2019 COLORADO CJP CONVENTION
MUSTANG
PW615F ENGINES
LE-DO VU SENIOR MANAGER PW615F PROGRAM
### Export Classification

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>
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<tbody>
<tr>
<td>1. Canadian ECL(s):</td>
<td>NLR</td>
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<td>2. ECCN(s) (EAR):</td>
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<td>3. P-ECCN(s):</td>
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<td>4. USML (ITAR):</td>
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<td>5. P-USML:</td>
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PW615F TOPICS

CUSTOMER SUPPORT
FLEET STATISTICS
NO. 4 CARBON SEAL
OIL SERVICING
ENGINE PRESERVATION
S/G EVENT INSPECTION
LOW UTILIZATION INSPECTION
H.S.I / OVERHAUL ENGINES
PUBLICATIONS
CUSTOMER FIRST CENTRES

Longueuil Team

Singapore Team

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.
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
GLOBAL SUPPORT NETWORK

Worldwide Services
- 7 Parts Distribution Centers
- 13 Service Centers
- 17 Independent Facilities
- 100 Field service representatives
- 100 Mobile Repair Teams

Service Centers • Rental Engines • Customer First • Field Service • Mobile Repair Teams

Service Centers & DOF
- Parts Distribution
- Fly-in Capability

GLOBAL SUPPORT NETWORK

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- 7 Parts Distribution Centers
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Service Centers & DOF
- Parts Distribution
- Fly-in Capability
To register for the Portal use the convenient link on the P&WC home page at [http://www.pwc.ca](http://www.pwc.ca) or go to [https://customer.pwc.ca](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 commercially available for PW615F-A

Sampling kits can be ordered through P&W Portal.
- Select Digital Engine Services from the Buy Online Menu.

SIL PW600-028 R1 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

Export Classification: No Technical Data
P&W Proprietary Information
<table>
<thead>
<tr>
<th>Engine model</th>
<th>PW615F-A</th>
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<tr>
<td>Total Fleet Hours</td>
<td>1,703,900</td>
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<td>High Time</td>
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<tr>
<td>No. of Engines Produced</td>
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<td>1st Delivery</td>
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</table>
**NO. 4 BEARING FRONT CARBON SEAL**

**Issue**
Progressive increase in oil consumption
One event of commanded IFSD due to oil loss

**Cause**
No. 4 bearing front carbon seal premature wear on Pre/Post SB63081
Seal spinning affecting the secondary sealing feature resulting in oil leakage from the bearing cavity

**Solution**
New carbon seal with split flow arrangement was designed to optimize air flow in No. 4 bearing chamber environment.
SB 63109 / CSPN 1008636 issued
Category Code 5
Incorporation at H.S.I / OH

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P&W Proprietary Information
OIL SERVICING

**Issue**
Inconsistent oil servicing practice have been reported in Mustang fleet.

**History**
Oil level above MAX level may result in Carbon Seal distress and subsequent loss of oil, oil pressure fluctuation and eventual low pressure indication.

Oil level below MIN level may result in insufficient oil supply to engine oil pump and may lead to oil fluctuation or low pressure indication.

**Recommendation**
Adhere to EMM Oil Servicing Procedure Task 72-00-00-640-804

- Always check oil between 10-20 minutes after engine shutdown.
OIL SERVICING

Recommendation (Con’t..)

- Monitor oil level and adding oil to the stabilized known oil level or to the same level as previously filled, only if oil level is below MIN.

- Oil level must be between the MIN and MAX level indication only.

- Record amount of oil added

- If oil level dropped below MIN overnight or when cold with no evidence of external oil leakage.
  - Carry out a ground run at stabilized GI for 5 minutes.
  - Check oil level between 10-20 mins

Under no circumstances should the engine be serviced to above the MAX level or below MIN level prior to flight
### OIL SERVICING RECORD

<table>
<thead>
<tr>
<th>TTSN</th>
<th>Oil Added (qts)</th>
<th>Consumption (lbs/hrs)</th>
<th>Max Consumption Rate</th>
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ENGINE PRESERVATION

**Issue**

Prolonged period of inactivity without preservation may lead to the deterioration of engine oil / fuel system components.

**Recommendations**

Observe the Preservation schedule Intervals listed in the EMM Engine Servicing Chapter 72-00-00 to avoid costly inspection.

- Engine Fuel System Preservation
- Engine Oil System Preservation

Running engines on a weekly basis can be a practical alternative.
STARTER GENERATOR EVENT INSPECTION

Issue
"GEN OFF L or R" message during flight from starter generator vibration

Recommendation
Starter Gen  event  may lead to severe structural damage to  engine Accessory Gear Box  (AGB) , fuel tube and other engine mounted components.
Comply with PWC  EMM Task 05-50-00-210-819
  – Visually inspect accessory gear box  starter mount for oil leakage.
  – Replace spline adapter
  – Replace FMU to flow-meter tube
  – Replace starter magnetic seal
  – Inspect oil filter
  – Flush oil system
LOW UTILIZATION INSPECTION (LUI)

On-wing LUI inspection (Ref. Task 05-20-00-210-802)
A low utilization engine is defined as an engine that has not been subject to disassembly and inspection of both hot section and cold section at an approved overhaul facility

12 years after entry into service or
13 years after engine manufacture

whichever occurs first

Procedure (Ref. Task 72-00-00-290-814)

(a) Periodic inspections
(b) Engine external wash, fan washing and desalination.
(c) Borescope inspection of the engine and performance calibration as required
(d) Subsequent LUI at 24 months interval until Overhauled
(e) Engine Minor

Export Classification: No Technical Data

P&WC Proprietary Information
HSI & OVERHAUL

Hot Section Inspection

336  H.S.I. Events to date
264 On-wing, 72 Off-wing

B.O.V. Track Wear inspection is required prior to HSI
All engine passing BOV inspection are eligible for On-Wing HSI.

Overhaul Inspection

73+ Overhaul Events recorded to date

Export Classification: ECL: Not Applicable; P-ECCN: 9E991
**Available Commercial Support Programs**

<table>
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<th>Description</th>
<th>CSPN#</th>
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<td>No.4 Brg Front and Rear Carbon Seal (SB63109)</td>
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<tr>
<td>HP Diffuser Case Assy replacement (SB63059)</td>
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<td>Oil Filler &amp; Indicator Assembly</td>
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THE END

THANK YOU