2019 COLORADO CJP CONVENTION
LEGACY CITATION 500
JT15D / PW500 ENGINES

LE-DO VU SENIOR MANAGER PW615F/JT15D/PW500 PROGRAM
Check this box if presentation contains "no technical data" OR Summarize the export classifications of all slides in this presentation as instructed below:

<table>
<thead>
<tr>
<th>Instructions: Box 1 and one (1) of boxes 2-5 must be completed</th>
<th>Classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Canadian ECL(s):</td>
<td>NLR</td>
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<tr>
<td>2. ECCN(s) (EAR):</td>
<td></td>
</tr>
<tr>
<td>3. P-ECCN(s):</td>
<td>9E991</td>
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<tr>
<td>4. USML (ITAR):</td>
<td></td>
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<td>5. P-USML:</td>
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PW500 / JT15D TOPICS

P&WC CUSTOMER SUPPORT
FLEET STATISTIC
PW500 JFC160 FUEL CONTROL
PW535A BLEED VALVE LVDT
PW500 ANTI-ICING VALVE
PW500 PUBLICATIONS
JT15D-5 BIRD STRIKE INVESTIGATION
JT15D FILLER BALL VALVE ASSEMBLY
JT15D PROGRAM HIGHLIGHTS
CUSTOMER FIRST CENTRES

VISION
Proactive approach to our customers needs with tailored technical support.

MISSION
Keep our customers flying with a 24/7/365 technical support that covers fleet monitoring to AOG event management.

Longueuil Team

Singapore Team
CUSTOMER FIRST CENTRE

24-hour 7 days a week event management, technical and commercial support

email: CFirst@pwc.ca

In Canada and United States
Tel: 1-800-268-8000

International
Inter. Access Code
+ 8000-268-8000
Tel: (450) 647-8000

Fax:(450) 647-2888
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13 Service Centers
17 Independent Facilities
100 Field service representatives
100 Mobile Repair Teams

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Mobile Repair Teams
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or go to https://customer.pwc.ca
P&WC OIL ANALYSIS TECHNOLOGY

**REVOLUTIONARY OIL ANALYSIS**

- Monitors the health of oil-wetted engine components including bearings, carbon seals and gears
- Improved precision/sensitivity: Know where it is happening earlier
- Demonstrated and proven on specific engines

**POTENTIAL BENEFITS FOR OPERATORS**

- Lower maintenance costs
- Predictable maintenance budget planning
- Reduce delays and cancellations
- Increase aircraft resale value

FROM REACTING TO ANTICIPATING TOWARD A 100% PLANNED MAINTENANCE ENVIRONMENT
P&W OIL ANALYSIS TECHNOLOGY

STATUS

The trial program was successfully completed. The Oil Analysis Technology (OAT) is now commercial available for PW535A/B/E.

Sampling kits can be ordered through P&W Portal,

- Select Digital Engine Services from the Buy Online Menu.

SIL PW500-073 and SIL GEN -135 issued to provide information on

- Price and discount structure of kit purchase
- Sampling kits ordering/shipping
- Sampling procedure
- Oil analysis reports

PW530A and JT15D engines series are still under validation, more samples are required to establish base line
# PW500 FLEET STATISTICS

June 2019

<table>
<thead>
<tr>
<th>Model</th>
<th>Cessna Citation Bravo</th>
<th>Cessna Citation Encore</th>
<th>Cessna Citation Encore+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Produced</td>
<td>701</td>
<td>388</td>
<td>137</td>
</tr>
<tr>
<td>Flying population</td>
<td>642</td>
<td>328</td>
<td>130</td>
</tr>
<tr>
<td>Total Hours</td>
<td>3,341,900</td>
<td>1,900,600</td>
<td>479,000</td>
</tr>
</tbody>
</table>

Citation Bravo

Citation Encore

Citation Encore+
JFC160 FUEL CONTROL

Issue
4 Events of unscheduled FCU removal due to liberated N2 Flyweight Governor bearing post SB30442 (Zero Backlash).

History
Field returned hardware inspection demonstrated varying levels of wear.

Status
New bushing type bearing are available to replace N2 ball bearing.

Service Bulletin 30545 published Sep’18
Commercial Support Program CSPN #1008754 are available for N2 bearing replacement
**Issue**
There have been a quantity of Linear Variable Differential Transformers with missing the dimension for calculating the spacer thickness required for BOV or LVDT replacement.

**History**
The requirement for marking the dimension was inadvertently removed from the part drawing during the last revision.

**Status**
The part drawing has been amended to reinstate the marking.

Service Bulletin 30552 was published to provide the required LVDT dimension for the particular units. Dec'18

Category code 3
Incorporation at next AC phase inspection, 600 hours or one year whichever comes first.
Commercial Support Program CSPN #1008786 available
Issue
There can be incorrect indication of anti-ice valve position during normal operation resulted in AIV removal.

History
The brazing process at manufacturing and repair of the anti-ice valve electrical assembly was not optimal.

Status
New Brazing process was introduced at Manufacture & Repair
New part numbers are available for new / repaired valve.
Service Bulletin 30548 published Jul’18
PUBLICATIONS

Maintenance Manual / IPC

PW500 revisions: May 2019 / June 2019

Service Information Letters & SB

SIL PW500-072 ACES Viper II Analyzer Introduction
SIL PW500-073 Oil Analysis Technology Solution
SB 30548 Anti Icing Valve Introduction
SB 30552 Bleed Valve LVDT Inspection

Available Commercial Support Programs

<table>
<thead>
<tr>
<th>Service</th>
<th>CSPN#</th>
<th>Ends</th>
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<tbody>
<tr>
<td>HFC Inspection (SB30545)</td>
<td>1008754</td>
<td>Dec 2023</td>
</tr>
<tr>
<td>Deep Sump (SB30413)</td>
<td>1005541</td>
<td>Dec 2022</td>
</tr>
<tr>
<td>Oil System Stability (SB30479)</td>
<td>1006977</td>
<td>Dec 2022</td>
</tr>
<tr>
<td>Rigid Fuel Manifold (SB30405)</td>
<td>1005989, 1006443</td>
<td>Nov 2022</td>
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P&W Proprietary Information
# JT15D FLEET STATISTICS

**June 2019**

<table>
<thead>
<tr>
<th></th>
<th>JT15D-1</th>
<th>JT15D-4</th>
<th>JT15D-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Produced</td>
<td>1,462</td>
<td>2,256</td>
<td>2,630</td>
</tr>
<tr>
<td>Flying population</td>
<td>920</td>
<td>1,548</td>
<td>2,040</td>
</tr>
<tr>
<td>Total Hours</td>
<td>12,301,400</td>
<td>18,924,600</td>
<td>16,511,700</td>
</tr>
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</table>
JT15D-5 BIRD STRIKE INVESTIGATION

Issue
Bird strike events resulting in extensive inlet distress
3 events in 2014

History
NTSB Safety Recommendation Report ASR 1703 issued 28 Feb 2017
P&WC reviewed options to minimize the excitation between the Fan Case / Fan Assembly during bird strike or foreign object ingestion events

Status
Review completed and a design solution has been developed.
A Control Service Use Service Bulletin (CSU SB) was completed in August 19 for JT15D-5/5B/5F series.
Engine Service Bulletin / Hardware availability planned for 1QRT 2020.
Incorporation is in conjunction with AC Inlet flange modification.
Solution
Support plate, damper & clamp
Models affected -5, -5B, -5F, -5R

cross sectional view
**JT15D FILLER BALL VALVE ASSY**

**Issue**
Reports of ball sticking resulting in oil servicing issues on post SB 7639 oil filler neck which was introduced in late 2016 to eliminate the possibility of improper or omitted installation of the oil filler neck cap.

**History**
Latest oil filler neck / ball valve design is not optimal.

**Status**
SB Category changed to Cat 7  
7 Jan’19
Service Bulletin to revert to pre-configuration in process
New design options are under evaluation.
JT15D PROGRAM HIGHLIGHTS

**P&WC Warranty Policies Revision**
- HPT and HPC shaft PPSP increased to 2 x TBO
- Bearing campaign (A00002) replaced by PPSP 2XTBO
- JT15D-5 series HPT blades PPSP increased to 2 x TBO
- JT15D-1 series HPT blades Post SB 7604 PPSP increased to 2 x TBO
- JT15D-4 series HPT blades post SB 7293 PPSP increased to 2 x TBO

**Recommendations**
- In case of HT Blade Fracture – 3 ½ Brg replacement recommended
- Facilities encouraged to replace all mainline bearings at Overhaul

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THE END

THANK YOU