



**Australian Government**  
**Department of Defence**  
**Capability Acquisition and**  
**Sustainment Group**

# 2016 Aircraft Structural Integrity Symposium

## AP-3C Orion Corrosion Management Outcomes



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## Situation

09/10 Annual ED Assessment (EDA)

- Surface Finishing (SURFIN)
  - CCF Venue closure
  - Paint supplier (Valspar) withdrawal
  - DM schedule slip (SBI #1)
    - Plenty of corrosion...
- Corrosion expected to be #1 issue to PWD
- OPS Normal
  - Maintain 'Flog Rate'



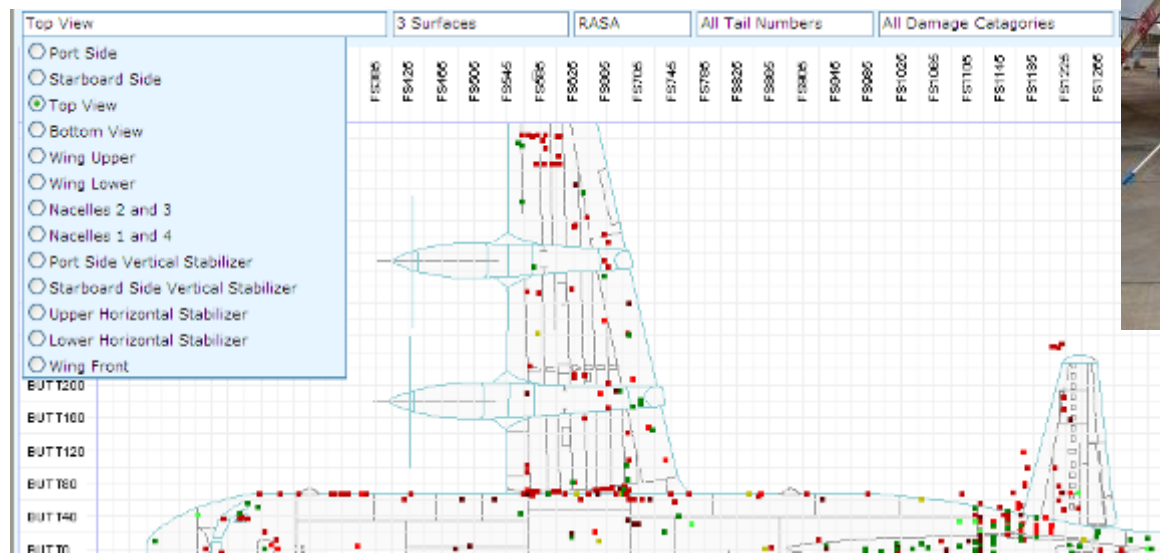
## ASD 'Lifeline' – ED Support tasking

### ED Support Task #1

- Targeted Strip & Repaint

### ED Support Task #2

- Wide Area CIC Application



## Task #2 – Wide Area CIC

### Reduce the Cost of Corrosion

- Policy
  - Manpower
  - Facilities
  - Availability
  - Capability
- Training
- S99
  - > Maintenance impost
  - > Manpower
  - EPA & WHS
- Benefits?



## AP-3C Cost of Corrosion

MEAO S25 aircraft wash

- ½ normal interval (25days)
- >55°C temps

S31 External Corrosion Inspection

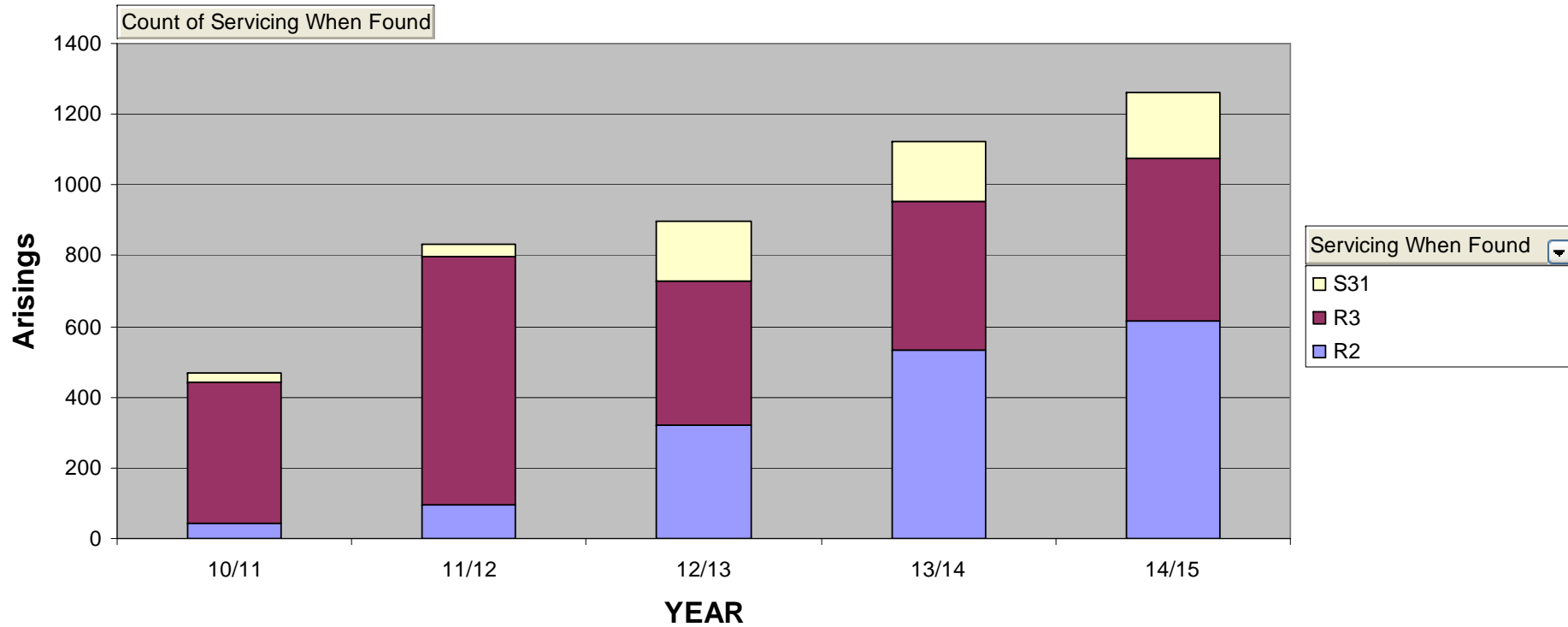
- Introduced 1997
  - Intended to take 4 days
  - Averaging 4 weeks
- Consolidation of inspections
- Half R2 interval (30 weeks)
- Treatment of corrosion to reduce R2 TMS
- Prevent another Corrosion Recovery Program (90-96)

PWD approaching still maintain tempo

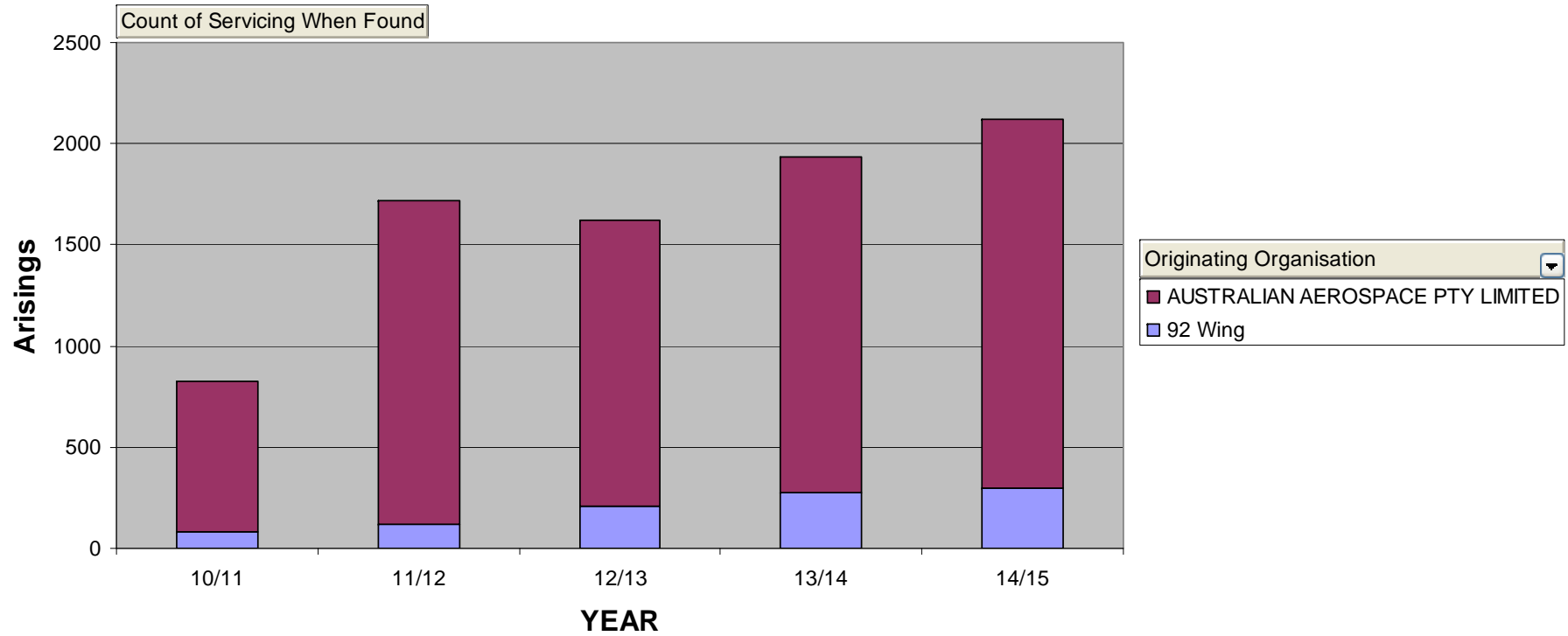
- Operations - Resolute, Solania, Gateway etc
  - >20,000hrs of MEAO OPs



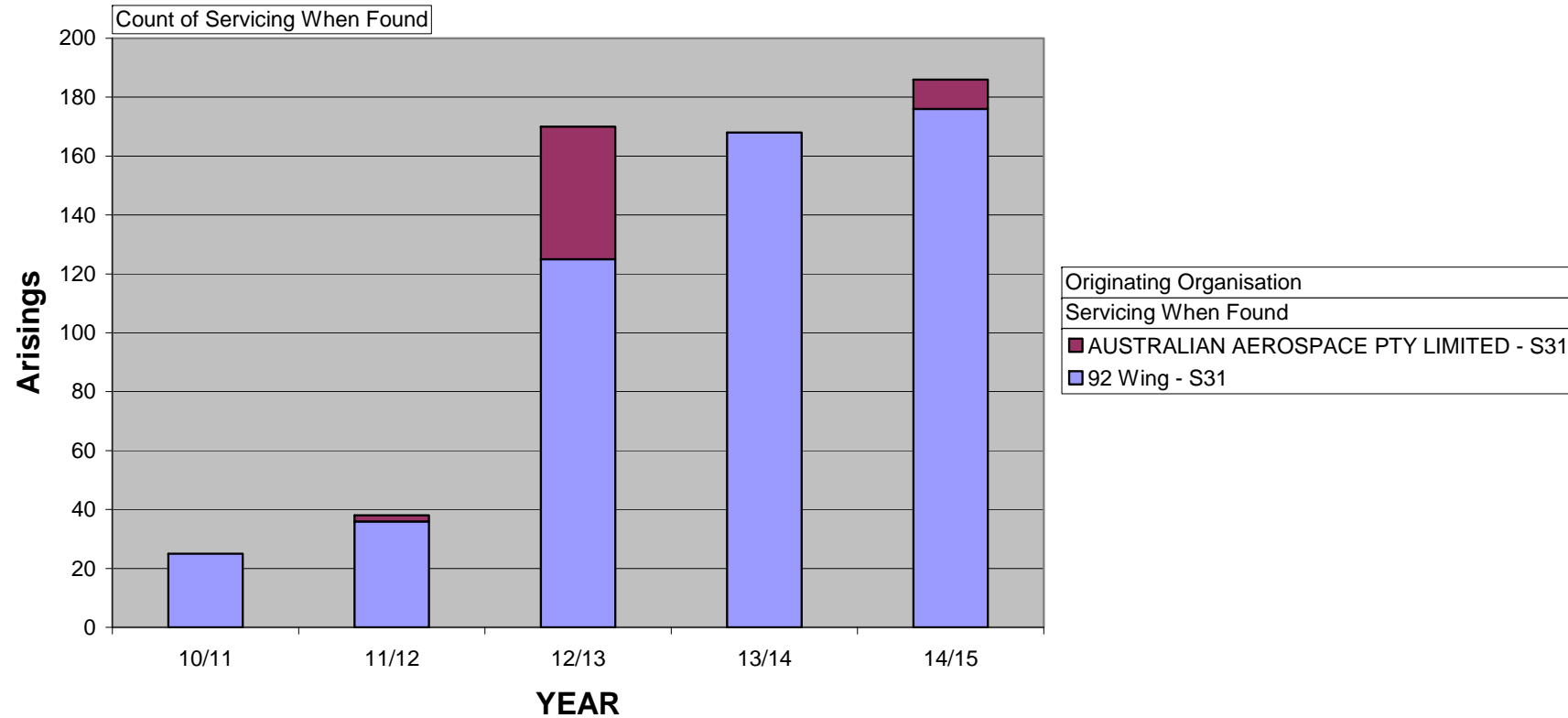
### Corrosion - Servicing when found



### Corrosion - Originating organisation



## Corrosion - Originating organisation



- 92WG corrosion arisings – **Undesirable** (OLM)
- Australian Aerospace (AGAP) arisings – **Desirable** (ILM)
  - S23 S31 findings included (May12 – Apr14)

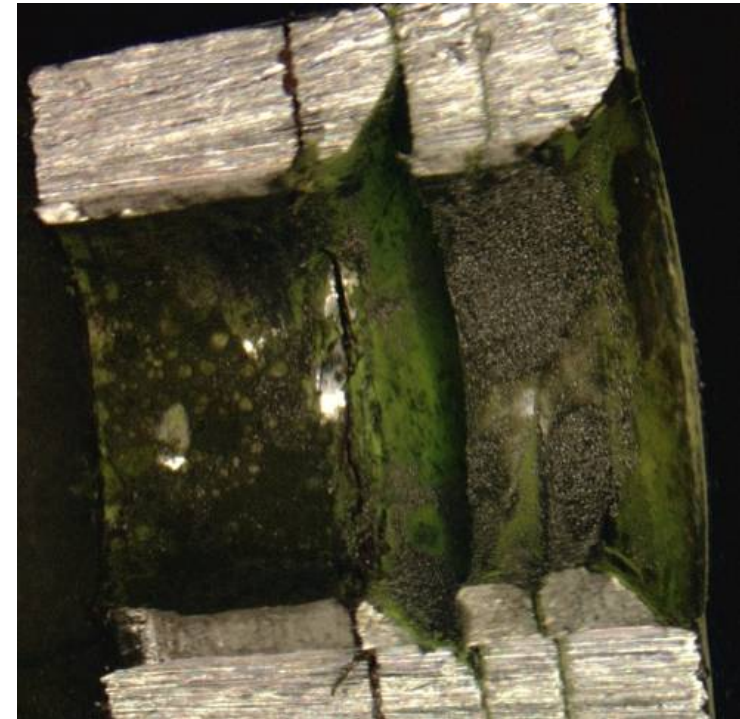


## Action

P3 EDM requests to 'stop' looking for corrosion...

WHY?

- Significant arisings @ R2 (ILM)
- Minor arisings at S31 (OLM)
  - Same management impost
  - Minimal (If any) repairs
  - Reporting and recording activity
    - Diminishing returns
- Corrosion awareness is good
  - SURFIN is effective\*
  - S99 is working



\* SURFIN tooling and materials optimised under earlier EDM 'Projects'.

## Action

P3 EDM Projects identified and implemented via EDA:

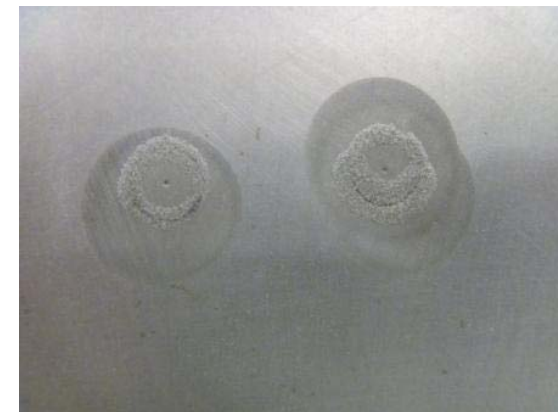
- SURFIN WKSHP GSE
  - HVLP spray guns
  - Tooling/spares
    - 'Becca' gun wash station
    - Clayton Hornet vacuum sander
- Structures WKSHP GSE
  - All folder blades 'dressed'
  - All guillotine blades sharpened
  - Corrosion removal tooling
- NDT Tooling/procedures
  - Cost Vs Benefit



## Result

S31 findings post ED Improvement tasks

- Fleet arisings post S99 introduction
- 292 arisings reported
  - 190 (65%) spot blasted
  - 73 (25%) spot blasted & blended
    - 263 (90%) 'Negligible Damage'
  - 23 (8%) RFD events (Neg Damage limits)
    - 2 rectified @ next R2
    - LoT extensions (Not repaired)
- 6 (2%) resulted in mechanical repair
  - Left unrepaired
    - No impact TMS
    - No impact to airworthiness



## Result

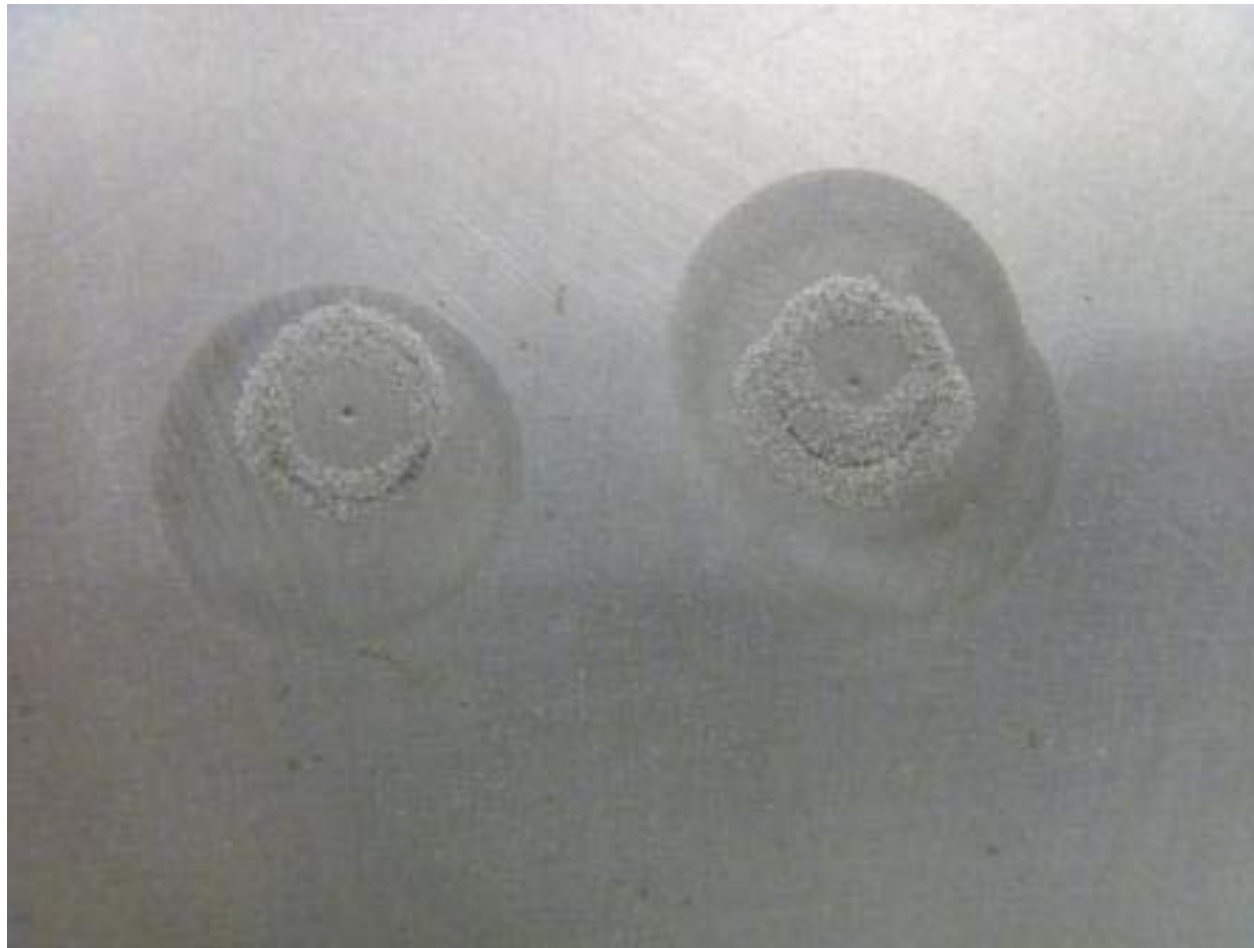
S31 findings post ED Improvement tasks

- Inspection and reporting process
  - No Fault Found (NFF)
  - Request for Deviation (RFD)
    - ❖ = Same recording impost
- Impact on TMS
- Impact on availability & capability



The servicing is becoming a recording exercise impacting TMS

## Result



## Findings

### Data fidelity

- Results due to S23 or S99?
  - 2 aircraft did not undergo S23
    - 10yr & 6yr between S23
    - 0 & 17 arisings - spurious data?
    - 17 arisings accrued 560hrs in one S31 (=15 man weeks)
- 1<sup>st</sup> S99 aircraft (May 12) was also the 1<sup>st</sup> S23 aircraft
  - 50 arisings since S99 inception
- 2<sup>nd</sup> S23 aircraft (Aug 12)
  - 0 arisings since S99 inception
- Last 2 S23 aircraft (Jan & Apr 14) have had 0 arisings since S99 inception
- Plenty of anecdotal evidence not analysed – Army, Navy etc.

## Benefits

S31 Interval extended from 30wks to 60wks

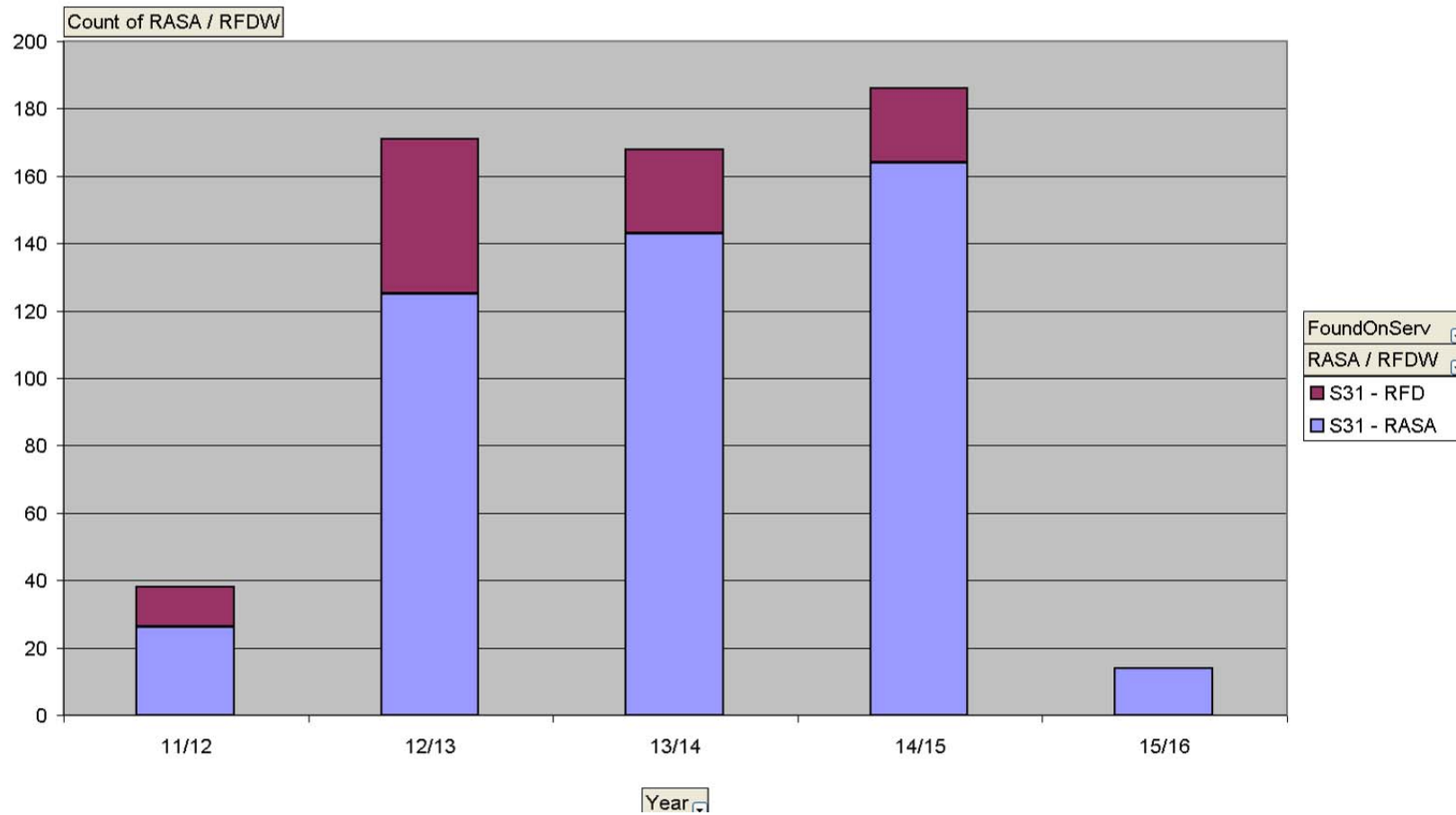
92WG benefits:

- Most man-hours of any 92WG servicing
- S31 requirement removed for 92WG
- 10 people for 2.5 weeks p/a (Per aircraft)
- 10% improvement in daily aircraft serviceability (MPIP figures)

S31 inspection content performed at R2 by AGAP

- No impact to TMS (Monitored by MPSPO EDM)
- Better utilisation of existing AGAP ILM capability
- 92WG exposure through MRU requirement

# Benefits





## How'd they do that?

Why is the P3 Corrosion program working?

Continuity

- F/T dedicated position
- No knowledge loss
- Regular communication with networks
  - Sustainment Conference
  - Technical Interchanges
    - Informal enablers
  - DSTG
  - Academia
- No Magic pill to corrosion
- “System of Systems” approach
  - Incremental gains add up!

## Acknowledgements

DSTG

DASA-ASI

Monash University

AASPO

NASPO

TFSP0

ALSPO

92 Wing

Airbus Group Australia Pacific (AGAP)

Qinetiq

Floormaster



# Questions?

