Safety Management:
Theory to Practice
Safety Management

Safety Assessment Tools, Data Analysis, and Information Feed-Back

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Airframe Services Division
BFG Flight Safety Program

- Developed in 1997, the program introduced HF into the 3rd party maintenance organization.
  - Move from “Blame and Train” to a structured process of review, training, and oversight.
  - The programs success is keyed on recognizing that mistakes are normal, and that the error reduction process should always focus on factors that contribute to maintenance errors.
Creating Program Definition

• Development and support of HF programs by Senior management.
• Acceptance and promotion by mid-management
• Active participation by all members of the organization
  – Investigation
  – Data Analysis
  – Corrective Action
• Measurement
• Feedback / Training
Define an Error Threshold

- Determine Threshold for Errors Requiring Investigation.
  - Avoid low thresholds of investigations at first.
  - Standard Focus:
    - Regulatory Compliance
    - Aircarrier General Maintenance Procedures
    - CASE Audit Standards
    - Standard Maintenance Practices
Work Force Involvement

- Encourage reporting of errors
- Investigations are conducted with the participation of the general workforce
- Corrective actions are developed through collective ideas from workforce
- Operational/Follow-up audits are staffed utilizing workforce/QC/QA personnel
HF / Error Reduction Processes
Investigation

• Don’t Try to Become a human Factors Expert
• Structured Investigations
  – Use of MEDA investigation format for standard questioning.
  – Continue to ask “WHY”
    • Focus on the identification of contributing factors
  – Disciplinary action
Audit

• Ongoing investigations focused on the specifics of the error

• Through structured review processes, an awareness of the error is maintained
  – Follow-up Audit
  – System Evaluations
  – FAA Checklist Audit
Analysis

• Validation process to determine the extent and level of error
  – Survey similar areas of the organization
  – Review current policies/procedures
  – Customer Feedback

• Determine whether findings are isolated or actual symptoms of technical, policy, procedural, or managerial problems
Corrective Action

- Prevention Strategies and Controls
  - Focus on the identified contributing factors
    - Avoid “Blame and Train”
  - Proposed corrective actions must be measurable
    - How will it be know if it works?
  - Workforce participation in developing corrective action plan
• **Performance Analysis**
  
  – Follow-up audits
  
  – Pre-delivery discrepancies
    • Records accuracy tracking
    • QC task rejections
  
  – Customer feedback
    • Post delivery discrepancies
    • Dispatch reliability data
Pre-Delivery Metrics

No. of QC Walk Around Items
No. of Customer Walk around Items

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<th>A/C-1</th>
<th>A/C-2</th>
<th>A/C-3</th>
<th>A/C-4</th>
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Aerospace
Post Delivery Metrics

10 Days out of Check

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DATA BASE DEMO

Flight Safety Database

BF Goodrich

MEDA FORM
MEDA Browser
Follow-Up Screen
Reports Browser

SEDA FORM
SEDA Browser
AUDIT
Analysis Screen

DataBaseAdmin
EXIT DATABASE

MEDA 1.2
## REPORT CRITERIA:

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### Error Decision Aid Report

1. **Improper Installation**

   **Wrong Equipment / Part Installed**
   - Meda # 250: Wrong attaching hardware installed on LH Aileron Trim Tab.

   **Incomplete Installation**
   - Meda # 40: Bolt for Fail-safe link for the #8 flap carriage was left loose.
## MEDA Database Metrics

### Maintenance Error

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<th>Contributing Factors</th>
<th>Improper Installation</th>
<th>Improper Servicing</th>
<th>Improper/Incomplete Repair</th>
<th>Improper Fault Isolation/Inspection/Testing</th>
<th>Actions Causing Foreign Object Damage</th>
<th>Actions Causing Equipment Damage</th>
<th>Actions Causing Personal Injury</th>
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Metric Breakdown

Contributing Factor: Job / Task Error Breakdown

- Improper Installation
- Improper Servicing
- Improper/Incomplete Repair
- Improper Fault Isolation/Inspection/Testing
- Actions Causing FOD
- Actions Causing Equipment Damage
- Actions Causing Personal Injury
- Other
Training

• Specialized Feedback / Training based upon post delivery metrics, investigation results, and audit findings
• MRM/Human Factors Training
• FAA / Repair Station regulation and policy reviews
• Maintenance Error Investigator Training
• A positive change in culture
  – Enhanced communications
  – Experience levels increase
  – Reinforces management commitment
  – Reinforces positive change can be effected by the workforce.

• Participation in program reviews
  – Quality Review Teams evaluate program data
  – Share customer program metrics

• Program Champion
Continuous Improvement

- Participation in industry forums
  - Keep up with new developments

- Communication:
  - Customers / Workforce / FAA / OEM
    - Enhance methods of sharing program data
    - Work to eliminate the enforcement action fear
    - Reinforce the commitment towards safety
What’s Next?