

NOTICE OF PROPOSED AMENDMENT (NPA) No 07/2007

DRAFT OPINION OF THE EUROPEAN AVIATION SAFETY AGENCY,

For a Commission Regulation 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

**DRAFT DECISION OF THE EXECUTIVE DIRECTOR OF THE EUROPEAN AVIATION
SAFETY AGENCY,**

amending Annex II (AMC to Part-145), Annex IV (AMC to Part-66), Annex V (GM to Part-66), Annex VI (AMC to Part-147) and Annex VII (GM to Part-147) of Decision N° 2003/19/RM of the Executive Director of the 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 and personnel involved in these tasks.

Privileges of B1 and B2 aircraft maintenance licenses

AND

Type and group ratings

AND

Type training.

TABLE OF CONTENTS.

		Page
A	EXPLANATORY NOTE	3
I	General	3
II	Consultation	4
III	Comment Response Document	4
IV	Content of the draft opinion and draft decision 66.006	5
	A) Background information	5
	B) Envisaged changes	6
V	Content of the draft opinion and draft decision 66.009	8
	A) Background information	8
	B) Envisaged changes	9
VI	Content of the draft opinion and draft decision 66.011	14
	A) Background information	14
	B) Envisaged changes	15
VII	Regulatory Impact Assessments	20
B	DRAFT OPINION AND DRAFT DECISIONS	21
I	Draft Opinion (EC) No 2042/2003	22
	A) Part 145	23
	B) Part 66	25
	C) Part 147	56
II	Draft Decision AMC to Part 145	57
III	Draft Decision AMC to Part 66	59
IV	Draft Decision GM to Part 66	80
V	Draft Decision AMC to Part 147	84
VI	Draft Decision GM to Part 147	85
Attachment 1	Regulatory Impact Assessment (RIA) 66.006	86
Attachment 2	Regulatory Impact Assessment (RIA) 66.009	94
Attachment 3	Regulatory Impact Assessment (RIA) 66.011	108

A. Explanatory Note

I. General

1. The purpose of this Notice of Proposed Amendment (NPA) is to envisage amending Commission Regulation (EC) No 2042/2003¹ 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 the Decision of the Executive Director of the Agency N° 2003/19/RM of 28 November 2003 on acceptable means of compliance and guidance material to Commission Regulation (EC) No 2042/2003. The scope of this rulemaking activity is outlined in the Terms of Reference 66-006, 66-009 and 66-011 as described in more detail below.
2. The Agency is directly involved in the rule-shaping process. It assists the Commission in its executive tasks by preparing draft regulations, and amendments thereof, for the implementation of the Basic Regulation², which are adopted as "Opinions" (Basic Regulation, Article 14(1)). It also adopts acceptable means of compliance (AMC) and guidance material (GM) for the application of Basic Regulation and its implementing rules (Basic Regulation, Article 14(2)).
3. When developing rules, the Agency is bound to following a structured process as required by article 43(1) of the Basic Regulation. Such process has been adopted by the Agency's Management Board and is referred to as "The Rulemaking Procedure"³.
4. This rulemaking activity is included in the Agency's 2007 programmes. It implements the following rulemaking tasks:
 - 66-006: Privileges of B1 and B2 aircraft maintenance licenses.
 - 66-009: Type and group ratings.
 - 66-011: Type training.
5. The text of this NPA has been developed by three dedicated EASA rulemaking groups, appropriately coordinated to ensure consistency between the changes introduced by each group. It is submitted for consultation of all interested parties in accordance with Article 43 of the Basic Regulation and Articles 5(3) and 6 of the EASA rulemaking procedure.

¹ 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, *OJ L 315*, 28.11.2003, p. 1. Regulation as last amended by Regulation (EC) No 376/2007 (*OJ L 94*, 4.4.2007, p. 18).

² Regulation (EC) No 1592/2002 of the European Parliament and of the Council of 15 July 2002 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency (*OJ L 240*, 7.9.2002, p.1). Regulation as last amended by Regulation (EC) No 334/2007 (*OJ L 88*, 29.3.2007, p. 39).

³ Management Board decision concerning the procedure to be applied by the Agency for the issuing of opinions, certification specifications and guidance material ("rulemaking procedure"), EASA MB/7/03, 27.6.2003.

II. Consultation

6. To achieve consultation, the Agency is publishing the draft opinion on its internet site. Comments on this proposal should be provided within 3 months in accordance with Article 6(4) of the EASA rulemaking procedure. Comments on this proposal should be submitted by one of the following methods:

CRT: Send your comments using the Comment-Response Tool (CRT) available at <http://hub.easa.europa.eu/crt/>

E-mail: In case the use of CRT is prevented by technical problems these should be reported to the [CRT webmaster](mailto:CRT_webmaster@easa.europa.eu) and comments sent by email to NPA@easa.europa.eu.

Correspondence: If you do not have access to internet or e-mail you can send your comment by mail to:
Process Support
Rulemaking Directorate
EASA
Postfach 10 12 53
D-50452 Cologne
Germany

Comments should be received by the Agency **before 28 September 2007**. If received after this deadline they might not be taken into account.

III. Comment response document

7. All comments received in time will be responded to and incorporated in a comment response document (CRD). This may contain a list of all persons and/or organisations that have provided comments. The CRD will be widely available on the Agency's website and in the Comment-Response Tool (CRT).

IV. Content of the draft opinion and draft decision in relation to Task 66-006: Privileges of B1 and B2 aircraft maintenance licenses.

A) Background information

8. On 20 November 2003 the European Commission adopted 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. The provisions of Annex III (Part-66) include the definition of different categories for aircraft maintenance licenses and describe the associated privileges.
9. Currently in (EC) 2042/2003, Appendix III (Part-66), the privileges associated to each aircraft maintenance license category are described as follows:
 - a) 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.
 - b) 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. Replacement of avionic line replaceable units, requiring simple tests to prove their serviceability, shall also be included in the privileges. Category B1 shall automatically include the appropriate A subcategory.
 - c) A category B2 aircraft maintenance licence shall permit the holder to issue certificates of release to service following maintenance on avionic and electrical systems.
 - d) 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.
10. Feedback received by EASA seems to indicate that it is not clearly defined what an electrical system is and what an avionic system is. Furthermore, the current AMCs and Guidance Material do not seem sufficient to clarify what avionic tasks can be performed by a B1 license holder and what is a simple test.
11. Additional feedback received by EASA suggests that the B2 licensed personnel privileges are too restricted. In addition, the duration of the basic training for category B2 (2400 hours) is the same as the one for category B1, while the Appendix I content seems to indicate that the B2 training should be shorter than that for the B1.
12. In order to address these issues, the Agency created a Rulemaking task and a drafting group, composed of representatives of national authorities, associations of maintenance engineers, helicopter manufacturers and training organisations. The aim was to evaluate the situation, submit a

proposal and develop guidelines for issuing an opinion to modify Part-66 and/or a decision to modify AMC to this Part.

B) Envisaged changes

13. Based on the work performed by the working group, it is proposed that the following elements should be introduced in 2042/2003 regulation:

- 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. This was justified by the fact that these systems include a high content of electrical tasks but currently can only be certified by B1 certifying staff.

As a consequence, Appendix I, II and III, for the systems mentioned above, have been revised to increase the training level for category B2 to match the training level for category B1 and to add new questions to the respective examinations.

Nevertheless, the B2 license holders will get this privilege automatically without requiring the performance of a course covering those changes. This was agreed by the group because these tasks are currently being performed by most of the B2 license holders (without certifying those tasks), and additionally, by the fact that the approved maintenance organisation is always required to assess the competence of certifying staff before issuing the appropriate authorisation.

As a consequence, and in order to provide a transition period, the amendments introduced in Appendix I and II will be subject to an 18 month application delay from the date of issue of this Regulation amendment. As mentioned above, this does not keep the B2 license holders from getting the new privileges as of the entry into force of the new Regulation amendment.

Appendix III has an 18 month transition period where type courses can still be performed in accordance with the current regulation, but where the organisations have the option of using the new Regulation amendment (this provision was also proposed by 66.011 working group, and is addressed in item 44).

- 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. This was justified by the fact that in many cases, category B2 certifying staff also worked on mechanical systems although they were not certifying such work, and this provided them the appropriate experience. However, this is not always true, and in some cases the B2 certifying staff works only on electrical and avionic systems.

As a consequence, the proposed increase of privileges is not automatic, meaning that the B2 license does not automatically include the category A (also, it was difficult to define what subcategory would apply since the B2 license does not have subcategories). This increased privilege will be granted by the Part-145 organisation where the B2 license holder works subject to the following limitations and requirements:

- a) The category A privilege will be limited to the aircraft types already endorsed on the B2 license;
- b) Appropriate task training must be performed, for each aircraft type, at the Part-145 organisation that issues the authorisation;
- c) 6 months of documented practical experience is required at the Part-145 organisation that issues the authorisation. This experience must cover the scope of the authorisation that will be issued;
- d) Both task training and practical experience shall be followed by the appropriate examination/assessment.

These limitations and additional requirements have been established, also, in order not to require a modification of the basic knowledge (Appendix I) or type training (Appendix III) requirements for the B2 license holder.

- 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).
- Revise the table of “category C component ratings” shown in AMC 145.A.20 in order to include the following:
 - a) ATA 42 and ATA 44 are included in RATING C6 “Equipment”.
 - b) ATA 46 is included in RATING C3 “Communication and Navigation”.
- Reduce the length of the Part-147 basic training course for category B2 to 2000 hours, despite the content added as a consequence of the increase of privileges. This reduction is the consequence of a detailed analysis of the syllabus content (modules, sub-modules and items) and the level of training for each particular item, which has concluded that the B2 basic syllabus is still shorter than the B1 basic syllabus.
- Include the possibility for the competent authority to issue a Part-145 maintenance organisation approval for line maintenance having only B1 or B2 certifying staff, subject to the appropriate limitations in the scope of work.
- 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.

V. Content of the draft opinion and draft decision in relation to Task 66-009: Type and group ratings.

A) Background information

14. On 20 November 2003 the European Commission adopted 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. The provisions of Annex III (Part-66) include a system of type and group ratings. Type ratings are listed in the AMC to Annex III (Part-66) in a list called Appendix I “Aircraft type ratings for Part-66 aircraft maintenance license”.
15. Currently in Part-66, for the purpose of endorsing aircraft type ratings on the aircraft maintenance licences, aircraft are classified as:
 - a) Those for which, in order to exercise their privileges, licence holders must have an individual aircraft type rating endorsed on the licence. This include all large aircraft as defined in regulation 2042/2003 (i.e. aeroplanes above 5700 Kg MTOM and multi-engine helicopters) and aircraft for which the Agency has determined that the complexity of the aircraft in question requires an aircraft type rating. For these aircraft, type training is required.
 - b) The remaining aircraft, for which in order to exercise their privileges, license holders have the possibility of either having an individual aircraft type rating endorsed on the licence, or having an appropriate group rating or manufacturer group rating. In this case type training is not required. However, it is necessary to complete type examination and practical experience (at least 50% of the tasks of Appendix II to AMC)
16. Feedback received by EASA show the following concerns:
 - It is not clear what an “aircraft type” is in terms of maintenance and, as a consequence, it is not clear when two different aircraft models/variants are similar enough to be considered belonging to the same “type rating”. This induced to inaccuracies in the list of Type ratings in Annex I to AMC to Part-66;
 - There is currently no policy describing when an aircraft shall be considered as complex in terms of maintenance, which may be different from the definition of “complex motor powered aircraft” contained in COM (2005) 579 “Proposal for Regulation of the European Parliament amending Regulation (EC) No 1592/2002 of 15 July 2002 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency”, which is:
 - (a) *an aeroplane:*
 - *with a maximum certificated take-off mass exceeding 5,700kg or;*
 - *with a maximum approved passenger seating configuration of more than 9 or;*
 - *certificated for operation with a minimum crew of at least 2 pilots or;*
 - *equipped with (a) turbojet engine(s); or*
 - (b) *a helicopter:*
 - *with a maximum certificated take-off mass exceeding 3,175kg or;*
 - *with a maximum approved passenger seating configuration of more than 5 or;*
 - *certificated for operation with a minimum crew of at least 2 pilots; or*

(c) a tilt rotor aircraft

- The different current aircraft groups do not really reflect the complexity of aircraft. Some aircraft are “not simple” in terms of design and are only required to have a group rating, which is the contrary to its definition.
- The privileges of B2 licence holders are too restrictive when considering manufacturer group ratings. It is reasonable to consider that the group ratings should be better adapted to the capacity of working of a B2 licence holder, where the technology is very similar from one manufacturer to another.
- Aircraft eligible for manufacturer group ratings and full group ratings currently require type examination for a representative number of aircraft. However, in many cases it is difficult to find a provider for those examinations (approved organisation or competent authority).

17. The Agency created a Rulemaking task aiming to fix these issues, and a drafting group, composed of representatives of national authorities, associations of light aviation bodies and EASA was formed to evaluate the situation, submit proposal and develop guidelines for issuing an opinion to modify Part-66 and/or a decision to modify AMC to this Part.

B) Envisaged changes

18. In order to fully consider the issues raised, the group proposed three questions:

Question a): What is an “aircraft type” for the purpose of maintenance?

Question b): What is a “complex” aircraft for the purpose of maintenance?

Question c) For non-complex aircraft (eligible for group ratings):

- Which should be the scope of the different groups?
- Which should be the conditions to be met in order to be granted a “group rating”?

19. Answering question a) helped the group in identifying in Appendix I to AMC to Part-66 “Aircraft type ratings for Part-66 aircraft maintenance license” how a type rating should be defined, for all categories of aircraft, and which are the conditions to be met in order for different aircraft models to be grouped in a single type rating designation. Since the type ratings shall be defined by the Agency, these criteria should be part of an EASA Internal Procedure, and are shown for information in the Regulatory Impact Assessment.

20. Question b) allowed clarifying under which criteria an aircraft shall be classified as requiring an individual aircraft type rating and type training. These aircraft shall be classified by the Agency in a single group (Group 1) in AMC to Annex III (Part-66) in the list called Appendix I “Aircraft type ratings for Part-66 aircraft maintenance license”.

- **Group 1:** All large aircraft and those non-large aircraft meeting the following criteria (to be put by EASA in an Internal Procedure):

A non large 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 250, or*
- c) *it is equipped with one or more of the following systems:*
 - *turbofan/turbojet engine*
 - *fly by wire control systems*

These criteria are simple and the aircraft will be easily identified whether they belong to group 1 or not. Two other groups were proposed by the working group, with the purpose of simplifying the current rule and facilitating the access to a broader scope of work to the licence holders:

- **Group 2:** Aircraft other than those in Group 1, which belong to the following subgroups,:
 - sub-group 2a: multiple turbo-propeller engine aeroplanes
 - sub-group 2b: single turbo-propeller engine aeroplanes
 - sub-group 2c: single turbine engine helicopters
 - sub-group 2d: single piston engine helicopters
- **Group 3:** Piston engine aeroplanes other than those in Group 1.

For example, Group 3 includes all simple design piston engine aeroplanes and provides to the licence holder a broader scope of work than the current manufacturer group ratings or full group ratings, by allowing the exercise of privileges for the full group 3, although some limitations related to specific systems/structures may apply. These limitations will include the following:

1. For category B1.2 and C: aircraft fitted with any of the following systems/structures:
 - pressurisation
 - retractable landing gear
 - variable pitch propeller
 - turbo-charged piston engine
 - FADEC
 - Structures (Metal / Composite / Wood)
2. For category B2: aircraft fitted with any of the following systems:
 - helicopter autopilots (only applicable to sub-groups 2c) and 2d))
 - aeroplane autopilots
 - EFIS
 - FADEC

These limitations may be removed after demonstration of appropriate experience.

21. Through question c), the working group aimed to refine the conditions which are necessary in order to endorse a particular group of aircraft on the licence. These conditions have been adapted to the categories of licences, whether they are category B1, B2 or C.

22. In addition, the issue of lack of appropriate providers of type examinations was mitigated by the fact that the new proposal has eliminated type examinations for Group 3 aeroplanes (for all license holders) and for Group 2 aircraft (for B2 license holders).
23. A summary of the proposed Groups, together with the licensing and training requirements for each license category can be found in the following page and in GM 66.A.45 (this table takes also into account changes proposed by 66.011).
24. Finally, and in order not to put an unnecessary burden on license holders and competent authorities, it has been proposed to keep the validity and privileges of those maintenance licenses issued prior to the entry into force of this Regulation amendment until there is a need for renewal or amendment of the license. At that point the ratings will be converted to the new proposed scheme following the table included in a new paragraph 66.B.125.

<u>Aircraft ratings requirements</u>			
	B1 license	B2 license	C license
<u>Group 1</u> Large aircraft + complex aircraft (defined by EASA)	Individual TYPE RATING <i>Type training:</i> - Theory + examination - Practical + assessment - OJT (for first aircraft in license subcategory)	Individual TYPE RATING <i>Type training:</i> - Theory + examination - Practical + assessment - OJT (for first aircraft in license subcategory)	Individual TYPE RATING <i>Type training:</i> - Theory + examination
<u>Group 2:</u> (except those in Group 1) <u>Subgroups:</u> <u>2a:</u> multi turboprop aeroplanes <u>2b:</u> single turboprop aeroplanes <u>2c:</u> single turbine helicopters <u>2d:</u> single piston helicopters	(B1.1, B1.3, B1.4 licence holders) Individual TYPE RATING <i>(type examination + practical experience)</i> or Manufacturer SUB-GROUP RATING <i>(Type examination + practical experience on at least 2 representative aircraft of that manufacturer sub-group)</i> (B1.2 licence holders)	Full SUB-GROUP RATING <i>(based on demonstration of appropriate experience)</i> except aircraft equipped with: <ul style="list-style-type: none"> ▪ Helicopter autopilots ▪ Aeroplane autopilots ▪ EFIS ▪ FADEC <i>(Limitations may be removed based on appropriate experience)</i>	Individual TYPE RATING <i>(type examination)</i> or Manufacturer SUB-GROUP RATING <i>(Type examination on at least 2 representative aircraft of that manufacturer sub-group)</i>
<u>Group 3</u> Piston engine aeroplanes (except those in Group 1)	Full GROUP 3 RATING <i>(based on demonstration of appropriate experience)</i> except aircraft equipped with: <ul style="list-style-type: none"> ▪ Pressurization ▪ Retractable Landing Gear ▪ Variable pitch propeller ▪ Turbocharged engine ▪ FADEC ▪ Structures (metal / composite / wood) <i>(Limitations may be removed based on appropriate experience)</i>	Full GROUP 3 RATING <i>(based on demonstration of appropriate experience)</i> except aircraft equipped with: <ul style="list-style-type: none"> ▪ Aeroplane autopilots ▪ EFIS ▪ FADEC <i>(Limitations may be removed based on appropriate experience)</i>	Full GROUP 3 RATING <i>(based on demonstration of appropriate experience)</i> except aircraft equipped with: <ul style="list-style-type: none"> ▪ Pressurization ▪ Retractable Landing Gear ▪ Variable pitch propeller ▪ Turbocharged engine ▪ FADEC ▪ Structures (metal / composite / wood) <i>(Limitations may be removed based on appropriate experience)</i>

For category B1 and C license holders:

- A manufacturer sub-group 2a automatically includes the corresponding manufacturer sub-group 2b.

For category B2 licence holders:

- full sub-group 2a automatically includes the full sub-group 2b and full group 3,
- full sub-group 2b automatically includes the full group 3,
- full sub-group 2c automatically includes the full sub-group 2d.

VI. Content of the draft opinion and draft decision in relation to Task 66-011: Type training.**A) Background information**

25. On 20 November 2003 the European Commission adopted 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. The provisions of its Annex III (Part-66) provide a system of licensing for certifying staff.
26. Except as otherwise specified, the holder of a category B1, B2 or C aircraft maintenance licence shall only exercise certification privileges on a specific aircraft when the aircraft maintenance licence (AML) is endorsed with the appropriate aircraft type rating.
27. Except as otherwise specified, 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.
28. According to current regulation and AMCs, category B1 and B2 approved type training shall include theoretical and practical elements which must comply with Appendix III to Part-66. 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.
29. The elements described in Appendix III of Part-66 (although quite extensive) do not seem to be detailed enough to address all the possibilities of aircraft type training. In fact, feedback received by EASA seems to indicate that too much room is left for interpretation, and cases of unequal treatment have been reported such as the same training course varying in level, length and content regarding theoretical, practical training/OJT/practical experience. Often, practical elements were limited to two week training, whatever the experience of the applicant was. Difference training is not sufficiently addressed.
30. In addition, since AMC and Guidance Material (GM) currently allows the competent authority to have the final word about the adequacy of the length of the practical element for a particular individual before endorsing the rating (which may vary between 2 weeks and 4 months), this has created situations where having completed an approved type training course, including theoretical and practical training, at a Part-147 organisation was not considered enough by the competent authority in order to have the rating endorsed, and additional practical training was requested by the competent authority.
31. A drafting group, composed of industry members, national authorities and EASA representatives was formed to evaluate the situation, make proposals as outlined below and develop an opinion to change Part-66 and/or a decision to change its related AMC/GM. The Terms of Reference that was proposed to the group was limited to large aircraft plus all aircraft where type training is required.

B) Envisaged changes

32. The rulemaking group initially identified that inconsistency exists, leading to different interpretations, in the following areas:

- Duration of theoretical and practical training;
- Practical training /practical experience/OJT;
- Definition of assessor and assessment;
- Differences training

33. Since the understanding and application of the AMC recommendation of the two weeks to four months OJT has been found to be inconsistent through NAA's and Industry, it was felt that a much simpler system is required to ensure consistency and provide clearer practices to aid standardisation in respect of practical elements of type training.

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 definition of practical training;
- A fixed content of practical training;
- A definition of OJT;
- The extension of the applicability of the existing Appendix II to AMCs "Aircraft Type Practical Experience List of Tasks" to include all aircraft where type training is required;
- Details of the responsibilities of the NAA related to type endorsement;
- Additional small amendments fitting the overall changes

35. Elements of type training

It was determined that the type training requirement should consist of:

- theoretical training and examination and
- practical training and assessment and
- mandatory additional OJT and assessment in the case of the first aircraft type rating within a license sub-category.

36. Minimum duration of theoretical training

The rulemaking group confirmed the need for adding a minimum duration concerning the theoretical elements of the type training.

Difficulties were encountered concerning the concept of minimum hours of training as it is not possible to propose durations that fully encompass the wide diversity in technology, complexity, weight... No prevailing factors authorise an easy classification or categories where such minimum durations could be proposed. As a matter of fact, the concept of "minimum duration" is not fully satisfactory as training should be based on competency, and as a consequence should contain an examination / assessment in order to confirm that the objectives are reached. According to the initial terms of reference, the first intent of this working group was for the Type Certificate Holder

(TCH) to propose the minimum syllabus for the theoretical and practical parts of the type training and to set training objectives. The group abandoned this approach as it would have required an amendment to the Basic Regulation (EC) 1592/2002.

As explained in the above paragraph, the group was fully aware of the “limits” of the concept of “minimum duration” but wanted to make a bridge with the future, waiting for the conclusions of rulemaking task 21.039 to be drawn and implemented.

According to rulemaking task 21.039, the minimum syllabus of maintenance certifying staff type training will be part of an “Operational Type Certificate” to be issued by the Agency. This syllabus will be created by the Type Certificate Holder based on guidelines provided by the Agency.

This rulemaking task 21.039 is currently in progress and the result could impact the Opinion to be issued following this NPA.

Nevertheless, even if the syllabus is provided by the Type Certificate Holder, the outcome of this NPA will be necessary in order to:

- cover existing type training if 21.039 does not require a recertification programme for aircraft already certified, and
- provide guidance to the 21.039 Working Group when developing the guidelines to be used by the Type Certificate Holder.

Therefore, the group decided to remain “generic” and only proposed three categories:

- Aeroplanes with a MTOM of more than 5700kg.
- Aeroplanes with a MTOM of 5700kg and below where type training is required;
- Multi-engine helicopters and helicopters where type training is required.

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 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 than the proposed minimum where this is required to satisfy the required teaching points.

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 following areas were discussed by the group though determined to be outside the terms of reference:

- Guidance on the generation of a course profile.
- The introduction of competency based training.
- Amendments to the existing group ratings according to Part 66.A.45 (g).

37. Improvement of the existing content of theoretical training

The existing table, (type training standard / theoretical elements), in Part-66 Appendix III was reviewed and updated to address new systems, new technology, etc and is now based on ATA chapter numbering.

Co-ordination has been undertaken with rulemaking task 66-006 where the privileges of a B1 and/or B2 licence holder have been reviewed.

38. Practical training and OJT

The group determined that definitions did not exist for either practical training or OJT. Furthermore, it was noted that these terms were being interpreted in numerous ways throughout Europe. As a consequence, the group defined these terms within this NPA.

The group established that the existing AMC material requiring two weeks to four months practical training or OJT was also being interpreted in different ways.

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. Clarity is now given on where practical training and OJT shall be completed.

The determination of both practical and OJT tasks to be completed must be representative of the aircraft and systems both in complexity and in the technical input required. While relatively simple tasks may be included, other more complex maintenance tasks shall also be incorporated and undertaken.

Finally, clearer requirements were developed for:

- performance of an assessment and the role of the practical training assessor within the practical training and OJT environment and
- compliance with the practical element requirement showing either a detailed syllabus, or practical worksheets / logbook (documentary evidence to be provided for type endorsement on the licence)
- retention of documentary evidence of performance of practical training and OJT

39. Extension of the applicability of the existing Appendix II to AMCs “Aircraft Type Practical Experience List of Tasks” to include all aircraft where type training is required;

The group concluded that OJT is mandatory in the case of a first type rating in order that the applicant could fully demonstrate competency on a new sub-category of the Aircraft Maintenance Licence (AML).

In the future, in the case of a first type rating within a license sub-category, the trainee will be required to perform a minimum amount of OJT. As a mean of compliance, the rulemaking group proposed a high level selectable list of tasks, (applicable to the type), at least 50% of which will have to be completed by the applicant working within an approved maintenance organisation. This list of tasks in Appendix II to AMC's was previously used purely for general aviation (current AMC 66.A.45(h)) and has now been updated. The OJT will not be performed by the Part-147 organisation in order the trainee to get competency in an actual maintenance environment.

Initially, one idea was that for subsequent types OJT could be used in place of practical training, though this would be a reduced number of items from the same list of tasks. This concept was subsequently rejected on the basis of difficulties with standardisation.

40. Responsibilities of the NAA related to type endorsement

Practical training and OJT, when conducted by a maintenance organisation, shall be assessed, approved and audited by the competent authority.

In the case of second or subsequent type rating within a license sub-category the aircraft type has to be granted based on a Part-147 Certificate of Recognition in the case all applicable elements (theoretical and practical part) are performed within an approved part-147 organisation. This point has been raised because of a lack of mutual recognition between Member States.

When the type training is conducted in different organisations (PART 147 and/or approved maintenance organisations or direct course approval) the authority shall be satisfied that the interfaces are appropriately handled.

41. Additional small amendments to fit to the overall changes

Based on experience in the application of the current requirements and feedback received, some improvements have been taken into consideration:

- The duration of type rating examination questions has been changed from a mixture of 75 and 120 seconds to 90 seconds for all levels in order to standardise question generation.
- Changes to the number of questions per chapter to simplify the system presently in place.
- Highlighting that examination question level must be in proportion to the level of training conducted.
- Clarification on instructor requirements.
- A form 4 will have to be filled in for every assessor and proposed to the competent authority.

42. Discrepant opinions within the group

A consensus could not be fully reached by the group as one member wanted the pre-requisites of each individual applicant to be systematically checked before an applicant enters a training room in order to adapt the syllabus to the competence of the trainee. Most of the rulemaking group members felt that in case of insufficient competence, the applicant will fail examinations and/or assessments.

One group member suggested that there should be eligibility requirements, (prerequisites), for attendance to approved theoretical type training courses based upon safety concerns. This concept was subsequently rejected by the remainder of the group on the basis that this was not required.

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.

43. Type Training and Examination requirements.

To ensure clarification in respect of training and examination, the following details have been added: 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.

44. Transition provisions

In order to ensure a smooth transition to the new requirements and in order not to put an unnecessary burden on industry and authorities, a transition period has been proposed as follows (this contains also elements from 66.006 working group), counting from the date of approval by the Commission:

- A period of 90 days has been proposed before entry into force of this Regulation amendment.
- A period of 15 months from the date of entry into force of this Regulation amendment has been proposed before mandatory application of the provisions of amendments to Appendix I and Appendix II to Part-66.
- Applicants for an initial Part-147 maintenance training organisation approval that are already subject to the applicable investigation process on the date of entry into force of this Regulation amendment, are subject to the requirements applicable prior to the entry into force of this Regulation amendment.
- Part-147 approved maintenance training organisations applying for approval of new type courses may elect not to apply this Regulation amendment until 15 months after the date of entry into force of this Regulation amendment. Partial implementation of selective items of this Regulation amendment is not allowed.
- Type 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 of this Regulation amendment. Certificates for those type courses issued not later than 15 months after the date of entry into force of this Regulation amendment shall be considered as issued in accordance with this Regulation amendment.

VII. Regulatory Impact Assessments

For the Regulatory Impact Assessments, please refer to:

- Attachment 1: Regulatory Impact Assessment 66.006
- Attachment 2: Regulatory Impact Assessment 66.009
- Attachment 3: Regulatory Impact Assessment 66.011

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.~~
2. New text to be inserted is highlighted with grey shading.
3. New paragraph or parts are not highlighted with grey shading, but are accompanied the following box text:

Insert new paragraph / part (Include N° and title), or replace existing paragraph/ part

4.
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:

Entry into force

1. This Regulation amendment shall enter into force 90 days after its publication in the *Official Journal of the European Union*.
2. By way of derogation from paragraph 1 the following provisions apply:
 - (a) Amendments introduced in Appendix I and Appendix II to Part-66 shall apply 15 months after the date of entry into force of this Regulation amendment.
 - (b) Applicants for an initial Part-147 maintenance training organisation approval that are already subject to the applicable investigation process on the date of entry into force of this Regulation, are subject to the requirements applicable prior to the entry into force of this Regulation amendment.
 - (c) Part-147 approved maintenance training organisations applying for approval of new type courses may elect not to apply this Regulation amendment until 15 months after the date of entry into force of this Regulation amendment. Partial implementation of selective items of this Regulation amendment is not allowed.
 - (d) The provisions of paragraph 2(c) shall also apply to organisations applying to the competent authority for approval of type courses not imparted by Part-147 approved maintenance training organisations.
 - (e) Competent authorities shall accept and process applications for type course approval submitted under paragraphs 2(c) and 2(d).
 - (f) Type 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 of this Regulation amendment. Certificates for those type courses issued not later than 15 months after the date of entry into force of this Regulation amendment shall be considered as issued in accordance with this Regulation amendment.

A) PART 145

Commission Regulation (EC) No 2042/2003 Annex II (Part 145) is hereby amended as follows:

Paragraph 145.A.30 is amended as follows (Working Group 66.006):**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 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 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 **and passed examination** 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 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.

2.

B) PART 66

Commission Regulation (EC) No 2042/2003 Annex III (Part 66) is hereby amended as follows:

Paragraph 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. 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.
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.
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.
 - (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 check of the component replaced.

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.

Insert new paragraph 66.A.42 (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 large aircraft and those non large aircraft requiring an individual aircraft type rating. A non large aircraft requires an individual aircraft type rating as defined by the Agency.
- Group 2: aircraft other than those in Group 1, which belong to the following subgroups,:
 - sub-group 2a: multiple turbo-propeller engine aeroplanes
 - sub-group 2b: single turbo-propeller engine aeroplanes
 - sub-group 2c: single turbine engine helicopters
 - sub-group 2d: single piston engine helicopters
- Group 3: piston engine aeroplanes other than those in Group 1.

Replace existing paragraph 66.A.45 with the following text (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 and/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 license 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 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.

- (c) Except as otherwise specified in paragraph (d), the holder of a category B1, B2 or C aircraft maintenance licence for group 1 aircraft and the holder of a category B1 or C aircraft maintenance licence for group 2 aircraft 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 type rating.
- (d) In addition to paragraph (c), for aircraft in group 2, the holder of a category B1 or C aircraft maintenance licence may also exercise certification privileges when the aircraft maintenance licence is endorsed with the appropriate manufacturer sub-group ratings.
- (e) The holder of a category B2 aircraft maintenance license may only exercise certification privileges for group 2 and/or group 3 aircraft, when the aircraft maintenance licence is endorsed with the applicable full sub-group 2 ratings and/or full group 3 rating.
- (f) The holder of a category B1.2 and C aircraft maintenance license may only exercise certification privileges for Group 3 aircraft, when the aircraft maintenance licence is endorsed with the full group 3 rating.
- (g) 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 sub-category
1. Category B1 and B2 approved type training shall include theoretical knowledge training, practical training and OJT and consist of the appropriate course in relation to the 66.A.20(a) privileges.
- (i) Theoretical knowledge training shall be conducted by appropriately approved Part-147 organisations, except in the case of type training directly approved by the competent authority. Theoretical knowledge training shall comply with Appendix III to this Part.
- (ii) Practical training
- I. Aircraft type practical training and assessment shall include a representative cross section of maintenance activities relevant to the sub-category.
- 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.

- III. Practical training can be performed by demonstrations using equipment, components, simulators, other training devices or aircraft. This training does not necessarily need to result in actual servicing or repair.
- IV. Practical training shall be assessed by approved assessors and shall be audited by the competent authority.
- V. Demonstration of practical training must be retained by the organisation approved to conduct practical training for at least five years following completion of the practical training.
- VI. Practical training shall comply with Appendix III to this Part.

(iii) On the job training

- I. In the case of a first type rating in any sub-category, practical training alone is not acceptable for type rating endorsement. In this instance, in addition to the practical training, an applicant must complete acceptable OJT.
- II. OJT is not required in the case of a second and subsequent type rating within the same category/sub-category. The additional type rating within the same category/Sub-category shall be endorsed without requesting OJT.
- III. OJT shall be conducted by a maintenance organisation appropriately approved to undertake this activity and must be approved by the competent authority either directly or within the MOE / MOM as part of the organisations Part-145 / Part M approval. The OJT shall be supported by a detailed syllabus showing its content and recorded within detailed worksheets/ logbook.
- IV. OJT shall be supervised and shall be assessed by approved assessors.
- V. OJT shall be audited by the competent authority. Individual records of OJT must be retained by the organisation approved to conduct this task for at least five years following completion of the OJT.
- VI. OJT shall comply with Appendix III to this Part.

(iv) Differences training

- I. Differences training is defined as training required to cover the differences between aircraft types ratings determined by the Agency.
 - II. Only differences training between aircraft types ratings from the same manufacturer is acceptable. Such 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. Differences training alone does not entitle to have any endorsement on the license. It is also required either of the following:
 - having the aircraft type rating from which the differences are being identified already endorsed in the license, or
 - having completed the type training requirements for the aircraft from which the differences are being identified.
2. Category C approved type training shall comply with Appendix III to this Part. 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. Practical training is not required.
 3. Completion of approved aircraft type training, as required by paragraphs (c), (g)(1) and (g)(2), shall be demonstrated by an examination. The examination shall comply with Appendix III to Part-66. The examinations in respect of category B1 or B2 or C aircraft type ratings shall be conducted by training organisations appropriately approved under Part-147, the competent authority, or the training organisation conducting the approved type training course.
- (h) For group 2 aircraft, type ratings may also be granted subject to satisfactory completion of the relevant category B1 or C aircraft type examination and, in the case of B1 category, demonstration of practical experience on the aircraft type.

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.

1. Category B1 and C approved type examinations must consist of a mechanical examination for category B1 and a mechanical and avionics examination for category C.
 2. 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.
 3. Aircraft type practical experience shall include a representative cross section of maintenance activities relevant to the category.
- (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.

A manufacturer sub-group 2a automatically includes the corresponding manufacturer sub-group 2b.

- (j) For group 2 aircraft, full sub-group ratings for category B2 license holders, and for group 3 aircraft, full group rating for category B1, B2 and C license 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 group/sub-group.

For category B2 licence holders:

- full sub-group 2a automatically includes the full sub-group 2b and full group 3,
 - full sub-group 2b automatically includes the full group 3,
 - full sub-group 2c automatically includes the full sub-group 2d.
- (k) Unless the applicant provides evidence of appropriate experience, the group/sub-group ratings granted as per above paragraph (j) are subject to the following limitations, which shall be stated on the licence:
1. For category B1.2 and C: aircraft fitted with any of the following systems/structures:
 - pressurisation
 - retractable landing gear
 - variable pitch propeller
 - turbo-charged piston engine
 - FADEC
 - Structures (Metal / Composite / Wood)
 2. For category B2: aircraft fitted with any of the following systems:
 - helicopter autopilots (only applicable to sub-groups 2c) and 2d))
 - aeroplane autopilots
 - EFIS
 - FADEC

In order to exercise certification privileges on aircraft equipped with any of the above systems/structures, the holder's licence must not have any limitation related to such installed systems, even if the tasks are not related to those systems.

The limitations shall be removed following demonstration of appropriate experience.

Nevertheless, with the basic category B1.2 license the holder is also entitled to issue certificates of release to service for Part-M, Appendix VIII tasks on all Group 3 aeroplanes, regardless of installed systems and associated limitations. The same applies to B2 license holders, within the B2 privileges shown in 66.A.20.

Insert new article 66.A.47 (Working Group 66.009)**66.A.47 Limited validity of existing licenses**

Notwithstanding paragraph 66.A.45, for group 2 and group 3 aircraft, the holder of a category B1, B2 or C aircraft maintenance license issued, last renewed or last amended prior to **(INCLUDE DATE OF ENTRY INTO FORCE)** may exercise certification privileges when the aircraft maintenance license is endorsed with the appropriate individual type rating, or the appropriate group ratings or manufacturer group ratings. The groups shall consist of the following:

(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 licenses shall have the type and group ratings re-defined according to 66.A.45 following the procedure described in 66.B.125 at the first amendment or renewal of the licence performed after **(INCLUDE DATE OF ENTRY INTO FORCE)**.

Paragraph 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 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.

Paragraph 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 rating within a sub-category the aircraft type will be granted without further showing, based on a Part-147 Certificate of Recognition in the case where all elements (theoretical and practical) are performed within a single approved Part-147 organisation.
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 license 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, or a course directly approved by the competent authority, for differences training is acceptable for type rating endorsement.
6. Determination of compliance with the practical elements can 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.
8. Practical training and OJT shall be assessed and shall be audited by the competent authority wherever this is undertaken.

Insert new article 66.B.125 (Working Group 66.009)**66.B.125 Procedure for the renewal/amendment of licenses with limited validity.**

For group 2 and group 3 aircraft, aircraft maintenance licenses issued, last renewed or last amended prior to **(INCLUDE DATE OF ENTRY INTO FORCE)**, as described in 66.A.47, shall have the type and group ratings redefined at the first amendment or renewal of the licence, in accordance with the following conversion table:

1) for category B1 or C:

- helicopter piston engine
(converted to include all manufacturer sub-groups 2d))
- helicopter turbine engine
(converted to include all manufacturer sub-groups 2c))
- aeroplane single piston engine — metal structure
(converted to full group 3 with the following limitations: pressurisation, FADEC, composite & wood structures)
- aeroplane multiple piston engines — metal structure
(converted to full group 3 with the following limitations: FADEC, composite & wood structures)
- aeroplane single piston engine — wooden structure
(converted to full group 3 with the following limitations: pressurisation, retractable landing gear, variable pitch propeller, turbo-charged piston engine, FADEC, composite & metal structures)
- aeroplane multiple piston engines — wooden structure
(converted to full group 3 with the following limitations: pressurisation, retractable landing gear, variable pitch propeller, turbo-charged piston engine, FADEC, composite & metal structures)
- aeroplane single piston engine — composite structure
(converted to full group 3 with the following limitations: pressurisation, retractable landing gear, turbo-charged piston engine, FADEC, metal & wood structures)
- aeroplane multiple piston engines — composite structure
(converted to full group 3 with the following limitations: pressurisation, metal & wood structures)
- aeroplane turbine — single engine
(converted to include all manufacturer sub-groups 2b))
- aeroplane turbine — multiple engine
(converted to include all manufacturer sub-groups 2a), which automatically includes all manufacturer sub-groups 2b))

(2) for category B2:

- aeroplane
(converted to include full sub-group 2a), which automatically includes full sub-group 2b) and full group 3))
- helicopter

(converted to include full sub-group 2c), which automatically full sub-group 2d))

(3) for category C:

— aeroplane

(converted to include all manufacturer sub-groups 2a), which automatically includes all manufacturer sub-groups 2b))

— helicopter

(converted to include all manufacturer sub-groups 2c))

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.

Appendix I is amended as follows (Working Group 66.006):

Appendix I **Basic Knowledge Requirements**

MODULE 11A. TURBINE AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS

	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: <ul style="list-style-type: none"> • 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. 	1	2	-
11.20. Cabin Intercommunication Data Systems (ATA44) These systems provide an interface between cockpit/cabin crew and cabin systems. These systems support data exchange of the different related LRU's and they are	1	2	-

typically operated via Flight Attendant Panels.			
11.21. Cabin Network Service (ATA44) Typically consists on a server, typically interfacing with, among others, the following systems: <ul style="list-style-type: none"> Data/Radio Communication, In-Flight Entertainment System. The Cabin Network Service may host functions such as: <ul style="list-style-type: none"> Access to pre-departure/departure reports, E-mail/intranet/internet access, Passenger database, 	1	2	-
11.22. Information Systems such as Air Traffic and Information Management Systems and Network Server Systems (ATA46)	1	2	-

MODULE 11B. PISTON AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS

	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	-

MODULE 12. HELICOPTER AERODYNAMICS, STRUCTURES AND SYSTEMS

	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: <ul style="list-style-type: none"> • 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. 	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 such as Air Traffic and Information Management Systems and Network Server Systems (ATA46)	1	2	-

MODULE 13. AIRCRAFT AERODYNAMICS, STRUCTURES AND SYSTEMS

	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;	-	-	1

Artificial feel, Yaw damper, Mach trim, rudder limiter, gust locks; Stall protection systems (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; 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;	-	-	2 3

Stall warning systems and angle of attack indicating systems;			
Vibration measurement and indication.			
13.10. On Board Maintenance Systems (ATA45)	-	-	2 3
Central maintenance computers;			
Data loading system;			
Electronic library system;			
Printing;			
Structure monitoring (damage tolerance monitoring)			
13.11. Air Conditioning and Cabin Pressurisation (ATA21)	-	-	2
13.11.1. <i>Air supply</i>			
Sources of air supply including engine bleed, APU and ground cart;	-	-	3
13.11.2. <i>Air Conditioning</i>			
Air conditioning systems;			
Air cycle and vapour cycle machines;			
Distribution systems;			
Flow, temperature and humidity control system.	-	-	3
13.11.3. <i>Pressurisation</i>			
Pressurisation systems;			
Control and indication including control and safety valves;			
Cabin pressure controllers.	-	-	3
13.11.4. <i>Safety and warning devices</i>			
Protection and warning devices.			
13.12. Fire Protection (ATA 26)			
(a)	-	-	3
Fire and smoke detection and warning systems;			
Fire extinguishing systems;			

System tests.	-	-	1
(b) Portable fire extinguisher	-	-	1
13.13. Fuel Systems (ATA 28)	-	-	3
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.	-	-	3
13.14. Ice and Rain Protection (ATA 30)	-	-	3
Ice formation, classification and detection; Anti-icing systems: electrical, hot air and chemical; De-icing systems: electrical, hot air, pneumatic and chemical; Rain repellent; Probe and drain heating. Wiper systems	-	-	3
13.15. Integrated Modular Avionics (ATA42)	-	-	3
Functions that may be typically integrated in the Integrated Modular Avionic (IMA) modules are, among others: <ul style="list-style-type: none"> 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. 	-	-	3
13.16. Cabin Intercommunication Data Systems	-	-	3

<p>(ATA44)</p> <p>These systems provide 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.</p>			
<p>13.17. Cabin Network Service (ATA44)</p> <p>Typically consists on a server, typically interfacing with, among others, the following systems:</p> <ul style="list-style-type: none"> • Data/Radio Communication, In-Flight Entertainment System. <p>The Cabin Network Service may host functions such as:</p> <ul style="list-style-type: none"> • Access to pre-departure/departure reports, • E-mail/intranet/internet access, • Passenger database, 	-	-	3
<p>13.18. Information Systems such as Air Traffic and Information Management Systems and Network Server Systems (ATA46)</p>	-	-	3
<p>13.19. Indications and warnings</p> <p>Hydraulic system;</p> <p>Landing Gear;</p> <p>Oxygen;</p> <p>Pneumatic / Vacuum;</p>	-	-	3

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.

1.2.

2. Question numbers for the Part-66 Appendix I Modules

....

2.11. Subject Module 11a Turbine Aeroplane Aerodynamics, Structures and Systems:

Category A-~~400~~ **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.

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~~ **160** multi-choice and 0 essay questions. Time allowed ~~165~~ **200** minutes.

2.15.

Replace existing Appendix III with the following text (Working Groups 66.006 and 66.011)

Appendix III

Type Training and Examination Standard

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 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 maintenance manual, structural repair manual, trouble shooting 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, engine, component and functional checks as specified in the aircraft maintenance manual.
- (c) Demonstrate the use, interpret and apply appropriate documentation including instructions for continued airworthiness, maintenance manual, structural repair manual, trouble shooting manual, illustrated parts catalogue, 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

Courses shall be either composed of pure theoretical elements, pure practical elements or a combination of both.

2.1. Theoretical element

- (a) Objective:

On completion of a theoretical training course the student shall be able to demonstrate 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.

The theoretical training minimum tuition hours are contained in the following table:

Aeroplanes with a maximum take-off mass of more than 5700kg:		
Category	hours	
B1.1	150	
B1.2	120	
B2	100	
C	25	
Aeroplanes of a maximum take-off mass of 5700kg and below, where type training is required:		
B1.1	120	
B1.2	100	
B2	100	
C	25	
Multi-engine helicopters and helicopters where type training is required:		
B1.1	120	
B1.2	100	
B2	100	
C	25	

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:

With an application for 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:

- 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 exceptional 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:

Introduction Module Title		All subjects must be trained at a minimum to level 1 and are applicable to all type training courses
5	Time limits/maintenance checks	
6	Dimensions/Areas (weights MTOW etc)	
7	Lifting and Shoring	
8	Levelling and weighing	
9	Towing and taxiing	
10	Parking/mooring, Storing & Return to Service	
11	Placards and Markings	
12	Servicing	
Standard practices – only type particular		

		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
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	-
63	Rotor Drives	-	-	-	-	3	1	3	1	-
64	Tail Rotor	-	-	-	-	3	1	3	1	-
65	Tail Rotor Drive	-	-	-	-	3	1	3	1	-
66	Folding Blades/Pylon	-	-	-	-	3	1	3	1	-
67	Rotors Flight Control	-	-	-	-	3	1	3	1	-
	Airframe Structure (Helicopter)	-	-	-	-	3	1	3	1	-
	Emergency Flotation Equipment	-	-	-	-	3	1	3	1	1
<u>Airframe structures:</u>		3	1	3	1	-	-	-	-	1
51	Standard Practices and Structures (damage classification, assessment and repair)									
53	Fuselage									
54	Nacelles/Pylons									
55	Stabilisers									
56	Windows									
57	Wings									
	Flight Control Surfaces (All)									
52	Doors	3	1	3	1	-	-	-	-	1
Zonal & Station Identification Systems.		1	1	1	1	1	1	1	1	1
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
	Instrument Systems	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
34	Navigation	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 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
28	Fuel Systems	3	1	3	1	3	1	3	1	2
28A	Fuel Systems indications	3	1	3	1	3	1	3	1	3
29	Hydraulic Power	3	1	3	1	3	1	3	1	1

		Aeroplanes turbine		Aeroplanes piston		Helicopters turbine		Helicopters piston		Avionics
		B1	C	B1	C	B1	C	B1	C	B2
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
32	Landing Gear	3	1	3	1	3	1	3	1	1
33	Lights	3	1	3	1	3	1	3	1	3
35	Oxygen	3	1	3	1	-	-	-	-	1
36	Pneumatic	3	1	3	1	3	1	3	1	1
37	Vacuum	3	1	3	1	3	1	3	1	1
38	Water/Waste	3	1	3	1	-	-	-	-	1
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
<i>Turbine Engines</i>										
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
<u>Turbine engine:</u>		3	1	-	-	3	1	-	-	1
70B	Engine Performance									
71	Powerplant									
72	Engine Turbine/Turbo Prop/Ducted Fan/Unducted fan									
73	Engine Fuel and Control									
75	Air									
76	Engine controls									
78	Exhaust									
79	Oil									
80	Starting									
82	Water Injections									
83	Accessory Gear Boxes									
84	Propulsion Augmentation									

		Aeroplanes turbine		Aeroplanes piston		Helicopters turbine		Helicopters piston		Avionics
		B1	C	B1	C	B1	C	B1	C	B2
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	-	-	-	-	-	-	1
Fire Protection Systems		3	1	-	-	3	1	-	-	3
Engine Monitoring and Ground Operation		3	1	-	-	3	1	-	-	-
Engine Storage and Preservation		3	1	-	-	3	1	-	-	-
<i>Piston Engines</i>										
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
<u>Piston engine:</u>		-	-	3	1	-	-	3	1	1
70B	Engine Performance									
71	Powerplant									
73	Engine Fuel and Control									
76	Engine Control									
79	Oil									
80	Starting									
81	Turbines									
82	Water Injections									
83	Accessory Gear Boxes									
84	Propulsion Augmentation									
73A	FADEC	-	-	3	1	-	-	3	1	3
74	Ignition	-	-	3	1	-	-	3	1	3
77	Engine Indication Systems	-	-	3	1	-	-	3	1	3

	Aeroplanes turbine		Aeroplanes piston		Helicopters turbine		Helicopters piston		Avionics
	B1	C	B1	C	B1	C	B1	C	B2
Fire Protection systems	-	-	3	1	-	-	3	1	3
Engine Monitoring and Ground Operation	-	-	3	1	-	-	3	1	-
Engine Storage and Preservation	-	-	3	1	-	-	3	1	-
<i>Propellers</i>									
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 competence in performing safe maintenance.

(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.

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: Trouble Shooting

	B1/B2	B1					B2				
	LOC	FOT	SGH	R/I	MEL	TS	FOT	SGH	R/I	MEL	TS
Blade Tracking	X/-	-	-	-	-	X	-	-	-	-	-
Rotors	X/-	-	X	X	-	X	-	-	-	-	-
Rotor Drives	X/-	X	-	-	-	X	-	-	-	-	-
Tail Rotor	X/-	-	X	-	-	X	-	-	-	-	-
Tail Rotor Drive	X/-	X	-	-	-	X	-	-	-	-	-
Folding Blades / Pylon	X/-	X	X	-	-	X	-	-	-	-	-
Rotors flight controls	X/-	X	X	-	X	X	-	-	-	-	-
Time limits, dimension & areas, lifting & shoring, levelling & weighing, towing & taxing, parking & mooring, placards & markings, servicing	X/X	-	X	-	-	-	-	X	-	-	-
Airframe Structures (includes the following elements)	-	-	-	-	-	-	-	-	-	-	-
Fuselage	X/-	-	-	-	-	X	-	-	-	-	-
Windows	X/-	-	-	-	-	X	-	-	-	-	-
Wings	X/-	-	-	-	-	-	-	-	-	-	-
Stabilisers	X/-	-	-	-	-	-	-	-	-	-	-
Nacelles/Pylons	X/-	-	-	-	-	-	-	-	-	-	-
Flight Control Surfaces	X/-	-	-	-	-	X	-	-	-	-	-
Fuselage Doors	X/X	X	X	-	-	-	-	X	-	-	-
Air Conditioning	X/X	X	X	-	X	X	-	X	-	-	-
Air Supply	X/X	X	-	-	-	-	-	-	-	-	-
Pressurization	X/X	X	-	-	X	X	-	-	-	-	-
Safety and warning Devices	X/X	X	-	-	-	-	X	X	X	X	X
Indicating/Recording Systems	X/X	X	X	X	X	X	X	X	X	X	X
Auto Flight	X/X	-	-	-	X	-	X	X	X	X	X
Communications	X/X	-	X	-	X	-	X	X	X	X	X
Navigation	X/X	-	X	-	X	-	X	X	X	X	X
Central Maintenance System	X/X	X	X	X	X	X	X	X	X	X	X
Information Systems	X/X	-	-	-	-	-	X	-	-	-	-
Electrical Power	X/X	X	X	X	X	X	X	X	X	X	X
Equipment & Furnishings	X/X	X	X	X	-	-	X	X	X	-	-
Fire Protection	X/X	X	-	X	X	X	X	X	-	-	-
Flight Controls	X/X	X	X	X	X	X	X	-	-	-	-
Fuel Systems	X/X	X	X	X	X	X	-	-	-	-	-
Hydraulic Power	X/X	X	X	X	X	X	-	X	-	-	-
Ice & Rain Protection	X/X	X	-	-	X	X	X	X	-	-	-
Landing Gear	X/X	X	X	X	X	X	-	-	-	-	-
Lights	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
Oxygen	X/-	X	X	X	-	-	-	-	-	-	-
Integrated modular avionics	X/X	-	-	-	-	-	X	X	X	X	X
Cabin systems	X/X	-	-	-	-	-	X	X	X	X	X
Centralized maintenance systems	X/X	X	X	X	X	X	X	X	X	X	X
Pneumatic/Vacuum	X/-	X	-	X	X	X	-	-	-	-	-
Water/Waste	X/-	X	X	-	-	-	-	-	-	-	-
Auxiliary Power Units (APU)	X/-	X	X	-	-	X	X	X	-	-	-
Water Ballast	X/-	-	-	-	-	-	-	-	-	-	-
Information systems	X/X	X	X	-	X	X	X	X	-	X	X
Cargo & Accessory Compartments	X/X	-	X	-	-	-	-	-	-	-	-
Turbine/Piston Engine Module											
Power Plant	X/-	X	X	-	-	-	-	X	-	-	-
Engine Turbine / Turbo Prop / Ducted Fan / Unducted fan	X/-	-	-	-	-	-	X	-	-	-	-
Engine Fuel and Control	X/X	X	-	-	-	-	-	-	-	-	-
Fire protection	X/X	X	X	X	X	X	X	X	X	X	X
FADEC Systems	X/X	X	-	X	X	X	X	X	X	X	X
Ignition	X/X	X	-	-	-	-	X	-	-	-	-
Air	X/-	-	-	X	-	X	-	-	-	-	-
Engine Controls	X/-	X	-	-	-	X	-	-	-	-	-
Engine Indicating	X	X	-	-	X	X	X	-	-	X	X
Exhaust	X/-	X	-	-	X	X	-	-	-	-	-
Oil	X/-	-	X	X	-	-	-	-	-	-	-
Starting	X/-	X	-	-	X	X	-	-	-	-	-
Water Injection	X/-	X	-	-	-	-	-	-	-	-	-
Accessory Gearboxes	X/-	-	X	X	-	-	-	-	-	-	-
Propulsion Augmentation	X/-	X	-	-	-	-	-	-	-	-	-
Engine Monitoring and Ground Operation	X/-	-	-	-	-	-	-	-	-	-	-
Engine Storage and Ground Operation	X/-	-	X	-	-	-	-	-	-	-	-
Propellers											
Pitch Control	X/-	X	-	X	X	X	-	-	-	-	-
Synchronising	X/-	X	-	-	-	X	-	-	-	X	-
Electronic Control	X/-	X	X	X	X	X	X	X	X	X	X
Ice Protection	X/-	X	-	X	X	X	-	-	-	-	-
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, in addition to the direct Supervisor or by an appropriately approved 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

3. Type training examination standard

Where aircraft type training is required, the examination must be written and 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 time for answering is based upon a nominal average of 90 seconds per question.
- (b) Alternative answers must seem equally possible to anyone with no knowledge 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, with a minimum of 1 question per chapter. The competent authority of the Member State will assess number and level of questions on a sampling basis when approving the course. The number of questions for each level shall be consistent with the effective training hours spent teaching at that level.
- (g) The minimum examination pass mark is 75%. The Pass mark for any exam is 75%, not just the final average score for all the exams completed during the course.
- (h) Penalty marking is not to be used to determine whether a candidate has passed.
- (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) Alternative answers must seem equally possible to anyone with no knowledge 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 trouble shooting, 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.

C) PART 147

Commission Regulation (EC) No 2042/2003 Annex IV (Part 147) is hereby amended as follows:

Paragraph 147.B.120 is amended by inserting new subparagraph (b) (Working Group 66.011):**147.B.120 Continued validity procedure**

- (a) Each organisation must be completely audited for compliance with this Part at periods not exceeding 24 months.
- (b) Notwithstanding (a), the competent authorities shall attend to an examination conducted by the approved Part-147 organisation at least once every 24 months.
- (c) ~~(b)~~ Findings shall be processed in accordance with 147.B.130

Appendix I is amended as follows (Working Group 66.006):

Appendix I
Basic Training Course Duration

Basic Course	Duration (in hours)	Theoretical training ratio (in %)
A1	800	30 to 35
A2	650	30 to 35
A3	800	30 to 35
A4	800	30 to 35
B1.1	2400	50 to 60
B1.2	2000	50 to 60
B1.3	2400	50 to 60
B1.4	2400	50 to 60
B2	2400 2000	50 to 60

II Draft Decision AMC to PART 145

Decision N° 2003/19/RM Annex II (AMC to Part 145) is hereby amended as follows:

AMC 145.A.20 is amended as follows (Working Group 66.006):

AMC 145.A.20 Terms of approval

The following ATA chapters are added to the existing table of “category C component ratings”:

- ATA 42 and ATA 44 are included in RATING C6 “Equipment”.
- ATA 46 is included in RATING C3 “Communication and Navigation”.

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~~ 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 are contained in the following list:
 - m.
 - n. Replacement of in-flight entertainment system simple components such as screens and Passenger Control Units, but excluding public address.
 - o.
 - p.
 - q.

In the particular case of helicopters, and in addition to the above items, 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). This does not include the hoist.

- t. removal and installation of quick release external cameras and search lights.
- u. removal and installation of emergency float bags. This does not include 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.

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.
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.

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 simple components such as screens and Passenger Control Units, but excluding public address.
- j.

III. Draft Decision AMC to PART 66

Decision N° 2003/19/RM Annex IV (AMC to Part 66) is hereby amended as follows:

AMC 66.A.20(a) is amended as follows (Working Group 66.006):

AMC 66.A.20(a) Privileges

The following definitions ~~of line and base maintenance~~ should apply:

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 definition.

Avionics system is defined as any analogue and digital data line and relevant connectors plus all components belonging to the following systems:

- Autoflight
- Communication & Navigation
- Instruments
- In Flight Entertainment Systems
- Integrated Modular Avionics (IMA)
- Cabin Intercommunication Data System
- Cabin Network Service
- On-Board Maintenance Systems
- Information Systems such as Air Traffic and Information Management Systems and Network Server Systems
- Fly by Wire Systems
- Fiber Optic Control Systems

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.

Line maintenance is any maintenance that is carried out before flight to ensure that the aircraft is fit for the intended flight. It may include:

- trouble shooting;
- 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.

Maintenance tasks falling outside these criteria are considered to be *base 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.

AMC 66.A.45(d) is deleted (Working Group 66.011).

AMC 66.A.45(g) is deleted (Working Group 66.009).

AMC 66.A.45(a) is renamed as AMC 66.A.45(a) & (b) and revised as follows (Working Group 66.006):

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 ~~will~~ **should** be required reflecting the authorised task(s). ~~as indicated under 66.A.20(a) 1.~~
2. Appropriately approved Part-145 or Part-147 organisation means compliance-with the applicable paragraphs of AMC 66.A.45.

Insert new AMC 66.A.45(g) (Working Group 66.011)

AMC 66.A.45 (g) Type/task training and ratings

Practical training may be performed either following or integrated with the theoretical elements, though cannot be performed before theoretical training.

Up to 50 percent of the required OJT may be undertaken before the aircraft theoretical type training starts.

Insert new AMC 66.A.45(g)(1)(i) & (g)(1)(ii) (Working Group 66.011)
--

AMC 66.A.45(g)(1)(i) & (g)(1)(ii) 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 trouble shooting 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, AMM, MPD, SRM
 - (i) 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), 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.

5. The assessment of practical training should be undertaken either by the competent authority, or by practical training assessors nominated within the approved maintenance or Part-147 organisation. Additionally, assessors may be independently approved to undertake this task by the competent authority within the Member State of licence issue. Assessors should demonstrate training and experience on the assessment process being undertaken.
6. Before the issue of an aircraft type rating, 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, trouble shooting, structural repairs, adjustments, replacements, rigging and functional checks.
 - (c) Demonstrate the correct use 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 the replacement of avionic line replaceable units.
8. Electrical systems should be included in both categories of type training.

Insert new AMC 66.A.45(g)(1)(ii) (Working Group 66.011)
--

AMC 66.A.45(g)(1)(ii) Type/task training and ratings

The objective of practical training is to gain competence in performing safe maintenance. This may either be conducted using a structured learning process which is instructor-led and takes place in classroom, on aircraft, in shops or assessor-led in an appropriately approved maintenance organisation.

For full type-rating courses, the majority of practical training should be conducted in a real maintenance or manufacturer environment

Insert new AMC 66.A.45(g)(1)(iii) (Working Group 66.011)

AMC 66.A.45(g)(1)(iii) 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 base maintenance tasks.

2. The OJT should cover at least 50% of the Appendix II tasks, though type specific tasks may be used in place of those in Appendix II, 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.

Type experience should be demonstrated by the submission of OJT records or a logbook showing the Appendix II, (or equivalent), tasks performed by the applicant.

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 Approved 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
- Be dependable
- Have a high degree of integrity
- Have good sense of judgement
- Be authorised by the approved maintenance organisation to carry out supervision

Insert 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

The maintenance organisation should provide applicants for a type rating 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 an approved 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.

Where the practical training and/or OJT, and its assessment are conducted under the responsibility of a nominated assessor within an approved maintenance organisation, this should be approved through the organisation's MOE procedures. These procedures should specify the requirements for assessor

training and the assessment process and should identify the assessor by name and position within the organization.

An EASA Form 4 should be completed for each assessor.

The assessment may be performed task by task or conducted as a final assessment at the end of the practical training and/or OJT.

Insert new AMC 66.A.45(g)(1)(iv) (Working Group 66.011)
--

AMC 66.A.45(g)(1)(iv) Type/task training and ratings

For differences training, theoretical knowledge and practical training may be limited to the differences between types.

Difference training is not required between aircraft types where additional manufacturer designations are added to an existing type rating designation, provided that the original type-rating course includes the additional aircraft.

Insert new AMC 66.A.45(g) and (h) (Working Group 66.011)

AMC 66.A.45(g) and (h) Type/task training and ratings

The theoretical and practical training in addition to an OJT provider may contract the services of a language translator in the case where training is to be provided to students not conversant in the language of the training material. The translator shall be approved to a national standard acceptable to the competent authority.

A translator should not be used to provide any assistance to students during either theoretical examinations or practical assessment or type examination.

AMC 66.A.45(e) is renamed as AMC 66.A.45(g)(2) (Working Group 66.009):

AMC 66.A.45(e)(g)(2) Type/task training and ratings

.....

AMC 66.A.45(h) is renamed as AMC 66.A.45(h)(3) (Working Group 66.009):

AMC 66.A.45(h)(3) Type/task training and ratings

....

Insert new AMC 66.A.45(i) (Working Group 66.009)**AMC 66.A.45(i) 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 representative of a manufacturer sub-group” means that the number of aircraft types should cover the typical systems, engines and technology relevant to the manufacturer sub-group.

Insert new AMC 66.A.45(j) (Working Group 66.009)**AMC 66.A.45(j) Type/task training and ratings**

1. Practical experience should cover an acceptable cross section including at least 50% of tasks from Appendix II relevant to the licence category and to the applicable aircraft group/sub-groups.
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.

Insert new AMC 66.A.45(k) (Working Group 66.009)**AMC 66.A.45(k) Type/task training and rating**

The practical experience required to remove the system/structures limitations should consist of a variety of tasks on each of the systems/structures in question under the supervision of an authorised certifying staff. For B1.2 and C licence holders, this should include the tasks required by a scheduled annual inspection.

For B2 licence holders, this should include system troubleshooting.

The application for the limitation removal should be supported by a record of experience certified by the authorised staff above.

Replace existing AMC 66.B.115 with the following text (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 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.
- (b) Aircraft type training may be sub-divided in airframe type training, powerplant type training, or avionic 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.
 - 1. Airframe type training means type training including all relevant aircraft structure and 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 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, 45, 46, 73 and 77 or equivalent.

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 license (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
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

Appendix IV to AMC 66.A.45(d) is renamed as Appendix IV to AMC 66.A.45(g)(1)

Appendix IV to AMC 66.A.45(d) Appendix IV to AMC 66.A.45(g)(1)

Fuel Tank Safety training

....

IV Draft Decision GM to PART 66

Decision N° 2003/19/RM Annex V (GM to Part 66) is hereby amended as follows:

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)(b) 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. The category B1 licence also permits the certification of work involving on avionic systems involving 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.

Insert new GM 66.A.45 (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.

<u>Aircraft ratings requirements</u>			
	B1 license	B2 license	C license
<u>Group 1</u> Large aircraft + complex aircraft (defined by EASA)	Individual TYPE RATING <i>Type training:</i> - Theory + examination - Practical + assessment - OJT (for first aircraft in license subcategory)	Individual TYPE RATING <i>Type training:</i> - Theory + examination - Practical + assessment - OJT (for first aircraft in license subcategory)	Individual TYPE RATING <i>Type training:</i> - Theory + examination
<u>Group 2:</u> (except those in Group 1) <u>Subgroups:</u> <u>2a:</u> multi turboprop aeroplanes <u>2b:</u> single turboprop aeroplanes <u>2c:</u> single turbine helicopters <u>2d:</u> single piston helicopters	(B1.1, B1.3, B1.4 licence holders) Individual TYPE RATING (type examination + practical experience) or Manufacturer SUB-GROUP RATING (Type examination + practical experience on at least 2 representative aircraft of that manufacturer sub-group) (B1.2 licence holders)	Full SUB-GROUP RATING (based on demonstration of appropriate experience) except aircraft equipped with: ▪ Helicopter autopilots ▪ Aeroplane autopilots ▪ EFIS ▪ FADEC (Limitations may be removed based on appropriate experience)	Individual TYPE RATING (type examination) or Manufacturer SUB-GROUP RATING (Type examination on at least 2 representative aircraft of that manufacturer sub- group)
<u>Group 3</u> Piston engine aeroplanes (except those in Group 1)	Full GROUP 3 RATING (based on demonstration of appropriate experience) except aircraft equipped with: ▪ Pressurization ▪ Retractable Landing Gear ▪ Variable pitch propeller ▪ Turbocharged engine ▪ FADEC ▪ Structures (metal / composite / wood) (Limitations may be removed based on appropriate experience)	Full GROUP 3 RATING (based on demonstration of appropriate experience) except aircraft equipped with: ▪ Aeroplane autopilots ▪ EFIS ▪ FADEC (Limitations may be removed based on appropriate experience)	Full GROUP 3 RATING (based on demonstration of appropriate experience) except aircraft equipped with: ▪ Pressurization ▪ Retractable Landing Gear ▪ Variable pitch propeller ▪ Turbocharged engine ▪ FADEC ▪ Structures (metal / composite / wood) (Limitations may be removed based on appropriate experience)

For category B1 and C license holders:

- A manufacturer sub-group 2a automatically includes the corresponding manufacturer sub-group 2b.

For category B2 licence holders:

- full sub-group 2a automatically includes the full sub-group 2b and full group 3,
- full sub-group 2b automatically includes the full group 3,
- full sub-group 2c automatically includes the full sub-group 2d.

GM 66.A.45(d) is deleted (Working Group 66.011):

Insert new GM 66.A.45(g)(1) (Working Group 66.011)

GM 66.A.45(g)(1) Type/task training and ratings

The minimum duration for type training has been determined based on generic categories of aircraft and minimum standard equipment fit.

Deviation below the minimum duration is only permissible in exceptional circumstances. Training program 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 GA aircraft course will demonstrate that a course of a shorter duration satisfies the requirement.

Insert new GM 66.A.45(g)(1)(ii) (Working Group 66.011)

GM 66.A.45(g)(1)(ii) Type/task training and ratings

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. Correctly demonstrate the use of 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.

GM 66.A.45(f) is renamed as GM 66.A.45(g)(3) (Working Group 66.009):

GM 66.A.45(f)(g)(3) Type/task training and ratings

....

GM 66.A.45(d) and (e) is renamed as GM 66.A.45(g)(1) and (g)(2) (Working Group 66.011):

GM 66.A.45(d) and (e)(g)(1) and (g)(2) Type/task training and ratings

....

V Draft Decision AMC to PART 147

Decision N° 2003/19/RM Annex VI (AMC to Part 147) is hereby amended as follows:

Insert new AMC 147.B.120(a) (Working Group 66.011)

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 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.
2. 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.

VI Draft Decision GM to PART 147

Decision N° 2003/19/RM Annex VII (GM to Part 147) is hereby amended as follows:

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.

ATTACHMENT 1:

REGULATORY IMPACT ASSESSMENT

66-006: “Privileges of B1 and B2 aircraft maintenance licenses”

Headings	Sub Headings
1. Purpose and Intended Effect	<p><u>a. Issue which the NPA is intended to address:</u> Feedback received by EASA seems to indicate that it is not clearly defined what is an electrical system and what is an avionic system. Furthermore, the current AMCs and Guidance Material do not seem sufficient to clarify what avionic tasks can be performed by a B1 license holder and what is a simple test.</p> <p>Additional feedback received by EASA suggests that the B2 licensed personnel is infra-utilised because most of the job can be performed by B1 licensed personnel.</p> <p><u>b. Scale of the issue (quantified if possible):</u> This is an important issue for B1 and B2 license engineers, specially for B2. It is also important for maintenance organisations.</p> <p><u>c. Relevant decisions by EASA or other authorities that guide/constrain action:</u> None</p> <p><u>d. Brief statement of NPA objectives:</u> Clarify the privileges of B1 and B2 certifying staff and study the need for revision of the privileges of B2 certifying staff.</p>
2. Options	<p><u>a. The options identified and evaluated</u> NOTE: All options (except option 1) will include a clarification of the privileges of each license (A, B1, B2).</p> <p><u>Option 1. Do nothing</u></p> <p><u>Option 2. Expansion of privileges.</u></p> <p><u>Option 2a) Expand B1 privileges:</u> Expand the B1 privileges further than currently allowed to enable the release of an aircraft after electrical/avionics tasks have been carried out i.a.w aircraft manufacturer maintenance data; i.e. fly by wire aircraft and digital technology that allows for easy testing of avionics with changing of modules when the test is inconclusive and avionics tasks where the serviceability of the system can be established after work is being carried out. This includes the simple troubleshooting of electrical/avionics systems.</p> <p><u>Option 2b) Expand B2 privileges:</u> Extend the privileges to activities corresponding to category A level</p>

Headings	Sub Headings
	<p>as listed in AMC 145.A.30(g). These tasks shall be carried out personally provided specific task training is carried out by the Part 145 maintenance organisation. The extension on A is limited to the B2 aircraft type ratings endorsed on the licence. Appendix I and III would need to be revised to cover adequately air conditioning, fire warning, fuel system indications, overheat protection in order to allow electrical troubleshooting and electrical defect rectification of these systems.</p> <p><u>Option 2c) Further expansion of B2 privileges:</u> Same as option 2b) but with a limited number of additional B1 category maintenance activities. This would require a more extensive amendment of App I and III to increase the educational level and content of the subject modules.</p> <p>Examples: Expand the B2 privileges to minor scheduled line maintenance, release under MEL, simple defect rectification within the limits of the tasks specifically endorsed on the authorisation and to enable the technicians to carry out mechanical/electro-mechanical tasks i.a.w aircraft manufacturer maintenance data; i.e. carry out mechanical/electro-mechanical tasks where the serviceability of the system can be established after work is being carried out. This includes the simple troubleshooting of mechanical/electro-mechanical systems including systems on power plants, air conditioning systems, mechanical parts associated with electrical/avionics systems, fuel gauging systems, anti-skids, sensors, fire warning systems.</p> <p><u>Option 3) Additional guidance material:</u> No change in privileges: provide additional material to industry and NAAs to define licence privileges.</p> <p><u>Option 4) No interface:</u> Modify the definitions of each privilege to either B1 or B2 to alleviate the overlap of B1 and B2 scopes of activities.</p> <p><u>Option 5) Single B license:</u> Creation of a single licence which covers the whole B1 and B2 activity (similar to the FAA A&P).</p> <p><u>Option 6) System rated B2 licence:</u> Creation of modules related to systems based on the activities of electric/avionics disciplines (similar to the guidelines on the A licence covered in the 66.A.20 and 145.A.30(g). Examples of entries on the licences could be “radio”, “navigation system” for a particular aircraft, however the agency would need to define a standard of entries.</p> <p><u>b. Equity and fairness issues identified:</u> None</p>

Headings	Sub Headings
	<p><u>c. If possible, the preferred option selected:</u> If possible, options 2b) or 2c).</p>
<p>3. Impacts</p>	<p><u>a. Sectors affected</u> Aircraft maintenance license holders and maintenance organisations.</p> <p><u>b. All impacts identified</u></p> <p><u>i. Safety</u></p> <p>Option 1. Do nothing No impact</p> <p>Option 2a) Expand B1 privilege: No impact, provided regulation is complied with.</p> <p>Option 2b) Expand B2 privileges: No impact, provided regulation is complied with.</p> <p>Option 2c) Further expansion of B2 privileges: No impact, provided regulation is complied with.</p> <p>Option 3) Additional guidance material: No impact – clarification of the rule-</p> <p>Option 4) No interface: No impact</p> <p>Option 5) Single B licence No impact</p> <p>Option 6) Task rated B2 licence No impact</p> <p><u>ii. Economic</u></p> <p>Option 1. Do nothing No impact, however companies will continue to face difficulties in flexible utilization of B2 personnel.</p> <p>Option 2a) Expand B1 privileges: Negative impact due to increased costs of training, which can be partially compensated by a more flexible B1 workforce. Companies will continue to face difficulties in flexible utilization of B2 personnel. Very positive impact due to clarification of privileges.</p> <p>Option 2b) Expand B2 privileges: Negative impact due to increased costs of training, which can be</p>

Headings	Sub Headings
	<p>compensated by a more flexible B2 workforce. Companies will appreciate a better utilisation of B2 personnel. Very positive impact due to clarification of privileges</p> <p>Option 2c) Further expansion of B2 privileges: Very negative impact due to increase costs of training. Companies will appreciate a better utilisation of B2 personnel. Very positive impact due to clarification of privileges</p> <p>Option 3) Additional guidance material: Very positive impact due to clarification of privileges</p> <p>Option 4) No interface: Very negative impact on the industry because of the need for more personnel. Very positive impact due to clarification of privileges</p> <p>Option 5) Single B licence: Negative impact on NAAs due to the need to create a new licensing system. Very negative impact on the industry due to the need to train all future personnel to the full license syllabus, which may be partially compensated by a more flexible workforce. Positive impact due to clarification of privileges (for the old B1 and B2 licenses)</p> <p>Option 6) Task rated B2 licence: Negative impact on NAAs due to the need to create a new licensing system. Very negative impact on industry because of the need of several B2 engineers at each line station in order to cover all areas of expertise, which may be partially compensated by the possibility of having type training common to several types of aircraft in an area of expertise (if they are available). Negative impact on training organisations because of more types of courses to be approved. Very difficult to manage globally a task related licence. Very positive impact due to clarification of privileges</p> <p><u>Harmonisation:</u> Option 1. Do nothing No impact</p> <p>Options 2, 3 and 4 Varying level of impacts depending on the regulation changes and the country. Very positive impact due to clarification of privileges</p>

Headings	Sub Headings
	<p>Option 5 Varying level of impacts depending on the regulation changes and the country. Positive impact due to clarification of privileges</p> <p>Option 6 Varying level of impacts depending on the regulation changes and the country. Positive impact due to clarification of privileges Very negative due to different licenses all around the Member States.</p> <p><u>iii. Environmental</u> None</p> <p><u>iv. Social</u> Option 1. Do nothing No impact</p> <p>Option 2.a) Expand B1 privilege: Possible negative impact on the amount of B2 licensed personnel needed because of the increase of flexibility. B1 licensed personnel may have more possibilities of employment.</p> <p>Option 2b) Expand B2 privileges: Possible negative impact on the amount of current “A” and “B1” licensed personnel. B2 licensed personnel may have more possibilities of employment.</p> <p>Option 2c) Further expansion of B2 privileges: Possible deeper negative impact on the amount of current “A” and “B1” licensed personnel. B2 licensed personnel may have even more possibilities of employment.</p> <p>Option 3) Additional guidance material: No impact</p> <p>Option 4) No interface: Positive impact to licensed personnel because of the need of more personnel. Negative impact on the industry.</p> <p>Option 5) Single B licence: People will refrain from becoming a licensed engineer because of the length and difficulty of the studies. However, for those successfully completing it, the salary will be higher. Difficulty of industry to find qualified personnel.</p>

Headings	Sub Headings
	<p>Option 6) Task rated B2 licence: Difficulty for licensed personnel to move around in the industry because they are too specialised.</p> <p><u>v. Other aviation requirements outside EASA scope, such as security, ATM, airports, etc.</u> Not identified</p> <p><u>vi Foreign comparable regulatory requirements</u> Not identified</p> <p><u>b Equity and fairness:</u> None</p>
<p>4. Summary and Final Assessment</p>	<p><u>a. Comparison of the positive and negative impacts for each option evaluated:</u> Refer to the Table of RIA results hereafter.</p> <p><u>b. A summary of who would be affected by these impacts and issues of equity and fairness:</u> Aircraft maintenance license holders and maintenance organisations.</p> <p><u>c. Final assessment and recommendation of a preferred option:</u></p> <p><u>Option 2b) Expand B2 privileges:</u> Extend the privileges to activities corresponding to category A level as listed in AMC 145.A.30(g). These tasks shall be carried out personally provided specific task training is carried out by the Part 145 maintenance organisation. The extension on A is limited to the B2 aircraft type ratings endorsed on the licence. Appendix I and III would need to be revised to cover adequately air conditioning, fire warning, fuel system indications, overheat protection in order to allow electrical troubleshooting and electrical defect rectification of these systems.</p>

-2 = very negative impact

-1 = negative impact

0 = no impact

+1 = positive impact

+2 = very positive impact

	Option 1	Options 2			Option 3	Option 4	Option 5	Option 6
		2a	2b	2c				
Safety	0	0	0	0	0	0	0	0
Economic	0	+1	+2	0	+2	0	-2	-2
Harmonization	0	+2	+2	+2	+2	+2	+1	-1
Environmental	0	0	0	0	0	0	0	0
Social	0	0	0	0	0	0	-1	-2
Equity	0	0	0	0	0	0	0	0
Summary	0	+3	+4	+2	+4	+2	-2	-5

Because of the intended effect of the ToR, option 2b) has been selected over option 3.

ATTACHMENT 2:
REGULATORY IMPACT ASSESSMENT
66-009: “Type and group ratings”

Headings	Sub Headings
1. Purpose and Intended Effect	<p><u>a. Issue which the NPA is intended to address:</u></p> <ul style="list-style-type: none"> • It is not clear what is an “aircraft type” in terms of maintenance and, as a consequence, it is not clear when two different aircraft models/variants are similar enough to be considered belonging to the same “type rating”. This induced to inaccuracies in the list of Type ratings in Annex I to AMC to Part-66. • There is currently no policy describing when an aircraft shall be considered as complex in terms of maintenance, which may be different from the definition of “complex motor powered aircraft” contained in COM (2005) 579. • The different current aircraft groups do not really reflect the complexity of aircraft. Some aircraft are “not simple” in terms of design and are only required to have a group rating, which is the contrary to its definition. • The privileges of B2 licence holders are too restrictive when considering manufacturer group ratings. It is reasonable to consider that the group ratings should be better adapted to the capacity of working of a B2 licence holder, where the technology is very similar from one manufacturer to another. • Aircraft eligible for manufacturer group ratings and full group ratings currently require type examination for a representative number of aircraft. However, in many cases it is difficult to find a provider for those examinations (approved organisation or competent authority). <p><u>b. Scale of the issue (quantified if possible):</u></p> <p>Major issue: Part 147 training organisations, Competent Authorities, individuals holding or applying to a Part-66 licence, Maintenance Organisations</p> <p><u>c. Relevant decisions by EASA or other authorities that guide/constrain action:</u></p> <p>None</p> <p><u>d. Brief statement of NPA objectives:</u></p> <p>Development of more transparent type rating principles, in particular:</p> <ul style="list-style-type: none"> • Define what is an “aircraft type” in terms of maintenance. • Define when an aircraft requires an individual type rating and type training because of its maintenance complexity. • Adapt the aircraft groups to their real maintenance complexity. • Adapt the aircraft groups to the working capacity of the license holders, in particular B2 and the requirements in order to endorse them on the license. • Alleviate the issue of not finding appropriate examination providers for some aircrafts.

Headings	Sub Headings
<p>2. Options</p>	<p><u>a. The options identified and evaluated</u></p> <p>The issue has been analysed by raising three questions all related to the type rating and group ratings. Each of the questions resulted in different options.</p> <p><u>Question a). What is an “aircraft type” for the purpose of maintenance?</u></p> <p>This question is better illustrated through the following expanded questions:</p> <p>On which basis should two aircraft types/models/variants be covered by the same type rating? Should types be the same for B1 and B2 categories?</p> <p>Since the new definition of type rating shall be used by EASA in order to create the type ratings included in Appendix I to AMC, this definition shall be part of an EASA Internal Procedure and shall not be added to AMC 66.A.45.</p> <p>Option a.1) Do nothing:</p> <ul style="list-style-type: none"> • no change to 66.A.45(b) • no AMC to clarify the concept of “aircraft type” <p>Recommendation: In case of option a.1), although no change is proposed to Part 66 and its AMC’s, the procedure used by EASA to issue and amend Appendix 1 to the Part 66 AMC’s should be improved, potentially through the use of external expertise, including that from the manufacturer.</p> <p>Option a.2) Very specific type ratings</p> <p>Redefine the concept of “aircraft type” along with the following guidelines:</p> <p>A different type rating should be created for each different aircraft model, engine, significant mods or STC.</p> <p>This is more specific than the current practice followed by EASA.</p> <p>Option a.3) Very wide-scope type ratings</p> <p>Redefine the concept of “aircraft type” along with the following guidelines:</p> <p>One type rating per aircraft manufacturer, or even one single maintenance type rating for several aircraft TC of similar technology.</p>

Headings	Sub Headings
	<p>This is softer than the current practice followed by EASA.</p> <p>Option a.4) Similar to current EASA practice but with a clear definition.</p> <p>Type ratings shall be defined considering the following steps:</p> <ol style="list-style-type: none"> 1. All the variants within the same aircraft TC are grouped in the same type rating, 2. The variants are then split in different type ratings depending on the engine type (one type per engine TC), 3. The type ratings are further split based on an analysis of the following aspects: <ol style="list-style-type: none"> a. Differences of the training courses, (variants should be separated when the difference course requires a more than 3 days or 10 percent of the theoretical course for the original model, whichever is the greater) b. Recommendations from the TC holder and the certification authority, c. Differences in the Maintenance programmes, 4. Aircraft from different TC holders may be grouped within the same type rating when the aircraft design is essentially the same (same aircraft manufactured by different TC holders), <p><u>The preferred option selected (if possible):</u></p> <p>Option a.4)</p> <p><u>Question b). What is the definition of a group 1 aircraft needing an individual type rating?</u></p> <p>For maintenance purposes, the group decided to withdraw the term COMPLEX because of possible confusion with the definition used in other EASA regulations or in COM (2005) 579. For this reason the group decided to call this group of aircraft: Group 1. The other different groups are defined in Question c) (further below)</p> <p>Option b.1) Do nothing:</p> <ul style="list-style-type: none"> • no change to 66.A.45(g)(h) • no AMC to clarify the concept of “complexity” <p>Option b.2) Definition of group 1 aircraft based on criteria:</p> <p>All large aircraft and those non-large aircraft meeting the following criteria (to be put by EASA in an Internal Procedure):</p> <p>A non large aircraft requires individual type rating when defined by the Agency according to the following criteria:</p> <ol style="list-style-type: none"> a) when the maintenance procedures require specialised training (meaning when one of its features is not adequately covered by the

Headings	Sub Headings
	<p>Basic syllabus of Appendix I of Part-66), or b) the maximum certified operating altitude exceeds FL 250, or c) it is equipped with one or more of the following systems:</p> <ul style="list-style-type: none"> • turbofan/turbojet engine, • fly by wire control systems, <p><u>The preferred option selected (if possible):</u> Option b.2)</p> <p><u>Question c). For other than group 1 aircraft (those eligible for group ratings):</u> - what should be the definitions of the different groups? - what should be the conditions to be met in order to be granted a “group rating”?</p> <p>Option c.1) Do nothing: No change to 66.A.45(g)</p> <p>Option c.2) Creation of a new group concept defined by the complexity of the aircraft:</p> <p>Creation of new groups of aircraft:</p> <p><u>Group 1:</u> large aircraft (includes multi-engine helicopters by definition) and non large aircraft requiring an individual type rating based on type training. The aircraft defined as group 1 by EASA require an individual type rating (refer to question b) above).</p> <p><u>Group 2:</u> aircraft in the following subgroups, other than those in Group 1:</p> <ul style="list-style-type: none"> • group 2a: multiple turbo-propeller engine aeroplanes • group 2b: single turbo-propeller engine aeroplanes • group 2c: single turbine engine helicopters • group 2d: single piston engine helicopters <p><u>Group 3:</u> piston engine aeroplanes other than those in Group 1.</p> <p><u>Conditions to issue a CRS for aeroplanes in each group:</u></p> <p><u>Group 1:</u> as in the current 66.A.45 (b) to (f) the licence category B1, B2 and C must be endorsed with the appropriate individual type rating issued after completion of an approved type training course + examination + on the job training (as provided for by working group 66.011).</p> <p><u>Group 2, for category B1 and C licences, the licence must be endorsed</u></p>

Headings	Sub Headings
	<p>as in the current 66.A.45(g), with the appropriate type rating based on a type examination and practical experience, except for category C where the practical experience is not required.</p> <p>They may also be endorsed with the appropriate manufacturer sub-group rating, based on meeting the type rating requirements of two aircraft representative of the sub-group from the same manufacturer.</p> <p>In group 2, for category B2 licence, the licence shall be endorsed with a full sub-groups 2a, 2b, 2c, or 2d. These full sub-groups shall be based on demonstration of experience.</p> <p><u>Group 3:</u> The B1.2 license will include, from initial issuance, the group 3 aeroplanes with the following limitations:</p> <ul style="list-style-type: none"> • Pressurisation • retractable landing gear • variable pitch propeller • turbo-charged piston engine • FADEC <p>Unless the holder has provided evidence of appropriate experience on such systems, these limitations shall be shown on the license. These limitations shall be removed when the holder provides evidence of appropriate experience in accordance with the applicable items from Appendix II of AMC to 66.A.45(g). In order to issue a CRS on aircraft equipped with one or more of the above systems, the person must have removed all the limitations belonging to such particular aircraft, even if the tasks are not related to those systems. Nevertheless, with the basic B1.2 license the holder is also entitled to issue CRS for Part-M, Appendix VIII tasks on all Group 3 aeroplanes, regardless of installed systems and associated limitations.</p> <p><u>For B2 license holders</u></p> <p>With the basic B2 license the holder is entitled to issue CRS for Group 2 and 3 aircrafts except those equipped with one or more of the following systems:</p> <ul style="list-style-type: none"> • Helicopter autopilots • Aeroplane autopilots • EFIS • FADEC <p>Unless the holder has provided evidence of appropriate experience on such systems, these limitations shall be shown on the license. These limitations shall be removed when the holder provides evidence of appropriate experience. In order to issue a CRS on aircraft equipped with one or more of the</p>

Headings	Sub Headings
	<p>above systems, he must have removed all the limitations belonging to such particular aircraft, even if the tasks are not related to those systems.</p> <p>Nevertheless, with the basic B2 license the holder is also entitled to issue CRS for Part-M, Appendix VIII tasks on all Group 3 aeroplanes, within the B2 privileges shown in 66.A.20, regardless of installed systems and associated limitations.</p> <p>Option c.3) = option c2) + limitations for material construction for group 3 aeroplanes</p> <p>For Group 3 aeroplanes, limitations shall be added to the license based on the material of the primary structure of the aeroplane (metallic, wooden, composite). These limitations shall be removed when the holder provides evidence of appropriate experience.</p> <p>After appropriate considerations, the group envisaged to remove option c.3), because structural repairs in the list of complex tasks in Appendix VII, restrict these activities to approved organisations (145 / subpart-F), which in any case, shall be responsible for assessing the competence of the certifying staff before issuing the appropriate authorisation.</p> <p>Furthermore, the basic knowledge requirements cover all types of structures.</p> <p><u>However, please refer to the final assessment in paragraph 4.c further down, because a deeper analysis made this option the final one selected.</u></p> <p>The preferred option selected (if possible): Option c.2)</p> <p><u>b. Equity and fairness issues identified:</u> None</p>
<p>3. Impacts</p>	<p><u>a. Sectors affected</u> Major issue: Part 147 training organisations, Competent Authorities, individuals holding or applying to a Part-66 licence, Maintenance Organisations.</p> <p><u>b. All impacts identified</u></p> <p><u>Question a) What is an “aircraft type” for the purpose of maintenance?</u></p> <p><u>i. Safety</u></p> <p>Option a.1) Do nothing: No impact</p>

Headings	Sub Headings
	<p>Option a.2) Very specific type ratings No impact</p> <p>Option a.3) Very wide-scope type ratings Negative impact as maintenance personnel may have insufficient training to cope with the scope of their licence.</p> <p>Option a.4) Similar to current EASA practice but with clear definition No impact</p> <p><u>ii. Economic</u></p> <p>Option a.1) Do nothing: No impact</p> <p>Option a.2) Very specific type ratings Negative impact as further training/examination would be required for engineers to qualify for the new types, and licences costs would be increased, and further administrative work within NAAs</p> <p>Option a.3) Very wide-scope type ratings Overall negative impact: On one hand, small positive impact as the frequency of type-training and examination would be less, as the groups would be broader. The licence would be cheaper. On the other hand the negative impact is that in the training organisations the type-training system for licensing would need to be rewritten to cope with the larger groups, and further administrative work within NAAs.</p> <p>Option a.4) Similar to current EASA practice but with clear definition Positive impact as easier to obtain basic licence cover for light aircraft maintenance organisations. The extension of system ratings to the licence is by demonstration of work experience. The licence and maintenance activity may be cheaper. Light/simple aircraft would be exempt from type examination under this system. Minimal impact on the NAAs as no type examinations for light aircraft would need to be produced or assessed.</p> <p><u>iii. Environmental</u> No impact</p> <p><u>iv. Social</u></p> <p>Option a.1) Do nothing: No impact</p>

Headings	Sub Headings
	<p>Option a.2) Very specific type ratings Negative impact: licence holders may require more training/examinations to obtain reasonable licence coverage. Maintenance organisations may be faced with difficulties in obtaining adequately authorised certifying staff.</p> <p>Option a.3) Very wide-scope type ratings No impact: licence holders/maintenance organisations may enjoy the benefit of broader licence coverage, but licence holders may face more competition for job employment.</p> <p>Option a.4) Similar to current EASA practice but with clear definition Overall positive impact due to: More structured career path for light aircraft licence holders, with an easier progression to add licence coverage, increased flexibility for maintenance organisations, improved maintenance cover for GA owners, but may create more competition between basic licence holders for the same job.</p> <p><u>Question b) What is a group 1 aircraft for the purpose of this study?</u></p> <p>i. <u>Safety</u></p> <p>Option b.1) Do nothing: No impact</p> <p>Option b.2) Definition of group 1 aircraft No impact</p> <p>ii. <u>Economic</u></p> <p>Option b.1) Do nothing: No impact</p> <p>Option b.2) Definition of group 1 aircraft <u>For maintenance organisations:</u> No impact <u>For licence holders:</u> No impact</p> <p><u>Overall: No impact</u></p> <p>iv. <u>Social</u></p>

Headings	Sub Headings
	<p>Option b.1) Do nothing: No impact</p> <p>Option b.2) Definition of group 1 aircraft <u>For maintenance organisations:</u> No impact <u>For licence holders:</u> No impact</p> <p><u>Overall: No impact</u></p> <p><u>Question c) For other than group 1 aircraft (those eligible for group ratings), what are the different groups and the associated endorsement requirements</u></p> <p><u>i. Safety</u></p> <p>Option c.1) Do nothing: No impact</p> <p>Option c.2) The concepts of “type ratings” or “group rating” as described in new 66.A.45: Positive impact, as the proposed text represents a more realistic regime for general aviation aircraft and promotes compliance with the requirements.</p> <p><u>ii. Economic</u></p> <p>Option c.1) Do nothing: No impact</p> <p>Option c.2) The concepts of “type ratings” or “group rating” as described in 66.A.45: <u>Licence holders:</u> Positive impact, as a full group 3 is larger than full groups permitted by the current regulation, extension to certification privileges may be easier. Depending on the member state, licence holders may pay less to extend the privileges because once the limitations have been removed for group 3 aircraft from the licence, no further application would be required.</p> <p><u>Maintenance organisations:</u> Positive impact as the group 3 eases the granting of privileges and alleviate the costs of renewing the licences</p> <p>Overall positive: impact</p>

Headings	Sub Headings
	<p><u>iv. Social</u> Option c.1) Do nothing: No impact</p> <p>Option c.2) The concepts of “type ratings” or “group rating” as described in 66.A.45:</p> <p><u>Licence holders:</u> Positive as it may ease the training burden on light general aviation. As the group 3 category would be easier to obtain, more employment opportunities may be created for technicians in the general aviation sector. Licence holders may benefit from having a larger scope of activity.</p> <p><u>Maintenance organisations:</u> Positive as it may ease the training burden on light general aviation. Organisations may benefit from having licence holders with a larger scope of activity.</p> <p>Overall positive impact as insufficient Part-147 approvals offering training and examination on a large category of light aircraft currently exist.</p> <p><u>v. Other aviation requirements outside EASA scope</u> None</p> <p><u>vi. Foreign comparable regulatory requirements</u> Not determined</p> <p><u>b. Equity and Fairness issues</u></p> <p>Technicians who had licenses issued in accordance with national systems may have expended considerable resources in type examinations/training in order to get group rating that now may be obtained based on appropriate experience. Nevertheless, they would be eligible to grand-father rights.</p>
4. Summary and Final Assessment	<p><u>a. Comparison of the positive and negative impacts for each option evaluated:</u></p> <p>Refer to the Table of RIA results hereafter</p> <p><u>b. A summary of who would be affected by these impacts and issues of equity and fairness:</u></p> <p>License holders and general aviation maintenance organisations.</p> <p><u>c. Final assessment and recommendation of a preferred option:</u></p> <p>Refer to the Table of RIA results hereafter</p>

Headings	Sub Headings

-2 = very negative impact
-1 = negative impact
0 = no impact
+ 1 = positive impact
+ 2 = very positive impact

Question a) What is an “aircraft type” for the purpose of maintenance?

	Option a1 Do nothing	Option a2 Detailed ratings	Option a3 Wide-scope ratings	Option a4 Current EASA practice with clarification
Safety	0	0	-1	0
Economic	0	-1	-1	+1
Environmental	0	0	0	0
Social	0	-1	0	+1
Equity	0	-2	-2	+2
Summary	0	-4	-4	+4

Option a.4) has been retained by the group and accepted by EASA

Question b) What is a “complex” aircraft for the purpose of maintenance?

	Option b1 Do nothing	Option b2 Evaluation of complexity (Group 1)
Safety	0	0
Economic	0	0
Environmental	0	0
Social	0	0
Equity	0	0
Summary	0	0

Option b.2) has been selected by the group and accepted by EASA because it provides a clear understanding to all involved parties of the group where an aircraft will be allocated, even before the aircraft is formally classified by EASA within Appendix I to AMC Part-66.

Question c) For other than group 1 aircraft (those eligible for group ratings), what are the different groups and the associated endorsement requirements

	Option c1 Do nothing	Option c2 Concept of type rating and group rating
Safety	0	+1
Economic	0	+1
Environmental	0	0
Social	0	+1
Equity	0	
Summary	0	+3

Option c2) was initially retained by the group and accepted by EASA as preferred option. **However, a deeper analysis made the group to select the initially rejected option c3), which is the same as option c2) but including limitations based on the structure material (metal / composite / wood).**

The option of including limitations on the structure material was initially rejected because structural repairs in the list of complex tasks in Appendix VII restrict these activities to approved organisations (145 / subpart-F), which in any case, shall be responsible for assessing the competence of the certifying staff before issuing the appropriate authorisation.

Furthermore, the basic knowledge requirements cover all types of structures.

However, the following reasons made the group to reconsider Option c3) and to select it:

- There are structural tasks (inspections, small repairs, etc) that are not part of Appendix VII and still need the appropriate competence. This competence can not be ensured by an approved organisation because these tasks can be performed by independent engineers.
- Current Part-66 licenses showing, for example, “airplane single piston engine – wood structure”, will need to be converted at some point to a license endorsed with “Group 3”, and it seems not reasonable to do it without including a limitation on the type of structure.
- In addition, the group had included in the proposal that in order to get Group 3, appropriate experience should be demonstrated. If no limitation on the type of structure is added, NAA’s and industry will question whether this experience must cover all types of structures or not. If experience must be shown on all structures it will be very difficult to achieve

because of limited access to wooden or composite aircraft. On the other hand, if it is not required to show experience on all type of structures, someone showing experience only on wooden aircraft may get a full Group 3 without limitation of material.

ATTACHMENT 3:
REGULATORY IMPACT ASSESSMENT
66-011: “Type training”

Headings	Sub Headings
1. Purpose and Intended Effect	<p><u>a. Issue which the NPA is intended to address:</u> The purpose of this NPA is to assess the need for revisiting type/task training and ratings for certifying staff, who shall be qualified in accordance with the provisions of Annex III (Part 66) of Regulations (EC) No 2042/2003 and its Appendix III. Presently, the only elements towards designing type training are contained in Part-66 Appendix III, Part-66.A.45 and the associated AMC. These elements although quite extensive do not seem to be detailed enough to address all the specificities of each aircraft type, variant and course type. Feedback received by EASA seems to indicate that too much room is left for interpretation and cases of unequal treatment have been reported such as the same training course varying in level, length and content regarding theoretical, practical training/OJT/ practical experience. The development of regulations and/or AMC/GM should give guidance in this respect, including the link between type training and the licence rating.</p> <p><u>b. Scale of the issue (quantified if possible):</u> Significant issue for NAAs and industry (maintenance organisations, training organisations and aircraft maintenance license holders)</p> <p><u>c. Relevant decisions by EASA or other authorities that guide/constrain action:</u> This issue was considered by the JAA in the “Top 10 priorities”.</p> <p><u>d. Brief statement of NPA objectives:</u> The objective of this rulemaking tasks is the standardization of the type training, ensuring a sufficient level of safety.</p>
2. Options	<p><u>a. The options identified and evaluated</u></p> <p>Taking into account the proposals included within the present NPA, all possible options are the following:</p> <p><u>Option 0: Do nothing:</u> Uncertainty remains and certain type training courses that are clearly inadequate continue without giving Member States the applicable legal tools to prevent it. There are neither minimum duration, nor objectives defined in Part 66 (appendix III)</p> <p><u>Option 1: Minimum duration of type training</u> Regardless of the content of the syllabus and regardless of the experience of the applicant, this option proposes a minimum duration for both theoretical and practical training based on:</p>

Headings	Sub Headings
	<ul style="list-style-type: none"> • Training objectives, • Complexity of the aircraft, • Examination and assessment. <p>This option depicts the current regulation except for the theoretical training where no minimum duration exists.</p> <p><u>Option 2: Fixed content for type training (proposed syllabus)</u> Regardless of the training or experience of the applicant, this option proposes prescribed elements for theoretical and practical parts of the training to be taught based on:</p> <ul style="list-style-type: none"> • Training objectives, • Complexity of the aircraft, • Examination and assessment. <p>For large aircraft, the current regulation does not propose any fixed content for the practical elements of the type training.</p> <p><u>Option 3: Type training based on a minimum syllabus proposed by the Type Certificate Holder (TCH)</u> The elements of the type training course should at least contain the recommendations from the TCH.</p> <p><u>Option 4: a combination of option 1 / option 2 and an additional On The Job Training (OJT) program in order to gain sufficient experience for the first type training in the sub-category.</u> This option includes:</p> <ul style="list-style-type: none"> • A framework syllabus and a minimum duration for theoretical elements of the type training, • A framework content of practical elements, • An additional mandatory OJT for the first type training in the sub-category with a define content to gain adequate experience. • Examination and assessment. <p><u>Option 5: Type rating to be based on examination and/or competency check without training.</u> Regardless of the training or the experience of the applicant, this option proposes an examination where the competency of the applicant is examined and assessed by approved examiners and assessors. This option means that there is no more training required: the applicant has to demonstrate his competency through a type examination / assessment and if he fails, he will have to gain further experience and competency either in a maintenance environment or in maintenance training provider until he passes the examination /</p>

Headings	Sub Headings
	<p>assessment.</p> <p><u>b) The realistic options and the preferred option selected</u></p> <p>Article 15(3) of the extended Basic Regulation states that the Agency shall define training requirements for the issuing of ratings, as appropriate. A proposal has been included in the Opinion of the Agency on the extension of the Basic Regulation to air operations and pilot licensing to amend Article 15(3) of the extended Basic Regulation. If this proposal were enacted:</p> <ul style="list-style-type: none"> • the licence holders type rating/type training would be put in the certification process of an aircraft as it is the case for a pilot. • The minimum training requirement and the core objectives of the training would be proposed by the Type Certification Holder (TCH); a minimum duration and content would be elaborated from a syllabus analysis. <p>The above elements would have constituted the basis for Option 3. Unfortunately, these elements are not available so far and are likely to be required only for new brand aircraft.</p> <p>Therefore, the existing system and its implementation has to be improved because it is observed that there is significant variation in duration (for example, duration of a type course for the same type and model can vary between one hundred and two hundred hours) and too much freedom is left for the content of the practical elements (no sufficient guidance). Additionally, the duration for the practical elements as specified in the current AMC (between two weeks and four months, based on the experience of the applicant IAW appendix III of Part 66) is not uniformly implemented: tendency was to limit the duration to two weeks.</p> <p>Moreover it is commonly accepted that true experience is mostly gained in an approved maintenance organisation where an aircraft is likely to be more available for training purposes. Few Part 147 organisations have permanent access to an aircraft and very few training organisations will perform maintenance for training purposes on an aircraft which is fit for fly because true trouble shooting cannot be performed and de-installation-re-installation could lead to a true failure.</p> <p>These facts encourage:</p> <ul style="list-style-type: none"> • Setting up a minimum duration for the theoretical elements and keeping /improving / updating the current syllabus (option 1) • Defining a guidance or a syllabus to be adapted for the practical elements (option 2), • Making a difference between practical training in a Part 147 environment and on the job training in a maintenance organisation environment (OJT) (option 0 would have not clarified this difficulties), • Replace duration of the practical training (between two weeks and four months) by a fixed content,

Headings	Sub Headings
	<ul style="list-style-type: none"> • On the job training for the first type training within a sub-category to be compelled in order to gain experience and competency. • Examination and assessment. <p>For all these reasons, 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.</p> <p><u>b. Equity and fairness issues identified:</u></p> <p>With the current systems there is a lack of standardisation in the duration of training, which leads also to unfair treatment of training organisations and trainees.</p> <p><u>c. If possible, the preferred option selected:</u></p> <p>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.</p>
3. Impacts	<p><u>a. Sectors affected</u></p> <p>The sectors of the EC regulated civil aviation community which will be affected are:</p> <ul style="list-style-type: none"> • Licence holders and maintenance staff • maintenance organisations • maintenance training organisations • TC holders • NAAs and EASA. <p><u>b. All impacts identified</u></p> <p><u>i. Safety</u></p> <p>Too much variation in duration or too much interpretation left in contents means that the safety level is negatively affected: consequently, option 0 (do nothing) is not rejected.</p> <p><u>Option 1 (minimum duration)</u> and its variations do not ensure that the critical safety items are adequately addressed because the sole criteria is duration and not content. For example, too many hours of training could be dedicated to aircraft furnishing or cabin configuration which is not very valuable for the competency of the student. Moreover the experience of the applicant is not adequately</p>

Headings	Sub Headings
	<p>taken into consideration for the first type training within a sub-category. Therefore safety objectives are unlikely to be met.</p> <p><u>Option 2 (fixed content or syllabus guidance)</u> and its variations do not ensure that the experience of the applicant is adequately taken into consideration for the first type training within a sub-category.</p> <p><u>Option 3 is probably valuable for the future where the TCH inputs are available.</u> This option is rejected because nowadays the TCH inputs are not available.</p> <p><u>Option 4</u> is the best option in terms of safety because it takes advantage of the positive impact from option 1 and option 2; it intentionally ensures that the applicant with no previous experience on the sub-category of aircraft (first type rating) gains sufficient experience and allow prerequisites not to be checked by the Part147 organisation.</p> <p><u>Option 5 (Type rating to be based on examination and/or competency check without training)</u> This option means that no more theoretical and practical training is required: the applicant has to demonstrate his competency through a type examination / assessment but this safety net is the unique one: in case of improper evaluation and because evaluation is based on sampling, it could lead to drastic consequences. Another argument against this option is that examination / assessment alone cannot ensure/cover that the person has gained full competence on the safety maintenance of an aircraft type. It could be that a person can have a type granted without any experience knowledge and practical training performed, where this is one major element to gain experience and to ensure that the person applies knowledge/experience and the right attitude safety related</p> <p><u>ii. Economic</u></p> <p><u>Foreword:</u> None of the options should have an economic impact if the current regulation were correctly implemented except for option 5. Additionally it must be said that whatever the option selected, the consequences will be the same for every applicant and will ensure fairness and equity.</p> <p><u>Option 4</u> It should be understood that for the existing approved training that are already of duration below the minimum duration, duration will have to be increased: the costs will be higher for the approved maintenance organisations and for self applicants because the student will have to</p>

Headings	Sub Headings
	<p>spend more time in training. Higher training duration will sustain the Part 147 business but will affect the costs of the training. Additionally, it will particularly impact new comers in the case of the first type training in the sub-category of aircraft as they will have to carry out 50% of the OJT list.</p> <p><u>Option 5:</u> mechanics will not apply anymore to training courses performed by Part 147 organisations and would prefer to sit directly to a type examination. The impact will be negative for the Part 147 organisations by loosing business and people will loose their jobs The consequences will be positive for the maintenance organisations and mechanics with significant experience.</p> <p>In case of option 3 (for the future where the TCH inputs are available) and option 4, all existing training courses will have to be re-visited and will be a burden for the Part 147 organisations and the competent authorities in charge of approving such courses (or MTOE).</p> <p><u>iii. Environmental</u> None</p> <p><u>iv. Social</u> The social impact is tied to the economic one. There should not be any social impact if the current regulation were correctly implemented. Where duration has to be increased, it may impede approved maintenance organisations to send an applicant to training organisations due to the increased costs of the training. Fewer B1/B2 licensed people with the relevant type rating could be available on the market because the human resources will be more adapted to the needs of properly qualified licensed engineers.</p> <p><u>With respect to option 5 (competency based training where training is not mandatory)</u>, mechanics with a significant experience would prefer to sit directly to a type examination, pass and may get more ratings endorsed on the AML: they will benefit from that system, will request for a better salary or will be encouraged to “go shopping”. The negative impact will be for newcomers.</p> <p><u>v. Other aviation requirements outside EASA scope, such as security, ATM, airports, etc.</u> There is no real parallel to be drawn with other regulation but JAR OPS1.250 proposes a similar concept: more training based on duration when the pilot has no previous experience.</p> <p><u>vi. Foreign comparable regulatory requirements</u> None</p>

Headings	Sub Headings
	<p><u>b. Equity and fairness</u> None</p>
<p>4. Summary and Final Assessment</p>	<p><u>a. Comparison of the positive and negative impacts for each option evaluated:</u></p> <p><u>Option 0</u> is rejected because it does not tackle the issue of standardisation: if it were selected, big variation in duration will remain throughout Europe. The situation will not be fair at all and no consistency will be achieved.</p> <p><u>Option 5</u> could lead to the same drawbacks when objectives and experience are not properly checked.</p> <p><u>Option 3</u> can not currently be implemented without the TCH inputs.</p> <p><u>Options 1, 2 and 4</u> will ensure fairness, equity and consistency.</p> <p><u>b. A summary of who would be affected by these impacts and issues of equity and fairness:</u></p> <p>The sectors of the EC regulated civil aviation community which will be affected are:</p> <ul style="list-style-type: none"> • Licence holders and maintenance staff • maintenance organisations • maintenance training organisations • NAAs <p><u>c. Final assessment and recommendation of a preferred option:</u></p> <p>The most consistent and cost effective way would be the type training course designed by the TC holder. This allows cutting the costs of the development of multiple training courses and ensures harmonisation as well as standardisation of course content, training techniques etc... The approval and the implementation of the training courses by the maintenance training providers under the supervision of the Member States / EASA will be simplified for the competent authorities. Unfortunately, a rulemaking effort was necessary because so far, such TCH elements were not available in order to standardise practices in this field.</p> <p>Pending the TCH inputs about the minimum training requirement for type training that will be binding in the future amendment of basic regulation EC1592/2002, the rulemaking group felt that:</p> <ul style="list-style-type: none"> • a minimum duration for the theoretical elements will be valuable; • it is worth adding a fixed content of practical elements to be carried out either in a Part 147 or an approved maintenance organisation: standardisation will be better with such a guidance

Headings	Sub Headings
	<p>table;</p> <ul style="list-style-type: none"> • gain of experience will be ensured through OJT for applicant with no previous experience <p>Such solution will constantly ensure fairness and equity down the road and this is why option 4 has been elected.</p> <p>Implementation of this option will result in:</p> <p>a) for Part-147 Maintenance Training Organisations, (all):</p> <ul style="list-style-type: none"> • Amendment of MTOE • Generation of Training Needs Analysis (TNA) for all courses • Develop and amend course material • Review of examination questions • Development of practical training schedules <p>b) for Part-145 / Part-M Maintenance Organisations, (if implemented):</p> <ul style="list-style-type: none"> • Amendment of MOE / MOM • Development of procedures for practical training/ OJT • Training and appointment of practical training/ OJT Assessors • Development of for practical training/ OJT schedules <p>c) for Competent Authorities:</p> <ul style="list-style-type: none"> • Review of existing procedures • Develop new procedures for the oversight of practical training/ OJT • Training of Surveyors/ Inspectors <p>d) for students:</p> <ul style="list-style-type: none"> • Formal use of logbook • Requirement for assessment of practical training <p>Therefore, the NPA encompasses an implementation period of 18 months.</p>