



**NTSB** National Transportation Safety Board

*Office of Aviation Safety*

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

Lorenda Ward

Investigator-in-Charge



# History of Flight

- At the gate, left engine would not start
  - Manual start attempted and failed
  - 2<sup>nd</sup> manual start succeeded
- Shortly after takeoff
  - Flight crew comments on the left engine air turbine starter valve (ATSV) light
  - Left engine fire warnings alerted
- Declared emergency and returned to STL

# History of Flight

- Go-around executed
- Landed and stopped airplane on runway
- Aircraft rescue and firefighting on-scene upon arrival
- While on runway
  - Fuel inadvertently reintroduced to engine
  - Left engine fire warnings alerted
- Passengers deplaned

# Investigative Findings

- ATSV-air filter disintegrated
  - Cleaning procedures not followed
  - Damage not detected
- Multiple previous engine no starts
  - Condition not recognized or addressed
- ATSV manual override button internal pin bent
- Flight crew delayed or did not complete checklists

# Safety Issues

- ATSV-air filter replacement intervals
- American Airlines' CASS program deficiencies
- Characteristics of the ATSV-Open light
- Emergency task allocation guidance
- Guidance and training on interrelationship between pneumatic crossfeed valves and engine fire handles

# Safety Issues

- Multiple simultaneous emergencies training
- Guidance on evacuation preparation on the ground
- Communications between flight and cabin crews during emergency and unusual situations

# Parties to the Investigation

- Federal Aviation Administration
- American Airlines
- Boeing Company
- Pratt & Whitney
- Honeywell
- PTI Technologies, Inc.
- Allied Pilots Association
- Transportation Workers Union
- Association of Professional Flight Attendants
- Lambert-St. Louis International Airport



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