PILATUS AIRCRAFT LTD. CH-6371 STANS, SWITZERLAND

SERVICE LETTER

SUBJECT: PRATT & WHITNEY (CANADA) SERVICE INFORMATION LETTER PT6A-144

To all Customers, Operators and Service Centers: Date: Feb 07/07

This Service Letter is issued to draw attention to the following vendor information:

PRATT & WHITNEY (CANADA) SERVICE INFORMATION LETTER PT6A-144 - FREQUENT COMPRESSOR WASHING

Pratt & Whitney (Canada) (P&WC) Service Information Letter (SIL) PT6A-144 provides information on compressor and turbine washes as an effective means of preventative maintenance.

Pilatus fully supports the content of the P&WC SIL PT6A-144 and would like to reinforce the importance and effectiveness of compressor and turbine washes (Ref. AMM, 71-00-00, Page Block 701).

Operators requiring further information on this subject, please contact one of the addresses given below:

PILATUS AIRCRAFT LTD.,
CUSTOMER SUPPORT MANAGER,
CH-6371 STANS,
SWITZERLAND.

General Aviation
Tel : + 41 41 619 6208
Fax: + 41 41 619 7311
eMail: SupportPC12@pilatus-aircraft.com

PILATUS BUSINESS AIRCRAFT LTD.,
PRODUCT SUPPORT DEPARTMENT,
11755 AIRPORT WAY,
BROOMFIELD, CO 80021.
USA

Tel : 303 465 9099
Fax: 303 465 6040
eMail: Productsupport@PilBal.com

PILATUS AUSTRALIA (Pty.) LTD.,
17 James Schofield Drive,
Adelaide Airport SA 5950,
AUSTRALIA

Tel : +61 (08) 8234 4433
Fax: +61 (08) 8234 4499
Free Call: 1800 445 007
eMail: info@pilatus.com.au

Attachments: Pratt & Whitney (Canada) Service Information Letter PT6A-144

SERVICE INFORMATION LETTER

Subject Compressor and Turbine washes as an effective means of preventative maintenance

Applicability All PT6A

Reference
Engine Maintenance Manual Chapter 71-00-00 Power Plant – Cleaning

Introduction
Pratt & Whitney Canada (P&WC) would like to reinforce the importance and effectiveness of compressor and turbine washes. These washes reduce the onset of sulphidation attacks on the turbine blades and prevent salt deposits from damaging the compressor section. All pilots, owners and maintenance personnel involved with the operations and maintenance of PT6A engines should carefully review these recommendations which can be found in Maintenance Manual section 71-00-00.

Background
Salt from the atmosphere will cause damage to engine components through different forms of corrosion. Sulphidation is a chemical reaction between sodium and sulphur at a specific temperature. Initially it attacks the oxide protective coating of the turbine blades and as the oxidation accelerates blister scale begins to form. The important point to remember is that sulphidation is a hot-corrosion, and therefore turbine blades are most susceptible to it.

Compressor blades are also affected by salt deposits; however the corrosion mode does not require high temperatures. Extended exposure to wet deposits of salt can lead to rust and pitting which affect aerodynamic efficiency and fatigue life.

This Service Information Letter is valid for one year from date of issue.

PRATT & WHITNEY CANADA CORP.
MARIE-VICTORIN, LONGUEUIL
QUEBEC, CANADA J4G 1A1
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There are four progressive stages of CT blade sulphidation.

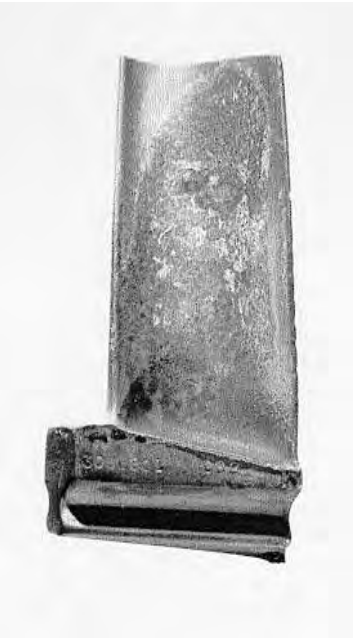
Stage 1 - Mild Sulphidation
Slight roughness of surface due to some growth and breakdown of the oxide scale layer. Depletion of chromium has not started. Mechanical integrity is not affected.

Stage 2 - Oxide Failure
Roughness of surface is more evident as breakdown of the oxide scale layer continues. Depletion of chromium from underlying alloy has started. Mechanical integrity still not affected.

Stage 3 - Severe Sulphidation
Oxidation of the base material has penetrated to significant depth. Build-up of blister scale noticeable. Mechanical integrity seriously affected.

Stage 4 - Catastrophic Attack
Deep penetration of attack with large blisters of scale. Loss of structural material will lead to eventual component failure.

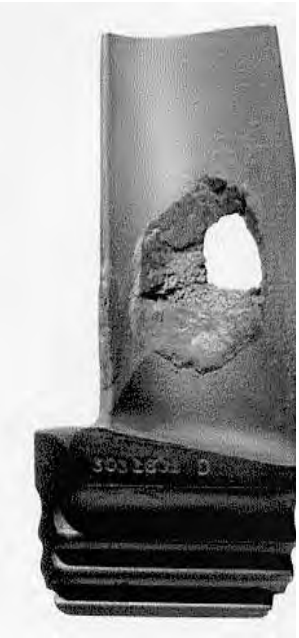
Examples of each stage on typical PT6 compressor turbine (C.T.) blades are given in the following figures.



STAGE 1

STAGE 2

STAGE 3



STAGE 4

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Preventative Action
P&WC recommends that Compressor and Compressor Turbine washes be performed in accordance with Maintenance Manual section 71-00-00 (Power Plant – Cleaning). Operator experience may necessitate a more aggressive wash schedule for optimal performance and reduced maintenance costs.

It is important to remember that the compressor wash provides the best result if performed after the last flight of the day before salt deposits have had a chance to do any lasting damage. Leaving the engine to sit overnight will severely reduce the effectiveness of a wash performed at a later time. Since sulphidation is dependant on temperature, there is no advantage to performing the turbine wash at any particular time of day.

Conclusion
Sulphidation and other types of corrosion in the gas path are a result of atmospheric contaminants entering the engine. This is beyond the control of P&WC and therefore is not covered by the engine warranties and service policies. However, implementing maintenance practices tailored to the operating environment can substantially reduce costs. As discussed in this SIL, regular compressor washes are very effective at removing salt deposits before they can cause permanent damage. Similarly, turbine washes will help to reduce the onset of sulphidation. Regular inspection is also essential to monitor the effectiveness of the maintenance practices and provide for improved reliability and timely cost effective refurbishment. P&WC has also developed special coatings which are more resistant to sulphidation and are available as new parts or as a repair scheme per the Engine Overhaul Manual.

PRATT & WHITNEY CANADA CORP

David Meisels
Manager, PT6A Service Engineering

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ISSUED: July 31/2006

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