



**NTSB** National Transportation Safety Board

*Office of Aviation Safety*

# **American Airlines Flight 1400 St. Louis, Missouri**

Maintenance Issues

Ron Price



# Air Turbine Starter Valve History

- Replaced **six** times in twelve days
- **Twice** placed back in service
- **Four** times deferred and put on MEL
- **Three** times MEL cleared

# ATSV Alert History

- First alert September 16
  - Cleared after successful operation of start system
- Second alert September 17
  - Troubleshoot wiring recommended
  - ATSV replaced and remained on MEL (no filter in stock)
- Third alert September 27
  - ATSV operation deferred and placed on MEL
  - Troubleshoot wiring recommended

# ATSV Discrepancy History

- Fleet wide review
  - 27 additional reported engine start-related maintenance items
  - 18 deferred and put on MEL
  - All MELs cleared
  - No repeat discrepancies reported

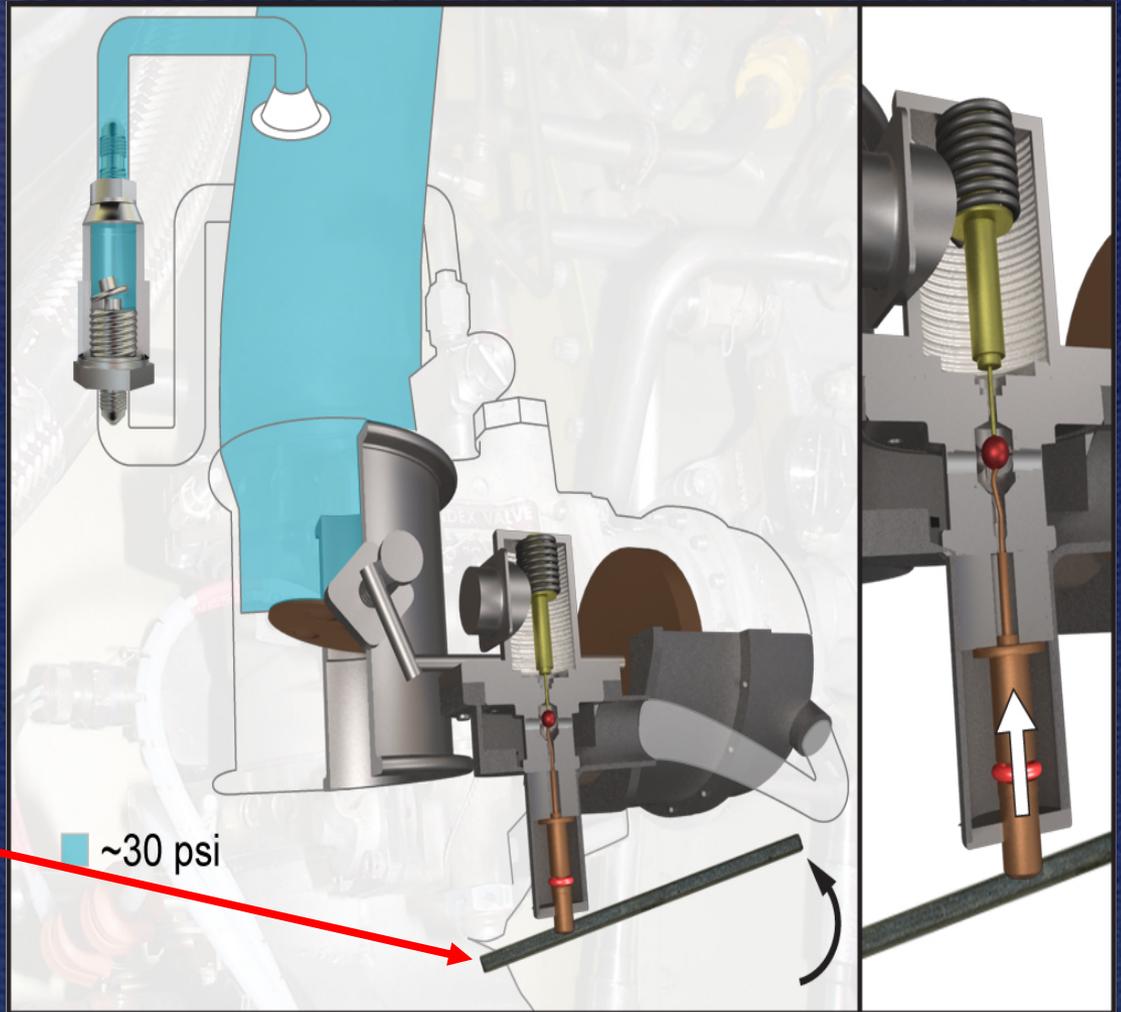
# Maintenance Findings

- ATSV – Air Filter
  - Maintenance records indicate “C” check cleaning
  - Severely deteriorated
  - “Removed and replaced”
- ATSV
  - Manual override pin bent
  - Line mechanics used unapproved manual start procedure

# AA1400 Lever Use

Lever used to push up on manual override pin

Lever



# CASS Program

- Designed to identify and correct factors that could lead to an accident
- Did not
  - Ensure inspection and maintenance program effective
  - Recognize repeated failed engine starts, ATSV replacements, and MEL deferments
  - Ensure that maintenance personnel adhered to proper maintenance inspections and procedures

# Maintenance Safety Issue

CASS did not adequately detect and correct maintenance performance deficiencies before they contributed to an accident



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