



AIRWORTHINESS BULLETIN

AWB 02-058 Issue 1 - 8 February 2017

Maintenance Authorisation - PT6A Engine Water Washing

1. Effectivity

Pratt & Whitney Canada (P&WC) PT6A series engines installed in aircraft conducting;

- a) an operation for a commercial purpose prescribed by regulation 206 of the *Civil Aviation Regulations 1988*;
- b) parachute training operations; and
- c) operations in salt-laden environment.

NOTE:

- 1) Parachute training operation means an aircraft operation involving a descent by a student parachutist or a novice parachutist from the aircraft, and includes any aircraft operation involving a tandem descent by parachutist from the aircraft.
- 2) An aircraft is considered to be operated in a salt-laden environment if:
 - a) it takes-off or lands within 10 nautical miles of the sea: or
 - b) the flight route is within 10 nautical miles of, or over, the sea and at an altitude of less than 10 000 feet.

2. Purpose

This Airworthiness Bulletin (AWB) identifies the training competencies and qualifications necessary for CASA to consider the making of an instrument under paragraph 42ZC(6) of the Civil Aviation Regulations 1988 (CAR 1988) for the purpose of authorising a pilot or an Aircraft Maintenance Engineer (AME) that is not endorsed on the type, (an engineer) to perform the maintenance tasks referred to in Paragraph 3.

3. Maintenance Tasks

Compressor Desalination Wash:

This wash is used to remove salt deposits. Light dirt deposits may also be removed by this wash. The wash fluid is to be injected into the engine intake using either an installed compressor wash ring or a hand held wash wand. Refer Pratt & Whitney Canada engine specific Maintenance Manual (Ref. 71-00-00 POWER PLANT – CLEANING).



Compressor Turbine (CT) Desalination Wash:

This wash is used to remove salt deposits from the compressor turbine blades and stator. The wash fluid is injected through a wash tube installed into the gas generator igniter boss. Refer Pratt & Whitney Canada engine specific Maintenance Manual (Ref. 71-00-00 POWER PLANT – CLEANING).

NOTE:

- 1) P&WC recommends doing a CT desalination wash following the compressor desalination wash for salt laden environments, since the compressor desalination wash will transfer salt deposits into the turbine.
- 2) Reducing the exposure time to salt deposits provides the best results therefore; it is recommended that the compressor desalination wash is performed after the last flight of the day.

4. Background

The compressor and turbine washing maintenance tasks were developed by P&WC to enhance the durability of the engine by reducing the onset of sulphidation attack on the turbine blades and prevent salt deposits from damaging the compressor section, (Ref. SIL No. PT6A-206R2 or subsequent).

These tasks are outside the scope of work that may be carried out by a person under Schedule 8 of CAR 1988, to that end the performance of this maintenance may only be carried out by a person authorised to do so under subregulation 42ZC(4) of CAR 1988.

It has been acknowledged that a number of aircraft to which these engine washing tasks apply are operated from airstrips where persons authorised to carry out the subject maintenance are not readily available. This situation is compounded by the fact that for aircraft that are continuously in a salt laden environment a Desalination Compressor and CT Wash is recommended on a daily basis.

To address that situation, and where appropriate this AWB has been developed in order to facilitate the authorisation of a pilot or AME by CASA to perform the maintenance tasks referred to in Paragraph 3.



5. Conditions

The following conditions are to be complied with in order for CASA to consider an application to authorise a person under CAR 42ZC(6) to carry out the maintenance mentioned in Paragraph 3:

- a. Authorisation must not be approved for the Pacific Aerospace P-750 XSTOL, or variants of this aircraft type, as access to perform the stated maintenance tasks is considered too complex and thus inappropriate for Pilot Maintenance.
- b. The applicant must hold a valid flight review for the aircraft type or a valid AME licence.
- c. The applicant, must have a written statement from a CASR Part 145 Approved Maintenance Organisation, a CASR Part 147 Maintenance Training Organisation or a CAR 30 certificate of approval holder for the maintenance tasks to the effect that the applicant:
 - i. has been trained and assessed as competent in the maintenance task ;
and
 - ii. is competent to carry out the maintenance task unsupervised; and
 - iii. has comprehensive knowledge of the continuing airworthiness records system in relation to the certification of completion of maintenance carried out on an aircraft.

Note: For training conducted by a Part 145 organisation, that organisation must also have approval to undertake CAR 1988 maintenance activities.

- d. If trained by a Part 145 organisation or the holder of a certificate of approval for the maintenance (CAR 30), the applicant must have completed relevant training given by a person who holds an aircraft engineer licence in subcategory B1.1, as applicable to the engine type.
- e. Training as required under Para. 5.c. must be inclusive of the syllabus given in the Australian Parachute Federation Jump Manual Appendix "B" - TURBINE ENGINE AIRCRAFT SUPPLEMENT.
- f. At intervals of not more than 2 years after the initial training, the applicant must complete recurrent training in accordance with Para. 5.c., 5.d. and 5.e. and must obtain a fresh statement in respect of that training.
- g. A CAR 42ZC holder cannot carry out any maintenance on an aircraft under the control of a CASR Part 42 Continuing Airworthiness Management Organisation (CAMO).



- h. Maintenance must not be carried out by the holder of a CAR 42ZC approval who does not hold a maintenance qualification if, under the approved maintenance data for the aircraft, the maintenance requires the use of tools, but tools may be used for:
 - i. performing related activities covered under Schedule 8 of CAR 1988;
 - ii. removal and installation of exhaust duct drain; and
 - iii. removal and installation of an igniter.
- i. The equipment being utilised to carry out the applicable maintenance tasks must conform with the equipment requirements stipulated within the Pratt & Whitney Canada engine specific Maintenance Manual.
- j. Calibrated equipment to carry out the applicable maintenance tasks must be controlled in accordance with the requirements of AC 21-35(1.1).
- k. Attachment 'A' to this AWB may be used for making an application to CASA for an Instrument under sub-regulation 42ZC(6) of the *Civil Aviation Regulations 1988 (CAR 1988)*, for the purpose of authorising a pilot or aircraft maintenance engineer to carry out the identified PT6A Engine Water Washing.

6. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link email address:

AirworthinessBulletin@casa.gov.au

or in writing, to:

Airworthiness and Engineering Standards Branch
Standards Division
Civil Aviation Safety Authority
GPO Box 2005, Canberra, ACT, 2601



Application Form and Training Competency Assessment:

AWB 02-058 Issue 1 – Maintenance Authorisation – PT6A Engine Water Washing

Refer to: CAR (1988) 42ZC(4) and CAAP 42ZC-1(2)

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|--|---|--|--|--|--|--|--|--|--|
| <p>IMPORTANT INFORMATION FOR APPLICANTS</p> <p>1: Section B and C of this form MUST be completed by your employer, (as applicable).</p> <p>2: Please ensure your application is completed correctly and that all required supporting documentation is provided. Incomplete applications will not be accepted and may be returned to you for amendment. Fields and sections marked with an * are mandatory.</p> | | | | | | | | | |
| <p>Applicant Details as per Birth Certificate / Passport:</p> <p>Title:* _____</p> <p>Family Name:* _____</p> <p>Given Names:* _____</p> <p>Date of Birth:* _____</p> | <p>Applicant ARN:*</p> <table border="1"> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table> | | | | | | | | |
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| <p>CONTACT DETAILS</p> <p>You are required to notify of any changes to your personal contact information (refer to CASR 11.70), information on how to change your contact details is available on CASA website https://www.casa.gov.au/services/standard-page/changing-your-details.</p> <p>All correspondence, including permissions issued as a result of this application, will be sent by email or post to your current contact details according to CASA's records.</p> | | | | | | | | | |

Privacy Statement: Any personal information you provide to CASA is protected by the *Privacy Act 1988* (Cth). CASA can only collect, use and disclose that information in accordance with that Act. CASA will use the information collected in this form for purposes associated with performing its functions under the *Civil Aviation Act 1988*, the *Airspace Act 2007*, the *Aviation Transport Security Act 2004* or the regulations made under those Acts. For full details on how CASA collects, protects and uses personal information, please refer to [CASA's Privacy Policy](#).

Section A: Application Details *

1. Scope of Authority Requested

Please tick the appropriate box(s)

Refer Pratt & Whitney Canada engine specific Maintenance Manual (Ref. 71-00-00 POWER PLANT – CLEANING).

- Compressor Desalination Wash
- Compressor Turbine (CT) Desalination Wash

2. Training Details

Trainee Name: _____ ARN: _____

Date: ____ / ____ / ____



Trainer Name: _____ Lic No: _____

Maint. Org/Training Org/COA _____

Aircraft Make/Model: _____ Engine Model: _____ VH - _____

Aircraft Make/Model: _____ Engine Model: _____ VH - _____

Aircraft Make/Model: _____ Engine Model: _____ VH - _____

Aircraft Make/Model: _____ Engine Model: _____ VH - _____

Aircraft Make/Model: _____ Engine Model: _____ VH - _____

Aircraft Make/Model: _____ Engine Model: _____ VH - _____

3. Training Competencies

The trainee must demonstrate an acceptable level of understanding of the following:

Please tick box(s), as appropriate

- Familiarity with associated documents – *ALL* pertinent sections of documents required for the engine washing procedure and specific to the aircraft type. The associated documents must include, but may not be limited to:

- Civil Aviation Advisory Publication CAAP 42ZC-1(*latest issue*).
- Pratt & Whitney Canada Maintenance Manual, including
 - PWC Consumable Materials List & table
 - Chapter 71-00-00 POWERPLANT CLEANING

Note: Special attention is to be given to the stated CAUTIONS, WARNINGS and inherent dangers associated with the maintenance activities.

Maintenance Manual Part No: _____ **Revision No:** _____

- Pratt & Whitney Canada SERVICE INFORMATION LETTER (S.I.L.) NO. PT6A –206 latest revision.
 - Related sections of the airframe maintenance manual required for access to perform the desalination wash.
- Use of tooling and equipment specific to the desalination wash task as per Pratt & Whitney requirements.
- Removal and installation of the exhaust duct drain;
 - Removal and installation of an igniter; and
 - Any related activities covered under Schedule 8 of CAR 1988.



A demonstrated understanding of the need for tooling calibration and the ability to verify the validity and serviceability of the tooling used for the specific task.

Understanding the requirements for the certification of completion of maintenance, including but not limited to:

CASA system of certification of completion of maintenance (CAR Schedule 6)

Approved system of certification of completion of maintenance [CAR 42ZE(1)(a)].

▪ **Approved System of Certification ID Ref. No:** _____

Reporting of defects (CAR 51)

Trainee has demonstrated competence to the trainer of the applicable Compressor & Compressor Turbine Desalination Wash procedure by practical demonstration of the completion of the applicable procedures on three (3) separate occasions.

Supporting evidence must be attached

4. Trainer Declaration

I am satisfied (trainee name) _____ has fulfilled the training competencies, as detailed above, and is an appropriate person to apply to CASA for an authorisation under Civil Aviation Regulation (1988) 42ZC(6) to carry out Compressor Wash procedures on the above stated aircraft.

Trainer Name: _____ Trainer Signature: _____

Date: ____ / ____ / _____

Section B: Employer Supporting Statement* Employer MUST complete this section of the form

Provide details for the reasons why your company requires the maintenance tasks defined in Section A of this application to be undertaken by the applicant.



Section C: Employer Endorsement* Employer MUST complete this section of the form

I, the undersigned, am satisfied that (trainee name) _____ has been appropriately trained on the Section A Maintenance Task(s) and recommend issue of a maintenance authority to carry out the task(s) whilst employed by (company name) _____

| | | | | | | | |
|--|--|-----|---------------------|--|--|--------------|--|
| Name of Employer / Company | | ARN | | | | | |
| | | | | | | | |
| Employer Phone Number | | | Employer Fax Number | | | | |
| Name and Position of Recommending Person | | | Signature | | | Date | |
| | | | | | | __ / __ / __ | |

Section D: Applicant Declaration*

I hereby certify that all statements in this application are true and correct in every particular and that I have read and understood the regulatory requirements and all associated documentation references in this application. I consent to CASA using and disclosing my personal information in accordance with CASA's privacy policy including exchanging the information with Commonwealth, State and Territory government agencies (see [CASA Privacy Policy](#)). I have attached all required documentation and acknowledge that to knowingly make a false or misleading statement is an offence against the *Criminal Code Act 1995* (Cth).

Signature: _____

Date: ____ / ____ / ____