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A799/NFF/NEOFF/CND High-Cost Impact Brief and Maintenance Trends

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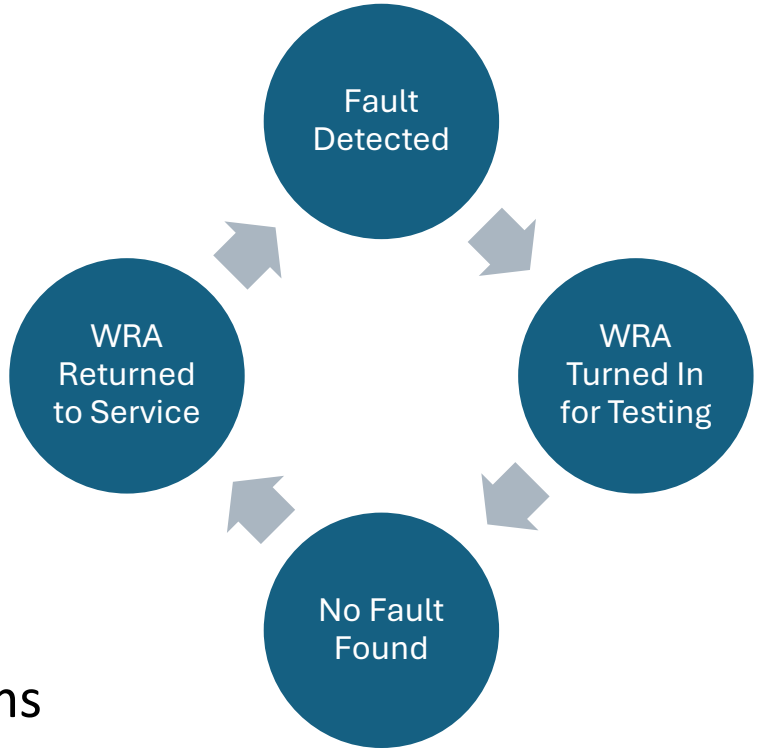
Background

- Across all branches of DoD aviation, components are frequently removed and turned in due to perceived system faults that are:
  - **Not verified during intermediate/depot-level testing**
  - **Found to operate within spec**
  - **Returned to service without repair**
  - **Many of these are due to intermittent EWIS discrepancies**
- This phenomenon contributes to:
  - Excessive cost of logistics and supply chain burden
  - Unnecessary removals increasing aircraft downtime
  - Erosion of confidence in fault isolation procedures
  - Depletion of RFI (Ready For Issue) inventory
  - Premature condemnation or overhaul of functioning systems



Common DoD Aviation Codes for No Fault Found Conditions

- Each service uses different codes, but meaning is consistent across DoD:
  - Navy/USMC: CND (Cannot Duplicate), NFF (No Fault Found), A799 (Awaiting Dispo)
  - Army: FDI (Fault Did Not Recur), Z-codes, AVIM/Depot referrals, NEOFF
  - Air Force: NDN (No Discrepancy Noted), AWM (Awaiting Maintenance)
- Placeholder codes like A799 often hide systemic diagnostic gaps
- Consistently linked to high re-test pass rates and returned RFI components

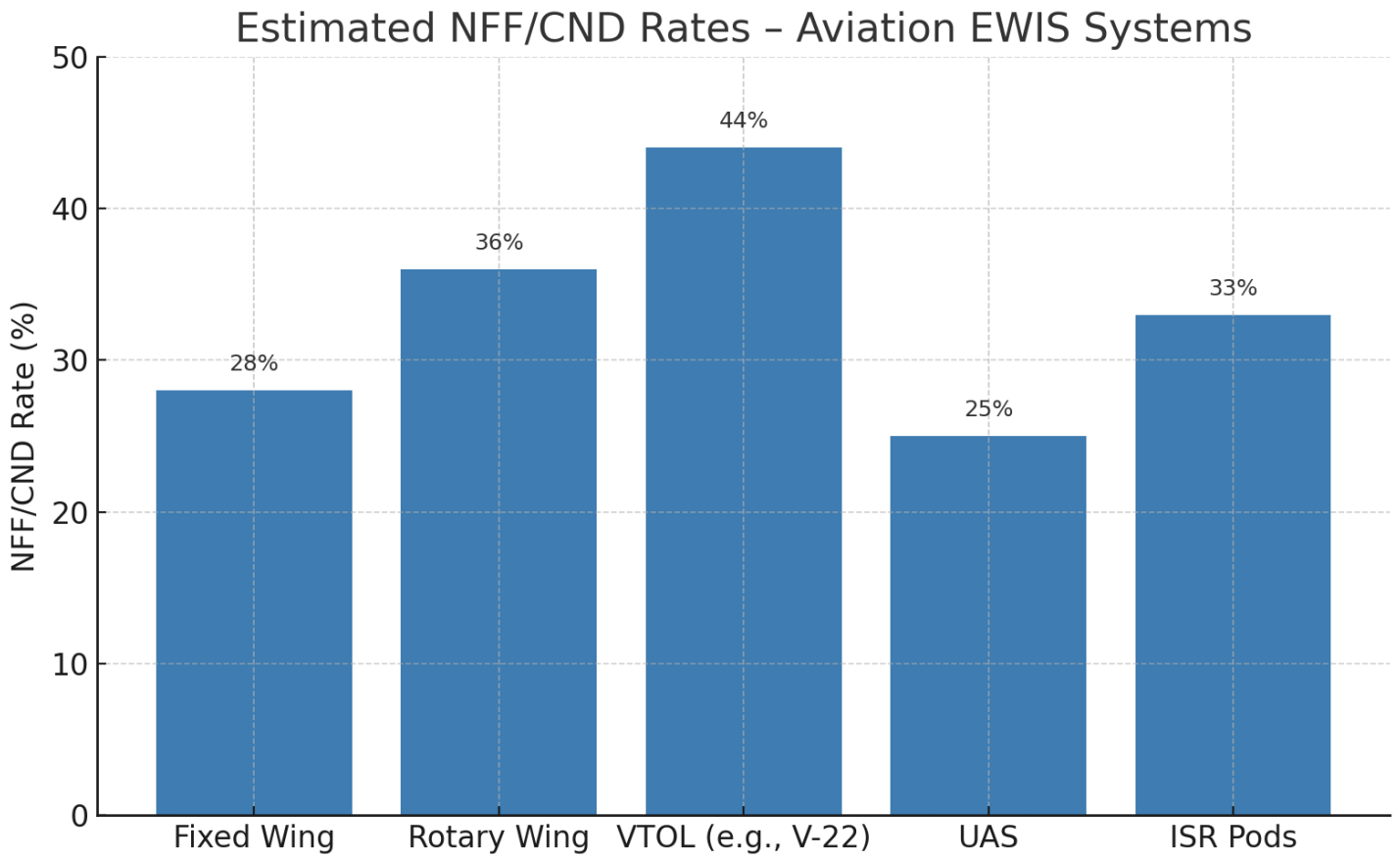
DoD-Wide Impact of No Fault Found Turn-ins

- NFF/FDI/CND rates range from 25–45% across DoD aviation systems
- Common outcomes:
  - Excessive maintenance man-hours and operational delays
  - Unnecessary removals, depot inductions, and supply churn
  - Reduced confidence in BITE/BIT diagnostics
  - Lowered Aircraft Availability (Ao) and readiness metrics
- Air Force and Army have active NFF working groups
- Navy efforts supported by JSWAG and platform sustainment teams

Cost Impact Examples

- In FY24, one Navy Type/Model/Series reported **over $18 million** in annual NFF returns from avionics LRUs alone.
- AMCOM analysis of Army UH-60/S-70 components showed **FDI rates above 37%** for mission-critical boxes.
- USAF Sustainment data shows **$50–70M/year** in unnecessary depot inductions due to NDN outcomes.

EWIS NFF/CDN


Estimated NFF/CND Rates – Aviation EWIS Systems
NFF/CND Rate (%)
0
10
20
30
40
50
28%
36%
44%
25%
33%
Fixed Wing
Rotary Wing
VTOL (e.g., V-22)
UAS
ISR Pods

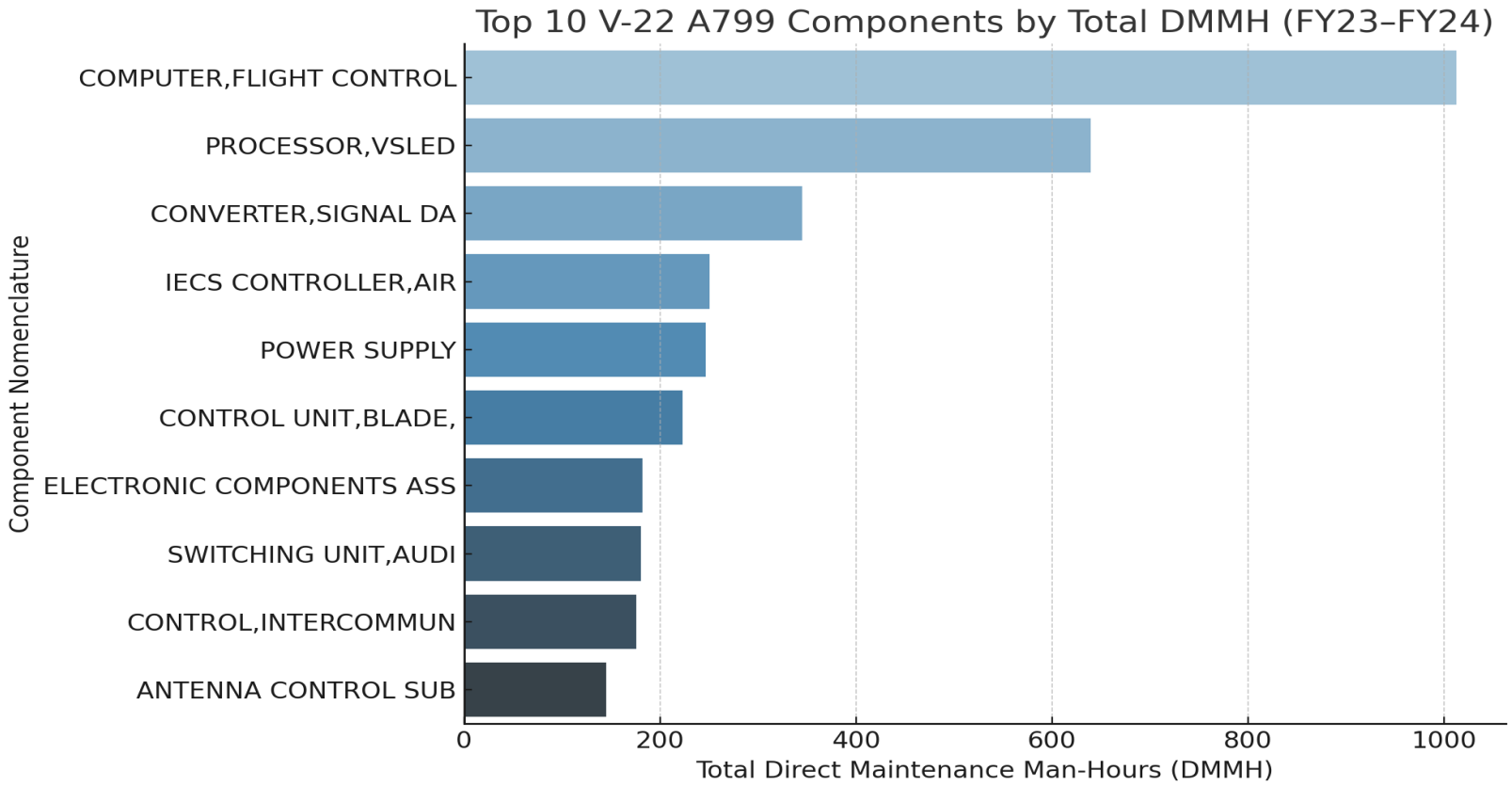
V-22 CND/A799 Rate over 2 Years

- 1,289 A799-coded MAFs logged on V-22 platforms over FY23–FY24
- Top 10 components account for over 50% of total labor burden
- Over 6,800 Direct Maintenance Man-Hours (DMMH) expended
- Common result: No Fault Found (NFF) or Cannot Duplicate (CND)
- Estimated labor cost: ~$820,000 (does not include supply impact)

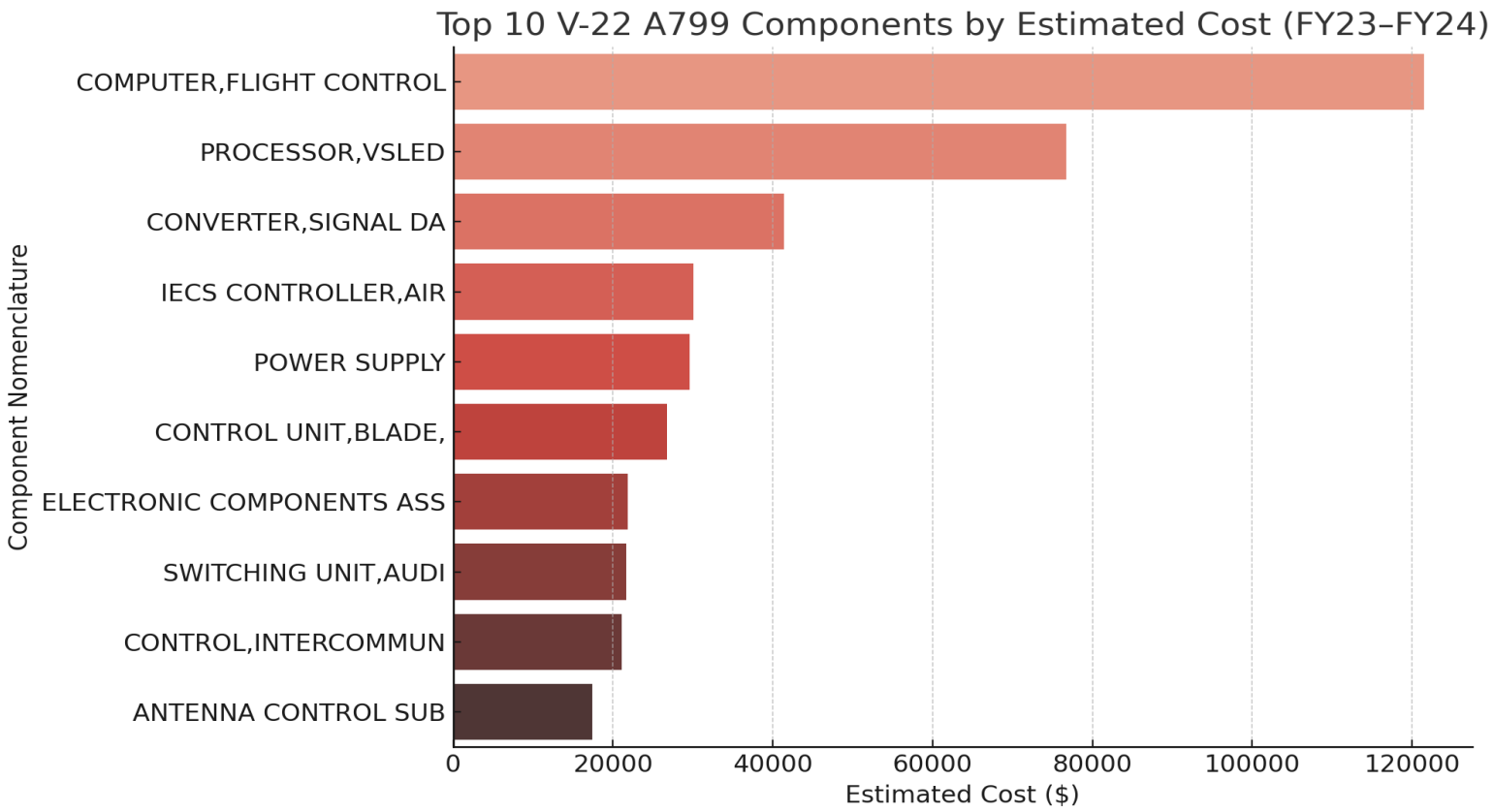
V-22 O-D Level Maintenance Plan

- During conceptual maintenance planning for the V-22, many of the WRAs were deemed an O to D-Level requirement.
  - Many of our turn in items go straight from O-Level to the vendor. This removes much of the fault data from the MAF Data.
    - Example Swashplate Actuator
    - High cost of Turn In when not Faulty

V-22 Top 10 A799 Components by DMMH (FY23–FY24)



V-22 Top 10 A799 Components by Estimated Cost (FY23–FY24)



MAF Narrative Examples – NFF / CND Trends

- "UUT PASSED TEST AND CHECK IAW RTCASS TESTING. RETURNED RFI."
- "WORKCENTER COULD NOT DUPLICATE GRIPE. NO FURTHER ACTION TAKEN."
- "WRA RAN RFI. SYSTEM TESTED GOOD. NO FAULT FOUND."
- "PERFORMED TEST/CHECK, NO FAULT VERIFIED."
- "SYSTEM CHECKED GOOD – COULD NOT DUPLICATE OPERATOR REPORTED ISSUE."
- "RETURNED UNIT TO FST WITH NO CORRECTIVE ACTION REQUIRED."

Root Cause Observations

- Limited O-level fault isolation tools for avionics and mission systems
- Over-reliance on BIT results without confirmatory diagnostics
- Operator-reported faults with no environmental or usage context
- Placeholder code A799 used broadly pending further disposition
- Minimal feedback loop between O-/I-/D-level and originating work centers

Recommendations

- Require tech assist or QA validation for top 10 components before removal
- Improve BIT logging and export to support actionable maintenance
- Establish a feedback loop from depot/I-level to fleet maintainers
- Implement NFF/CND tracking metrics at command and platform level
- Regularly review A799 MAFs for trend analysis and training opportunities

Backup – Part Number Cross-Reference

Component	Part Number	Total DMMH	Total Incidents
COMPUTER,FLIGHT CONTROL	901-305-150-111	1012.2999999999995	106
PROCESSOR,VSLED	901-305-900-105	380.6	36
PROCESSOR,VSLED	901-305-900-103	258.8	24
CONVERTER,SIGNAL DA	901-370-371-101	326.7999999999999	93
CONVERTER,SIGNAL DA	901-070-502-511	11.1	4
CONVERTER,SIGNAL DA	901-070-502-509	6.8	3
ECS CONTROLLER,AIR	901-325-116-103	206.7	39
ECS CONTROLLER,AIR	901-325-106-163	43.6	7
POWER SUPPLY	901-375-201-401	244.7	29
POWER SUPPLY	901-375-201-305	2.2	1