



Navy and Marine Corps CAD/PAD Mishap Investigation Support Team Engineering Investigations and Mishaps

14th Cartridge Actuated Devices/Propellant Actuated Devices
(CAD/PAD) Technical Exchange Workshop

Presented by:

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Abstract



An explanation of the Mishap Investigation Support Team (MIST) and its role to the United States Navy and Marine Corps. Provides a summary of mishaps for FY21, and Engineering Investigations (EI) that were supported for the Navy and Marine Corps as they relate to CAD/PAD MIST. Status and key findings will be provided.



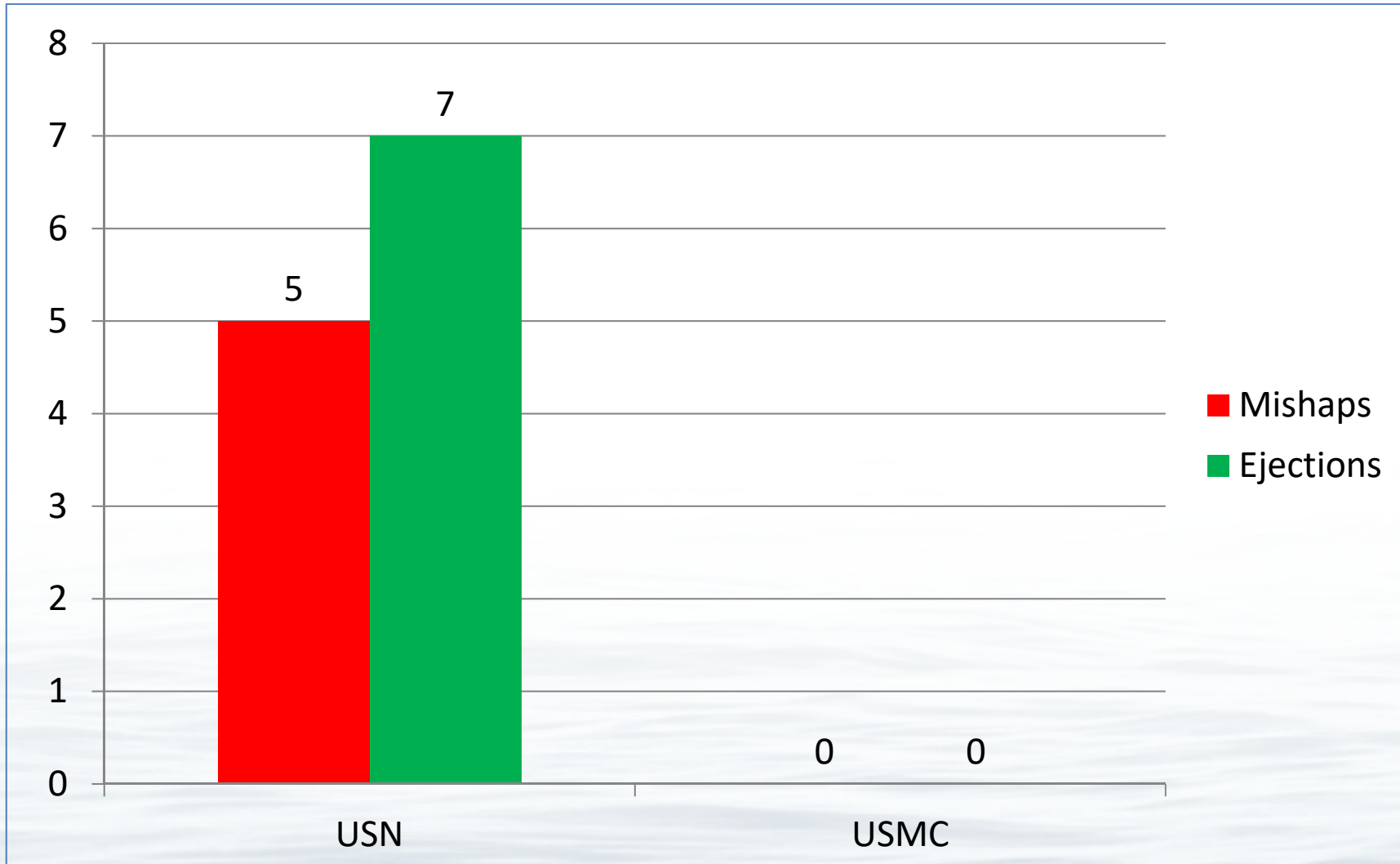
MIST & EI Definition



- What is the MIST and EI?
 - MIST is managed by NAVAIR;
 - The team consists of an escape systems engineer, a survival equipment specialist, and a CAD/PAD equipment specialist;
 - The primary mission for MIST is to provide expert level support to the Naval Safety Center and the Aircraft Mishap Board on class “A” mishaps involving the escape systems for the Navy and Marine Corps. MIST will help the NTSB and FMS if requested.
 - UXO MIST Team Lead for CAD/PAD.
- An EI can be opened on a Conventional Ordnance Deficiency Report/Explosive Event Report (CODR/EER) by the In-Service Support Center (ISSC), CAD/PAD, if a need is seen for further action and investigation.



FY21 Mishap Totals



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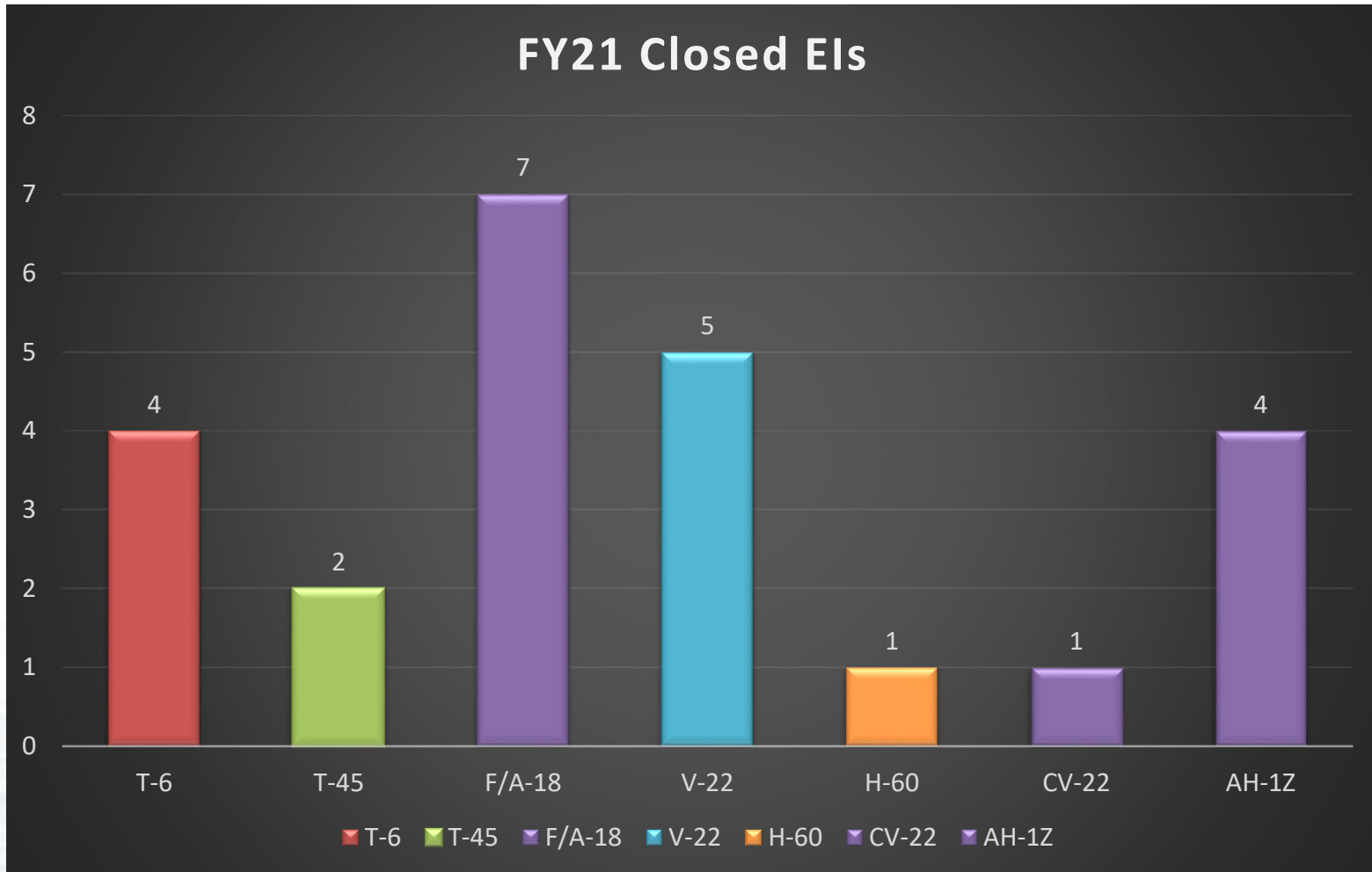
Class "A" Mishaps USN/USMC



- 20OCT20 Near NAS China Lake: F/A-18E crashed after malfunction. Pilot ejected. MIST responded.
- 23OCT20 Foley, Alabama: T-6 crashed during day training flight. Instructor pilot (IP) and student, 2 fatalities. MIST responded.
- 24MAR21 Orange Grove, Texas: T-45 Lost control during take off. Both aircrew ejected. MIST responded.
- 17MAY21 Kingsville, Texas: Two T-45s collided during day formation. One aircraft recovered safely, IP and student ejected in the other aircraft. MIST responded. (Seats recovered in January 2022)
- 19SEP21 Fort Worth, Texas: Aircraft crashed on final approach. IP and student ejected. MIST responded.



FY21 Closed EIs



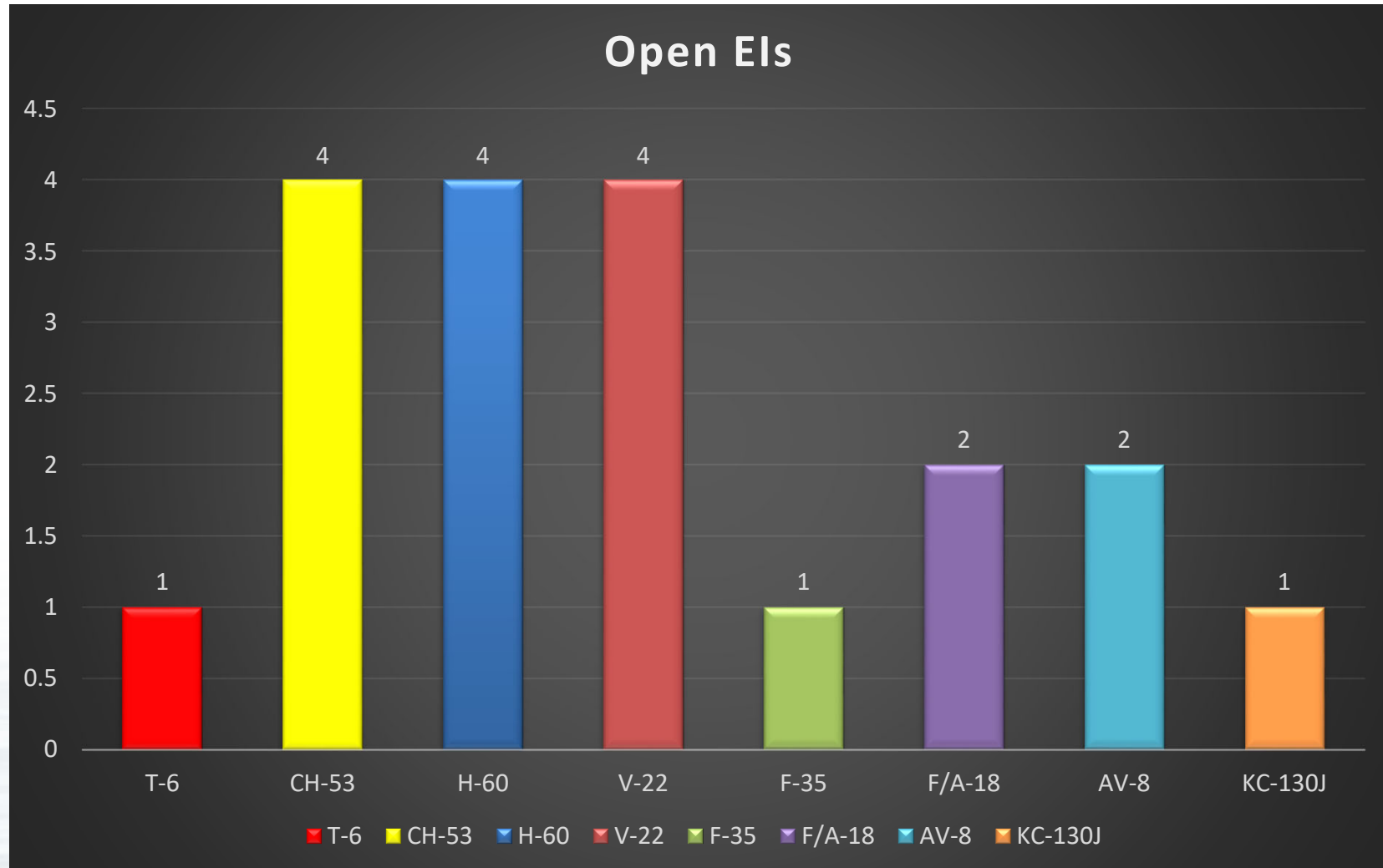


FY21 Closed EIs

- 24 total closed EIs for FY21;
- Four out of the 24 were never returned, and closed for non-receipt.
 - All four of the devices that were lost were directly attributed to the weapons station processing errors. Possible solution is to turn on fleet returns for EI assets. This will eliminate station weapons and vastly speed up EI processing times.
- Seven were returned for failing to fire or faulty indications and all passed testing at Indian Head.
- Five were closed for incorrect configurations: we reached out to the contractor for more oversight.
- Two were from corrosion upon opening, updated inspection requirements at our facility.
- One was returned to the contractor for a latent defect.
- Five were closed due to maintenance errors.



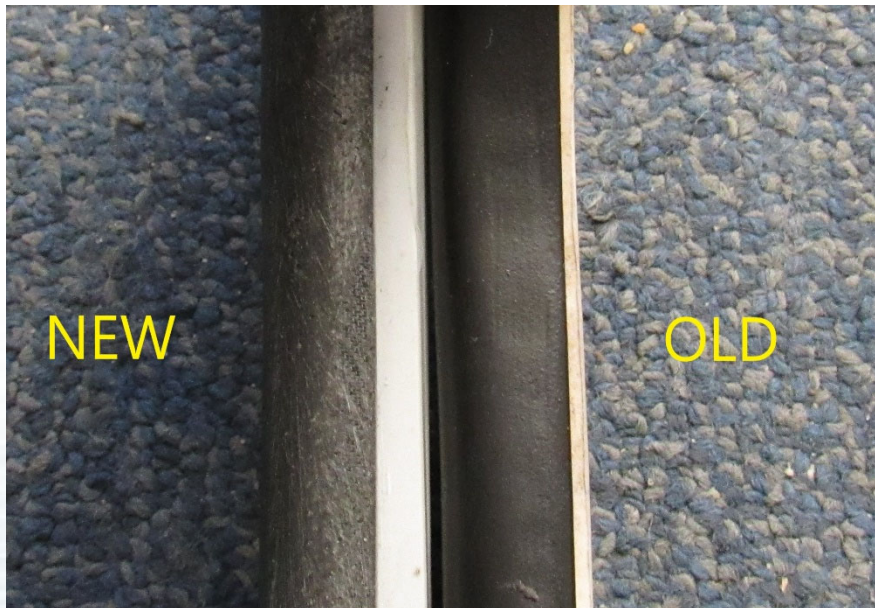
Current Open EIs



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WB34 On-Site EI

- V-22 Window Cutter Assembly (WCA) cracking windows.
 - New WCA has a visibly thicker charge than the old.
 - Cracked three windows before the WCA was suspect and we completed our on-site assessment.
 - Currently working with the ISE and contractor, looking at drawings/requirements.



NSWC IHD, Photo credit Dept E2



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T-6 JN45 EI

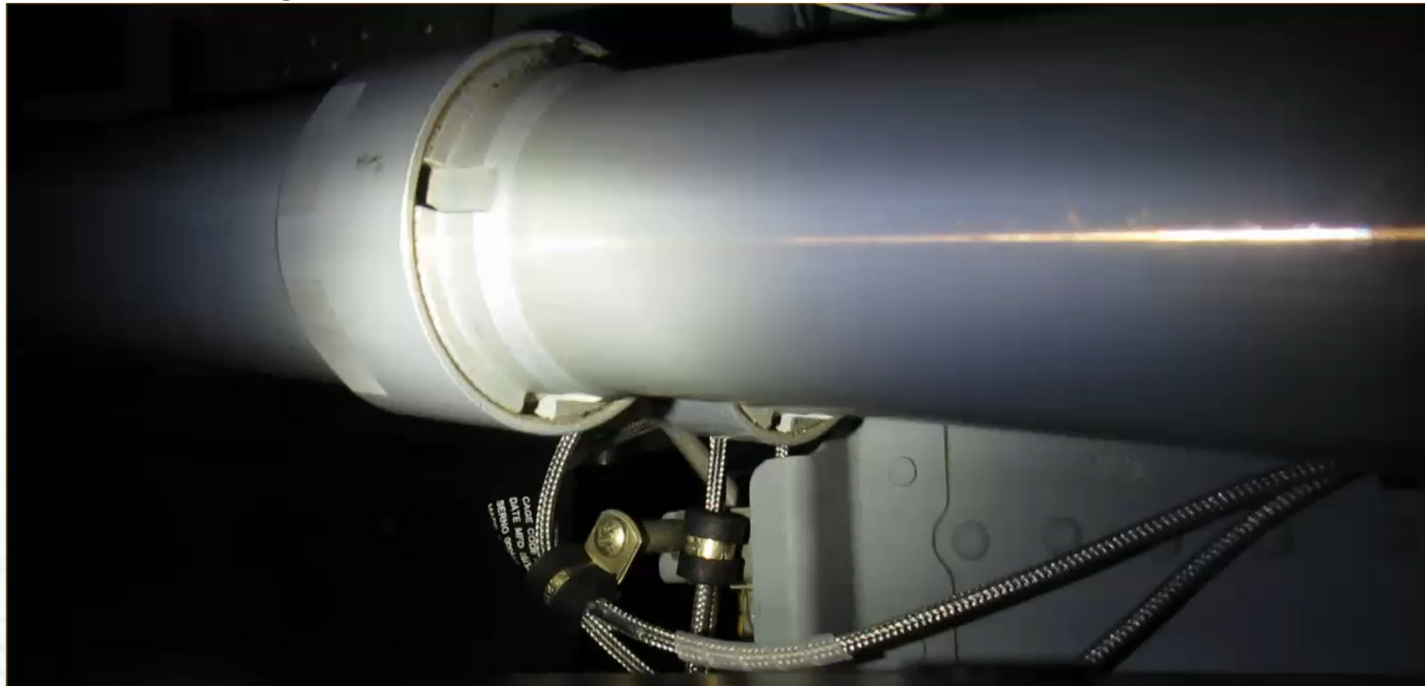
- USAF T-6 SMD Det. Cord found damaged during daily inspection.
- E23 Hill Air Force Base and E25 Indian Head CAD/PAD worked together on this EI.
 - This happened six times in 1.5 years depleting stock on CFIS B kits.



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T-6 JN45 EI

- Inspected Navy installed assets at Naval Air Station (NAS) Patuxent River, NAS Pensacola and Edwards Air Force Base.
 - Inspections revealed the canopy strut is coming in contact during opening and closing.



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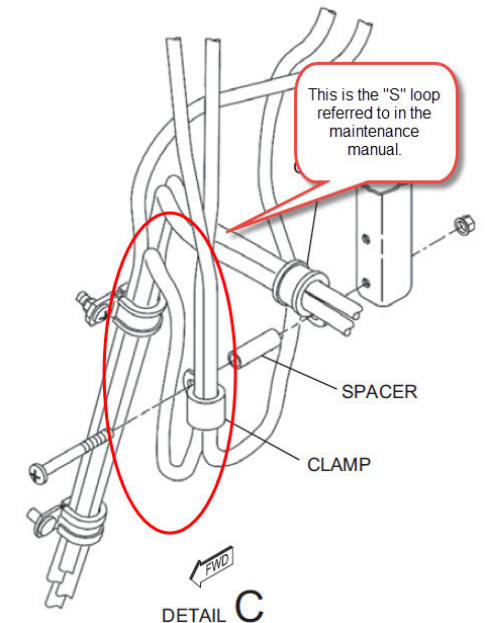
T-6 JN45 EI

The maintenance publications state to make sure there is an “S” loop in the line.

- A spot check inspection revealed that a small number of lines did not have the “S” loop installed correctly.
- Instruction found to be confusing.

How Do we fix the problem?

- TCTO issued to inspect on next seat maintenance cycle.
- Replace if needed
- Re-route Det. Cord.



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T-6 JN45 EI



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What are the logistical impacts to the fleet?

V-22 WB36 WCA

- CODR reported white environmental tape on two new WB36s is falling off.
 - Both devices recalled for an EI, only one was returned.
 - Initial inspections revealed significant degradation of the adhesive that holds the environmental tape to the charge.
 - Contractor confirms error during build process while applying tape.



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V-22 WB36 WCA (con't)



Solution:

- Continue to let the fleet report through the CODR process.
- Issued a “CAUTION” in the NA 11-100-1.1 CAD/PAD Technical Manual stating the issue and report if it fails inspection.
- Contractor will repair what is in stock at Indian Head in phases.
- Contractor changed build procedure to mitigate future risk.



Questions???

