Civil Aviation Safety Authority
of Papua New Guinea

Advisory Circular

AC66-1

Aircraft Maintenance Engineer Licence - General

Issue 2

31 October 2022

GENERAL

Civil Aviation Authority Safety Advisory Circulars (AC) contain information about standards, practices and procedures that the Director has found to be an Acceptable Means of Compliance (AMC) with the associated rule.

An AMC is not intended to be the only means of compliance with a rule, and consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices or procedures are found to be acceptable, they will be added to the appropriate Advisory Circular.

An advisory circular also includes **guidance material** to facilitate compliance with the rule requirements. Guidance material must not be regarded as an acceptable means of compliance.

PURPOSE

The advisory circular provides acceptable means of compliance for issue of aircraft maintenance licences, certificates and ratings and the privileges and limitations of those licences, certificates and ratings.

RELATED CAR

This AC relates specifically to Civil Aviation Rule 66.

CHANGE NOTICE

This AC replaces AC 66-1 Revision 1 dated 01 May 2016.

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Introduction

Part 66, Aircraft Maintenance Personnel Licensing, prescribes the rules relating to the issue of licences, ratings, certificates, and authorisations issued by the Director.

This advisory circular provides information about some of the rules in Part 66 and describes the policies of the CAA in administering those rules. Because some of the rules are obvious in their application, not all rules are detailed in this circular.

This advisory circular also specifies the examinations that are required for the issue of documents under Part 66.

Subpart A - General

Readers should refer to Part 66 for references to the rule. Rule numbers have been used here to identify paragraphs that relate to those rules.

66.55 Application for Licences, Certificates and Ratings

Applications for licences, ratings, certificates, and authorisations should be completed on the applicable application form and forwarded to—

Personnel Licensing CASA PNG
PO Box 1941
Boroko NCD, PNG

All application forms are available for download on the CASA website. Contact CASA PEL branch for a copy of a form that may not be available on the website, to be emailed to you directly.

The appropriate fees, as prescribed by the Civil Aviation Charges Regulations and specified on the applicable application form should be enclosed with the application.

Where practical experience details are required they should be documented in a suitable *Practical Training Record (see Appendix 5 for PTR template*) and be as complete and detailed as possible to allow prompt assessment of the application.

Applicants for additional categories or ratings, should forward their existing licence or certificate with the application.

66.7 Issue of Licences, Certificates and Ratings

The appendices to this circular contain information on the following:

- Appendix 1 - description of AME Licence category groups and ratings
- Appendix 2 - lists the various ratings
- Appendix 3 - describes the Category demarcations

This rule requires the applicant to satisfy the Director that the following requirements are met—

66.7(1) Fit and Proper Persons Test

Holders of an aviation document must pass a fit and proper person test. Initial applicants for licences or certificates issued under this part will be required to complete a *Fit and Proper Person Questionnaire – CAA FPP1,* that meets the requirements of this test.

The criteria for the fit and proper person test are in section 50 of the Civil Aviation Act. Section 51 of the Act defines the rights of individuals, and requires a set procedure in case of adverse determinations.

66.7(2) English Language Test

The applicant's ability to speak, read, and write the English language will be assessed during the written and oral examinations carried out to qualify for the licence or certificate.

66.7(4) Interest of Aviation Safety

The granting of a licence or certificate must not be contrary to the interests of aviation safety. To satisfy this requirement the personal records of each applicant for a licence, or certificate, will be reviewed. The Director can only review records that are in the possession of the Authority.

66.9 Acceptance of Foreign AME Licences

Applicants for the grant of licences, ratings, or certificates, issued on the basis of a *current* licence or certificate issued by a foreign ICAO Contracting State, should complete the applicable application form. Reference should be made to this form for the application requirements.

The application will be assessed:

- to ensure that the licence or certificate has been issued by an ICAO Contracting State, where CAA understands that state's licensing system and that state's system meets the requirements of Annex 1 to the ICAO Convention;
- to ensure that the document is valid and current, as part of this process the issuing State should be able to verify this to CASA;
- to determine the extent of, any limitations, and rating coverage; and
- to determine which AMEL examinations are required to be passed. As a minimum this will include completion of a Human Factors Course acceptable to the Director and the written Air Law examination.

Applicants will be required to complete the *Fit and Proper Person test* and satisfy the Director that the issue of the document is not contrary to the interests of safety.

66.9(a)(8) FAA Airframe & Powerplant Certificates

The FAA A & P Certificate is not an ICAO Annex 1 Aircraft Maintenance Engineer Licence and therefore, cannot be converted directly into a PNG Part 66 AMEL. However, CASA PNG recognizes the training, experience and some of the testing that holders of FAA Airframe and Powerplant (A & P) Certificates have already completed with a FAA certified Part 147 school.

The CASA PNG AMS-1 certificate provides a pathway for transition of FAA A&P certificate holders to a PNG Part 66 AMEL.

CASA PNG may issue an AMS-1 credential to FAA A&P Certificate holders who apply under rule 66.157(a). In such cases, CASA PNG will endorse the AMS-1 Certificate with written examination subject codes 1A, 1B, 2, 3, 11 and 17.

Holders of AMS-1 certificates who pass all the remaining written examinations acceptable to the Director in the category sought may continue to have these additional subject codes endorsed on their AMS-1 certificates until such time that they qualify for a PNG Part 66 AMEL under Part 66 -Subpart B.

66.9(a)(8) FAA Inspection Authorisation (IA) Certificates

CASA PNG recognizes the training, experience and testing that holders of FAA Inspection Authorisation (IA) credential holders have already completed with the FAA.

Holders of valid and current FAA A&P Certificate who also hold a valid and current FAA Inspection Authorisation (IA) credential may apply to CASA PNG for direct conversion of their FAA credentials into a PNG Part 66 AMEL.

66.61 Duration of Licences and Certificates

A licence is issued under Part 66 for the lifetime of the holder. It is, therefore, important that licence and certificate holders advise the Director when they change their personal details, such as address or name. This is a requirement under section 48(2) of the Civil Aviation Act.

AME Licences, aircraft maintenance specialist certificates, certificates of inspection authorization, certificate of examiner authorisation and certificates of instructor authorisation will need to be forwarded to the Director with applications for amendment, such as rating issue or renewal. Amended documents cannot be issued until the original document has been received.

This return-of-documents requirement is to prevent the possibility that old licence documents may be mislaid by their owner and then used fraudulently by another person.

Aircraft maintenance specialist certificates, granted for other purposes, may be issued for any period of up to 2 years to five years. The period of issue will depend on the purpose for which the certificate has been issued. Where an AMS is issued to allow practical experience to be gained it will be issued for the minimum time required for that experience. AMS-1 certificate provides a pathway for transition to a PNG Part 66 AMEL. AMS -1 certificates are issued to eligible persons who have passed at least three basic part 66 AMEL exams. AMS-1 certificates are endorsed with a written basic examination subject code, every time a holder passes a basic AMEL exam. A basic AMEL will be issued to AMS -1 certificate holders once they satisfy the full requirements for the issue of a basic AMEL. The AMS-1 certificate is exchanged for a basic AMEL.

Certificates of inspection authorization, examiner authorization and instructor authorization, may be issued for up to 5 years.

Any licence, AMS, or certificate of authorisation that has been suspended or revoked is to be forwarded forthwith to the Director. Forthwith means without delay, having regard for the circumstances of the holder.

Lost or stolen documents

If a licence or certificate is lost, or is stolen, the document may be replaced. You will need to submit to the director a cover letter from your employer together with the statutory declaration signed by a qualified lawyer or commissioner of oaths, pay the appropriate fee and produce written evidence that the loss, or theft, has been reported to the local Police.

66.11 Examinations

This rule requires examination candidates to produce documented proof of their identity for examinations that will lead to the issue of a licence, rating, or certificate issued under Part 66. Acceptable methods of proving identity include—

- Passport;
- PNG or foreign driver's licence;
- PNG or foreign pilot's licence ;
- Birth Certificate;
- PNG NAC Airport Identity Card; or
- any similar document acceptable to an Examination Conducting Officer.

The minimum pass mark for all written examinations is 75%. Applicants should ensure that they retain course certificates or examination result notices until the licence, rating, or certificate the examination or course relates to, has been issued.

Written examination passes are valid for the lifetime of the holder, except for the Written Air Law examination (code 20) which is valid for 2 years. This means an applicant must apply and have the licence issued within 2 years of completing the Air Law examination (code 20). If an applicant fails to have the licence issued within 2 years of sitting the Air Law examination, that subject must be re-sat and passed.

Before sitting the written Air Law examination (code 20) the applicant must have completed all written

examinations required for the licence issue and have completed the required practical experience listed in rule 66.57(b).

If the written Air Law examination (code 20) is failed 3 times in succession a six-month stand down period will apply from the date of the last attempt, this is to allow the candidate to suitably review the subject material prior to a further sitting.

Subpart B – Aircraft Maintenance Engineer Licence

66.57 Eligibility Requirements

66.57(a)(2) Examination Requirements

For the issue of a licence this rule requires that examinations have been passed that are acceptable to the Director and are relevant to the duties and responsibilities or an aircraft maintenance engineer in the category of licence sought. Appendix 6 details the structure and layout of the examination syllabuses.

Table 1 details the examinations requirements for each category. The table identifies each subject code number (column 2) and name (column 3) and indicates the Advisory Circular that contains the syllabus and other relevant material for each subject (column 1). The numbers of examinations to be passed in respect of each category are as follows:

Table 1

AMEL Basic Examination requirements											
Advisory Circular	Subject Code	Subject Name	Licence Category								
			Aeroplane	Rotorcraft	Power plant		Electrical	Instrument	Radio	LTA
					Piston	Turbine				
AC66-2.1A	1A	Aero. Science - Maths & Physics	✓	✓	✓	✓	✓	✓	✓	
AC66-2.1B	1B	Aero. Science - Electrical Fund.	✓	✓	✓	✓	✓	✓	✓	
AC66-2.2	2	Aircraft Engineering Knowledge	✓	✓	✓	✓	✓	✓	✓	
AC66-2.3	3	Aircraft Materials	✓	✓	✓	✓	✓	✓	✓	
AC66-2.4	4	Aeroplanes I	✓		2		✓	✓	✓	
AC66-2.5	5	Aeroplanes II	1							
AC66-2.6	6	Rotorcraft		✓	2					
AC66-2.7	7	Piston Engines			✓					
AC66-2.8	8	Turbine Engines				✓				
AC66-2.11	11	Avionics I	✓	✓	✓	✓	✓	✓	✓	
AC66-2.12	12	Avionics II					3	4	5	
AC66-2.13	13	Electrical Systems					3			
AC66-2.14	14	Instruments Systems						4		
AC66-2.15	15	Radio Systems							5	
AC66-2.16	16	Compass Compensation	✓	✓				✓		
AC66-2.17	17	Human Factors	✓	✓	✓	✓	✓	✓	✓	
AC66 -2.18	18	Reserved								✓

AC66-2.20	20	Air Law - Written	✓	✓	✓	✓	✓	✓	✓	✓
AC66-2.21	21	Reserved								
		Number of examinations	9	9	9	9	8	9	8	2

Notes: – prior to issue in following categories stated exams required		
1	Aeroplane	Prior to the issue of a pressurised aircraft type rating in **Groups 5 or 6**, a pass in Subject 5 is required.
2	Powerplant	Prior to the issue of category, either subjects 4 or 6 **and** either subjects 7 or 8 required, dependent upon the aspirations of the candidate. Only need to take **one each** of the paired subjects. All four subjects must be taken for all four rating specialities
3	Electrical	Prior to the issue of a type rating in **Group 2** a pass in Subjects12 & 13 is required
4	Instrument	Prior to the issue of a rating in **Group 2 or 3** a pass in Subjects12 &14 is required
5	Radio	Prior to the issue of a rating in **Groups 2, 3 or 4** a pass in Subjects12 &15 is required

66.57(a)(b) Practical Experience, Training

Licence issue experience

Practical aviation experience requirements for licence issue vary depending on the method by which the applicant has gained training—

- An engineer that has not undertaken any formal engineering training but has completed the required examinations through self-study methods will be required to complete 60 months of practical aviation engineering experience;
- An engineer who has completed a traineeship in an aviation technical trade will be required to complete 48 months of practical aviation experience. These 48 months includes the time spent in formal technical training. The training could comprise a number of formal block courses or a continuous non-integrated training course.
- Engineers who have successfully completed a traineeship in an allied engineering trade require 36 months of aviation related practical experience. This is in addition to any practical experience gained when qualifying for the allied trade qualification. An allied trade is considered to be a technical trade similar in nature to aviation trades such as, automotive engineering, general engineering, and electronic engineering; and
- Engineers that undertake a course of training conducted by a certificated Part 141 organisation that holds the appropriate E2 rating will need to show 36 months of aviation related experience that includes the time spent on integrated aviation training. The course will need to include supervised training and practical experience.

Category experience

A period of 24 months of practical experience is required relating to the specific category being sought. For example, an applicant for a powerplant category is required to show 24 months of powerplant maintenance experience. The balance of the required experience may consist of experience in any of the other categories.

Practical experience for two or more categories may be gained concurrently if the nature of the job allows for this. For example, typically in a general aviation hangar a tradesperson would work on both aeroplane and powerplant category type maintenance concurrently.

Rule 66.57 (d)(ii) provides for an engineer who has exercised the privileges of an aircraft maintenance engineer licence for 10 years or more, the holder is entitled to an additional category of licence if he or she has completed 12 months of appropriate experience.

Documenting practical experience

Practical experience for the issue of an AME Licence and Categories should be documented in a suitable Practical Training Record (PTR). This should be set out or highlighted so the experience is readily identifiable to the applicable licence and/or category that is being applied for and in respect to ATA Specification 104 published in Appendix 4, “List of typical maintenance tasks”.

CASA has produced an acceptable PTR template that applicants should use when submitting their PTR to CASA The template provides the following:

- provide an overview of experience /employment in the aviation industry, detailing relevant qualifications, training and courses;
- list specific tasks completed, being countersigned by a supervising LAME; and
- details of the dates and the specific aircraft or components and hours worked on As a guide, typical PTR format have been included in Appendix 5.

66.59 Privileges and Limitations

To exercise the privileges of an aircraft maintenance engineer licence the holder must be appropriately rated. A list of ratings is included as Appendix 2**.**

The demarcations between each licence category are published as Appendix 3.

Part 145 Demarcation

Rule 43.51 details the maintenance that must be carried out under the authority of, and according to the provision of, a maintenance organisation certificate issued under Part 145. Aircraft and aircraft components maintained under this Part may only be released to service by a person authorised to do so by the certificated maintenance organisation. Ratings covering aircraft and aircraft components that are required to be maintained by a Part 145 maintenance organisation may be added to an aircraft maintenance engineer licence issued under Part 66.

These ratings alone do not provide release-to-service privileges – such privileges are conferred by an authorisation issued by the Part 145 certificated maintenance organisation.

These ratings:

- have been retained as a method of indicating examination and practical experience qualification in a transportable manner; and
- are restricted to aircraft, or system, type and component groups and are described in Part 66 Appendix B.2, and in Appendix 2.

EM 66.59(b) - Familiarity

Before exercising the privileges of an aircraft maintenance engineer licence the engineer must be

familiar with the specific aircraft or aircraft component being maintained. This is applicable to all ratings, be it a Group rating or Type rating.

For Group ratings, the engineer should be familiar with the specific types with the Group.

For Type ratings, the engineer should be familiar with the specific variants or models with the type rating.

E.g. - Powerplant Type Ratings, where the type may cover FADEC variants. The engineer would need to have completed specific training on the FADEC system or models.

The engineer should have a thorough knowledge of the appropriate maintenance manual, and other ICAs, and understand the acceptable standards and practices required by Part 43. The engineer should have practical experience of the task to be performed, or of a task of similar nature.

EM 66.59(c) - Special Test Equipment

When using special test equipment to carry out the additional privileges specified in Part 66 Appendix C, the licence holder is required to have received appropriate training and have evidence of that training on the test equipment.

This evidence may be a certificate, or letter, from:

- an appropriately rated aircraft maintenance engineer licence holder;
- a person authorised to conduct training on the equipment under Part 141; or
- the test equipment manufacturer or their technical representative.

Subpart C – Maintenance Engineer Licence Ratings

66.107 Eligibility Requirements

To be eligible for the grant of an aircraft maintenance engineer licence rating, the applicant must hold a current aircraft maintenance engineer licence and meet the practical experience and examination or course requirements detailed below.

EM to 66.107(2) - Practical experience

The rule specifies a minimum time of 6 months practical experience on the type or group of aircraft or aircraft components. This should be completed within the immediate three years before application to demonstrate familiarity and currency.

Documenting experience - Practical Training Record (PTR)

To demonstrate that six months practical experience has been completed for the issue of a rating, the experience should be documented in a suitable Practical Training Record (PTR). This should be set out, or highlighted so the experience is readily identifiable to the applicable rating that is being applied for.

CASA has produced an acceptable PTR template that applicants should use when submitting their PTR to CASA.

Engineers are not required to use the CASA PTR but the format of any acceptable PTR should list the specific tasks completed, being countersigned by a supervising LAME, along with details of the dates and the specific aircraft or component.

As a guide, a typical group rating PTR page has been included in **Appendix 5**.

Only experience specific to the rating(s) sought should be included, or highlighted in some way in the PTR. The range and depth of the relevant experience should be readily evident from an assessment of the PTR.

Rating experience requirements

Practical experience should comprise a broad cross section of maintenance tasks at both **Line** and **Base** (Hangar) Maintenance Levels and should be across all relevant systems (appropriate ATA Chapters) for the category(s) applying for.

Typically this should include:

- Completing all aspects of a number of line and base level routine inspections;
- For transport category type rated aircraft this should include a minimum of three; and different C level type checks:;
- A broad cross section of the following representative tasks on the various aircraft systems:
    - trouble shooting;

- repair;
- adjustments and rigging;
- component and module changes;
- functional/operational checks; and
- use of special tooling and test equipment.

Reference should be made to **Appendix 4** that lists typical tasks by aircraft systems.

Group Ratings

As a guide, typical acceptable practical experience for group ratings should include the following practical experience:

Aeroplane and rotorcraft categories

- Minimum of three periodic inspections, including avionic systems;
- Minimum of two aircraft weighings, or weight and balance calculations for the first aeroplane and the first rotorcraft rating;
- Rectification of defects and component changes including avionic components;
- Compass compensation for the first rating; and
- Functional testing and servicing of aircraft systems.

Powerplant category

- Minimum of three periodic inspections;
- Rectification of defects and component changes; and
- Functional testing and servicing of powerplant systems, including propulsion engine ground running.

Note: Applicants for the Group 2 powerplant rating must hold the Group 1 powerplant rating.

Electrical category

- Periodic inspection and testing;
- Defect analysis and rectification, including component changes; and
- Modification installation.

Instrument category

- Periodic inspection and testing;
- Defect analysis and rectification, including component changes;
- Modification installation; and
- Compass compensation for the issue of the first rating.

Radio category

- Periodic inspection and testing;
- Defect analysis and rectification, including component changes; and
- Modification installation.

Note: If insufficient experience is shown for a group rating and this is due to the inability of the applicant to be

exposed to more than one type within a group, the applicant may apply to have that type issued as a restricted type rating within a group. It is not intended for this to be usual practice, but the provision is included for cases of genuine need. If a genuine need cannot be substantiated then the application will be declined.

Type Ratings

For the issue and assessment of Type Ratings practical experience and any specific OJT should be documented in an appropriate aircraft and/or powerplant specific type rating PTR that details/sets out the experience under the relevant systems (ATA Chapters).

For transport category aircraft the PTR will normally be developed by the Part 145 Certificated Maintenance Organisation as part of their company authorisation procedures and should clearly detail or set out an acceptable cross section of specific tasks across the relevant systems that must be completed prior to the issue of a company authorisation.

Type rating PTRs may also be developed by a Part 141 aviation training organisation for their type rating courses.

Component Ratings

Applicants for the component ratings, Group 7 of each category, should show 6 months of practical experience gained on the overhaul or repair of specific components. Where the rating applies to a group of components the PTR should demonstrate that the experience has been gained on a wide selection of components from within the category. If this cannot be demonstrated a restricted rating may be issued limiting the range of component types. *For example, restricted to alternators only.*

EM to 66.103(3) - Examinations and courses

Type Ratings Courses

Type ratings require the completion of an approved or acceptable course. A course must be:

- conducted by a Part 141 aviation training organisation or a Part 145 maintenance organisation certificated (rule 145.11(a)(11)) with the appropriate E1 rating;
- conducted by the manufacturer of the applicable aircraft or component; or
- approved by the competent authority of a foreign ICAO Contracting State.

Additionally, courses should:

- be developed/packaged to an industry recognised standard such as - ATA Specification 104 - Guidelines for Aircraft Maintenance Training - Level III (Line and Base Level Maintenance), or an equivalent standard;
- cover all the relevant systems (ATA chapters) for the privilege of the category of licence;
- cover the series of aircraft or powerplants that the rating provides privilege for; or
- cover a competency assessment element such as a technical oral.

Type rating courses should be completed within 2 years to ensure familiarity and currency on type. If more than 2 years has expired since course completion, the currency of type course may be satisfactory if the holder can show continuous or significant recent practical experience on the type since completion of the course.

In cases where approved courses are not available and the provisioning of an oral or written examination is within the capabilities of CASA, an examination may be conducted by CASA.

Technical Oral

The purpose of the technical oral is to establish the engineer's ***technical competence*** relevant to the privileges of the type rating. That is, the engineer understands more than the just 'nuts and bolts' or theory of operation of

the relevant powerplant or airframe, and can apply the knowledge from the course, to the maintenance requirements that they can be expected to perform, and certify for, in operation and maintenance.

This may be conducted by the applicant's Part 145 Maintenance Organisation as part of their company authorisation procedures, or alternatively by a Part 141 Training School.

Note: As part of the requirements for a Part 145 company authorisation to be issued, the technical competence for the scope of the authorisation should be examined by an appropriate senior person within the company. *[Refer Rule 145.111(e)(ii)]*

Where the course is conducted by an foreign course provider, that is approved by another ICAO contracting state, the technical oral may be conducted by the approved training provider using CASA guidelines for the content of the technical oral, these can be obtained by contacting CAA Personnel Licensing.

Group Ratings

Group ratings require the completion of acceptable rating examinations. Acceptable examinations for Group Ratings are detailed in Appendix 1.

Should an acceptable course be available covering a specific rating group, or individual aircraft in Aeroplane Category Group 5, the applicant may qualify for the rating by successfully completing the approved course and meeting the practical experience requirements. Note: Applicants should check with CAA before attending a course to ensure it is acceptable

Some specific Aeroplane Category Group 5 type ratings examinations that are available through CASA are listed below:

Group 5 Ratings	Exam. Code
Beech 58P	120
Beech 60	121
Beech C90 and E90	122
Beech 200 and 300	123
Cessna 340, 414A, 421C 124	124
Mitsubishi MU-2	125
Rockwell 690B and 695A	126
Piper PA-31 Series	127
De Havilland Venom	128
Swearingen SA226	129
Piper PA46 Series	130
Cessna 337P Series	131

Group 7 Component Ratings

Group 7 component type rating qualification may be met by either an approved or acceptable course, or acceptable rating examination.

The Group 7 type rating qualification is also dependent on the applicant passing the prerequisite component overhaul examination that relates to the appropriate category. These examinations are in addition to the basic examinations detailed in 66.57.

The specific rating examinations are detailed in Appendix 1.

Subpart D – Aircraft Maintenance Specialist Certificates

66.157 Eligibility Requirements

The certificate is issued to suitably qualified persons to permit the performance of maintenance and the release to service of aircraft or aircraft components within the limitations annotated on the certificate. AMS certificates are not issued as a replacement document for an aircraft maintenance engineer licence.

Restrictions may be placed on the certificate that include the limiting of privileges to specific inspection levels or specific components, or require the direct supervision by a fully qualified person. For the issue of an AMS certificate the rule requires the applicant to—

- provide evidence of appropriate practical experience; and
- hold a pass in acceptable examinations or an approved course, as appropriate.

Examination requirements may include the full suite of examinations required for the issue of an aircraft maintenance engineer licence or they may be any lesser number that the Director may determine. This will depend on the extent of the privileges to be granted, the technical background of the applicant, and the extent of the applicant's aviation related practical experience.

AMS-1: ATO Graduates lacking practical experience and FAA A & P Certificate holders;

AMS-2: Specific Maintenance tasks and Processes such as NDT, Painting and Welding;

AMS-4: Lack practical experience;

In the case of AMS, the applicant will be required to demonstrate the eligibility requirements of 66.157.

The applicant for AMS may continue to exercise the privilege of the AMS certificate as long as they continue to comply with the conditions of validity specified in 66.163.

AMS-1: ATO Graduates in transition to a Part 66 AMEL

Part 141 ATO graduates who satisfy the eligibility criteria in rule 66.157(a) may be issued an AMS-1 .
The AMS-1 is a documented process for transitioning to a Part 66 AMEL after:

- successfully passing all written examinations that are acceptable to the Director, relevant to the duties and responsibilities or an aircraft maintenance engineer in the category of licence sought, including Air Law; and
- successful completion of the 24 months of practical experience appropriate to each category of licence sought as required in rule 66.57(b)(2) .

(Note 1: CASA PNG will endorse the AMS-1 credential with all written examinations passed by the holder until such time that the holder is ready to exchange their AMS-1 for a Part 66 AMEL
Note 2: An AMS-1 certificate holder should work under supervision and not be authorized to make RTS certifications)

Practical Experience for a LAME applying to hold an AMS-4

To gain the full practical experience required for a rating, rule 66.107(2) provides for a LAME to be eligible for issue of a AMS-4. The prerequisite is that the examination or type-course requirements for the rating have been met and a minimum acceptable level of practical experience has been gained already.

Air Legislation Exam Time Limitation for AMS-4

An AMS-4 is also used to facilitate a foreign AME Licence holder to 'transition' onto the Papua New Guinea AME Licence by allowing him to study for and pass the Air Legislation exam within 3 months of issue. No further extension will be granted to the holder, unless he/she has made an attempt to sit for the Air Legislation exam and subsequently failed.

The practical experience required before the issue of a AMS-4 certificate approval will vary, depending on the limitations to be applied to the certificate. The following should be considered when demonstrating appropriate practical experience of aircraft or aircraft component maintenance to gain AMS-4 issue—

General

Experience levels should include periodic inspections, defect analysis and rectification, component replacement, servicing, and functional testing.

Supervision

Performance of maintenance on the specific aircraft or component covered by the AMS-4 certificate, whilst under the supervision of a fully qualified person being—

- a rated aircraft maintenance engineer;
- an approved training organisation;
- a manufacturer's technical representative; or
- a foreign operator approved by the competent authority of that State–

may be acceptable as grounds for a reduced level of required practical experience for certificate issue. This supervision should be carried out on site during maintenance tasks, remote supervision is not acceptable.

Similar existing rating coverage

Evidence of limited experience on type, plus evidence of experience or a rating on similar aircraft or aircraft components may be acceptable grounds for a reduction in the required practical experience for certificate issue. For example - a turbine engine of an earlier model that has the same basic technology but different components.

'First-of-Type' aircraft introduction

Due to the introduction of a new type of aircraft or aircraft component new ratings have to be issued or gained. The necessary experience period is accommodated by the Director issuing AMS-4 certificates in the interim.

When a AMS-4 certificate is required, the individual, or organisation, introducing the aircraft or aircraft component should submit a schedule of intended practical training or OJT to CASA. This will be assessed for acceptance before commencement of the training.

Subpart E – Certificate of Inspection Authorisation

66.205 Eligibility Requirements

The *course of instruction* in rule 66.205(a)(4) is an IA Initial Issue Course that is specific to the certificate of inspection authorisation and is conducted by the Director.

Familiarity

The rule does not specifically require that the holder of a certificate of inspection authorisation is rated on each aircraft that the holder performs a review of airworthiness on.

However, similar to the familiarity requirements of rule 66.59(b) to exercise the privileges of the AME Licence, and rule 43.53(a)(1) for the performance of all maintenance, the holder of a certificate of inspection authorisation *must be familiar with the specific aircraft type to perform a review of airworthiness.* Without being familiar, an IA cannot be reasonably assured that all the requirements for the performance of the review of airworthiness have been met.

Experience over the 12 years since the IA certificate has been introduced has demonstrated that IAs who are not familiar on type cannot perform a review of airworthiness to an acceptable standard to meet the requirements of Rule Part 43 Subpart D.

66.209 Duration of the Certificate

This rule provides for a certificate of inspection authorisation to be issued for a period up to 60 months. To gain a new certificate of inspection authorisation the holder should apply to attend a CASA PNG online IA Renewal Course. Applicants should contact the CASA PNG at least 30 days before expiry of the certificate to book for a place on the online IA Renewal course.

66.211 Recent Experience Requirements

This rule prescribes the recent experience requirements concerning the certificate. It is emphasised that performing the routine or 100-hour inspection does not count towards maintaining recent experience for a certificate of inspection authorisation.

Subpart F – Certificate of Examiner Authorisation

66.305(a)(4) Eligibility Requirements

The *course of instruction* in rule 66.305(a)(4) is an Examiner Authorization Course that is specific to the certificate of inspector authorization credential and is conducted by the Director.

66.307 Privileges and Limitations

This certificate entitles the holder to examine aircraft maintenance engineering and after the successful completion of the aircraft maintenance engineer examination or skills test, endorse those personnel for a license, rating or certificate issued under Part 66.

Subpart G – Certificate of Instructor Authorisation

66.405(a)(4) Eligibility Requirements

The *course of instruction* in rule 66.405(a)(4) is an Instructor Authorization Course that is specific to the certificate of inspector authorization credential and is conducted by the Director.

66.407 Privileges and Limitations

This certificate entitles the holder to give instruction to aircraft maintenance engineering personnel in a Part 141 approved Aviation Training Organization.

APPENDIX 1 – Categories and Rating Described

Category	Rating Group - *Ref Rule Part 66 for full Group*		Examinations / Course req.
Aeroplane	Group	Metal skin, unpress, < 5700kg, fixed u/c	60 Written and 61 Oral
	Group	Metal skin, unpress, < 5700kg, not Gp 1	62 Written and 63 Oral
	Group	Wood or Tube structure, fabric cover	64 Written and 65 Oral
	Group	FRP or similar construction	66 Written and 67 Oral
	Group	Specific Type - Press, < 5700kg	5 + rating exam / course, tech.
	Group	Specific Type - Press, > 5700kg	5 + type rating course , tech. oral
	Group	Airframe Component	10 + 34 written and 35 oral
Rotorcraft	Group	Piston engined rotorcraft other than Gp 3	80 written and 81oral
	Group	Turbine engined rotorcraft other than Gp 3	82 written and 83 oral
	Group	Specific Type - considered other than Gp 1	type rating course
	Group	Helicopter Dynamic Component	10 + 46 written and 47 oral
Powerplant	Group	Normally aspirated piston engine	7 + 70 written and 71oral
	Group	Turbo, supercharged & radial piston engine	7 + 72 written and 73 oral
	Group	Specific Type - Turbines	8 + type rating course, tech. oral
	Group	Piston Engine Component	10 + 40 written and 41 oral
	Group	Turbine Engine Component	10 + 42 written and 43 oral
	Group	Propeller Component	10 + 44 written and 45 oral
Electrical	Group	Electrical systems	90 written and 91 oral
	Group	Specific Type - elec. systems a/c > 5700 kg	12,13 + type rating course, tech.
	Group	Electrical Component	22 + 50 written and 51 oral
Instrument	Group	General a/c Inst. systems	93 written and 94 oral
	Group	Auto flight & Nav systems	14 + 95 written and 96 oral
	Group	Specific Type - flight systems a/c > 5700 kg	12,14 + type rating course, tech.
	Group	Instrument Component	22 + 52 written and 53 oral
Radio	Group	Airborne Comms. systems	101 written and 102 oral
	Group	Airborne Nav. systems	15 + 103 written and 104 oral
	Group	Airborne Radar systems	15 + 105 written and 106 oral
	Group	Specific Type - radio systems a/c > 5700 kg	12,15 + type rating course, tech.
	Group	Radio Component	22 + 54 written and 55 oral

Legend

X - Group Ratings
R - Individual Type Ratings
C - Component Ratings

APPENDIX 2 – AMEL Ratings

Note: these listings may not include all models recently type accepted into PNG. This does not exclude those types from the various AMEL Categories. The rating Groups are described in Rule Part 66 Appendix B . If unsure contact CASA.

Category Aeroplane – Rating Groups 1 to 6

Rating Group 1	Rating Group 2
Metal stressed skin unpressurised commercially manufactured and amateur-built aeroplanes not exceeding 5700 kg MCTOW and with fixed undercarriage: *Note: excludes retractable models of any specific type listed.*	*Metal stressed skin unpressurised type certified and amateur-built aeroplanes other than Group 1:* *That is retractable aircraft that are Metal stressed skin unpressurised*
Aerocommander 100	Aerocommander 500 series, & 680 series
AESL/Victa Airtourer series	Aviation Traders DC-4/ATL-98
Beagle B121	Beech 24 series, V35 series, A36 series, 58, 95, 65 and 76 series, & 99 series
Beech B19, 23 series & 77	Bristol 170
Bolkow 208 series	Cessna 172RG, 177RG 182 series, 210 series, 212 series, T303, 310 and 320 series, 337 series, 402 and 404 series, & A-37B
Britten Norman BN-2 series	Chance Vought Corsair
Cessna 150, 152, 170, 172, 177, 180, 182, 185 O-1, A188 series, 206 series, 207 series, 208 series, & 336.	Curtiss P40 series
De Havilland-Australia DHA3 series	De Havilland DH104, & DH114
De Havilland-Canada DHC1 series, DHC2 series, & DHC6 series	Douglas DC-3
Ercoupe 415	Embraer EMB-110
Fletcher FU-24 series	GAF Nomad series
Grumman American AA-1 and AA-5	Garden GY80
Morane Saulnier MS880 and MS885 & MS893 series	Grumman G21 and G44, TB series Avenger
NZAIL Cresco series	Gulfstream GA7
NZAIL CT-4	Hawker Sea Fury
Partenavia P-68 series	Lake LA-4
Pilatus PC-6 series	Mooney M20 series
Piper PA-28 series, PA-32 series, PA-36 series, & PA-38 series	Moravin Zlin 526F
PZL-104 Wilga series	North American Harvard/T-6 series, P-51 Mustang, & T-28 Trojan
Transavia PL12 series	Piper Aerostar 600 series, PA-23, PA-30, PA-34, PA-39 and PA-44 series, PA-24 series, PA-28R, and PA-32R series, & PA-31 series

Rockwell Commander S2R	Supermarine Spitfire
Schweizer G164 Ag Cat. Series	Ted Smith Aerostar 600 series
SOCATA TB9 and TB10	
Yeoman Cropmaster series	

Rating Group 3	*Commercially manufactured or Amateur-built aeroplanes constructed principally of fibre reinforced plastic (FRP), or similar material:*
Commercially manufactured and amateur-built aeroplanes with, principally, wooden, tubular, or fabric covered structure:	Slingsby T61C Falcon, & T67 Firefly
Auster B8	
Auster J series	
Beagle A61 series, A109 series	
Cessna 120	
Champion 7 series	
Chrislea CH-3	
Falco F8L	
Rearwin 9000 series	
De Havilland DH60 series, DH82 series, DH83 series, DH89 series, & DH94 series	
General Aircraft ST-25	
Maule M4 and M5 series	
Percival Prentice & Proctor	
Piper J, PA-18 series, PA-22 series, & PA-25 series	
Pitts Special series	
Taylorcraft BC series & 20	
Rating Group 4	

Rating Group 5 - Type ratings	
Pressurised aeroplanes not exceeding 5700 kg MCTOW, by individual types:	
Designator	***Aircraft***
BE58P	Beech 58P
BE60	Beech B60
BE90	Beech 90 series
BE200	Beech 200 and 300 series
C210P	Cessna 210P series
C337P	Cessna 337P series
C414	Cessna 340, 414A, 421, 425 and 441 series

C500	Cessna Citation 500 series
C525	Cessna Citation 525 series
DH115	De Havilland Vampire DH115 and Venom DH112
L-29	Aero Vodochody L-29 series
Aero L-39	Aero Vodochody L-39 series
MU2	Mitsubishi MU-2 series
PA31P	Piper PA-31P series
Piper PA42	Piper PA 42P (Cheyenne) series
PA46P	Piper PA 46P series
R690	Rockwell 690B & 695A
SA226	Swearingen SA226 series
Rating Group 6 - Type ratings	
Pressurised aeroplanes exceeding 5700 kg MAUW by individual types:	
Designator	***Aircraft Series***
A320, A330-2/3/9	Airbus A320, 330 Series
ATR72	ATR 72 series
AW650	Armstrong Whitworth AW650 series
BAe125	British Aerospace HS 125 series
BAe146	British Aerospace 146 series
BAe J31	British Aerospace J31 Jetstream series
BAe J41	British Aerospace J41 Jetstream series
BE1900	Beech 1900 series
B727	Boeing 727 series
B737	Boeing 737-100 & 200 series
B737-3/4/5	Boeing 737-300, 400, & 500 series
B737-6/7/8	Boeing 737-600, 700, & 800 series
B747-2	Boeing 747-200 series
B747-4	Boeing 747-400 series
B767	Boeing 767 series
B777	Boeing 777-200 series
C650	Cessna Citation 111
CV580	Convair 580 series
DC8	McDonnell Douglas DC-8
DHC8	De Havilland Canada DHC-8 series
F10	AMD-Ba-Falcon 10 series
F200	AMD-BA-Falcon 200 and 20 series
F27, F28	Fokker F27, F28 series

GIV	Gulfstream GIV series
HS748	Hawker Siddeley HS 748 series
Hunter	Hawker Hunter
IAI 1124	Westwind / IAI 1124 series
LJ35/36	Learjet 35 and 36 series
SA227	Swearingen Metroliner SA227 series
SF340	SAAB 340 series

Category Rotorcraft – Rating Groups 1 to 3

Rating Group 1
Piston-engine rotorcraft
Brantly B2
Bell 47 and Kawasaki-Bell 47 series, *except Soloy conversion*
Enstrom F-28, 280 series
Hughes / Schweizer 269 series
Hiller UH12E series *except Soloy conversion*
Robinson R22 and R44 series
Rotorway Exec
Sikorsky S-55B

Rating Group 2
Turbine-engine rotorcraft other than those included in Group 3
Aerospatiale AS350 series
Aerospatiale SA315
Bell 47 Soloy conversion
Bell 206, 407 and OH-58 series
Eurocopter EC120 and EC130 series
Fairchild Hiller FH-1100
Hiller UH12E Soloy conversion
Hughes 369 series / Kawasaki 369 series
McDonnell Douglas MD500

Rating Group 3 – Specific Type ratings	
Rotorcrafts that the Director considers are not included in Groups 1 or 2 due to their complex design or systems.	
Designator	***Rotorcraft Type***
AS355	Aerospatiale AS355
A109	Augusta 109
AW139	Augusta AB and AW 139
B205	Bell 204, 205, & UH-1
B212	Bell 204, 205, 212, & UH-1
B214	Bell 214
B214ST	Bell 214 ST
B222	Bell 222
B412	Bell 412
BK117	Kawasaki BK-117 Series and Airbus BK117 B2/D2 modelS

B0105	MBB 105
CH107	Columbia Helicopters Inc. 107
CH234	Columbia Helicopters Inc. 234
EC135	Eurocopter EC135
S76	Sikorsky S-76
SA365	Aerospatiale SA365N Dauphine II
SCOUT AH-1	Westland Scout AH-1
Wessex	Westland Wessex

Category Powerplant – Rating Groups 1 to 3

Rating Group 1
All normally aspirated piston engines, including -
All Teledyne Continental and Rolls Royce Continental normally aspirated piston engines
De Havilland Gipsy 1, Gipsy Minor, Gipsy Major, Gipsy Six 1, Queen series *except Queen 70*, Blackburn Cirrus Minor & Cirrus Major
Le Blond 90-5F
All Avco Lycoming normally aspirated piston engines
Pobjoy Niagara III
Piper Start Stamo MS1500
Walter M137
PZL AI-14RA
Normally aspirated piston engines in amateur-built aircraft.

Rating Group 2
All turbocharged or supercharged piston engines, including -
Allison V-1710
Avco Lycoming TIO-540 series, TIO-541 series, LTIO-540 series, TO-360 and LTO-360 series, TVO-435 series, IGSO-540 series
Bristol Centaurus, Hercules 730 series
De Havilland Gipsy Queen 70
Pratt and Whitney R-985 series, R-1340 series, R-1830 series, R-2000 series, R-2800 series
Rolls Royce and Packard V-1650 Merlin series
Teledyne Continental GTSIO-520 series, TSIO-520 series, TSIO-360 series, LTSIO-360
Wright R-1300 series, R-1820 series, R-2600 series

Rating Group 3 – Specific Type ratings		
All turbine engines, including APUs installed in aircraft and rotorcraft.		
Designator	***Powerplant Type***	***Installed in / Notes***
A250	Allison 250 - Series	FADEC versions requires specific
A501	Allison 501 (T-56) - Series	
ALF502	Lycoming ALF502 - Series Turbofan	
APS 3200 APU	APS 3200 Series - APIC	APU - A320
APS500	Sundstrand APS500	APU
ARRIEL	Turbomeca Arriel IB / 2E	FADEC versions requires specific
ARRIUS	Turbomecca Arrius	

ARTOUSTE	Turbomeca Artouste IIIB	
ATF3	Garrett ATF3-6	
Avco Lycoming	AL5512	
Avon	Rolls Royce Avon	
CF6	General Electric CF6 - Series	
CFM56	CFM56 Series	
CT58	General Electric CT58 - Series	
CT7	General Electric CT7 - Series	
CT7-2	General Electric CT7-2	
CT7-5	General Electric CT7-5	
FJ44	Williams-Rolls Royce FJ44 - Series	
GHOST	De Havilland Ghost - Series	
Gnome	Rolls Royce Gnome	
GOBLIN	De Havilland Goblin	
GTCP 131	Airesearch GTCP-131 Series	APU - B737 -7/8/9
GTCP200	Airesearch GTCP-200 Series	APU
GTCP30	Airesearch GTCP-30 Series	APU
GTCP331	Airesearch GTCP-331 Series	APU - B767-2/300 & B777
GTCP36	Airesearch GTCP-36 Series	APU
GTCP660	Airesearch GTCP 660-4	APU - B747-200
GTCP85	Airesearch GTCP-85	APU - B737-2/3/4/500
J85	General Electric J85-17	
JT15D	JT15D	
JT3D	Pratt And Whitney JT3D - Series	
JT8D	Pratt And Whitney JT8D - Series	
JT9D	Pratt And Whitney JT9D - Series	
Kilmov LIS 2	Kilmov LIS 2	
LT101	Avco Lycoming LTP 101 and LTS 101 - Series	
LTP101	Avco Lycoming LTP 101 - Series	
LTS101	Avco Lycoming LTS 101 - Series	
M601	Walter M601 - Series	
Marbore	Turbo Mecca Marbore	
NIMBUS	Rolls Royce Nimbus	
PT6	Pratt and Whitney PT6A/ PT6T - Series	
PT6A	Pratt and Whitney PT6A - Series	
PT6C	Pratt and Whitney PT6C - Series	AW 139
PT6T	Pratt and Whitney PT6T - Series	
PW100	Pratt and Whitney PW100 - Series	

PW206	Prat and Whitney PW206 – Series	
PW901A	Pratt And Whitney PW901 Series	APU - B747-400
RB211	Rolls Royce RB211 - Series	
RB211Trent800	Rolls Royce RB211 Trent 800 Series	B777-2
T53	Avco Lycoming T53 and T55 Series	
T55	Avco Lycoming T55 and T53 Series	
T62	Solar/Sunstrand T62 - APU	
Tay611	Rolls Royce TAY611 - Series	
TFE731	Airesearch TFE 731 - Series	
TPE331	Airesearch TPE 331 - Series	FADEC versions requires specific
TPE331-14	Airesearch TPE 331-14	
V2500	International Aero Engines(IAE) V2500 - Series	

Category Electrical – Ratings 1 to 2

Rating Group 1

Electrical systems, other than those in Group 6 aeroplanes, which have, as their primary source of power: DC generators or starter generators or alternators with self-contained rectifiers.

Maintenance of rechargeable aircraft batteries.

Rating Group 2 – Specific Type Ratings

Electrical systems and equipment installed in pressurised aircraft with a MCTOW of more than 5700 kgs.

This will include all the aircraft types identified in the Aeroplane Category Group 6 type ratings. The licence designator will be based on this group 6 designator with the suffix ELEC added.

Category Instrument – Ratings 1 to 3

Rating Group 1

General aircraft instrument systems basic flight instrument systems; oxygen systems, cabin pressurisation and air conditioning systems, other than those fitted to Aeroplane Group 6 aircraft.

Rating Group 2

Autoflight and navigation systems including air data computer systems, servo driven instruments; remote gyro systems including remote reading compasses; automatic flight control systems and inertial navigation systems other than those fitted to Aeroplane Group 6 aircraft.

Rating Group 3 – Specific Type Ratings

Integrated flight systems and equipment installed in pressurised aircraft with a MCTOW of more than 5700 kgs.

This will include all the aircraft types identified in the Aeroplane Category Group 6 type ratings. The licence designator will be based on this group 6 designator with the suffix INST added.

Category Radio – Ratings 1 to 4

Rating Group 1

Airborne communication systems, including - VHF, HF, CVR, audio, and ELBA.

Rating Group 2

Airborne navigation systems, including -ADF, VOR, ILS, VLF, OMEGA, GPS, GNSS, and marker beacon.

Rating Group 3

Airborne primary and secondary radar, including - weather radar, doppler, radio altimeter, DME, transponder, and TCAS.

Rating Group 4 – Specific Type Ratings

Complete radio installations installed in pressurised aeroplanes with an MCTOW of more than 5700 kgs.

This will include all the aircraft types identified in the Aeroplane Category Group 6 type ratings. The licence designator will be based on this group 6 designator with the suffix RAD added.

Rating Group 7 – Components

Excepting the powerplant category, component ratings appear on the licence as a group rating designated by the capital letter X in the Group 7 column of the licence document. The powerplant category is restricted to piston engines, turbine engines or propellers and rating coverage is indicated by a capital letter R in the licence document box for Group 7, powerplant, and, the words *Turbine Engines, Piston Engines or Propellers* will appear on the licence document. An applicant may have all three subdivisions appear on a licence if qualified to do so.

Ratings in Group 7 other than powerplant ratings may also be issued as restricted ratings when the applicant cannot comply with the full requirements for training or experience. For example a restricted electrical component rating could appear as *Alternators.*

Group ratings and their coverage are listed below—

Category	Rating coverage
Aeroplane	Rotary and fixed wing airframe components excluding rotorcraft dynamic components.
Rotorcraft	Rotocraft dynamic components
Powerplant	Piston engines, Turbine engines & Propellers
Electrical	Electrical components
Instrument	Instrument components
Radio	Radio and radar component

Ratings issued in this group do not have *release to service* privileges. These ratings have been retained on the licence to allow a transportable record of the holder's qualification only

APPENDIX 3 – Category Demarcations

To determine which areas / systems of an aircraft are the responsibility of the various licence categories and ratings, the following demarcations apply. It is the responsibility of all certifying engineers to ensure that, where there is an overlap of responsibility with other licence categories, a holder of the appropriate licence is notified of the subsequent work required before the aircraft or aircraft component is returned to service.

CATEGORY AEROPLANE	CATEGORY ROTORCRAFT
Encompasses all parts of the aeroplane other than those stated as being the responsibility of another licence. Encompasses the relevant parts of the categories and includes following– (i) aircraft structure; (ii) control surfaces; (iii) control systems; (iv) hydraulic systems; (v) pneumatic systems; (vi) pressurisation systems; (vii) air conditioning systems; (viii) oxygen systems; (ix) de-icing and anti-icing systems; (x) landing gear systems; (xi) fuel and other liquid tanks and plumbing not forming part of the engine installation; (xii) fire protection systems; (xiii) cabin and cockpit furnishings; (xiv) role equipment; (xv) wind shield clear vision systems; (xvi) emergency equipment. (xvii) weight and balance.	Encompasses all parts of the rotorcraft other than those stated as being the responsibility of other licence categories and includes the relevant parts of the following– (i) structure; (ii) rotor hubs and blades; (iii) control systems; (iv) hydraulic systems; (v) pneumatic systems; (vi) air conditioning systems; (vii) de-icing and anti-icing systems; (viii) landing gear systems; (ix) fuel and other liquid tanks and plumbing not forming part of the engine installation; (x) fire protection systems; (xi) cabin and cockpit furnishings; (xii) role equipment; (xiii) wind shield clear vision systems; (xiv) emergency equipment; (xv) transmissions and drive systems, excluding rotorcraft reduction gear boxes or power input coupling gear boxes provided by the engine manufacturer. (xvi) weight and balance.

CATEGORY POWERPLANT	CATEGORY ELECTRICAL
Encompasses the following– (i) engine and propeller; (ii) engine mounting and firewalls; (iii) engine exhaust system, including thrust reversers, reheat, tail pipe assemblies and exhaust-type cabin heating units; (iv) components and items of equipment attached to or driven by the engine but excluding rotorcraft transmission and drive systems; (v) engine controls, including variable intake, propeller, fuel, oil, anti-icing, de-icing, and other controls associated with engine operation; (vi) ignition, fuel, oil, fire extinguisher, anti-icing and de-icing systems, and other systems associated with engine operation, but excluding fuel and water-methanol tanks and associated plumbing not forming a part of the engine installation; (vii) compressor bleed air systems contained within the engine installation sections; (viii) engine cowlings; and (ix) auxiliary power unit.	Encompasses all parts of the aircraft electrical system including the following– (i) all parts of the electrical power generation, supply, distribution, and control systems; (ii) all other electrical systems and components associated with the electrical installation, excluding instruments and radio but including multiplex systems and EICAS; and (iii) aircraft batteries.

CATEGORY INSTRUMENT	CATEGORY RADIO
Encompasses all parts of the aircraft instrument system including the following– (i) vacuum, pressure, and electrically operated instruments; (ii) direct and remote reading magnetic compasses, including compensation; (iii) gyro instruments; (iv) automatic pilots, auto-flight control systems, and integrated flight control systems; (v) oxygen systems; (vi) flight data recorders; (vii) inertial navigation systems; (viii) cabin pressurisation and air conditioning control systems; (ix) multiplex systems; (x) HICAS; (xi) EFIS; (xii) flight director, air data computer system; (xiii) GPWS; and (xiv) instrument panels, shock mounts, bonding, cables, and looms.	Encompasses all parts of the aircraft radio system including the following– (i) radio communications systems; (ii) radio navigation systems; (iii) audio intercommunication and passenger address-entertainment systems, and multiplex systems; (iv) radar navigation and alerting systems; (v) radio racks, shock mounts, bonding, cables, and looms; (vi) radio system instruments and power supplies; (vii) GPWS; and (viii) EFIS.

APPENDIX 4 – List of Typical Maintenance Tasks

5 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.

6 Dimensions/Areas
Locate component(s) by station number.
Perform symmetry check.

7 Lifting and Shoring
Assist in:
Jack aircraft nose or tail wheel.
Jack complete aircraft.
Sling or trestle major component.

8 Levelling/Weighing
Level aircraft.
Weigh aircraft.
Prepare W & B amendment.
Check aircraft against equipment list.

9 Towing and Taxiing
Tow aircraft.
Be part of aircraft towing team.

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

11 Placards and Markings
Check aircraft for correct placards.
Check aircraft for correct markings.

12 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

18 Vibration and Noise Analysis
Analyse helicopter vibration problem.
Analyse noise spectrum.

21 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

22 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

23 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.

24 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

25 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.

26 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

27 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 flap actuator Adjust trim tab.
Adjust control cable tension.
Check control range and sense of movement.
Check for correct assembly and locking.
Troubleshoot faulty system.

28 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.

29 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.

30 Ice and rain protection
Replace pump.
Replace timer
Install wiper motor.
Check operation of systems.
Troubleshoot faulty system.

31 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

32 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

33 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

34 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

35 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.

36 Pneumatic systems
Replace filter.
Replace compressor.
Recharge desiccator.
Adjust regulator.
Check for leaks.
Troubleshoot faulty system.

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

38 Water/Waste
Replace water pump.
Replace tap.
Replace toilet pump.
Troubleshoot faulty system.

45 Central Maintenance System
Retrieve data from CMU.
Replace CMU.
Perform Bite check.
Troubleshoot faulty system.

49 Airborne Auxiliary power
Install APU.
Inspect hot section.
Troubleshoot faulty system.

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

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

56 Windows
Replace windshield.
Replace window.
Repair transparency.

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

61 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.

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

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

64 Tail Rotors
Install rotor assembly.
Replace blades.
Troubleshoot.

65 Tail Rotor Drive
Replace bevel gearbox.
Replace universal joints.
Overhaul bevel gearbox.
Install drive assembly.
Check chip detectors.

67 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.
Troubleshoot faulty system.

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

72 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.

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

73 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.

73 Fuel and control, turbine
Replace FCU.
Replace engine driven pump.
Clean/test fuel nozzles.
Clean/replace filters.
Adjust FCU.
Troubleshoot faulty system.

74 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.

74 Ignition systems, turbine
Check glow plugs/igniters.
Check H.T. leads.
Check ignition unit. Replace ignition unit. Troubleshoot faulty system.

76 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.

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

78 Exhaust , piston
Replace exhaust gasket.
Inspect welded repair.
Pressure check cabin heater muff.
Troubleshoot faulty system.

78 Exhaust, turbine
Change jet pipe.
Change shroud assembly.
Install trimmers.

79 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.

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

81 Turbines, piston engines
Replace PRT.
Replace turbo -blower.
Replace heat shields.
Replace waste gate.
Adjust density controller.

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

83 Accessory gear boxes
Replace gearbox.
Replace drive shaft.
Check chip detector

APPENDIX 5 – Acceptable PTR / SOE Format

Documenting practical experience

Practical experience for the issue of an AME Licence, Categories and Ratings should be documented in a suitable ***Practical Training Record (PTR)***.

The format of any acceptable PTR should have the following features:

- a section that provide an overview of experience /employment in the aviation industry, detailing relevant qualifications, training and courses
- an experience record section that list specific tasks completed, and:
  - details the dates and the specific aircraft (P2-registered) or component worked on.
  - is countersigned by a supervising LAME who must indicate his CASA PNG AME Licence No.

Example of experience record page

Below is an example of the typical format that should be used in the experience record section to document practical experience.

Experience should be recorded in a separate section for the appropriate rating group or specific type rating of the relevant category section.

There should be sufficient detail to describe the task to allow an assessment to see that a range of various maintenance tasks have been completed for the unit standard (U.S.), category, or rating being applied for.

In the '**Details of maintenance task'** column indicate one of the following actions has been carried out:

(P) - Personally performed the task

(A) - Taken an active interest in

(T) - Received instruction or on the job training

Section 3.1 - Practical Experience Record - *Aeroplane Category Rating*

Date	ATA No. and/or U.S. No.	A/C Reg. and Job No.	A/C Type or Component	Details of Maintenance Task	Hrs	Validating Eng. CASA AMEL No	

APPENDIX 6 – AME Licence Examination Syllabus Structure

Each syllabus subject is described in a separate Advisory Circular as detailed in **Table 1** of this Advisory Circular. The overall layout and structure of these syllabuses is outlined below.

Performance verbs

The performance verbs used in the basic examination syllabuses are as follows:

		Knowledge		
Verb	**Description**	**1**	**2**	**3**
Apply	To employ a formula, theorem or principle.		□	
Assess	To fix the size, quantity, amount, value or quality		□	□
Calculate	To determine or ascertain mathematical methods.		□	
Categorise	To place in a class or division.	□	□	
Compare	To establish similarities or dissimilarities.	□	□	
Construct	To build an entity by fitting parts together		□	
Convert	To change into others of a different kind.		□	
Decode	To interpret in plain language.		□	
Define	To state the exact meaning or give the limits.		□	
Derive	To trace from a source or deduce			□
Describe	To give a description or state the characteristics.	□	□	
Detail	To deal with things item by item.			□
Determine	To resolve or establish precisely			□
Diagnose	To identify the cause of a mechanical fault			□
Differentiate	To identify the difference between two items.	□	□	
Distinguish	To make the difference recognisable.		□	□
Estimate	To give an approximate judgement		□	
Evaluate	To critically interpret and appraise in various contexts			□
Explain	To make known in detail.		□	□
Extract	To derive from.		□	□
Graph	To draw a graph as representing a given function.		□	□
Identify	To establish individuality of an item.	□	□	
Illustrate	To give specific examples of a general case.	□	□	
Interpret	To put in plain words.	□		
List	To record a number of connected items.	□		
Match	To join two or more things so they correspond.	□		
Name	To use the word by which an item is known.	□		
Outline	To draw or describe the essential parts only.	□	□	
Perform	To carry out a task.	□	□	
Plot	To mark or connect points on a graph.	□	□	
Reproduce	To produce again, to produce copies or representations.		□	
Round	To approximate to a specified degree of accuracy.	□		
Select	To choose for suitability from a list	□		
Show	To demonstrate.		□	
Simplify	To make easier to do or understand.		□	□
Solve	To determine the answer to a problem.	□	□	
Specify	To provide details of design, materials or conditions	□	□	

State	To express in words or number.	□		
Trace	To follow the course, development, history of.	□		

Topic Numbering

Each syllabus is set out by topics (except for subject 18), every main topic in each syllabus is divided into sub-topics then into sub-sub-topics and, where applicable, paragraphs. The three-digit sub-sub-topic numbers shown in the left hand column of the syllabus table are used in the 'knowledge deficiency reports' (KDRs) to provide feedback on individual examinations.

Objective description

The middle column of each syllabus table objectively describes each sub-sub-topic by plainly stating its subject matter and the type of performance or activity required. The objectives are intended to be simple, unambiguous, and clearly focused, outcomes to aid learning.

Knowledge levels

The right hand column of the syllabus table specifies the knowledge level for the sub-topic headings. The levels indicate the depth of knowledge required and are defined as follows:

LEVEL 1: A familiarisation with the principal elements of the subject.

LEVEL 2: A general knowledge of the theoretical and practical aspects of the subject.

The applicant should have the ability to apply their knowledge.

LEVEL 3: A detailed knowledge of the theoretical and practical aspects of the subject.

The applicant should have the capacity to combine and apply the separate elements of knowledge in a logical and comprehensive manner.

Note that the knowledge levels indicate the depth of knowledge required NOT its safety importance.