Beyond the Flight Deck

The Role of Maintenance Personnel in Emergency and Abnormal Situations
Who Gets Involved?

1. Dispatch
2. Maintenance Control - SAMC
3. Engineering
4. Flight Ops duty manager
5. Engineering test flight
6. Flight Attendants
7. ATC
UAL Maintenance Control

- Located in IND, LHR and SFO
- Separate organization from line maintenance
- Technical training on respective fleet type
- Some flight ops training, ex. LOFT. Familiarity with flight manuals.
- Qualified by fleet or engine type
- Technical experts for line maintenance
- Primary customer is pilots
- Handle all in-flight maintenance issues
How Maintenance Control Gets Involved

- ACARs
- RDI
- ARINC
- SATCOM
- Dispatch
- Cell phone
- Air phone
Role of Maintenance Control

1. Provide technical support
2. Supplement flight manual
3. Suggested ‘fix’ depends on the operation
4. Think ‘outside the box’
5. Liaison with other support groups
Maintenance Control Tools

1. ECM – Engine condition monitoring
2. CMC – Central maintenance computer data downloads
3. C/B database
4. AMIS - Aircraft maintenance history
5. Supplemental databases and manuals
### 737-300/500 Circuit Breaker Database

<table>
<thead>
<tr>
<th>Circuit Breaker</th>
<th>Design</th>
<th>Amps</th>
<th>ATA</th>
<th>Panel</th>
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<th>Wiring</th>
<th>BUS</th>
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<td>737-300/500</td>
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<td>Flight Manual Procedures</td>
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<td>Primary Systems Affected</td>
<td>Right wing fuel tank (inc. 2) forward fuel boost pump.</td>
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<tr>
<td>Engr. &amp; Ops. Remarks &amp; Precautions</td>
<td>Cycling or resetting prohibited by Boeing Operations Manual QRH Cl. 2.2 Affected fuel pump will be inop. if CB tripped. Associated fuel pump low pressure light will be on. Maintenance may pull and reset this CB as part of maintenance procedures.</td>
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<td>MEL Considerations if Deferred (See MEL for Details)</td>
<td>28080 Fuel Boost Pumps-Main Tank One pump per main tank may be inop. CB for failed pump must be safetied. Maintain 4800 lbs. usable fuel in affected tank.</td>
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**Note:** If data block is full, click on scroll arrows to ensure all data is presented.

**Has this been evaluated in the simulator?**

**Has this been evaluated in the airplane?**

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**REQUESTS FOR ADDITIONS/CHANGES TO THIS DATABASE MUST BE ADDRESSED TO THE RESPONSIBLE FLEET SUPPORT ENGINEER IN OPSE3 (634-9977).**
Real Life Examples

1. DC10 – Loss of all hydraulics
2. 757 – SVA failsafe message
3. 757 – Unable to extend gear
4. 767 – Engine stall
5. MD83 - Stabilizer trim failure
Lessons Learned

1. Maintenance bias is to ‘fix it’
2. Crews need to establish clear expectations
3. Need good communication and coordination
4. Need better checklists and use of technology
5. Maintenance needs more crew orientated training, primarily around irregular procedures
Challenges for the Future

1. Define role of maintenance
2. Address FAA concerns
3. Finding qualified candidates
4. Develop better training and checklists
5. Find ways to make technology work for you