National Transportation Safety Board

American Airlines flight 2253 Jackson Hole, Wyoming

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Investigator in Charge

Incident Summary

- December 29, 2010
- American Airlines flight 2253
- Boeing 757-200, N668AA
- Stopped 730 feet off end of runway 19
- No injuries,185 passengers/crew
- Minor damage to airplane
- Full NTSB incident investigation

Incident Summary

- Normal takeoff, cruise, descent
- Flight crew pre-landing analysis
  - Available weather & runway conditions
  - Verified airplane performance
  - Crew: “legal and safe” to land
  - Stop in first 2/3 of runway
  - MAX auto wheelbrakes & thrust reversers

Incident Landing

NTSB

Investigation Findings

- Examined air/ground, automatic speedbrake, and thrust reverser systems
- Air/Ground signal
  - Normal operation with no faults found
  - Most likely “unloading event”
  - Normal acceleration inoperative

Investigation Findings

- Thrust reverser system
  - No preexisting defects found
  - System designed to handle an unloading event
  - Auto restow system provides an alternate electrical source
  - Would continue to extend normally

Investigation Findings

- Thrust reverser system
  - Sync-lock mechanism locked in transit
  - Thrust reversers began to extend
  - <u>Before</u> the auto restow activated
  - Air/ground signal changed to “air”
  - Hydraulic/mechanical lock

Investigation Findings

- Thrust reverser system
  - Locked condition would remain until 5 seconds after reverser levers stowed
  - Incident thrust reversers briefly stowed and then deployed 5 seconds later
  - Pilots interviewed were not aware of this system operation

Investigation Findings

- Automatic speedbrake system
  - Armed before landing
  - On-scene testing – normal operation
  - Automatic speedbrake system failed again 3 months later
  - Automatic speedbrake mechanism removed and examined by NTSB

Investigation Findings

- Automatic speedbrake system
  - Preexisting assembly defect in no-back clutch mechanism
  - Intermittent failure of automatic speedbrake system
  - No effect on manual speedbrake deployment or retraction

Investigation Findings

- Automatic speedbrake system
  - No previous similar events documented
  - Manufacturer clarified assembly documents
  - Boeing issuing Fleet Team Digest

Safety Issues

- Pilot training concerning automatic speedbrake failure
- Alert if speedbrakes are not deployed
- Awareness of thrust reverser lockout

Safety Issues

- Pilot training related to multiple emergency/abnormal situations
- Pilot training related to monitoring skills and workload management

NTSB Staff

- Dan Bartlett
- Roger Cox
- Dennis Crider
- Pocholo Cruz
- Mark George
- Mike Hauf
- Marie Moler
- Amy Penwell
- Jodi Reeves
- Mike Richards
- Greg Smith
- Bill Tuccio
- Katherine Wilson

Parties to the Investigation

- Allied Pilots Association
- The Boeing Company
- Federal Aviation Administration
- Transport Workers Union of America

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