14. PROPULSION

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	Level		
	A	B1	B2
14.3 Starting and Ignition Systems Operation of engine start systems and components; Ignition systems and components; Maintenance safety requirements;	-	-	2

Appendix II is amended as follows (Working Group 66.006):

Appendix II
Basic Examination Standard

1. *Standardisation basis for examinations*

1.1. All basic examinations must be carried out using the multi-choice question format and essay questions as specified below. The incorrect alternatives must seem equally plausible to anyone ignorant of the subject. All of the alternatives should be clearly related to the question and of similar vocabulary, grammatical construction and length. In numerical questions, the incorrect answers should correspond to procedural errors such as corrections applied in the wrong sense or incorrect unit conversions: they must not be mere random numbers.

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2. *Question numbers for the Part-66 Appendix I Modules*

2.1. Subject Module 1 Mathematics:
Category A-16 multi-choice and 0 essay questions. Time allowed 20 minutes.
Category B1-~~30~~ 32 multi-choice and 0 essay questions. Time allowed 40 minutes.
Category B2-~~30~~ 32 multi-choice and 0 essay questions. Time allowed 40 minutes.

2.2. Subject Module 2 Physics:
Category A-~~30~~ 32 multi-choice and 0 essay questions. Time allowed 40 minutes.
Category B1-~~50~~ 52 multi-choice and 0 essay questions. Time allowed 65 minutes.
Category B2-~~50~~ 52 multi-choice and 0 essay questions. Time allowed 65 minutes.

2.3. Subject Module 3 Electrical Fundamentals:
Category A- 20 multi-choice and 0 essay questions. Time allowed 25 minutes.
Category B1-~~50~~ 52 multi-choice and 0 essay questions. Time allowed 65 minutes.
Category B2-~~50~~ 52 multi-choice and 0 essay questions. Time allowed 65 minutes.

2.4. Subject Module 4 Electronic Fundamentals:
Category A-None.
Category B1-20 multi-choice and 0 essay questions. Time allowed 25 minutes.
Category B2-40 multi-choice and 0 essay questions. Time allowed 50 minutes.

2.5. Subject Module 5 Digital Techniques/Electronic Instrument Systems:
Category A-16 multi-choice and 0 essay questions. Time allowed 20 minutes.
Category B1.1 & B1.3-40 multi-choice and 0 essay questions. Time allowed 50 minutes.
Category B1.2 & B1.4-20 multi-choice and 0 essay questions. Time allowed 25 minutes.
Category B2-~~70~~ 72 multi-choice and 0 essay questions. Time allowed 90 minutes.

2.6. Subject Module 6 Materials and Hardware:
Category A-~~50~~ 52 multi-choice and 0 essay questions. Time allowed 65 minutes.
Category B1-~~70~~ 72 multi-choice and 0 essay questions. Time allowed 90 minutes.
Category B2-60 multi-choice and 0 essay questions. Time allowed 75 minutes.

2.7. Subject Module 7 Maintenance Practices:
Category A-~~70~~ 72 multi-choice and 2 essay questions. Time allowed 90 minutes plus 40 minutes.

Category B1-80 multi-choice and 2 essay questions. Time allowed 100 minutes plus 40 minutes.
Category B2-60 multi-choice and 2 essay questions. Time allowed 75 minutes plus 40 minutes.

2.8. Subject Module 8 Basic Aerodynamics:
Category A-20 multi-choice and 0 essay questions. Time allowed 25 minutes.
Category B1-20 multi-choice and 0 essay questions. Time allowed 25 minutes.
Category B2-20 multi-choice and 0 essay questions. Time allowed 25 minutes.

2.9. Subject Module 9 Human factors:
Category A-20 multi-choice and 1 essay question. Time allowed 25 minutes plus 20 minutes.
Category B1-20 multi-choice and 1 essay question. Time allowed 25 minutes plus 20 minutes.
Category B2-20 multi-choice and 1 essay question. Time allowed 25 minutes plus 20 minutes.

2.10. Subject Module 10 Aviation Legislation:
Category A-~~30~~ 32 multi-choice and 1 essay question. Time allowed 40 minutes plus 20 minutes.
Category B1-40 multi-choice and 1 essay question. Time allowed 50 minutes plus 20 minutes.
Category B2-40 multi-choice and 1 essay question. Time allowed 50 minutes plus 20 minutes.

2.11. Subject Module 11a Turbine Aeroplane Aerodynamics, Structures and Systems:
Category A-~~100~~ 108 multi-choice and 0 essay questions. Time allowed ~~125~~ 135 minutes.
Category B1-~~130~~ 140 multi-choice and 0 essay questions. Time allowed ~~165~~ 175 minutes.
Category B2-None.

2.12. Subject Module 11b Piston Aeroplane Aerodynamics, Structures and Systems:
Category A-~~70~~ 72 multi-choice and 0 essay questions. Time allowed 90 minutes.
Category B1-100 multi-choice and 0 essay questions. Time allowed 125 minutes.
Category B2-None.

2.13. Subject Module 12 Helicopter Aerodynamics, Structures and Systems:
Category A-~~90~~ 100 multi-choice and 0 essay questions. Time allowed ~~115~~ 125 minutes.
Category B1-~~115~~ 128 multi-choice and 0 essay questions. Time allowed ~~145~~160 minutes.
Category B2-None.

2.14. Subject Module 13 Aircraft Aerodynamics, Structures and Systems:
Category A-None.
Category B1-None.
Category B2-~~130~~ 180 multi-choice and 0 essay questions. Time allowed ~~165~~ 225 minutes.

2.15. Subject Module 14 Propulsion:
Category A-None.
Category B1-None.
Category B2-~~25~~ 24 multi-choice and 0 essay questions. Time allowed 30 minutes.

2.16. Subject Module 15 Gas Turbine Engine:
Category A-60 multi-choice and 0 essay questions. Time allowed 75 minutes.
Category B1-~~90~~ 92 multi-choice and 0 essay questions. Time allowed 115 minutes.
Category B2-None.

2.17. Subject Module 16 Piston Engine:

Category A-~~0~~ 52 multi-choice and 0 essay questions. Time allowed 65 minutes.
Category B1-~~0~~ 72 multi-choice and 0 essay questions. Time allowed 90 minutes.
Category B2-None.

2.18. Subject Module 17 Propeller:
Category A-~~0~~ 20 multi-choice and 0 essay questions. Time allowed 25 minutes.
Category B1-30 multi-choice and 0 essay questions. Time allowed 40 minutes.
Category B2-None.

Appendix III is replaced as follows (Working Groups 66.006 and 66.011):

Appendix III
Type Training and Examination Standard.
On the Job Training

1. Type training levels

The three levels listed below define the objectives, the depth of training and the level of questions that the training is intended to achieve.

Level 1

A brief overview of the airframe, systems and powerplant as outlined in the Systems Description Section of the Aircraft Maintenance Manual / Instructions for Continued Airworthiness.

Course objectives: Upon completion of Level 1 training, the student will be able to:

(a) provide a simple description of the whole subject, using common words and examples, using typical terms and identify safety precautions related to the airframe, its systems and powerplant

(b) Identify aircraft manuals, maintenance practices important to the airframe, its systems and powerplant

(c) Define the general layout of the aircraft's major systems

(d) Define the general layout and characteristics of the powerplant

(e) Identify special tooling and test equipment used with the aircraft

Level 2

Basic system overview of controls, indicators, principal components including their location and purpose, servicing and minor troubleshooting. General knowledge of the theoretical and practical aspects of the subject.

Course objectives: In addition to the information contained in the Level 1 training, at the completion of Level 2 training, the student will be able to:

(a) Understand the theoretical fundamentals; apply knowledge in a practical manner using detailed procedures

(b) Recall the safety precautions to be observed when working on or near the aircraft, powerplant and systems

(c) Describe systems and aircraft handling particularly access, power availability and sources.

(d) Identify the locations of the principal components.

(e) Explain the normal functioning of each major system, including terminology and nomenclature.

(f) Perform the procedures for servicing associated with the aircraft for the following systems: Fuel, Power Plants, Hydraulics, Landing Gear, Water/Waste, and Oxygen.

(g) Demonstrate proficiency in use of crew reports and on-board reporting systems (minor troubleshooting) and determine aircraft airworthiness per the MEL/CDL.

(h) Demonstrate the use, interpretation and application of appropriate documentation including instructions for continued airworthiness, maintenance manual, illustrated parts catalogue, etc.

Level 3

Detailed description, operation, component location, removal /installation and bite and troubleshooting procedures to maintenance manual level.

Course objectives: In addition to the information contained in Level 1 and Level 2 training, at the completion of Level 3 training, the student will be able to:

(a) Demonstrate a theoretical knowledge of aircraft systems and structures and interrelationships with other systems, provide a detailed description of the subject using theoretical fundamentals and specific examples and to interpret results from various sources and measurements and apply corrective action where appropriate.

(b) Perform system, powerplant, component and functional checks as specified in the aircraft maintenance manual.

(c) Demonstrate the use, interpret and apply appropriate documentation including structural repair manual, troubleshooting manual, etc.

(d) Correlate information for the purpose of making decisions in respect of fault diagnosis and rectification to maintenance manual level.

(e) Describe procedures for replacement of components unique to aircraft type.

2. Type training standard

Although aircraft type training includes both theoretical and practical elements, courses can be approved for the theoretical element, the practical element or for a combination of both.

2.1. Theoretical element

(a) Objective:

On completion of a theoretical training course the student shall be able to demonstrate, to the levels identified in the Appendix III syllabus, the detailed theoretical knowledge of the aircraft's applicable systems, structure, operations, maintenance, repair, and troubleshooting according to approved maintenance data. The student shall be able to demonstrate the use of manuals and approved procedures, including the knowledge of relevant inspections and limitations.

(b) Level of training:

Training levels are those levels defined in paragraph 1 above.
After the first type course for category C certifying staff all subsequent courses need only be to level 1.
During a level 3 theoretical training, level 1 and 2 training material may be used to teach the full scope of the chapter if required. However, during the training the majority of the course material and training time must be at the higher level.

(c) Duration:

- Times shown below are the minimum hours for the theoretical element.
- Times shown below are tuition hours only and exclude any breaks, examination, revision, preparation and aircraft visit.
- One tuition hour means 60 minutes of teaching.
- All course applications must be supported by detailed training needs analysis.
- For aeroplanes of a maximum take-off mass of 5700kg and below (non-complex) where type training is not required the course length must be defined on an individual case basis if applied.

Minimum participation time is at least 90 percent of the tuition hours of the theoretical training course. If this requirement 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.

The number of tuition hours per day for the theoretical training shall not exceed 8 hours, which shall be performed during regular office hours; in exceptional cases, deviation from this standard may be envisaged when justified. This maximum number of hours is also applicable for the combination of theoretical and practical training, when they are performed at the same time.

The theoretical training minimum tuition hours are contained in the following table:

Aeroplanes with a maximum take-off mass above 30000kg:		
Category	hours	
B1.1	150	
B1.2	120	
B2	100	
C	30	
Aeroplanes with a maximum take-off mass equal or less than 30000kg and above 5700kg:		
B1.1	120	
B1.2	100	
B2	100	
C	25	
Aeroplanes with a maximum take-off mass of 5700kg and below *		
B1.1	80	
B1.2	60	

B2	60	
C	15	
Helicopters **		
B1.3	120	
B1.4	100	
B2	100	
C	25	

* For non-pressurised piston engine aeroplanes below 2000kg MTOM the minimum duration can be reduced by 50%.
** For helicopters in group 2 the minimum duration can be reduced by 30%.

These hours apply only to theoretical courses for complete aircraft engine combinations according to the type rating as defined by the Agency.

(d) Justification of course duration:

When applying for approval of a Part-147 course, or a course to be approved directly by the competent authority, the hour duration as listed above shall be justified and shown to cover the full syllabus by a training needs analysis based on:

- The design of the aircraft type, its maintenance needs and the types of operation
- Detailed analysis of applicable chapters – see contents table in sub-paragraph 2.1(e) below;
- Detailed competency analysis showing that the objectives as stated in sub-paragraph 2.1(a) above are fully met;
- Information based on approved type design, if necessary.

Where the training needs analysis shows that more hours are needed, course lengths shall be longer than the minimum specified in the table.

Similarly, tuition hours of differences courses, other training course combinations, such as combined B1/B2 courses, and in cases of theoretical type training courses below the figures given in subparagraph 2.1(c) above, these shall be justified to the competent authority by the training needs analysis as described above.

(e) Content:

As a minimum, the elements in the Syllabus below that are specific to the aircraft type must be covered. Additional elements introduced due to type variations, technological changes, etc shall also be included.
The training syllabus should be focused on mechanical and electrical aspects for B1 personnel, and electrical and avionic aspects for B2.

The numbers used are chapters:

	Level									
	Aeroplanes turbine		**Aeroplanes piston**		**Helicopters turbine**		**Helicopters piston**		**Avionics**
	B1	**C**	**B1**	**C**	**B1**	**C**	**B1**	**C**	**B2**

		Aeroplanes turbine		Aeroplanes piston		Helicopters turbine		Helicopters piston		Avionics
		B1	C	B1	C	B1	C	B1	C	B2
Introduction module:		-	-	-	-	-	-	-	-	-
5	Time limits/maintenance checks	1	1	1	1	1	1	1	1	1
6	Dimensions/Areas (weights MTOW etc)	1	1	1	1	1	1	1	1	1
7	Lifting and Shoring	1	1	1	1	1	1	1	1	1
8	Levelling and weighing	3	1	3	1	3	1	3	1	1
9	Towing and taxiing	1	1	1	1	1	1	1	1	1
10	Parking/mooring, Storing & Return to Service	1	1	1	1	1	1	1	1	1
11	Placards and Markings	1	1	1	1	1	1	1	1	1
12	Servicing	1	1	1	1	1	1	1	1	1
20	Standard practices – only type particular	1	1	1	1	1	1	1	1	1
Helicopters:										
18	Vibration and Noise Analysis (Blade tracking)	-	-	-	-	3	1	3	1	-
60	Standard Practices Rotor	-	-	-	-	3	1	3	1	-
62	Rotors	-	-	-	-	3	1	3	1	1
62A	Rotors – Monitoring and indicating	-	-	-	-	3	1	3	1	3
63	Rotor Drives	-	-	-	-	3	1	3	1	1
63A	Rotor Drives – Monitoring and indicating	-	-	-	-	3	1	3	1	3
64	Tail Rotor	-	-	-	-	3	1	3	1	1
64A	Tail rotor - Monitoring and indicating	-	-	-	-	3	1	3	1	3
65	Tail Rotor Drive	-	-	-	-	3	1	3	1	1
65A	Tail Rotor Drive - Monitoring and indicating	-	-	-	-	3	1	3	1	3
66	Folding Blades/Pylon	-	-	-	-	3	1	3	1	-
67	Rotors Flight Control	-	-	-	-	3	1	3	1	-
53	Airframe Structure (Helicopter)	-	-	-	-	3	1	3	1	-
25	Emergency Flotation Equipment	-	-	-	-	3	1	3	1	1
Airframe structures:										
51	Standard Practices and Structures (damage classification, assessment and repair)	3	1	3	1	-	-	-	-	1
53	Fuselage	3	1	3	1	-	-	-	-	1
54	Nacelles/Pylons	3	1	3	1	-	-	-	-	1
55	Stabilisers	3	1	3	1	-	-	-	-	1
56	Windows	3	1	3	1	-	-	-	-	1
57	Wings	3	1	3	1	-	-	-	-	1
27A	Flight Control Surfaces (All)	3	1	3	1	-	-	-	-	1
52	Doors	3	1	3	1	-	-	-	-	1
Zonal & Station Identification Systems.		1	1	1	1	1	1	1	1	1
Airframe systems:										
21	Air Conditioning	3	1	3	1	3	1	3	1	3
21A	Air Supply	3	1	3	1	3	1	3	1	2
21B	Pressurization	3	1	3	1	3	1	3	1	3
21C	Safety and Warning Devices	3	1	3	1	3	1	3	1	3
22	Autoflight	2	1	2	1	2	1	2	1	3
23	Communications	2	1	2	1	2	1	2	1	3
24	Electrical Power	3	1	3	1	3	1	3	1	3
25	Equipment & Furnishings	3	1	3	1	3	1	3	1	1
25A	Electronic Equipment including emergency equipment	1	1	1	1	1	1	1	1	3
26	Fire Protection	3	1	3	1	3	1	3	1	3
27	Flight Controls	3	1	3	1	3	1	3	1	2
27A	Sys. Operation: Electrical/ Fly-by-Wire	3	1	-	-	-	-	-	-	3

		Aeroplanes turbine		Aeroplanes piston		Helicopters turbine		Helicopters piston		Avionics
		B1	C	B1	C	B1	C	B1	C	B2
28	Fuel Systems	3	1	3	1	3	1	3	1	2
28A	Fuel Systems - Monitoring and indicating	3	1	3	1	3	1	3	1	3
29	Hydraulic Power	3	1	3	1	3	1	3	1	2
29A	Hydraulic Power - Monitoring and indicating	3	1	3	1	3	1	3	1	3
30	Ice & Rain Protection	3	1	3	1	3	1	3	1	3
31	Indicating/Recording Systems	3	1	3	1	3	1	3	1	3
31A	Instrument Systems	3	1	3	1	3	1	3	1	3
32	Landing Gear	3	1	3	1	3	1	3	1	2
32A	Landing Gear - Monitoring and indicating	3	1	3	1	3	1	3	1	3
33	Lights	3	1	3	1	3	1	3	1	3
34	Navigation	2	1	2	1	2	1	2	1	3
35	Oxygen	3	1	3	1	-	-	-	-	2
36	Pneumatic	3	1	3	1	3	1	3	1	2
36A	Pneumatic - Monitoring and indicating	3	1	3	1	3	1	3	1	3
37	Vacuum	3	1	3	1	3	1	3	1	2
38	Water/Waste	3	1	3	1	-	-	-	-	2
41	Water Ballast	3	1	3	1	-	-	-	-	1
42	Integrated modular avionics	2	1	2	1	2	1	2	1	3
44	Cabin Systems	2	1	2	1	2	1	2	1	3
45	On-Board Maintenance System (or covered in 31)	3	1	3	1	3	1	-	-	3
46	Information Systems	2	1	2	1	2	1	2	1	3
50	Cargo and Accessory Compartments	3	1	3	1	3	1	3	1	1
Turbine Engines										
70	Standard Practices – Engines	3	1	-	-	3	1	-	-	1
70A	Constructional arrangement and operation (Installation Inlet, Compressors, Combustion Section, Turbine Section, Bearings and Seals, Lubrication Systems)	3	1	-	-	3	1	-	-	1
70B	Engine Performance	3	1	-	-	3	1	-	-	1
71	Powerplant	3	1	-	-	3	1	-	-	1
72	Engine Turbine/Turbo Prop/Ducted Fan/Unducted fan	3	1	-	-	3	1	-	-	1
73	Engine Fuel and Control	3	1	-	-	3	1	-	-	1
75	Air	3	1	-	-	3	1	-	-	1
76	Engine controls	3	1	-	-	3	1	-	-	1
78	Exhaust	3	1	-	-	3	1	-	-	1
79	Oil	3	1	-	-	3	1	-	-	1
80	Starting	3	1	-	-	3	1	-	-	1
82	Water Injections	3	1	-	-	3	1	-	-	1
83	Accessory Gear Boxes	3	1	-	-	3	1	-	-	1
84	Propulsion Augmentation	3	1	-	-	3	1	-	-	1
73A	FADEC	3	1	-	-	3	1	-	-	3
74	Ignition	3	1	-	-	3	1	-	-	3
77	Engine Indicating Systems	3	1	-	-	3	1	-	-	3
49	Auxiliary Power Units (APUs)	3	1	-	-	-	-	-	-	2

		Aeroplanes turbine		Aeroplanes piston		Helicopters turbine		Helicopters piston		Avionics
		B1	C	B1	C	B1	C	B1	C	B2
Piston Engines										
70	Standard Practices – Engines	-	-	3	1	-	-	3	1	1
70A	Constructional arrangement and operation (Installation, Carburettors, Fuel injection systems, Induction, Exhaust and Cooling Systems, Supercharging/Turbocharging, Lubrication Systems,	-	-	3	1	-	-	3	1	1
70B	Engine Performance	-	-	3	1	-	-	3	1	1
71	Powerplant	-	-	3	1	-	-	3	1	1
73	Engine Fuel and Control	-	-	3	1	-	-	3	1	1
76	Engine Control	-	-	3	1	-	-	3	1	1
79	Oil	-	-	3	1	-	-	3	1	1
80	Starting	-	-	3	1	-	-	3	1	1
81	Turbines	-	-	3	1	-	-	3	1	1
82	Water Injections	-	-	3	1	-	-	3	1	1
83	Accessory Gear Boxes	-	-	3	1	-	-	3	1	1
84	Propulsion Augmentation	-	-	3	1	-	-	3	1	1
73A	FADEC	-	-	3	1	-	-	3	1	3
74	Ignition	-	-	3	1	-	-	3	1	3
77	Engine Indication Systems	-	-	3	1	-	-	3	1	3
Propellers										
60A	Standard Practices - Propeller	3	1	3	1	-	-	-	-	1
61	Propellers/Propulsion	3	1	3	1	-	-	-	-	1
61A	Propeller Construction	3	1	3	1	-	-	-	-	-
61B	Propeller Pitch Control	3	1	3	1	-	-	-	-	-
61C	Propeller Synchronising	3	1	3	1	-	-	-	-	1
61D	Propeller Electronic control	2	1	2	1	-	-	-	-	3
61E	Propeller Ice Protection	3	1	3	1	-	-	-	-	-
61F	Propeller Maintenance	3	1	3	1	-	-	-	-	1

2.2 Practical element

(a) Objective:

The objective of practical training is to gain the required competence in performing safe maintenance, inspections and routine work according to the maintenance manual and other relevant instructions and tasks as appropriate for the type of aircraft, for example troubleshooting, repairs, adjustments, replacements, rigging and functional checks. It includes the awareness of the use of all technical literature and documentation for the aircraft, the use of specialist/special tooling and test equipment for performing removal and replacement of components and modules unique to type, including any on-wing maintenance activity.

(b) Content:

Part 1 At least one maintenance task from all ticked item (both rows and columns in the table below) shall be completed and assessed as part of the approved practical training.

Tasks ticked represent subjects that are mandatory for practical training purposes to ensure that the operation, function, installation and safety significance of key maintenance tasks is adequately addressed; particularly where these cannot be fully explained by theoretical training alone. The list details the minimum practical training subjects, other items may be added where applicable to the particular aircraft type.

Tasks to be completed 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.

Glossary of the table:

- LOC: Location
- FOT: Functional / Operational Test
- SGH: Service and Ground Handling
- R/I: Removal / Installation
- MEL: Minimum Equipment List
- TS: TroubleShooting

		B1/B2	B1					B2				
		LOC	FOT	SGH	R/I	MEL	TS	FOT	SGH	R/I	MEL	TS
Introduction module:												
5	Time limits/maintenance checks	X/X	-	X	-	-	-	-	X	-	-	-
6	Dimensions/Areas (weights MTOW etc)	X/X	-	X	-	-	-	-	X	-	-	-
7	Lifting and Shoring	X/X	-	X	-	-	-	-	X	-	-	-
8	Levelling and weighing	X/X	-	X	-	-	-	-	X	-	-	-
9	Towing and taxiing	X/X	-	X	-	-	-	-	X	-	-	-
10	Parking/mooring, Storing & Return to Service	X/X	-	X	-	-	-	-	X	-	-	-
11	Placards and Markings	X/X	-	X	-	-	-	-	X	-	-	-
12	Servicing	X/X	-	X	-	-	-	-	X	-	-	-
20	Standard practices – only type particular	X/X	-	X	-	-	-	-	X	-	-	-
Helicopters:												
18	Vibration and Noise Analysis (Blade tracking)	X/-	-	-	-	-	X	-	-	-	-	-
60	Standard Practices Rotor – only type specific	X/X	-	X	-	-	-	-	X	-	-	-
62	Rotors	X/-	-	X	X	-	X	-	-	-	-	-
62A	Rotors – Monitoring and indicating	X/X	X	X	X	X	X	-	-	X	-	X
63	Rotor Drives	X/-	X	-	-	-	X	-	-	-	-	-
63A	Rotor Drives - Monitoring and indicating	X/X	X	-	X	X	X	-	-	X	-	X
64	Tail Rotor	X/-	-	X	-	-	X	-	-	-	-	-
64A	Tail rotor -Monitoring and indicating	X/X	X	-	X	X	X	-	-	X	-	X
65	Tail Rotor Drive	X/-	X	-	-	-	X	-	-	-	-	-
65A	Tail Rotor Drive - Monitoring and indicating	X/X	X	-	X	X	X	-	-	X	-	X
66	Folding Blades/Pylon	X/-	X	X	-	-	X	-	-	-	-	-
67	Rotors Flight Control	X/-	X	X	-	X	X	-	-	-	-	-
53	Airframe Structure (Helicopter) Note: covered under Airframe structures											
25	Emergency Flotation Equipment	X/X	X	X	X	X	X	X	X	-	-	-
Airframe structures:												
51	Standard Practices and Structures (damage classification, assessment and repair)											
53	Fuselage	X/-	-	-	-	-	X	-	-	-	-	-
54	Nacelles/Pylons	X/-	-	-	-	-	-	-	-	-	-	-
55	Stabilisers	X/-	-	-	-	-	-	-	-	-	-	-
56	Windows	X/-	-	-	-	-	X	-	-	-	-	-
57	Wings	X/-	-	-	-	-	-	-	-	-	-	-
27A	Flight Control Surfaces	X/-	-	-	-	-	X	-	-	-	-	-
52	Doors	X/X	X	X	-	-	-	-	X	-	-	-
Airframe systems:												
21	Air Conditioning	X/X	X	X	-	X	X	X	X	-	X	X

		B1/B2	B1					B2				
		LOC	FOT	SGH	R/I	MEL	TS	FOT	SGH	R/I	MEL	TS
21A	Air Supply	X/X	X	-	-	-	-	X	-	-	-	-
21B	Pressurization	X/X	X	-	-	X	X	X	-	-	X	X
21C	Safety and warning Devices	X/X	-	X	-	-	-	-	X	-	-	-
22	Autoflight	X/X	-	-	-	X	-	X	X	X	X	X
23	Communications	X/X	-	X	-	X	-	X	X	X	X	X
24	Electrical Power	X/X	X	X	X	X	X	X	X	X	X	X
25	Equipment & Furnishings	X/X	X	X	X	-	-	X	X	X	-	-
25A	Electronic Equipment including emergency equipment	X/X	X	X	X	-	-	X	X	X	-	-
26	Fire Protection	X/X	X	X	X	X	X	X	X	X	X	X
27	Flight Controls	X/X	X	X	X	X	X	X	-	-	-	-
27A	Sys. Operation: Electrical/ Fly-by-Wire	X/X	X	X	X	X	X	X	-	X	-	X
28	Fuel Systems	X/X	X	X	X	X	X	X	X	X	X	X
28A	Fuel Systems - Monitoring and indicating	X/X	X	-	-	-	-	X	-	-	-	-
29	Hydraulic Power	X/X	X	X	X	X	X	X	X	X	X	X
29A	Hydraulic Power - Monitoring and indicating	X/X	X	-	X	X	X	X	-	X	X	X
30	Ice & Rain Protection	X/X	X	X	-	X	X	X	X	-	X	X
31	Indicating/Recording Systems	X/X	X	X	X	X	X	X	X	X	X	X
31A	Instrument Systems	X/X	X	X	X	X	X	X	X	X	X	X
32	Landing Gear	X/X	X	X	X	X	X	X	X	X	X	X
32A	Landing Gear - Monitoring and indicating	X/X	X	-	X	X	X	X	-	X	X	X
33	Lights	X/X	X	X	-	X	-	X	X	X	X	-
34	Navigation	X/X	-	X	-	X	-	X	X	X	X	X
35	Oxygen	X/-	X	X	X	-	-	X	X	X	-	-
36	Pneumatic	X/-	X	-	X	X	X	X	-	X	X	X
36A	Pneumatic - Monitoring and indicating	X/X	X	X	X	X	X	X	X	X	X	X
37	Vacuum	X/-	X	-	X	X	X	-	-	-	-	-
38	Water/Waste	X/-	X	X	-	-	-	X	X	-	-	-
41	Water Ballast	X/-	-	-	-	-	-	-	-	-	-	-
42	Integrated modular avionics	X/X	-	-	-	-	-	X	X	X	X	X
44	Cabin Systems	X/X	-	-	-	-	-	X	X	X	X	X
45	On-Board Maintenance System (or covered in 31)	X/X	X	X	X	X	X	X	X	X	X	X
46	Information Systems	X/X	-	-	-	-	-	X	X	X	X	X
50	Cargo and Accessory Compartments	X/X	-	X	-	-	-	-	-	-	-	-
Turbine/Piston Engine Module:												
70	Standard Practices – Engines - only type particular	-	-	X	-	-	-	-	X	-	-	-
70A	Constructional arrangement and operation	X/X	-	-	-	-	-	-	-	-	-	-

	B1/B2	B1					B2				
	LOC	FOT	SGH	R/I	MEL	TS	FOT	SGH	R/I	MEL	TS
(Installation Inlet, Compressors, Combustion Section, Turbine Section, Bearings and Seals, Lubrication Systems)											
Turbine engines:											
70B Engine Performance	-	-	-	-	-	X	-	-	-	-	-
71 Power Plant	X/-	X	X	-	-	-	-	X	-	-	-
72 Engine Turbine / Turbo Prop / Ducted Fan / Unducted fan	X/-	-	-	-	-	-	-	-	-	-	-
73 Engine Fuel and Control	X/X	X	-	-	-	-	-	-	-	-	-
73A FADEC Systems	X/X	X	-	X	X	X	X	X	X	X	X
74 Ignition	X/X	X	-	-	-	-	X	-	-	-	-
75 Air	X/-	-	-	X	-	X	-	-	-	-	-
76 Engine Controls	X/-	X	-	-	-	X	-	-	-	-	-
77 Engine Indicating	X/X	X	-	-	X	X	X	-	-	X	X
78 Exhaust	X/-	X	-	-	X	X	-	-	-	-	-
79 Oil	X/-	-	X	X	-	-	-	-	-	-	-
80 Starting	X/-	X	-	-	X	X	-	-	-	-	-
82 Water Injection	X/-	X	-	-	-	-	-	-	-	-	-
83 Accessory Gearboxes	X/-	-	X	X	-	-	-	-	-	-	-
84 Propulsion Augmentation	X/-	X	-	-	-	-	-	-	-	-	-
Auxiliary Power Units (APUs):											
49 Auxiliary Power Units (APUs)	X/-	X	X	-	-	X	-	-	-	-	-
Piston Engines:											
70 Standard Practices – Engines - only type particular	-	-	X	-	-	-	-	X	-	-	-
70A Constructional arrangement and operation (Installation Inlet, Compressors, Combustion Section, Turbine Section, Bearings and Seals, Lubrication Systems)	X/X	-	-	-	-	-	-	-	-	-	-
70B Engine Performance	-	-	-	-	-	X	-	-	-	-	-
71 Power Plant	X/-	X	X	-	-	-	-	X	-	-	-
73 Engine Fuel and Control	X/X	X	-	-	-	-	-	-	-	-	-
73A FADEC Systems	X/X	X	-	X	X	X	X	X	X	X	X
74 Ignition	X/X	X	-	-	-	-	X	-	-	-	-
76 Engine Controls	X/-	X	-	-	-	X	-	-	-	-	-
77 Engine Indicating	X/X	X	-	-	X	X	X	-	-	X	X
78 Exhaust	X/-	X	-	-	X	X	-	-	-	-	-
79 Oil	X/-	-	X	X	-	-	-	-	-	-	-
80 Starting	X/-	X	-	-	X	X	-	-	-	-	-
81 Turbines	X/-	X	X	X	-	X	-	-	-	-	-

	B1/B2	B1					B2				
	LOC	FOT	SGH	R/I	MEL	TS	FOT	SGH	R/I	MEL	TS
82 Water Injection	X/-	X	-	-	-	-	-	-	-	-	-
83 Accessory Gearboxes	X/-	-	X	X	-	-	-	-	-	-	-
84 Propulsion Augmentation	X/-	X	-	-	-	-	-	-	-	-	-
Propellers:											
60A Standard Practices - Propeller	-	-	-	X	-	-	-	-	-	-	-
61 Propellers/Propulsion	X/X	X	X	-	X	X	-	-	-	-	-
61A Propeller Construction	X/X	-	X	-	-	-	-	-	-	-	-
61B Propeller Pitch Control	X/-	X	-	X	X	X	-	-	-	-	-
61C Propeller Synchronising	X/-	X	-	-	-	X	-	-	-	X	-
61D Propeller Electronic control	X/X	X	X	X	X	X	X	X	X	X	X
61E Propeller Ice Protection	X/-	X	-	X	X	X	-	-	-	-	-
61F Propeller Maintenance	X/X	X	X	X	X	X	X	X	X	X	X

2.3. On the Job Training

(a) Objective:

The objective of OJT is to gain the required competence and experience in performing safe maintenance.

(b) Content:

OJT shall cover an acceptable cross section of tasks accepted by the competent authority. The determination of the OJT tasks to be completed 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 assessor. The tasks listed shall refer to an actual job card/work order, etc.

The assessment of the OJT is mandatory.

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 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

In order to facilitate the verification by the competent authority, demonstration of the OJT shall consist of

- detailed worksheets / logbook and

- a compliance report demonstrating how the OJT meets the requirement of this Part.

3. Type training examination standard

After the theoretical portion of the aircraft type training has been completed, a written examination must be performed, which must comply with the following:

(a) Format of the examination is of the multiple-choice type. Each multiple choice question must have 3 alternative answers of which only one must be the correct answer. The total time is based on the total number of questions and the time for answering is based upon a nominal average of 90 seconds per question.

(b) The incorrect alternatives must seem equally plausible to anyone ignorant of the subject. All of the alternatives should be clearly related to the question and of similar vocabulary, grammatical construction and length.

(c) In numerical questions, the incorrect answers shall correspond to procedural errors such as the use of incorrect sense (+ versus -) or incorrect measurement units: they must not be mere random numbers.

(d) The level of each question should be the one defined in paragraph 2 "type training standard".

(e) The examination must be of the closed book type. No reference material is permitted. An exception will be made for the case of examining a B1 or B2 candidate's ability to interpret technical documents.

(f) The number of questions must be at least 1 question per hour of instruction. The competent authority of the Member State will assess number and level of questions when approving the course. The number of questions for each chapter and level shall be consistent with:
- the effective training hours spent teaching at that chapter and level;
- the learning objectives as given by the training needs analysis.

(g) The minimum examination pass mark is 75%. When the type training examination is split in several examinations, each examination must be passed with at least a 75% mark. In order to be possible to achieve exactly a 75% pass mark, the number of questions in the examination must be a multiple of 4.

(h) Penalty marking (negative points for failed questions) is not to be used.

(i) End of module phase examinations cannot be used as part of the final examination unless they contain the correct number and level of questions required.

(j) It is accepted that during a level 3 examination, level 1 and 2 questions may be used to examine the full scope of the course material. However, during the examination it is not acceptable to use an excessive number of questions at any lower level such that the intention of the higher examination level is reduced.

4. Type examination standard

Where type training is not required, the examination must be oral, written or practical assessment based, or a combination thereof. It must comply with the following:

(a) Oral examination questions must be open.

(b) Written examination questions must be essay type or multiple choice questions.

(c) Practical assessment must determine a person's competence to perform a task.

(d) Examinations must be on a sample of chapters drawn from paragraph 2 type training/examination syllabus, at the indicated level.

(e) The incorrect alternatives must seem equally plausible to anyone ignorant of the subject. All of the alternatives should be clearly related to the question and of similar vocabulary, grammatical construction and length.

(f) In numerical questions, the incorrect answers should correspond to procedural errors such as corrections applied in the wrong sense or incorrect unit conversions: they must not be mere random numbers.

(g) The examination must ensure that the following objectives are met:

1. Properly discuss with confidence the aircraft and its systems.
2. Ensure safe performance of maintenance, inspections and routine work according to the maintenance manual and other relevant instructions and tasks as appropriate for the type of aircraft, for example troubleshooting, repairs, adjustments, replacements, rigging and functional checks such as engine run, etc, if required.
3. Correctly use all technical literature and documentation for the aircraft.
4. Correctly use specialist/special tooling and test equipment, perform removal and replacement of components and modules unique to type, including any on-wing maintenance activity

(h) A written report must be made by the examiner to explain why the candidate has passed or failed.

Appendix V is amended as follows (Working Group 66.009):

Appendix V
Application Form and Example of Licence Format

…

PART-66 AIRCRAFT MAINTENANCE LICENCE

…

15. The limitations endorsed on the licence are tasks that are excluded from the certification privileges. If there are no limitations applicable, the LIMITATIONS page will be issued stating "No limitations".

…

C) PART 147

Commission Regulation (EC) No 2042/2003 Annex IV (Part-147) is hereby amended as follows:

Point 147.B.120 is amended as follows (Working Group 66.011):

1. **147.B.120 Continued validity procedure**

(a) Each organisation must be completely audited for compliance with this Part at periods not exceeding 24 months. This shall include the monitoring of at least one training course and one examination performed by the Part-147 organisation.

(b) Findings shall be processed in accordance with 147.B.130

Appendix III is amended as follows (Working Group 66.011):

…

Type training Certificate

The Part-147 training certificate as detailed below may be used for recognition of completion of either the theoretical elements, the practical elements or both the theoretical and practical elements of the type rating training course. The certificate shall indicate the airframe/engine combination for which the training was imparted.

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

The training certificate must clearly identify if the course is a complete course or a reduced course based upon the applicant previous experience (e.g. A340 (CFM) course for A320 technicians).

II Draft Decision AMC to PART 145

Decision N° 2003/19/RM, Annex II (AMC to Part-145), is amended as follows:

Point AMC 145.A.20 is amended as follows (Working Group 66.006):

In AMC 145.A.20, the following ATA chapters are added to the existing table of "category C component ratings":

- ATA 46 is included in RATING C3 "Communication and Navigation".
- ATA 42, 44, 50, 92 are included in RATING C6 "Equipment".
- ATA 85, 93 are included in RATING C12 "Hydraulic"

Point AMC 145.A.30(g) is amended as follows (Working Group 66.006):

AMC 145.A.30 (g) Personnel requirements

1. For the purposes of ~~category A~~ 66.A.20(a)(1) and 66.A.20(a)(3)(ii), minor scheduled line maintenance means any minor scheduled inspection/check up to and including a weekly check specified in the operators approved aircraft maintenance programme. For aircraft maintenance programmes that do not specify a weekly check, the competent authority will determine the most significant check that is considered equivalent to a weekly check.

2. Typical tasks permitted after appropriate task training to be carried out by the ~~category A~~ 66.A.20(a)(1) or the 66.A.20(a)(3)(ii) personnel for the purpose of ~~the category A~~ these personnel issuing an aircraft certificate of release to service as specified in 145.A.50 as part of minor scheduled line maintenance or simple defect rectification are contained in the following list:

   …

   m. ….

   n. Replacement of in-flight entertainment system simple components ~~but excluding~~ other than public address.

   o. ….

   p. ….

   q. ~~Replacement of any other component as~~ Any other task agreed by ~~the Agency~~ the competent authority as a simple task for a particular aircraft type. ~~only where it is agreed that the task is simple.~~ This may include defect deferment when all the following conditions are met:

      - there is no need for troubleshooting, and
      - the task is in the MEL, and
      - the maintenance action required by the MEL is agreed by the competent authority to be simple

   In the particular case of helicopters, and in addition to the items above, the following:

   r. removal and installation of Helicopter Emergency Medical Service (HEMS) simple internal medical equipment.

s. removal and installation of external cargo provisions (i.e, external hook, mirrors) other than the hoist.

t. removal and installation of quick release external cameras and search lights.

u. removal and installation of emergency float bags, not including the bottles.

v. removal and installation of external doors fitted with quick release attachments.

w. removal and installation of snow pads / skid wear shoes / slump protection pads.

NOTE: This list will be periodically updated in the light of ongoing experience and technological changes.

No task which requires troubleshooting should be part of the authorised maintenance actions. Release to service after rectification of deferred defects should be permitted as long as the task is listed above.

3. The requirement of having appropriate type rated certifying staff qualified as category B1 and B2 in the case of aircraft line maintenance does not imply that the organisation must have B1 and B2 personnel at every line station. The MOE should have a procedure on how to deal with defects requiring B1 or B2 certifying staff.

4. The competent authority may accept that in the case of aircraft line maintenance an organisation has only B1 or B2 certifying staff as applicable, provided the competent authority is satisfied that the scope of work, as defined in the Maintenance Organisation Exposition, does not need the availability of both B1 and B2 certifying staff. Special attention should be taken to clearly limit the scope of scheduled and non-scheduled line maintenance (defect rectification) to only those tasks that can be certified by the available certifying staff category.

Point AMC 145.A.30(j)(4) is amended as follows (Working Group 66.006):

AMC 145.A.30(j)(4) Personnel requirements

…

2.(i) …

2.(ii) Holders of a valid JAR FCL Flight engineers licence, or a national equivalent acceptable to the competent authority, on the aircraft type may only exercise this limited certification authorisation privilege when performing the duties of a flight engineer.
In addition to paragraph 2(i)(a) to (d) other typical minor maintenance or simple defect rectification tasks that may be carried out are included in the following list:

…

h. ….

i. Replacement of in-flight entertainment system components ~~but excluding~~ other than public address.

j. ....

Point AMC 145.A.35(a) is replaced as follows (Working Group 66.011):

AMC 145.A.35(a) Certifying staff and category B1 and B2 support staff

1. A Part-66 licence including endorsed type / group rating does not mean by itself that the person is competent to be authorised as Certifying staff and/or category B1 and B2 support staff.

2. Adequate understanding of the relevant aircraft and/or aircraft component(s) to be maintained together with the associated organisation procedures means that the person has received training.
   The organisation should specifically ensure that the individual competencies have been established with regard to:
   - relevant maintenance experience on the product type;
   - knowledge, experience, skills and attitude on the relevant aircraft type and configuration to be maintained such as the training differences between the generic aircraft type rating training that the person has received and the aircraft configuration of the aircraft to be maintained;
   - Knowledge of the associated organisation and operator procedures such that the person understands how the product functions, what are the more common defects with associated consequences.
   - Knowledge of the specific applicable national requirements when not superseded by EU requirements;
   - 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 a variant(s))

3. Some special maintenance tasks may require additional specialised training, such as but not limited to:
   - in depth troubleshooting,
   - very specific adjustment or test procedures,
   - rigging,
   - engine run-up, starting and operating the engines, skills for checking engine performance characteristics, normal and emergency engine operation, associated safety precautions and procedures,
   - extensive structural/system inspection and repair,
   - other specialised maintenance or inspections required by the maintenance programme

   Personnel should have experience in the fields as specified above in which training will be received.
   Engine run-up training should be provided using adequate simulators and/or real aircraft.

4. The satisfactory assessment of the certifying staff competency should be conducted under the responsibility of designated assessor(s) within the maintenance organisation in accordance with a procedure approved by the competent authority (item 3.4 of the MOE, as described in AMC 145.A.70(a)).

5. The organisation should hold copies of all documents that attest the qualification, and to recent experience.

III. Draft Decision AMC to PART 66

Decision N° 2003/19/RM Annex IV (AMC to Part-66) is amended as follows:

Point AMC 66.A.20(a) is replaced as follows (Working Group 66.006):

AMC 66.A.20(a) Privileges

The following definitions should apply:

Electrical system means the aircraft electrical power supply source, plus the distribution system to the different components contained in the aircraft and relevant connectors. Lighting systems are also included in this definition. When working on cables (including coaxial cables) and connectors which are part of these electrical systems, the following typical practices are included in the privileges:

- Continuity, insulation and bonding techniques and testing.
- Crimping and testing of crimped joints.
- Connector pin removal and insertion.
- Wiring protection techniques.

Avionics system means an aircraft system that transfers, processes, displays or stores analogue or digital data using data lines, wireless or other data transmission medium, and includes the system's components and connectors. Examples of avionics systems include the following

- Autoflight
- Communication & Navigation
- Instruments (see NOTE below)
- In Flight Entertainment Systems
- Integrated Modular Avionics (IMA)
- Cabin Systems
- On-Board Maintenance Systems
- Information Systems
- Fly by Wire Systems (related to ATA27 "Flight Controls")
- Fibre Optic Control Systems

NOTE: Although electro-mechanical and pitot-static instruments are not formally considered avionic systems, and they are included in the privileges of the B1 licence holder, they can also be considered within the privileges of the B2 licence holder due to the level 3 knowledge required in sub-module 13.8.

Simple test means a test described in approved maintenance data and meeting all the following criteria:

- The serviceability of the system can be verified using aircraft controls, switches, Built-in Test Equipment (BITE), Central Maintenance Computer (CMC) or external test equipment not involving special training.
- The outcome of the test is a unique go – no go indication or parameter. No interpretation of the test result or interdependence of different values is allowed.
- The test does not involve more than 10 actions as described in the approved maintenance data (not including those required to configure the aircraft prior to the test, i.e. jacking, flaps down, etc, or to return the aircraft to its initial configuration). Pushing a control, switch or button, and reading the corresponding outcome may be considered as a single step even if the maintenance data shows them separated.

Troubleshooting means the procedures and actions necessary, using approved maintenance data, in order to identify the root cause of a defect or malfunction. It may include the use of BITE or external test equipment.

Line maintenance means any maintenance that is carried out before flight to ensure that the aircraft is fit for the intended flight. It may include:

- troubleshooting;
- defect rectification;
- component replacement with use of external test equipment if required. Component replacement may include components such as engines and propellers;
- scheduled maintenance and/or checks including visual inspections that will detect obvious unsatisfactory conditions/discrepancies but do not require extensive in depth inspection. It may also include internal structure, systems and powerplant items which are visible through quick opening access panels/doors;
- minor repairs and modifications which do not require extensive disassembly and can be accomplished by simple means;
- for temporary or occasional cases (airworthiness directives, hereinafter AD; service bulletins, hereinafter SB) the quality manager may accept base maintenance tasks to be performed by a line maintenance organisation provided all requirements are fulfilled. The Member State will prescribe the conditions under which these tasks may be performed.

Base maintenance means any task falling outside the criteria given above for Line Maintenance.

Note: Aircraft maintained in accordance with "progressive" type programmes need to be individually assessed in relation to this paragraph. In principle, the decision to allow some "progressive" checks to be carried out is determined by the assessment that all tasks within the particular check can be carried out safely to the required standards at the designated line maintenance station.

A new point AMC 66.A.20(b)3 is added as follows (Working Group 66.009):

AMC 66.A.20(b)3 Privileges

The wording "has the adequate competence to certify maintenance on the corresponding aircraft" means that the licence holder should ensure that he/she has acquired the appropriate knowledge and experience to release the specific aircraft. This is essential because some systems and technology present in the particular aircraft may not have been covered by the 66.A.25 basic knowledge requirements or by the 66.A.45 type rating requirements.
This is typically the case of:

- Type ratings endorsed on a licence using the designations defined in Appendix I to AMC "List of Type Ratings" after following type training/examination which didn't cover all the variants within that rating designation.
- Work performed on a model that has evolved technologically from the original model used for the type training/examination.
- Evolution of the basic knowledge requirements not requiring re-examination of existing licence holders.
- Specific technology and options selected by each customer, which may not have been covered by the type training/examination.
- The endorsement of group/sub-group ratings based on experience on a representative number of tasks or based on type training/examination on a representative number of aircraft.

All the AMCs related to the previous point 66.A.45 are replaced by the following AMCs related to the new point 66.A.45(Working Groups 66.006, 66.009 and 66.011):

AMC 66.A.45(a) & (b) Type / task training and ratings

1. For category A and 66.A.20(a)(3)(ii) certifying staff specific training on each aircraft type should be required reflecting the authorised task(s). In those cases where the category A certifying staff receives the task training in a Part-147 organisation, the Part-145 organisation is responsible for ensuring that the certifying staff authorisation does not go beyond the training received.

2. Appropriately approved Part-147 organisation means an organisation holding an approval to provide category A training for the corresponding aircraft type.
   Appropriately approved Part-145 organisation means an organisation holding a maintenance organisation approval for the corresponding aircraft type and with the content of the task training approved by the competent authority.

AMC 66.A.45(b) Type / task training and ratings

The privilege for a B2 licence holder to release minor scheduled line maintenance and simple defect rectification (see 66.A.20(a)(3)(ii)) is granted by the Part-145 approved organisation where he is employed/contracted after meeting all the requirements specified in 66.A.45(b). This privilege can not be transferred to another Part-145 approved organisation and the 6 month experience requirement and task training must be obtained again in the new Part-145 approved organisation.

When a B2 licence holder already has a certifying staff authorization containing minor scheduled line maintenance and simple defect rectification for a particular aircraft type, new tasks can be added to that type without requiring another 6 months of experience. Still, task training for those tasks is required.

When the certifying staff authorization is going to cover several aircraft types, the experience may be combined within a single 6 month period.
For the addition of new types to the certifying staff authorisation, another 6 months should be required unless the aircraft is considered similar per AMC 66.A.20(b)2 to one already held.

AMC 66.A.45(h) Type / task training and rating

For the granting of manufacturer sub-group ratings for group 2 aircraft, for B1 and C licence holders, the sentence "at least two aircraft types from the same manufacturer which combined are representative of the applicable manufacturer sub-group" means that the number of aircraft types should cover the typical systems, engines and technology relevant to the manufacturer sub-group (e.g. retractable undercarriage, pressurization, variable pitch propeller, etc). In cases where there are very different aircraft within the same manufacturer sub-group, it may be necessary to cover more than two aircraft types to ensure adequate representation.
For this purpose it may be possible to use an aircraft from the same manufacturer classified in Group 1.

For the granting of full sub-group ratings for group 2 aircraft, for B1 and C licence holders, the sentence "at least three aircraft types from different manufacturers which combined are representative of the applicable sub-group" means that the number of aircraft types should cover the typical systems, engines and technology relevant to the manufacturer sub-group (e.g. retractable undercarriage, pressurization, variable pitch propeller, etc). In cases where

there are very different aircraft within the same sub-group, it may be necessary to cover more than three aircraft types to ensure adequate representation.
For this purpose it may be possible to use an aircraft classified in Group 1.

For manufacturer sub-group ratings, the term "manufacturer" means the TC holder defined in the certification data sheet, which is reflected in the list of type ratings in Appendix I to AMC to Part-66.
In the case of an aircraft rating where the type rating refers to a TC holder made of a combination of two manufacturers which produce a similar aircraft (i.e. CESSNA AIRCRAFT Company / REIMS AVIATION or AGUSTA / BELL HELICOPTER TEXTRON) this combination should be considered as one manufacturer.
As a consequence:

- When a licence holder gets a manufacturer sub-group rating, it covers the combination of manufacturers mentioned in the TC.
- When a licence holder who intends to endorse a full sub-group rating selects three aircraft from different manufacturers, this means from different combinations.

AMC 66.A.45(h)(3) & (i) Type / task training and ratings

1. Practical experience should cover a representative cross section including at least 50% of tasks from Appendix II relevant to the licence category and to the applicable aircraft group/sub-groups. This experience may be shown by covering one or several aircraft types of the applicable group/sub-group and may include experience on aircraft classified in group 1 as long as the experience is relevant.

2. Practical experience should be demonstrated by the submission of records or logbook showing the Appendix II tasks performed by the applicant as specified by the competent authority.

AMC 66.A.45(j) Type / task training and rating

The practical experience required to remove the limitations should consist of a variety of tasks applicable to the limitations under the supervision of an authorised certifying staff. This should include the tasks required by a scheduled annual inspection. Alternatively, this experience may also be gained, if agreed by the competent authority, by theoretical and practical training provided or recognised by the manufacturer.
It may be acceptable to have this experience on just one aircraft type.
The application for the limitation removal should be supported by a record of experience certified by the authorised staff above.

AMC 66.A.45 (k) Type / task training and ratings

1. Aircraft type training may be sub-divided in airframe type training, powerplant type training or avionic systems type training.
   a. Airframe type training means type training including all relevant aircraft structure and systems excluding the powerplant.
   b. Powerplant type training means type training on the bare engine, including the build-up to a quick engine change unit.
   c. The interface of the engine/airframe systems must be addressed by either airframe or powerplant type training.
   d. Avionic systems type training means type training on avionics systems covered by but not necessarily limited to ATA (Air Transport Association) chapters 22, 23, 25, 27, 31, 33, 34, 42, 44, 45, 46, 73 and 77 or equivalent.

2. Practical training may be performed either following or integrated with the theoretical elements, though cannot be performed before theoretical training.

AMC 66.A.45(k)(1) Type / task training and ratings

Category C certifying staff may not carry out the duties of category B1 or B2, or equivalent within base maintenance, unless they hold the relevant B1 or B2 category and have passed type training corresponding to the relevant B1 or B2 category.

AMC 66.A.45(k)(1) & (k)(2) Type / task training and ratings

1. The theoretical knowledge training should give adequate details of the aircraft, its main parts, systems, equipment, interior, structure and applicable components; including training in the systems and in the use of technical manuals and maintenance procedures. The course should also take into account the following:

   (a) Type design including type design variants, new technology and techniques;

   (b) Feedback from in-service difficulties, occurrence reporting etc;

   (c) Significant applicable airworthiness directives and service bulletins;

   (d) Known human factors issues associated with the particular aircraft type;

   (e) Use of type specific generic documentation, (MMEL, AMM, MPD, TSM, SRM, WD, AFM, tool handbook etc), philosophy of the troubleshooting, etc;

   (f) Knowledge of the maintenance on-board reporting systems and ETOPS maintenance conditions where applicable;

   (g) Use of special tooling and test equipment or specific maintenance practises including critical safety items and safety precautions;

   (h) Significant and critical tasks from the MMEL, CDL, ALI including CDCCL, CMR, MRB, MPD, SRM, AMM, etc;

   (i) Maintenance actions and procedures to be followed as a consequence of specific certification requirements, such as, but not limited to, RVSM (Reduced Vertical Separation Minimum) and NVIS (Night Vision Imaging Systems);

   (j) Knowledge of relevant inspections and limitations as applicable to the effects of environmental factors or operational procedures such as cold and hot climates, wind, moisture, sand, de-icing / anti-icing, etc.

   Theoretical type training should include significant features of all variants of an aircraft type shown in a group in Part-66 AMC Appendix I, whereas it is not required that all possible customer options and variant under the same type ratings are covered.

2. The theoretical as well as the practical training may be supported by the use of training aids, such as, aircraft or aircraft components, synthetic training devices (STD), computer based training devices (CBT), web based training elements, etc…

3. Theoretical and practical training should also take into account critical aspects such as Critical Design Configuration Control Limitations. EASA guidance is provided for training in Appendix IV to AMC 66.A.45(g)(1).

4. Aircraft type practical training and assessment should include a representative cross section of maintenance activities, including component location, component changes,

troubleshooting and functional checks relevant to the category/subcategory being applied, ref. to Appendix III of Part-66.

5. The assessment of practical training should be undertaken either by the competent authority, or by practical training assessors nominated within the organisation which has provided the training. Additionally, assessors may be independently approved by the competent authority in order to undertake this task on its behalf.. Assessors should demonstrate training and experience on the assessment process being undertaken.

6. Before the type rating training certificate is granted, the applicant should be able to:

(a) Demonstrate by knowledge examination a detailed understanding of applicable systems, their operation and maintenance;

(b) Ensure safe performance of maintenance, inspections and routine work according to the maintenance manual and other relevant instructions and tasks, as appropriate for that aircraft type. For example, troubleshooting, structural repairs, adjustments, replacements, rigging and functional checks.

(c) Demonstrate the correct use of all technical literature and documentation applicable to the aircraft;

7. Limited avionics system training should be included in the category B1 type training as the B1 privileges include work on avionic systems requiring simple tests to prove their serviceability.

8. Electrical systems should be included in both categories of type training.

AMC 66.A.45(k)(2) Type/task training and ratings

The objective of practical training is to gain competence in performing safe maintenance. This may include instruction in a classroom or in simulators but part of the practical training should be conducted in a real maintenance or manufacturer environment.

The minimum duration for the practical element of a type rating course would be expected to last two weeks unless a shorter duration meeting the objectives is justified to the competent authority. The training need analysis might be the document bringing the justifications. Refer to GM to Appendix III to Part-66 for guidance on how to produce the training needs analysis.

AMC 66.A.45(k)(3) Type/task training and ratings

For differences training, theoretical knowledge and practical training may be limited to the differences between the aircraft types.

Difference training is not required for different variants within the same aircraft type rating (as specified in Appendix I to AMC to Part-66) for the purpose of type rating endorsement on the aircraft maintenance licence. However, this does not mean that no training is required before a certifying authorisation can be issued.

AMC 66.A.45(l) Type/task training and ratings

1. The objective of OJT is to gain the required competence and experience in performing safe maintenance which may or may not use structured learning processes. This is usually peer to peer and shall take place on aircraft, or component, or at the workplace

involving actual work task performance. OJT shall include line and/or base maintenance tasks.

2. The OJT should cover at least 50% of the Appendix II tasks to AMC to Part-66, though type specific tasks may be used in place of those in Appendix II to AMC to Part-66, as applicable to the aircraft type concerned and licence category. Significantly, OJT should demonstrate a variety and cross section of tasks both in terms of aircraft systems experience and in the complexity of the tasks performed.

   OJT should be demonstrated by the submission of OJT records or a logbook showing the Appendix II to AMC to Part-66, (or equivalent), tasks performed by the applicant.

   Up to 50 percent of the required OJT may be undertaken before the aircraft theoretical type training starts.

3. 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

AMC 66.A.45(k)(2) & (l) Type / task training and ratings

The organisation providing the practical element and/or OJT should provide applicants a schedule or plan indicating a list of tasks to be performed under supervision. A record of the tasks completed should be entered into a logbook which should be designed such that each or a group of tasks may be countersigned by a designated assessor. The logbook format and its use should be clearly defined. Assessors should be trained for this purpose and the logbook should include an assessment statement for each aircraft type.

The assessment may be performed task by task or conducted as a final assessment at the end of the practical training and/or OJT.

AMC 66.A.45(k) and (l) Type / task training and ratings

The theoretical and practical training providers, as well as the OJT provider, may contract the services of a language translator in the case where training is imparted to students not conversant in the language of the training material.

During the performance of examinations and assessments, the assistance of the translator should be limited to the translation of the questions, but not to provide clarifications or help in relation to those questions.

AMC 66.A.45(m) Type/task training and ratings

1. Type experience should cover an acceptable cross section of tasks from Appendix II. For the first aircraft type of each manufacturer group, at least 50% of the Appendix II tasks, as applicable to the concerned aircraft type and licence category, should be performed. For the second aircraft type of each manufacturer group, this should be reduced to 30%. For subsequent aircraft types of each manufacturer group, this should be reduced to 20%.

2. Type experience should be demonstrated by the submission of records or logbook showing the Appendix II tasks performed by the applicant as specified by the competent authority.

Point AMC 66.B.115 is replaced as follows (Working Group 66.011).

AMC 66.B.115 Procedure for the amendment of an aircraft maintenance licence to include an aircraft type or group

(a) Where the type training has not been conducted by a Part-147 organisation, there should be supporting documents confirming to the competent authority that the trainee has been successfully examined/assessed and has completed the elements of the type training approved by the competent authority.

(b) Aircraft type training may be sub-divided in airframe type training, powerplant type training, or avionic/electrical systems type training.

1. Airframe type training means type training including all relevant aircraft structure and electrical and mechanical systems excluding the powerplant.

2. Powerplant type training means type training on the bare engine, including the build-up to a quick engine change unit.

3. The interface of the engine/airframe systems must be addressed by either airframe or powerplant type training.

4. Avionic/electrical systems type training means type training on avionics and electrical systems covered by but not necessarily limited to ATA (Air Transport Association) chapters 22, 23, 24, 25, 27, 31, 33, 34, 42, 44, 45, 46, 73 and 77 or equivalent.

A new point AMC 66.B.130 is added as follows (Working Group 66.011).

AMC 66.B.130 Procedure for the approval of aircraft type training

The procedure for the direct approval of type training courses by the competent authority should require that the proposed course covers the following aspects:

- The duration and content of the theoretical and/or practical elements, as applicable, in accordance with Appendix III to Part-66.
- 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 and that the examination/assessments has been successfully passed.

The procedure should also indicate how the competent authority is going to audit the proper performance of the approved course.

Appendix I is amended as follows (Working Group 66.009):

APPENDIX I
AIRCRAFT TYPE RATINGS
FOR PART-66 AIRCRAFT MAINTENANCE LICENCE

The following aircraft type ratings should be used to ensure a common standard throughout the Member States.

This list aims to:

- Specify all aircraft requiring type rating and type training (group 1).
- List the different type ratings which may be endorsed on the licence (group 1 and 2).

The inclusion of an aircraft type in the licence does not indicate that the aircraft type has been granted a type certificate under Regulation 1702/2003, this list being only intended for the purpose of maintenance.

In order to keep this list current and type ratings consistent, where a Member State needs to issue a type rating that is not included in this list, such information should be first passed on to the Agency.

…

Appendix II is amended as follows (Working Group 66.011):

APPENDIX II

Aircraft type practical experience and On the Job Training
List of Tasks

Time limits/Maintenance checks

100 hour check (general aviation aircraft).
"B" or "C" check (transport category aircraft).
Assist carrying out a scheduled maintenance check i.a.w. AMM.
Review Aircraft maintenance Log for correct completion.
Review records for compliance with airworthiness directives.
Review records for compliance with component life limits.
Procedure for inspection following heavy landing.
Procedure for inspection following lightning strike.

Dimensions/Areas

Locate component(s) by zone/station number.
Perform symmetry check.

Lifting and Shoring

Assist in:
Jack aircraft nose or tail wheel.
Jack complete aircraft.
Sling or trestle major component.

Levelling / Weighing

Level aircraft.
Weigh aircraft.
Prepare weight and balance amendment.
Check aircraft against equipment list.

Towing and Taxiing

Prepare aircraft for towing.
Tow aircraft.
Be part of aircraft towing team.

Parking and mooring

Tie down aircraft.
Park, secure and cover aircraft.
Position aircraft in maintenance dock.
Secure rotor blades.

Placards and Markings

Check aircraft for correct placards.
Check aircraft for correct markings.

Servicing

Refuel aircraft.
Defuel aircraft.
Carry out tank to tank fuel transfer
Check/adjust tire pressures.
Check/replenish oil level.
Check/replenish hydraulic fluid level.
Check/replenish accumulator pressure.
Charge pneumatic system.
Grease aircraft.
Connect ground power.
Service toilet/water system
Perform pre-flight/daily check

Vibration and Noise Analysis

Analyse helicopter vibration problem.
Analyse noise spectrum.
Analyse engine vibration

Air Conditioning

Replace combustion heater.
Replace flow control valve.
Replace outflow valve.
Replace safety valve
Replace vapour cycle unit.
Replace air cycle unit.
Replace cabin blower.
Replace heat exchanger.
Replace pressurisation controller.
Clean outflow valves.
Check operation of air conditioning/heating system
Check operation of pressurisation system
Troubleshoot faulty system

Auto flight

Install servos.
Rig bridle cables
Replace controller.
Replace amplifier.
Replacement of the auto flight system LRUs in case of the fly-by-wire aircraft
Check operation of auto-pilot.
Check operation of auto-throttle/auto-thrust.
Check operation of yaw damper.
Check and adjust servo clutch.
Perform autopilot gain adjustments.
Perform mach trim functional check.
Troubleshoot faulty system.
Check autoland system
Check flight management systems
Check stability augmentation system

Communications

Replace VHF com unit.
Replace HF com unit.
Replace existing antenna.
Replace static discharge wicks.
Check operation of radios.
Perform antenna VSWR check.
Perform Selcal operational check.
Perform operational check of passenger address system.
Functionally check audio integrating system.

Repair co-axial cable.
Troubleshoot faulty system.

Electrical Power

Charge lead/acid battery.
Charge ni-cad battery.
Check battery capacity.
Deep-cycle ni-cad battery.
Replace integrated drive/generator/alternator.
Replace switches.
Replace circuit breakers.
Adjust voltage regulator.
Change voltage regulator
Amend electrical load analysis report.
Repair/replace electrical feeder cable.
Troubleshoot faulty system
Perform functional check of integrated drive/generator/alternator
Perform functional check of voltage regulator

Equipment/Furnishings

Replace carpets
Replace crew seats.
Replace passenger seats.
Check inertia reels.
Check seats/belts for security.
Check emergency equipment.
Check ELT for compliance with regulations.
Repair toilet waste container.
Repair upholstery.
Change cabin configuration.
Replace cargo loading system actuator.
Test cargo loading system.
Replace escape slides/ropes

Fire protection

Check fire bottle contents.
Check/test operation of fire/smoke detection and warning system.
Check cabin fire extinguisher contents.
Check lavatory smoke detector system.
Check cargo panel sealing
Install new fire bottle.
Replace fire bottle squib.
Troubleshoot faulty system.
Inspect engine fire wire detection systems

Flight Controls

Inspect primary flight controls and related components i.a.w. AMM
Extending/retracting flaps & slats

Replace horizontal stabiliser.
Replace spoiler/lift dumper
Replace elevator.
Deactivation / reactivation of aileron servo control
Replace aileron.
Replace rudder.
Replace trim tabs.
Install control cable and fittings.
Replace slats
Replace flaps.
Replace powered flying control unit
Replace flap actuator
Rig primary flight controls
Adjust trim tab.
Adjust control cable tension.
Check control range and ~~sense~~ direction of movement.
Check for correct assembly and locking.
Troubleshoot faulty system.
Functional test of primary flight controls
Functional test of flap system
Operational test of the side stick assembly
Operational test of the THS
THS system wear check

Fuel

Water drain system (operation)
Replace booster pump.
Replace fuel selector.
Replace fuel tank cells.
Replace/test fuel control valves
Replace magnetic fuel level indicators
Replace water drain valve
Check / calculate fuel contents manually
Check filters.
Flow check system.
Check calibration of fuel quantity gauges.
Check operation feed/selectors
Check operation of fuel dump/jettison system
Fuel transfer between tanks
Pressure de-fuel
Pressure re-fuel (manual control)
Deactivation / reactivation of the fuel valves (transfer de-fuel, X-feed, re-fuel)
Troubleshoot faulty system.

Hydraulics

Replace engine driven pump.
Check/replace case drain filter
Replace standby pump.
Replace hydraulic motor pump/generator
Replace accumulator.
Check operation of shut off valve.

Check filters/clog indicators.
Check indicating systems.
Perform functional checks.
Troubleshoot faulty system.
Pressurisation / depressurisation of the hydraulic system
PTU operation

Ice and rain protection

Replace pump.
Replace timer.
Inspect repair propeller deice boot
Test propeller de-icing system
Inspect/test wing leading edge de-icer boot
Replace anti-ice/deice valve
Install wiper motor.
Check operation of systems.
Operational test of the pitot-probe ice protection
Operational test of the TAT ice protection
Operational test of the wing ice protection system
Assistance to the operational test of the engine air-intake ice protection (with engines in operation)
Troubleshoot faulty system.

Indicating/recording systems

Replace flight data recorder.
Replace cockpit voice recorder.
Replace clock.
Replace master caution unit.
Replace FDR.
Perform FDR data retrieval.
Troubleshoot faulty system.
Implement ESDS procedures
Inspect for HIRF requirements
Start/stop EIS procedure
Bite test of the CFDIU
Ground scanning of the central warning system

Landing Gear

Build up wheel.
Replace main wheel.
Replace nose wheel.
Replace steering actuator
Replace truck tilt actuator
Replace gear retraction actuator
Replace uplock/downlock assembly
Replace shimmy damper.
Rig nose wheel steering.
Functional test of the nose wheel steering system
Replace shock strut seals.

Servicing of shock strut
Replace brake unit.
Replace brake control valve.
Bleed brakes.
Replace brake fan
Test anti skid unit.
Test gear retraction.
Change bungees.
Adjust micro switches/sensors
Charge struts with oil and air.
Troubleshoot faulty system.
Test outbrake system
Replace rotorcraft skids
Replace rotorcraft skid shoes
Pack and check floats
Flotation equipment
Check/test emergency blowdown
Operational test of the landing gear doors

Lights

Repair/replace rotating beacon.
Repair/replace landing lights.
Repair/replace navigation lights.
Repair/replace interior lights.
Replace ice inspection lights
Repair/replace logo lights
Repair/replace emergency lighting system.
Perform emergency lighting system checks.
Troubleshoot faulty system

Navigation

Calibrate magnetic direction indicator.
Replace airspeed indicator.
Replace altimeter.
Replace air data computer.
Replace VOR unit.
Replace ADI.
Replace HSI.
Check pitot static system for leaks.
Check operation of directional gyro.
Functional check weather radar.
Functional check doppler.
Functional check TCAS.
Functional check DME
Functional check ATC Transponder
Functional check flight director system.
Functional check inertial nav system.
Complete quadrantal error correction of ADF system.
Update flight management system database.
Check calibration of pitot static instruments.
Check calibration of pressure altitude reporting system.
Troubleshoot faulty system

Check marker systems
Compass replacement direct/indirect
Check Satcom
Check GPS
Test AVM

Oxygen

Inspect on board oxygen equipment.
Purge and recharge oxygen system.
Replace regulator.
Replace oxygen generator.
Test crew oxygen system.
Perform auto oxygen system deployment check.
Troubleshoot faulty system.

Pneumatic systems

Replace filter.
Replace air shut off valve
Replace pressure regulating valve
Replace compressor.
Recharge dessicator.
Adjust regulator.
Check for leaks.
Troubleshoot faulty system.

Vacuum systems

Inspect the vacuum system i.a.w. AMM
Replace vacuum pump.
Check/replace filters.
Adjust regulator.
Troubleshoot faulty system.

Water/Waste

Replace water pump.
Replace tap.
Replace toilet pump.
Troubleshoot faulty system.
Inspect waste bin flap closure

Central Maintenance System

Retrieve data from CMU.
Replace CMU.
Perform Bite check.
Troubleshoot faulty system.

Airborne Auxiliary power

Install APU.
Inspect hot section.
Troubleshoot faulty system.

Structures

Sheet metal repair.
Fibre glass repair.
Wooden repair.
Fabric repair.
Recover fabric control surface.
Treat corrosion.
Apply protective treatment.

Doors

Inspect passenger door i.a.w. AMM
Rig/adjust locking mechanism.
Adjust air stair system.
Check operation of emergency exits.
Test door warning system.
Troubleshoot faulty system.
Remove and install passenger door i.a.w. AMM
Remove and install emergency exit i.a.w. AMM
Inspect cargo door i.a.w. AMM

Windows

Replace windshield.
Replace direct vision window
Replace cabin window.
Repair transparency.

Wings

Skin repair.
Recover fabric wing.
Replace tip.
Replace rib.
Replace integral fuel tank panel.
Check incidence/rig.

Propeller

Assemble prop after transportation.
Replace propeller.
Replace governor.
Adjust governor.

Perform static functional checks.
Check operation during ground run.
Check track.
Check setting of micro switches.
Assessment of ~~Dress out~~ blade damage i.a.w. AMM.
Dynamically balance prop.
Troubleshoot faulty system.

Main Rotors

Install rotor assembly.
Replace blades.
Replace damper assembly.
Check track.
Check static balance.
Check dynamic balance.
Troubleshoot.

Rotor Drive

Replace mast.
Replace drive coupling.
Replace clutch/freewheel unit
Replace drive belt.
Install main gearbox.
Overhaul main gearbox.
Check gearbox chip detectors.

Tail Rotors

Install rotor assembly.
Replace blades.
Troubleshoot.

Tail Rotor Drive

Replace bevel gearbox.
Replace universal joints.
Overhaul bevel gearbox.
Install drive assembly.
Check chip detectors.
Check/install bearings and hangers
Check/service/assemble flexible couplings
Check alignment of drive shafts
Install and rig drive shafts

Rotorcraft flight controls

Install swash plate.
Install mixing box.

Adjust pitch links.
Rig collective system.
Rig cyclic system.
Rig anti-torque system.
Check controls for assembly and locking.
Check controls for operation and sense.
Troubleshoot faulty system.

Power Plant

Build up ECU.
Replace engine.
Repair cooling baffles.
Repair cowling.
Adjust cowl flaps.
Repair faulty wiring.
Troubleshoot.
Assist in dry motoring check
Assist in wet motoring check
Assist in engine start (manual mode)

Piston Engines

Remove/install reduction gear.
Check crankshaft run-out.
Check tappet clearance.
Check compression.
Extract broken stud.
Install helicoil.
Perform ground run.
Establish/check reference RPM.
Troubleshoot.

Turbine Engines

Replace module.
Replace fan blade
Hot section inspection/boroscope check
Carry out engine/compressor wash
Carry out engine dry cycle
Engine ground run.
Establish reference power.
Trend monitoring/gas path analysis.
Troubleshoot.

Fuel and control, piston

Replace engine driven pump.
Adjust AMC.
Adjust ABC.
Install carburettor/injector.
Adjust carburettor/injector.

Clean injector nozzles.
Replace primer line.
Check carburettor float setting.
Troubleshoot faulty system.

Fuel and control, turbine

Replace FCU.
Replace Engine Electronic Control Unit (FADEC)
Replace Fuel Metering Unit (FADEC)
Replace engine driven pump.
Clean/test fuel nozzles.
Clean/replace filters.
Adjust FCU.
Troubleshoot faulty system.
Functional test of FADEC

Ignition systems, piston

Change magneto.
Change ignition vibrator.
Change plugs.
Test plugs.
Check H.T. leads.
Install new leads.
Check timing.
Check system bonding.
Troubleshoot faulty system.

Ignition systems, turbine

Perform functional test of the ignition system
Check glow plugs/ignitors.
Check H.T. leads.
Check ignition unit.
Replace ignition unit.
Troubleshoot faulty system.

Engine Controls

Rig thrust lever.
Rig RPM control.
Rig mixture HP cock lever.
Rig power lever.
Check control sync (multi-eng).
Check controls for correct assembly and locking.
Check controls for range and ~~sense of operation~~ direction of movement.
Adjust pedestal micro-switches.
Troubleshoot faulty system.

Engine Indicating

Replace engine instruments(s).
Replace oil temperature bulb.
Replace thermocouples.
Check calibration.
Troubleshoot faulty system.

Exhaust, piston

Replace exhaust gasket.
Inspect welded repair.
Pressure check cabin heater muff.
Troubleshoot faulty system.

Exhaust, turbine

Change jet pipe.
Change shroud assembly.
Install trimmers.
Inspect/replace thrust reverser
Replace thrust reverser component
Deactivate/reactivate thrust reverser
Operational test of the thrust reverser system

Oil

Change oil.
Check filter(s).
Adjust pressure relief valve.
Replace oil tank.
Replace oil pump.
Replace oil cooler.
Replace firewall shut off valve.
Perform oil dilution test.
Troubleshoot faulty system.

Starting

Replace starter.
Replace start relay.
Replace start control valve.
Check cranking speed.
Troubleshoot faulty system.

Turbines, piston engines

Replace PRT.
Replace turbo-blower.
Replace heat shields.
Replace waste gate.
Adjust density controller.

Engine water injection

Replace water/methanol pump.
Flow check water/methanol system.
Adjust water/methanol control unit.
Check fluid for quality.
Troubleshoot faulty system

Accessory gear boxes

Replace gearbox.
Replace drive shaft.
~~Check~~ Inspect magnetic chip detector.

APU

Removal/installation of the APU
Removal/installation of the inlet guide-vane actuator
Operational test of the APU emergency shut-down test
Operational test of the APU

IV Draft Decision GM to PART 66

Decision N° 2003/19/RM Annex V (GM to Part-66) is amended as follows:

Point GM 66.A.20(a) is amended as follows (Working Group 66.006):

GM 66.A.20(a) Privileges

1. Tasks permitted by 66.A.20(a)(1) and 66.A.20(a)(3)(ii) to be certified as part of minor scheduled maintenance or simple defect rectification are as specified in Part-145 and agreed by the competent authority. AMC to Part-145 contains a typical example list of such tasks.

2. For the purposes of ~~category A~~ 66.A.20 (a)(1) and 66.A.20(a)(3)(ii) minor scheduled line maintenance means any minor check up to but not including the A check where functional tests can be carried out by the aircrew to ensure system serviceability. In the case of an aircraft type not controlled by a maintenance programme based upon the A/B/C/D check principle, minor scheduled line maintenance means any minor check up to and including the weekly check or equivalent.

3. Tasks included in Module 7.7 of Annex I are considered to be "electrical tasks" and can be released by both B1 and B2 certifying staff since the basic knowledge requirements are the same for both categories. The category B1 licence also permits the certification of work ~~involving~~ on avionic systems involving only simple tests as specified in AMC66.A.20(a). ~~providing the serviceability of the system can be established by a simple self-test facility, other on-board test systems/equipment or by simple ramp test equipment. Defect rectification involving test equipment which requires an element of decision making in its~~

~~application - other than a simple go/no-go decision - cannot be certified. The category B2 will need to be qualified as category A in order to carry out simple mechanical tasks and be able to make certifications for such work.~~

4. The category C certification authorisation permits certification of scheduled base maintenance by the issue of a single certificate of release to service for the complete aircraft after the completion of all such maintenance. The basis for this certification is that the maintenance has been carried out by competent mechanics and both category B1 and B2 staff have signed for the maintenance under their respective specialisation. The principal function of the category C certifying staff is to ensure that all required maintenance has been called up and signed off by the category B1 and B2 staff before issue of the certificate of release to service. Category C personnel who also hold category B1 or B2 qualifications may perform both roles in base maintenance.

A new point GM 66.A.20(b)2 is added as follows (Working Group 66.006):

GM 66.A.20(b)2 Privileges

The intent of point 66.A.20(b)2 is that if a licence holder has met the provisions for the issue of the appropriate privileges within the last two years, then he/she does not need to comply with the six months of recent experience requirement.

For example, a licence holder who has had a new type rating endorsed on the licence does not need to comply with the six months of recent experience as long as he/she has performed and completed the type training / type examination and, if applicable, the On the Job Training requirements, within the last two years.

Point GM 66.A.20(b)3 is renamed as GM 66.A.20(b)4 (Working Group 66.009):

GM 66.A.20(b)~~3~~4 Privileges

…

A new point GM 66.A.45 is added as follows (Working Group 66.009).

GM 66.A.45 Type/task training and ratings

This is a summary of the requirements contained in 66.A.45.

Aircraft rating requirements			
	B1 licence	**B2 licence**	**C licence**
Group 1 Complex aircraft + other aircraft defined by EASA	**Individual TYPE RATING** *Type training:* *- Theory + examination* *- Practical + assessment* *OJT (for first aircraft in licence*	**Individual TYPE RATING** *Type training:* *- Theory + examination* *- Practical + assessment* *OJT (for first aircraft in licence*	**Individual TYPE RATING** *Type training:* *- Theory + examination*

	subcategory)	*subcategory)*	
Group 2: (except those in Group 1) **Subgroups:** **2a**: single turboprop aeroplanes **2b**: single turbine helicopters **2c**: single piston helicopters	***(B1.1, B1.3, B1.4 licence holders)*** **Individual TYPE RATING** *(type training+OJT) or (type examination + practical experience)* **or** **Full SUB-GROUP RATING** *(type training+OJT or type examination + practical experience on at least 3 representative aircraft)* **or** **Manufacturer SUB-GROUP RATING** *(type training+OJT or type examination + practical experience on at least 2 representative aircraft of that manufacturer sub-group)*	**Individual TYPE RATING** *(type training+OJT) or (type examination + practical experience)* **or** **Full SUB-GROUP RATING** *(based on demonstration of appropriate experience)*	**Individual TYPE RATING** *(type training) or (type examination)* **or** **Full SUB-GROUP RATING** *(type training or type examination on at least 3 representative aircraft)* **or** **Manufacturer SUB-GROUP RATING** *(type training or type examination on at least 2 representative aircraft of that manufacturer sub-group)*
Group 3 Piston engine aeroplanes (except those in Group 1)	***(B1.2 licence holders)*** **Individual TYPE RATING** *(type training+OJT) or (type examination + practical experience)* **or** **Full GROUP 3 RATING** *(based on demonstration of appropriate experience)* **Limitations:** ▪ *Pressurized aeroplanes* ▪ *Structures (metal / composite / wood/metal tubing and fabric)* *(Limitations may be*	**Individual TYPE RATING** *(type training+OJT) or (type examination + practical experience)* **or** **Full GROUP 3 RATING** *(based on demonstration of appropriate experience)*	**Individual TYPE RATING** *(type training) or (type examination)* **or** **Full GROUP 3 RATING** *(based on demonstration of appropriate experience)*

	removed based on appropriate experience)		

Point GM 66.A.45(d) is deleted (Working Group 66.011):

A new point GM to appendix III to Part-66 is added as follows (Working Group 66.011).

GM to appendix III to Part-66

Minimum duration and training need analysis

a) The minimum duration for the type rating training course as described in Appendix III to Part-66 has been determined based:

- on generic categories of aircraft and minimum standard equipment fit.
- on the average duration of standard courses imparted in Europe.

Deviation below the minimum duration is only permissible in exceptional and justified circumstances. Training program reductions for a particular aircraft type will be approved by the competent authority on a case-by-case basis appropriate to the type. For example, while it would be exceptional for a theoretical knowledge course to be below the minimum duration shown for a large transport category aircraft such as an A330 or B757, it would not necessarily be exceptional in the case of a General Aviation (GA) business aircraft such as a Learjet 45 or similar. Typically the Training Needs Analysis (TNA) for a GA aircraft course will demonstrate that a course of a shorter duration satisfies the requirement.

b) As a minimum, the Training Need Analysis (TNA) should take into account the elements of the syllabus in subparagraphs 2.1 & 2.2 of Part-66 Appendix III and in AMC 66.A.45 (k) (1) and (k) (2)

1) Good practices would allow the TNA to initially set-up the course content considering the Appendix III objectives per each level and prescribed topics in the theoretical and practical element table. The applicable chapter and the corresponding minimum training time within those defined in Appendix III of Part-66 should be recorded.

2) This analysis should identify all the areas and elements where there is a need for training as well as the associated learning objectives, considering the design philosophy of the aircraft type, the operational environment, the type of operations and the operational experience.
Typical documents used may include Instructions for Continuing Airworthiness (ICA), Aircraft Maintenance Manual, MRB report, CMRs, airworthiness limitations, Troubleshooting Manual, Structural Repair Manual, Illustrated Parts Catalogue, Airworthiness Directives and Service bulletins.

3) A task by task analysis is not necessary. The analysis should be written in a manner that reasonable understanding of which areas and elements constitutes the type training objectives and the course.

A task means a maintenance activity as defined in the maintenance documents and should determine the skills, knowledge and attitudes necessary to satisfactory perform the task.
The analysis may be carried out by considering;

- Each task or group of tasks, or
- Each system or sub-system or components

The available documents may be analyzed in term of training objectives per task activity or group of activities such a:

- o Activation/reactivation,
- o Removal/Installation,
- o Testing,
- o Servicing,
- o Inspection, check and repairs,
- o Trouble shooting / diagnosis.

For that purpose, a filtering method may be used in order to extract the elements constituting the training course, such as:

(i) frequency;
(ii) safety (staff, materials etc.);
(iii) human factors;
(iv) difficulty of the maintenance activity;
(v) criticality of the maintenance activity;
(vi) in service experience;
(vii) novel or unusual design features (not covered by Part-66 Appendix I) ;
(viii) similarities with other aircraft type;
(ix) dispatch, tests, special toolings;
(x) Competent Authority requirements; etc.

4) Each topic of the TNA should identify the average time needed (at the prescribed level of Part-66 Appendix III)

5) The following elements should be considered, developing the TNA:

- Identify the learning objectives for each task / sub-task (maintenance course objectives) or group of tasks or each system or sub-system or components
- Associate the identified tasks to be trained to the regulatory requirements (tables in Appendix III of Part-66),
- Organise the training into modules in a logical sequence (adequate combination of chapters as defined in Appendix III of Part-66);
- Determine the sequence of learning (within a lesson and for the whole syllabus);
- Identify the scope of information and level of details with regard minimum standard to which these elements (topics of the TNA) should be taught according to the set-up objectives (ref. Part-66 Appendix III).
  Each chapter / subject of the Part-66 Appendix III should address:
  - Description and,
  - System/Component operation including structure (where applicable) taking into account:
    i. complexity of the system (e.g. the need of further break down into sub-systems etc.),
    ii. design specifics which may require more detailed presentation,
    iii. normal and emergency functioning.
    iv. Troubleshooting
    v. Interpretation of indications and malfunctions
    vi. Use of maintenance publications
    vii. Identification of special tools and equipment required for servicing and maintaining the aircraft;
    viii. Maintenance Practices,

ix. Routine inspections, Functional or Operational Tests, rigging/Adjustments etc
x. Design specifics that may contribute to maintenance errors

In addition, the following additional elements should be considered

i. the instructional methods and equipment, teaching methods and blending of the teaching methods in order to endure the effectiveness of the training
ii. - the maintenance training documentation/material to be delivered to the student,
iii. - facilitated discussions, questioning session, additional practiced-oriented training etc,
iv. - the homework if developed,
v. - the training provider's resources available to the learner;
vi. - reference of the specific training material to the chapters as specified in appendix III to Part-66

6) Differences can be made between issues that have to be instructor led and that can be delivered trough interactive simulation training devices and or covered by web based elements;

7) Overall time will be allocated accordingly (taking primarily into account content / scope to be delivered and delivery methods to be used)

8) The examination, which is not part of the training needs analysis, should however be prepared in accordance with the learning objectives (which derives from the training needs analysis) to the required level and number of questions for the final evaluation.
The course shall be imparted in such a manner that examination at each stage of the training should ensure that the trainee can go to the next stage or module, by verifying that the training objectives are met.

Point GM 66.A.45(f) is deleted (Working Group 66.009):

Point GM 66.A.45(d) and (e) is deleted (Working Group 66.011):

V Draft Decision AMC to PART 147

Decision N° 2003/19/RM Annex VI (AMC to Part-147) is amended as follows:

A new point AMC 147.A.200(f) is added as follows (Working Group 66.011).

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

1. The number of tuition hours per day for the theoretical training shall not exceed 8 hours, which shall be performed during regular office hours; in exceptional cases, deviation from this standard may be envisaged when justified. This maximum number of hours is also applicable for the combination of theoretical and practical training, when they are performed at the same time.
2. Minimum participation time is at least 90 percent of the tuition hours of the theoretical training course. If this criterion is not met, the certificate of recognition should not be

issued. Additional training may be given by the training organisation in order to meet the minimum participation time.

Point AMC 147.A.300 is amended as follows (Working Group 66.011).

AMC 147.A.300 Aircraft type / task training

1. Aircraft type training may be sub-divided in airframe type training, powerplant type training, or avionic/electrical systems type training. A maintenance training organisation approved under Part-147 may be approved to conduct airframe type training only, powerplant type training only or avionics systems type training.
2. Airframe type training means type training including all relevant aircraft structure and electrical and mechanical systems excluding the powerplant.
3. Powerplant type training means type training on the bare engine, including the build-up to a quick engine change unit.
4. The interface of the engine/airframe systems must be addressed by either airframe or powerplant type training.
5. Avionic/electrical systems type training means type training on avionics and electrical systems covered by but not necessarily limited to ATA (Air Transport Association) chapters 22, 23, 24, 25, 27, 31, 33, 34, 42, 44, 45, 46, 73 and 77 or equivalent.

A new point AMC 147.B.120(a) is added as follows (Working Group 66.011).

2. AMC 147.B.120 (a) Continued validity procedure

1. It is not necessary to sample all basic and type training courses that will be approved, but the competent authority should sample, as appropriate, one basic and one type training course for as long as is necessary to establish that training is conducted in an appropriate manner, except that the minimum sampling time for the course being sampled should not be less than 3 hours. Where no training course is being conducted during the audit, arrangements should be made to return at a later date to sample the conduct of a training course.

2. It is not necessary to sample all examinations associated with a training course but the competent authority should sample, as appropriate, one basic and one type training course examination.

VI Draft Decision GM to PART 147

Decision N° 2003/19/RM Annex VII (GM to Part-147) is amended as follows:

Point GM 147.B.110 is amended as follows (Working Group 66.011):

GM 147.B.110 Approval procedure

2. ....

~~3. It is not necessary to sample all basic and type training courses that will be approved, but it is necessary to sample, as appropriate, one basic and one type training course for as long as is necessary to establish that training is conducted in an appropriate manner, except that the minimum sampling time for the course being sampled should not be less than 3 hours. Where no training course is being conducted during the audit, arrangements should be made to return at a later date to sample the conduct of a training course.~~

3. ~~4.~~ Where it is intended that the maintenance training organisation may conduct training and examinations away from the maintenance training organisation address(es) in accordance with 147.A.145(c), then a sample audit should be carried out by the competent authority from time to time of the process to ensure that procedures are followed. For practical reasons such sample audits will need to be carried out when training is being conducted away from the maintenance training organisation address(es).

~~5. It is not necessary to sample all examinations associated with a training course, but it is necessary to sample, as appropriate, one basic and one type training course examination.~~

4. ~~6.~~ The auditing surveyor should ensure that they are always accompanied throughout the audit by a senior member of the organisation making application for Part-147 approval. Normally this should be the proposed quality manager. The reason for being accompanied is to ensure that the organisation is fully aware of any findings during the audit. In any case, the proposed quality manager/senior member of the organisation must be debriefed at the end of the audit visit on the findings made during the audit.

5. ~~7.~~ There will be occasions when the auditing surveyor may find situations in the applicant's organisation on which he/she is unsure about compliance. In this case, the organisation must be informed about possible non-compliance at the time of audit and the fact that the situation will be reviewed before a decision is made. The organisation must be informed of the decision within 2 weeks of the audit visit in writing if the decision is a confirmation of non-compliance. If the decision is a finding of being in compliance, a verbal confirmation to the organisation will suffice.

Appendix B - Attachments

MODULES performed by A which the B2 did not perform in any other MODULE - (BASIC TRAINING).pdf
Attachment #1 to comment #403

MODULE 11. TURBINE AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS	MODULE 11A. TURBINE AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS	11.1.2 High Speed Flight	1	A1 and A2 to B2 differences
	11.2 Airframe Structures — General Concepts	(a)	2	
		(b)	1	
	11.3 Airframe Structures — Aeroplanes	11.3.1 Fuselage (ATA 52/53/56)	1	
		11.3.2 Wings (ATA 57)	1	
		11.3.3 Stabilisers (ATA 55)	1	
		11.3.4 Flight Control Surfaces (ATA 55/57)	1	
		11.3.5 Nacelles/Pylons (ATA 54)	1	
	11.4 Air Conditioning and Cabin Pressurisation (ATA 21)	11.4.1 Air supply	1	
		11.4.2 Air Conditioning	1	
		11.4.3 Pressurisation	1	
		11.4.4 Safety and warning devices	1	
	11.7 Equipment and Furnishings (ATA 25)	(a)	2	
		(b)	1	
	11.8 Fire Protection (ATA 26)	(a) and (b)	1	
	11.10 Fuel Systems (ATA 28)		1	
	11.11 Hydraulic Power (ATA 29)		1	
	11.12 Ice and Rain Protection (ATA 30)		1	
	11.13 Landing Gear (ATA 32)		2	
	11.15 Oxygen (ATA 35)		2	
	11.16 Pneumatic/Vacuum (ATA 36)		1	
	11.17 Water/Waste (ATA 38)		2	
MODULE 12. HELICOPTER AERODYNAMICS, STRUCTURES AND SYSTEMS	12.1 Theory of Flight — Rotary Wing Aerodynamics		1	A3 and A4 to B2 differences
	12.2 Flight Control Systems		2	
	12.3 Blade Tracking and Vibration Analysis		1	
	12.4 Transmissions		1	
	12.5 Airframe Structures	(a)	2	
		(b)	1	

Attachment #2 to comment #403

MODULES performed by A which the B2 did not perform in any other MODULE - (BASIC TRAINING)			LEVEL REQUIRED
MODULE 6. MATERIALS AND HARDWARE	6.3 Aircraft Materials — Composite and Non-Metallic	6.3.1 Composite and non-metallic other than wood and fabric (b)	1
		6.3.2 Wooden structures	1
		6.3.3 Fabric covering	1
MODULE 7 MAINTENANCE PRACTICES	7.8 Riveting		1
	7.9 Pipes and Hoses		1
	7.10 Springs		1
	7.11 Bearings		1
	7.12 Transmissions		1
	7.13 Control Cables		1
	7.19 Abnormal Events	(b)	2

A to B2 differences

Some modules performed by B2 cover most of the syllabus for A. For example, module 13 for B2 covers a good part of other destinated to A.

Attachment #3 to comment #403

MODULE 15. GAS TURBINE ENGINE	15.1 Fundamentals		1	A to B2 differences
	15.3 Inlet		2	
	15.4 Compressors		1	
	15.5 Combustion Section		1	
	15.6 Turbine Section		2	
	15.7 Exhaust		1	
	15.9 Lubricants and Fuels		1	
	15.10 Lubrication Systems		1	
	15.11 Fuel Systems		1	
	15.12 Air Systems		1	
	15.13 Starting and Ignition Systems		1	
	15.14 Engine Indication Systems		1	
	15.16 Turbo-prop Engines		1	
	15.17 Turbo-shaft engines		1	
	15.18 Auxiliary Power Units (APUs)		1	
	15.19 Powerplant Installation		1	
	15.20 Fire Protection Systems		1	
	15.21 Engine Monitoring and Ground Operation		1	
MODULE 16. PISTON ENGINE	16.1 Fundamentals		1	
	16.2 Engine Performance		1	
	16.3 Engine Construction		1	
	16.4 Engine Fuel Systems	16.4.1 Carburettors	1	
		16.4.2 Fuel injection systems	1	
		16.4.3 Electronic engine control	1	
	16.5 Starting and Ignition Systems		1	
	16.6 Induction, Exhaust and Cooling Systems		1	
	16.7 Supercharging /Turbocharging		1	
	16.8 Lubricants and Fuels		1	
	16.9 Lubrication Systems		1	
	16.10 Engine Indication Systems		1	
	16.11 Powerplant Installation		1	
	16.12 Engine Monitoring and Ground Operation		1	
MODULE 17. PROPELLER	17.1 Fundamentals		1	
	17.2 Propeller Construction		1	
	17.3 Propeller Pitch Control		1	
	17.5 Propeller Ice Protection		1	
	17.6 Propeller Maintenance		1	
	17.7 Propeller Storage and Preservation		1	

Attachment #4 to comment #403

NPA 07 reply JA 16-10-07.pdf
Attachment #5 to comment #203

Comments NPA 07-2007.pdf
Attachment #6 to comment #345