Corrosion Management for New Capabilities
P-8A Poseidon

Darren Roles
Environmental Degradation Lead
P-8A SMU
Boeing Defence Australia
P-8A Co-Operative Program

P-8A ISSC
Replacement of the AP-3C Orion.
• Boeing Commercial ‘Green’ 737…
• Modified to USN P-8A Specification…
• RAAF paint scheme applied…
  – The ‘13th SQN’
P-8A Interim Sustainment Support Contract

Comprised of:

- **SRSPPO**
  - Governance
- **USN (NAVAIR)**
  - Engineering authority
- **Boeing Defence Australia**
  - Engineering support
  - Boeing FSR’s
- **Airbus**
  - Logistics
P-8A Co-Operative Program

US Navy P-8A

- ‘Fleet Lead’ concept
  - Their fleet is older than ours
- Still under ‘Warranty’
- USN has the Horsepower*
- RAAF has the Agility*
  - Feed back into the CP
  - Improvements
  - Optimisation is key
P-8A Co-Operative Program

The good:
- 1st Aircraft – November 2016
- IOC – March 2018
  - 5 months ahead of schedule
- Remainder of fleet to be delivered in 2019
  - Approx 3yrs ahead of schedule*

The not so good:
- Facilities haven’t kept pace
- Support & Test Equipment (GSE)
- Logistics – a new WS
  - NOTE: ‘Good’ problems to have!

P-8A Corrosion Roadmap

CAR 2018-03 ‘MTCHO Obligations on ASI Management’

Welcome to the job!

1. Analysis of the effect of lack of fresh water rinse (Bird Bath) both at EDN and other operational locations;
2. Work with infrastructure development to ensure rinsing requirements will be met;
3. Review engine and aircraft wash procedures for effectiveness
4. Review RAAF CRE considerations regarding identified engine corrosion issues and work with FST to implement solution(s); and
5. Adequate recording and analysis of outcomes by FST regarding corrosion findings on the P-8A fleet.
P-8A Corrosion Roadmap

The challenges

- CAR 2018-03 ‘MTCHO Obligations on ASI Management’
- AIR7000 Infrastructure
  - Fresh Water Rinse – AKA ‘Birdbath’
  - Aircraft Wash facility
- Support & Test Equipment (GSE)
  - Legacy Orion (Engine) GSE used
- Acquisition assumptions
  - New commercial based platform
  - Usage & maintenance assumptions
- Mitigation activities
  - Flow-on effects
CAR 2018-03:
1. Analysis of the effect of lack of fresh water rinse (Bird Bath) both at EDN and other operational locations;
Corrosion Management for New Capabilities

*Google Maps, March 2019*
Infrastructure

The challenges

• Fresh Water Rinse – AKA ‘Birdbath’
  – Originally Jan 2018
  – Estimated: 22 Nov 2019 (Rev 12)
  – Commissioning to follow

• P-8A Wash point
  – Originally Aug 2018
  – Estimated: 12 Jun 2020 (Rev 12)
  – Commissioning to follow

• Mitigations
  – P3 Birdbath (In use since Dec 2018)
  – P3 Wash point (In use since Jan 2017)
Support and Test Equipment

AIR7000 Assumptions

• No P3 GSE will be required once the P-8A Wash Point is commissioned.
  – Incorrect…
  – It’s only a facility, we need wash equipment.
P-8A Corrosion Roadmap

Airframes and Engines!

CFM56-7B Engine wash requirement

- AMM 72-00-03
  - Juniper Rig (JMP/HERD/D/1144/C600)
    - ‘J’ or ‘Shepherd Hook’
    - Legacy P3 equipment
  - Post wash ‘Dry out’ run
P-8A Corrosion Roadmap

Airframes and Engines!

EcoPower System

- Better water dispersion
- Total containment set-up
- Post wash ‘Dry out’ run
- *Detergent wash requirement extant

Corrosion Management for New Capabilities
P-8A Corrosion Roadmap

3. Review engine and aircraft wash procedures for effectiveness

4. Review RAAF CRE considerations regarding identified engine corrosion issues and work with FST to implement solution(s) AMM procedure
   - Detergent wash followed by fresh water wash
     - Post bird strike
     - Other condition e.g.: Salt
   - PMIC/TMP Intervals
     - Reduced and/or ‘On Condition’
     - What impacts?
       - 11SQN Impost
       - CRE & SOIU assumptions
       - Aircraft Availability
       - S&TE
P-8A Corrosion Roadmap

5. Adequate recording and analysis of outcomes by FST regarding corrosion findings on the P-8A fleet.

- Record what??
  - Surface contaminants
  - Salt – severity
  - Simple
  - Repeatable
  - Standard
  - Availability
P-8A Corrosion Roadmap

Environmental Degradation Management System (EDMS)

- Effective
- Simple
- Communication
  - Corrosion Prevention & Control Plan (CPCP)
  - ‘Continuation Training’
    - Data source
- Revise the process for effectiveness
Questions?