European Union Aviation Safety Agency

Notice of Proposed Amendment 2021-15

in accordance with
Articles 6(3), 7 and 8 ('Standard procedure': public consultation) of MB Decision No 18-2015

New air mobility

Continuing airworthiness (CAW) rules for electric and hybrid propulsion aircraft and other non-conventional aircraft

RMT.0731 (SUBTASK 1)

EXECUTIVE SUMMARY

The objective of this Notice of Proposed Amendment (NPA) is to close the gaps that currently exist in Regulation (EU) No 1321/2014, which pose compliance difficulties in relation to the management of manned aircraft that are not conventional or have a powerplant other than a piston engine or a turbine.

This NPA proposes to amend the different Annexes to Regulation (EU) No 1321/2014 in order to address the regulatory gaps that the Agency has identified regarding non-conventional aircraft (i.e. aircraft other than aeroplanes, rotorcraft, sailplanes, balloons or airships) or aeroplanes or rotorcraft with a powerplant other than a piston engine or turbine. Several of the regulatory gaps need to be addressed only due to the fact that some requirements of the rule are unnecessarily explicit in regard to the list of aircraft categories or powerplants considered, leading to blocking points that would be eliminated by considering a new aircraft category 'any other aircraft/powerplant'. Besides that, in the Part-66 licensing system, new training and experience requirements are proposed that would entitle maintenance certification rights for these aircraft. Finally, some alleviations that the rule permits, which were intended to apply for simple aircraft, are established in the rule using a piston engine as a discriminant of a simple aircraft, but this is no longer the case and therefore has also led to certain proposed regulatory changes in this NPA.

The proposed amendments are expected to maintain the same safety levels as regards the continuing airworthiness of non-conventional aircraft and will eliminate the need for the Member States (MSs) grant approvals for these aircraft by exemption.

Domain:	New technologies and concepts		
Related rules:	Regulation (EU) No 1321/2014 (the CAW Regulation) and the related AMC & GM		
Affected stakeholders:	national competent authorities (NCAs), organisations approved under Part-145, Part-147, Part-CAMO and Part-CAO, holders of licences issued under Part-66, type certificate holders (TCHs), and applicants for any of these approvals/licences/certificates		
Driver:	Safety	**Rulemaking group:**	No
Impact assessment:	Yes	**Rulemaking Procedure:**	Standard

EASA rulemaking procedure milestones

Start Terms of Reference	**Public consultation** (NPA)	**Proposal to the Commission** EASA Opinion	**Adoption by the Commission** Implementing Rules	**Decision** Certification Specifications, Acceptable Means of Compliance, Guidance Material
SubT 1: 9.9.2020	21.12.2021	2023	2024	2024

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1. About this NPA

1.1. How this NPA was developed

The European Union Aviation Safety Agency (EASA) developed this NPA in line with Regulation (EU) 2018/1139[1] (the 'Basic Regulation') and the Rulemaking Procedure[2]. This Rulemaking Task (RMT).0731 is included in the European Plan for Aviation Safety (EPAS) for 2021-2025[3]. The scope and timescales of the task were defined in the related Terms of Reference (ToR)[4].

EASA developed this NPA and discussed the main concepts contained in this proposal with stakeholder experts and its advisory bodies (ABs). It is hereby submitted to all interested parties for consultation in accordance with Articles 6(3), 7 and 8 of the Rulemaking Procedure[5].

The major milestones of this RMT are presented on the cover page.

1.2. How to comment on this NPA

Please submit your comments using the automated **Comment-Response Tool (CRT)** available at **http://hub.easa.europa.eu/crt/**[6].

The deadline for the submission of comments is **21.3.2022**.

1.3. The next steps

Following the public consultation, EASA will review all the comments received. Based on them, EASA will revise, if necessary, the proposed amendments to the CAW Regulation[7] and issue an opinion. A summary of the comments received will be provided in the Explanatory Note to the opinion.

The opinion will be submitted to the European Commission, which will decide whether to amend the CAW Regulation based on the opinion.

If the European Commission decides to amend the Regulation, EASA will issue a decision to amend the related acceptable means of compliance (AMC) & guidance material (GM) to support the implementation of the amendments to the Regulation.

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1 Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1) (https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1535612134845&uri=CELEX:32018R1139).

2 EASA is bound to follow a structured rulemaking process as required by Article 115(1) of Regulation (EU) 2018/1139. Such a process has been adopted by the EASA Management Board (MB) and is referred to as the 'Rulemaking Procedure'. See MB Decision No 18-2015 of 15 December 2015 replacing Decision 01/2012 concerning the procedure to be applied by EASA for the issuing of opinions, certification specifications and guidance material (http://www.easa.europa.eu/the-agency/management-board/decisions/easa-mb-decision-18-2015-rulemaking-procedure).

3 https://www.easa.europa.eu/downloads/123563/en

4 https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-rmt0731

5 http://www.easa.europa.eu/the-agency/management-board/decisions/easa-mb-decision-18-2015-rulemaking-procedure

6 In case of technical problems, please send an email to crt@easa.europa.eu with a short description.

7 Commission Regulation (EU) No 1321/2014 of 26 November 2014 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 362, 17.12.2014, p. 1) (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014R1321&qid=1637597331895).

The individual comments received on this NPA and the EASA responses to them will be reflected in a comment-response document (CRD), which will be published on the EASA website[8].

8 https://www.easa.europa.eu/document-library/comment-response-documents

2. In summary — why and what

2.1. Why we need to amend the rules — issue/rationale

The objective of this NPA is to propose a regulatory amendment to close the gaps that currently exist in the CAW Regulation, which pose compliance difficulties in relation to the management of manned aircraft which are not conventional or have a powerplant other than a piston engine or a turbine. Some of the recent industry projects for new aircraft fall into the non-conventional category (aircraft and/or powerplant).

The difficulties for compliance are derived from the fact that the requirements are sometimes prescriptive when establishing requirements in respect of certain aircraft (called 'conventional aircraft' in this document, i.e. aeroplane, helicopter, sailplane, balloon and airship), while making no reference whatsoever to the rest of aircraft. As a consequence, the rules are not fit for non-conventional aircraft. The situation is similar as regards the aircraft powerplant as in most cases, the rule considers only piston engine and turbine.

Also, the definition of complex motor-powered aircraft (CMPA), which is used as a discriminant to identify aircraft subject to Part-M, includes 'tilt rotor aircraft'. A definition of tilt rotor aircraft is given in the proposed Article 3. Being a CMPA implies that all tilt rotor aircraft are subject to Part-M.

A different situation arises in certain scenarios for which the rule contains alleviations intended to be applicable for small aircraft. Often, these alleviations are introduced by referring to '… in the case of piston-engine aircraft …' or similarly. This scenario does not cater for other simple aircraft that may not have a piston-engine powerplant and that could be also entitled to the same alleviation, resulting in an unfair situation to them. A similar case to this one is, for instance, the definition of the aircraft subject to Part-ML.

Lastly, the licensing system of Part-66 caters again, for certain privileges, only for conventional aircraft or aircraft with piston engine/turbine as powerplant (conventional powerplant). Different licence categories are established for each of those aircraft. For non-conventional aircraft, there are no defined aircraft maintenance licence (AML) subcategories and therefore, the current subcategories do not permit the release to service of certain maintenance on aircraft that are not addressed in any of the existing subcategories/privileges — for more information on this, please refer to Chapter 4.

The first aircraft for which it was identified that the rules were not totally suitable (existing regulatory gap) was the electric variant of Pipistrel Virus SW121, a small aeroplane with an electric battery and engine as powerplant, that obtained an EASA Type Certificate for the electric variant (Virus SW 128) in June 2020. For this aircraft, some Members States granted an exemption in accordance with Article 71 'Flexibility provisions' of the Basic Regulation, allowing the users to derogate from compliance with certain rule requirements while imposing on them some mitigating measures tailored for an electric aeroplane.

Stakeholders are invited to provide their views on whether small tilt rotor aircraft conducting non-commercial operations should be subject to Part-ML.

2.2. What we want to achieve — objectives

The overall objectives of the EASA system are defined in Article 1 of the Basic Regulation. The proposals contained in this NPA would contribute to achieving the overall objectives by addressing the issues described in Section 2.1.

The specific objectives of this RMT are to establish the necessary legal framework:

— to ensure the continuing airworthiness of electric and hybrid propulsion aircraft;

— to embrace non-conventional aircraft and aircraft with non-conventional powerplants, where some regulatory gaps have been identified;

— more generally, to support the development of new technologies;

— to ensure smooth and flexible transitioning of AML holders in the current subcategories to obtain certification privileges for the maintenance of non-conventional aircraft; and

— to support the competitiveness of the EU industry.

The above-mentioned legal framework is expected to provide a level playing field while maintaining a high uniform level of civil aviation safety in the Union.

2.3. How we want to achieve it — overview of the proposed amendments

Where the rule is explicit on certain aircraft or powerplant, but it does not take into consideration non-conventional aircraft or aircraft with non-conventional powerplants — for instance, when defining permitted ratings for organisation approvals — the proposal is to amend the rule to also refer to these aircraft/powerplants. This proposal would not have any impact since the applicable requirements would not be specific for them.

Secondly, EASA has assessed the existing alleviations in the requirements applicable for piston-engine aircraft and considered whether such alleviations should be expanded to other small/simple aircraft with other powerplants due to their lower risk. Certain rule changes are proposed accordingly.

Also, the proposal aims to consistently use the terms ‘helicopter’ and ‘rotorcraft’ across the regulation, by mainly using this second term except in some areas (e.g. dedicated AMC) which are only adequate for helicopters. Part-66 licences in the category B1 are also affected by this terminology misalignment and the NPA proposes that the related licence (sub)categories are applicable to ‘rotorcraft’, assuming that the related licences already issued can be extended to rotorcraft at time of their next renewal without further action (the regulatory transitioning process is not defined in the NPA), and slightly amending the path for obtaining new rotorcraft licences.

Lastly, in regard to the maintenance licensing system (Part-66), this NPA proposes amendments to Part-66 that would permit licence holders to obtain certification privileges for the release of maintenance of conventional aircraft with an electrical powerplant and of any non-conventional aircraft. Two different strategies are proposed: one for aeroplanes and rotorcraft with an electrical powerplant and another one for non-conventional aircraft. See Section 4.3. for more details on this.

Aiming to attain the above, there is also the intention to not impact the applicable provisions for the aircraft already considered by the rules.

Note: Considering that, as per Article 4(4) of the CAW Regulation, organisations approved in accordance with Subpart F or Subpart G of Annex I (Part-M) of this Regulation will cease to exist after

24 March 2022, this NPA does not propose changes to these Subparts or any other point that only affects these Subparts.

Note: NPA 2020-12 proposed amendments to Part-66, including provisions for an AML suitable for electrical aircraft. NPA 2020-12 was published for comments by stakeholders, which are currently being reviewed by the Agency. With the present NPA, EASA is consulting again on such AML for aeroplanes and rotorcraft with an electrical powerplant, considering the reactions to this topic received during the consultation of NPA 2020-12 and later inputs from the ABs.

2.4. What are the expected benefits and drawbacks of the proposed amendments

The expected benefits and drawbacks of the proposed amendments can be grouped into three main topics and are summarised below.

Point being amended	***Benefits***	***Drawbacks***
Requirements for which aircraft categories are explicitly mentioned but contain no different technical requirements among the different aircraft categories considered	Legal certainty	None
Expanding alleviations to simple aircraft with a powerplant other than piston engine	Alleviations do not apply based on a particular powerplant; instead, they apply based on more fair criteria	None
Process to acquire maintenance certification privileges/Part-66	See full description in Chapter 4 'Impact assessment'.	

In order to adapt the Part-66 requirements to address the issue in consideration of the objectives, the following options have been considered in the impact assessment:

— Option 0 (No policy change)

— Option 1 (new basic knowledge): Amend Part-66 by establishing new AML privileges for the certification of maintenance of non-conventional aircraft or aircraft with non-conventional powerplants. The new privileges would be granted to personnel having followed training on new basic modules defined by TC applicants of non-conventional aircraft to address their specificities.

— Option 2 (type rating endorsement): Amend Part-66 by allowing the endorsement of an AML corresponding to one of the existing subcategories (i.e. for a conventional aircraft) with a non-conventional aircraft type rating (syllabus defined by the TC applicant), without the aircraft belonging to the scope of the licence. The same approach would be taken for aircraft with non-conventional powerplants.

After assessing the impact of these options, Option 2 is preferred since it has a higher positive social impact and provides higher economic advantages while maintaining the current safety level.

For more information, please refer to Chapter 4.

3. Proposed amendments and rationale

The amendment is arranged to show deleted, new or amended, and unchanged text as follows:

— deleted text is ~~struck through~~;

— new or amended text is highlighted in blue;

— an ellipsis '[…]' indicates that the rest of the text is unchanged.

Where necessary, the rationale is provided in *blue italics*.

Note: The proposed text shows amendments to the officially adopted text. In this respect, the amendments to Part-66, as proposed through NPA 2020-12, have not been taken into consideration.

3.1. Draft regulation (draft EASA opinion) and draft acceptable means of compliance and guidance material (draft EASA decision)

Commission Regulation (EU) No 1321/2014 and the Agency Executive Director Decisions 2015/029/R[9], 2019/009/R[10] and 2020/002/R[11] are amended as follows:

[…]

COVER REGULATION

[…]

Article 2 Definitions

[…]

(s) 'flying display' means 'flying display' as defined in Article 2(11) of Regulation (EU) No 965/2012;~~.~~

(t) 'aeroplane' means an engine-driven fixed-wing aircraft heavier than air that is supported in flight by the dynamic reaction of the air against its wings during all phases of flight;

(u) 'rotorcraft' means a heavier-than-air aircraft that depends principally for its support in all phases of flight on the lift generated by one or more rotors with substantially vertical axes.

(v) 'tilt rotor aircraft' means an aircraft with one or more rotors that can tilt during flight and which provides substantial lift or thrust depending on the phase of flight.

Rationale: *The proposal regarding the suitable Part-66 licence subcategories for certifying staff requires certainty as regards the aircraft for which a licence subcategory is adequate. The establishment of certain definitions is therefore required. The proposed definitions take consideration of the syllabus covered with the basic knowledge in Part-66. Also certainty is required to establish which aircraft are subject to Part-M or Part-ML, and therefore the definitions of the categories of aircraft being complex motor-powered aircraft are proposed for the purpose of the CAW Regulation.*

9 https://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2015029r
10 https://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2019009r
11 https://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2020002r

Article 3 Continuing airworthiness requirements

[…]

2. The requirements of Annex Vb (Part-ML) shall apply to the following other than complex motor-powered aircraft:

(a) aeroplanes of 2 730 kg maximum take-off mass or less;

(b) rotorcraft of 1 200 kg maximum take-off mass or less, certified for a maximum of up to four ~~4~~ occupants;

(c) other ELA2 aircraft~~;~~.

(d) aircraft other than aeroplanes, rotorcraft, sailplanes, balloons and airships with a MTOM of:

(i) 1 200 kg or less if they can maintain zero horizontal speed, or

(ii) 2 730 kg or less for other than those in (i).

Where an aircraft referred to points (a), (b), (c) and ~~(c)~~(d) of the first subparagraph is listed in the air operator certificate of an air carrier licensed in accordance with Regulation (EC) No 1008/2008, the requirements of Annex I (Part-M) shall apply.

3. In order to be listed in the air operator certificate of an air carrier licensed in accordance with Regulation (EC) No 1008/2008, an aircraft referred to in points (a), (b), (c) and ~~(c)~~(d) of the first subparagraph of paragraph 2 shall comply with all of the following requirements:

(a) its aircraft maintenance programme has been approved by the competent authority in accordance with point M.A.302 of Annex I (Part-M);

(b) due maintenance required by the maintenance programme referred to in point (a) has been performed and certified in accordance with point 145.A.48 and 145.A.50 of Annex II (Part-145);

(c) an airworthiness review has been performed and a new airworthiness review certificate has been issued in accordance with point M.A.901 of Annex I (Part-M).

4. […]

Rationale: *Certain small non-conventional aircraft should also be subject to Part-ML (instead of Part-M). Therefore, Article 3.2.(d) is proposed to include these aircraft to the ones for which the requirements Part-ML apply, establishing for them similar discriminants as the ones already existing for other Part-ML aircraft.*

GM Articles 3 and 4, M.A.201 and ML.A.201 Continuing airworthiness requirements and approvals for organisations involved in the continuing airworthiness

In accordance with Articles 3 and 4, as well as M.A.201 and ML.A.201, the following table provides a summary of the applicability of the Annexes to Regulation (EU) No 1321/2014 related to continuing airworthiness requirements and organisations involved therein.

		Non-licensed air carrier						Licensed air carrier[12]	
		Non-commercial			Commercial[13]				
		Both conditions: Non-CMPA and non-'UHA' ~~Non-CMPA~~		Either CMPA[14] or UHA[15] ~~CMPA~~	Both conditions: Non-CMPA and non-'UHA' ~~Non-CMPA~~		Either CMPA or UHA	~~Non-CMPA~~	~~CMPA[16]~~
		'Light'[17]	Non-'Light'		'Light'	Non-'Light'			
Part-M (Annex I)		N/A	Part-M mandatory		N/A	Part-M mandatory			
Part-ML (Annex Vb)		Part-ML mandatory	N/A		Part-ML mandatory	N/A			
Part-CAMO (Annex Vc)		Individual CAM[18] or CAO-CAM or CAMO		Part-CAMO mandatory	CAO-CAM[19] or CAMO		Part-CAMO mandatory		
Part-CAO (Annex Vd)	for CA management (CAO-CAM)			N/A			N/A		
	for maintenance (CAO-M)	Individual maintenance[20] or CAO-M[21]		N/A	CAO-M or Part-145		N/A		

[12] Air carrier licensed in accordance with Regulation (EC) No 1008/2008.

[13] Commercial = balloon operated under Subpart-ADD of Part-BOP or sailplane operated under Subpart-DEC of Part-SAO or other aircraft, not operated under Part-NCO; includes commercial ATO and commercial DTO.

[14] CMPA = complex motor-powered aircraft, ref. Article 3(j) of Regulation (EC) 216/2008.

[15] UHA (unconventional heavy aircraft; not formal denomination) = aircraft with MTOM of 3 175 kg or more or certified for more than 10 occupants, other than aeroplanes, helicopters, airships and balloons.

[16] ~~CMPA = Complex motor-powered aircraft, ref. Article 3(j) of Regulation (EC) No 216/2008.~~

[17] 'Light' a/c (not formal denomination) = non-CMPA which are: a~~A~~eroplanes up to 2 730 kg MTOM, rotorcraft up to 1 200 kg MTOM / max four ~~4~~ occupants, ~~and~~ other ELA2 aircraft, or aircraft other than aeroplanes, rotorcraft, sailplanes, balloons and airships with a certified MTOM of 1 200 kg or less if they can maintain zero horizontal speed, or 2 730 kg or less for other.

[18] Individual CAM (not formal denomination) = continuing airworthiness of the a/c managed by the owner under its own responsibility.

[19] CAO-CAM (not formal denomination) = Part-CAO organisation with continuing airworthiness management privilege.

[20] Individual maintenance (not formal denomination) = maintenance released by pilot-owner or independent certifying staff.

[21] CAO-M (not formal denomination) = Part-CAO organisation with maintenance privilege.

Part-145 (Annex II)	or Part-145	Part-145 mandatory		Part-145 mandatory

Rationale: *Table updated to be aligned with the proposed amendment to Article 3, M.A.201 and ML.A.201.*

ANNEX I (PART-M)

[…]

M.A.201 Responsibilities

[…]

(f) For complex motor-powered aircraft and aircraft with MTOM of 3 175 kg or more or certified for more than 10 occupants, other than aeroplanes, helicopters, airships and balloons, and which are used for commercial specialised operations, for CAT operations other than those performed by air carriers licensed in accordance with Regulation (EC) No 1008/2008 or by commercial ~~A~~approved ~~T~~training ~~O~~organisations (~~'~~ATOs~~'~~) and ~~D~~declared ~~T~~training ~~O~~organisations (~~'~~DTOs~~'~~) referred to in Article 10a of Regulation (EU) No 1178/2011[22], the operator shall ensure that:

(1) no flight takes place unless the conditions set out in point (a) are met;

(2) the tasks associated with continuing airworthiness are performed by a CAMO approved in accordance with Annex Vc (Part-CAMO) or Subpart G of this Annex (Part-M); when the operator is not a CAMO approved in accordance with Annex Vc (Part-CAMO) or Subpart G of this Annex (Part-M), it shall conclude a written contract as regards the performance of those tasks in accordance with Appendix I to this Annex with an organisation approved in accordance with Annex Vc (Part-CAMO) or Subpart G of this Annex (Part-M);

(3) the CAMO referred to in point (2) is approved in accordance with Annex II (Part-145) as an organisation to qualify for the issue of an approval for the maintenance of aircraft and of components for installation thereon, or that CAMO has concluded a written contract in accordance with point CAMO.A.315(c) of Annex Vc (Part-CAMO) or point M.A.708(c) of this Annex (Part-M) with organisations approved in accordance with Annex II (Part-145).

(g) For complex motor-powered aircraft and aircraft with MTOM of 3 175 kg or more or certified for more than 10 occupants, other than aeroplanes, helicopters, airships and balloons, and which are not included in points (e) and (f), the owner shall ensure that:

(1) no flight takes place unless the conditions set out in point (a) are met;

(2) the tasks associated with continuing airworthiness are performed by a CAMO approved in accordance with Annex Vc (Part-CAMO) or Subpart G of this Annex (Part-M); when the owner is not a CAMO approved in accordance with Annex Vc (Part-CAMO) or Subpart G of this Annex (Part-M), it shall conclude a written contract as regards the performance of those tasks in accordance with Appendix I to this Annex with an organisation approved in accordance with Annex Vc (Part-CAMO) or Subpart G of this Annex (Part-M);

(3) the CAMO referred to in point (2) is approved in accordance with Annex II (Part-145) as an organisation to qualify for the issue of an approval for the maintenance of aircraft and of components for installation thereon, or that CAMO has concluded a written contract in accordance with point CAMO.A.315(c) of Annex Vc (Part-CAMO) or point M.A.708(c) of this Annex (Part-M) with organisations approved in accordance with Annex II (Part-145).

[22] Commission Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 311, 25.11.2011, p. 1).

(h) For aircraft other than those referred to in point (f) (regardless of their use), which are ~~complex motor-powered aircraft~~ used for commercial specialised operations or for CAT operations other than those performed by air carriers licensed in accordance with Regulation (EC) No 1008/2008, or by commercial ATOs and commercial DTOs referred to in Article 10a of Regulation (EU) No 1178/2011, the operator shall ensure that:

(1) no flight takes place unless the conditions set out in point (a) are met;

(2) the tasks associated with continuing airworthiness are performed by a CAMO approved in accordance with Annex Vc (Part-CAMO) or Subpart G of this Annex (Part-M), or a combined airworthiness organisation ('CAO') approved in accordance with Annex Vd (Part-CAO); when the operator is not a CAMO approved in accordance with Annex Vc (Part-CAMO) or Subpart G of this Annex (Part-M), or a CAO approved in accordance with Annex Vd (Part-CAO), it shall conclude a written contract in accordance with Appendix I to this Annex with a CAMO approved in accordance with Annex Vc (Part-CAMO) or Subpart G of this Annex (Part-M), or a CAO approved in accordance with Annex Vd (Part-CAO);

(3) the CAMO or CAO referred to in point (2) is approved in accordance with Annex II (Part-145) or in accordance with Subpart F of this Annex (Part-M) or as a CAO with maintenance privileges, or that CAMO or CAO has concluded a written contract with organisations approved in accordance with Annex II (Part-145) or in accordance with Subpart F of this Annex (Part-M) or Annex Vd (Part-CAO) with maintenance privileges.

(i) For aircraft other those referred to in (f) (regardless of their use), which are ~~complex motor-powered aircraft~~ not included in points (e) and (h), or used for limited operations, the owner shall ensure that flight takes place only if the conditions set out in point (a) are met. To that end, the owner shall:

(1) attribute the continuing airworthiness tasks referred to in point M.A.301 to a CAMO or CAO through a written contract concluded in accordance with Appendix I; or

(2) carry out those tasks ~~himself~~themselves; or

(3) carry out those tasks ~~himself~~themselves except the tasks of the development of and the processing of the approval of the AMP, only if those tasks are performed by a CAMO or CAO through a limited contract concluded in accordance with point M.A.302.

[…]

***Rationale**: The requirements on operators/owners of complex motor-powered aircraft in points M.A.201 (f) and (g) are extended to operators/owners of non-conventional aircraft which had not been considered before, establishing discriminants comparable to the existing ones for complex motor-powered aircraft. A similar approach has been taken for M.A.201 (h) and (i).*

GM M.A.201 Responsibilities

Quick summary table

Select your type of operation and your category of aircraft	Complex motor-powered aircraft, OR aircraft with MTOM of 3 175 kg or more or certified for more than 10 occupants, other than aeroplanes, helicopters, airships and balloons	Other ~~than complex motor-powered~~ aircraft (aircraft subject to Part-ML are excluded here)

			Is a CAMO or CAO required for the management of continuing airworthiness?	Is maintenance by a maintenance organisation required?	Is a CAMO or CAO required for the management of continuing airworthiness?	Is maintenance by a maintenance organisation required?
Commercial operations	CAT	Air carriers licensed in accordance with Regulation (EC) No 1008/2008	Yes, a CAMO is required, and it shall be part of the AOC (M.A.201(e))	Yes, maintenance by a Part-145 organisation is required (M.A.201(e))	Yes, a CAMO is required, and it shall be part of the AOC (M.A.201(e))	Yes, maintenance by a Part-145 organisation is required (M.A.201(e))
		CAT other than air carriers licensed in accordance with Regulation (EC) No 1008/2008	Yes, a CAMO is required (M.A.201(f))	Yes, maintenance by a Part-145 organisation is required (M.A.201(f))	Yes, a CAMO or CAO is required (M.A.201(h))	Yes, maintenance by a Subpart F, by a Part-CAO or by a Part-145 organisation is required (M.A.201(h))
	Commercial operations other than CAT	Commercial specialised operations	Yes, a CAMO is required (M.A.201(f))	Yes, maintenance by a Part-145 organisation is required (M.A.201(f))	Yes, a CAMO or CAO is required (M.A.201(h))	Yes, maintenance by a Subpart F, by a Part-CAO or by a Part-145 organisation is required (M.A.201(h))
		Commercial training organisations (ATOs)	Yes, a CAMO is required (M.A.201(f))	Yes, maintenance by a Part-145 organisation is required (M.A.201(f))	Yes, a CAMO or CAO is required (M.A.201(h))	Yes, maintenance by a Subpart F, by a Part-CAO or by a Part-145 organisation is required (M.A.201(h))
Other than commercial operations including limited operations as defined in Article 2(p)			Yes, a CAMO is required (M.A.201(g))	Yes, maintenance by a Part-145 organisation is required (M.A.201(g))	No, a CAMO or CAO is not required (M.A.201(i))	No, maintenance by a Subpart F, by a Part-CAO or Part-145 organisation is not always required (M.A.201(i))

[…]

***Rationale**: Table updated to be aligned with the proposed amendment to M.A.201.*

AMC M.B.301(b) Maintenance programme

1. […]

6. In the case of aircraft used by air carriers licensed in accordance with Regulation (EC) No 1008/2008 or complex motor-powered aircraft or aircraft with MTOM of 3 175 kg or more or certified for more than 10 occupants, other than aeroplanes, helicopters, airships and balloons, the development of the aircraft maintenance programme is dependent upon sufficient satisfactory in-service experience which has been properly processed. In general, the task being

considered for escalation beyond the MRB limits should have been satisfactorily repeated at the existing frequency several times before being proposed for escalation. Appendix I to AMC M.A.302 and M.B.301(b) gives further information.

7. […]

***Rationale**: M.B.301(b)(6) updated to be aligned with the proposed amendment to M.A.201 in order to impose the maintenance programme requirements of non-conventional aircraft similarly to those for CMPA.*

Appendix VII — Complex Maintenance Tasks

[…]

(d) the disturbing of individual parts of units which are supplied as bench tested units, except for the replacement or adjustment of items normally replaceable or adjustable in service.

3b. the performance of maintenance on the powerplant that would require disassembly of engine(s), main batteries or fuel cell(s), other than removing them from the aircraft and reinstalling them back.

3c the performance of maintenance on high-pressure reservoirs and components belonging to high-pressure lines/systems related to the powerplant.

4. The balancing of a propeller, except:

[…]

***Rationale:** Complex maintenance tasks are amended taking into account the new aircraft being considered.*

AMC to Appendix VIII — Limited Pilot Owner Maintenance

1. […]

3. Therefore, the following lists are considered to be the representative scope of limited Pilot-owner maintenance referred to in M.A.803 and Appendix VIII:

– Part A applies to piston-engine aeroplanes;

– Part B applies to piston-engine rotorcraft;

– Part C applies to sailplanes and powered (piston engine) sailplanes;

– Part D applies to balloons and airships.

4. […]

***Rationale**: Text adapted since the cases covered are only for piston-engine aircraft and to be explicit that Parts A to C of this AMC refer to piston-engine aircraft.*

ANNEX II (PART-145)

[…]

GM 145.A.10 Scope

This Guidance Material (GM) provides guidance on how the smallest organisations satisfy the intent of Part-145:

1. […]

3. Where only one person is employed (in fact having the certifying function and others), these organisations approved under Part-145 may use the alternatives provided in point 3.1 limited to the scope mentioned in point (m) of Appendix II~~following:~~

~~Class A2 Base and Line maintenance of aeroplanes of 5 700 kg and below (piston engines only).~~

~~Class A3 Base and Line maintenance of single-engined helicopters of less than 3 175 kg.~~

~~Class A4 Aircraft other than A1, A2 and A3~~

~~Class B2 Piston engines with maximum output of less than 450 HP.~~

~~Class C Components.~~

~~Class D1 Non-destructive Testing.~~

3.1. […]

***Rationale**: Text adapted to refer to Appendix II, point (m) (also proposed for amendment, see below) that contains the scope for one-man organisations.*

AMC 145.A.20 Terms of approval

The following table identifies the ATA Specification 2200 chapter for the category C component rating. If the maintenance manual (or equivalent document) does not follow the ATA Chapters, the corresponding subjects still apply to the applicable C rating.

CLASS	RATING	ATA CHAPTERS
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs	C1 Air Cond & Press	21
	C2 Auto Flight	22
	C3 Comms and Nav	23 - 34
	C4 Doors - Hatches	52
	C5 Electrical Power & Lights	24 – 33 - 85
	C6 Equipment	25 - 38 - 44 – 45 - 50
	C7 Engine – APU	49 - 71 - 72 - 73 - 74 - 75 - 76 - 77 - 78 - 79 - 80 - 81 - 82 - 83
	C8 Flight Controls	27 - 55 - 57.40 - 57.50 -57.60 - 57.70
	C9 Fuel	28 - 47
	C10 Rotorcraft~~Helicopters~~ - Rotors	62 - 64 - 66 - 67
	C11 Rotorcraft~~Helicopter~~ - Trans	63 - 65
	C12 Hydraulic Power	29
	C13 Indicating/Recording Systems	31 – 42 - 46

	C14 Landing Gear	32
	C15 Oxygen	35
	C16 Propellers	61
	C17 Pneumatic & Vacuum	36 - 37
	C18 Protection ice/rain/fire	26 - 30
	C19 Windows	56
	C20 Structural	53 - 54 - 57.10 - 57.20 - 57.30
	C21 Water Ballast	41
	C22 Propulsion Augmentation	84
	C23 Other	

***Rationale**: References to 'helicopter' are changed to 'rotorcraft'. Addition of new row, with C23 Other, to align with Appendix II.*

AMC3 145.A.30(e) Personnel requirements

When relevant for the organisation scope, additional~~Additional~~ training ~~in~~ on fuel tank safety as well as on the associated inspection standards and maintenance procedures should be required for maintenance organisations' technical personnel, especially technical personnel involved in the compliance of CDCCL tasks.

EASA guidance is provided for training to maintenance organisation personnel in Appendix IV to AMC 145.A.30(e) and 145.B.10(3).

***Rationale**: As fuel tank safety training would not be required for all aircraft considered (e.g. aircraft without fuel tanks), the necessary text change is proposed.*

Appendix II — Class and rating system for the terms of approval of Part-145 maintenance organisations

(a) […]

(l) Table

CLASS	RATING	LIMITATION	BASE	LINE
AIRCRAFT	A1 Aeroplanes above 5 700 kg maximum take-off mass (MTOM)	[…]	[…]	[…]
	A2 Aeroplanes of 5 700 kg MTOM and below	[…]	[…]	[…]
	A3 Rotorcraft~~Helicopters~~	[Shall state the rotorcraft~~helicopter~~ manufacturer or the group or series or type and/or the maintenance task(s)] *Example: Robinson R44*	[…]	[…]

CLASS	RATING	LIMITATION	BASE	LINE
		State whether the issuing of airworthiness review certificates is authorised (only possible for aircraft covered by Annex Vb (Part-ML))		
	A4 Aircraft other than A1, A2 and A3	[Shall state aircraft category (sailplane, balloon, airship, etc.) when possible, the manufacturer or group or series or type and/or the maintenance task(s)] State whether the issue of airworthiness review certificates is authorised (only possible for aircraft covered by Annex Vb (Part-ML))	[…]	[…]
ENGINES	B1 Turbine	[…]		
	B2 Piston	[…]		
	B3 APU	[…]		
	B4 Engines other than B1, B2 and B3	[Shall state the engine manufacturer or group or series or type and/or the maintenance task(s)]		
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs	C1 Air Cond & Press	[…]		
	C2 Auto Flight			
	C3 Comms and Nav			
	C4 Doors — Hatches			
	C5 Electrical Power & Lights			
	C6 Equipment			
	C7 Engine — APU			
	C8 Flight Controls			
	C9 Fuel			
	C10 Rotorcraft~~Helicopters~~ — Rotors			
	C11 Rotorcraft~~Helicopters~~ — Trans			
	C12 Hydraulic Power			
	C13 Indicating — recording system			
	C14 Landing Gear			

CLASS	RATING	LIMITATION	BASE	LINE
	C15 Oxygen			
	C16 Propellers			
	C17 Pneumatic & Vacuum			
	C18 Protection ice/rain/fire			
	C19 Windows			
	C20 Structural			
	C21 Water ballast			
	C22 Propulsion Augmentation			
	C23 Other			
SPECIALISED SERVICES	D1 Non-Destructive Testing	[…]		
(*) Delete as appropriate				

(m) *A maintenance organisation which employs only one person* to both plan and carry out all its maintenance activities can only hold limited terms of approval. The maximum permissible limits are as follows:

CLASS	RATING	LIMITATION
AIRCRAFT	A2	~~PISTON ENGINE AEROPLANE OF 5700 KG MTOM OR LESS~~ AEROPLANES of 5700 KG MTOM OR LESS WITH PISTON ENGINE or ELECTRICAL POWERPLANT WITH NO FUEL CELL
AIRCRAFT	A3	~~SINGLE PISTON ENGINE HELICOPTER OF 3175 KG MTOM OR LESS~~ ROTORCRAFT of 3 175 KG MTOM OR LESS WITH SINGLE-PISTON ENGINE or ELECTRICAL POWERPLANT WITH NO FUEL CELL
AIRCRAFT	A4	~~NO LIMITATION~~ AIRCRAFT of 3 175 KG MTOM OR LESS WITH SINGLE-PISTON ENGINE or ELECTRICAL POWERPLANT WITH NO FUEL CELL
ENGINES	B2	LESS THAN 450 HP
ENGINES	B4	ELECTRICAL ENGINE
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs~~.~~	C1 TO C23~~C22~~	AS PER CAPABILITY LIST
SPECIALISED SERVICES	D1 NDT	NDT METHOD(S) TO BE SPECIFIED

It should be noted that such an organisation may be further limited by the competent authority in the scope of approval depending on the capabilities of the particular organisation.

***Rationale**: Class and rating system for Part-145 organisations adapted to rotorcraft, non-conventional aircraft, all engines, and other components. Adaptation of the scope of one-man organisations, as these organisations should not perform maintenance of aircraft with a fuel cell due to high safety precautions required for the maintenance of the associated system/components.*

[…]

ANNEX III (PART-66)

[…]

66.1 Competent authority

[…]

(b) The Agency shall be responsible for defining:

1. the list of aircraft types; ~~and~~
2. what airframe/engine combinations are included in each particular aircraft type rating~~.~~; and
3. the appropriate licence(s') subcategory/categories that permit(s) its (their) holder to issue certificates of release to service after maintenance in respect of any aircraft type that is not covered by any licence subcategory of point 1 of point 66.A.3 and point 66.A.20 privileges.

[…]

***Rationale**: This amendment assigns EASA the responsibility to define which is the adequate licence (sub)category for each non-conventional aircraft.*

66.A.3 Licence categories and subcategories

1. Aircraft maintenance licences include the following categories and, where applicable, subcategories and system ratings:

(a) Category A, divided into the following subcategories:

[…]

– A3 Rotorcraft~~Helicopters~~ Turbine;

– A4 Rotorcraft~~Helicopters~~ Piston.

(b) Category B1, divided into the following subcategories:

[…]

– B1.3 Rotorcraft~~Helicopters~~ Turbine;

– B1.4 Rotorcraft~~Helicopters~~ Piston~~.~~;

– B1.E Aeroplanes/rotorcraft with an electrical powerplant.

[…]

(g) Category C

The C licence is applicable to aeroplanes and rotorcraft~~helicopters~~.

2. The appropriate licence (sub)category(ies)for the aircraft maintenance licence for an aircraft type and related powerplant not covered in points (a), (b), (f) and (g) of point 1., shall be the one that the Agency consider(s) *adequate* among those in point 1. and which is established in the operational suitability data established in accordance with Regulation (EU) No 748/2012, taking into consideration a report from the applicant for or holder of the type certificate that assesses the architecture and systems of the aircraft and the syllabus of the basic knowledge modules and knowledge levels relevant for each subcategory referred to in point 1.

***Rationale**: This amendment assigns EASA the responsibility to define which is the 'adequate' licence (sub)category for each non-conventional aircraft. In addition, the text referring to helicopters is expanded to rotorcraft, and a new licence subcategory — based on B1 — is created for electric aeroplane and rotorcraft.*

66.A.5 Aircraft groups

[…]

~~(1) Group 1: complex motor-powered aircraft, helicopters with multiple engines, aeroplanes with maximum certified operating altitude exceeding FL290, aircraft equipped with fly-by-wire systems, gas airships other than ELA2 and other aircraft requiring an aircraft type rating when defined as such by the Agency.~~

(1) (i) Group 1 is composed of:

(A) an aeroplane certificated for a MTOM exceeding 5 700 kg, or certificated for a maximum passenger seating configuration of more than 19, or certificated for operation with a minimum crew of at least two pilots, or equipped with (one) turbojet engine(s) or more than one turboprop engine, or pressurised and with maximum certified operating altitude exceeding FL290 or with a powerplant not being piston/turbine/electrical;

(B) a rotorcraft certificated for a MTOM exceeding 3 175 kg, or for a maximum passenger seating configuration of more than nine, or for operation with a minimum crew of at least two pilots, or with multiple piston/turbine engines, or with a powerplant not being piston/turbine/electrical;

(C) gas airships other than ELA2;

(D) aircraft other than aeroplanes, rotorcraft, sailplanes, balloons and airships; and

(E) [reserved]

(F) aircraft requiring an aircraft type rating endorsement in respect of this Part, when defined as such by the Agency

(ii) The Agency may decide to classify into Group 2, Group 3 ~~or~~ Group 4 or Group E, as appropriate, an aircraft which meets the conditions set out in ~~the first subparagraph~~ point (i), if it considers that the lower complexity of the particular aircraft justifies so.

(2) Group 2: aircraft other than those in Group 1 belonging to the following subgroups:

(i) subgroup 2a:

– single-turboprop engine aeroplanes,

– those turbojet and multiple-turboprop aeroplanes classified by the Agency in this subgroup because of their lower complexity.

(ii) subgroup 2b:

– single-turbine engine rotorcraft~~helicopters~~,

– those multiple-turbine engine rotorcraft~~helicopters~~ classified by the Agency in this subgroup because of their lower complexity.

(iii) subgroup 2c:

– single-piston-engine rotorcraft~~helicopters~~,

– those multiple-piston-engine rotorcraft~~helicopters~~ classified by the Agency in this subgroup because of their lower complexity.

(3) Group 3: piston-engine aeroplanes other than those in Group 1.

(4) Group 4: sailplanes, powered sailplanes, balloons and airships, other than those in Group 1.

(5) Group E: aircraft other than those in Group 1 belonging to the following subgroups:

(i) subgroup E_A: aeroplanes with an electrical powerplant.

(ii) subgroup E_R: rotorcraft with an electrical powerplant.

***Rationale**: This amendment updates the definition of Group 1 to consider non-conventional aircraft/powerplant and creates Group E for electrical aeroplanes and rotorcraft other than those in Group 1. The intention is for non-conventional aircraft in Group 1 to require type endorsement on the licence, and for those aeroplanes/rotorcraft in Group E to allow type endorsement, manufacturer subgroup and full subgroup endorsement. In addition, the description for Group 1 is amended to incorporate all complex motor-powered aircraft (CMPA) and consider that certain technological evolutions have rendered some Group1 criteria obsolete.*

GM 66.A.5 Aircraft groups

The following table summarises the applicability of categories/subcategories of Part-66 licences versus the groups/subgroups of aircraft:

Category/subcategory Groups	A, B1 and C	B2	B2L	B3	L				
					L1C and L1	L2C and L2	L3H and L3G	L4H and L4G	L5
1 ~~— Complex motor-powered aircraft~~ ~~— Multi-engine helicopters~~ ~~— Aeroplanes above FL290~~ ~~— Aircraft with fly-by-wire systems~~ ~~— Any other aircraft when defined by the Agency~~ Group 1 aircraft, except airships	X	X							
1		X							X

Category/subcategory Groups	A, B1 and C	B2	B2L	B3	L				
					L1C and L1	L2C and L2	L3H and L3G	L4H and L4G	L5
~~— Gas airships other than ELA2~~ Group 1 airships									
2 2a: Single-turboprop aeroplanes 2b: Single-turbine rotorcraft~~helicopters~~ 2c: Single-piston rotorcraft~~helicopters~~	X	X	X						
3 — Piston-engine aeroplanes	X	X	X						
3 — Piston-engine aeroplanes (non-pressurised of 2 000 kg MTOM and below)	X	X	X	X					
3 — ELA1 piston-engine aeroplanes	X	X	X	X		X			
4 — Sailplanes — Powered sailplanes — Balloons — Airships not in Group 1		X X X X	X X X X		X	X X	X	X	X

***Rationale**: The text referring to helicopters is expanded to rotorcraft.*

66.A.20 Privileges

(a) The following privileges shall apply:

[…]

8. In addition to the privileges in points 1. to 7., in respect of aircraft mentioned in point 2. of point 66.A.3, an aircraft maintenance licence identified as *adequate* in the operational suitability data established in accordance with Regulation (EU) No 748/2012, shall permit the holder of the licence to issue certificates of release to service and, when relevant, to act as support staff.

(b) […]

***Rationale**: This amendment, in respect of non-conventional aircraft, assigns privileges of the 'adequate' (see proposed 66.A.3) subcategories to maintenance licence holders.*

GM 66.A.20(a) Privileges

1. The following definitions apply:

Electrical system means the aircraft electrical power supply source (other than the main powerplant in aircraft with an electrical powerplant), plus the distribution system to the different components contained in the aircraft and relevant connectors. Lighting systems are

also included in this definition. When working on cables and connectors which are part of these electrical systems, the following typical practices are included in the privileges:

– Continuity, insulation and bonding techniques and testing;

– Crimping and testing of crimped joints;

– Connector pin removal and insertion;

– Wiring protection techniques.

Electrical powerplant means all elements of a powerplant system which are used to store, transform/convert, control and transmit electrical energy to the aircraft elements that provide trust and/or lift to the aircraft, such as electrical batteries, fuel cell elements (including tanks, lines and other circuit elements for consumables), solar panels, electrical engines, cables and connectors, mechanical attachments to the aircraft structure, related instrumentation, power output control system, etc. Hybrid powerplant systems that transform fossil-fuel energy into electrical energy used for trust and/or lift are not considered to be covered under electrical powerplants.

[…]

***Rationale**: The definition of 'electrical system' is amended to clarify that this term refers to systems other than the main powerplant. The definition of 'electrical powerplant' is added into this GM as it is a term to be used in the proposed rule and to distinguish it from 'electrical system'.*

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

[…]

2. Nature of the experience:

[…]

For category B1, B2, B2L, B3 and L, for every aircraft included in the authorisation the experience should be on that particular aircraft or on a similar aircraft within the same licence (sub)category. Two aircraft can be considered to be similar when they have similar technology, construction and comparable systems, which means equally equipped with the following (as applicable to the licence category):

– Propulsion systems (piston, turboprop, turbofan, turboshaft, jet-engine or push propellers, electrical powerplant); and

[…]

– Subcategory used (A1, A2, A3, A4, B1.1, B1.2, B1.3, B1.4, B1.E, B2, B2L, B3, C or L1, L1C, L2, L2C, L3G, L3H, L4G, L4H, L5);

– Duration in days or partial-days.

***Rationale**: Text updated to also refer to electrical powerplant aircraft and B1.E licence.*

66.A.25 Basic knowledge requirements

[…]
(b) […]
The holder of an aircraft maintenance licence in subcategory B1.2 or category B3 is deemed to meet the basic knowledge requirements for a licence in subcategories L1C, L1, L2C and L2, except module 8L.19 at level 2 as defined in Appendix VII, when relevant.
[…]
***Rationale**: This amendment is required to impose basic knowledge submodule requirements to B1.2/ B3 licence holders to complete the required basic knowledge required to be eligible for L2 licence.*

66.A.30 Basic experience requirements

(a) […]
2b […]
The holder of an aircraft maintenance licence in category/subcategory B1.2 or B3 is deemed to meet the basic experience requirements for a licence in subcategories L1C, L1, L2C and L2, except practical experience in powered sailplanes or ELA1 aeroplanes with an electrical powerplant, when relevant. The practical experience in powered sailplanes or ELA1 aeroplanes with an electrical powerplant will be considered as met when the holder of the licence can demonstrate 3 months of maintenance experience covering a representative cross section of maintenance activities for aircraft with an electrical powerplant.
[…]
***Rationale**: This amendment is required to establish the missing required basic experience for B1.2/B3 licence holders when seeking to complete the basic experience requirements to be eligible as applicants for a licence in the L2 subcategory.*

AMC 66.A.30(a) Basic experience requirements

[…]

6. All maintenance experience gained in aircraft referred to in point 2 of 66.A.3 should account for a maximum of 50 % of the experience required per 66.A.30 in respect of the licence(s') subcategory/categories on which the aircraft type can be endorsed.

***Rationale**: Text adapted to count experience obtained in non-conventional aircraft.*

66.A.45 Endorsement with aircraft ratings

(a) In order to be entitled to exercise certification privileges on a specific aircraft type, the holder of an aircraft maintenance licence needs to have their licence endorsed with the relevant aircraft ratings:

– For category B1, B2 or C, the relevant aircraft ratings are the following:

(i) for Group 1 aircraft, the appropriate aircraft type rating;

(ii) for Group 2 aircraft, the appropriate aircraft type rating, manufacturer subgroup rating or full subgroup rating;

(iii) for Group 3 aircraft, the appropriate aircraft type rating or full group rating;

(iv) for Group 4 aircraft, for the category B2 licence, the full group rating~~.~~;

(v) for Group E aircraft, the appropriate aircraft type rating, manufacturer subgroup rating or full subgroup rating.

– For category B2L, the relevant aircraft ratings are the following:

(i) for Group 2 and Group E aircraft, the appropriate manufacturer subgroup rating or full subgroup rating;

(ii) for Group 3 aircraft, the full group rating;

(iii) for Group 4 aircraft, the full group rating.

– […]

(c) For other than category C licences, in addition to the requirements of point (b), the endorsement of the first aircraft type rating within a given category/subcategory requires satisfactory completion of the corresponding on-the-job training. This on-the-job training shall comply with Appendix III to Annex III (Part-66), except in the case of gas airships, where it shall be directly approved by the competent authority.

Aircraft referred to in point 2 of 66.A.3 may only be considered as the first aircraft to be endorsed in a licence within a given category/subcategory for the purpose of the previous paragraph, when the aircraft operational suitability data specifies that the aircraft is suitable for on-the-job training in the given licence category/subcategory. Otherwise, and notwithstanding the previous paragraph an *adequate* licence subcategory can still be endorsed with this aircraft type after compliance with all Appendix III requirements, but on-the-job training is still required for the first aircraft type to be endorsed which belongs to the licence subcategory in accordance with point 1 of point 66.A.3.

(d) By derogation from points (b) and (c), for Group 2, ~~and~~ Group 3 and Group E aircraft, aircraft type ratings may also be endorsed on a licence after completing the following steps:

[…]

(e) For Group 2 and Group E aircraft:

[…]

(h) […]

(ii) […]

(3) […]

The holder of an aircraft maintenance licence in subcategory B1.2 endorsed with the Group 3 rating, or in category B3 endorsed with the rating ‘piston engine non-pressurised aeroplanes of 2 000 kg MTOM and below’, is deemed to meet the requirements for the issuance of a licence in ~~subcategories~~subcategory L1 and, when fulfilling the missing basic knowledge and basic experience requirements referred to in points 66.A.25(b) and 66.A.30(a), subcategory L2, with the corresponding full ratings and with the same limitations as the B1.2/B3 licence held.

[…]

***Rationale**:*

This amendment, in respect of non-conventional aircraft, permits:

- *for licences B1, B2 and C, the endorsement of aircraft types for any Group 1 or Group E aircraft;*
- *for licences B1, C, B2 and B2L, the endorsement of manufacturer subgroup rating or full subgroup rating for aircraft in Group E. Type endorsement is simplified for Group E aircraft in the same way as it is already permitted for the endorsement of the aircraft type for aircraft in Groups 2 and 3.*

The on-the-job training of non-conventional aircraft is a special case when considered as the first aircraft in the subcategory. A non-conventional aircraft may be endorsed in a licence as a first endorsement, but it does not necessarily substitute the need for on-the-job training for the endorsement of the first conventional aircraft on the licence subcategory.

In addition, it refers to the missing basic knowledge and basic experience requirements under the new 66.A.25(b) and 66.A.30(a) that B1.2/B3 licence holders need to meet in order to obtain a licence with the L2 subcategory.

GM 66.A.45 Endorsement with aircraft ratings

The following table shows a summary of the aircraft rating requirements contained in 66.A.45, 66.A.50 and Appendix III to Part-66.

The table contains the following:

- The different aircraft groups.
- For each licence (sub)category, which ratings are possible (at the choice of the applicant):
  - Individual type ratings.
  - Full and/or ~~M~~manufacturer (sub)group ratings.
- For each rating option, which are the qualification options.
- For the B1.2 licence (Group 3 aircraft), the B3 licence (piston-engine non-pressurised aeroplanes of 2 000 kg MTOM and below) and the L licences, which are the possible limitations and ratings to be included in the licence if not sufficient experience can be demonstrated in those areas.

Note: OJT means 'On-the-Job Training' (Appendix III to Part-66, Section 6) and is only required for the first aircraft rating in the licence (sub)category. Exemptions apply for the endorsement of aircraft referred to in point 2 of 66.A.3 and they are explained after the following table.

Aircraft rating requirements			
Aircraft	**B1/B3/L licence**	**B2/B2L licence**	**C licence**
Group 1 aircraft, except airships ~~- Complex motor-powered aircraft.~~ ~~- Multiple engine helicopters.~~ ~~- Aeroplanes certified above FL290.~~ ~~- Aircraft equipped with fly-by-wire.~~ ~~- Other aircraft when defined by the Agency.~~	(For B1) **Individual TYPE RATING** Type training: - Theory + examination - Practical + assessment **PLUS** OJT (for first aircraft in licence subcategory)	(For B2) **Individual TYPE RATING** Type training: - Theory + examination - Practical + assessment **PLUS** OJT (for first aircraft in licence subcategory)	**Individual TYPE RATING** Type training: - Theory + examination
Group 1 airships	[…]	[…]	[…]
Group 2 aircraft Subgroups: 2a: single-turboprop aeroplanes (*) 2b: single-turbine-engine rotorcraft~~helicopters~~ (*) 2c: single-piston-engine rotorcraft~~helicopters~~ (*) (*) Except those classified in Group 1.	(For B1.1, B1.3, B1.4) **Individual TYPE RATING** (type training + OJT) **or** (type examination + practical experience) **Full SUBGROUP RATING** (type training + OJT) **or** (type examination + practical experience) on at least ~~3~~ three aircraft representative of that subgroup **Manufacturer SUBGROUP RATING** (type training + OJT) **or** (type examination + practical experience) on at least ~~2~~ two aircraft representative of that manufacturer subgroup	(For B2) **Individual TYPE RATING** (type training + OJT) **or** (type examination + practical experience) (For B2 and B2L) **Full SUBGROUP RATING** based on demonstration of practical experience **Manufacturer SUBGROUP RATING** based on demonstration of practical experience	**Individual TYPE RATING** type training **or** type examination **Full SUBGROUP RATING** type training **or** type examination on at least three ~~3~~ aircraft representative of that subgroup **Manufacturer SUBGROUP RATING** type training **or** type examination on at least ~~2~~ two aircraft representative of that manufacturer subgroup

Aircraft rating requirements			
Aircraft	**B1/B3/L licence**	**B2/B2L licence**	**C licence**
Group E aircraft Subgroups: E_A: aeroplanes with an electrical powerplant (*)	(For B1.E) **Individual TYPE RATING** (type training + OJT) **or** (type examination + practical experience)	(For B2) **Individual TYPE RATING** (type training + OJT) **or** (type examination + practical experience)	**Individual TYPE RATING** type training **or** type examination
E_R: rotorcraft with an electrical powerplant (*) (*) Except those classified in Group 1.	**Full SUBGROUP RATING** (type training + OJT) **or** (type examination + practical experience) on at least three aircraft representative of that subgroup **Manufacturer SUBGROUP RATING** (type training + OJT) **or** (type examination + practical experience) on at least two aircraft representative of that manufacturer subgroup	(For B2 and B2L) **Full SUBGROUP RATING** based on demonstration of practical experience **Manufacturer SUBGROUP RATING** based on demonstration of practical experience	**Full SUBGROUP RATING** type training **or** type examination on at least three aircraft representative of that subgroup **Manufacturer SUBGROUP RATING** type training **or** type examination on at least two aircraft representative of that manufacturer subgroup
[…]	[…]	[…]	[…]

Type endorsement of aircraft referred to in point 2 of 66.A.3 in a given licence subcategory B1.x or B2 does not require on-the-job training if the licence subcategory has already been endorsed with an aircraft type not being an aircraft of point 2 of 66.A.3.

If the licence subcategory has not yet been endorsed with such aircraft, the on-the-job training for the aircraft referred to in point 2 of 66.A.3 which is being endorsed on the *adequate* licence subcategory, may or may not count for the purpose mentioned in the first paragraph of point (c) of 66.A.45. This would be specified on the operational suitability data for the aircraft. For instance, a given small and simple aircraft referred to in point 2 of 66.A.3 might be suitable for endorsement both in the B1.1. and B1.2. licence subcategories, but its on-the-job training may only be considered suitable for allowing further type endorsement without conducting new on-the-job training in the B1.2 licence subcategory.

***Rationale**: Table updated to consider electrical aeroplanes/rotorcraft and OJT for non-conventional aircraft.*

AMC 66.A.45(d);(e)3;(f)1;(g)1;(h) Endorsement with aircraft ratings

1. […]

2. In the case of endorsement of individual type ratings for Group 2, ~~and~~ Group 3 and Group E aircraft, for the second aircraft type of each manufacturer (sub)group the practical experience should be reduced to 30% of the tasks contained in Appendix II to AMC relevant to the licence category and to the applicable aircraft type. For subsequent aircraft types of each manufacturer (sub)group, this should be reduced to 20%.

3. […]

***Rationale**: Text updated to consider Group E aircraft.*

AMC 66.A.45(e) Endorsement with aircraft ratings

1. For the granting of manufacturer subgroup ratings for Group 2 and Group E aircraft, for B1 and C licence holders, the sentence 'at least two aircraft types from the same manufacturer which combined are representative of the applicable manufacturer subgroup' means that the selected aircraft types should cover the technologies relevant to the manufacturer subgroup in the following areas:

[…]

2. For the granting of full subgroup ratings for Group 2 and Group E aircraft, for B1 and C licence holders, the sentence 'at least three aircraft types from different manufacturers which combined are representative of the applicable subgroup' means that the selected aircraft types should cover all the technologies relevant to the manufacturer subgroup in the following areas:

[…]

***Rationale**: Text updated to consider Group E aircraft.*

[…]

66.B.110 Procedure for the change of an aircraft maintenance licence to include an additional basic category or subcategory

[…]

(d) In the case of a holder of an aircraft maintenance licence in subcategory B1.2 endorsed with the Group 3 rating or in category B3 endorsed with the rating 'piston-engine non-pressurised aeroplanes of 2 000 kg MTOM and below', the competent authority shall issue~~, upon application, a fully rated licence in subcategories L1 and L2, with the same limitations as the B1.2/B3 licence held.~~:

(i) upon application, a fully rated licence in subcategory L1, with the same limitations as the B1.2/B3 licence held; and

(ii) upon application and presenting evidence of fulfilment of the missing basic knowledge and basic experience requirements referred to in 66.A.25(b) and 66.A.30(a), a fully rated licence in subcategory L2, with the same limitations as the B1.2/B3 licence held.

[…]

***Rationale**: This amendment is required to establish the path for B1.2/B3 licence holders to be entitled to obtain an L1 licence (automatically by application) and an L2 licence (by application and completing the missing basic knowledge and basic experience requirements).*

APPENDICES TO ANNEX III (Part-66)

Appendix I — Basic Knowledge Requirements (except for category L licence)

[…]

2. Modularisation

Qualification on basic subjects for each aircraft maintenance licence category or subcategory shall be in accordance with the following matrix, where applicable subjects are indicated by an 'X':

For (sub)categories A, B1(*), B1.E and B3:

(*) – All B1 subcategories except subcategory B1.E

Subject module	A or B1(*) aeroplane with:		A or B1(*) rotorcraft ~~helicopter~~ with:		B1.E aeroplane and rotorcraft	B3
	Turbine engine(s)	Piston engine(s)	Turbine engine(s)	Piston engine(s)	Electrical powerplant	Piston-engine non-pressurised aeroplanes 2 000 kg MTOM and below
1	X	X	X	X	X	X
2	X	X	X	X	X	X
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5	X	X	X	X	X	X
6	X	X	X	X	X	X
7A	X	X	X	X	X	
7B						X
8	X	X	X	X	X	X
9A	X	X	X	X	X	
9B						X
10	X	X	X	X	X	X
11A	X				X	
11B		X				
11C						X
12 and 12B			X	X	X	
13						
14						

Subject module	A or B1(*) aeroplane with:		A or B1(*) rotorcraft ~~helicopter~~ with:		B1.E aeroplane and rotorcraft	B3
	Turbine engine(s)	Piston engine(s)	Turbine engine(s)	Piston engine(s)	Electrical powerplant	Piston-engine non-pressurised aeroplanes 2 000 kg MTOM and below
15	X		X			
16		X		X		X
17A	X	X	X	X	X	
17B						X
18					X	

For categories B2 and B2L:

Subject module/submodules	B2	B2L
[…]		
18		

[…]

MODULE 5. DIGITAL TECHNIQUES/ELECTRONIC INSTRUMENT SYSTEMS

MODULE 5. DIGITAL TECHNIQUES/ELECTRONIC INSTRUMENT SYSTEMS	LEVEL				
	A	B1.1 B1.3 B1.E	B1.2 B1.4	B2 B2L	B3

[…]

MODULE 11A. TURBINE AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS

MODULE 11A. TURBINE AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS	LEVEL	
	A	B1 ~~1~~

[…]

MODULE 12. ROTORCRAFT ~~HELICOPTER~~ AERODYNAMICS, STRUCTURES AND SYSTEMS

MODULE 12. ROTORCRAFT: ~~HELICOPTER~~ AERODYNAMICS, STRUCTURES AND SYSTEMS	LEVEL	
	A3 A4	B1.3 B1.4

[…]

MODULE 12B. ROTORCRAFT: GYROCOPTER SPECIFICS

MODULE 12B. ROTORCRAFT: GYROCOPTER SPECIFICS	LEVEL	
	A3 A4	B1.3 B1.4 B1.E
12B.1 Theory of flight — rotary wing aerodynamics	1	2

MODULE 12B. ROTORCRAFT: GYROCOPTER SPECIFICS	LEVEL	
	A3 A4	B1.3 B1.4 B1.E
Terminology; Blade lift and drag; Auto-rotation; Ground effect; Pre-rotate, take-off, flight, and landing characteristics; Gyroplane pitch stability, influence of centre of gravity, body aerodynamics; Thrust line; Horizontal tail; Gyroplane yaw stability; Taxi stability and roll-over risk; Power pushover, pilot-induced oscillations, low-g manoeuvres.		
12B.2 Flight control systems Rotor control systems; Yaw control systems; Main rotor head: design and operation features; Rotor blades: structure, attachments; Trim control.	1	3
12B.3 Blade tracking and vibration analysis Rotor alignment; Rotor tracking; Static and dynamic balancing; Vibration types, vibration reduction methods; Ground resonance.	1	3
12B.4 Transmission Gearboxes for pre-rotator and propeller; Pre-rotator systems; Clutches, free wheel units and rotor brake; Flexible couplings, drive shafts, bearings, vibration dampers and bearing hangers.	1	3

[…]

MODULE 14. PROPULSION

MODULE 14. PROPULSION	LEVEL
	B2 B2L
[…]	[…]
14.4 Electrical powerplants - Working principle of electrical engines and generators; - Construction of rotating electric machines; - Power electronics; - Engine control system (control functions, speed control, torque control, position measurement, generator mode for energy recuperation, protection functions); - High voltage wiring, batteries, solar cells, fuel cells and auxiliary systems; - Practical elements: Safety procedures (high-pressure reservoirs, handling of chemicals, high voltage/currents); Scheduled inspection/check of the engine(s)/battery(ies)/fuel cells.	2

[…]

MODULE 18. ELECTRICAL POWERPLANT

MODULE 18. ELECTRICAL POWERPLANT	LEVEL B1.E
18.1 Electrical engines - General understanding of electromagnetics; - Working principle of electrical engines and generators; - Types and classification of rotating electric machines (DC brush, DC brushless, AC synchronous (reluctance, hysteresis, stepped, PM) and AC asynchronous (induction)); - Construction of rotating electric machines (outrunner, inrunner, rotor, stator, shaft, bearings, magnets, windings, electrical insulation, commutators, motor cooling, sensors, wiring); - Power electronics (switching devices, DC-DC converters, single-phase and multiple-phases DC-AC inverters, single-phase and multiple-phases AC-DC rectifiers); - Engine control system (control functions, speed control, torque control, position measurement, generator mode for energy recuperation, protection functions).	3
18.2 Batteries and accessories - Power-storage systems (common high-density battery, chemistry batteries, load cycles, degradation, effects of charging and overcharging, thermal runaway); - Battery management systems (general functions, battery balancing, monitoring; - Solar cells; - Wiring of electric power storage, power electronics and electric motor; - Instrumentation and cockpit indicators.	3
18.3 Fuel cells - General understanding and chemical principles: energy density, current generation, and generated heat; - Typical architectures, electrolytes, catalysts and fuels and chemical products; - Fuel cell auxiliary systems: tanks, lines, instruments; - Degradation, maintenance and fluids replenishment.	3
18.4 Practical elements - Safety procedures (high-pressure reservoirs, handling of chemicals, high voltage/currents); - Scheduled inspection/check of the engine(s)/battery(ies)/fuel cells; - Inspection/check after unscheduled events: lightning strike, component overheating, leakages; - Removal/installation of different elements of the powerplant.	3

…

***Rationale**: Appendix I, '2. Modularisation' is amended to define the required basic knowledge modules for B1.E licence holders. Module 12 is completed with Module 12B, covering other rotorcraft. Modules 14.4 and 18 are added to expand the basic knowledge in regard to electrical powerplant aircraft for the B2/B2L and B1.E licence holders respectively.*

Appendix II — Basic examination standard (except for category L licence)

[…]

2. Number of questions per module

[…]

2.12. MODULE 12 and 12B — ~~HELICOPTER~~ROTORCRAFT AERODYNAMICS, STRUCTURES AND SYSTEMS:

[…]

2.14. MODULE 14 — PROPULSION:

Category B2 and B2L: ~~24~~30 multi-choice and 0 essay questions. Time allowed ~~30~~36 minutes.

[…]

MODULE 18 –ELECTRICAL POWERPLANT

Subcategory B1.E: 120 multi-choice and 0 essay questions. Time allowed 150 minutes.

[…]

***Rationale**: Appendix II is amended to provide an updated title, new values for the questions and the duration of the examination standards for the new modules 12/12B, 14 and 18.*

Appendix III — Aircraft type training and examination standard — On the job training

[…]

3. Aircraft type training standard

[…]

3.1. Theoretical element

[…]

(c) Duration:

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

Category	Hours(**)
Aeroplanes(*) with a maximum take-off mass above 30 000 kg:	
[…]	[…]
Aeroplanes(*) with a maximum take-off mass equal to or less than 30 000 kg and above 5 700 kg:	
[…]	[…]
Aeroplanes(*) with a maximum take-off mass of 5 700 kg and below[23]	
[…]	[…]
~~Helicopters~~rotorcraft(*)[24]	
B1.3	120
B1.4	100
B2	100
C	25
Aeroplanes/rotorcraft with an electrical powerplant	

[23] For non-pressurised piston-engine aeroplanes below 2 000 kg MTOM, the minimum duration can be reduced by 50 %.
[24] For ~~helicopters~~rotorcraft in Group 2 (as defined in point 66.A.5), the minimum duration can be reduced by 30 %.

B1.E[25]	150/120
C	adbA
Aircraft other than aeroplanes, rotorcraft, sailplanes, balloons and airships	
B1.1	adbA
B1.2	adbA
B1.3	adbA
B1.4	adbA
B1.E	adbA
B2	adbA
C	adbA

(*) – aircraft with piston or turbine engine

(**) – For aeroplanes and rotorcraft with propulsion system other than turbine, piston engine or based on an electrical powerplant, the number of hours should be 'adbA'

In the table above, adbA means '*as determined by the Agency*' in the operational suitability data established in accordance with Regulation (EU) No 748/2012, taking into consideration a report from the applicant for, or holder of, the type certificate that contains an assessment of the required theoretical knowledge of the aircraft, considering the *adequate* licence category on which the aircraft type would be permitted for endorsement in accordance with 66.A.3.

[…]

(e) Content:

Level / Chapters	Aeroplanes turbine		Aeroplanes piston		~~Helicopter~~ rotorcraft turbine		~~Helicopter~~ rotorcraft piston		Aeroplanes /rotorcraft electric		Avionics
Licence category	**B1**	**C**	**B1**	**C**	**B1**	**C**	**B1**	**C**	**B1.E**	**C**	**B2**
Introduction module:											
05 Time limits/maintenance checks	1	1	1	1	1	1	1	1	1	1	1
06 Dimensions/Areas (MTOM, etc.)	1	1	1	1	1	1	1	1	1	1	1
07 Lifting and Shoring	1	1	1	1	1	1	1	1	1	1	1
08 Levelling and weighing	1	1	1	1	1	1	1	1	1	1	1
09 Towing and taxiing	1	1	1	1	1	1	1	1	1	1	1
10 Parking/mooring, Storing and Return to Service	1	1	1	1	1	1	1	1	1	1	1
11 Placards and Markings	1	1	1	1	1	1	1	1	1	1	1
12 Servicing	1	1	1	1	1	1	1	1	1	1	1
20 Standard practices — only type particular	1	1	1	1	1	1	1	1	1	1	1
~~*Helicopters*~~*Rotorcraft*											
18 Vibration and Noise Analysis (Blade tracking)	—	—	—	—	3	1	3	1	—/3	—/1	—
60 Standard Practices Rotor	—	—	—	—	3	1	3	1	—/3	—/1	—
62 Rotors	—	—	—	—	3	1	3	1	—/3	—/1	1

[25] For aeroplanes/rotorcraft in Group E (as defined in point 66.A.5), the minimum duration can be reduced by 30 %.

Level / Chapters	Aeroplanes turbine		Aeroplanes piston		~~Helicopter~~ rotorcraft turbine		~~Helicopter~~ rotorcraft piston		Aeroplanes /rotorcraft electric		Avionics
Licence category	**B1**	**C**	**B1**	**C**	**B1**	**C**	**B1**	**C**	**B1.E**	**C**	**B2**
62A Rotors — Monitoring and indicating	—	—	—	—	3	1	3	1	—/3	—/1	3
63 Rotor Drives	—	—	—	—	3	1	3	1	—/3	—/1	1
63A Rotor Drives — Monitoring and indicating	—	—	—	—	3	1	3	1	—/3	—/1	3
64 Tail Rotor	—	—	—	—	3	1	3	1	—/3	—/1	1
64A Tail rotor — Monitoring and indicating	—	—	—	—	3	1	3	1	—/3	—/1	3
65 Tail Rotor Drive	—	—	—	—	3	1	3	1	—/3	—/1	1
65A Tail Rotor Drive — Monitoring and indicating	—	—	—	—	3	1	3	1	—/3	—/1	3
66 Folding Blades/Pylon	—	—	—	—	3	1	3	1	—/3	—/1	—
67 Rotors Flight Control	—	—	—	—	3	1	3	1	—/3	—/1	—
53 Airframe Structure (~~Helicopter~~Rotorcraft)	—	—	—	—	3	1	3	1	—/3	—/1	—
25 Emergency Flotation Equipment	—	—	—	—	3	1	3	1	—/3	—/1	1
Specific gyrocopter systems					3	1	3	1	—/3	—/1	1
Airframe structures											
51 Standard practices and structures (damage classification, assessment and repair)	3	1	3	1	—	—	—	—	3/—	1/—	1
53 Fuselage	3	1	3	1	—	—	—	—	3/—	1/—	1
54 Nacelles/Pylons	3	1	3	1	—	—	—	—	3/—	1/—	1
55 Stabilisers	3	1	3	1	—	—	—	—	3/—	1/—	1
56 Windows	3	1	3	1	—	—	—	—	3/—	1/—	1
57 Wings	3	1	3	1	—	—	—	—	3/—	1/—	1
27A Flight Control Surfaces (All)	3	1	3	1	—	—	—	—	3/—	1/—	1
52 Doors	3	1	3	1	—	—	—	—	3/—	1/—	1
Zonal and Station Identification Systems.	1	1	1	1	1	1	1	1	1	1	1
Airframe systems:											
21 Air Conditioning	3	1	3	1	3	1	3	1	3	1	3
21A Air Supply	3	1	3	1	3	1	3	1	3	1	2
21B Pressurisation	3	1	3	1	3	1	3	1	3	1	3
21C Safety and Warning Devices	3	1	3	1	3	1	3	1	3	1	3
22 Autoflight	2	1	2	1	2	1	2	1	2	1	3
23 Communications	2	1	2	1	2	1	2	1	2	1	3
24 Electrical Power	3	1	3	1	3	1	3	1	3	1	3
25 Equipment and Furnishings	3	1	3	1	3	1	3	1	3	1	1
25A Electronic Equipment including emergency equipment	1	1	1	1	1	1	1	1	1	1	3

Level / Chapters	Aeroplanes turbine		Aeroplanes piston		~~Helicopter~~ rotorcraft turbine		~~Helicopter~~ rotorcraft piston		Aeroplanes /rotorcraft electric		Avionics
Licence category	**B1**	**C**	**B1**	**C**	**B1**	**C**	**B1**	**C**	**B1.E**	**C**	**B2**
26 Fire Protection	3	1	3	1	3	1	3	1	3	1	3
27 Flight Controls	3	1	3	1	3	1	3	1	3	1	2
27A Sys. Operation: Electrical/Fly-by-Wire	3	1	—	—	3	1	—	—	3/—	1/—	3
28 Fuel Systems	3	1	3	1	3	1	3	1	—	—	2
28A Fuel Systems — Monitoring and indicating	3	1	3	1	3	1	3	1	—	—	3
29 Hydraulic Power	3	1	3	1	3	1	3	1	3	1	2
29A Hydraulic Power — Monitoring and indicating	3	1	3	1	3	1	3	1	3	1	3
30 Ice and Rain Protection	3	1	3	1	3	1	3	1	3	1	3
31 Indicating/Recording Systems	3	1	3	1	3	1	3	1	3	1	3
31A Instrument Systems	3	1	3	1	3	1	3	1	3	1	3
32 Landing Gear	3	1	3	1	3	1	3	1	3	1	2
32A Landing Gear — Monitoring and indicating	3	1	3	1	3	1	3	1	3	1	3
33 Lights	3	1	3	1	3	1	3	1	3	1	3
34 Navigation	2	1	2	1	2	1	2	1	2	1	3
35 Oxygen	3	1	3	1	—	—	—	—	3/—	1/—	2
36 Pneumatic	3	1	3	1	3	1	3	1	3	1	2
36A Pneumatic — Monitoring and indicating	3	1	3	1	3	1	3	1	3	1	3
37 Vacuum	3	1	3	1	3	1	3	1	3	1	2
38 Water/Waste	3	1	3	1	—	—	—	—	3/—	1/—	2
41 Water Ballast	3	1	3	1	—	—	—	—	3/—	1/—	1
42 Integrated modular avionics	2	1	2	1	2	1	2	1	2	1	3
44 Cabin Systems	2	1	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	1	3
46 Information Systems	2	1	2	1	2	1	2	1	2	1	3
50 Cargo and Accessory Compartments	3	1	3	1	3	1	3	1	3	1	1
Turbine Engine											
70 Standard Practices — Engines,	3	1	—	—	3	1	—	—	—	—	1
70A constructional arrangement and operation (Installation Inlet, Compressors, Combustion Section, Turbine Section, Bearings and Seals, Lubrication Systems).	3	1	—	—	3	1	—	—	—	—	1
70B Engine Performance	3	1	—	—	3	1	—	—	—	—	1
71 Powerplant	3	1	—	—	3	1	—	—	—	—	1

Level / Chapters	Aeroplanes turbine		Aeroplanes piston		~~Helicopter~~ rotorcraft turbine		~~Helicopter~~ rotorcraft piston		Aeroplanes /rotorcraft electric		Avionics
Licence category	**B1**	**C**	**B1**	**C**	**B1**	**C**	**B1**	**C**	**B1.E**	**C**	**B2**
72 Engine Turbine/Turbo Prop/Ducted Fan/Unducted fan	3	1	—	—	3	1	—	—	—	—	1
73 Engine Fuel and Control	3	1	—	—	3	1	—	—	—	—	1
75 Air	3	1	—	—	3	1	—	—	—	—	1
76 Engine controls	3	1	—	—	3	1	—	—	—	—	1
78 Exhaust	3	1	—	—	3	1	—	—	—	—	1
79 Oil	3	1	—	—	3	1	—	—	—	—	1
80 Starting	3	1	—	—	3	1	—	—	—	—	1
82 Water Injections	3	1	—	—	3	1	—	—	—	—	1
83 Accessory Gear Boxes	3	1	—	—	3	1	—	—	—	—	1
84 Propulsion Augmentation	3	1	—	—	3	1	—	—	—	—	1
73A FADEC	3	1	—	—	3	1	—	—	—	—	3
74 Ignition	3	1	—	—	3	1	—	—	—	—	3
77 Engine Indicating Systems	3	1	—	—	3	1	—	—	—	—	3
49 Auxiliary Power Units (APUs)	3	1	—	—	—	—	—	—	—	—	2
Piston Engine											
70 Standard Practices — Engines	—	—	3	1	—	—	3	1	—	—	1
70A Constructional arrangement and operation (Installation, Carburettors, Fuel injection systems, Induction, Exhaust and Cooling Systems, Supercharging/Turbocharging, Lubrication Systems).	—	—	3	1	—	—	3	1	—	—	1
70B Engine Performance	—	—	3	1	—	—	3	1	—	—	1
71 Powerplant	—	—	3	1	—	—	3	1	—	—	1
73 Engine Fuel and Control	—	—	3	1	—	—	3	1	—	—	1
76 Engine Control	—	—	3	1	—	—	3	1	—	—	1
79 Oil	—	—	3	1	—	—	3	1	—	—	1
80 Starting	—	—	3	1	—	—	3	1	—	—	1
81 Turbines	—	—	3	1	—	—	3	1	—	—	1
82 Water Injections	—	—	3	1	—	—	3	1	—	—	1
83 Accessory Gear Boxes	—	—	3	1	—	—	3	1	—	—	1
84 Propulsion Augmentation	—	—	3	1	—	—	3	1	—	—	1
73A FADEC	—	—	3	1	—	—	3	1	—	—	3
74 Ignition	—	—	3	1	—	—	3	1	—	—	3
77 Engine Indication Systems	—	—	3	1	—	—	3	1	—	—	3
Electrical powerplant											
Electrical engines	—	—	—	—	—	—	—	—	3	1	—
Fuel cell and related systems	—	—	—	—	—	—	—	—	3	1	—
Batteries	—	—	—	—	—	—	—	—	3	1	—

Chapters / Level	Aeroplanes turbine		Aeroplanes piston		~~Helicopter~~ rotorcraft turbine		~~Helicopter~~ rotorcraft piston		Aeroplanes /rotorcraft electric		Avionics
Licence category	**B1**	**C**	**B1**	**C**	**B1**	**C**	**B1**	**C**	**B1.E**	**C**	**B2**
Auxiliary systems to the electrical powerplant	—	—	—	—	—	—	—	—	3	1	—
Propellers											
60A Standard Practices — Propeller	3	1	3	1	3	1	3	1	3	1	1
61 Propellers/Propulsion	3	1	3	1	3	1	3	1	3	1	1
61A Propeller Construction	3	1	3	1	3	1	3	1	3	1	1
61B Propeller Pitch Control	3	1	3	1	3	1	3	1	3	1	1
61C Propeller Synchronising	3	1	3	1	3	1	3	1	3	1	1
61D Propeller Electronic control	2	1	2	1	2	1	2	1	2	1	1
61E Propeller Ice Protection	3	1	3	1	3	1	3	1	3	1	1
61F Propeller Maintenance	3	1	3	1	3	1	3	1	3	1	1
Special chapters for aeroplanes/rotorcraft with a powerplant (engine) other than piston/turbine/electric											
Identified specific chapters for the propulsion of the aeroplane or rotorcraft when the propulsion is based on a powerplant other than turbine, piston or electrical engines	adbA	adbA	adbA	adbA	adbA	adbA	adbA	adbA	adbA	adbA	adbA
Special chapters due to the aircraft not being covered by a B1/C (or L) licence											
Identified specific chapters for aircraft other than aeroplanes or rotorcraft (or covered by a category L licence)	adbA	adbA	adbA	adbA	adbA	adbA	adbA	adbA	adbA	adbA	adbA

In the table above, adbA means 'as determined by the Agency' in the operational suitability data established in accordance with Regulation (EU) No 748/2012, taking into consideration a report from the applicant for, or holder of, the type certificate that contains an assessment of the required type of theoretical knowledge of the aircraft, considering the adequate licence category on which the aircraft type would be permitted for endorsement in accordance with 66.A.3. For these aircraft, EASA can also consider as 'not required' some of the chapters contained in the above table that would be otherwise required for a piston/turbine/electric aeroplane or rotorcraft.

(f) Multimedia-Based Training (MBT) […]

3.2. Practical element

[…]

(b) Content:

[…]

Chapters	B1/B2	B1					B2				
	LOC	FOT	SGH	R/I	MEL	TS	FOT	SGH	R/I	MEL	TS
[…]											
~~*Helicopter*~~*rotorcraft:*											
[…]											
53 Airframe Structure (~~Helicopter~~rotorcraft) Note: covered under Airframe structures											
[…]											
Specific gyrocopter systems	X/X	X	X	X	X	X	X	X	—	—	—
[…]											
Turbine/Piston Engine/Electrical propulsion Module:											
[…]											
Electrical powerplant											
Electrical engines	X/X	X	x	X	X	X	X	—	—	X	—
Fuel cell and related systems	X/X	X	x	X	X	X	X	—	—	X	—
Batteries	X/X	X	x	X	X	X	X	—	—	X	—
Auxiliary systems to the electrical powerplant	X/X	X	x	X	X	X	X	—	—	X	—
[…]											
61F Propeller Maintenance	X/X	X	X	X	X	X	X	X	X	X	X
Identified specific modules for the propulsion of the aeroplane or rotorcraft when the propulsion is based on other than turbine, piston or electrical engines	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*
Identified specific modules for aircraft other than aeroplanes or	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*	*adbA*

rotorcraft (or covered by a category L licence)											

In the table above, adbA means '*as determined by the Agency*' in the operational suitability data established in accordance with Regulation (EU) No 748/2012, taking into consideration a report from the applicant for, or holder of, the type certificate that contains an assessment of the required practical training on the aircraft, considering the *adequate* licence category on which the aircraft type would be permitted for endorsement in accordance with 66.A.3. For these aircraft, the Agency can also exempt some of the chapters contained in the above table that would be otherwise required for an aeroplane or a rotorcraft.
[…]

***Rationale**: Appendix III is amended to provide new values for duration (minimum tuition hours), contents (chapters) and detail (levels) of the theoretical element and contents of the theoretical and practical elements of the type training standard for the change from helicopter to rotorcraft licence and for electrical aeroplanes/rotorcraft. The amendment also covers the type training and examination of aircraft other than aeroplanes, rotorcraft or aircraft covered by an L licence and also of aeroplanes and rotorcraft with propulsion systems other than turbine, engine or electrical, both in respect of the theoretical knowledge and the practical training.*

Appendix IV — Experience requirements for extending a Part-66 aircraft maintenance licence

[…]

To From	A1	A2	A3	A4	B1.1	B1.2	B1.3	B1.4	B1.E	B2	B2L	B3
A1	—	6 months	6 months	6 months	2 years	6 months	2 years	1 year	2 years	2 years	1 year	6 months
A2	6 months	—	6 months	6 months	2 years	6 months	2 years	1 year	2 years	2 years	1 year	6 months
A3	6 months	6 months	—	6 months	2 years	1 year	2 years	6 months	2 years	2 years	1 year	1 year
A4	6 months	6 months	6 months	—	2 years	1 year	2 years	6 months	2 years	2 years	1 year	1 year
B1.1	None	6 months	6 months	6 months	—	6 months	6 months	6 months	6 months	1 year	1 year	6 months
B1.2	6 months	None	6 months	6 months	2 years	—	2 years	6 months	6 months	2 years	1 year	None
B1.3	6 months	6 months	None	6 months	6 months	6 months	—	6 months	6 months	1 year	1 year	6 months
B1.4	6 months	6 months	6 months	None	2 years	6 months	2 years	—	6 months	2 years	1 year	6 months
B1.E	6 months	6 months	6 months	6 months	2 years	6 months	2 years	6 months	—	1 year	1 year	6 months
B2	6 months	6 months	6 months	6 months	1 year	1 year	1 year	1 year	1 year	—	—	1 year
B2L	6 months	6 months	6 months	6 months	1 year	1 year	1 year	1 year	1 year	1 year	—	1 year
B3	6 months	None	6 months	6 months	2 years	6 months	2 years	1 year	2 years	2 years	1 year	—

***Rationale**: This table is amended to provide experience requirements for extending a Part-66 aircraft maintenance licence from one of the already existing subcategories to B1.E and vice versa.*

Appendix V — Application Form — EASA Form 19

[…]

APPLICATION FOR INITIAL/AMENDMENT/RENEWAL OF PART-66 AIRCRAFT MAINTENANCE LICENCE (AML)	EASA FORM 19

APPLICANT'S DETAILS:

Name: ……

Address: ……

Tel: …… E-mail: ……

Nationality: …… Date and Place of Birth: ……

PART-66 AML DETAILS (if applicable):

Licence No: …… Date of Issue: ……

EMPLOYER'S DETAILS:

Name: ……

Address: ……

……

Maintenance Organisation Approval Reference: ……

Tel: …… Fax: ……

APPLICATION FOR: (Tick relevant boxes)

Initial AML ☐ Amendment of AML ☐ Renewal of AML ☐

(Sub)categories	**A**	**B1**	**B2**	**B2L**	**B3**	**C**	**L (see below)**
Aeroplane Turbine	☐	☐					
Aeroplane Piston	☐	☐					
~~Helicopter~~Rotorcraft Turbine	☐	☐					
~~Helicopter~~Rotorcraft Piston	☐	☐					
Aeroplane/rotorcraft electric		☐					
Avionics			☐	☐ See system ratings below			
Piston-engine non-pressurised aeroplanes of a MTOM of 2t and below					☐		
Complex motor-powered aircraft						☐	
Aircraft other than complex motor-powered aircraft						☐	

System ratings for B2L licence:

1. autoflight ☐
2. instruments ☐
3. com/nav ☐
4. surveillance ☐
5. airframe systems ☐

L-licence subcategories:	
L1C: Composite sailplanes	☐
L1: Sailplanes	☐
L2C: Composite powered sailplanes and composite ELA1 aeroplanes	☐
L2: Powered sailplanes and ELA1 aeroplanes	☐
L3H: Hot-air balloons	☐
L3G: Gas balloons	☐
L4H: Gas balloons	☐
L4H: Hot-air airships	☐
L4G: ELA2 gas airships	☐
L5: Gas airship other than ELA2	☐

Type endorsements/Rating endorsement/Limitation removal (if applicable): ……
I wish to apply for initial/amendment of/renewal of Part-66 AML, as indicated, and confirm that the information contained in this form was correct at the time of application. I herewith confirm that: 1. I ~~am~~ do not hold~~ing~~ any Part-66 AML issued in another Member State; 2. I have not applied for any Part-66 AML in another Member State; and 3. I never had a Part-66 AML issued in another Member State which was revoked or suspended in any other Member State. I also understand that any incorrect information could disqualify me from holding a Part-66 AML. Signed: …… Name: …… Date: ……
I wish to claim the following credits (if applicable): …… …… …… Experience credits for Part-147 training …… …… …… Examination credits for equivalent exam certificates …… …… …… Please enclose all relevant certificates
Recommendation (if applicable): It is hereby certified that the applicant has met the relevant Part-66 maintenance knowledge and experience requirements and it is recommended that the competent authority grants or endorses the Part-66 AML. Signed: …… Name: …… Position: …… Date: ……

EASA Form 19 Issue ~~5~~6

***Rationale**: Appendix V is amended to replace the references to helicopters with references to rotorcraft and to consider the new subcategory B1.E.*

Appendix VI — Aircraft Maintenance Licence referred to in Annex III (Part-66) — EASA Form 26

[…]

I. **EUROPEAN UNION (*)** **[STATE]** **[AUTHORITY NAME & LOGO]**	IVa. Full name of holder: IVb. Date and place of birth: V. Address of holder:

II. **Part-66** **AIRCRAFT MAINTENANCE LICENCE** **III.** **Licence No. [MEMBER STATE CODE].66.[XXXX]** EASA FORM 26 Issue ~~5~~6	VI. Nationality of holder: VII. Signature of holder: III. Licence No:

VIII. CONDITIONS:

This licence shall be signed by the holder and be accompanied by an identity document containing a photograph of the licence holder.

Endorsement of any categories on the page(s) entitled 'Part-66 CATEGORIES' only~~,~~ does not permit the holder to issue a certificate of release to service for an aircraft.

This licence, when endorsed with an aircraft rating, meets the intent of ICAO Annex 1.

The privileges of this licence holder are prescribed by Regulation (EU) No 1321/2014 and, in particular, Annex III (Part-66) thereto.

This licence remains valid until the date specified on the limitation page unless previously suspended or revoked.

The privileges of this licence may not be exercised unless in the preceding ~~two~~2 year period, the holder had either ~~six~~ 6 months of maintenance experience in accordance with the privileges granted by the licence, or met the provisions for the issue of the appropriate privileges.

III. Licence No:

IX. Part-66 CATEGORIES

VALIDITY	A	B1	B2	B2L	B3	L	C
Aeroplanes Turbine			n/a		n/a	n/a	n/a
Aeroplanes Piston			n/a		n/a	n/a	n/a
~~Helicopters~~Rotorcraft Turbine			n/a		n/a	n/a	n/a
~~Helicopters~~Rotorcraft Piston			n/a		n/a	n/a	n/a
Aeroplanes/rotorcraft electrical powerplant	n/a		n/a		n/a	n/a	n/a
Avionics	n/a	n/a			n/a	n/a	n/a
Complex motor-powered aircraft	n/a	n/a	n/a		n/a	n/a	
Aircraft other than complex motor-powered aircraft	n/a	n/a	n/a		n/a	n/a	
Sailplanes, powered sailplanes, ELA1 aeroplanes, balloons and airships	n/a	n/a	n/a		n/a		n/a
Piston-engine non pressurised aeroplanes of 2 000 kg MTOM and below	n/a	n/a	n/a			n/a	n/a

X. Signature of issuing officer & date:

XI. Seal or stamp of issuing authority:

III. Licence No:

[...]

***Rationale**: Appendix VI is amended to replace the references to helicopters with references to rotorcraft and to consider the new subcategory B1.E.*

Appendix II — Aircraft Type Practical Experience and On-the-Job Training - List of Tasks

The proposed amendment to this 'Appendix II' is not detailed in this NPA and this Appendix II to AMC would largely follow the principles and contents proposed for amendment with NPA 2020-12. Refer to the text proposed with such NPA, which would be adapted in consideration of:

- *new modules to cover any rotorcraft, as considered in the proposed amended Appendix III to Part-66 in this NPA;*
- *new modules to cover aeroplanes and rotorcraft with an electrical powerplant, as considered in the proposed amended Appendix III to Part-66 in this NPA;*
- *the fact that the definition of the aircraft type training for aircraft other than aeroplanes, rotorcraft, (powered) sailplanes, balloons and airships and for aeroplanes and rotorcraft with a powerplant other than piston, turbine or electrical, would be established in the operational suitability data referred to in Appendix III to Part-66 and in points 21.A.15 and 21.B.82 of Regulation (EU) No 748/2012[26].*

[…]

ANNEX IV (PART-147)

[…]

AMC 147.A.100(i) Facility requirements

1. […]

2. Except for the Parts and national aviation regulations, the remainder of the documentation should represent typical examples for both large and small aircraft and cover both aeroplanes and ~~helicopters~~rotorcraft as appropriate. Avionic documentation should cover a representative range of available equipment. All documentation should be reviewed and updated on a regular basis.

***Rationale**: Text updated to refer to rotorcraft.*

GM 147.A.145(d) Privileges of the maintenance training organisation

1. […]

3. The reason for allowing the subcontracting of training modules 1 to 6 and 8 to 10 only is that~~,~~ most of the related subjects can generally also be taught by training organisations not specialised in aircraft maintenance and the practical training element, as specified in 147.A.200, does not apply to them. On the contrary, the other training modules ~~7 and 11 to 17~~ are specific

[26] Commission Regulation (EU) No 748/2012 of 3 August 2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (OJ L 224, 21.8.2012, p. 1) (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32012R0748&qid=1637832597996).

to aircraft maintenance and include the practical training element as specified in 147.A.200. The intent of the 'limited subcontracting' option as specified in 147.A.145 is to grant Part-147 approvals only to those organisations having themselves at least the capacity to teach on aircraft maintenance specific matters.

***Rationale**: Text updated to reflect the updated list of modules.*

AMC 147.A.145(f) Privileges of the maintenance training organisation

When an organisation approved to provide basic knowledge training or type training is also approved to provide type examination in the cases where type training is not required, appropriate procedures in the MTOE should be developed and approved, including:

– ~~T~~the development and the conduct of the type examination;

– ~~T~~the qualification of the examiners and their currency.

In particular, emphasis should be put on when such an examination is not regularly conducted or when the examiners are not normally involved in aircraft or activities with technology corresponding to the aircraft type subject to examination. An example would be the case of an organisation providing basic knowledge training only for the B1.1 licenc~~s~~e. This organisation should justify how they run type examinations for single-piston-engine rotorcraft~~helicopters~~ in the case of a B1.4 licence.

***Rationale**: Text updated to refer to rotorcraft.*

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

Typical conversion durations are given below:

(a) […]

(f) The approved basic training course to qualify for conversion from holding a Part-66 aircraft maintenance licence in subcategory A1, A3 or A4 to subcategory B1.E should not be less than 1 800 hours and for conversion from holding a Part-66 aircraft maintenance licence in subcategory A1, A3 or A4 to subcategory B1.E combined with B2 should not be less than 2 400 hours. For conversions from A2 to B1.E or B1.E combined with B2, the minimum duration of the basic training course should be not less than 1 950 and 2 550 hours respectively. The course should include between 60 % and 70 % knowledge training.

(g) The approved basic training course to qualify for conversion from holding a Part-66 aircraft maintenance licence in subcategory B1.E to B2 should not be less than 600 hours or from a licence in category B2 to B1.E should not be less than 800 hours and should include between 80 % and 85 % knowledge training.

(h) The approved basic training course to qualify for conversion from holding a Part-66 aircraft maintenance licence in subcategory B1.1, B1.2, B1.3 or B1.4 to subcategory B1.E should not be less than 200, 600, 200 and 200 hours respectively, and should include between 50% and 60% knowledge training.

***Rationale**: Proposed duration of basic training courses for conversions from existing subcategories to the new B1.E and vice versa.*

Appendix I — Basic training course duration

The minimum duration of a complete basic training course shall be as follows:

Basic Course	Duration (in hours)	Theoretical Training Ratio (in %)
[…]		
B1.4	2 400	50–60
B1.E	2 600	50–60
[…]		

***Rationale**: Proposed minimum duration for a complete basic training course for the new B1.E subcategory.*

Appendix II — Maintenance Training Organisation Approval — EASA Form 11

[…]

Page 2 of 2

MAINTENANCE TRAINING AND EXAMINATION ORGANISATION APPROVAL SCHEDULE

Reference: [MEMBER STATE CODE (*)].147.[XXXX]

Organisation: [COMPANY NAME AND ADDRESS]

CLASS	LICENCE CATEGORY	LIMITATION	
BASIC (**)	B1 (**)	TB1.1 (**)	AEROPLANES TURBINE (**)
		TB1.2 (**)	AEROPLANES PISTON (**)
		TB1.3 (**)	~~HELICOPTERS~~ROTORCRAFT TURBINE (**)
		TB1.4 (**)	~~HELICOPTERS~~ROTORCRAFT PISTON (**)
		TB1.E (**)	AEROPLANES/ROTORCRAFT WITH AN ELECTRICAL POWERPLANT
	B2 (**)/(****)	TB2 (**)	AVIONICS (**)
	B2L (**)	TB2L (**)	AVIONICS (indicate system rating) (**)
	B3 (**)	TB3 (**)	PISTON-ENGINE NON-PRESSURISED AERO-PLANES 2 000 KG MTOM AND BELOW (**)
	A (**)	TA.1 (**)	AEROPLANES TURBINE (**)
		TA.2 (**)	AEROPLANES PISTON (**)
		TA.3 (**)	~~HELICOPTERS~~ROTORCRAFT TURBINE (**)
		TA.4 (**)	~~HELICOPTERS~~ROTORCRAFT PISTON (**)
	L (**) (Only examination)	TL (**)	QUOTE THE SPECIFIC LICENCE SUB-CATEGORY (**)
TYPE/TASK (**)	C (**)	T4 (**)	[QUOTE AIRCRAFT TYPE] (***)
	B1 (**)	T1 (**)	[QUOTE AIRCRAFT TYPE] (***)
	B2 (**)	T2 (**)	[QUOTE AIRCRAFT TYPE] (***)
	A (**)	T3 (**)	[QUOTE AIRCRAFT TYPE] (***)

This approval schedule is limited to those trainings and examinations specified in the 'Sscope of work' section of the approved maintenance training organisation exposition.

Maintenance training organisation exposition reference: .....

Date of original issue: .....

Date of last revision approved: ..... Revision No: .....

Signed: .....

For the competent authority:[COMPETENT AUTHORITY OF THE MEMBER STATE (*)]

EASA Form 11 Issue ~~6~~7

_____

(*) or EASA if EASA is the competent authority.

(**) Delete as appropriate if the organisation is not approved.

(***) Complete with the appropriate rating and limitation.

(****) The approval for the Basic B2 course/examination includes approval for B2L course/examination for all system ratings.

***Rationale**: Appendix II is proposed for amendment to take into consideration the new scope of approval for Part-147 organisations and to replace the references to helicopters with references to rotorcraft.*

Appendix III — Certificates of Recognition referred to in Annex IV (Part-147) — EASA Forms 148 and 149

[…]

2. Type Training/Examination (Appendix III to Part-147)

The type training certificate template shall be used for recognition of completion of either the theoretical elements or the practical elements, or both the theoretical and practical elements of the type rating training course.

The certificate shall indicate the airframe/engine (or powerplant) combination for which the training was imparted.

[…]

***Rationale**: Appendix III is proposed for amendment so that the Certificate of Recognition can refer to both the airframe/engine combination and aircraft/powerplant combination.*

[…]

ANNEX Vb (PART-ML)

[…]

ML.1

(a) In accordance with paragraph 2 of Article 3, this Annex (Part-ML) applies to the following other than complex motor-powered aircraft not listed in the air operator certificate of an air carrier licensed in accordance with Regulation (EC) No 1008/2008:

(1) aeroplanes of 2 730 kg maximum take-off mass (MTOM) or less;

(2) rotorcraft of 1 200 kg MTOM or less, certified for a maximum of up to ~~4~~ four occupants;

(3) other ELA2 aircraft~~;~~.

(4) aircraft other than aeroplanes, rotorcraft, sailplanes, balloons and airships with a MTOM of:

(i) 1 200 kg or less if they can maintain zero horizontal speed; or

(ii) 2 730 kg or less for other than those in (i).

[…]

Rationale: *Small non-conventional aircraft should also be subject to Part-ML (instead of Part-M). Therefore, ML.1 (a)(4) is proposed to incorporate these aircraft to Part-ML, establishing for them the same discriminants as the ones already existing for other Part-ML aircraft. This aligns with the proposed new Article 3.2.(d).*

ML.A.302 Aircraft maintenance programme

[…]

(d) An MIP:

[…]

(2) […]

(f) in the case of aeroplanes, as applicable to the aircraft powerplant:

[…]

(g) inspection of the condition and attachment of the structural items, systems and components corresponding to the following areas:

[…]

(iv) for gas balloons:

envelope, basket, equipment and instruments.

As long as this Annex does not specify an MIP for ~~airships and rotorcraft~~aeroplanes with a powerplant other than piston/turbine and for aircraft other than aeroplanes, sailplanes and balloons, their AMP shall be based on the ICA issued by the DAH, as referred to in point (c)(2)(b).

(e) […]

Rationale: *In the rule, the MIP is only defined for certain aircraft. Therefore, the text in ML.A.302 needs to be amended in order to be explicit on the aircraft for which an MIP is defined. The wording proposed excludes aeroplanes with an electrical powerplant.*

GM2 ML.A.302 Aircraft maintenance programme

The following table provides a summary of the provisions contained in ML.A.302 in relation to the content of the maintenance programme, its approval and its link with the AR:

	OPTION 1	OPTION 2
Responsibility for developing the AMP	Contracted CAMO or CAO	Owner (if allowed under ML.A.201(f))
Approval/declaration of the maintenance programme	Approved by the CAMO or CAO, or none required in case of compliance with ML.A.302(e)	Declaration by the owner or none required in case of compliance with ML.A.302(e)
Basis for the maintenance programme	MIP (not applicable to aeroplanes with a powerplant other than piston/turbine nor to aircraft other than aeroplanes, sailplanes and balloons~~rotorcraft and airships~~) or ICA issued by the DAH	
Deviations from the DAH's ICA	Deviations from the DAH's instructions are justified. The CAMO/CAO keeps a record of the justifications and provides a copy of them to the owner.	Deviations do not need to be justified.
AMP annual review	In conjunction with the AR, by the AR staff or, if not performed in conjunction with the AR (e.g. in case of ARC extension), by the CAMO or CAO.	

Rationale: *Correction required since there is no MIP for aeroplanes with an electrical powerplant and non-conventional aircraft.*

AMC1 ML.A.302(d) Aircraft maintenance programme

This AMC contains an acceptable MIP for ~~aeroplanes of 2 730 kg maximum take-off mass (MTOM) and below, and for ELA2 aircraft other than rotorcraft or airships, grouped in the following categories~~:

– Piston-engine aeroplanes of 2 730 kg MTOM and below;

– ELA2 sailplanes and ELA2 powered sailplanes; and

– ELA2 balloons.

[…]

Rationale: *Correction required since the AMC is relevant only for piston-engine aeroplanes.*

AMC1 to Appendix II to Part-ML — Limited pilot-owner maintenance

[…]

(d) Therefore, the following lists are considered to meet the representative scope of limited pilot-owner maintenance referred to in ML.A.803 and Appendix II to Part-ML:

(1) Part A applies to piston-engine aeroplanes;

(2) Part B applies to piston-engine helicopters~~rotorcraft~~;

(3) Part C applies to sailplanes and powered sailplanes; and

(4) Part D applies to balloons and airships.

[…]

Part B — PILOT-OWNER MAINTENANCE TASKS FOR HELICOPTERS~~ROTORCRAFT~~

ATA	Area	Task	Helicopter~~Rotorcraft~~
11	Placards	Placards, markings — installation and renewal of placards and markings required by the AFM and the AMM	Yes
12	[…]	[…]	[…]

Rationale: *Correction required so that the lists provided in this AMC1 refer to the scope of limited pilot-owner maintenance for the intended aircraft.*

Appendix III — Complex maintenance tasks not to be released by the Pilot-owner

[…]

(4) the disturbing of individual parts of units which are supplied as bench-tested units except for the replacement or adjustment of items normally replaceable or adjustable in service;

(c1) the performance of maintenance on the powerplant that would require disassembly of engine(s), main batteries or fuel cell(s), other than removing them from the aircraft and reinstalling them back

(c2) the performance of maintenance on high-pressure reservoirs and components belonging to high-pressure lines/systems related to the powerplant.

(d) the balancing of a propeller, except:

[…]

Rationale: *The tasks that are permitted to be performed by the pilot-owner are amended taking into account the new aircraft considered.*

[…]

ANNEX Vc (PART-CAMO)

[…]

AMC1 CAMO.A.310(a) Airworthiness review staff qualifications

GENERAL

[…]

(d) An appropriate licence in compliance with Annex III (Part-66) is any one of the following:

– a category B1 or L licence in the subcategory of the aircraft reviewed or such that the licence holder the privilege to release the aircraft to service after maintenance,

– […]

Rationale: *This text proposal aims to cover the scenario of airworthiness reviews of non-conventional aircraft. For these aircraft, there is no dedicated Part-66 subcategory, so the privilege to release the aircraft to service after maintenance is granted to licence holders by endorsing the aircraft type in an adequate licence category (refer to the proposed amendments to Part-66 for more details). The same criterion applies here for the airworthiness review staff.*

CAMO.A.315 Continuing airworthiness management

(a) […]

(b) […]

(4) for all complex motor-powered aircraft, for aircraft other than aeroplanes, rotorcraft, sailplanes, balloons and airships with a MTOM of 5 700 kg or of 3 175 kg if they are capable of maintaining zero horizontal speed, or for aircraft used by air carriers licensed in accordance with Regulation (EC) No 1008/2008, establish a procedure to assess non-mandatory modifications and/or inspections and decide on their application, making use of the organisation's safety risk management process as required by point (a)(3) of point CAMO.A.200;

(5) […]

Rationale: *Point (b)(4) of CAMO.A.315 is updated to refer to non-conventional aircraft in order to establish a level playing field as regards the need to assess non-mandatory modifications and/or inspections, etc.*

[…]

ANNEX Vd (PART-CAO)

[…]

CAO.A.020 Terms of approval

(a) The CAO shall specify the approved scope of work in its combined airworthiness exposition (CAE), as provided for in point CAO.A.025.

(1) For aeroplanes of more than 2 730 kg maximum take-off mass (MTOM) and for rotorcraft~~helicopters~~ of more than 1 200 kg MTOM or certified for more than ~~4~~ four occupants and for other aircraft which also are not ELA2, the scope of work shall indicate the particular aircraft types. Changes to this scope of work shall be approved by the competent authority in accordance with point (a) of point CAO.A.105 and point (a) of point CAO.B.065.

(2) For ~~complete turbine~~ engines other than piston or electrical, the scope of work shall indicate the engine manufacturer or group or series or type or the maintenance task(s). Changes to this scope of work shall be approved by the competent authority in accordance with point (a) of point CAO.A.105 and point (a) of point CAO.B.065.

(3) A CAO which employs only one person for both planning and carrying out of all maintenance tasks cannot hold privileges for the maintenance of:

(a) aeroplanes, rotorcraft and other aircraft which also are not ELA2, when equipped with a powerplant being other than piston engine(s) or electrical engine(s) ~~a turbine engine~~ (in the case of aircraft-rated organisations);

(b) rotorcraft~~helicopters~~ equipped ~~with a turbine engine or~~ with more than one piston engine (in the case of aircraft-rated organisations);

(c) ~~complete piston engines of 450 HP and above~~complete engines other than piston engines with output power below 450 HP or electrical engines (in the case of engine-rated organisations)~~.; and~~

~~(d) complete turbine engines (in the case of engine-rated organisations).~~

(4) […

(xxiii) C23: other

[…]

Rationale: *The amendment in point (a)(1) mandates that the scope of work indicates the aircraft type for some non-conventional aircraft. The amendment in point (a)(2) mandates that the terms of approval indicate the engine manufacturer for engines other than piston or electrical, i.e. for turbines and other engines like complete hybrid engines. The amendment in point (a)(3) proposes a limited scope of work for one-man organisations. The amendment in point (a)(4) proposes a new 'C23: other' to be used for components not covered by C1 to C22.*

GM1 CAO.A.020 Terms of approval

SCOPE OF WORK — AIRCRAFT CLASS

In the combined airworthiness exposition (CAE), the following guidance can be used as ~~a~~ the minimum aircraft information to be indicated while specifying the scope of work of an organisation in the aircraft class.

(a) For aeroplanes above 2 730 kg maximum take-off mass (MTOM):

The particular aircraft types included (the use of the list of type ratings contained in the AMC to Part-66 is acceptable).

(b) For aeroplanes up to 2 730 kg MTOM:

– The type of propulsion (turbine engine, piston engine, electrical engine)

– The category (ELA1, ELA2, up to 2 730 kg)

(c) For rotorcraft~~helicopters~~ above 1 200 kg MTOM and four occupants:

The particular aircraft types included (the use of the list of type ratings contained in Appendix I to AMC to Part-66 is acceptable).

(d) For rotorcraft~~helicopters~~ up to 1 200 kg MTOM and four occupants:

The type of propulsion (turbine engine, piston engine, electrical engine)

(e) For sailplanes:

ELA1

(f) For balloons:

– Hot-air balloons

– Gas-balloons

– Roziere balloons

(g) For airships:

– The particular airship type for those which are not classified as ELA2

– For ELA2 airships, whether it covers hot-air airships or gas-airships

(h) For any other aircraft:

– The particular aircraft types included (the use of the list of type ratings contained in the AMC to Part-66 is acceptable).

Each category or type of aircraft specified in the scope of work is to be completed with the privileges held (maintenance, continuing airworthiness management, airworthiness review, permit to fly) for that aircraft category or type.

Rationale: *This text proposal aims to explain how to indicate the scope of work of an organisation approved under Part-CAO for any aircraft for which this Part is adequate.*

CAO.A.105 Changes to the organisation

(a) In order to enable the competent authority to determine continued compliance with this Annex, the CAO shall notify the competent authority of any proposal to carry out any of the following changes, before such changes take place:

(1) changes affecting the information contained in the approval certificate laid down in Appendix I and the terms of approval of this Annex;

(2) changes of the persons referred to in points CAO.A.035(a) and (b);

(3) changes in the aircraft types covered by the scope of work referred to in point (a)(1) of point CAO.A.020 in the case of aeroplanes of more than 2 730 kg maximum take-off mass (MTOM) ~~and in the case of helicopters~~, rotorcraft of more than 1 200 kg MTOM or certified for more than ~~4~~ four occupants and for any other aircraft which also is not an ELA2;

(4) changes in the scope of work referred to in point (a)(2) of CAO.A.020 in the case of ~~complete turbine~~ engines other than piston or electrical;

(5) changes in the control procedure set out in point (b) of this point.

(b) Any other changes in locations, facilities, equipment, tools, material, procedures, scope of work and staff shall be controlled by the CAO through a control procedure provided for in the CAE. The CAO shall submit a description of those changes and the corresponding CAE amendments to the competent authority within 15 days from the day on which the change took place.

Rationale: *This text proposal aims to update the changes to the scope of work of the organisation, approved in accordance with Part-CAO, that need to be notified to the authority before they take place, as regards non-conventional aircraft.*

Appendix I — Combined airworthiness organisation (CAO) certificate - EASA Form 3-CAO

(a) Within the approval class(es) and rating(s) established by the competent authority, the scope of work specified in the CAE defines the exact limits of approval. It is therefore essential that the approval class(es) and rating(s) and the organisations scope of work are matching.

(b) An aircraft rating, in relation to the maintenance privileges, means that the CAO may carry out maintenance on the aircraft and any component (including engines), in accordance with aircraft maintenance data or, if agreed by the competent authority, in accordance with component maintenance data, only whilst such components are fitted to the aircraft. Nevertheless, such aircraft-rated CAO may temporarily remove a component for maintenance in order to improve access to that component except when such removal creates the need for additional maintenance not eligible for the requirements of point (b). This will be subject to a control procedure in the CAE to be approved by the competent authority.

(c) An engine rating (turbine, piston, ~~or~~ electrical or other) means that the CAO may carry out maintenance on the uninstalled engine and engine components, in accordance with engine maintenance data or, if agreed by the competent authority, in accordance with component maintenance data, only whilst such components are fitted to the engine. Nevertheless, such engine-rated CAO may temporarily remove a component for maintenance in order to improve access to that component except when such removal creates the need for additional maintenance not eligible for the requirements of point (c). An engine-rated CAO may also carry out maintenance on an installed engine during base and line maintenance subject to a control procedure in the CAE to be approved by the competent authority.

(d) A component rating (other-than-complete engines) means that the CAO may carry out maintenance on uninstalled components (excluding complete engines) intended for fitment to the aircraft or engine. This CAO may also carry out maintenance on an installed component (other-than-complete engines) during base and line maintenance or at an engine maintenance facility subject to a control procedure in the CAE to be approved by the competent authority.

(e) An non-destructive testing (NDT) rating is a self-contained rating not necessarily related to a specific aircraft, engine or other component. The NDT rating is only necessary for a CAO that carries out NDT as a particular task for another organisation. A CAO approved with an aircraft, engine or component rating may carry out NDT on products they are maintaining subject to the CAE containing NDT procedures, without the need for an NDT rating.

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[MEMBER STATE (*)]
A Member of the European Union (**)

COMBINED AIRWORTHINESS ORGANISATION CERTIFICATE

Reference: [MEMBER STATE CODE (*)].CAO.[XXXX]

Pursuant to Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency and to Regulation (EU) No 1321/2014 and subject to the conditions specified below, the [COMPETENT AUTHORITY OF THE MEMBER STATE (*)] hereby certifies:

[COMPANY NAME AND ADDRESS]

as a combined airworthiness organisation in compliance with Section A of Annex Vd (Part-CAO) to Regulation (EU) No 1321/2014.

CONDITIONS:

(a) this approval is limited to that specified in the terms of approval attached, and in the 'Scope of work' Section of the approved combined airworthiness exposition, as referred to in Section Vd (Part-CAO) to Regulation (EU) No 1321/2014; and

(b) this approval requires compliance with the procedures specified in the approved combined airworthiness exposition; and

(c) this approval is valid whilst the approved combined airworthiness organisation remains in compliance with Annex Vd (Part-CAO) to Regulation (EU) No 1321/2014; and

(d) where the approved combined airworthiness organisation contract out, under their quality system, the service of one or several organisations, this approval remains valid subject to such organisation(s) fulfilling applicable contractual obligations; and

(e) subject to compliance with the foregoing conditions, this approval shall remain valid for an unlimited duration unless the approval has previously been surrendered, superseded, suspended or revoked.

Date of original issue of the approval certificate: .....

Date of this revision of the approval certificate: .....

Revision No: .....

Signed: .....

For the competent authority: [COMPETENT AUTHORITY OF THE MEMBER STATE (*)]

(*) or EASA if EASA is the competent authority

(**) delete for non-EU Member States or EASA.

EASA Form 3-CAO, Issue 2~~1~~

COMBINED AIRWORTHINESS ORGANISATION TERMS OF APPROVAL

Reference: [MEMBER STATE CODE (*)].CAO.XXXX

Organisation: [COMPANY NAME AND ADDRESS]

CLASS	RATING	PRIVILEGES(***)
AIRCRAFT (**)	Aeroplanes — other-than-complex motor-powered aircraft (**)	□ Maintenance □ Continuing-airworthiness management □ Airworthiness review □ Permit to fly
	Aeroplanes up to 2 730 kg maximum take-off mass (MTOM) (**)	□ Maintenance □ Continuing-airworthiness management □ Airworthiness review □ Permit to fly
	Rotorcraft~~Helicopters~~ — other-than-complex motor-powered aircraft (**)	□ Maintenance □ Continuing-airworthiness management □ Airworthiness review □ Permit to fly
	Rotorcraft~~Helicopters~~ up to 1 200 kg MTOM, certified for a maximum of up to ~~4~~ four occupants (**)	□ Maintenance □ Continuing-airworthiness management □ Airworthiness review □ Permit to fly
	Airships (**)	□ Maintenance □ Continuing-airworthiness management □ Airworthiness review □ Permit to fly
	Balloons (**)	□ Maintenance □ Continuing-airworthiness management □ Airworthiness review □ Permit to fly
	Sailplanes (**)	□ Maintenance □ Continuing-airworthiness management □ Airworthiness review □ Permit to fly
	Other aircraft (**)	□ Maintenance □ Continuing-airworthiness management □ Airworthiness review □ Permit to fly
COMPONENTS (**)	Complete turbine engines (**)	□ Maintenance
	Complete piston engines (**)	
	Electrical engines (**)	
	Other engines/powerplants (**)	
	Components other than complete engines (**)	
SPECIALISED SERVICES (**)	Non-destructive testing (NDT) (**)	□ NDT

LIMITATIONS **(to be included only for organisations rated for certain aircraft (see CAO.A.20(a)(3)) ~~aeroplanes, helicopters~~ or complete engines, if they only have one person planning and performing all maintenance tasks)**
The following maintenance is excluded from the scope of work (***): — maintenance on aeroplanes, rotorcraft and other aircraft which also are not ELA2, when equipped with a powerplant being other than a piston engine or electrical engine(s) ~~a turbine engine~~; — maintenance on rotorcraft~~helicopters~~ equipped ~~with a turbine engine or~~ with more than one piston engine; and — maintenance on complete ~~piston engines of 450 HP and above, and on complete turbine engines~~ engines other than piston engines with output power below 450 HP or electrical engines.

List of organisation(s) working under a quality system (***)

These terms of approval are limited to the products, parts and appliances, and to the activities specified in the 'Scope of work' Section of the approved combined airworthiness exposition.~~,~~
Combined airworthiness exposition reference: .....

Date of original issue of the exposition: .....

Date of last revision approved: .....Revision No: .....

Signed: .....

For the competent authority: [COMPETENT AUTHORITY OF THE MEMBER STATE (*)]

(*) or EASA if EASA is the competent authority

(**) delete as appropriate if the organisation is not approved.

(***) complete as appropriate

EASA Form 3-CAO, Issue 2~~1~~

Rationale: *This appendix is updated to align with CAO.A.20.*

[…]

4. Impact assessment (IA)

The impact assessment in this chapter only covers the proposed changes in regard to the Part-66 licensing system, in order to expand it to non-conventional aircraft. The other proposed regulatory amendments contained in this NPA are not considered to require an impact assessment since they are not controversial (i.e. elimination of difficulties for regulatory compliance in respect of non-conventional aircraft due to lack of consideration of them in the current rules) or the proposals have been aligned with already existing provisions (i.e. scope of alleviations expanded to also apply to some non-conventional aircraft).

4.1. What is the issue

In regard to the privilege to certify maintenance performed on aircraft structure, powerplant and mechanical and electrical systems, the current Part-66 licensing system is defined only for certain licence subcategories that cover conventional aircraft (piston and turbine aeroplanes, piston and turbine helicopters, sailplanes, balloons and airships). There are no provisions that provide certification privileges for the maintenance of non-conventional manned aircraft. Pending such provisions, these types of aircraft are prevented from being maintained, hence prevented from flying.

Taking into account that the existing system in Part-66 is considered to be an important element to attain the good safety record achieved in aircraft maintenance in Europe and the existing structure of the licensing system established by Part-66, the proposed amendments should continue to respect the current framework to avoid any disruption. In addition, there is a constraint on finding the adequate balance between the high-level competence required for licence holders of 'complex aircraft' and the wider flexibility needed as regards the maintenance of simpler aircraft.

Another issue is the certification of maintenance of rotorcraft: currently there are no AML subcategories for the certification of maintenance on rotorcraft other than helicopters.

Also, in the current definition of Group 1 only aircraft of certain categories are covered; therefore, the definition needs to be amended to also consider non-conventional aircraft. The implication of one aircraft type being covered under the definition of Group 1 is that the endorsement of the aircraft on the relevant AML is only possible as 'aircraft rating', i.e. neither 'manufacturer rating' nor 'group rating' are possible. This implies, as a minimum, that the AML holder has followed aircraft type training to endorse the aircraft on the AML.

Finally, there is no AML for aeroplanes and rotorcraft with electric powerplant.

4.1.1. Who is affected

Current and future AML holders, their employers (i.e. maintenance organisations), organisations approved i.a.w. Part-147, TC applicants and licensing authorities (i.e. NCAs).

4.1.2. How could the issue evolve

Without amending the Part-66 AML system, the baseline scenario is the following:

— the certification of the maintenance of non-conventional aircraft will not be possible under the existing provisions, which require holding a valid AML obtained in accordance with Part-66;

— maintenance staff competencies and skills will not keep pace with the technological evolutions; and

— there will be a decrease of the competitiveness of the European aviation industry if their technology needs are not catered for due to the lack of a suitable maintenance regulatory framework.

4.2. What we want to achieve — objectives

The objectives of this proposal are defined in Section 2.2.

4.3. How we want to achieve it — options

In order to address some of the issues presented in Section 4.1, no assessment of different options is required. These issues are addressed as follows:

— Certification of maintenance of rotorcraft: the privileges of AML holders of current licence subcategories for helicopters are expanded to rotorcraft (the proposed definition of rotorcraft is given in the amending text), without further requirements. Having assessed the basic knowledge requirements to obtain a licence in the helicopter subcategories, it is considered that they are sufficient as the basic knowledge requirements for a rotorcraft licence. Basic knowledge modules to obtain a future 'rotorcraft licence' are amended to cover not just helicopters, but also other rotorcraft.

— The definition of Group 1 is revised in order to include non-conventional aircraft, as per the amended point 66.A.5.

— Creation of a new subcategory for aeroplanes and rotorcraft (see discussion above) with an electrical powerplant: due to the comments received during the consultation of NPA 2020-12 as regards a proposal for the qualification of certifying staff of electrical aircraft, EASA decided to follow a different strategy after consultation with the EASA ABs: the new strategy, contained in this NPA, proposes to create a new licence subcategory in the B1 category for the certifying staff of electrical aeroplanes and rotorcraft. The NPA contains also, similarly to NPA 2020-12, proposed amendments to the rule that, for licence holders of (sub)categories B1.2 and B3 to obtain an L2 licence, they need to show basic knowledge and basic experience on aircraft with an electrical powerplant. The current scenario that gives the possibility to licence holders of (sub)categories B1.2 and B3 to obtain an L2 licence without this relevant basic knowledge/experience and only upon application was not intended at the time of the creation of the licence in category L with Regulation (EU) 2018/1142[27].

— Creation of a new Group E, so that it is possible to endorse manufacturer subgroup and full subgroup ratings for aeroplanes and rotorcraft with an electrical powerplant that are not in Group 1 (refer to point 66.A.5 for the groups definition).

Different options have been considered for the following issue described in Section 4.1:

[27] Commission Regulation (EU) 2018/1142 of 14 August 2018 amending Regulation (EU) No 1321/2014 as regards the introduction of certain categories of aircraft maintenance licences, the modification of the acceptance procedure of components from external suppliers and the modification of the maintenance training organisations' privileges (OJ L 207, 16.8.2018, p. 2) (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018R1142&qid=1638480954378).

— Establishing the AML subcategories and rating required for the certification of maintenance of non-conventional aircraft or aeroplanes/rotorcraft with a powerplant other than piston engine, turbine or electrical. In addition to Option 0 'No policy change', two other options have been considered, as described in the following table:

Table 1: Selected policy options for the licences for the maintenance of non-conventional aircraft

Option No	***Short title***	***Description***
0	No policy change	No policy change (rules remain unchanged and risks as outlined in the issue analysis).
1	New basic knowledge	Amend Part-66 by establishing new AML privileges for the certification of maintenance of non-conventional aircraft or aircraft with non-conventional powerplants. The new privileges would be granted to personnel having followed training on new basic modules defined by TC applicants of non-conventional aircraft to address their specificities.
2	Type rating endorsement	Amend Part-66 by allowing the endorsement of an AML corresponding to one of the existing subcategories (i.e. for a conventional aircraft) with a non-conventional aircraft type rating (syllabus defined by the TC applicant), without the aircraft belonging to the scope of the licence. The same approach would be taken for aircraft with non-conventional powerplants. *Note: Refer to Chapter 3 for the proposed text following the selection of Option 2.*

For non-conventional aircraft, in order for the TC holder to define the specific type training syllabus referred to in Option 2 and other related information (see Chapter 3 for full details), CS-MCSD need to be amended so that the operational suitability data for these aircraft contains such data. The proposed amendment to CS-MCSD will be published in due time separately from this NPA, as an addendum.

4.4. What are the impacts

4.4.1. Methodology

The methodology applied for this impact assessment is the multi-criteria analysis (MCA), which allows comparing all options by scoring them against a set of criteria.

The MCA covers a wide range of techniques that aim at combining a variety of positive and negative impacts into a single framework to allow an easier comparison of scenarios.

The MCA key steps in this RIA include:

— establishing the criteria to be used for comparing the options (these criteria must be measurable, at least in qualitative terms);

— scoring how well each option meets the criteria (the scoring needs to be relative to the baseline scenario); and

— ranking the options by combining their scores.

The criteria used to compare the options were derived from the Basic Regulation and the guidelines for the impact assessment were developed by the European Commission. The principal objective of the Basic Regulation, in accordance with Article 1(1), is to 'establish and maintain a high uniform level of civil aviation safety in the Union'. As additional objectives, the Basic Regulation identifies environmental, economic, proportionality, and harmonisation aspects, which are reflected below.

For the scoring of the impacts, a scale of -10 to +10 is used to indicate the negative and positive impacts of each option (i.e. from 'very high' to 'very low' negative/positive impacts). The intermediate levels of benefits are termed 'high', 'medium' and 'low', with also a 'no impact' score possible.

4.4.2. Safety impact

Option 0 'No policy change' has neutral impact because the aircraft in the scope of this NPA will not be allowed to fly due to the lack of maintenance requirements (see Section 4.1).

Both Options 1 and 2, as regards non-conventional aircraft, rely on the fact that the applicant for the aircraft type certificate will identify what is the required training syllabus and depth of knowledge, as basic knowledge (Option 1) or as detailed knowledge on the aircraft type (option 2), to cover what is particular in its aircraft. In this sense, both options are considered to keep a safe system equivalent to the existing one. The knowledge obtained under Option 2 is more focused on the aircraft subject to the maintenance event, and therefore probably safer than Option 1.

4.4.3. Environmental impact

None identified for any of the options.

4.4.4. Social impact

Option 0 'No policy change' has a negative impact because the AML holders (or students pursuing to obtain one) will not have the means to expand their competencies and skills for aircraft in the scope of this NPA. As a result, in the medium/long term:

— the attractiveness of jobs in the maintenance field may decrease over time;

— the AML holders in the EU may face job reductions if the maintenance regulatory framework is not adapted to keep pace with new technologies and the type of aircraft in the scope of this NPA.

Neither Option 1 nor Option 2 changes existing privileges for the current holders of AML (or students pursuing to obtain one), valid for conventional aircraft with conventional powerplants.

Further to both Option 1 and Option 2, an AML holder is required to attend new training (less demanding for Option 2) if they want to expand their privileges and certify maintenance on non-conventional aircraft, which is not permitted with their current licence subcategory. This provides a social positive impact for AML holders since they will acquire new competencies and have new business opportunities.

4.4.5. Economic impact

Option 0 'No policy change' has a negative impact because the maintenance regulatory framework will remain not adapted to keep pace with new technologies and the type of aircraft in the scope of this NPA, hence decreasing the competitiveness of the EU aviation industry in the medium/long term.

— Economic impact on licence holders/their employers paying for the licence: Whichever option is retained, Option 1 or Option 2, obtaining an AML that entitles the holder to certify maintenance of a non-conventional aircraft will require attending additional training and/or examination. In the current system, for AML holders to expand their certification privileges with an aircraft of Group1, it is required that they follow type training on the aircraft type. In this sense, Option 2 as regards expanding the certification privileges to certify maintenance on large/complex non-conventional aircraft classified in the new Group 1 would have no relative impact, when compared to endorsing one existing licence with a Group 1 conventional aircraft, since this also demands type endorsement.

The biggest economic impact of Option 2 is related to small/simple non-conventional aircraft (which are also included in new Group1). For a small/simple conventional aircraft, the current system allows to exercise certification privileges when the AML is endorsed with the 'aircraft manufacturer' or 'aircraft group'. This is a privilege that can be exercised for any aircraft within the 'aircraft manufacturer' or 'aircraft group', since all the aircraft covered have similar architecture/systems, which is/are known by the AML holder. The same approach would apply under Option 1, once the licence holder would have acquired the relevant basic knowledge for the same group of non-conventional aircraft. In any case, acquiring the required basic knowledge would be more costly than following type training on a single aircraft.

Applying Option 2 to non-conventional small/simple aircraft still requires type endorsement, since basic knowledge obtained when applying for an AML for a conventional aircraft does not provide sufficient generic knowledge for a non-conventional aircraft.

Note that by defining a new subcategory for the AML of aeroplanes/rotorcraft with an electrical powerplant, the endorsement of manufacturer and full subgroup ratings is allowed for aircraft that do not belong to Group 1. This new subcategory is only possible by defining dedicated 'basic knowledge' modules corresponding to this new subcategory. This strategy alleviates the requirements applicable to the certification of maintenance of electrical aeroplanes and rotorcraft in general aviation.

— Economic impact on training organisations: New training requirements, both for Option 1 and Option 2, would provide a new source of revenues for this sector.

— Economic impact on TC applicants: TC applicants for non-conventional aircraft will be required to, in the case of Option 1, define the knowledge gap compared to existing AML subcategories, and, in the case of Option 2, propose the most adequate AML subcategory and propose the syllabus/depth of knowledge for the type training. The impact of Option 2 is considered to be less. Overall, new business opportunities should compensate largely this workload.

— Economic impact on NCAs: For Option 1, NCAs would need to have control of basic knowledge modules passed by AML holders/applicants and identify their privileges based on the acquired basic knowledge and as determined by EASA. That would demand a huge administrative effort. For Option 2, NCAs would not be much affected since their current systems already provide for adding type ratings to existing licence subcategories.

— Economic impact on EASA: For both options, EASA would need to devote some resources to discuss with the TC applicant and later on identify and publish the new basic knowledge

modules syllabus (for Option 1) or identify the most adequate AML subcategory and agree on the type training syllabus/training depth of knowledge (for Option 2).

Stakeholders are invited to provide quantified elements to justify the possible economic impacts of the options proposed, or alternatively propose other justified solutions to the issue.

4.4.6. ICAO and third-country references relevant to this RMT

The proposal of this NPA is based on some amendments to the existing Part-66 licensing system and does not create differences with International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARPs).

It does also not change the continuing airworthiness principles upon which Bilateral Safety Agreements (BASAs) are based; therefore, these BASAs and related implementation documents should not be affected.

4.4.7. General Aviation and proportionality issues

— Option 2 does not allow endorsement of 'aircraft group' in the existing licence subcategories for non-conventional aircraft. This is a disadvantage when compared to the AML subcategories used by General Aviation (sport/recreational aircraft), since 'group rating' is permitted for conventional aircraft. This is mitigated by permitting 'type differences training' for second types being endorsed. It is also believed that the first non-conventional small/simple aircraft that would be affected by the proposed regulation would not be used for sport/recreational aviation, but rather as new business services, the economic impact of which could be passed on to end users. In regard to sport/recreational activity, EASA believes that the most new aircraft would be conventional aeroplanes or rotorcraft with an electrical powerplant, for which the proposal permits the manufacturer and full subgroup endorsement on the licences.

— The impact of Option 1 would be difficult to predict: if many non-conventional small/simple aircraft would be similar and the related basic knowledge for them could be covered by the same new basic modules, EASA could classify them into the same new Group and allow 'group rating'. That would allow the AML holders to exercise AML privileges on these many different small/simple aircraft types, if they would belong to the same group. Whether the situation just described will materialise, we cannot say at the moment.

4.4.8. Comparison of the options

The following table contains a basic comparison of the different options:

Table 2: Comparison of the options

Impact criteria	*Option 0 'No policy change'*	*Option 1 'New basic knowledge'*	*Option 2 'Type rating endorsement'*
	The scores are based on an MCA scale from -10 to +10 (see Section 4.4.1)		
Safety impact	0 non-conventional aircraft not flying	0 required basic knowledge for AML privileges to be identified by	0 required type training for AML endorsement to be identified by

		the TC applicant in order to build a safe system	the TC applicant in order to build a safe system
Environmental impact	0 No impact	0 No impact	0 No impact
Social impact	0	+2 No changes for existing privileges (conventional aircraft) New basic training is required for the certification of maintenance of non-conventional aircraft AML holders will need to invest time/effort to acquire the new privileges, but they will acquire new competencies and have new business opportunities.	+4 No changes for existing privileges (conventional aircraft) New type training is required for the certification of maintenance non-conventional aircraft, even small/simple ones AML holders will need to invest time/effort to acquire the new privileges, but they will acquire new competencies and have new business opportunities. With this option, endorsing an aircraft type requires less time/effort compared to Option 1.
Economic impact on AML holders/paying employers	0	-3 New basic training is required for the certification of maintenance of non-conventional aircraft	-2 New type training is required for the certification of maintenance of non-conventional aircraft, even small/simple ones
Economic impact on maintenance organisations	0	+4 Maintenance organisations may decide to offer their maintenance services to aircraft operators as there is legal certainty stemming from the applicable requirements	+4 Maintenance organisations may decide to offer their maintenance services to aircraft operators as there is legal certainty stemming from the applicable requirements.
Economic impact on training organisations	-2 Loss of business opportunities	+4 Training organisations may decide to offer training (new basic modules) and get new business.	+4 Training organisations may decide to offer training (new type training) and get new business.
Economic impact on TC applicants	-4 Loss of business opportunities	+4 TC applicants of non-conventional aircraft would need to devote some resources to define required basic knowledge: minor workload New business opportunities should compensate largely this workload.	+4 TC applicants of non-conventional aircraft would need to devote some resources to identify the most adequate AML subcategory and the required type training syllabus and training depth of knowledge: minor workload

			New business opportunities should compensate largely this workload.
Economic impact on NCAs	0	-4 NCAs would need to monitor the basic knowledge modules passed by each AML applicant, to assess their eligibility to certify maintenance on a given non-conventional aircraft.	-1 NCA would need to add type ratings to AMLs even for small/simple non-conventional aircraft. This impact is very minor.
Economic impact on EASA	0	-2 EASA would need to devote resources to confirm the basic knowledge modules required to be entitled to certify maintenance of non-conventional aircraft.	-1 EASA would need to devote resources to confirm the most adequate AML subcategory and the required type training syllabus and training depth of knowledge.
Overall	-6	+5	+12

Option 2 is the preferred option. The corresponding draft rules are in the Chapter 3.

Stakeholders are invited to provide any quantitative information they find necessary to bring to the attention of EASA.

5. Proposed actions to support implementation

EASA will work with the Member State NCAs to support the implementation of the amended regulation, including discussion on the transitional period before the proposed system becomes applicable.

6. References

6.1. Related EU regulations

Commission Regulation (EU) No 1321/2014 of 26 November 2014 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 362, 17.12.2014, p. 1).

6.2. Related EASA decisions

— Executive Director Decision 2015/029/R of 17 December 2015 issuing acceptable means of compliance and guidance material to Part-M, Part-145, Part-66, and Part-147 of Regulation (EU) No 1321/2014 and repealing Decision 2003/19/RM of the Executive Director of the Agency of 28 November 2003 'AMC and GM to the Annexes to Regulation (EU) No 1321/2014 — Issue 2'

— Executive Director Decision 2019/009/R of 28 March 2019 amending the Acceptable Means of Compliance and Guidance Material to Annex I (Part-M), Annex II (Part-145), Annex III (Part-66), Annex IV (Part-147) and Annex Va (Part-T) to Commission Regulation (EU) No 1321/2014 and issuing the Acceptable Means of Compliance and Guidance Material to the articles of that Regulation

— Executive Director Decision 2020/002/R of 13 March 2020 amending the Acceptable Means of Compliance and Guidance Material to Annex I (Part-M), Annex II (Part-145), Annex III (Part-66), Annex IV (Part-147) and Annex Va (Part-T) to as well as to the articles of Commission Regulation (EU) No 1321/2014, and issuing Acceptable Means of Compliance and Guidance Material to Annex Vb (Part-ML), Annex Vc (Part-CAMO) and Annex Vd (Part-CAO) to that Regulation

— Executive Director Decision 2020/019/R of 20 November 2020 issuing the Certification Specifications and Guidance Material for Maintenance Certifying Staff Data 'CS-MCSD – Issue 1'

6.3. Other references

— NPA 2020-12 'Review of Part-66'

— ToR for RMT.0230 'Introduction of a regulatory framework for the operation of unmanned aircraft systems and for urban air mobility in the European Union aviation system'

7. Appendix

N/A

8. Quality of the NPA

To continuously improve the quality of its documents, EASA welcomes your feedback on the quality of this NPA with regard to the following aspects:

8.1. The regulatory proposal is of technically good/high quality

Please choose one of the options below and place it as a comment in CRT; if you disagree or strongly disagree, please provide a brief justification.
Fully agree / Agree / Neutral / Disagree / Strongly disagree

8.2. The text is clear, readable and understandable

Please choose one of the options below and place it as a comment in CRT; if you disagree or strongly disagree, please provide a brief justification.
Fully agree / Agree / Neutral / Disagree / Strongly disagree

8.3. The regulatory proposal is well substantiated

Please choose one of the options below and place it as a comment in CRT; if you disagree or strongly disagree, please provide a brief justification.
Fully agree / Agree / Neutral / Disagree / Strongly disagree

8.4. The regulatory proposal is fit for purpose (capable of achieving the objectives set)

Please choose one of the options below and place it as a comment in CRT; if you disagree or strongly disagree, please provide a brief justification.
Fully agree / Agree / Neutral / Disagree / Strongly disagree

8.5. The impact assessment (IA), as well as its qualitative and quantitative data, is of high quality

Please choose one of the options below and place it as a comment in CRT; if you disagree or strongly disagree, please provide a brief justification.
Fully agree / Agree / Neutral / Disagree / Strongly disagree

8.6. The regulatory proposal applies the 'better regulation' principles[1]

Please choose one of the options below and place it as a comment in CRT; if you disagree or strongly disagree, please provide a brief justification.
Fully agree / Agree / Neutral / Disagree / Strongly disagree

8.7. Any other comments on the quality of this NPA (please specify)

Note: Your comments on Chapter 8 will be considered for internal quality assurance and management purposes only and will not be published in the related CRD.

[1] For information and guidance, see:
- https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/better-regulation-why-and-how_en
- https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/better-regulation-why-and-how/better-regulation-guidelines-and-toolbox_en
- https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/better-regulation-why-and-how/better-regulation-guidelines-and-toolbox/better-regulation-toolbox_en