53rd Annual Fuzes Conference

20 May 2009

Briefer:
Marcelious Willis, Jr.
679 ARSS
DSN 875-1282

Distribution Statement A. Approved for public release; distribution unlimited.
Outline

- JPF System Description
- JPF Program Schedule
- Design Enhancement Qualification Status
- Sled Test Video– 15 Oct 08
- Aircraft Integration Update
- Initiatives
- Operational Reliability Summary
- Summary
JPF System Description

- System - FMU-152A/B, FZU-55A/B, Power Cable, Closure Ring
- Requirements Based from JDAM JORD (CAF 401-91-III-A, 10 Mar 01)
- Cockpit Selectable Arm/Delay Times In-flight Retargeting (Through JDAM)
- Interchangeable with Current FMU-124, FMU-139, and Some FMU-143 Applications
- Single Tail Fuze Compatible with MK80 Series, BLU-109, BLU-110, BLU-113, BLU-121, BLU-122 and BLU-126 Warheads
- Weapons: All JDAM Variants, AGM-130 and GBU-10/12/15/16/24/27/28
- AF & Allied Nations (AF Lead)
- Built by Kaman Precision Products, Incorporated (Orlando, FL / Middletown, CT)
# JPF Program Schedule

## EVENTS

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<thead>
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<th>EVENTS</th>
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<td>Design Enhancement Qual Tests</td>
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## TEST SCHEDULE

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## Progress

As of: 30 Apr 09

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Legend:
- **Milestone**
- **Complete**
- **Slip**
- **Task**
- **Progress**
- **Slip**
**Design Enhancement Qualification Status**

- **Enhanced Design JPF**
  - Changes Invisible to Operator
  - No Change to Way Fuze Operates
  - No Change to Nomenclature
  - No Change to Technical Orders

- **Purpose of Enhancements**
  - Producibility: Reduce Parts/touch Labor – Increase Production Yield
  - Testing: More Extensive Factory Test – Fewer Quality Escapes
  - Reliability: Deliver quality fuze

- **Qualification of Enhancements & 2\textsuperscript{nd} Production Facility**
  - Completed Last Two Sled Test 24 Sep & 15 Oct
  - Two Flight Test Sorties – Dec 08 & Jan 09
  - Begin Enhanced Design Production at 2\textsuperscript{nd} Facility – May 09

*Continuous Improvement*
Sled Test-15 Oct 08
Aircraft Integration Update

ON-GOING

B-52
B-1
B-2
F-16
F-15E
F-22A

NEW

A-10
MQ-9B

FUTURE

F-35

JPF Integration Occurs With JDAM
Initiatives

- JPF Hard Tgt Characterization – Gather JPF Survivability Data (>5K psi)
  - Phase I – Detonation Test & 2 Sled Tests (Complete)
  - Phase 2 – Eight Sled Tests (10K psi Tgts)
    - First Test Conducted Dec 07 – Successful
    - Second Test Conducted Jan 08 – Did Not Detonate
      - FA Conducted and Corrective Action Implemented
    - Third Test Conducted Jun 08 – Did Not Detonate
      - Fuze Damaged During Retrieval Limiting Ktr’s Investigation; FA Inconclusive
    - Fourth Test on 4 Feb 09 – Successful
- Retractable Actuator Study
  - Testing Complete; Data Supports Increased Shock Endurance From 40kGs to 70kGs
  - Production Implementation Projected by Aug 09
- FZU-55 Pull Force Study – Excessive Pull Force Measured During LAT
  - Pursuing Coined Groove vs. Photo-Etched Groove Process
    - 78 Out of 79 Prototype Pulls Successful
    - Production Implementation Projected by Aug 09
## Operational Reliability Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Expenditures</th>
<th>Total Reported Failures</th>
<th>Reliability</th>
<th>Relevant Failures</th>
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<td>Cum.</td>
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<td>150</td>
<td>97.6%</td>
<td>78</td>
<td>98.7%</td>
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**Reliability > 95% Requirement**
Summary

- Production Line Steady
  - 38,000 JPF Systems Placed in the Inventory
  - Operational Reliability Stable (98.7% a/o Apr 09)
- Ongoing Initiatives
  - Hard Target Characterization
  - Retractable Actuator Study
  - FZU-55 Coined Groove Design Validation
  - Working Lots 6-8 Negotiation Activities