

# AIRCRAFT WIRING ISSUES

Master Minimum Equipment List (MMEL)  
&  
Operator Minimum Equipment Lists (MEL)

Presented by FAA/ATA MMEL Industry Group

# MMEL Development

- MMEL development is a joint FAA/industry or a JAA/manufacturer process.
- FAA process includes aircraft manufacturers, operators and labor groups working together to draft MMELs and revision proposals.
- Damaged wiring is not uniquely considered a failure mode for MMEL evaluation. It is a certification issue and is outside the scope of the MMEL development process.

# MMEL Philosophy

- The MMEL is intended to permit operation with inoperative equipment for a limited period of time until repairs can be accomplished.
- The MMEL is not intended to provide troubleshooting/fault isolation guidance nor does it provide instructions to effect repair.
- The MMEL is not intended to be used to allow operation with un-repaired, damaged wiring (such as chafed, cut, improperly shielded, etc.).

# MMEL Proposal Analysis

- The typical analysis associated with the evaluation of an MMEL proposal includes a review of the failure effects associated with the inoperative item as well as the effects associated with a subsequent failure of the next critical component, the interrelationships between items that are inoperative, the impact on flight crew procedures and the increase in flight crew workloads.
- This analysis typically does not include an evaluation of the various failure modes of the inoperative item because the MMEL is only used after the item has been determined to be inoperative.

# MEL Procedures

- Appropriate restrictions and/or procedures are established to ensure an acceptable level of safety is maintained during the MEL deferral period.
- These procedures may include deactivation of the electrical power circuit to ensure the end unit, such as a pump or seized fan, does not overheat. Valve or actuator circuits may be deactivated to ensure they remain in the proper position for dispatch.
- However, these procedures to remove or deactivate electrical power are not uniquely developed to protect against the possibility of damaged wiring.

# MEL Deferrals

- A basic premise of an MEL deferral is that sufficient troubleshooting/fault isolation has occurred prior to applying the dispatch relief potentially available via the MEL.
- If wiring damage has been identified, it should be repaired per the guidance contained in the Aircraft Maintenance Manual, Standard Wiring Practices Manual or Electrical Standards Practices Manual.

# Conclusion

- The MMEL development process includes deactivation for certain items. More than thirty years of in-service experience has shown that not all items require deactivation.
- Basic troubleshooting/fault isolation occurs prior to deferral. Wiring faults uncovered prior to deferral or during the MEL deferral period must be addressed.
- Aircraft design, manufacturing processes and continuous airworthiness maintenance programs should employ materials, techniques and tasks designed to eliminate or reduce the occurrence of in-service wiring defects.