



Electrical Wiring Proposed Rulemaking

NBAA Convention

October 6, 2003



EWMS

The Future of
EWMS Systems
Certification



What is an EWIS?

Electrical Wiring Interconnection System

An electrical connection between two or more points including the associated termination devices and the necessary means for its installation and identification.

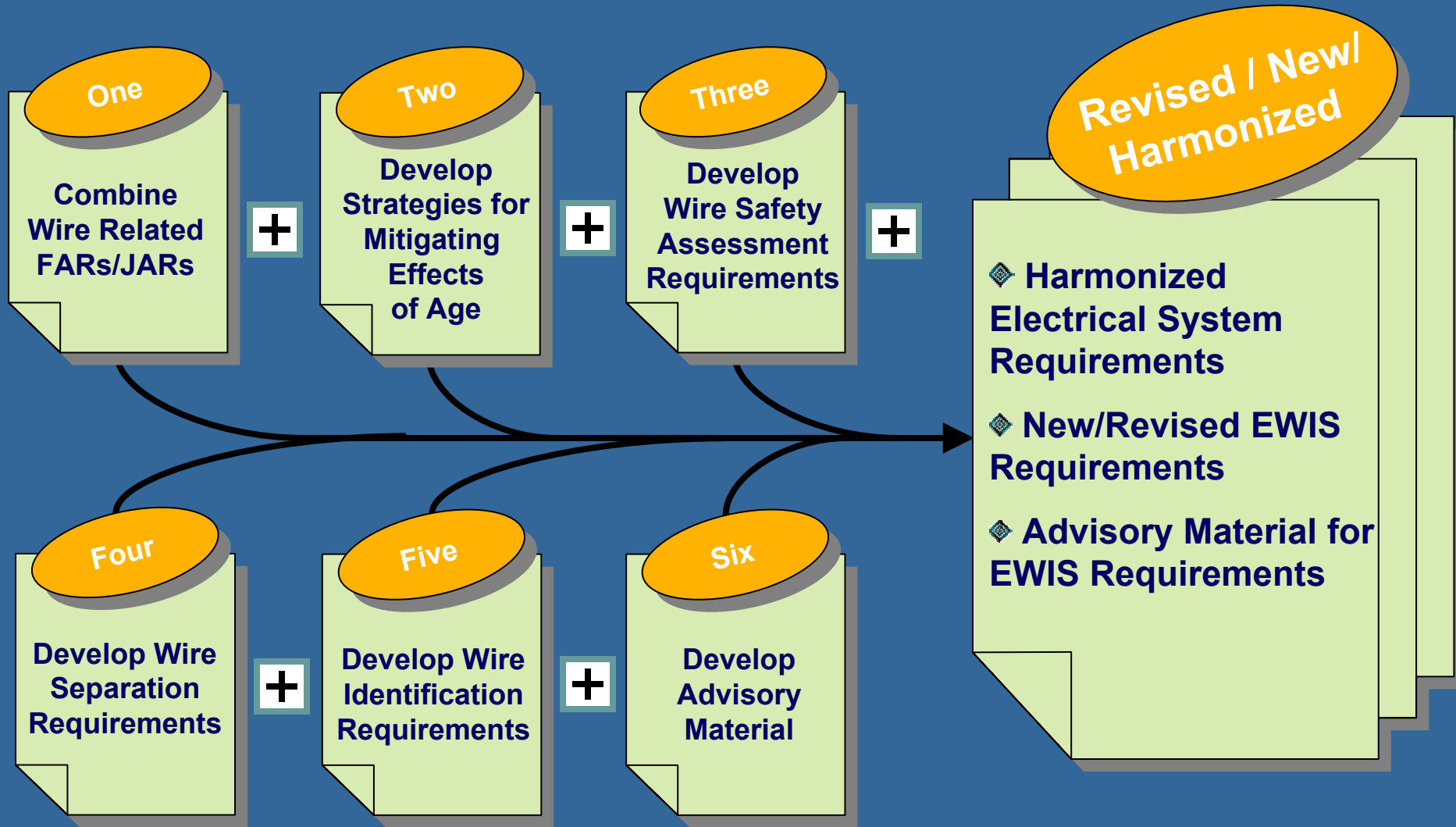


Is There a Single EWIS?

- The answer is NO
- Each airplane contains multiple electrical wiring interconnection systems
- Think of EWIS as a sub-system that supports an airplane-level system(s)
 - Without the EWIS system, the system for which it provides electrical interconnection could not function
 - An EWIS may support a single airplane system or multiple airplane systems



How Were the New EIWS Requirements Developed?





EWIS System Separation

Replaces 25.1353(b) (**among others**)

- **Addresses known separation issues**
 - **Electrical interference**
 - **Heavy-current carrying cables**
 - **Power source separation and isolation**
 - **Fuel systems**
 - **Hydraulic systems**
 - **Oxygen system**
 - **Waste/water system**
 - **Flight or other mechanical control systems**
 - **Heated equipment, hot air ducts and lines**
 - **Aircraft structure**

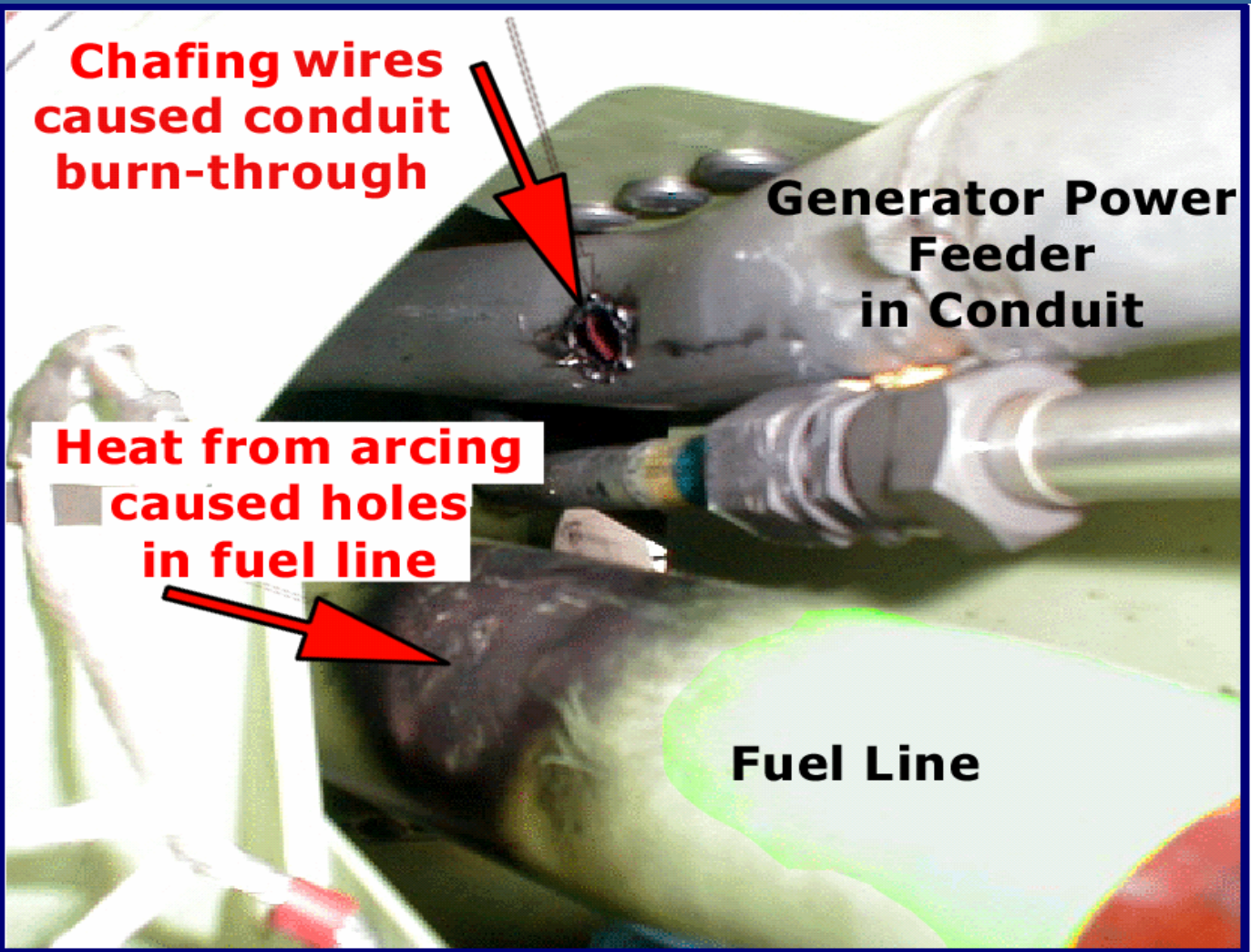


Importance of:

- Wiring Identification,
- Wiring Separation, and
- Wiring System Safety Assessment



Conduit Wire Chafing



**Chafing wires
caused conduit
burn-through**

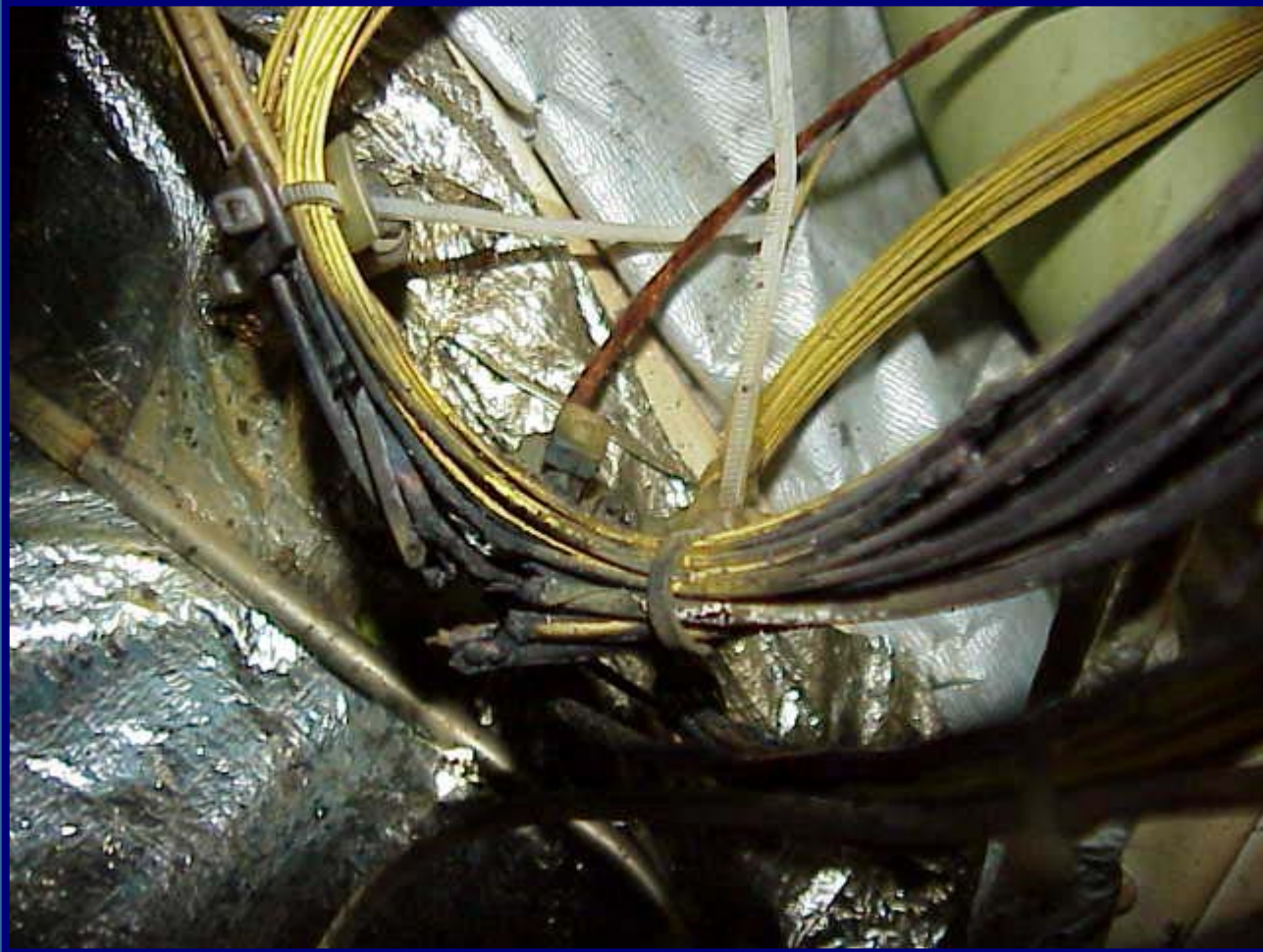
**Generator Power
Feeder
in Conduit**

**Heat from arcing
caused holes
in fuel line**

Fuel Line

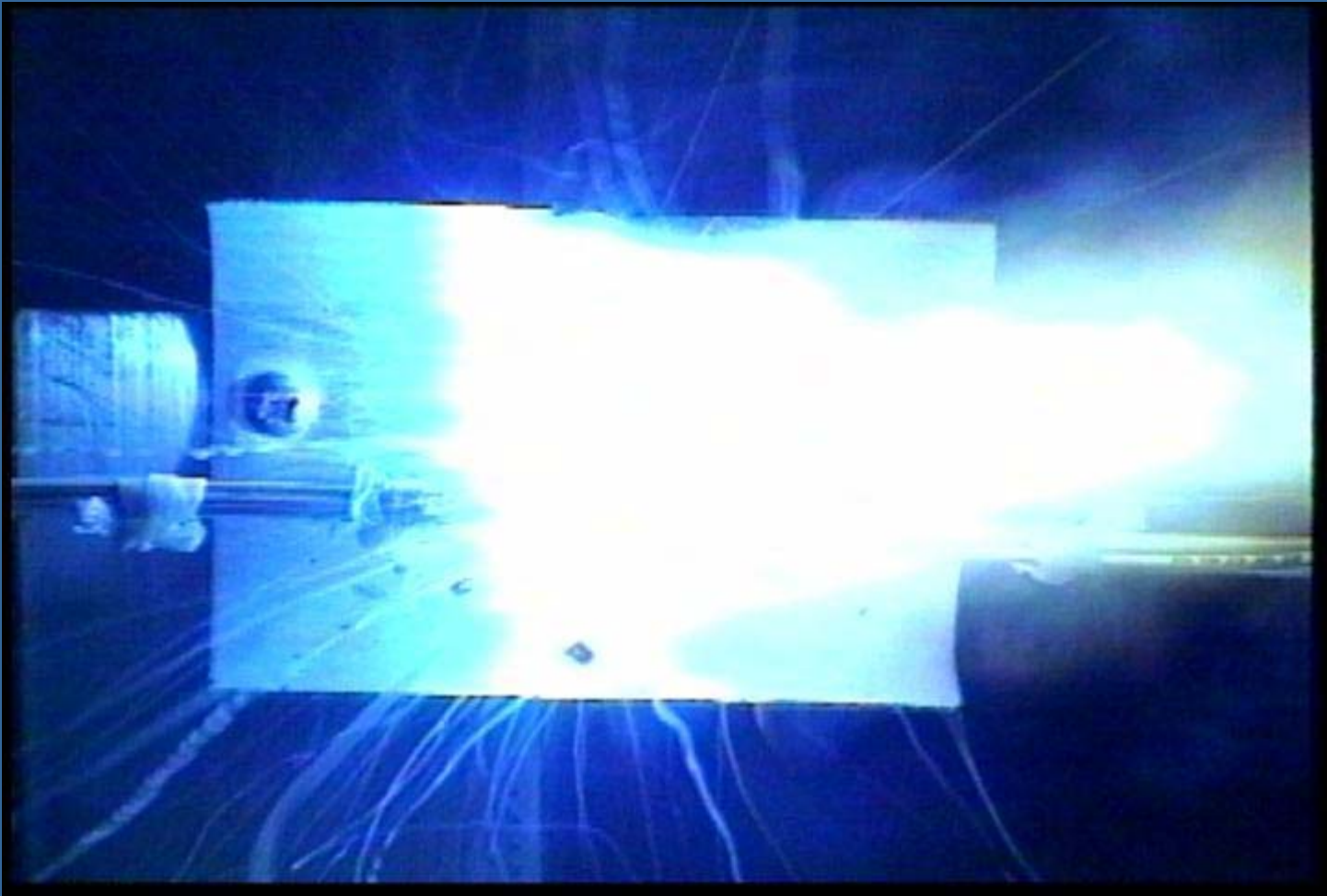


Failure of Wire





Wet Arc Wire Bundle Failure





Any Question?