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EWIS Awareness

JSWAG

DECEMBER 2025

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CLEARED
For Open Publication

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Department of Defense
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

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Bottom Line Up Front



- Promote and Increase EWIS Awareness
 - Event focused on the Maintainer vs. Discrepancy Count
 - Inspection skills enhancement / development
 - Re-calibration of eyes
 - Inspection Tools
 - Improve EWIS preventative maintenance
 - Proactive vs. Reactive
 - Find it before it breaks
 - Increase cross shop communication
 - If it doesn't look correct, ask the question
 - Get the right skills engaged



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Background



- **Over 90% of wiring maintenance is unscheduled maintenance.**
- **The EWIS is a critical system.**
- **Preventative maintenance of this system and sub-assemblies is essential to sustain the aircraft's life cycle.**



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Background





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Background



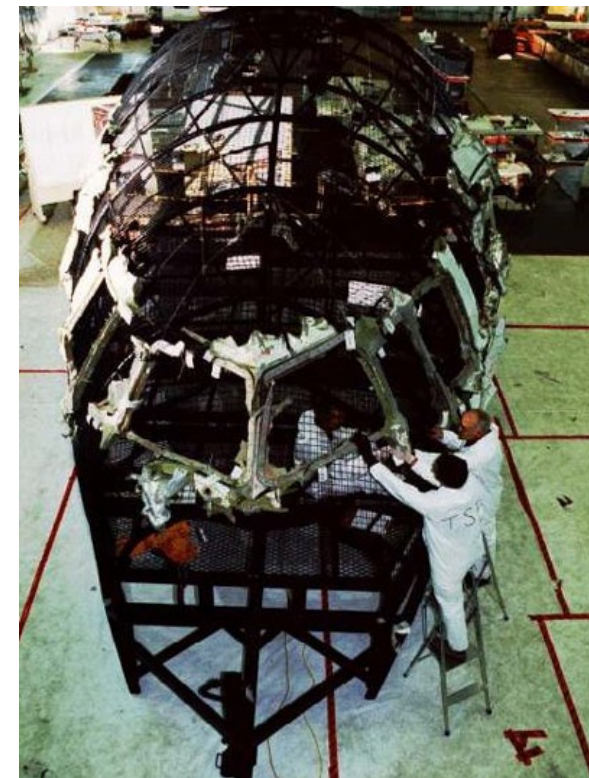
TWA Flight 800

- The National Transportation Safety Board report findings:
- Most probable cause:
 - Wiring chafing condition, short circuit
 - Wiring produced sparking to ignite fuel vapors which contributed to the explosion
- 230 fatalities.



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Background





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Background



Swissair Flight 111

Transportation Safety Board of Canada report notes:

- **Electrical arcing event involving one or more wires**
- **Ignited the covering material of the insulation blankets above the right rear cockpit**
- **229 fatalities.**



EWIS Awareness Topics



➤ Inspection Techniques

➤ Installation Inspection

- Wire Insulation Inspection
- Harness Routing Inspection
- Grommet Inspection
- Wire/ Harness Clearance Inspection
- Primary Support Cable Clamp Inspection

➤ Termination Devices Inspection

- Terminal Board and Ground Stud Inspection
- Circuit Breaker Inspection

➤ Corrosion

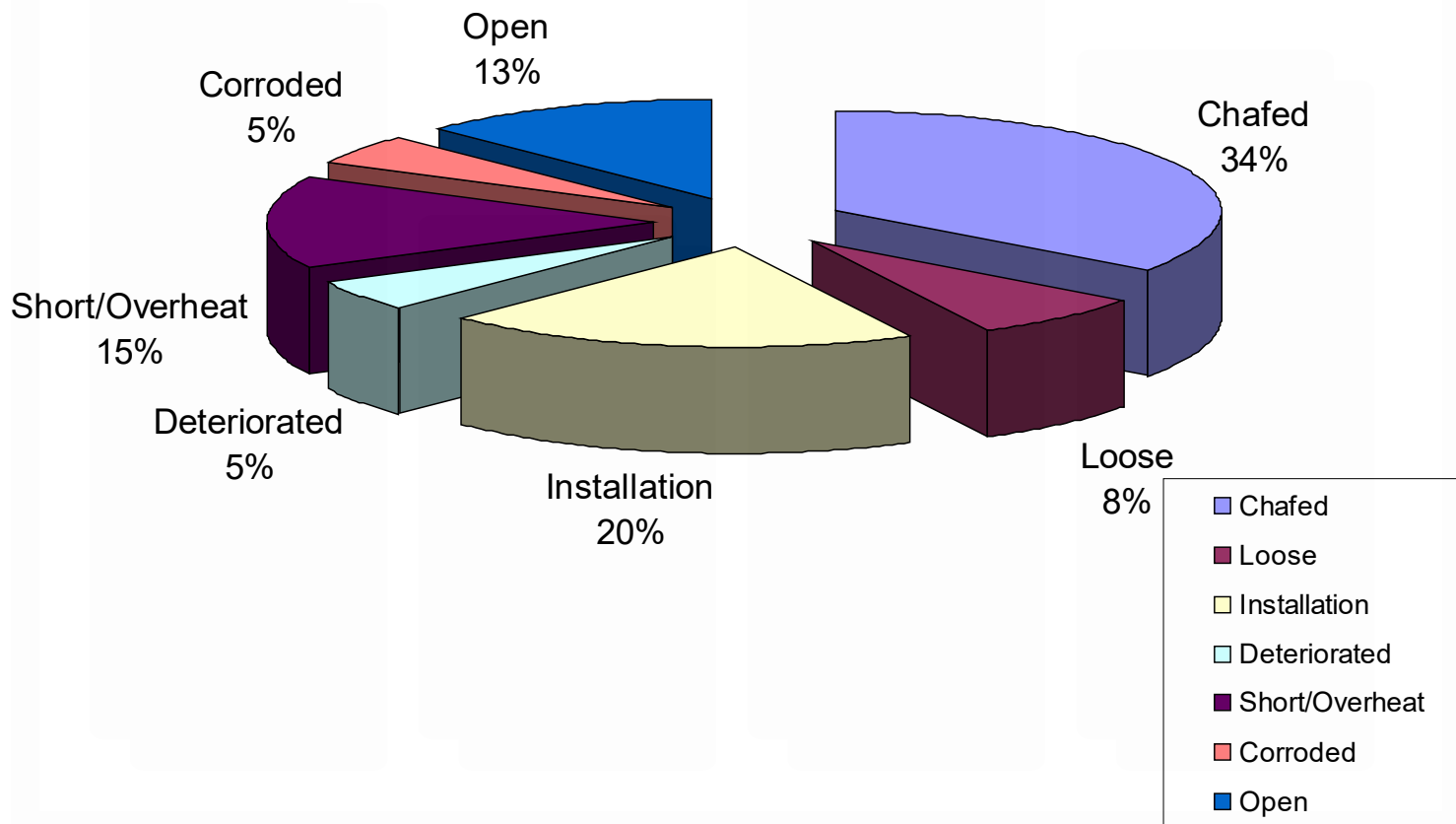
➤ Data Documentation

- Wire Malfunction Codes



Aircraft EWIS Failure Modes

2002 to date average





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Maintainer Awareness





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Maintainer Focus





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Maintainer Focus



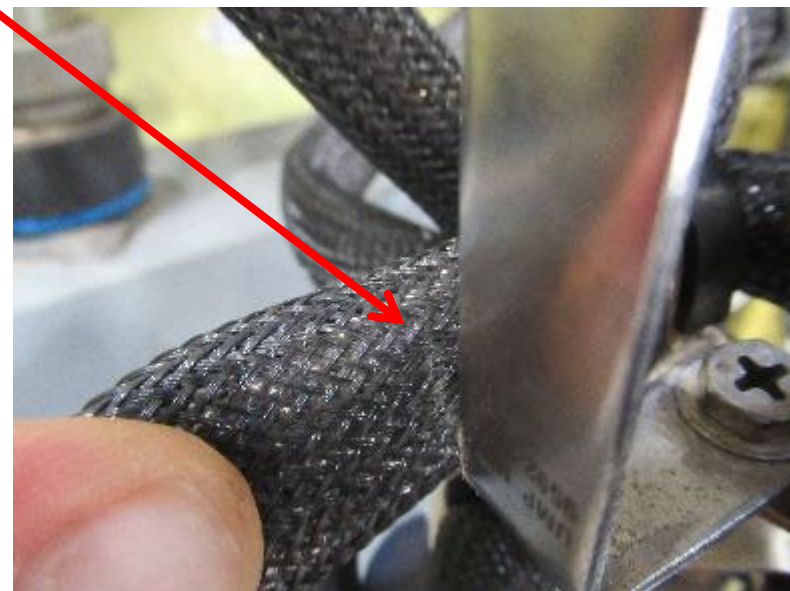
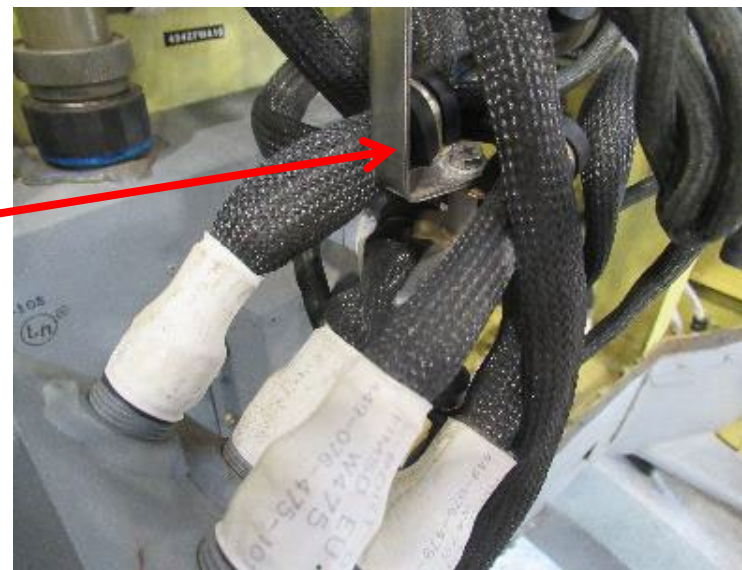


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Location: #2 side cheek panel (2RS4)

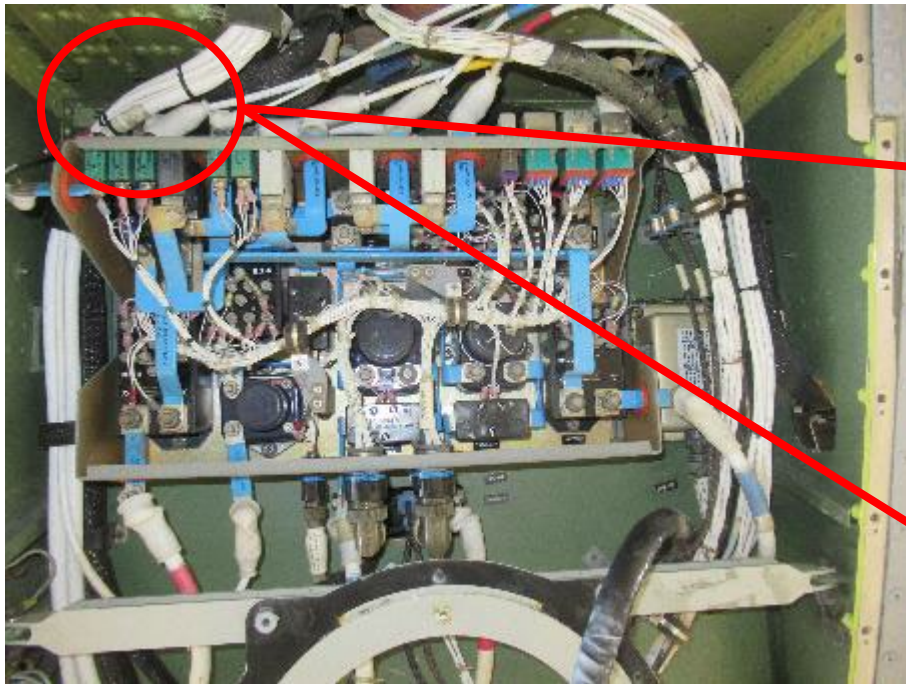
Finding: Harness chafing on support "L" bracket, visible wear mark on harness



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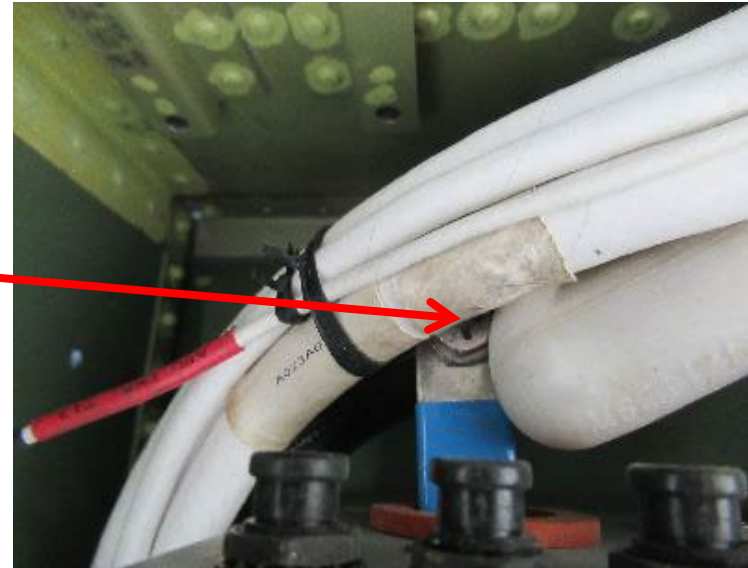


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Location: Power distribution panel

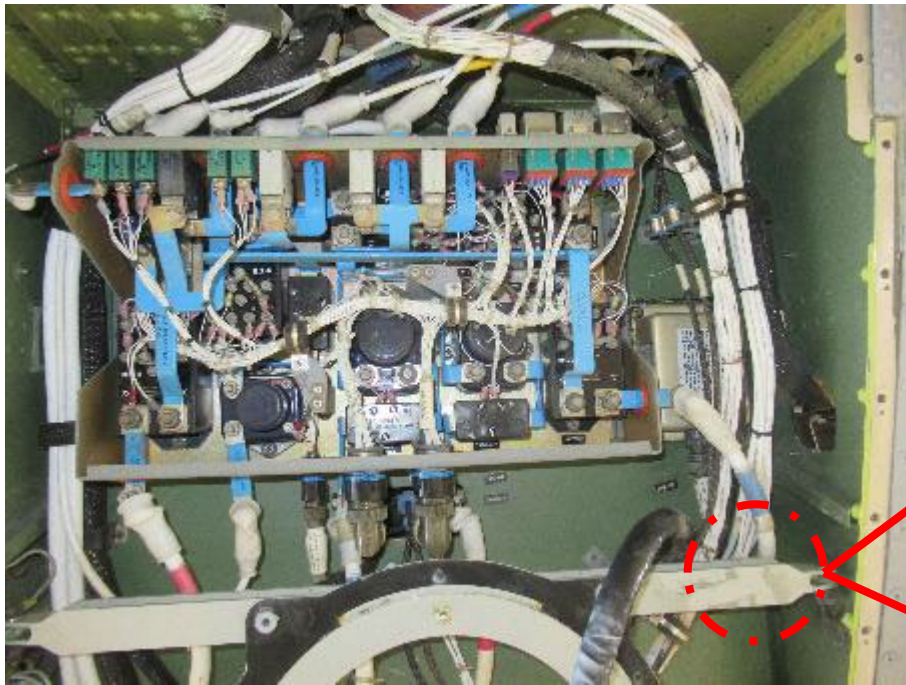
Finding: Bus bar bolt head chafing on power feeder cable



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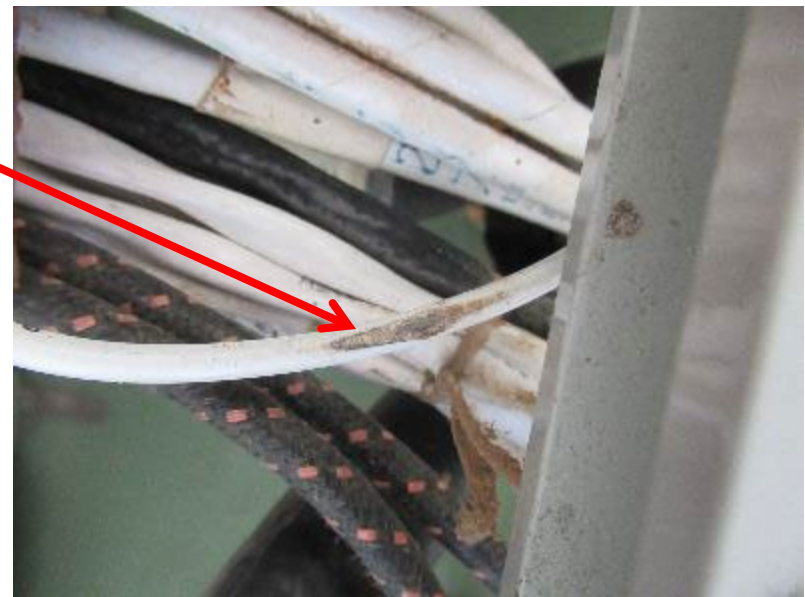
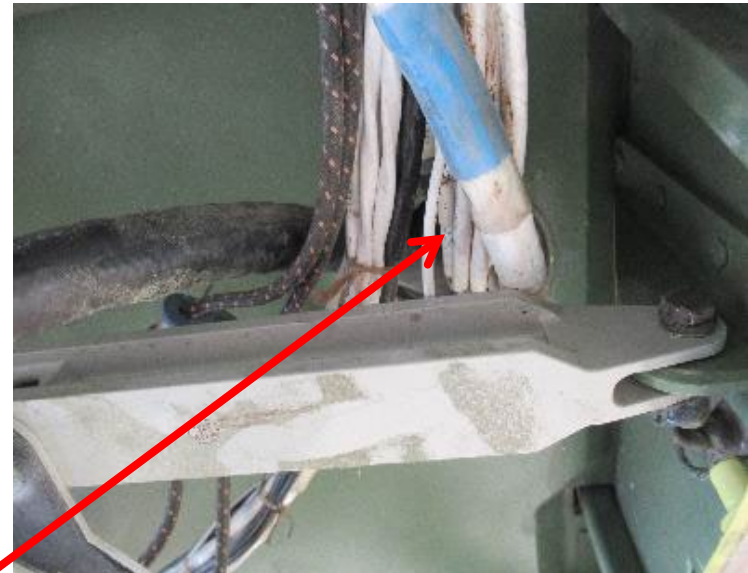


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Location: Power distribution panel

Finding: APU/BATT BUS wire 429VAPL1T2 chafing on TFU mount, visible wear.



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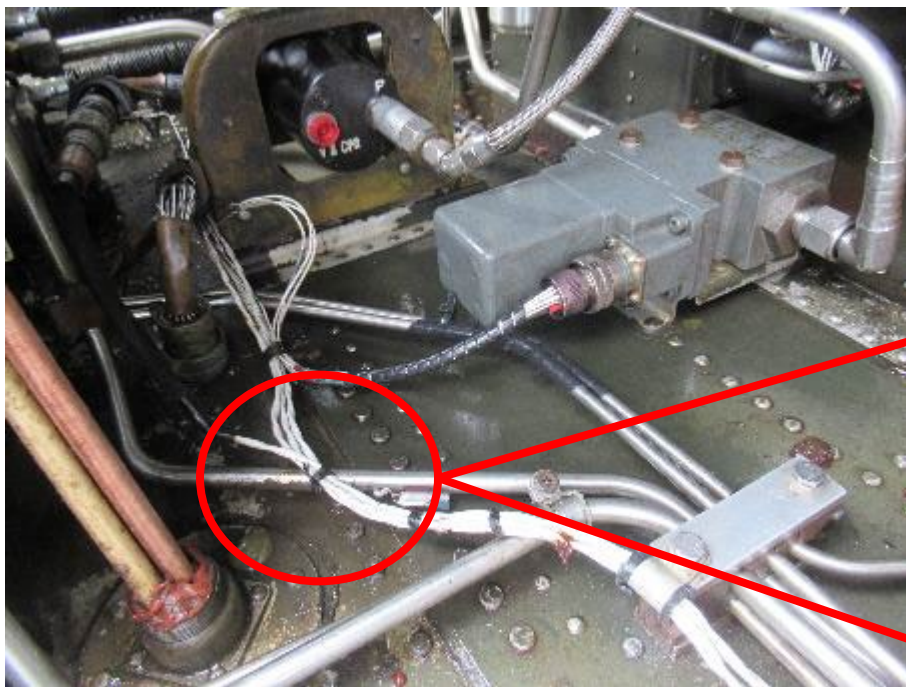
Location: Aft main gearbox panel 4T-88

Discrepancy: Wire bundle contact with panel floor. Visible wear

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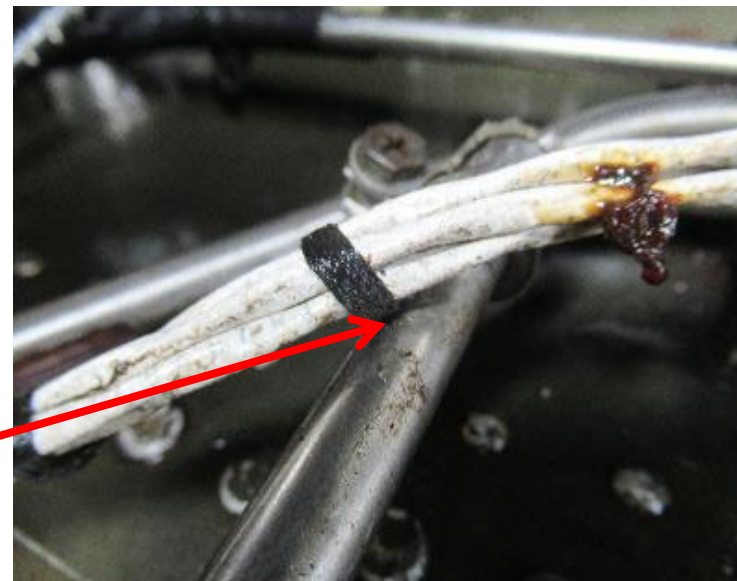


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Location: Aft main gearbox panel 4T-88

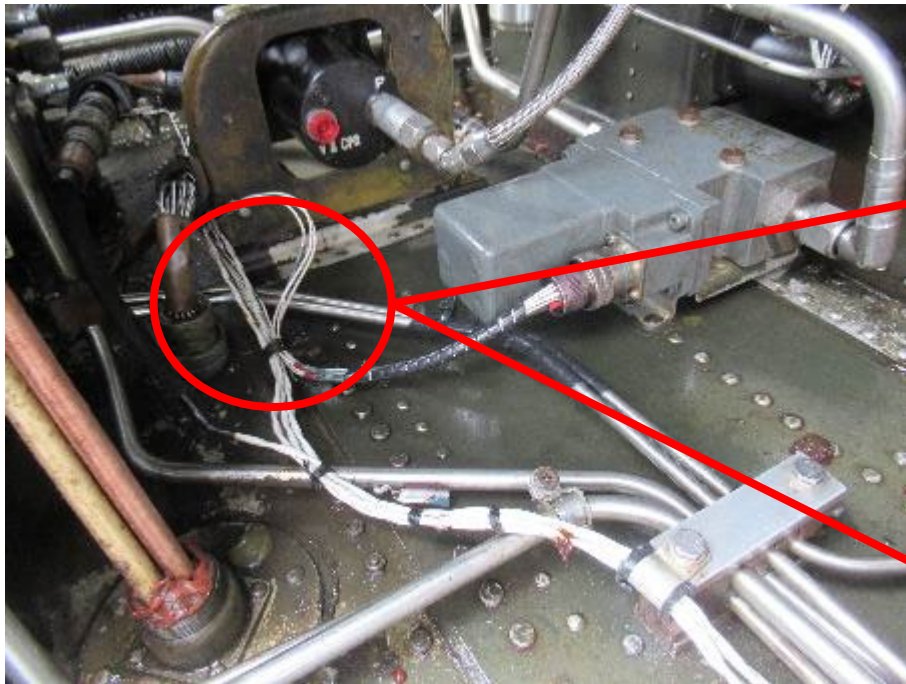
Finding: Harness bundle contact with tube, visible wear on tube



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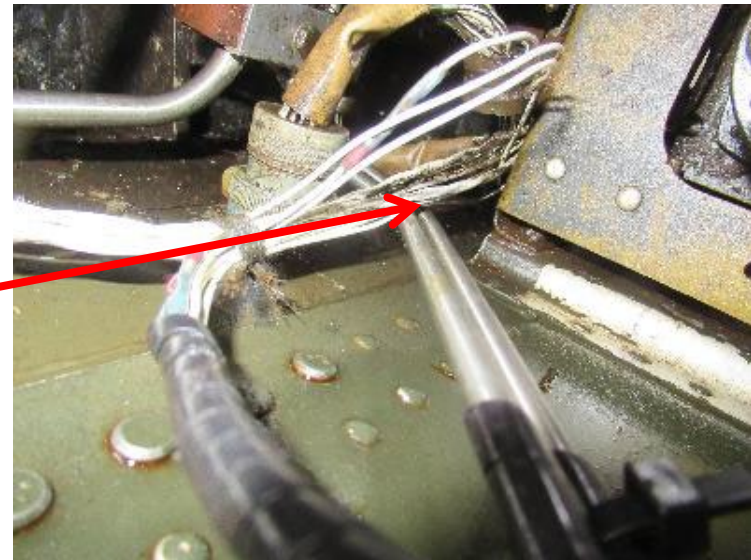


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Location: Aft main gearbox panel 4T-88

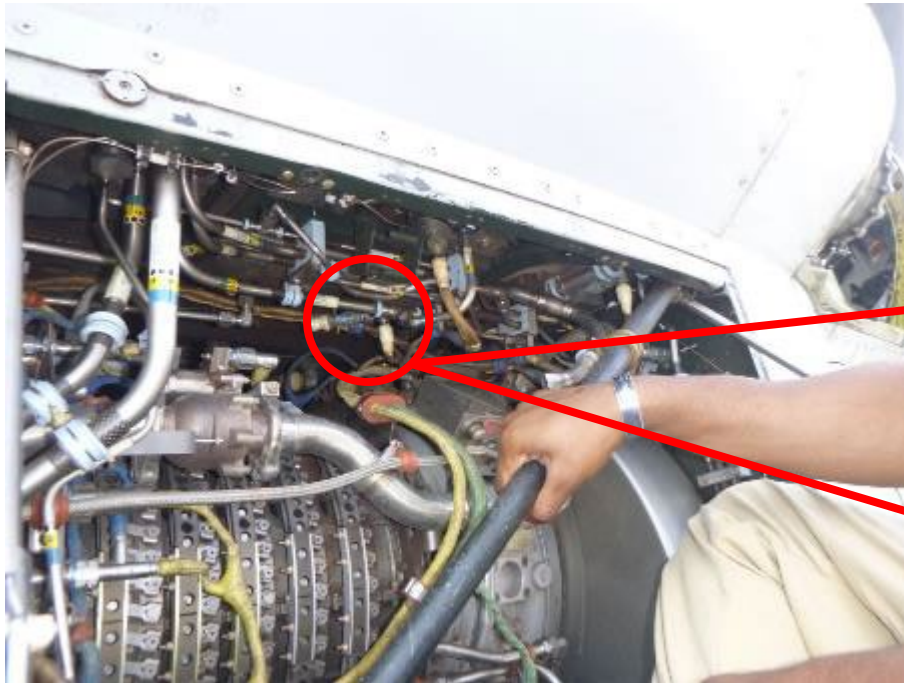
Finding: Harness bundle contact with tube, visible wear on tube



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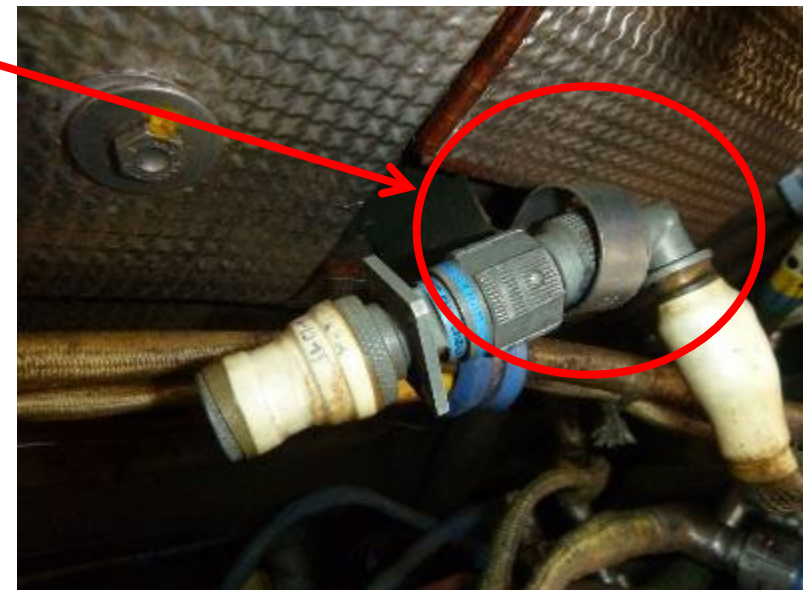
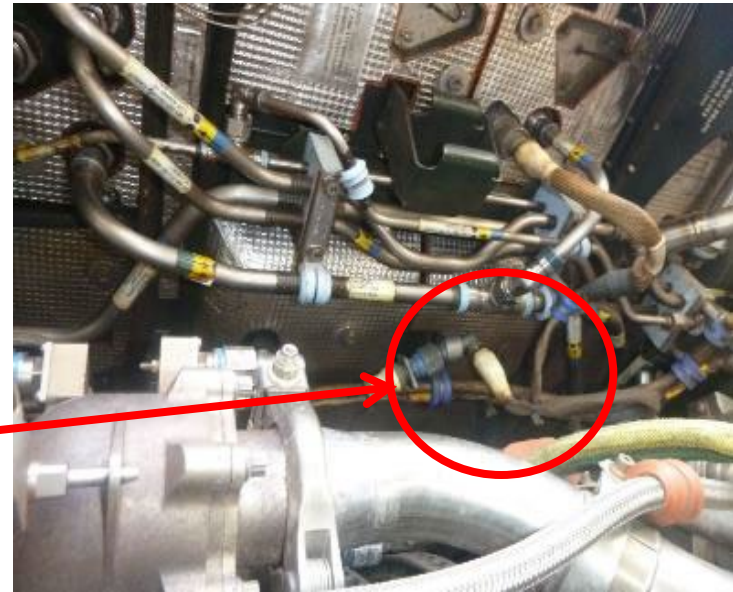


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Location: R/H Lower Nacelle, AFT and above engine ignitor box,

Finding: Missing clamp cushion for connector 5491US60P1 support.



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Location: FWD L/H Nacelle

Finding: Harness W608 chafing with adjacent harness W545. Damage evident.



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Location: L/H Nacelle,

Finding: Harness chafing on clamp. Wear evident on both clamp and harness.



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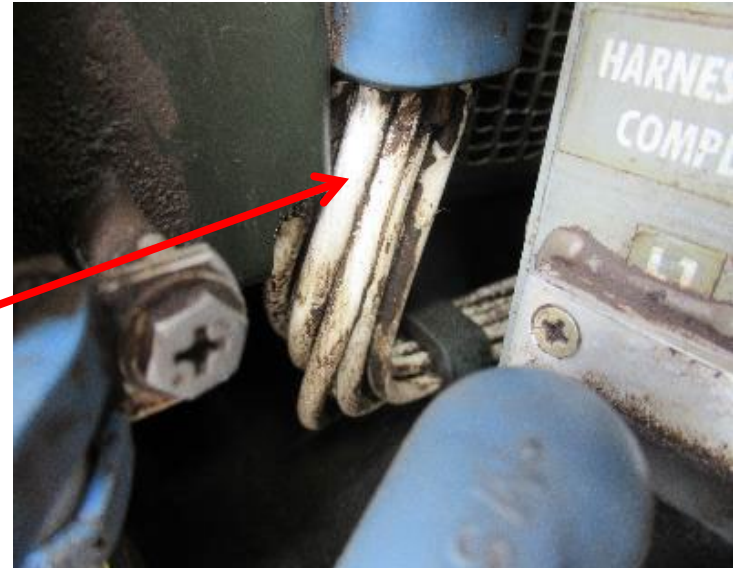


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Location: Right nacelle, aft

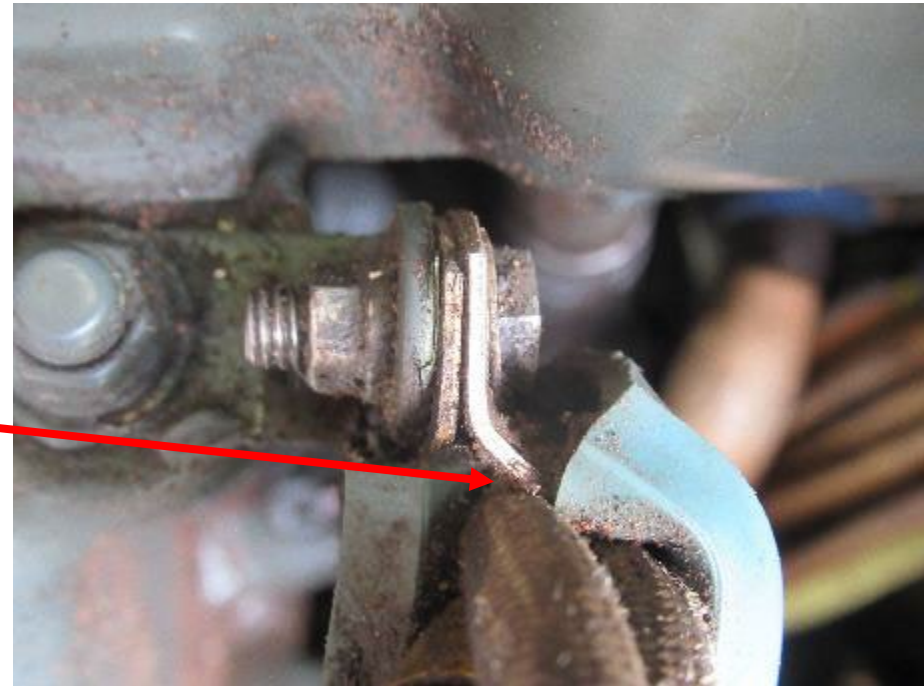
Finding: Power feeder chafing on clamp support bracket, visible wear



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Location: Right nacelle, center

Discrepancy: Harness chafing on clamp metal

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Location: Midwing, L/H side

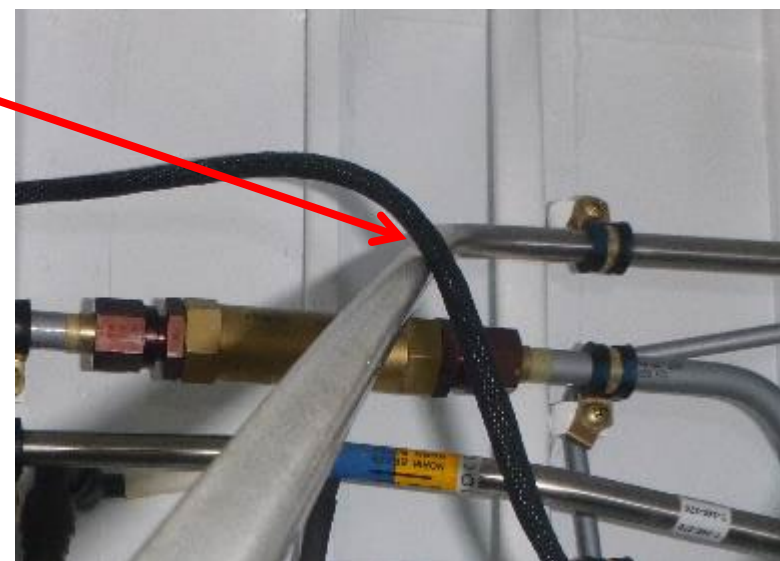
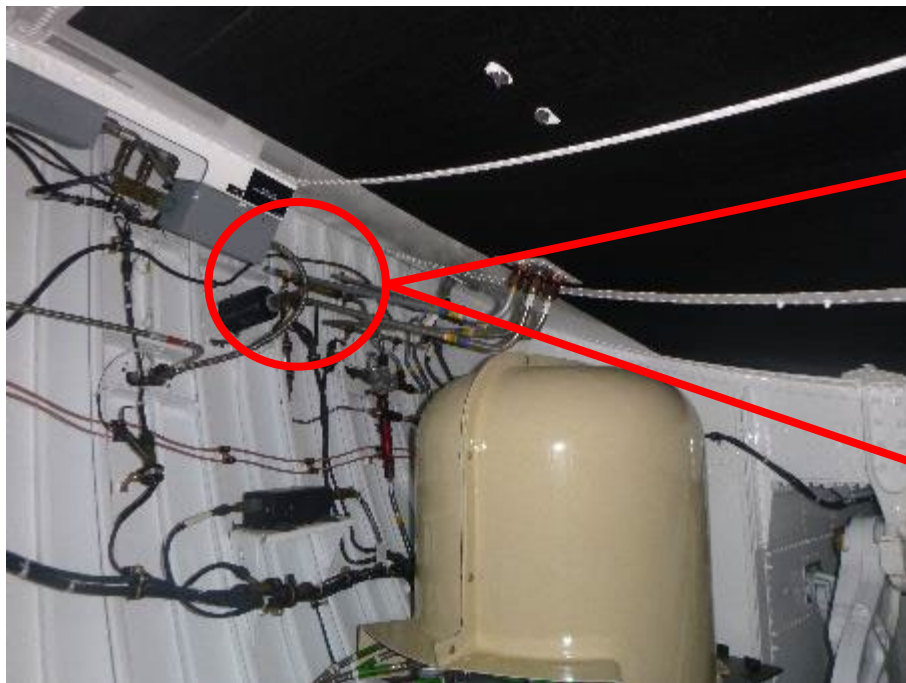
Finding: CFG-1 wires chafing on hyd drain tube



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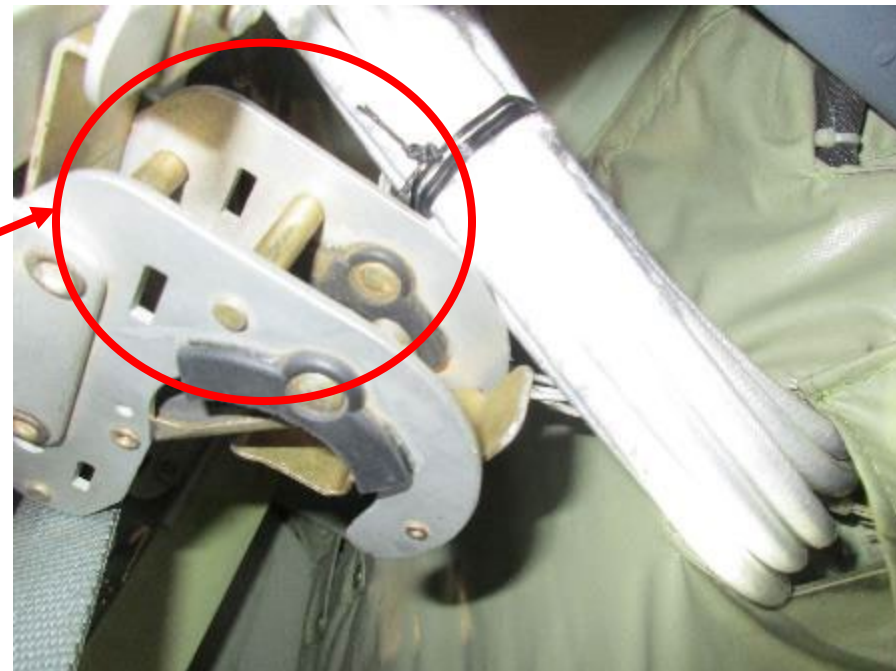
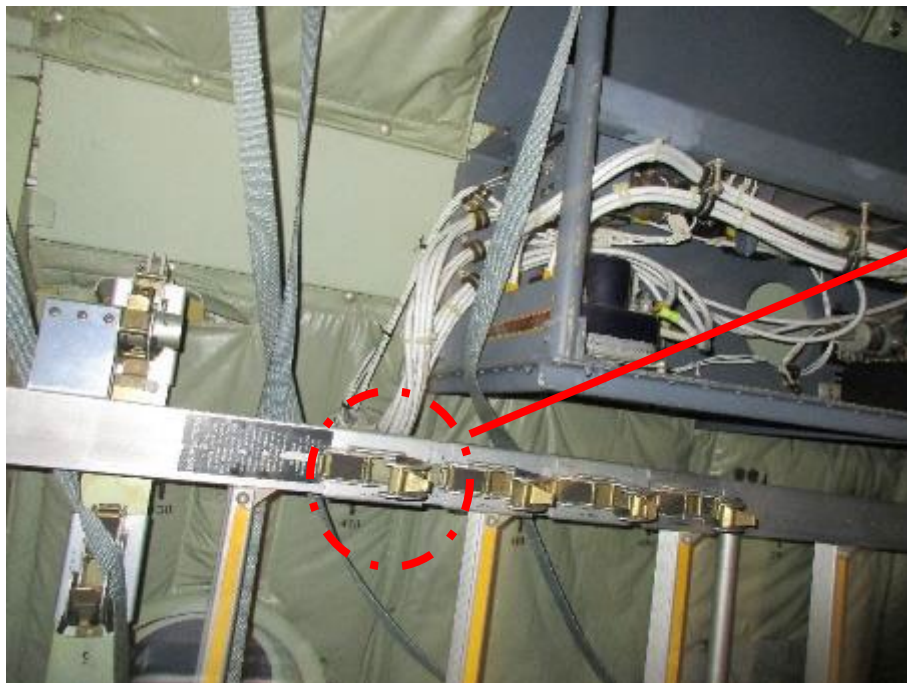


Nose wheel well, R/H side, OUTBD and Above LOX Bottle, Harness from P1653RR contacting / chafing Hyd. Line.

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Location:FS420 LT

Finding(s): Ladder chafes power feeders

NAVAIR Comment: Refer to NA 01-1A-505-1 WP 004 01

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On A/C 925 wire chafes on hook and on 532 it chafes on ladder edge

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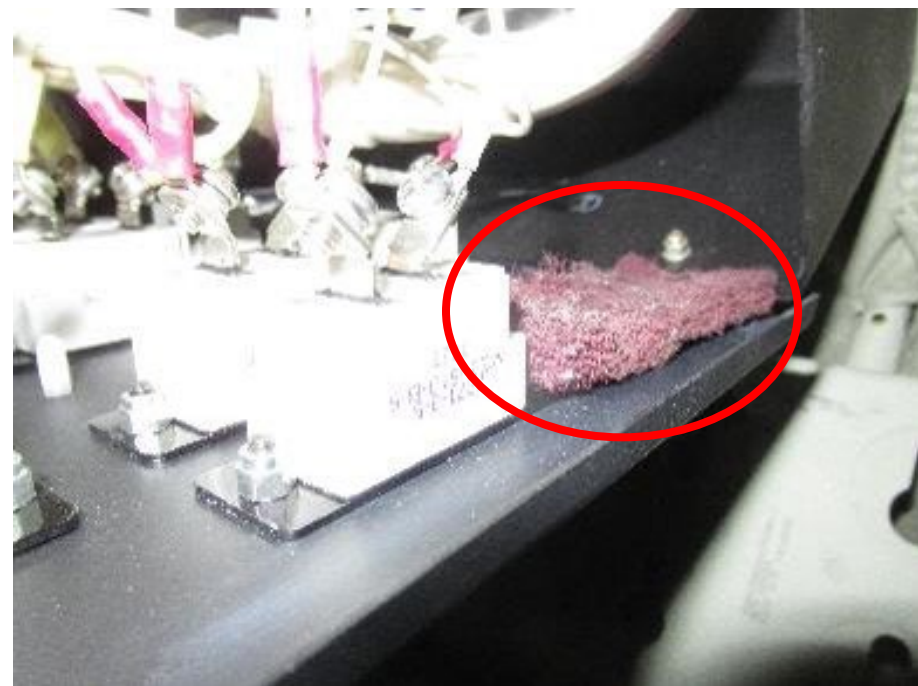
Location: FS420 LT

**Finding(s): Clamps unsecured/ not installed. Missing hardware
NAVAIR Comment: Refer to NA 01-1A-505-1 WP 004 01**

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Location: Fuselage

Finding(s): Scotch-Brite Pad found in C/B panel

NAVAIR Comment: Refer to NA 01-1A-505-1 WP 004 01

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Summary of Event



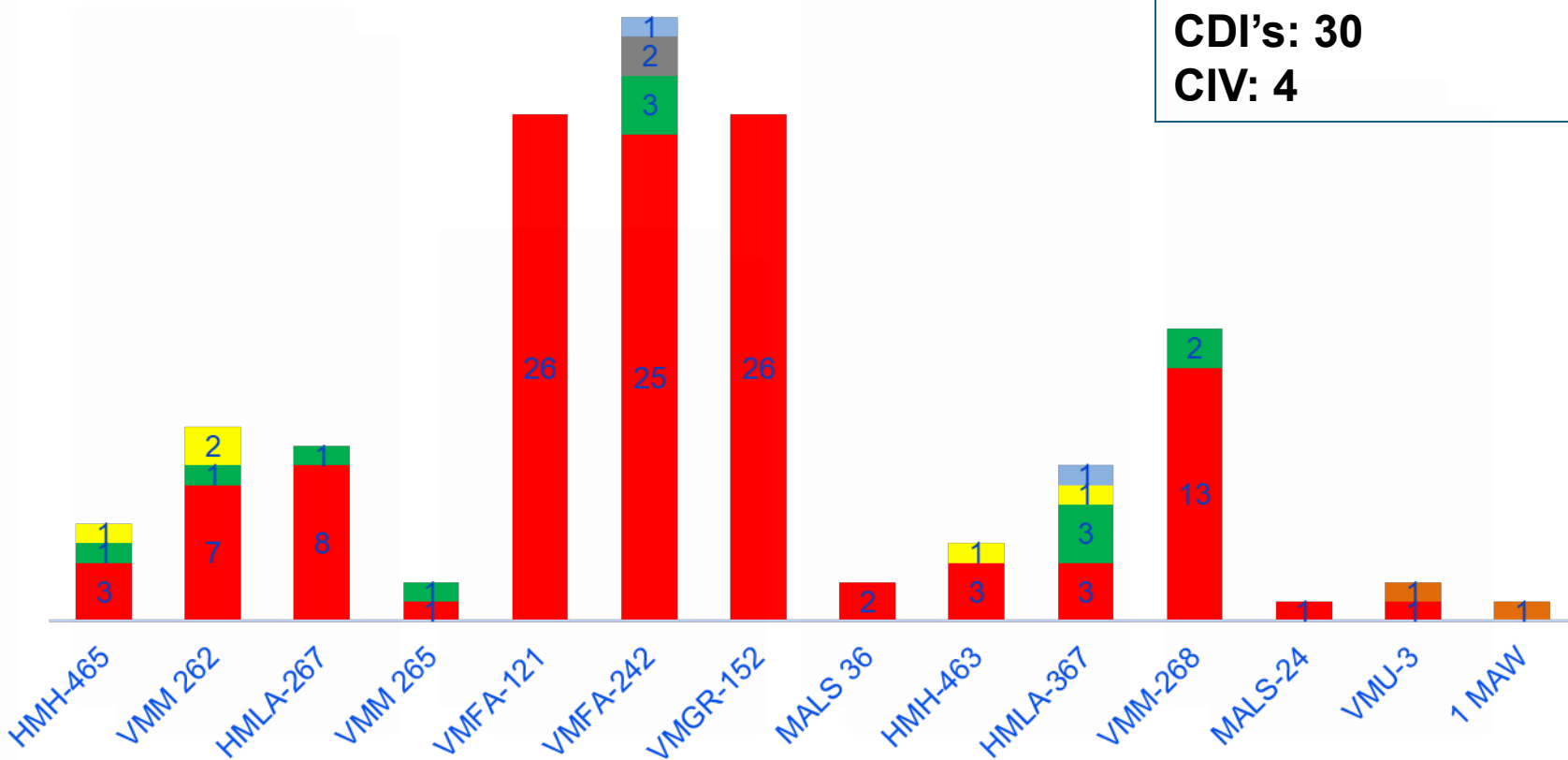
- **Squadron personnel quickly demonstrated transfer of classroom knowledge to aircraft practical application.**
 - Squadron CDI's led and engaged Junior Marines on aircraft.
- **Findings and observations were documented by squadron personnel along with NAVAIR Wiring during the EWIS Awareness event.**
- **To minimize maintenance impact, this event was conducted on a non-interference basis**
- **A complete aircraft EWIS assessment was not conducted**



Participation by Shops

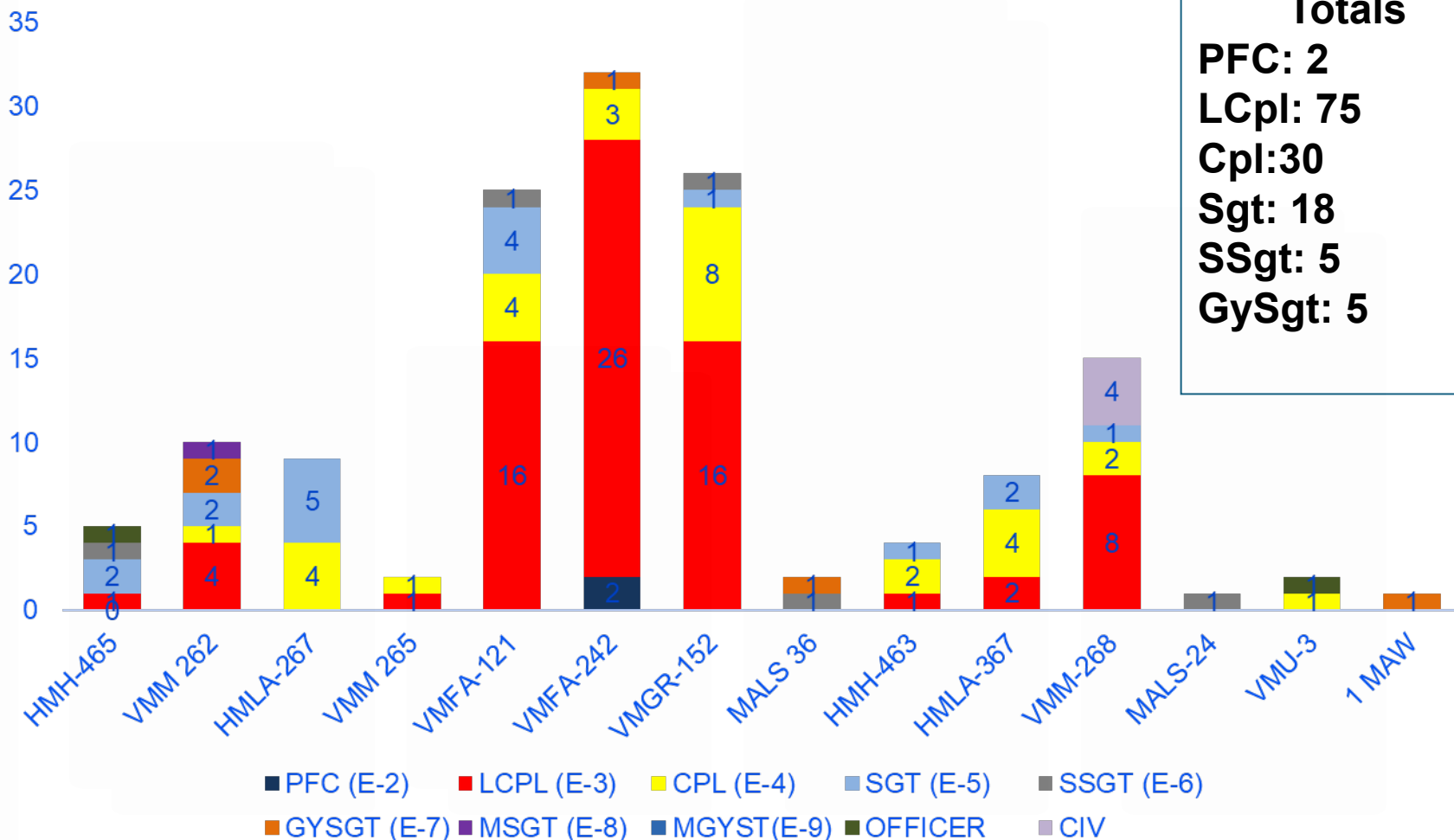
■ AVI/ ES ■ Airframes ■ Flight/ PowerLine ■ Seat /FE ■ ORD ■ Other

Total Personnel: 142
CDI's: 30
CIV: 4





Participation by Ranks



Totals
PFC: 2
LCpl: 75
Cpl: 30
Sgt: 18
SSgt: 5
GySgt: 5



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Attendee Feedback



“Great training especially as an up and coming CDI for AVI”

“Information what we need to know to look for to prevent future mishaps”

“Everyone in the shop will use the knowledge daily”

“Everyone in the maintenance department should know how to recognize improper wire configuration and discrepancies”

“Makes me more vigilant and help me to know what to look for”

“Flightline Plane Captains would benefit much”

“As an Air Framer this training helped me to be more cognizant of wire harnesses in relation to my components”



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