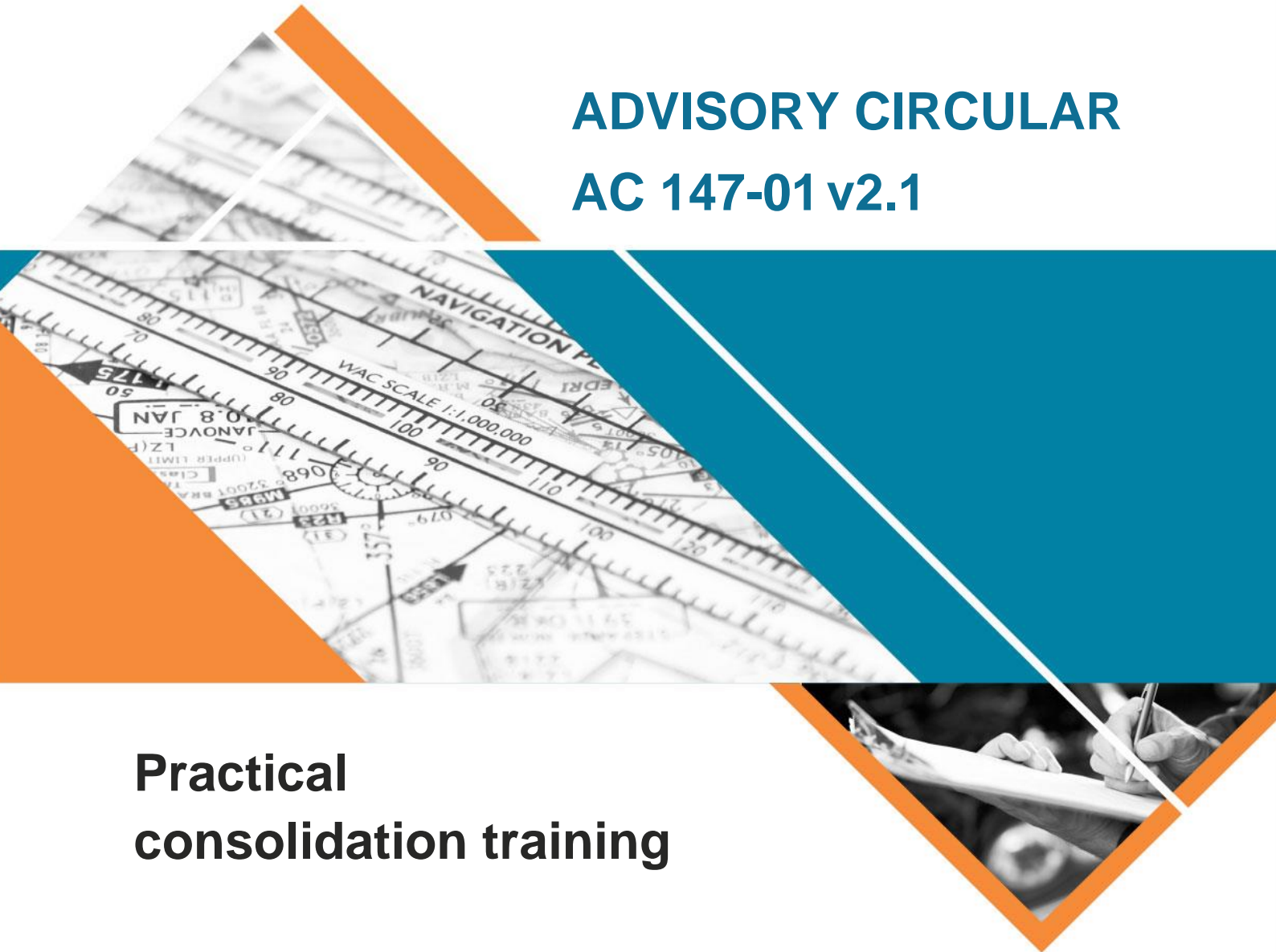




Australian Government
Civil Aviation Safety Authority

ADVISORY CIRCULAR

AC 147-01 v2.1



Practical consolidation training

Date November 2022
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Advisory circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the Regulations, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.

Advisory circulars should always be read in conjunction with the relevant regulations.

Purpose

This AC provides guidance against Part 147 of the CASR 1998 - pertaining to the carrying out Practical Consolidation Training (PCT). PCT is one way of satisfying the practical component of aircraft type rating training for B1 and B2 Licenced Aircraft Maintenance Engineers (LAME) licences. The other methods are Practical on Course (POC), On-the-Job Training (OJT), Schedules of Experience (SOE) and Permitted Training (See Advisory Circular AC 145-4).

For further information

For further information, contact CASA's Airworthiness Standards (telephone 131 757).

Status

This version of the AC is approved by the Branch Manager Airworthiness & Engineering.

Note: Changes made in the current version are not annotated. The document should be read in full.

Version	Date	Details
v2.1	November 2022	Administrative review only.
(1)	July 2013	<ul style="list-style-type: none"> Replacement of reference to AC 66-1 in Section 2 of the AC with AC 145-4, as the information was expanded upon to deal with other forms of practical training and transferred into AC 145-4. Addition of a Note after the second dot point for paragraph 11.1 in the document. Amendment to the time requirement in the selection criteria for the position of PCT trainer at paragraph 13.1, that a person would need to meet in actively exercising the privileges of a type rating. Clarification in the selection criteria for the position of PCT trainer at paragraph 13.1 for completion of the organisation's instruction in the PCT program, that this can be gained via a mentoring program or briefing sessions.
(0)	November 2011	This is the first AC to be issued on this subject. However it supersedes draft AC 66-5(0) published in August 2011 and the information bulletin previously issued on the subject.

Unless specified otherwise, all subregulations, regulations, Divisions, Subparts and Parts referenced in this AC are references to the *Civil Aviation Safety Regulations 1998 (CASR)*.

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1 Reference material

1.1 Acronyms

The acronyms and abbreviations used in this AC are listed in the table below.

Acronym	Description
AC	advisory circular
AMC	Acceptable Means of Compliance
ATA	Air Transport Association
CAR	<i>Civil Aviation Regulations 1988</i>
CASA	Civil Aviation Safety Authority
CASR	<i>Civil Aviation Safety Regulations 1998</i>
LAME	Licensed Aircraft Maintenance Engineer
MOS	Manual of Standards
MPL	Maintenance Personnel Licencing
MTO	Maintenance Training Organisation
OJT	On the Job Training
PCT	Practical Consolidation Training
POC	Practical on Course
SOE	Schedule of Experience

1.2 References

Legislation

Legislation is available on the Federal Register of Legislation website <https://www.legislation.gov.au/>

Document	Title
Part 66 of CASR	Continuing airworthiness—aircraft engineer licences and ratings
Part 147 of CASR	Registration of aircraft and related matters
Part 66 MOS	
Part 147 MOS	

2 Background

- 2.1.1 Under the previous regulation 31 of the Civil Aviation Regulations 1988 (CAR 1988) licence system, the PCT program was established to provide an alternative to schedules of experience (SOE) which would still satisfy the experience requirements for grant of aircraft type ratings.
- 2.1.2 The objective of a PCT program is to provide an existing type rated LAME with the practical experience required to gain the second or subsequent type ratings in category B1 or B2. In addition, a LAME who already holds a B1 or B2 type rating may utilise PCT training to meet the practical requirements of the first type rating in the other licence category. For example, a B1 holder seeking their first B2 rating may utilise PCT training to meet the practical requirements for the aircraft type rating.
- 2.1.3 An approved PCT program provides structured training coupled with a period of service familiarisation for the applicable rating sought. The structured training element will be performed according to a type of specific program. It includes training in maintenance of the aircraft, rigging, adjustments, replacement of line replaceable units, trouble shooting, rectification of minor defects and testing of systems.
- 2.1.4 Since there are many possible combinations of LAMEs seeking an additional rating, an individual experience analysis process is incorporated in a PCT program.
- 2.1.5 For a first rating either PCT or POC is combined with an OJT program to provide the experience required for licence rating. Details of the elements of POC and OJT for aircraft type training can be found in *Practical training options for aircraft type training and recording of recent work experience* available on the CASA website in the [Advisory Circulars](#) section.

3 Overview

- 3.1.1 PCT courses are delivered under a Maintenance Training Organisations (MTO) approval certificate issued under Regulation 147.035 of CASR 1998. An organisation's PCT program is subject to compliance with Part 147 of CASR 1998 and its MOS. The PCT program comes under the control of the manager responsible for PCT. For PCT purposes Section 147.A.130 of the Part 147 MOS training procedures and quality management systems are comprised of the following elements:
- service familiarisation, which is the minimum level of actual maintenance exposure applicable to all LAMEs seeking the type rating;
 - experience analysis, which identifies if any additional practical experience, called Supplementary Tasks, is required prior to rating application;
 - the PCT Course, which is a structured practical training course applicable to the type rating; and
 - PCT program audit, conducted as part of the organisation's quality management system.
- 3.1.2 After completing a PCT course, the PCT assessor would formally assess the trainees. The review includes course review, a specific type subject oral assessment and a validation of the experience analysis outcomes.
- 3.1.3 The results of the PCT assessment are communicated to CASA to record as a practical credit for the aircraft type rating.
- 3.1.4 Application for approval of PCT programs requires documenting the part of the quality management system applicable to the PCT program. The PCT program procedure document will describe how quality of the program is established and maintained. If an organisation wishes to establish a PCT program, they should:
- apply for, or seek a variation to include, a Part 147 of CASR 1998 approval that includes the PCT program within their exposition; and
 - follow the guidance contained within this document.

4 Service familiarisation

- 4.1.1 Service familiarisation is the term used to describe the minimum level of actual OJT maintenance experience, applicable to the type rating, in which all LAMEs must participate when undertaking a PCT training program.
- 4.1.2 Service familiarisation is experience to be gained in addition to the satisfactory completion of the PCT course and is to be completed prior to PCT course attendance. The service familiarisation will include a minimum level of maintenance exposure for the type rating. During the service familiarisation period the LAME must gain a minimum amount of exposure to substantial maintenance tasks and/or scheduled maintenance checks greater than the daily inspection.
- 4.1.3 The practical maintenance experience should comprise a period of 16 weeks for LAMEs with no recent or recorded previous practical experience of aircraft and/or engines of comparable construction and systems. This service familiarisation period can be reduced to a minimum of four weeks for LAMEs with such experience.
- 4.1.4 The actual maintenance period for an individual LAME will depend on their previous experience, the complexity of the rating sought and the similarity of that rating with existing ratings held. This will be determined during the experience analysis process. The period is based on the person participating in maintenance applicable to the type rating sought on a daily or each shift contact basis.
- 4.1.5 The minimum amount, i.e., scope and depth, of the maintenance experience required will be identified for each aircraft type rating for the organisation. This will be applicable to all LAMEs participating in a PCT program. Some LAMEs may be required to complete additional tasks and/or show a longer period of maintenance experience for service familiarisation. This may be as a result of either the experience analysis process conducted by the organisation or as an outcome of the PCT review.
- 4.1.6 LAMEs whose normal duties do not include the level of maintenance exposure required for the service familiarisation will need to participate in that maintenance at a location where it is conducted.
- 4.1.7 Recording Service Familiarisation. The service familiarisation and any additional tasks may be recorded in the previous licence system CASA Group 20/21/22 SOE or within a dedicated PCT SOE record sheet(s).

5 Experience analysis

- 5.1.1 The experience analysis process is aimed at giving the individual LAME appropriate credit for their experience. It should identify if any other practical experience is required, in addition to the minimum level provided by the PCT course and service familiarisation. The analysis is carried out on all persons prior to their PCT course attendance and ensures the PCT course entry criteria are satisfied by the proposed trainee.
- 5.1.2 Experience Analysis Summary. The following types of information should be documented and considered in the experience analysis of a LAME:
- experience to date on the type of aircraft (engine);
 - experience on similar types of aircraft (engine);
 - overall category/trade stream experience; and
 - previous work environments i.e., servicing, line maintenance, base maintenance or engine overhaul.
- 5.1.3 Experience Analysis Procedure. The experience analysis will be conducted by a person(s) identified in the program procedures, who is familiar with the requirements of the process within the PCT program. The experience of the LAME is to be verified in a summary document by a supervisory maintenance person who is personally aware of the LAMEs capabilities i.e., shift supervisor, base supervisor or chief engineer, senior category LAME, PCT trainer etc.
- 5.1.4 Experience Analysis Outcomes. The experience analysis outcome will provide:
- the service familiarisation period for that LAME;
 - any supplementary tasks required; and
 - verification of the PCT course entry criteria.
- 5.1.5 This process should be supported by some form of aircraft type rating to aircraft type rating or Air Transport Association (ATA) system (sub-system) comparison matrix, or other acceptable means. The experience analysis for each trainee is to be retained with the PCT course records and a copy given to the trainee. All service familiarisation, and any supplementary tasks, are to be completed before an aircraft type rating application is submitted to CASA.

6 Supplementary tasks

6.1.1 Supplementary tasks may be required for:

- candidates participating in PCT trials;
- first exposure to an ATA chapter sub-system;
- first exposure to different control systems;
- first exposure to another manufacturer's product; or
- first transition between categories, wide body airliners, narrow body airliners, business jets or turboprops.

6.1.2 Further supplementary tasks may also be required as an outcome of the PCT review. Supplementary tasks will normally only be required where there is a difference in the maintenance procedures or philosophy applicable to the type rating sought, that is not adequately covered by previous training and/or experience.

6.1.3 Supplementary tasks would normally comprise specific maintenance in an ATA chapter system. Any task(s) nominated should be readily achievable within three months of working in a location conducting regular scheduled maintenance checks on the aircraft or engine type.

7 PCT course objectives

- 7.1.1 The PCT course is a structured practical training course applicable to a type rating conducted by a Part 147 MTO. It is led and 100% supervised by a trainer and physically conducted at or on the applicable aircraft or engine type. Depending on the circumstances it will be carried out at a Part 145 Approved Maintenance Organisation, Part 147 MTO or in particular circumstances at the aircraft and/or engine and/or system manufacturer, or a mixture of the mentioned organisations.
- 7.1.2 The PCT course is the formal practical training for the oral assessment for that type rating. The course objectives are:
- familiarity with the safety precautions and operational and maintenance procedures related to the type rating; and
 - practical reinforcement and consolidation of the knowledge gained during the specific type theory course and the minimum service familiarisation.
- 7.1.3 The course material comprises:
- ATA chapter highlights, which are a summary list of points to be used as memory joggers for discussion by the trainer during the conduct of tasks in each ATA chapter;
 - Inspection Tasks in each ATA chapter where each main component and maintenance significant item in a system or structure is visually inspected and discussed; and
 - Performance Tasks in each ATA chapter, which is an operational, system or functional check, or a review of a specific maintenance task procedure.
- 7.1.4 All PCT courses will also include a hands-on review of the applicable maintenance documentation and any specialist tooling and test equipment that can be used in line maintenance activities.
- 7.1.5 The course objectives will be satisfied by:
- attending the entire course;
 - being familiar with the safety precautions relevant to the type rating;
 - participating in all inspection tasks and being familiar with the maintenance aspects of the system, component or structure inspected;
 - participating in all performance tasks and being familiar with the checks and tests available utilising on-board equipment;
 - being aware of the specialised tests, test equipment and tooling associated with the systems or structure applicable to the type rating; and
 - being familiar with any significant differences associated with the type rating that are not commonly encountered in the category.

8 PCT procedures

8.1.1 PCT procedures and course details are detailed within the MTOs exposition. Each course approved by CASA needs to:

- be conducted in dedicated training sessions where the aircraft or engine is available and accessible to the extent required by the course task content;
- typically commence within six months of successful completion of the specific type theory course;

Note: An extension up to a maximum of 2 years (24 months) may be sought through CASA, where control procedures in the MTOs exposition are in place to manage these circumstances.

- be delivered in accordance with the conducting organisation's approved PCT procedures; and
- have its training session(s) limited to a maximum of six hours actual training per day with training not normally extended beyond 0200 hours for any training session.

8.1.2 **Entry Criteria.** The entry criteria to a PCT course for a LAME seeking a second or subsequent type rating is to:

- hold a subcategory of B1 or category B2 licence;
- hold a specific type theory credit for the relevant aircraft type; and
- have completed the minimum service familiarisation determined by the PCT program experience analysis of the candidate.

8.1.3 Compliance with the entry criteria for a PCT course trainee is to be verified by the organisation during the experience analysis process. Entry criteria compliance also needs to be confirmed prior to the oral assessment by the assessor conducting the PCT review.

8.1.4 **Training Ratio.** The maximum ratio for delivery of a PCT course is normally six trainees to one trainer. The actual training ratio proposed by an organisation for a specific PCT course will be assessed during that individual PCT course approval process. The assessment will take into consideration such things as the planned course delivery location(s), accessibility to the aircraft (engine), the aircraft size and any additional trainee entry criteria proposed. The course plan for the PCT will set out details of training ratios.

8.1.5 **Training locations.** Courses will normally be conducted at a maintenance facility where an operational aircraft is readily available to be utilised for the training session(s). An aircraft undergoing major servicing and/or a spare engine may be required for some tasks. Any PCT course to be conducted at other than a base maintenance facility for the type may require adjustment of the course delivery timeframe and trainer/trainee ratio. These adjustments will be considered by CASA as required.

8.1.6 **Course Review.** This process will utilise feedback from the trainer and trainees. It should provide ongoing revalidation of the course delivery time, trainer performance, task content and program procedures. It should also be used as a mechanism to update the trainer ATA chapter highlights. The review process should be recorded and any follow up action initiated prior to further delivery of the course.

9 Delivery of PCT courses to multiple customers

9.1.1 An MTOs approved PCT courses may be provided to LAMEs from multiple customers providing the PCT program procedures cover how this is to be controlled. The PCT course must adequately cover any significant difference(s) particular to a customer's aircraft (engine). A significant difference is a difference that:

- the ignorance of which could affect the safety of the aircraft or become a danger to person or property;
- introduces a change that affects a maintenance practice, specific company procedure or requirement; or
- causes a different presentation of data, the understanding of which is a factor in determining aircraft serviceability.

10 Teaching staff - PCT trainer

10.1.1 As per section 147.A.105 of the Part 147 MOS, an MTO must describe the selection criteria for teaching staff. The PCT course will be led and supervised by a person identified and approved in the program procedures as a PCT trainer for that type rating. The selection criteria for a PCT trainer would normally include all of the following:

- licensed in the category for >5 years and been actively exercising the privileges of the type rating >12 months;
- have recent maintenance experience in that rating;
- completed a recognised “Train the Trainer” course; and
- completed the organisation’s instruction in the PCT program, this could be gained via a mentoring program or briefing sessions.

Note: The introduction of B1 & B2 licences means that being previously licenced under regulation 31 of the CAR 1988 may satisfy the licenced in category > 5 year requirement.

10.1.2 A recognised “Train the Trainer” course is one that is equivalent under the Australian Qualifications Framework to be the unit of competence for training small groups, as endorsed by the National Skills Standards Council. Trainer instruction in the PCT program should include general description, definitions and terminology and trainer responsibilities and course delivery.

10.1.3 The trainer will be issued a “PCT Trainer Course Delivery Guide”. This is to be used as a reference document during the preparation and delivery of a PCT course. CASA’s MPL Section needs to be advised when a new trainer has been proposed.

10.1.4 PCT Trainer Responsibilities. The PCT trainer should:

- ensure adequate time is taken to prepare and review the course documentation before the course starts;
- check the currency and effectivity of the course tasks;
- ensure all tasks are conducted in a manner that does not render the aircraft, engine or equipment unserviceable;
- record any interference with the aircraft or engine in the appropriate maintenance documentation;
- co-ordinate the training session tasks to aircraft availability, in conjunction with appropriate maintenance supervisor;
- monitor course progress within the planned timeframe – noting any deficiencies in the course tasks or timeframe;
- note any additional ATA chapter highlight points to be added to the trainers course material;
- record trainee attendance;
- monitor trainee performance to ensure the course objectives are achieved;
- action the course documentation;
- have the authority to remove a trainee from the training group if that person is disruptive or refuses to comply with the program procedures; and
- have access to the PCT program procedures and undertake all tasks according to those procedures.

11 PCT course conduct

11.1.1 The trainer will conduct the PCT course within the following guidelines:

- follow a logical, progressive task sequence:
 - o complete inspection tasks before the performance tasks in an ATA chapter section; and
 - o complete tasks in the common trade stream ATA chapters before any specific category ATA chapter system tasks i.e., chapter 29 before chapters 27 and 32; chapter 36 before chapters 30 and 21 etc;
- lead discussion in any available Built in Test Equipment procedures and troubleshooting steps that could be taken following a typical fault report of the system or sub-system;
- emphasise any in-service difficulties in the task area and encourage the trainees to share any personal experience in the area;
- highlight any cautions and warnings, servicing, tooling and test equipment, rigging and adjustment and minimum equipment list or permissible unserviceability maintenance significant areas related to the task;
- during inspection tasks ensure each trainee physically inspects each item, whilst the trainer refers to the appropriate system or structural schematic (if applicable) and leads discussion on the component's method of attachment and interface considerations with other structure, components or systems;
- during performance tasks ensure each trainee participates in the task, whilst the trainer refers to the system schematic or flight deck indications and leads discussion on the normal indications and any usual fault indications;
- reviewing specific tests, rigging or adjustment procedures whilst referring to the approved data, tooling or test equipment and the aircraft system, component or structure concerned;
- encourage use of instructions for continued airworthiness at all times (including use of maintenance data in the form of locator diagrams); and
- whilst at or on the aircraft or engine working through the steps in the fault isolation manual or troubleshooting charts for a typical defect scenario.

11.1.2 **Technical Diagram Usage.** Some inspection task items are not readily accessible. In certain circumstances that item may be approved to be conducted by identifying the component's location within a specific area or behind a specific panel on the aircraft or engine. This must be carried out at the aircraft or engine location whilst referring to an approved detailed technical location diagram of the component.

11.1.3 This alternative can only be utilised for those inspection task items identified with the "diagram" option in the task list and when the component is not accessible during the training session. When a trainer needs to use this option, particular care must be taken to ensure comprehensive discussion of any inspection considerations, adjustment or rigging points, method of attachment and connection to other components and structure relating to the inspection item.

11.1.4 If any inspection items, where this alternative has been used, later become accessible during the course then they should be revisited and physically inspected. Additionally, if a component can be accessed from spare parts holdings, then the usage of the diagram option will be supplemented with inspection of the spare part.

- 11.1.5 **PCT Course Review.** Qualifications for assessors for aircraft type training are detailed in section 147.A.106 of the Part 147 MOS. The PCT review is conducted by the PCT assessor with each trainee following completion of a PCT course in accordance with sections 147.A.135 and 147.A.137 of the Part 147 MOS. The PCT course review is made up of two elements:
- an oral assessment for the type rating, based on the PCT course content; and
 - a review of the LAME’s experience analysis and accumulated experience to date, to assess if any further experience is needed prior to rating application.
- 11.1.6 The PCT review should take place within two weeks of completing the course and would normally be conducted at the training location.
- 11.1.7 The oral assessment will comprise questions drawn from a library based on the PCT course content. The scope of this assessment will be all ATA chapter areas relevant to the specific type rating. To be eligible to attend the oral assessment the student must have satisfied the course entry criteria and completed the PCT course.
- 11.1.8 The oral assessment is normally conducted in the presence of an observer who is an experienced type rated LAME or PCT trainer. The observer’s role is to moderate the oral assessment process by verifying the accuracy of any non-standard answers given by the candidate to ensure the candidate is not disadvantaged in any way.
- 11.1.9 The duration of the oral assessment will depend on the scope, depth and complexity of the type rating. It may also be influenced by the responses given by the candidate and any need to expand on question topics. As a guide, the duration of the oral assessment may vary between 30 and 120 minutes, depending on the rating sought and candidate performance.
- 11.1.10 Successful completion of this assessment will permit the practical experience reduction provided for by the approved PCT program.
- 11.1.11 **PCT Course Assessment Outcomes.** At the completion of the oral assessment the candidate’s responses are to be assessed by the PCT assessor to determine if the PCT course objectives have been achieved. The pass level is a minimum of 75% correct answers across the whole assessment, with satisfactory performance in all subjects. The assessment result will be one of the following:
- Pass.
 - Failure in part, i.e., unsatisfactory performance in a minority of subject areas, which would then require a further oral assessment of those subjects after one month. The assessor may require additional experience to be gained in the subject(s) prior to conducting the oral re-assessment.
 - Fail, unsatisfactory performance in the majority of subject areas, revert to OJT, POC, SOE, permitted training or repeat the PCT program for that type rating.
- 11.1.12 The oral assessment result will be recorded by the course assessor and a copy provided to the candidate. A pass is required for any rating application relying on practical experience gained via an approved PCT program. Reporting qualifications to CASA is covered in section 147.A.139 of the Part 147 MOS.

- 11.1.13 Upon successful completion of the oral assessment a trainee seeking their first aircraft type rating in a category/subcategory will be entitled to attend or complete an OJT program.
- 11.1.14 **PCT Experience Review.** At the commencement of the PCT review the course assessor will check the candidate's experience records to confirm that the PCT course entry criterion was satisfied. After successful completion of the oral assessment the LAME's experience analysis documentation is checked to confirm the appropriate service familiarisation allocation and any need for supplementary tasks. The experience review will be recorded and provided to the LAME and their maintenance organisation.

12 Additional licence rating application

12.1.1 Application for an additional type rating in a category, based on the practical training and experience gained via an approved PCT program, requires evidence of the following:

- oral assessment pass;
- all service familiarisation completed; and
- all supplementary tasks completed.

12.1.2 When applying for a rating all practical experience records related to that rating should be submitted with the application.

13 PCT responsible manager

13.1.1 The PCT responsible manager means the person who has corporate authority for ensuring that all PCT training commitments are carried out to the standard required by CASA. The responsible manager may delegate in writing the day to day management of a PCT program to a senior technical person(s) in the organisation but not the overall approved program management responsibility. PCT program responsibilities include:

- course development;
- the experience analysis of course candidates;
- notification and coordination with CASA for the conduct of courses and oral assessments;
- trainer training, course conduct and review;
- documentation and record keeping; and
- PCT procedures amendment and internal audit.

14 Program audits

- 14.1.1 The internal audit of a PCT program is conducted to enable the organisation to satisfy itself that it can deliver properly trained persons and that the organisation remains in compliance with Parts 66, 145 and 147 of CASR 1998.
- 14.1.2 There are two elements to the quality system, namely an independent audit procedure and a management/control and follow up system.
- 14.1.3 Independent Audit. The independent audit procedure is a process of routine sample checks of all aspects of the training organisation's ability to carry out the training to the required standards. It represents an overview of the complete training system but does not replace the need for trainers to ensure that they carry out training to the required standard.
- 14.1.4 The independent audit procedure should ensure all key aspects of CASR compliance are checked at least once in every 12 months and may be carried out as one complete single exercise or subdivided over a 12 month period in accordance with a scheduled plan.
- 14.1.5 A report should be raised each time an audit is carried out describing what was checked and any resulting negative findings. The report should be sent to the affected manager(s) for rectification action giving target rectification dates. Possible rectification dates may be discussed with the affected manager(s) before the person responsible for the audit confirms such dates on the report. The affected manager(s) are required to rectify any negative findings and inform the person responsible for the audit of such rectification.
- 14.1.6 The independence of the audit system should be established by always ensuring audits are carried out by personnel not responsible for the function or procedure being checked. It therefore follows that a large training organisation should have or utilise a dedicated quality audit group whose sole function is to conduct audits, raise finding reports and follow up to ensure that findings are being rectified.
- 14.1.7 For the medium sized training organisation, it is acceptable to use competent personnel from one section/department not responsible for the function or procedure to check the section/department that is responsible. This is subject to the overall planning and implementation being under the control of the quality manager.
- 14.1.8 Audit Control and Follow Up. The management control and follow up system is the second part of the independent quality system. The principle function is to ensure all negative findings resulting from the audit system are corrected in a timely manner and to enable the responsible manager to remain properly informed of the state of compliance and any safety issues.
- 14.1.9 The accountable and responsible managers should hold routine meetings to check on the progress of rectification of negative audit findings. In the case of large training organisations such meetings may be delegated on a day to day basis to the quality manager, as long as the responsible manager meets at least once per year with the senior staff involved to review the overall performance.

14.1.10 The PCT program will also be subject to system and product audits conducted by CASA and based on the cycle frequency identified within the CASA Operations surveillance program.

15 PCT program documentation and records

- 15.1.1 A PCT program requires various documents, forms and records to be created. The MTO records for section 147.A.125 of the Part 147 MOS purposes pertaining to a PCT program are to be retained for a minimum of five years. These include:
- a procedures manual and trainer’s course delivery guide;
 - an experience analysis record;
 - a trainer’s type rating course manual(s) for each course;
 - a trainee’s type rating SOE booklet;
 - the trainer’s course daily summary record;
 - a course report, feedback and review record; and
 - the PCT audit check list(s).
- 15.1.2 **Quality Management System - General Guidance.** Documented quality procedures support reliable and consistent performance i.e., when something is supposed to happen it does and it is done the right way without fail. Procedures provide the framework to discipline and order work within which people can use their initiative and skill knowing what needs to be done. Procedures are written in terms of who shall do what and what shall be done.
- 15.1.3 **Procedures are not static documents.** Where staff find a better way of operating it is the responsibility of management to amend the procedure document and have it approved. Procedures are also upgraded through the internal audit and course review processes which capture improved practice.
- 15.1.4 Procedures follow a consistent format, as follows:
- Purpose - why the procedure is in place, what it is intended to do;
 - Scope - when and where the procedure shall be applied;
 - Responsibilities - who shall do what;
 - Definitions - any peculiar or particular terms;
 - References - any related procedures, standards or codes referred to in the procedure;
 - Procedure - what actually shall be done, how it will be done, when and by whom;
 - Documentation - instructions, forms and other papers used to perform and record the procedure; and
 - Flowchart - captures the procedure in chart form.
- 15.1.5 **PCT Procedures Manual.** The purpose of the PCT Procedures Manual is to meet the training procedures requirements of section 147.A.130 of the Part 147 MOS. The procedures should describe the how, when, where, what, why and who for the specific processes in the program. They also include an audit process to monitor training standards and compliance with, and the adequacy of, the procedures. The audit procedures can be referenced to another approved document. An example of a PCT Procedures Manual structure is available at Appendix A of this AC.
- 15.1.6 **Experience Analysis Record.** This record should contain a summary of the individual’s experience, qualifications and past work environments and the outcome of the analysis process. Refer to Appendix B of this AC.

- 15.1.7 **Trainer's Course Delivery Guide.** This is a quick reference booklet for the trainer to use during the delivery of a PCT course. It should explain the responsibilities of the trainer and process methodology for conduct and delivery of the PCT course. It may also contain a general description of the organisation's PCT program.
- 15.1.8 **Trainer's PCT Course Manual.** The trainer's course manual is type rating specific and shall contain the following:
- Documentation Review;
 - Tooling and Test Equipment Review;
 - ATA chapter highlights in each ATA chapter to cover cautions and warnings, servicing, tooling and test equipment, rigging and adjustments and MEL/PUS. Significant maintenance items may be a part of the inspection and performance tasks or a separate listing;
 - Inspection Tasks in each ATA chapter to cover the main components and maintenance significant items in a system or structure; and
 - Performance Tasks in each ATA chapter to cover an operational, system or functional check or maintenance procedure review.
- 15.1.9 Each performance task is to be allocated a task identifier (between 1 and 6) to indicate the maximum number of trainees in the group for delivery of that task. The letter "G" or "I" following the number indicates if the task can be carried out as a group exercise (G) or must be performed individually (I) by each trainee. Refer to Appendix C of this AC.
- 15.1.10 **Trainee PCT Experience Booklet.** The trainee PCT experience booklet should contain a course task completion record, a list of the course tasks (with any approved inspection task alternate diagrams) and a record for service familiarisation and supplementary task recording. The course task completion record will have a certification block for the inspection and performance tasks in each ATA chapter. This to be completed by the PCT trainer who delivered that part of the course. It will also contain a final Certificate of Completion certification covering the entire document. This is to be completed by the trainee prior to rating application.
- 15.1.11 **Trainer's PCT Course Daily Summary.** The daily summary is to record trainee attendance and extent of the course completed during that training session. The sheet should also provide a method for the trainer to highlight any corrections, or recommendations for change, to the tasks completed in that training session. These are to be evaluated in the course review process. Refer to Appendix D of this AC.
- 15.1.12 **PCT Course Report.** The course report will be completed at the conclusion of each PCT course. It shall contain the relevant details of the course, the trainer(s) and trainee's details, and will be retained with the experience analysis records by the responsible manager as a record of the conduct and completion of a PCT course. Refer to Appendix E of this AC.
- 15.1.13 **Trainee's PCT Course Feedback Sheet.** The course feedback sheet provides an opportunity for the trainees to comment on the delivery and content of the PCT course. This provides a method of validating trainer performance, as viewed by the trainees, and monitoring course tasks for consideration in the course review. Refer to Appendix F of this AC.

- 15.1.14 **Course Review Record.** This record will show that the course review process has been carried out i.e., what items were evaluated and what follow up action was taken. It should reflect comment on the course delivery duration, trainer performance and task validity, based on information gained from the trainer daily summary sheets and trainee feedback sheets.
- 15.1.15 **Audit Check Lists.** This list(s) should show the check items covered by the audit system applying to the PCT program. The audit process procedures and check lists can be referenced to another approved document.
- 15.1.16 **False Statements.** All documents used in a PCT program that require a verification or certification signature must contain the following statement: I acknowledge that to knowingly make a false statement is an offence against the Criminal Code Act 1995.
- 15.1.17 **Documents and Forms.** Documents mentioned in this section may be published as hard copy or online.

16 PCT program approval process

- 16.1.1 Historically approval of a PCT program consisted of approval of an organisation's PCT program under regulation 30 of CAR 1988 and CASA approval of each PCT course to be conducted by the organisation under that CAR 30 certificate of approval activity. These approvals remain valid and can be transitioned to CASR Part 147 approvals by CASA.
- 16.1.2 To be approved to conduct a PCT course you must hold a CASR Part 147 approval and have suitable access to the maintenance facilities and the aircraft (engine) for the type rating being trained.
- 16.1.3 When applying for, or seeking to vary a Part 147 MTO approval to include PCT you must submit a PCT program quality management system (procedures document) in accordance with Part 147 of CASR 1998 and the Part 147 MOS. PCT program procedures should include the following:
- a statement signed by the responsible manager confirming that the program procedures and any associated manuals and documents defines the training organisations compliance with Part 147 of CASR 1998 and will be complied with at all times;
 - the name(s) of the position(s) occupied by the person(s) performing key functions in the program;
 - the duties and responsibilities of the position(s) performing key functions in the program;
 - a PCT program organisation chart showing associated chains of responsibility of the key function positions;
 - a program process flowchart;
 - a record of approved PCT trainers, courses and locations;
 - a record of the approved minimum service familiarisation for each approved course;
 - PCT program process and course conduct procedures that ensure training standards and compliance with all the requirements of Part 147 of CASR 1998 and the Part 147 MOS;
 - PCT program audit; and
 - PCT program procedures amendment procedure.
- 16.1.4 Key function personnel in a PCT program include the responsible manager, trainers, persons conducting the experience analysis, persons conducting the internal audit and personnel responsible for co-ordination and notification with CASA.
- 16.1.5 The Part 147 MTO approval (or variation) is to be submitted to CASAs MPL section in Canberra, for assessment. Any subsequent amendments to the PCT program procedures must also be notified to CASA for approval.
- 16.1.6 **PCT Course Approval.** The following information and documents are required to be assessed for approval of a PCT course for a type rating:
- a written request for the assessment by the organisation's PCT program responsible manager;
 - a course title that reflects the type rating;
 - the trainee's PCT experience booklet;

- proposed course duration by number and length of training sessions;
 - proposed conduct locations and a description of the facilities available to facilitate PCT at those locations;
 - proposed training group size (for each location if applicable);
 - proposed minimum service familiarisation;
 - details of proposed initial trainer(s);
 - any proposed experience analysis guidance material for this rating; and
 - a library of line maintenance level oral questions and answers drawn from the course material with the question library scope reflecting the complexity of the type rating.
- 16.1.7 Inspection Tasks in a PCT course should identify each main component in an ATA chapter system. This will normally include line replaceable units, serialised components, major structure and maintenance significant sub-assemblies.
- 16.1.8 If technical diagram usage, as per paragraph 14.2 of this AC, is required then that diagram must adequately depict any inspection considerations, adjustments, rigging, method of attachment and connection to other components or structure. Any such proposed substitute diagram(s) must be supplied as part of the inspection task listings and must be identified as an alternative option against the particular inspection task item. The number of these diagrams approved for use with the inspection task items needs to be kept to a minimum.
- 16.1.9 Performance Tasks should be targeted at the minimum required by all LAMEs to provide familiarity with the systems applicable to the type rating. Additional tasks that may be required for lesser experienced LAME's will be identified during the experience analysis process.
- 16.1.10 Service Familiarisation proposed must be substantiated. It should be of duration and depth that will give a good cross-section of work exposure to the rating and typically include what is normally done during an overnight scheduled maintenance check up to "C" check tasks or periodic inspections.
- 16.1.11 The PCT course details are to be submitted to CASA's MPL section in Canberra for assessment. Upon approval, the course will be allocated a dedicated PCT course identification number, which is to be referenced on the PCT course documentation and future correspondence relevant to the PCT course with CASA.
- 16.1.12 Before a PCT course can be approved the organisation must have their PCT program procedures assessed and approved. An example of the PCT course tasks format and level of detail is provided at Appendix C of this AC.
- 16.1.13 The following Appendix documents are examples only. They show the type of information that should be recorded as part of the documentation and records for a PCT program. The actual documents developed by an organisation may be modified or tailored to suit their individual needs, providing the necessary information is adequately recorded and evident from those documents and consistent with the guidance material in this document. The example documents provided are:
- Appendix A – Procedures Manual Structure;
 - Appendix B – Experience Analysis Record;
 - Appendix C – PCT Course Task Layout;

- Appendix D – Course Daily Summary;
- Appendix E – Course Report;
- Appendix F – Course Feedback; and
- Appendix G – PCT Experience Record.

Appendix A

PCT procedures manual structure example

A.1 PCT program procedures (Program No)

A.1.1 Introduction

Corporate commitment by responsible manager - General description

A.1.2 Management

Management personnel - Duties and responsibilities of management personnel

Management personnel organisation chart

PCT program process flow chart

List of PCT trainers

Notification procedures regarding changes to organisation - Manual(s) amendment procedure

A.1.3 PCT course(s)

Development Approval

Review

List of PCT courses approved	Duration
	Conduct location(s)
	Training group size
	Trainers Qualifications

A.1.4 Training procedures

Service Familiarisation	Task areas - Substantial maintenance tasks & checks
-------------------------	-----------------------------------------------------

Recording

Experience Analysis	Assessment
---------------------	------------

Outcomes

PCT Course	Entry criteria
------------	----------------

Objectives

PCT Trainer	Responsibilities
-------------	------------------

Course delivery

PCT Trainee	Responsibilities
-------------	------------------

Oral Assessment Observer - Outcomes follow up

Third Party Delivery

Course Review

A.2 Notification and coordination

Experience analysis

PCT trainer training

PCT course(s)

Oral assessment(s)

A.3 Documentation

Training material	Trainers course delivery guide
-------------------	--------------------------------

Trainers PCT course manual

Trainees PCT SOE booklet

Records of training carried out	Experience analysis assessment
---------------------------------	--------------------------------

Experience analysis reference material
Course daily summary
PCT course report
Trainee feedback
PCT course review

Storage of training records

A.3.1 Quality procedures

Audit of training Schedule - checklists
Remedial action Audit
Accountable/Responsible manager's annual review

A.3.2 Appendices

Definitions
Example of documents and forms used
Trainers course delivery guide

Appendix B

Experience analysis record example – single sheet front face

B.1 PCT program experience summary record

Page 1 of 2

PCT PROGRAM EXPERIENCE SUMMARY RECORD		
Name:	ARN:	Base:
Category:	Rating Sought:	
B1/B2 Licence rating endorsements held		
B1 – Airframe (Engine)s	B2 – Avionic	
Category Experience - Years holding a aircraft type rating		
Previous work environments – aircraft (engine) types - list by type		
Transits and Daily Checks (list type only)	Scheduled Maintenance Checks (>100 hr cycle by type and category)	Heavy Maintenance areas or Engine/Module changes
Summary of Experience on type for rating from workplace exposure & experience records		
Verified by (workplace supervisor): Name:..... Position:.....	Signature	Date

PCT PROGRAM EXPERIENCE ANALYSIS RECORD		
Name:	ARN:	Base:
Category:	Rating Sought:	
SUPPLEMENTARY TASKS REQUIRED FROM EXPERIENCE ANALYSIS		
Assessed by		
Name:.....	Signature	Date
Position:.....		

Appendix C

PCT course task layout

C.1 Example – ATA Chapter highlights

Example – ATA Chapter Highlights

Page 1 of 3

Chapter 28 FUEL SYSTEMS

The following references are applicable to this system and are detailed in the appropriate maintenance publication.

CAUTIONS/WARNINGS

Coat fuel temp. probe with silicone grease when installing

Fuel pumps dangerous - Poisonous and explosive

Spills

Tank Entry/Venting

SERVICING

Refuel aircraft

Procedure for determining wing tank fuel quantity using dipsticks

Carry out fuel transfer

TOOLING/TEST EQUIPMENT

Plumb bob

Fuel quantity test box

RIGGING/ADJUSTMENT

D.C.T.U. replacement requires re-programming

MAINTENANCE MELs

Fuel quantity indicators

C.2 Example – Inspection tasks

Page 2 of 3

Chapter 29 HYDRAULIC POWER

FLIGHT DECK

- P5 FLIGHT CONTROL PANEL
- P5 HYDRAULIC CONTROL PANEL
- P2/P3 HYDRAULIC PRESSURE AND QUANTITY INDICATIONS

WHEEL WELL

- SYSTEM A RESERVOIR
 - QUANTITY INDICATOR AND TRANSMITTER
- SYSTEM B RESERVOIR
 - QUANTITY INDICATOR AND TRANSMITTER
- RESERVOIR PRESSURISATION MODULE
 - CHARGE VALVE
 - DEPRESSURISATION VALVES (A/B)
- SYSTEM A/B PRESSURE MODULE
 - LOW PRESSURE SWITCHES
- SYSTEM A/B ELECTRIC MOTOR DRIVEN PUMP (EMDP)
 - ELECTRICAL CONNECTORS
 - TEMPERATURE SENSING SWITCH
- HYDRAULIC SUPPLY SHUTOFF VALVES (DIAGRAM optional)
 - VALVE POSITION INDICATOR
- STANDBY RESERVOIR
 - LOW LEVEL INDICATION SWITCH
- STANDBY PRESSURE MODULE
 - STANDBY RUDDER SHUTOFF VALVE
 - LEADING EDGE STANDBY SHUTOFF VALVE
 - LOW PRESSURE SWITCH
- STANDBY ELECTRIC DRIVEN PUMP
- POWER TRANSFER UNIT (PTU)
- PTU CONTROL VALVE
 - POSITION INDICATOR
 - PRESSURE LINE

ENGINE

Access via LH Fan cowl

- ENGINE DRIVEN HYDRAULIC PUMP
 - DEPRESSURISATION SOLENOID

C.3 Example – Performance tasks

Page 3 of 3

Chapter 27 FLIGHT CONTROLS			
G6	27-01	Review Flight Control Surface Rigging Tools	27-09-94/201-208
G6	27-02	Review Flight Control Cables Runs and Adjustment points	27-09-14/201-218
G6	27-03	Review Flight Control Trim Correction Troubleshooting	27-09-71/101-103 27-09-71/501
G3	27-04	Leading Edge Flap and Slat System Operational Test	27-81-00/501-513
With TE Flaps fully extended carry out the following			
G6	27-05	Flap Drive Lockout In-Flight Troubleshooting	27-51-00/101-105
G3	27-06	Leading Edge Symmetry Mismatch check	27-09-71/523/530
G6	27-07	Review Flap and Slat Hydraulic Fuses Reset	27-81-61/402-405
Carry out the following checks and tests			
G6	27-08	Review Elevator Tab Adjustment Following Flight Test procedures	27-31-00/539-544
G3	27-09	Spoiler Control System Operational Test	27-61-00/501-502
I3	27-10	Speed Brake Control System Operational test	27-62-00/501-502
G2	27-11	Aileron Power Control Units test	27-11-00/528-531
I2	27-12	Elevator and Tab Control System Operational test	27-31-00/501-503
I3	27-13	Stabiliser Trim Electric Actuator test	27-41-71/501-504
G3	27-14	Flight Controls Hydraulic Module test	27-09-21/501-502
G6	27-15	L.E. Flaps and Slats Deactivation from the T.E. Flaps	27-81-00/205-210

Appendix D

PCT course daily summary example

D.1 PCT course daily summary record

PCT COURSE DAILY SUMMARY RECORD					
Course No:		Conduct Date:			
Category:		Rating:			
Surname	First Name		ARN		
Trainer 1:					
Trainer 2:					
Trainee Names					
1:		4:			
2:		5:			
3:		6:			
Start Time	Finish Time	Inspection Tasks completed in any ATA chapter covered	ATA Performance Tasks completed in any ATA chapter covered		
Task Comments/Corrections					
Task Type	Task No	AMM Reference	Comment		

Appendix E

PCT course report example

E.1 PCT Course Report Example

PCT COURSE REPORT			
Course No:.....		Category/sub-category:.....	
		Rating:.....	
Dates Conducted:.....		Total Days:.....	
Location of Course:.....			
Trainer/s Name:		ARN:	
.....		
.....		
Trainees:	NAME	HOME BASE	LIC.NO./ARN
1/.....	.....	.....	.....
2/.....	.....	.....	.....
3/.....	.....	.....	.....
4/.....	.....	.....	.....
Verification: The above listed persons have completed the Approved Practical			
Consolidation Training (PCT)		Course No:.....	
Responsible Manager:.....		.....
NAME		TITLE	
Signature:.....			
Date:.....			

Note: I acknowledge that to knowingly make a false statement is an offence against the Criminal Code Act 1995.

Appendix F

PCT course feedback example

G.1 PCT course feedback example

Course No:..... Licence Category:..... Rating:.....
(BLOCK CAPITALS)

Comments on Specific Tasks:
(Quote task number and/or AMM ref.)

.....
.....
.....
.....
.....

Procedural Comments

.....
.....
.....
.....
.....

General Comments/Suggestions

.....
.....
.....
.....
.....

NAME:..... CONTACT TEL NO.....

Appendix H

PCT experience record example – Single sheet front face

I.1 PCT experience record example – Single sheet front face

Page 1 of 2

PCT EXPERIENCE RECORD

Licence Category/sub-category

Endorsement

Name

ARN

NOTES:

- (1) **Purpose of Experience Record** - Applicants for a second or subsequent rating in a category, who gain the required practical experience through an approved Practical Consolidation Training (PCT) Program, are required to produce evidence of completion of the Service Familiarisation and any Supplementary Tasks assessed by the Experience Analysis. This record sheet is a means of recording this experience, and any other practical experience that the LAME gains, prior to the licence endorsement application.
- (2) **Responsibility** - The Applicant is to fill in the Licence Category, Type Rating, Name and ARN blocks. The Signature, Date block and number of pages are to be completed on the date of Licence endorsement application.
- (3) **Certification** - Only the LAME who certifies for the actual maintenance task can certify for the experience task item, when he/she is satisfied that the applicant has satisfactorily carried out the task.
- (4) **Verification** - Applicants and Certifying LAME's should note that experience claimed may be verified and penalties can apply for false statements.

I hereby declare that the information given on this form is true in every respect.

Signature Date

Aircraft Registration	Details of Work Undertaken	Date(s) Work Undertaken	Name, Date, Signature and Lic. No. of Person Certifying for the Work Undertaken

I.2 PCT experience record example – single sheet back face

Page 2 of 2

PCT EXPERIENCE RECORD

I hereby declare that the information given on this form true in every respect.

Signature Date

Aircraft Registration	Details of Work Undertaken	Date(s) Work Undertaken	Name, Date, Signature and Lic. No. of Person Certifying for the Work Undertaken

Note: I acknowledge that to knowingly make a false statement is an offence against the Criminal Code Act 1995.