

Annex IV

Acceptable Means of Compliance to Part-66

SECTION A

AMC 66.A.10 Application

1. Maintenance experience should be written up in a manner that the reader has a reasonable understanding of where, when and what maintenance constitutes the experience. A task by task account is not necessary but at the same time a bland statement "X years maintenance experience completed" is not acceptable. A log book of maintenance experience is desirable and some competent authorities may require such log book to be kept. It is acceptable to cross refer in the EASA Form 19 to other documents containing information on maintenance.

2. Applicants claiming the maximum reduction in 66.A.30(a) total experience based upon having successfully completed 147.A.200 approved basic training, should include the Part-147 certificate of recognition for approved basic training.

3. Applicants claiming reduction in 66.A.30(a) total experience based upon having successfully completed technical training in an organisation or institute recognised by the competent authority as a competent organisation or institute, should include the relevant certificate of successful completion of training.

AMC 66.A.20(a) Privileges

The following definition of line and base maintenance should apply:

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

- trouble shooting;
- defect rectification;
- component replacement with use of external test equipment if required. Component replacement may include components such as engines and propellers;
- scheduled maintenance and/or checks including visual inspections that will detect obvious unsatisfactory conditions/discrepancies but do not require extensive in depth inspection. It may also include internal structure, systems and powerplant items which are visible through quick opening access panels/doors;
- minor repairs and modifications which do not require extensive disassembly and can be accomplished by simple means;
- for temporary or occasional cases (airworthiness directives, hereinafter **AD**; **service bulletins**, hereinafter **SB**) the quality manager may accept base maintenance tasks to be performed by a line maintenance organisation provided all requirements are fulfilled. The **Member State** will prescribe the conditions under which these tasks may be performed.

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

Note: Aircraft maintained in accordance with "progressive" type programmes need to be individually assessed in relation to this paragraph. In principle, the decision to allow some "progressive" checks to be carried out is determined by the assessment

that all tasks within the particular check can be carried out safely to the required standards at the designated line maintenance station.

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

The required 6-month experience should be on aircraft structure, powerplant and systems as appropriate to the category or subcategory and relevant to the type or group rating held.

Experience should be supported by documentary evidence.

AMC 66.A.25 Basic knowledge requirements

1 For an applicant being a person qualified by holding an academic degree in a aeronautical, mechanical or electronic discipline from a recognised university or other higher educational institute the need for any examination will depend upon the course taken in relation to Appendix I to Part-66

2 Knowledge gained and examinations passed during previous experiences, for example, in military aviation and civilian apprenticeships will be credited where the competent authority is satisfied that such knowledge and examinations are equivalent to that required by Appendix I to Part-66.

AMC 66.A.30(a) Experience requirements

1. For a category C applicant holding an academic degree the representative selection of tasks should include the observation of hangar maintenance, maintenance planning, quality assurance, record-keeping, approved spare parts control and engineering development.

2. While an applicant to a Part-66 category C licence may be qualified by having 3 years experience as category B1 or B2 certifying staff only in line maintenance, it is however recommended that any applicant to a category C holding a B1 or B2 licence demonstrate at least 12 months experience as a B1 or B2 base maintenance support staff.

3. A skilled worker is a person who has successfully completed a course of training, acceptable to the competent authority, involving the manufacture, repair, overhaul or inspection of mechanical, electrical or electronic equipment. The training would include the use of tools and measuring devices.

AMC 66.A.30(d) Experience requirements

To be considered as recent experience, at least 50% of the required 12 month experience should be gained within the 12 month period prior to the date of application for the Part-66 aircraft maintenance licence. The remainder of the experience should have been gained within the 7 year period prior to application.

AMC 66.A.30(e) Experience requirements

1. For category A the additional experience of civil aircraft maintenance should be a minimum of 6 months. For category B1 or B2 the additional experience of civil aircraft maintenance should be a minimum of 12 months.
2. Aircraft maintenance experience gained outside a civil aircraft maintenance environment can include aircraft maintenance experience gained in armed forces, coast guards, police etc. or in aircraft manufacturing.

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

- 1 For category A certifying staff specific training on each aircraft type will be required reflecting the authorised task(s) as indicated under -66.A.20 (a) 1.
- 2 Appropriately approved Part-145 or Part-147 organisation means compliance with the applicable paragraphs of AMC 66.A.45.

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

1. The training should give adequate detailed theoretical knowledge of the aircraft, its main parts, systems, equipment, interior and applicable components, including training in the systems in use for technical manuals and maintenance procedures. The course should also take into account the following:
 - (a) in service experience on the aircraft type;
 - (b) feedback from in-service difficulties/occurrence reporting etc;
 - (c) significant airworthiness directives and/or service bulletins;
 - (d) known human factors issues associated with the particular aircraft type.
2. Theoretical training should be supported by training aids such as aircraft system components. Ground simulator time, engine ground running and computer based training (CBT) etc may also be utilised.
3. Knowledge is also recommended of relevant inspections and limitations as applicable to the effects of environmental factors such as cold and hot climates, wind, moisture, etc.
4. The practical training must comprise a period of 4 months for applicants with no recent recorded previous practical experience of aircraft of comparable construction and systems, including the engines, but this can be reduced to a minimum of two weeks for applicant with such previous experience.
5. A programme of structured on-job-training (OJT) may be prepared to satisfy the practical training requirement.

Where the practical training element is conducted by or under the responsibility of the training organisation under an Part-147 approval or a direct type course approval, it should be considered as part of the approved course and as such, **its acceptance by the competent authority** should be supported by a detailed syllabus showing its content and duration. The individual practical training records should be designed in a manner that they demonstrate compliance with the detailed practical training syllabus. Such

records may take the form of an individual training logbook. The logbook should be designed such that tasks may be countersigned by the Part-147 school or other course provider.

Where the practical training element is conducted by a maintenance organisation approved under Part-145, under its own responsibility, its acceptance by the competent authority should be supported by a detailed syllabus showing its content and duration. The individual practical training records should be designed in a manner that they demonstrate compliance with the detailed practical training syllabus. Alternatively, the practical training element may consist of a structured OJT programme. In this case the maintenance organisation approved under Part-145 should provide applicants for a type rating a logbook indicating a list of tasks to be performed under supervision. The logbook should be designed such that tasks may be countersigned by the supervisor. The list of tasks should be accepted either directly for each individual – depending on the individuals previous experience, or indirectly through the acceptance of a procedure giving delegation to the maintenance organisation.

In all cases the practical element should include an acceptable cross section of maintenance tasks, which, in the case of a structured OJT, can be tailored to accommodate the operating profile of the Part-145 organisation whilst also supplementing the theoretical course elements. The means by which the practical element is supervised and the control of the standard should be acceptable to the Member State. The duration of the practical type training element should take into account significant differences between types and be acceptable to the Member State. These differences will require considerably more practical training for certifying staff who are not familiar with the new techniques and technologies. Some examples of differences may include, but are not limited to, the following elements: Fly by wire, glass cockpit avionics, significant structural differences, etc.

5. Before grant of the aircraft type, the applicant should be able to:

(a) demonstrate by knowledge examination a detailed understanding of applicable systems, their operation and maintenance;

(b) ensure safe performance of maintenance, inspections and routine work according to the maintenance manual and other relevant instructions and tasks, as appropriate, for the type of aircraft, for example trouble shooting, repairs, adjustments, replacements, rigging and functional checks such as engine run, etc, if required;

(c) correctly use all technical literature and documentation for the aircraft;

(d) correctly use specialist/special tooling and test equipment, perform removal and

replacement of components and modules unique to type, including any on-wing

maintenance activity.

6. The practical assessment should also ensure safe performance of maintenance,

inspections and routine work according to the maintenance manual and other

relevant instructions and tasks as appropriate for the type of aircraft, for example

trouble shooting, repairs, adjustments (rigging), replacements and functional / operational checks etc including engine operation (ground running) if required.

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

Category C certifying staff may not carry out the duties of category B1 or B2, or equivalent within base maintenance, unless they hold the relevant B1 or B2 category and have passed type training corresponding to the relevant B1 or B2 category.

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

1. “Aircraft types representative of a group” means that:
 - for the B1 category the aircraft type should include typical systems and engines relevant to the group (e.g. retractable undercarriage, pressurisation, variable pitch propeller, etc. for the single piston engine metal subgroup) and,
 - for the B2 category the aircraft type should include complex avionics systems such as radio coupled autopilot, EFIS (Electronic flight instrument system), flight guidance systems, etc .
2. A “multiple engines” group automatically includes the corresponding “single engine” group.

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

1. Type experience should cover an acceptable cross section of tasks from Appendix II. For the first aircraft type of each manufacturer group , at least 50% of the Appendix II tasks, as applicable to the concerned aircraft type and licence category, should be performed. For the second aircraft type of each manufacturer group, this should be reduced to 30%. For subsequent aircraft types of each manufacturer group, this should be reduced to 20%.
2. Type experience should be demonstrated by the submission of records or logbook showing the Appendix II tasks performed by the applicant as specified by the competent authority.

AMC 66.A.70 Conversion provisions

Technical limitations will be deleted, as appropriate, when the person satisfactorily sits the relevant conversion examination and gains relevant experience.

SECTION B PROCEDURE FOR COMPETENT AUTHORITIES

AMC 66.B.100 Procedure for the issue of an aircraft maintenance licence by the competent authority

1. Applicants claiming credit against the 66.A.30(a) total experience requirement by virtue of 66.A.30(d) non-civil aircraft maintenance experience, may only be granted such credit where the Member State has recognised such non-civil aircraft maintenance experience. The competent authority in recognising non-civil aircraft maintenance experience will have specified who within the non-civil environment may make a statement that the applicant has met relevant maintenance experience. The applicant should include a detailed statement of such maintenance experience signed by the non-civil maintenance authority in accordance with the conditions specified in the competent authority's letter of recognition.
2. The competent authority should check that the experience record satisfies above paragraphs in terms of content and the countersigning signature.

AMC 66.B.105 Procedure for the issue of an aircraft maintenance licence via the Part-145 approved maintenance organisation

1. The maintenance organisation approved under Part 145 procedure must be included in the organisation's exposition and audited by the Member State at least once in each 12 month period.
2. Applicants claiming the maximum reduction in -66.A.30(a) total experience based upon having successfully completed a 147.A.200 approved basic training course, should include the Part-147 certificate of recognition for approved basic training.
3. Applicants claiming reduction in -66.A.30(a) total experience based upon having successfully completed technical training in an organisation or institute recognised by the competent authority as a competent organisation or institute, should include the relevant certificate of successful completion of training.
4. Applicants claiming credit against the -66.A.30(a) total experience requirement by virtue of -66.A.30(d) non-civil aircraft maintenance experience, may only claim such credit where the competent authority has recognised such non-civil aircraft maintenance experience. The competent authority in recognising non-civil aircraft maintenance experience will have specified who within the non-civil environment may make a statement that the applicant has met relevant maintenance experience. The applicant should include a detailed statement of such maintenance experience signed by the non-civil maintenance authority in accordance with the conditions specified in the competent authority letter of recognition.
5. The Part 145 organisation should check that the experience record has been countersigned by the maintenance organisation approved under Part 145 except for the non-civil aircraft maintenance experience specified above.

6. The maintenance organisation approved under Part 145 may keep the experience record of applicants in a different form from that of application EASA Form 19 but such different form or manner must be acceptable to the competent authority.

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

In the case of computer generated licences, the licence should be reissued.

AMC 66.B.115 Procedure for the amendment of an aircraft maintenance licence to include an aircraft type or group

Where aircraft type training is covered by more than one course, for example airframe and engine courses, the competent authority should ensure prior to the type rating endorsement that the content of the courses fully covers the scope of the license category. In this case, it is important that the interface is addressed.

In the case of differences training for a similar type, the competent authority should be satisfied that the candidates previous qualification supplemented by the differences training is acceptable as regards the type endorsement.

Determination of compliance with the practical elements can be demonstrated by provision of the detailed practical training records or logbook or, where available by an Part-147 training certificate covering the practical training element.

AMC 66.B.100 to 115

Aircraft type endorsement should use the standard codes contained in Appendix I.

AMC 66.B.305 Conversion report for national qualifications

The scope of the national qualifications and the Part-66 licence should be compared on the basis of a detailed analysis of the national and Part-66 basic qualification standards. The report should identify where a difference between the two standards exists. The report should show where such a difference would lead to a limitation on the Part-66 licence.

AMC 66.B.310 Conversion report for approved maintenance organisations authorisations

The scope of the approved maintenance organisation authorisation and the Part-66 licence should be compared on the basis of a detailed analysis of the Organisations procedures defining the scope of the authorisation, the scope of work of the organisation and the aircraft type qualifications held by the individuals or groups or individuals. The report should identify where a difference between the two scopes exists. The report should show where such a difference would lead to a limitation on the Part-66 licence.

AMC Appendix V to Part-66

The national designators for Part-66 licences are as indicated below:

APPENDIX I

AIRCRAFT TYPE RATINGS
FOR Part-66 AIRCRAFT MAINTENANCE LICENCE

Appendix I - Aircraft type ratings for Part-66 aircraft maintenance licence

The following aircraft type ratings will be used to ensure a common standard throughout the Member States.

The inclusion of an aircraft type in the licence does **not** indicate that the aircraft type has been granted a type certificate in the Member State that issued the licence, this list being only intended for the purpose of maintenance.

In order to keep this list current and type ratings consistent, where a Member State needs to issue a type rating that is not included in this list, such information should be first passed on to the Agency.

1. Aeroplanes with a maximum take-off mass of 5700 kg and above, and/or requiring type training and individual type rating [to be completed].

Aerospatiale/BAe Concorde (RR Olympus)	Airbus A318 (PW6000)
Aerospatiale N262 (Bastan)	Airbus A330 (GE CF6)
Aerospatiale SN601 (PW JT15D)	Airbus A330 (PW 4000)
Aerospaceline Guppy (Allison 501)	Airbus A330 (RR RB211Trent)
Airbus A300 B2/B4 (GE CF6)	Airbus A340 (CFM56)
Airbus A300 B2/B4(PW JT9D)	Airbus A340 (RR RB211)
Airbus A300 B2/B4(PW 4000)	Airbus Beluga (GE CF6)
Airbus A300-600 (PW JT9D)	Antonov AN12 (IP A1-20)
Airbus A300-600 (GE CF6)	Antonov AN22 (Samara/Kusnetsov)
Airbus A300-600 (PW 4000)	Antonov AN24 (IP A1-24)
Airbus A310 (GE CF6)	Antonov AN26 (IP A1-24)
Airbus A310 (PW JT9D)	Antonov AN28 (Rzeszow)
Airbus A310 (PW 4000)	Antonov AN32 (IPA1-20)
Airbus A318/A319/A320/A321 (CFM56)	Antonov AN38 (Allied TPE 331)
Airbus A319/A320/A321 (V2500)	Antonov AN72 (IPD-36)
	Antonov AN124 (IP/L-D18)

ATR 42/72 (PW 120)	Boeing B777- 200/300 (PW 4000)
B Ae 146 / RJ (Avco-Lyc ALF 500 Series)	Boeing B777- 200/300 (RR RB211Trent)
B Ae ATP (PW 120)	Bombardier DHC- 6 (PW PT6)
B Ae 1-11 (RR Spey)	Bombardier DHC- 7 (PW PT6)
B Ae 125 (RR Viper)	Bombardier DHC- 8-100/200/300 (PW 120)
B Ae 125 (Allied TFE 731)	Bombardier DHC- 8-400 (PW 150)
BAe/Hawker 125 (PW305)	Bombardier CL 600 (Avco-Lyc ALF502)
B Ae 748 (RR Dart)	Bombardier CL 601 (GE CF34)
B Ae 1000 (PW PLU 305)	Bombardier CL 600-2B16 (GE CF34)
B Ae Jetstream 31/32/41 (Allied TPE 331)	Bombardier CL-600-2B19 (GE CF34)
Beech 300 (PW PT6)	Bombardier CL-600-2C10 (GE CF34)
Beech 350 (PW PT6)	Bombardier CL-600-2D24 (GE CF34)
Beech 1900 (PW PT6)	Bombardier BD700-1A12 (BRR BR710)
Beech 400 (PW JT15)	-
Boeing B707/720 (PW JT3D)	Canadair CL 215 (PW R2800)
Boeing B707 (RR Conway)	Canadair CL 415 (PW 123)
Boeing B717-200 (BRR BR715)	Canadair CL 44 (RR Tyne)
Boeing B727 (PW JT8D)	Casa 212 (Allied TPE 331)
Boeing B727 (RR Tay)	Casa 235 (GE CT7)
Boeing B737-100/200 (PW JT8D)	Cessna 525 (Will FJ 44)
Boeing B737- 300/400/500 (CFM56)	Cessna 550/560 (PW JT15D)
Boeing B737- 600/700/800/900 (CFM 56)	Cessna 550/560 (PW 530)
Boeing B747- 100 (PW JT9D)	Cessna 560 (PW 545)
Boeing B747- 100 (GE CF6)	Cessna 650 (Allied TFE 731)
Boeing B747SP (RR211)	Cessna 750 (Allison AE 3000)
Boeing B747SP (PW JT9D)	Consolidated PBY-5A (PW R1830)
Boeing B747- 200/300 (PW JT9D)	Convair 240/340/440 (PW R2800)
Boeing B747- 200/300 (RR RB211)	Convair 540/580 (Allison 501)
Boeing B747- 200/300 (GE CF6)	Convair 600/640 (RR Dart)
Boeing B747- 400 (PW JT9D)	
Boeing B747- 400 (PW 4000)	Dassault Falcon 10/100 (Allied TFE 731)
Boeing B747- 400 (RR RB211)	Dassault Falcon 20 (GE CF700)
Boeing B747- 400 (GE CF6)	Dassault Falcon 20 (Allied TFE 731)
Boeing B757- 200/300 (RR RB211)	Dassault Falcon 200 (Allied ATF 3-6)
Boeing B757- 200/300 (PW 2000)	Dassault Falcon 50 (Allied TFE 731)
Boeing B767- 200/300 (PW JT9D)	Dassault Falcon 900 (Allied TFE 731)
Boeing B767- 200/300 (RR RB211)	Dassault Falcon 2000 (Allied CFE 738)
Boeing B767- 200/300/400 (GE CF6)	De Havilland DH 114 (DH Gipsy Queen)
Boeing B767- 200/300 (PW 4000)	
Boeing B777- 200/300 (GE 90)	

Dornier DO 228 (Allied TPE 331)
Dornier DO 328 (PW 119)
Dornier DO 328 (PW 306)

Embraer EMB 110 (PW PT 6)
Embraer EMB 120 (PW 118)
Embraer EMB 135/145 (Allison AE3007)

Fairchild SA 226/227/228 (Allied TPE 331)
Fairchild SA 227 Metro III (PW PT6)
Fokker F27/FH227 (RR Dart)
Fokker F50 (PW 125)
Fokker F28 (RR Spey)
Fokker F70 (RR Tay)
Fokker F100 (RR Tay)

Gates Learjet 23 (CJ610)
Gates Learjet 24 (CJ610)
Gates Learjet 25 (CJ610)
Gates Learjet 31 (Allied TFE 731)
Gates Learjet 35 (Allied TFE 731)
Gates Learjet 36 (Allied TFE 731)
Gates Learjet 45 (Allied TFE 731)
Gates Learjet 55 (Allied TFE 731)
Gates Learjet 60 (PW 305)
Gulfstream I (RR Dart)
Gulfstream II & III (RR Spey)
Gulfstream IV (RR Tay)
Gulfstream V (BRR BR710)

HP Herald (RR Dart)
IAI 1121/1123 (CJ610)
IAI 1124 (Allied TFE 731)
IAI 1125 (Allied TFE 731)

Ilyushin IL-14 (Ash 82)
Ilyushin IL-18 (Ivchenko)
Ilyushin IL-62 (Kuznetsov)
Ilyushin IL-62 (Soloviev)
Ilyushin IL-76/78 (Aviadvigatel)
Ilyushin IL-86 (Samara)
Ilyushin IL-86 (Aviadvigatel)

Ilyushin IL-86 (CFM 56)
Ilyushin IL-96 (Aviadvigatel)
Ilyushin IL-96M (PW 2337)
Ilyushin IL-114 (Klimov)
Ilyushin IL-114PC (PW 127)

Junkers JU 52 (BMW 132)

Let 410 (MW M601)
Let 610 (GE CT7)
Lockheed L100 (Allison T56)
Lockheed L188 (Allison 501)
Lockheed L382 (Allison 501)
Lockheed L1011 (RR RB211)
Lockheed Jetstar (PW JT12)
Lockheed Jetstar (Allied TFE 731)

McD DC3 (PW R1830)
McD DC4 (PW R2000)
McD DC6 (PW R2800)
McD DC7 (Wright R3350)
McD DC8 (PW JT3D)
McD DC8 (CFM56)
McD DC8 (RR Conway)
McD DC9 (PW JT8D)
McD DC10 (GE CF6)
McD DC10 (PW JT9D)
McD MD80 (PW JT8D)
McD MD90 (V2500)
McD MD11 (GE CF6)
McD MD11 (PW 4000)
Mitsubishi MU-300 (PW JT15)

PLZ M-28 Mielec (Rzeszow TW-10)
PLZ M-28 Mielec (PW PT6)

Rockwell Sabreliner (PW JT12)
Rockwell Sabreliner (GE CF700)
Rockwell Sabreliner (Allied TFE 731)
Saab 340 (GE CT-7)
Saab 2000 (Allison AE2100)
Shorts 330/360 (PW PT6)

Tupolev TU 134 (Soloviev)

Tupolev TU 154 (Kusnetsov)
Tupolev TU 154 (Soloviev)
Tupolev TU 204 (Aviadvigatel)
Tupolev TU 204 (RR RB211)

Yakolev Yak-40 (Ivchenko)
Yakolev Yak-42 (Ivchenko)

2. Aeroplanes with a maximum take-off mass less than 5700 kg and eligible to type examination and group ratings

[To be completed]

3. Helicopters with a maximum take-off mass of 3175 kg and above, and/or requiring type training and individual type rating:

Bell 214 (GE CT7)
Boeing BV234 (Avco Lyc 5512)

Mil Mi-17 (Isotov TV3)
Mil Mi-26 (Lotarev D-136)

Eurocopter AS 321/330 (Turmo)
Eurocopter AS 332/332L/L1 (Makila)
Eurocopter AS 332 L2 (Makila)
EH 101 (GE CT700)

PZL W3A Swidnik (Rzeszow TW-10)

Sikorsky S55 (Wright Cyclone)
Sikorsky S58 (Wright Cyclone)
Sikorsky S58T (PW PT6)
Sikorsky S61 (GE CT58)
Sikorsky S64 (PW JTFD 12)
Sikorsky S70 (GE CT700)

Kamov KA-25 (Glushenkov)
Kamov KA-26 (Vedeneyev)
Kamov KA-27 (Isotov)

Mil Mi-6 (Soloviev)
Mil Mi-8 (Isotov TV2)
Mil Mi-10 (Soloviev)

Westland Wessex (RR Gnome)
Westland W30 (RR Gem)

[To be expanded]

4. Helicopters with a maximum take-off mass less than 3175 kg and eligible to type examination and group ratings.

[To be completed]

APPENDIX II

Aircraft Type Practical Experience List of Tasks

Appendix II - Aircraft type practical experience list of tasks

Time limits/Maintenance checks

100 hour check (general aviation aircraft).
“B” or “C” check (transport category aircraft).
Review records for compliance with airworthiness directives.
Review records for compliance with component life limits.
Procedure for Inspection following heavy landing.
Procedure for Inspection following lightning strike.

Dimensions/Areas

Locate component(s) by station number.
Perform symmetry check.

Lifting and Shoring

Assist in :
Jack aircraft nose or tail wheel.
Jack complete aircraft.
Sling or trestle major component.

Levelling/Weighing

Level aircraft.
Weigh aircraft.
Prepare weight and balance

amendment.

Check aircraft against equipment list.

Towing and Taxiing

Tow aircraft.
Be part of aircraft towing team.

Parking and mooring

Tie down aircraft.
Park, secure and cover aircraft.
Position aircraft in dock.
Secure rotor blades.

Placards and Markings

Check aircraft for correct placards.
Check aircraft for correct markings.

Servicing

Refuel aircraft.
Defuel aircraft.
Check tire pressures.
Check oil level.
Check hydraulic fluid level.
Check accumulator pressure.
Charge pneumatic system.
Grease aircraft.
Connect ground power.
Service toilet/water system
Perform pre-flight/daily check

Vibration and Noise Analysis

Analyse helicopter vibration problem.
Analyse noise spectrum.

Air Conditioning

Replace combustion heater.
Replace outflow valve.
Replace vapour cycle unit.
Replace air cycle unit.
Replace cabin blower.
Replace heat exchanger.
Replace pressurisation controller.
Clean outflow valves.
Check operation of air conditioning/heating system
Check operation of pressurisation system
Troubleshoot faulty system

Auto flight

Install servos.
Rig bridle cables
Replace controller.
Replace amplifier.
Check operation of auto-pilot.
Check operation of auto-throttle.
Check operation of yaw damper.
Check and adjust servo clutch.
Perform autopilot gain adjustments.
Perform mach trim functional check.
Troubleshoot faulty system.

Check autoland system
Check flight management systems
Check stability augmentation system

Communications

Replace VHF com unit.
Replace HF com unit.
Replace existing antenna.
Replace static discharge wicks.
Check operation of radios.
Perform antenna VSWR check.
Perform Selcal operational check.
Perform operational check of passenger address system.
Functionally check audio integrating system.
Repair co-axial cable.
Troubleshoot faulty system.

Electrical Power

Charge lead/acid battery.
Charge ni-cad battery.
Check battery capacity.
Deep-cycle ni-cad battery.
Replace generator/alternator.
Replace switches.
Replace circuit breakers.
Adjust voltage regulator.
Amend electrical load analysis report.
Repair/replace electrical feeder cable.
Troubleshoot faulty system

Equipment/Furnishings

Replace carpets
Replace crew seats.
Replace passenger seats.
Check inertia reels.
Check seats/belts for security.
Check emergency equipment.
Check ELT for compliance with regulations.
Repair toilet waste container.
Repair upholstery.
Change cabin configuration.

Fire protection

Check fire bottle contents.
Check operation of warning system.
Check cabin fire extinguisher contents.
Check lavatory smoke detector system.
Install new fire bottle.
Replace fire bottle squib.
Troubleshoot faulty system.
Inspect engine fire wire detection systems

Flight Controls

Replace horizontal stabiliser.
Replace elevator.
Replace aileron.
Replace rudder.
Replace trim tabs.
Install control cable and fittings.

Replace flaps.
Replace powered flying control unit
Replace flat acuator
Adjust trim tab.
Adjust control cable tension.

Check control range and sense of movement.
Check for correct assembly and locking.
Troubleshoot faulty system.

Fuel

Replace booster pump.
Replace fuel selector.
Replace fuel tank cells.
Check filters.
Flow check system.
Check calibration of fuel quantity gauges.
Check operation feed/selectors
Troubleshoot faulty system.

Hydraulics

Replace engine driven pump.
Replace standby pump.
Replace accumulator.
Check operation of shut off valve.
Check filters.
Check indicating systems.
Perform functional checks.
Troubleshoot faulty system.

Ice and rain protection

Replace pump.
Replace timer.
Install wiper motor.
Check operation of systems.
Troubleshoot faulty system.

Indicating/recording systems

Replace flight data recorder.
Replace cockpit voice recorder.
Replace clock.
Replace master caution unit.
Replace FDR.
Perform FDR data retrieval.
Troubleshoot faulty system.
Implement ESDS procedures
Inspect for HIRF requirements

Landing Gear

Build up wheel.
Replace main wheel.
Replace nose wheel.
Replace shimmy damper.
Rig nose wheel steering.

Replace shock strut seals.
Replace brake unit.
Replace brake control valve.
Bleed brakes.
Test anti skid unit.

Test gear retraction.
Change bungees.
Adjust micro switches.
Charge struts.
Troubleshoot faulty system.
Test outbrake system

Lights

Repair/replace rotating beacon.
Repair/replace landing lights.
Repair/replace navigation lights.
Repair/replace interior lights.
Repair/replace emergency lighting system.
Perform emergency lighting system checks.
Troubleshoot faulty system

Navigation

Calibrate magnetic direction indicator.
Replace airspeed indicator.
Replace altimeter.
Replace air data computer.
Replace VOR unit.
Replace ADI.
Replace HSI.
Check pitot static system for leaks.
Check operation of directional gyro.

Functional check weather radar.
Functional check doppler.
Functional check TCAS.
Functional check DME
Functional check ATC Transponder
Functional check flight director system.
Functional check inertial nav system.
Complete quadrantal error correction of ADF system.
Update flight management system database.
Check calibration of pitot static instruments.
Check calibration of pressure altitude reporting system.

Troubleshoot faulty system
Check marker systems
Compass replacement direct/indirect
Check Satcom
Check GPS
Test AVM

Oxygen

Inspect on board oxygen equipment.
Purge and recharge oxygen system.
Replace regulator.
Replace oxygen generator.
Test crew oxygen system.
Perform auto oxygen system deployment check.
Troubleshoot faulty system.

Pneumatic systems

Replace filter.
Replace compressor.
Recharge dessicator.
Adjust regulator.
Check for leaks.
Troubleshoot faulty system.

Vacuum systems

Replace vacuum pump.
Check/replace filters.
Adjust regulator.
Troubleshoot faulty system.

Water/Waste

Replace water pump.
Replace tap.
Replace toilet pump.
Troubleshoot faulty system.

Central Maintenance System

Retrieve data from CMU.
Replace CMU.
Perform Bite check.
Troubleshoot faulty system.

Airborne Auxiliary power

Install APU.
Inspect hot section.
Troubleshoot faulty system.

Structures

Sheet metal repair.
Fibre glass repair.
Wooden repair.
Fabric repair.
Recover fabric control surface.
Treat corrosion.
Apply protective treatment.

DoorsRig/adjust locking mechanism.
Adjust air stair system.
Check operation of emergency exits.
Test door warning system.
Troubleshoot faulty system.

Windows

Replace windshield.
Replace window.
Repair transparency.

Wings

Skin repair.
Recover fabric wing.
Replace tip.
Replace rib.
Check incidence/rig.

Propeller

Assemble prop after transportation.
Replace propeller.
Replace governor.
Adjust governor.
Perform static functional checks.
Check operation during ground run.
Check track.
Check setting of micro switches.
Dress out blade damage.
Dynamically balance prop.
Troubleshoot faulty system.

Main Rotors

Install rotor assembly.
Replace blades.
Replace damper assembly.
Check track.
Check static balance.
Check dynamic balance.
Troubleshoot.

Rotor Drive

Replace mast.
Replace drive coupling.
Replace clutch/freewheel unit
Replace drive belt.
Install main gearbox.
Overhaul main gearbox.
Check gearbox chip detectors.

Tail Rotors

Install rotor assembly.
Replace blades.
Troubleshoot.

Tail Rotor Drive

Replace bevel gearbox.
Replace universal joints.
Overhaul bevel gearbox.
Install drive assembly.
Check chip detectors.

Rotorcraft flight controls

Install swash plate.
Install mixing box.
Adjust pitch links.
Rig collective system.
Rig cyclic system.
Rig anti-torque system.
Check controls for assembly and locking.
Check controls for operation and sense.
Troubleshoot faulty system.

Power Plant

Build up ECU.
Replace engine.
Repair cooling baffles.
Repair cowling.
Adjust cowl flaps.
Repair faulty wiring.
Troubleshoot.

Piston Engines

Remove/install reduction gear.
Check crankshaft run-out.
Check tappet clearance.
Check compression.
Extract broken stud.
Install helicoil.
Perform ground run.

Establish/check reference RPM.
Troubleshoot.

Turbine Engines

Replace module.
Hot section inspection.
Engine ground run.
Establish reference power.
Trend monitoring/gas path analysis.
Troubleshoot.

Fuel and control, piston

Replace engine driven pump.
Adjust AMC.
Adjust ABC.
Install carburettor/injector.
Adjust carburettor/injector.
Clean injector nozzles.
Replace primer line.
Check carburettor float setting.
Troubleshoot faulty system.

Fuel and control, turbine

Replace FCU.
Replace engine driven pump.
Clean/test fuel nozzles.
Clean/replace filters.
Adjust FCU.
Troubleshoot faulty system.

Ignition systems, piston

Change magneto.
Change ignition vibrator.
Change plugs.
Test plugs.
Check H.T. leads.
Install new leads.
Check timing.
Check system bonding.
Troubleshoot faulty system.

Ignition systems, turbine

Check glow plugs/ignitors.
Check H.T. leads.
Check ignition unit.
Replace ignition unit.
Troubleshoot faulty system.

Engine Controls

Rig thrust lever.
Rig RPM control.

Rig mixture HP cock lever.
Rig power lever.
Check control sync (multi-eng).
Check controls for correct assembly and locking.
Check controls for range and sense of operation.
Adjust pedestal micro-switches.
Troubleshoot faulty system.

Engine Indicating

Replace engine instruments(s).
Replace oil temperature bulb.
Replace thermocouples.
Check calibration.
Troubleshoot faulty system.

Exhaust, piston

Replace exhaust gasket.
Inspect welded repair.
Pressure check cabin heater muff.
Troubleshoot faulty system.

Exhaust, turbine

Change jet pipe.
Change shroud assembly.
Install trimmers.

Oil

Change oil.
Check filter(s).
Adjust pressure relief valve.
Replace oil tank.
Replace oil pump.
Replace oil cooler.
Replace firewall shut off valve.
Perform oil dilution.
Troubleshoot faulty system.

Starting

Replace starter.
Replace start relay.
Replace start control valve.
Check cranking speed.
Troubleshoot faulty system.

Turbines, piston engines

Replace PRT.
Replace turbo-blower.

Replace heat shields.
Replace waste gate.
Adjust density controller.

Engine water injection

Replace water/methanol pump.
Flow check water/methanol system.
Adjust water/methanol control unit.
Check fluid for quality.
Troubleshoot faulty system

Accessory gear boxes

Replace gearbox.
Replace drive shaft.
Check chip detector.

Annex V

Guidance Material to Part-66

SECTION A

GM 66.A.20(a) Privileges

1. The following titles shown against each category designator below are intended to provide a readily understandable indication of the job function:

Category A: Line maintenance certifying mechanic.

Category B1: Maintenance certifying technician - mechanical.

Category B2: Maintenance certifying technician - avionic.

Category C: Base maintenance certifying engineer.

The titles adopted by each competent authority may differ from those shown to reflect titles used in the national language for the above functions but the designators A, B1, B2 and C are required by 66.A.20.

2. Individual aircraft maintenance licence holders need not be restricted to a single category. Provided that each qualification requirement is satisfied, any combination of categories may be granted.

GM 66.A.20(a) Privileges

1. Tasks permitted by 66.A.20 (a) 1. to be certified under the category A certification authorisation as part of minor scheduled maintenance or simple defect rectification are as specified in Part 145 and agreed by the **competent authority**. Part 145 contains a typical example list of such tasks.

2. For the purposes of category A minor scheduled line maintenance means any minor check up to but not including the A check where functional tests can be carried out by the aircrew to ensure system serviceability. In the case of an aircraft type not controlled by a maintenance programme based upon the A/B/C/D check principle, minor scheduled line maintenance means any minor check up to and including the weekly check or equivalent.

3. The category B1 licence also permits the certification of work involving avionic systems, providing the serviceability of the system can be established by a simple self-test facility, other on-board test systems/equipment or by simple ramp test equipment. Defect rectification involving test equipment which requires an element of decision making in its application - other than a simple go/no-go decision - cannot be certified. The category B2 will need to be qualified as category A in order to carry out simple mechanical tasks and be able to make certifications for such work.

4. The category C certification authorisation permits certification of scheduled base maintenance by the issue of a single certificate of release to service for the complete aircraft after the completion of all such maintenance. The basis for this certification is that the maintenance has been carried out by competent mechanics and

both category B1 and B2 staff have signed for the maintenance under their respective specialisation. The principal function of the category C certifying staff is to ensure that all required maintenance has been called up and signed off by the category B1 and B2 staff before issue of the certificate of release to service. Category C personnel who also hold category B1 or B2 qualifications may perform both roles in base maintenance.

GM 66.A.20(b)3. Privileges

1. Holders of a **Part-66** aircraft maintenance licence may not exercise certification privileges unless they have a general knowledge of the language used within the maintenance environment including knowledge of common aeronautical terms in the language. The level of knowledge should be such that the licence holder is able to:

- read and understand the instructions and technical manuals in use within the organisation;
- make written technical entries and any maintenance documentation entries, which can be understood by those with whom they are normally required to communicate;
- read and understand the maintenance organisation procedures;
- communicate at such a level as to prevent any misunderstanding when exercising certification privileges.

2. In all cases, the level of understanding should be compatible with the level of certification privileges exercised.

GM 66.A.25(a) Basic knowledge requirements

The levels of knowledge are directly related to the complexity of certifications appropriate to the particular 66.A.1 category, which means that category A must demonstrate a limited but adequate level of knowledge, whereas category B1 and B2 must demonstrate a complete level of knowledge in the appropriate subject modules.

Category C certifying staff must meet the relevant level of knowledge for B1 or B2.

GM 66.A.30(a) Basic knowledge requirements

Maintenance experience on operating aircraft means the experience of being involved in maintenance tasks on aircraft which are being operated by airlines, air taxi organisations, etc. The point being to gain sufficient experience in the environment of commercial maintenance as opposed to only the training school environment. Such experience may be combined with approved training so that periods of training can be intermixed with periods of experience rather like the apprenticeship.

GM 66.A.40 Continued validity of the aircraft maintenance licence

Validity of the Part-66 aircraft maintenance licence is not affected by recency of maintenance experience whereas the validity of the 66.A.20 privileges is affected by maintenance experience as specified in 66.A.20(a)

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

1. The required duration of practical training must be accepted on a case by case basis by the competent authority prior to the type rating endorsement. It is strongly recommended that the agreement on the practical training duration be reached before

the training starts. For applicants from a Part-145 organisation, the required duration may be approved through the organisation's MOE procedures.

2. While it is not feasible to establish a formula giving the required training duration in all cases, the following may be used as a guideline:

(a) For a first type training course with no recent recorded maintenance experience four months practical training is required.

(b) Some factors that may lead to a reduction in the maximum duration of 4 months practical training required are as follows:

-experience on aircraft type of a similar technology, construction and systems including engines;

-recency on type;

-the quantity of the practical experience. For example experience gained will depend upon the environment e.g. line maintenance environment with one aircraft per week would permit limited experience compared with the constant base maintenance check environment;

-the quality of the practical experience. The type of tasks carried out. These tasks should reflect, at a minimum, those tasks specified by the practical training needs matrix developed by the organisation approved under Part-147.

3. The minimum two weeks practical training is normally required for all type training courses. This includes the addition of similar type ratings on a Part-66 licence (differences courses). There may be cases where the practical differences training required is less than two weeks for example an engineer with a Part-66 type license in category B2 on an Airbus A330 with PW 4000 engines who takes a differences course to an Airbus A330 with Rolls Royce Trent engines.

It should be noted however that while AMC 66.A.45(d) specifies a practical training duration between 2 weeks and 4 months, in the case of a structured OJT performed at line stations, due to the availability of aircraft its duration may need be subsequently extended in order to fulfil the required list of supervised tasks.

4. Except in those cases where the Part-147 organisation determines the practical training required it is the responsibility of the maintenance organisation to determine that the duration of practical training is commensurate with the candidates' recency and experience. However, in either case the Member State must satisfy itself that the practical training is of sufficient duration before adding a type rating.

Limited avionics system training should be included in the category B1 type training as the B1 privileges include the replacement of avionic line replaceable units. Electrical systems should be included in both categories type training.

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

The examinations in respect of category B1 or B2 or C aircraft type ratings may be conducted by training organisations appropriately approved under Part-147, the Member State or an organisation accepted by the Member State to conduct such examination.

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

Part-66 Appendix III type training levels are based upon [ATA 104](#) (Air Transport Association) corresponding type training levels.

Guidance to 66.A.70 Conversion provisions

For example a technical limitation could be where a person holds a pre Part-66 national licence or authorisation limited to the release of the airframe and engine but not the electrical power system. This person would be issued with an Part-66 aircraft maintenance licence in the B1 category with a limitation excluding electrical power systems.

SECTION B PROCEDURE FOR COMPETENT AUTHORITIES

GM 66.B.115(b)

Where the maintenance organisation approved under Part-145 conducts the practical training, it must confirm to the competent authority that the trainee has been assessed and has successfully completed the practical elements of type training course to satisfy the requirements of 66.A.45(c). The competent authority is required to agree how the practical elements are assessed, for example under a procedure as agreed by the competent authority or on a case by case basis.

GM 66.B.120

The competent authority will not be carrying out any investigation to ensure that the licence holder is in current maintenance practice as this is a matter for the maintenance organisation approved under Part 145 in ensuring validity of the Part 145 certification authorisation.

GM 66.B.200 Examination by the competent authority

1. Questions may be prepared in the national language but the use of aviation English is recommended wherever possible.
2. The primary purpose of essay questions is to determine that the candidate can express themselves in a clear and concise manner and can prepare a concise technical report for the maintenance record, which is why only a few essay questions are required.
3. Oral type questions may not be used as the primary means of examination because of the difficulty in establishing consistency of standards between examiners or day to day.
Nothing however prevents the competent authority from meeting potential certifying staff for the purpose of ensuring they understand their obligations and responsibilities in the application of maintenance Parts.
4. For pass mark purposes, the essay questions should be considered as separate from the multiplechoice questions.
5. Multiple choice question (MCQ) generation.

The following principles should be observed when developing multiple choice question:

- (a) The examination should measure clearly formulated goals. Therefore the field and depth of knowledge to be measured by each question must be fully identified.
- (b) All the questions should be of the multiple choice type with three alternative answers.
- (c) Questions that require specialised knowledge of specific aircraft types, should not be asked in a basic licence examination.
- (d) The use of abbreviations and acronyms should generally be avoided. However where needed, only internationally recognised abbreviations and acronyms

should be used. In case of doubt use the full form, e.g. angle of attack = 12 degrees instead of $\alpha = 12^\circ$.

- (e) Questions and answers should be formulated as simply as possible: the examination is not a test of language. Complex sentences, unusual grammar and double negatives should be avoided.
 - (f) A question should comprise one complete positive proposition. No more than 3 different statements should appear among the suggested responses otherwise the candidate may be able to deduce the correct answer by eliminating the unlikely combinations of statements.
 - (g) Questions should have only one true answer.
 - (h) The correct answer should be absolutely correct and complete or, without doubt, the most preferable. Responses that are so essentially similar that the choice is a matter of opinion rather than a matter of fact should be avoided. The main interest in MCQs is that they can be quickly performed: this is not achieved if doubt exists about the correct answer.
 - (i) The incorrect alternatives must seem equally plausible to anyone ignorant of the subject. All of the alternatives should be clearly related to the question and of similar vocabulary, grammatical construction and length. In numerical questions, the incorrect answers should correspond to procedural errors such as corrections applied in the wrong sense or incorrect unit conversions: they must not be mere random numbers.
 - (j) Calculators are not allowed during examination. Therefore all calculations should be feasible without a calculator. Where a question involves calculations not feasible without a calculator, such as $\sqrt{10}$, then the question should specify the approximate value of $\sqrt{10}$.
 - (k) Questions must be referred to Part-66 Appendix I examination syllabus.
6. Essay question generation

(a) The purpose of the essay is to allow the competent authority to determine if candidates can express themselves in a clear and concise manner in the form of a written response, in a technical report format using the technical language of the aviation industry. The essay examination also allows to assess, in part, the technical knowledge retained by the individual and with a practical application relevant to a maintenance scenario.

(b) Questions should be written so as to be broad enough to be answered by candidates for all licence category or sub-categories (Cat A, B1 & B2) and comply with the following general guidelines.

- the question topic selected should be generic, applicable to mechanical as well as avionic licence categories and have a common technical difficulty level as indicated in Part -66, Appendix I.
- cover technology applicable to most areas of aircraft maintenance.
- reflects common working practises.
- it is not type or manufacturer specific and avoids subjects which are rarely found in practice.
- when drafting a question there is need to ensure consideration is given to the limited practical experience that most candidates will have.

(c) In order that the questions and the marking procedures are as consistent as possible, each question and model answer, with the required key areas required (see below) should be reviewed independently by at least 2 technical staff.

(d) When raising questions the following must be considered:

- each essay question will have a time allowance of 20 minutes.
- a complete A4 side is provided for each question and answer, if required the answer can be extended onto the reverse side of the page.
- the question should be such that the answer expected will be at the level shown for that subject in the module syllabus.
- the question should not be ambiguous but should seek a broad reply rather than be limited in scope for answer.
- the question should lend itself to be written in a technical report style, in a logical sequence (*beginning , middle and end*), containing the applicable and relevant technical words needed in the answer.

- do not ask for drawings/sketches to support the essay.
- the question must be relevant to the category and level of difficulty listed in the syllabus, e.g. a description of a typical general aviation system may not be acceptable for a typical commercial aeroplane.
- subject to obvious constraints in relation to the topic being addressed the question should have a strong bias towards the practical maintenance of a system/component and the answer should show an understanding of normal and deteriorated conditions of an aircraft and its systems.

Variations on alternative possible answers which have not been thought of, may have to be taken into account to aid the examiner when marking. If considered relevant, the model answer should be amended to include these new points.

(e) Because of the difficulty in marking an essay answer using key points only, there is a need for the way in which the report was written to be assessed and taken into consideration.

(f) The total points for each question will add up to 100 and will need to reflect both the combination of the technical (key point) element and the report style element.

(g) Each key point will be graded upon its importance and have point weighting allocated to it. The total weight will represent 60% of the mark.

(h) Key points are the 'important elements' that may be knowledge or experience-based and will include other maintenance orientated factors such as relevant safety precautions or legislative practices if applicable. Excessive reference to the need for MM referral or safety checks may be considered wasteful.

(i) The question answer will be analysed for the clarity and manner in which the essay report is presented and have a weighting allocated to it which will represent 40% of the mark.

(j) The answer should show the candidate's ability to express himself in technical language. This includes readability of the language, basic grammar and use of terminology.

(k) The report starts in the beginning and has logical process to reach a conclusion.

(l) Supporting diagrams should not be encouraged but if used should supplement the answer and not replace the need for a broad text answer.

(m) The report should not be indexed, itemised or listed.

(n) Within reason the candidate should not be penalised for incorrect spelling.

(o) A zero mark should only be given in exceptional circumstances. Even if the student misunderstands the question and gives an answer to a different question, a

sympathetic mark even if only for the report style should be given, this could up to the maximum percentage allowed.

(p) The two allocated marks should be added together and written into the answer paper.

(q) If a question answer resulting in a borderline failure is principally due to “written report errors,” the paper should be discussed and the mark agreed if possible with another examiner.