ANNEX C to AC 145-04 v2.3

Permitted training manual

SAMPLE

Permitted training manual

About this Manual

This manual template has been prepared to guide and assist an approved maintenance organisation (AMO) who proposes to use the permitted training provisions of paragraph 145.A.37 (a) of the Part 145 Manual of Standards (MOS).

It is also structured so that it may be used by Certificate of Approval (COA) holders who propose to train and authorise maintenance certification staff under the provisions of Civil Aviation Order (CAO) 104.0.

The procedures set out in this manual represent a standard that meets the requirements set out in the legislation.

How to use this sample manual

This manual is made up of five general and four training topics:

General:

* Sections 1 to 5 – describes the general administration and management processes applicable to the manual.

Training:

* Section 6 – contains the training plan
* Section 7 – provides practical performance assessment guidelines. If you propose to use this manual you should read it carefully and ensure that you are able to incorporate the manual into your organisational procedures. Once approved, you will be required by regulation 11.077 of the Civil Aviation Safety Regulations 1998 (CASR) to comply with the manual. Therefore, you need to ensure that it is specific to your operations, not just a generic manual with your name on the cover page.

Important note (COA holders only): When assessing an application for a delegation under subregulation 42ZC (6) of Civil Aviation Regulation 1988 (CAR) for the purpose of utilising permitted training under CAO 104.0, the Civil Aviation Safety Authority (CASA) will refuse the application if the required manual does not meet these minimum requirements.

Wherever a blank space appears, you will be required to ensure that you insert the appropriate information. Depending on context, the required information may be any of the following:

* your name or the name that is shown on your COA
* your Aviation Reference Number (ARN)
* the identifying details of an aircraft as shown in the Part 66 MOS
* the name of the person responsible for managing the training program
* the name of an employee under training.

If a phrase, position name or title is shown with multiple options (e.g. Training/Quality Manager) you should remove all but the correct option for your organisation. If the position is held under a different title in your organisation - use that title.

Preparation

1. An aircraft should be assessed and determinations made as to which items listed in Tables 1 to 9 are relevant to the aircraft.
2. The trainee should be assessed to determine their training needs taking into account relevant experience and qualifications.
3. Delete those tables and/or table items that are not relevant.
4. Assess whether additional knowledge topics or maintenance tasks need to be added to the tables.

Assessment

1. Assess trainee against each task using the Trainee Objectives Assessment Form at Table 11.
2. As each task is completed satisfactorily, enter the details in the appropriate columns in the training plan.

Note: The completed training plan is an acceptable means for recording accomplishment of the practical task details and if fully completed, may be used in place of a log of industrial experience.

Contents

[1 Applicability statement and responsible manager certification 5](#_Toc446418517)

[2 Distribution List 6](#_Toc446418518)

[2.1 List of Effective Pages 6](#_Toc446418519)

[2.2 Amendment Record 7](#_Toc446418520)

[2.3 Manual Holders acknowledgement of receipt of amendment 7](#_Toc446418521)

[3 Introduction 8](#_Toc446418522)

[3.1 Acronyms and abbreviations 8](#_Toc446418523)

[3.2 Definitions 8](#_Toc446418524)

[4 Training program management 10](#_Toc446418525)

[4.1 Quality Manager qualifications 10](#_Toc446418526)

[4.2 Quality Manager responsibilities 10](#_Toc446418527)

[4.3 Trainee eligibility assessment guidelines 11](#_Toc446418528)

[5 Training procedures 12](#_Toc446418529)

[5.1 Training providers 12](#_Toc446418530)

[5.2 Third party training 12](#_Toc446418531)

[5.4 Assessment for issue of a certification authorisation 13](#_Toc446418532)

[5.5 Issue of a WHR certification authorisation (Not applicable to AMOs) 13](#_Toc446418533)

[5.6 Issue of an excluded type certification authorisation 13](#_Toc446418534)

[5.7 Notification to CASA 13](#_Toc446418535)

[6 Training plan 14](#_Toc446418536)

[6.1 Objectives and outcomes 14](#_Toc446418537)

[6.2 Reference material 14](#_Toc446418538)

[6.3 Processes 14](#_Toc446418539)

[6.4 Explanation of knowledge levels 14](#_Toc446418540)

[7 Practical performance assessment 27](#_Toc446418541)

[Appendix A Certification authorisation form 29](#_Toc446418542)

[Appendix B List of WHR aircraft 32](#_Toc446418543)

# Applicability statement and responsible manager certification

This manual has been generated to meet the Part 145 / CAO 104.0 (delete as applicable) requirements for the purpose of providing maintenance training and issuing certification authorisations.

This manual sets out the procedures and assessment guidelines for the issue of certification authorisations that will be followed by (name of organisation) working under the COA number…………………………..

This manual forms part of the (name of organisation) Quality and Procedures Manual, as approved by CASA. Amendments to this manual will only be made by the Quality Manager, in accordance with the procedures set out in this manual.

Authorised by (signature): …………………… Quality Manager

Date Revision: 1.0

# Distribution List

|  |  |
| --- | --- |
| Copy number | Manual holder |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |

## List of Effective Pages

|  |  |
| --- | --- |
| Page | Issue date |
| Cover page |  |
| Page 1 |  |
| Page 2 |  |
| Page 3 |  |
| Page 4 |  |
| Page 5 |  |
| Page 6 |  |
| Page 7 |  |
| Page 8 |  |
| Page 9 |  |
| Page 10 |  |
| Page 11 |  |
| Page 12 |  |
| Page 13 |  |
| Page 14 |  |
| Page 15 |  |
| Page 16 |  |
| Page 17 |  |

(Adjust to suit finished document)

## Amendment Record

|  |  |
| --- | --- |
| Amendment issue number | Date |
| Initial Issue |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

## Manual Holders acknowledgement of receipt of amendment

It is a requirement of the Part 145 MOS that each manual holder, on receipt of an amendment, must return to the Quality manager, a signed confirmation that the amendment has been received, read and the manual has been updated accordingly.

See 0 for a sample form that may be copied and used for this purpose.

# Introduction

This document sets out the procedures, processes and documentation that will be followed for the purpose of training maintenance personnel in the maintenance of excluded aircraft systems and excluded aircraft types as listed in Appendix VII or Table 2 of Appendix IX of the Part 66 MOS.

This document also sets out the procedures that will be followed by a COA holder for training and authorising Licensed Aircraft Maintenance Engineers (LAMEs) to maintain and certify for maintenance of Warbird, Historic and Replica aircraft (WHR) as described in Section 8 of CAO 104.0.

Following these procedures, an AMO or COA holder's maintenance training staff will be able to:

* provide training
* assess an employee’s competencies
* where appropriate, issue a certification authorisation.

## Acronyms and abbreviations

|  |  |
| --- | --- |
| Acronym | Description |
| AMO | Approved Maintenance Organisation |
| CAO | Civil Aviation Order |
| CAR | Civil Aviation Regulations 1988 |
| CASA | Civil Aviation Safety Authority |
| CASR | Civil Aviation Safety Regulations 1998 |
| COA | Certificate of Approval |
| LAME | Licensed Aircraft Maintenance Engineer |
| MOS | Manual of Standards |
| MTO | Maintenance Training Organisation |
| WHR | Warbird, Historic and Replica aircraft |

## Definitions

|  |  |
| --- | --- |
| Term | Definition |
| COA holder | A person who holds a certificate of approval under regulation 30 of CAR for maintenance of aircraft, aircraft components or aircraft materials. |
| Employee | Any individual who is performing or certifying for maintenance on behalf of and under the control of the COA holder. |
| Excluded system | An excluded system mentioned in Appendix VII of the Part 66 MOS. |
| Excluded type | A type of aircraft or aircraft engine mentioned in Table 2 of Appendix IX of the Part 66 MOS. |
| In a COA | In an organisation approved to perform maintenance under regulation 30 of the Civil Aviation Regulations 1988 (CAR). |
| LAME | The holder of an aircraft maintenance engineer licence issued under Part 66 of CASR. |
| Warbird, Historic and Replica aircraft (WHR) | An aircraft that is:   * + 1. either:        1. manufactured in accordance with the requirements of, and accepted for use by, an armed force; or   Note: Such an aircraft is colloquially known as a warbird.   * + - 1. an historic or replica aircraft that CASA or an authorised person is satisfied meets the airworthiness requirements for the issue of a standard certificate of airworthiness (except any requirements that are inappropriate for the special purpose for which the aircraft is to be used); and     1. issued with either:        1. a special certificate of airworthiness for limited category aircraft under regulation 21.189 of CASR        2. an experimental certificate for aircraft under paragraph 21.191 (d) or (e). |

# Training program management

This program will be managed by the Quality Manager or a person appointed to act as the Training Manager.

Note: The terms Quality Manager and Training Manager are used throughout this document, however responsibility for many of the functions described in the document could be assigned to other persons such as a training manager, aircraft maintenance manager or chief engineer. The user should ensure that the correct title is substituted where such differences occur.

## Quality Manager qualifications

A Quality Manager must have the following attributes:

* an understanding of the Part 66 licence regulations
* an understanding of workplace training and assessment processes
* credentials in quality management, acceptable experience in a training or quality management role, or acceptable experience in a maintenance supervision role
* a high level of understanding of the procedures set out in this training and assessment manual.

Additionally, for a Quality Manager in a COA:

* a high level of understanding of the maintenance regulations in Parts 4 and 4A of CAR
* a high level of understanding of the provisions and application of CAO 104.0
* a high level of understanding of the responsibilities of the person administering the subregulation 42ZC (6) delegation on behalf of the COA holder.

## Quality Manager responsibilities

The Quality Manager will have the following responsibilities (which may be allocated to a responsible person):

* supervision of training delivery under the provisions of Part 145 MOS or CAO 104.0
* assessment of training providers using the guidelines set out in Section 5 of this manual
* if external training providers are to be engaged, assessment of the external provider to ensure that the provider is able to deliver the required training outcomes as set out in this manual
* ensuring that each training plan is configured to:
  + adequately meet the trainee’s identified training needs
  + provide training in all aspects of the aircraft/engine that would be unlikely to be encountered during normal exercising of the trainee’s licence privileges.
* if third party training is provided:
  + ensure that the training is delivered is in accordance with this approved training manual
  + maintain a record of the training provided under such arrangements and the training outcomes.
* review training results for each trainee and determine whether the training objectives have been satisfactorily achieved
* issue certification authorisations once the trainee has satisfactory completed the training and assessment
* notify CASA if, in the opinion of the manager, the trainee has successfully completed the training and certification period of not less than 6 months
* monitor the training program for effectiveness and amend the program if deficiencies are identified
* notify CASA of any amendments to the training programs set out in this manual and provide CASA with copies of the amended pages with the changes highlighted with change bars.

Additionally, for a Quality Manager in a COA:

* ensure that certification authorisations are only issued or re-issued while the COA holder holds a CASA delegation under subregulation 42ZC (6) of CAR to issue certification authorisations to employees for the purpose of paragraph 42ZC (4) (e) of CAR.

## Trainee eligibility assessment guidelines

The following course entry requirements will be applied:

* the trainee must hold a valid CASA Part 66 licence in the applicable subcategory for the aircraft for which training is to be provided
* if training is for an excluded type or a WHR certification authorisation, the trainee’s licence must not be affected by an exclusion which would disallow maintenance of the particular aircraft (i.e. E2 – Mechanical or structural systems, E3 – powerplant systems, E12–propellers)
* if training is for removal of an exclusion on a type rating, the trainee must first have had the relevant exclusion removed from the category of the licence.

# Training procedures

Training will be given in an on-the-job format or a combination of on-the-job and theoretical training. The makeup of the training will be decided by the training manager, based on an assessment of the needs of the individual trainee and the complexity of the particular aircraft

A record of completed training and assessment will be retained in the personnel file of the individual and maintained by the Quality Manager.

Training records will be made available to CASA for review, as required by CASA.

## Training providers

Instruction will be provided by personnel experienced or qualified in the type of maintenance training being given under this training plan.

Training may be given by approved licence holders or task specialists with recognised skills and experience in the relevant discipline. In the case of ex-military aircraft, training may also be provided by non-licenced individuals who have provided or supervised maintenance for a particular aircraft in the military environment or provided maintenance training for the particular aircraft in the military environment.

Training personnel will be listed in a register of trainers contained in section 6 of this manual (see Table 10) and be revised as instructors are added or removed.

The register will detail the names of approved trainers and their qualifications for the role.

## Third party training

Third party training providers such as proprietary theory training organisations, manufacturer’s training or training in a specialised work environment (such as an overhaul facility) may be used at the discretion of the Quality Manager if in the opinion of the Quality Manager, the training would enhance the skill or knowledge levels of the employee under training.

Guidance note: Use of the sample training plan  
(delete this information box when completed)

The training plan should be varied as required to reflect the individual’s training needs and specific requirements of the aircraft, engine or system for which training is to be given.

For a WHR or excluded type trainee, tables 1 to 8 are to be used, however if the electrical or avionics systems of a particular aircraft are common to non-WHR or non-type rated aircraft, the relevant tables (7 or 8) may be deleted.

For an engine-only excluded type trainee, tables 2 and 6 are to be used.

It should be noted that the training plan is aimed only at training an LAME in the differences that are unique to the aircraft/engine in which training is being given. When drawing up a training plan, the tables should be amended as required by either inserting additional training tasks or deleting tasks that are not required for the particular aircraft or trainee.

## Assessment for issue of a certification authorisation

On successful completion of training, a trainee will be assessed in accordance with the assessment guidelines set out in Section 7 of this manual. Assessment will be made by the training provider conducting the training. The results will be reviewed by the Quality Manager.

If the Quality Manager is satisfied that the trainee has achieved an acceptable level of competency in all knowledge topics maintenance tasks listed in tables 3 to 9 (as applicable), the trainee may be issued with a certification authorisation for the aircraft in which the training and assessment was given.

Personnel holding current Part 66 licences or a CASA issued maintenance authorisation issued under regulation 33B or subregulation 42ZC (6) of CAR that covers a particular WHR aircraft may be issued with a WHR certification authorisation without further training.

## Issue of a WHR certification authorisation (Not applicable to AMOs)

A WHR authorisation may be issued for a period of not more than 2 years. The certification authorisation form at Appendix A of this sample manual will be completed by the training or quality manager and issued to the employee. A copy will be retained by the employer for a period of 12 months after an employee ceases to be employed.

Re-issue of a WHR certification authorisation

At the end of a 2 year period since issue or reissue of a certification authorisation, the Quality Manager must assess the trained WHR employee for re-issue of the certification authorisation for a further 2 years.

If, in the view of the Quality Manager, no additional or refresher training is required, the certification authorisation may be reissued accordingly.

Certification authorisations held by employees on the basis of a CASA issued authorisation or type rating, may be reissued without further assessment at the Quality Manager’s discretion.

## Issue of an excluded type certification authorisation

A certification authorisation for an excluded type or excluded system on an aircraft type will be issued with no expiry date. A written authorisation will be handed to the employee and a copy will be retained on file by the Quality Manager.

## Notification to CASA

At the completion of 6 months from the date of issue of a certification authorisation to an employee, if satisfied that the employee has successfully completed training and assessment, the Quality Manager will forward the notification to CASA Permission and Application Centre (PAC) in the approved form.

The Quality Manager will also hand a signed and dated copy of the completed notification to the trainee.

# Training plan

## Objectives and outcomes

The Quality Manager will ensure that a person is properly trained in the knowledge elements and maintenance procedures that are specific to the type of aircraft.

On completion of the training, the trainee will have demonstrated the competencies required to maintain the type of aircraft to an acceptable standard of airworthiness in accordance with the relevant instructions for continuing airworthiness.

## Reference material

The following material may be used by the operator when collating a training plan:

* Subsection 66.A.45 (h) of the Part 66 MOS
* Appendix VII and Table 2 of Appendix IX of the Part 66 MOS
* Subsection 145.A.37 (a) of the Part 145 MOS
* AMC/GM 145.A.37
* Part 4 and 4A of CAR
* CAO 104.0 Applicable aircraft or system maintenance data
* FAA Advisory Circular AC 43-13.

## Processes

This training plan is based on the use of on-the-job training that will be provided using the aircraft and maintenance facilities of [Insert name of organisation].

## Explanation of knowledge levels

### Level 1

The trainee will be:

* familiar with the basic elements of the topic
* able to give a simple description of the topic, using common words and examples
* able to use typical terms.

### Level 2

A general knowledge of the theoretical and practical aspects of the topic and an ability to apply that knowledge, such that the following trainee objectives are met:

* understand the theoretical fundamentals of the topic
* give a general description of the topic using, as appropriate, typical examples
* demonstrate awareness of practical applications of the topic.

### Level 3

A detailed knowledge of the theoretical and practical aspects of the topic, and a capacity to combine and apply the separate elements of knowledge in a logical and comprehensive manner, such that the following trainee objectives are met:

* describe the underlying intent and implications of the topic
* give a detailed description of the topic using theoretical fundamentals and specific examples
* explain, in detail, the theoretical and practical application of the topic.

The employee (all trade categories) is required to demonstrate a comprehensive understanding of the maintenance manuals and other data related to the aircraft on which training is being given.

Table : Data knowledge elements

|  |  |  |  |
| --- | --- | --- | --- |
| **Aircraft data knowledge** | **Knowledge level** | **Satisfactory**  **Y/N** | **Date & Signature** |
| Source appropriate data references for each maintenance task | N/A |  |  |
| Demonstrate an understanding of where to find: |  |  |  |
| inspection wear limits | 2 |  |  |
| damage limits | 2 |  |  |
| acceptable repair practices | 2 |  |  |
| service life limitations | 2 |  |  |
| maintenance instructions | 2 |  |  |
| special inspections | 2 |  |  |

Table : Turbine engine theory

(Not applicable if manufacturer or Part 147 MTO provides theory training and assessment)

|  |  |  |  |
| --- | --- | --- | --- |
| Element | Knowledge level | Satisfactory /Pass  Y/N | Date & Signature |
| Note: Differences training only: delete any items that are not unique to the particular aircraft for which training is being given. |  |  |  |
| Auxiliary power (APUs) | 2 |  |  |
| Internal airflows and pressures | 2 |  |  |
| Constructional arrangement and operation (installation, inlet, compressors, combustion section, turbine section, bearings and seals, lubrication systems) | 2 |  |  |
| Functions of bleed air valves | 3 |  |  |
| Bearing locations and construction | 2 |  |  |
| Engine performance | 3 |  |  |
| Engine fuel and control | 3 |  |  |
| FADEC | 2 |  |  |
| Ignition | 3 |  |  |
| Air | 2 |  |  |
| Engine controls | 3 |  |  |
| Engine indicating systems | 2 |  |  |
| Exhaust | 2 |  |  |
| Oil | 2 |  |  |
| Starting | 3 |  |  |
| Water injections | 2 |  |  |
| Accessory gearboxes | 2 |  |  |
| Propulsion augmentation | 2 |  |  |

Table : Maintenance procedures - general

|  |  |  |  |
| --- | --- | --- | --- |
| **General** | **OJT Aircraft Details** | **Competent** | |
| VH-…………. or serial number  Comments | Y/N | Date and  Signature |
| Note: Differences training only: delete any items that are not unique to the particular aircraft for which training is being given. |  |  |  |
| Demonstrate location and use of: |  |  |  |
| * mooring points |  |  |  |
| * earth points |  |  |  |
| * towing and turning limits |  |  |  |
| * ground power starting (if applicable) |  |  |  |
| * ……………………… * ………………………   (Insert additional specific items if required) |  |  |  |

Table : Maintenance procedures – inspections

|  |  |  |  |
| --- | --- | --- | --- |
| **Inspections** | **OJT Aircraft Details** | **Competent** | |
| VH-…………. or serial number  Comments | Y/N | Date and Signature |
| Perform under supervision: | | | |
| * daily inspection |  |  |  |
| * 25 hour inspection and service |  |  |  |
| * 50 hour inspection and service |  |  |  |
| * annual inspection |  |  |  |
| * periodic inspection |  |  |  |
| * ……………………………………   (Insert additional specific items if required) |  |  |  |

Table : Maintenance procedures – airframe

|  |  |  |  |
| --- | --- | --- | --- |
| Airframe | OJT Aircraft Details | Competent | |
| VH-…………. or serial number  Comments | Y/N | Date and  Signature |
| Note: Differences training only: delete any items that are not unique to the particular aircraft for which training is being given. |  |  |  |
| Jacking and levelling  Demonstrate knowledge of location and use of: | | | |
| * jacking points |  |  |  |
| * levelling points |  |  |  |
| * bonding points |  |  |  |
| Control surface travel checks  Demonstrate an understanding of control surface travel limits, and competency in the use of any aircraft specific travel measuring equipment such as travel gauges etc  (Delete if only standard tools and procedures required) |  |  |  |
| Undercarriage functional tests  (Only applicable if special jacking, ballasting or operating techniques are involved) |  |  |  |
| Strut charging  Demonstrate use of any aircraft specific strut charging equipment or techniques  (Delete if only standard tools and procedures required) |  |  |  |
| Flight control system rigging  Flight control system (if applicable), demonstrate competency in aircraft specific techniques required when removing, replacing or adjusting the ……………..….system  (Delete if only standard tools and procedures required) |  |  |  |
| Pressurisation tests (if applicable)  Demonstrate competency in setting up and operating ground pressurisation unit and an understanding of any aircraft specific safety requirements  (Delete if no specific differences to other pressurised aircraft) |  |  |  |
| Pneumatic system (if applicable)  Demonstrate knowledge of the locations and functions of the pneumatic system components. |  |  |  |
| Explosive devices  (Delete if no explosive devices fitted)  Demonstrate comprehensive understanding of safety requirements and maintenance procedures related to: |  |  |  |
| * ground safety-disarming |  |  |  |
| * safety requirements before entering cockpit |  |  |  |
| * flight arming |  |  |  |
| * removing and installing ejection seats |  |  |  |

Table : Maintenance tasks for helicopters

|  |  |  |  |
| --- | --- | --- | --- |
| Use in conjunction with Tables 3,4,5 and 7 (if applicable) | | | |
| Note: Differences training only: delete any items that are not unique to the particular aircraft for which training is being given.  (Delete tasks that do not apply to the particular aircraft.) | OJT Aircraft Details | Competent | |
| VH-…………. or serial number  Comments | Y/N | |
|  |  | Date and Signature |
| General: |  |  |  |
| * Analyse vibration problems |  |  |  |
| Main rotor: |  |  |  |
| * remove /install rotor assembly |  |  |  |
| * blade removal/replacement |  |  |  |
| * blade damper removal/replacement |  |  |  |
| * replace TT straps/ blade grip bearings/elastomeric bushes |  |  |  |
| * blade alignment |  |  |  |
| * balance main rotor |  |  |  |
| * blade tracking |  |  |  |
| * test/adjust autorotation RPM |  |  |  |
| * troubleshoot rotor system |  |  |  |
| Stabiliser bar (if applicable): |  |  |  |
| * balance stabiliser |  |  |  |
| * remove/replace damper |  |  |  |
| * test/adjust damper timing |  |  |  |
| Rotor drive: |  |  |  |
| * remove/install mast |  |  |  |
| * remove/install transmission |  |  |  |
| * remove/install drive coupling |  |  |  |
| * remove/install clutch/freewheel unit |  |  |  |
| * remove/install drive belt |  |  |  |
| Main rotor drive monitoring and indicating: |  |  |  |
| * inspect/function test monitoring and indicating systems |  |  |  |
| * check chip detectors |  |  |  |
| Tail Rotor: |  |  |  |
| * remove/install TR blades |  |  |  |
| * remove/replace TR blade bearings |  |  |  |
| * check/adjust TR tracking |  |  |  |
| Tail rotor drive: |  |  |  |
| * remove/inspect/install drive shafts |  |  |  |
| * replace driveshaft hanger bearing |  |  |  |
| * remove/install bevel gearbox |  |  |  |
| * remove/install right angle gearbox |  |  |  |
| * drive train alignment check/adjust |  |  |  |
| * replace drive belt |  |  |  |
| Tail rotor drive monitoring and indicating: |  |  |  |
| * inspect/function test TR monitoring/indicating system |  |  |  |
| Notar system: |  |  |  |
| * rig directional control system |  |  |  |
| * inspect Notar fan |  |  |  |
| * remove/install Notar fan |  |  |  |
| Flight controls: |  |  |  |
| * remove /install pitch change links |  |  |  |
| * remove/install swashplate |  |  |  |
| * inspect/replace scissor links |  |  |  |
| * remove/install cyclic servo |  |  |  |
| * remove/install collective servo |  |  |  |
| * remove/install irreversible valves |  |  |  |
| * rig cyclic flight control system |  |  |  |
| * rig collective system |  |  |  |
| * rig tail rotor controls |  |  |  |

Table : Maintenance procedures – Engine

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Engine Details: Manufacturer | Model | | | | |
| Task List  Note: Differences training only: delete any items that are not unique to the particular aircraft for which training is being given. | | Job details | Supervisor | | |
| Aircraft VH…………. or  Engine S/no……….or  Job No………………. | Competent  Y/N | | Signature and date |
| General | | | | | |
| Read and understand maintenance schedule | |  | |  |  |
| Read and understand maintenance records | |  | |  |  |
| Determine life limits of components | |  | |  |  |
| Locate inspection limits | |  | |  |  |
| Assemble work package | |  | |  |  |
| Locate appropriate data for tasks | |  | |  |  |
| Properly complete maintenance recording at end of each task | |  | |  |  |
| Carry out compressor and turbine wash-demonstrate engine-specific precautions (if any) | |  | |  |  |
| Engine mounting | | | | | |
| Inspect for correct attachment and security | |  | |  |  |
| Explain any special precautions relating to working around engine installation | |  | |  |  |
| Induction system | | | | | |
| Demonstrate location of filtration system elements and explain any special precautions | |  | |  |  |
| Inspect ducting for damage | |  | |  |  |
| Inspect compressor bleed valves and lines | |  | |  |  |
| Inspect/remove/replace particle separator | |  | |  |  |
| Inspect/replenish propulsion augmentation system | |  | |  |  |
| Fuel system | | | | | |
| Demonstrate location of fuel system filters | |  | |  |  |
| Inspect fuel control unit for leaks and security | |  | |  |  |
| Conduct fuel control system rigging | |  | |  |  |
| Adjust droop compensator (if applicable) | |  | |  |  |
| Demonstrate location of high and low pressure fuel pumps, as applicable, and explain any special precautions associated with maintenance of the fuel delivery and control systems | |  | |  |  |
| Remove, clean, replace fuel nozzle | |  | |  |  |
| For multi-engine aircraft: | |  | |  |  |
| Carry out engine trimming/balancing | |  | |  |  |
| Engine control system | | | | | |
| Engine control linkages adjust and match levers if multi engine | |  | |  |  |
| Remove/replace FADEC system | |  | |  |  |
| Ignition system | | | | | |
| Make ignition system safe for removal of igniter | |  | |  |  |
| Remove, inspect and replace igniter | |  | |  |  |
| Remove/replace igniter | |  | |  |  |
| Inspect igniter lead and connections | |  | |  |  |
| Perform functional test/troubleshoot | |  | |  |  |
| Starter Generator | | | | | |
| Explain any special precautions to be observed when removing or replacing starter generator | |  | |  |  |
| Carry out functional check | |  | |  |  |
| Reduction/accessory gear casings | | | | | |
| Describe location of engine driven accessories | | | | | |
| Explain process to: | | | | | |
| * check and replenish engine oil | |  | |  |  |
| * remove, clean and replace oil screen | |  | |  |  |
| * remove and inspect chip detector and interpret findings, clean and reinstall | |  | |  |  |
| Hydraulic system if applicable | | | | | |
| Remove and replace hydraulic pump | |  | |  |  |
| Remove and replace hydraulic filters | |  | |  |  |
| Check and replenish system | |  | |  |  |
| Inspect/charge/adjust accumulator | |  | |  |  |
| Drive shaft if applicable | | | | | |
| Remove, inspect and replace drive shaft | |  | |  |  |
| Inspect/replace driveshaft flex couplings | |  | |  |  |
| Inspect oil seals | |  | |  |  |
| Hot section | | | | | |
| Conduct borescope inspection | |  | |  |  |
| Inspect exhaust ducting | |  | |  |  |
| Inspect duct seals | |  | |  |  |
| Carry out or demonstrate hot start check | |  | |  |  |
| Engine Run | | | | | |
| Prepare area ensuring safety | |  | |  |  |
| Anchor aircraft (if applicable) | |  | |  |  |
| Conduct ground run and power checks in conjunction with pilot | |  | |  |  |
| Additional specific items | | | | | |
| Remove /replace propeller output shaft | |  | |  |  |
| Prop governor (If integrated) | |  | |  |  |
| Prop gearbox mountings | |  | |  |  |
| Shaft seals | |  | |  |  |
| Propeller (if applicable) | | | | | |
| Check/balance propeller | |  | |  |  |
| Assess blade damage | |  | |  |  |
| Troubleshoot | |  | |  |  |

Table : Maintenance procedures – Electrical (B1/B2)

|  |  |  |  |
| --- | --- | --- | --- |
| Electrical | OJT Details | Competent | |
| VH-….. or serial number  Comments | Y/N | Date & Signature |
| Note: Differences training only: delete any items that are not unique to the particular aircraft for which training is being given. |  |  |  |
| Electrical systems and interface with other systems:  Demonstrate required knowledge of: |  |  |  |
| * propeller electrical control systems trouble shooting and brush inspections |  |  |  |
| * location and function of landing gear indication switches and sensors |  |  |  |
| * location of aircraft batteries and vent system components and any associated hazards |  |  |  |
| * location of fire detection and extinguishing systems for engine, cargo and wheel well (if applicable) |  |  |  |
| * understanding of electrical aspects of fuel feed system and troubleshooting |  |  |  |
| Operational check of: |  |  |  |
| * emergency bus indication |  |  |  |
| * emergency bus isolation |  |  |  |
| * fuel shutoff valves |  |  |  |
| * rotor brake switch assemblies |  |  |  |

Table : Maintenance procedures – Avionics (B1/B2)

|  |  |  |  |
| --- | --- | --- | --- |
| Instrument | OJT Aircraft Details | Competent | |
| VH…………. or system | Y/N | Date & Signature |
| Note: Differences training only: delete any items that are not unique to the particular aircraft for which training is being given. |  |  |  |
| Demonstrate knowledge of: |  |  |  |
| * auto flight functions, operations and component changes |  |  |  |
| * location of vacuum supply pumps, filters and indicators (if fitted) for servicing and calibration |  |  |  |
| * radio interaction with navigation systems including GPS, VOR/ILS and G/S |  |  |  |
| Functional checks of: |  |  |  |
| * ADF, VOR, GPS, Marker, localiser, glideslope |  |  |  |
| * weather radar |  |  |  |
| * autoflight, autohover, autostability |  |  |  |
| * rescue hoist electrical system |  |  |  |
| * hoist bonding |  |  |  |
| * emergency flotation electrical system |  |  |  |
| Carry out compass swing, standby and remote |  |  |  |
| Update GPS data |  |  |  |

At the successful completion of the training and assessment in all selected tasks, the Quality Manager will be notified that the trainee is eligible for issue of a certification authorisation.

Table : Training providers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | | **Authorised to provide training in/on:** | | **Qualifications** |
|  |  | |  | |
|  |  | |  | |
|  |  | |  | |
|  |  | |  | |
|  |  | |  | |
|  |  | |  | |
|  |  | |  | |

# Practical performance assessment

To be used when assessing an employee in accordance with sections 2, 4 and 5 of this manual

Trainee………………………………………………

AIRCRAFT type/registration…………………...

Table : Trainee Objectives Assessment Form (For Use By The Assessor)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| USE REPORTS & INDICATIONS | PERFORMANCE ASSESSMENT | | | | |
| ATTEMPTS | | | RESULT \* | |
| 1st | 2nd | 3rd | U | S |
| Trainee reads the available reports and indications (maintenance task) |  |  |  |  |  |
| Trainee interprets the reports and indications correctly (opens proper manuals/takes correct actions to start the process) |  |  |  |  |  |
| FIND & USE AIRCRAFT DOCUMENTATION | ATTEMPTS | | | RESULT | |
| 1st | 2nd | 3rd | U | S |
| Trainee reads the available reports and indications (maintenance task) |  |  |  |  |  |
| Trainee interprets the reports and indications correctly (opens proper manuals/takes correct actions to start the process) |  |  |  |  |  |
| CORRECTLY PERFORM ACTIONS | ATTEMPTS | | | RESULT | |
| 1st | 2nd | 3rd | U | S |
| Trainee follows the procedure steps |  |  |  |  |  |
| Trainee make sure that actions are properly done |  |  |  |  |  |
| Trainee uses required tooling |  |  |  |  |  |
| OPERATE IN COMPLIANCE WITH ENVIRONMENT | ATTEMPTS | | | RESULT | |
| 1st | 2nd | 3rd | U | S |
| Trainee scans the environment before starting the task to ensure safety |  |  |  |  |  |
| Trainee reads/interprets safety warnings correctly |  |  |  |  |  |
| Trainee informs people of his/her work, if necessary |  |  |  |  |  |
| Trainee continuously scans environment during task performance |  |  |  |  |  |
| Trainee reacts properly to changes during task performance to ensure safety |  |  |  |  |  |
| SYSTEM INTERACTION | ATTEMPTS | | | RESULT | |
| 1st | 2nd | 3rd | U | S |
| Trainee ‘analyses’ the consequences of other systems before performing an action (trainee can do this him/herself or by asking the assessor or a knowledgeable colleague) |  |  |  |  |  |
| Trainee takes other systems into account when acting on a system |  |  |  |  |  |
| PERFORMS AIRCRAFT FINAL / CLOSE-UP | ATTEMPTS | | | RESULT | |
| 1st | 2nd | 3rd | U | S |
| Trainee restores the aircraft back to initial condition (or appropriate condition depending on the circumstances) |  |  |  |  |  |
| REPORTS IN MAINTENANCE RECORDS | ATTEMPTS | | | RESULT | |
| 1st | 2nd | 3rd | U | S |
| Trainee fills the proper field in the maintenance record |  |  |  |  |  |
| Trainee uses proper references and descriptions in the maintenance record |  |  |  |  |  |

|  |  |
| --- | --- |
| Coaching comments | Assessors Name |
| 1st attempt |  |
| 2nd attempt |  |
| 3rd attempt |  |

|  |  |  |
| --- | --- | --- |
| RESULT OF THE ASSESSMENT | | Succeeded ❒ Remedial ❒ |
| TRAINEE NAME: |  |  |
| TRAINEE SIGNATURE: |  | DATE: |
| ASSESSOR NAME: |  |  |
| ASSESSOR SIGNATURE: |  | DATE: |

|  |  |
| --- | --- |
| Unsatisfactory | Satisfactory |
| Observed performance not adequate/ had safety implications | Observed performance was adequate |

###### Certification authorisation form

XXXXX Maintenance.

COA no ……………………………

Certification authorisation

Issued pursuant to subsection 5/6/7/8/10 of CAO 104-1 *(delete whichever does not apply)*

Issued to ………………………

(Name of holder) …………………….is authorised to carry out maintenance and perform maintenance certification for the following Part 1 WHR aircraft / excluded aircraft type/ excluded system on behalf of xxxxxx Maintenance

Aircraft System

1……………………………………………. 1……………………………………………………

2……………………………………………. 2……………………………………………………

*(strike out or delete any not applicable)*

This authorisation expires at midnight on *(date)*……………………. or

upon issue by CASA of an amended licence showing addition of the type rating or removal of the exclusion.

Issued by………………………

Position: Quality Manager/Chief Engineer/Training Manager. *(delete all which do not apply)*

Signed……………………………………

Date………………………………………

CAO 104.0 training manual amendment-acknowledgement

Amendment Number………………………… Date…………………………..

Manual Number……………………. Manual Holder……………………….

I have actioned the amendment and have read and understand the change(s)

Signed…………………………………… Date…………………………….

Each manual holder, on receipt of a manual amendment must action the amendment as required (pen amendment or page insertion/replacement) and having done so, return this signed acknowledgement to ..................................

The acknowledgement may be returned to …………….. via post, courier or emailed as a PDF document.

###### List of WHR aircraft

Table : List of WHR aircraft

|  |  |  |  |
| --- | --- | --- | --- |
| Aircraft | | Licence Categories | Suggested identification for a certification authorisation[[1]](#footnote-1) |
| Airframe | Engine type |  |  |
| Aero Vodochody L 29 Delphin | Motorlet M‑701C 500 | B1.1; B2 | L29 |
| Aero Vodochody L 39 Albatross | Ivchenko AI-25TL | B1.1; B2 | L 39 |
| BAC Jet Provost | A-S Viper | B1.1; B2 | Jet Provost |
| BAC Strikemaster | Rolls-Royce Viper Mk.535 turbojet | B1.1; B2 | Strikemaster |
| Bell Cobra | Lycoming T53-L-13 | B1.3; B2 | AH-1G |
| Bell Iroquois Huey | Lycoming T53-L-11 | B1.3; B2 | UH series |
| CAC Sabre | RR Avon | B1.1; B2 | Sabre |
| Cessna Dragonfly | General Electric J85-GE-17A | B1.1; B2 | Dragonfly |
| DH 115 Vampire | DH Goblin | B1.1; B2 | DH115 |
| English Electric/Handley Page Canberra | RR Avon | B1.1; B2 | Canberra |
| Folland Gnat | BS Orpheus | B1.1; B2 | Gnat |
| Fouga CM 170 Magister | Turbomeca Marbore | B1.1; B2 | CM 170 |
| Gloster Meteor | RR Derwent | B1.1; B2 | Meteor |
| Hawker Hunter | RR Avon | B1.1; B2 | Hunter |
| Lockheed P2v Neptune | Wright R-3350 and Westinghouse J 34 | B1.1; B1.2; B2 | Neptune  Note 3 |
| Mikoyan Mig 15 | Klimov VK 1 | B1.1; B2 | Mig 15 |
| Mikoyan Mig 17 | Klimov VK-1F | B1.1; B2 | Mig 17 |
| Mikoyan Mig 21 | Tumansky | B1.1; B2 | Mig 21 |
| Savoia Marchetti S211 | P&W JT15D-4C | B1.1; B2 | S211 |
| Soko Galeb | A-S/RR Viper | B1.1; B2 | Galeb |
| TS-11 Iskra | WSK SO-3 | B1.1; B2 | TS-11 |

Note 1: Only a type rating holder, a holder of a valid maintenance authorisation or an employee, issued with a certification authorisation, may carry out maintenance on these aircraft.

Note 2: Training and certification authorisation with respect to the Neptune is only required for certification of the Westinghouse J34 engine.

1. The ‘Suggested identification for a certification authorisation’ (if any) refers to a suggested means of identifying certification authorisations for CAO 104.0. It is included here for information only. [↑](#footnote-ref-1)