



AF Life Cycle Management Center



CAVEO CAELUM... Beware the Sky



B-52H Overview

2026 Corrosion Technical Interchange Meeting

Spokane, WA



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Distribution/Dissemination Controls: Distro A

Caveo Caelum



Icebreaker



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Ship of Theseus Thought Experiment: If you replace one piece of a ship at a time, eventually replacing every piece, is it still the same ship?

Air Force heard this and thought it sounded like a good idea for the B-52!





Overview



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Coatings

- Non-chrome status
- Tri-chrome efforts
- Fleet improvements

Corrosion

- Upper wing skins
- Center wing skins
- Horizontal stab spar chords
- Vertical stab fittings
- Engine struts
- Fuselage side skins
- BS 1853+40 fittings
- Honorable Mentions



Aircraft 61-0028 Heritage Orange

<https://www.twz.com/air/b-52h-stratofortress-rocks-retro-dayglo-orange-paint-scheme>



Non-Chrome Status



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Non-Chrome Tracker

- 62 of 76 aircraft are now chrome-reduced or about to be (at PDM currently)
 - Chrome-reduced = Alodine + non-chrome primer
- 14 remain chromated (chrome primer + PreKote)
- 4 are upcoming FY26 inputs
- 9 are planned for FY27 input
- 1 test jet remains chromated

Fleetwide implementation by end of FY27

- Minus test jet

A couple aircraft have returned to depot with non-chrome primer applied last PDM

- Results appear promising



Aircraft with Non-Chrome Primer



Paint Stencil from Aircraft



Tri-chrome Efforts



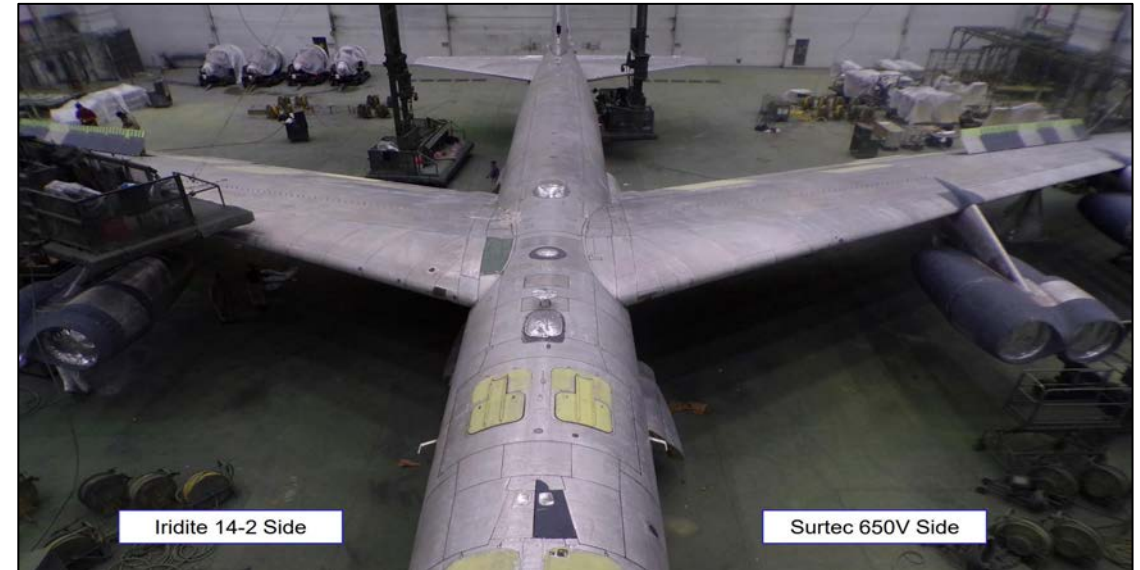
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On-aircraft evaluation completed on 60-0013, currently ongoing with 60-0033

- **60-0013 results appeared promising**

Test panels at Patrick SFB

- **Several tri-chrome pretreatments, Class N primers, topcoats**
- **Non-isocyanate topcoats**
- **Deployed Feb 2025, likely to remain out for 2-3 years**



**Tri-Chrome Demo Aircraft 60-0033 (TOP RIGHT),
Test Panels at Patrick SFB (BOTTOM RIGHT)**



Fleet Improvements



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Aft Body Wheel Well (ABWW)

- Implemented at PDM in FY25
- 9 A/C completed to date

Flap and Tip Gear Well (FTGW)

- Working for PDM implementation
- 1 Val/Ver completed to date

Bomb Bay or Forward Wheel Well could be on the horizon

Forward-thinking and proactive, but necessary for fleet sustainment



ABWW Final Product



FTGW Final Product



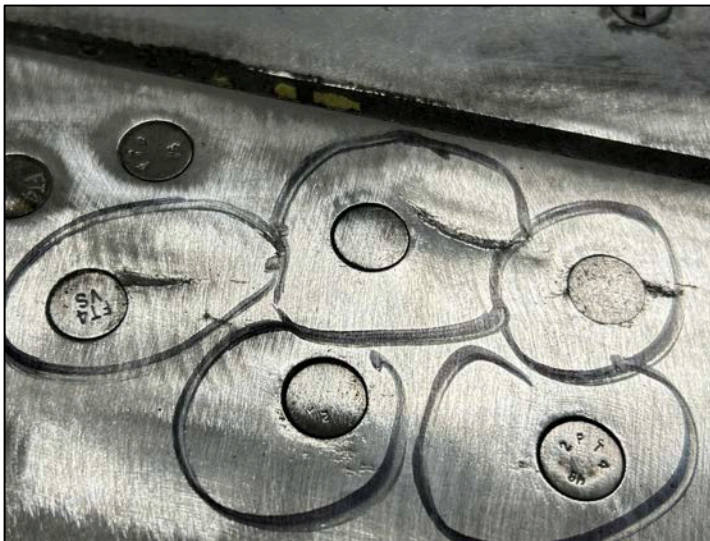
Corrosion



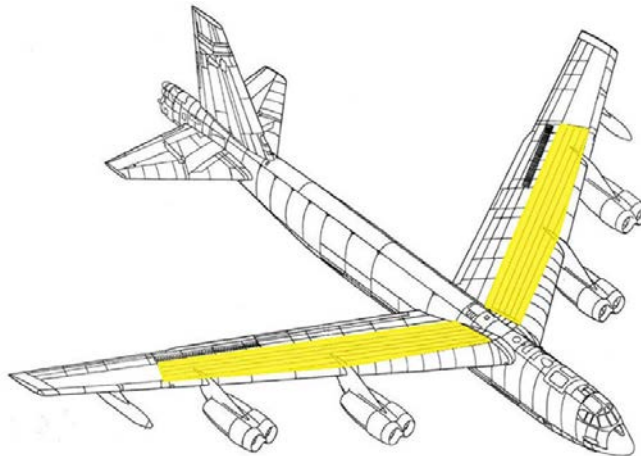
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Upper wing skins (UWS)

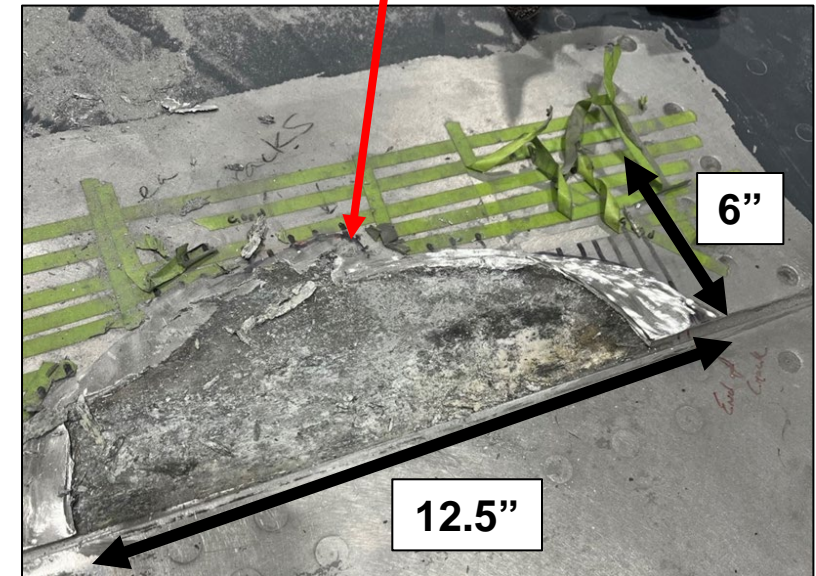
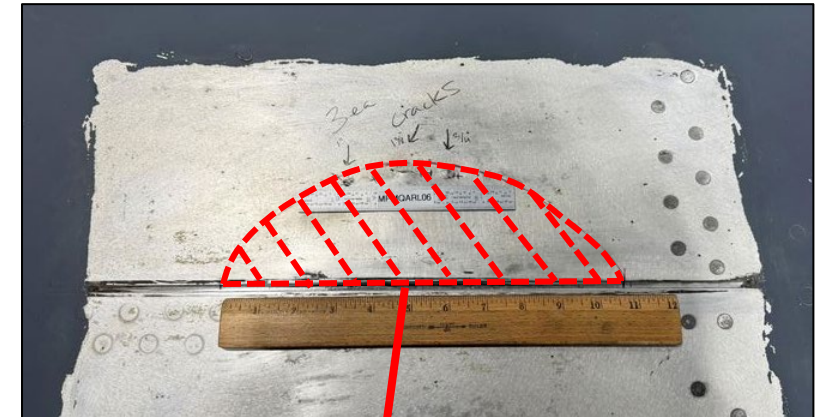
- Intergranular corrosion at steel fastener and aluminum skin interface at front/rear spar chords
- Lap splices between wing skins
- 27 aircraft impacted to date
- Skin replacement efforts in work



UWS Corrosion Example



UWS Diagram



Lap Splice SCC Example



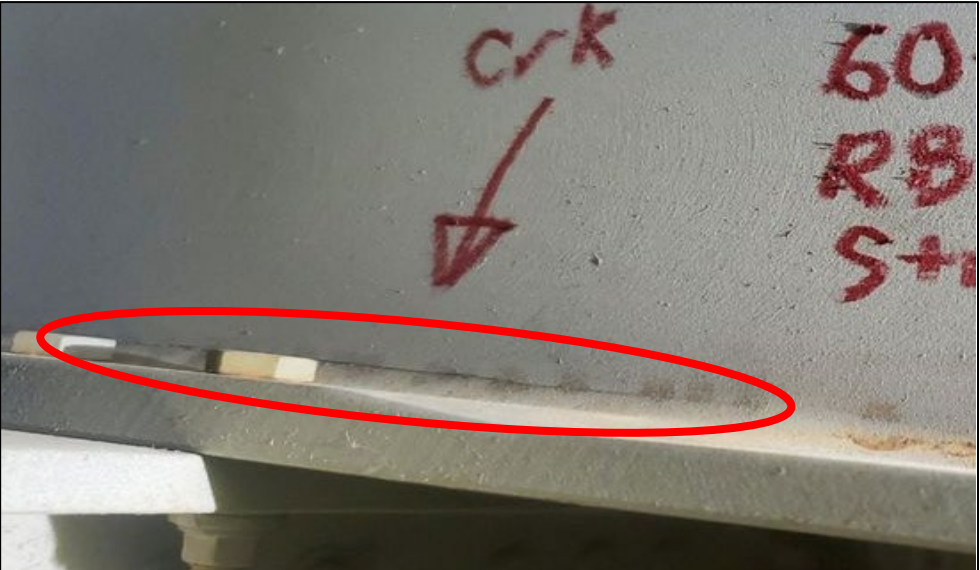
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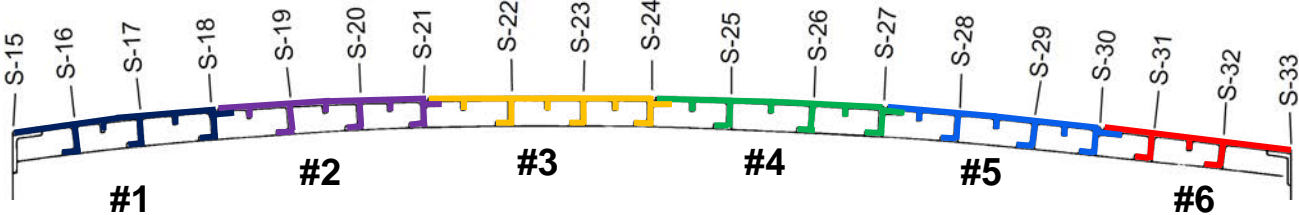
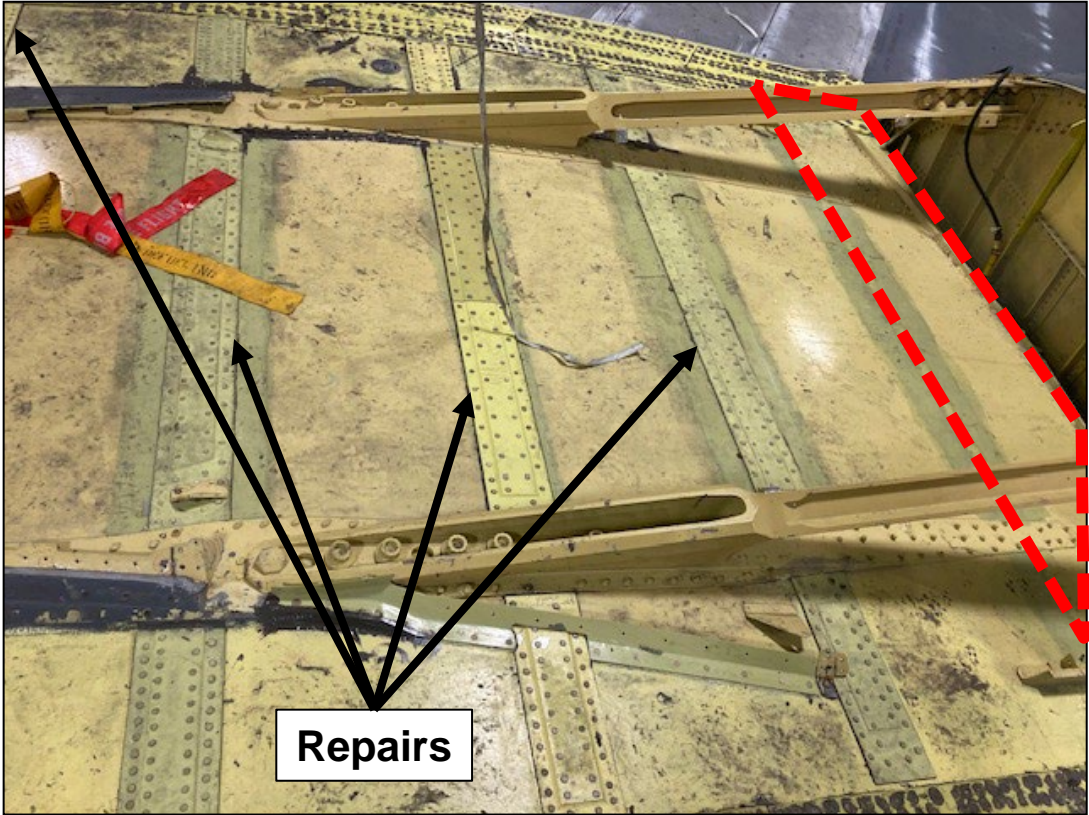
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Center wing skins (CWS)

- Stress corrosion cracking typical in lap splice stringers
- Val/Ver planned at PDM soon



CWS SCC Example (UP),
 CWS Top View (TOP RIGHT),
 CWS Cross Section (BOTTOM RIGHT)





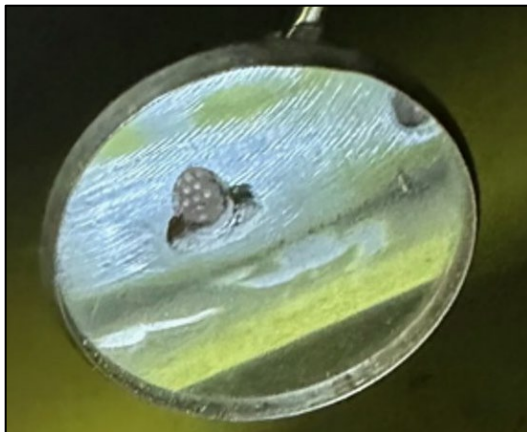
Corrosion



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Horizontal stab spar chords

- Effort in work to prepare for future repair/overhaul, establish and verify procedures, develop shop aids
- If repair/overhaul is not possible, swapping horizontals may be only solution short of new procurement



**Horizontal Stab being
Removed at AMARG (UP),
Spar Chord Damage (LEFT)**



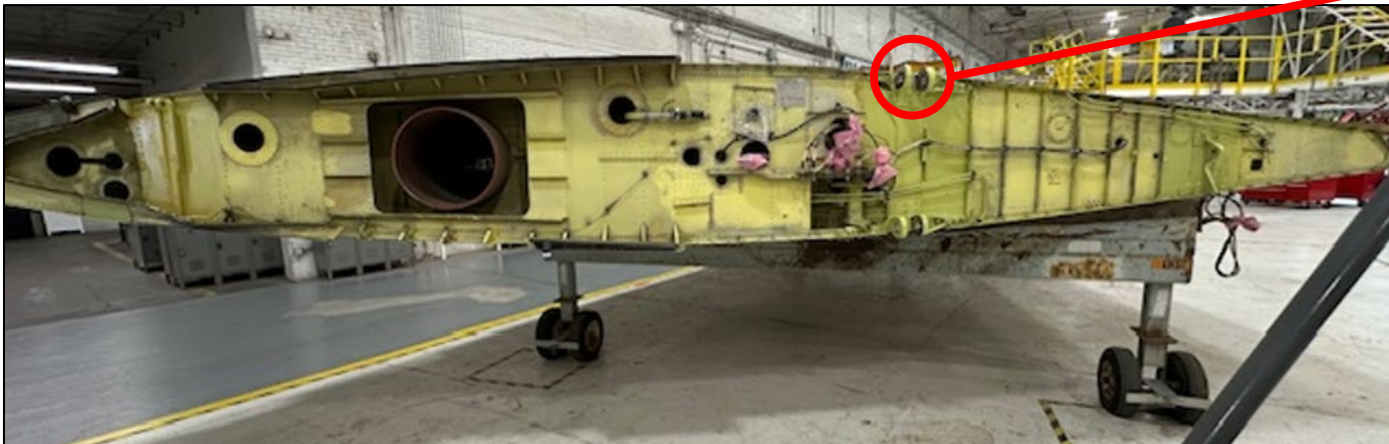
Corrosion



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Vertical stab fittings

- Pitting on lug faces
- Effort underway to develop removal and replacement procedures
- Root cause possibly identified and corrected, must now deal with impact



Vertical Stab Off-Aircraft (Laying on Side)



Vertical Stab Fitting Lug



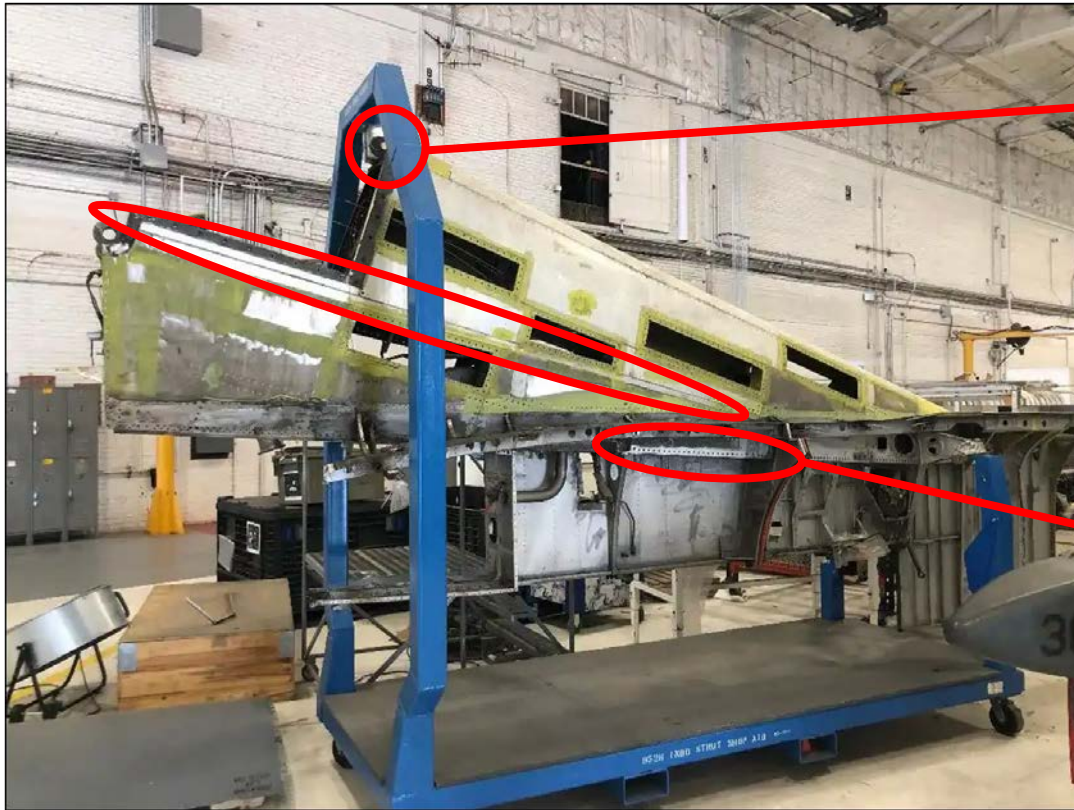
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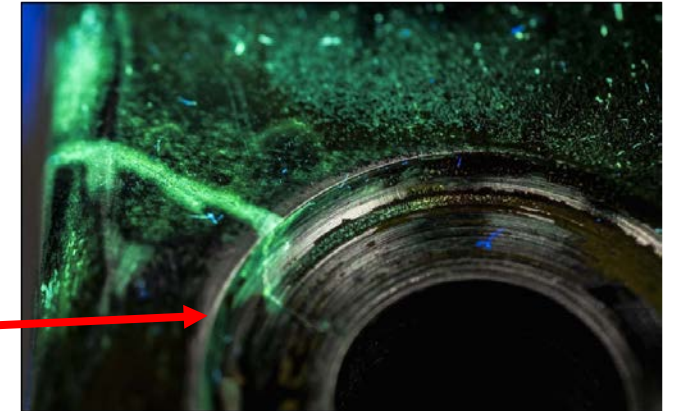
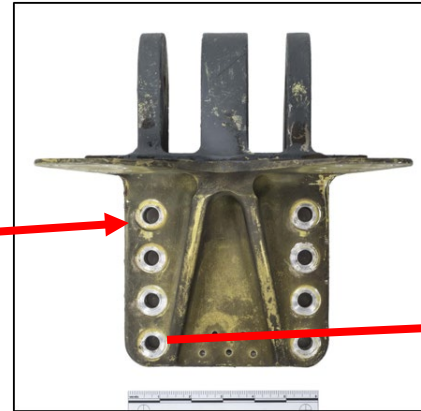
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Engine struts

- Closure beams, 20Y fittings, mid spar
- Efforts in work to replace major structure



Engine Strut



20Y Fitting (TOP), Closure Beam Corrosion (BOTTOM)



Corrosion



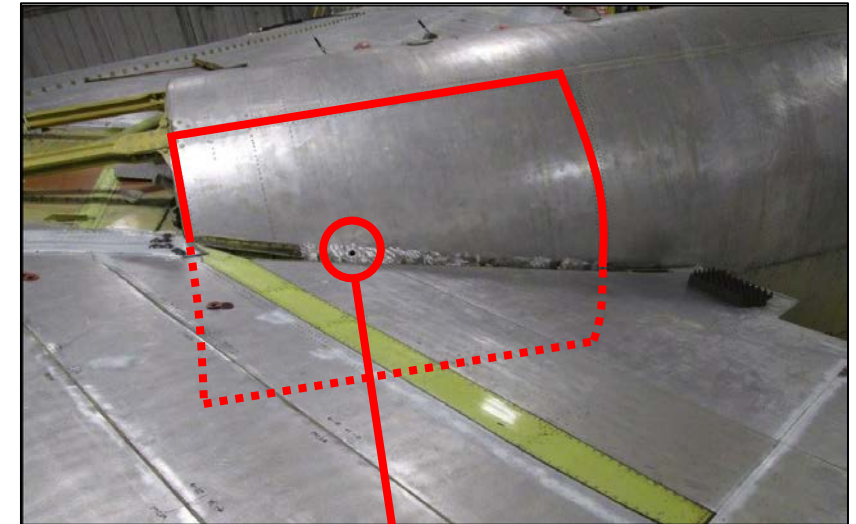
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Fuselage side skins

- BS 694-805 replaced recently
- Several other skins already replaceable or in work



Side Skin Removed



Damage Before Removal



Corrosion



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BS 1853+40 fittings

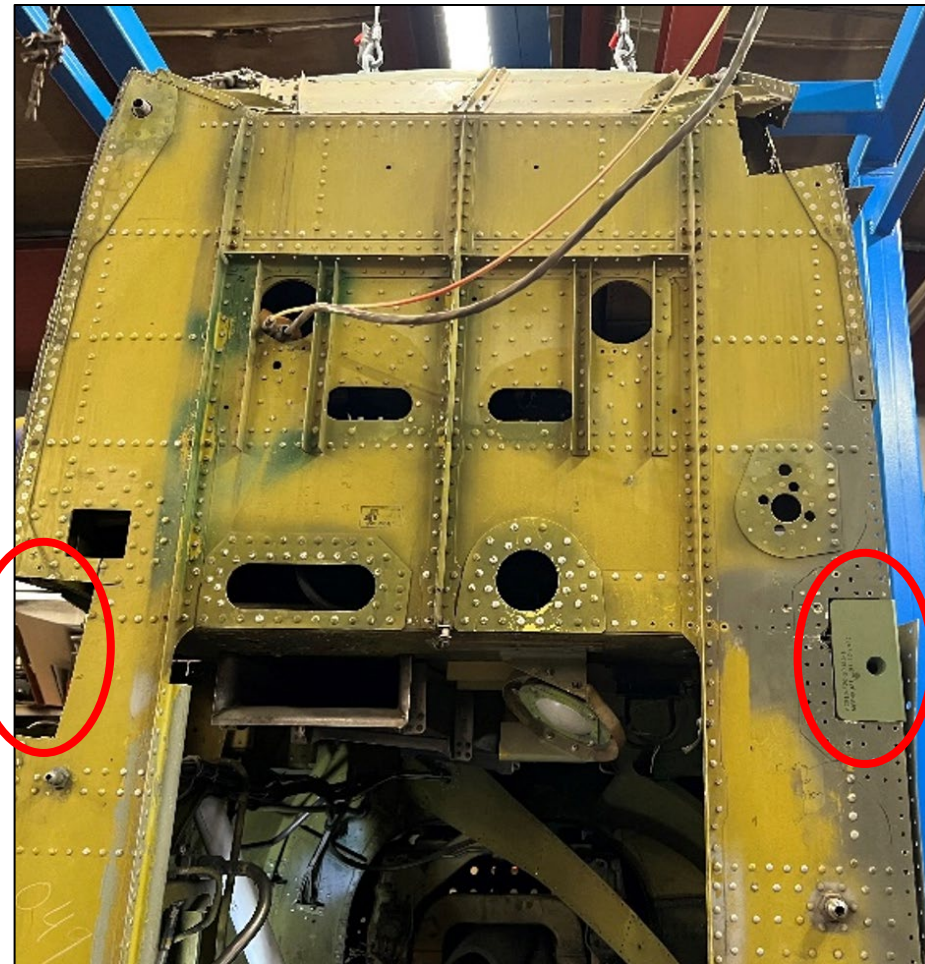
- Water intrusion through chute door caused corrosion and SCC to mid and lower fittings
- Once-through-fleet replacement in work



Cracked Fittings



Tail Removed



Tail Section Fitting Replacement



Honorable Mentions



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- Front/rear spar terminal fittings
- BL55 splice plates
- Strut kneecaps (#1)
- BL55 rib chord (#2)
- Stub longerons (#3)
- Lower longerons





Conclusion

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You can't fly for 65+ years without a great team, and we hope to make it to 100 years with that same great team (field units, depot maintainers, industry partners, AF-wide support)

Thanks to everyone who made this CTIM happen!

Questions?

Corrosion Problem Areas



 **Corrosion**