ICAO Accident/Incident Investigation Workshop, Mexico 2015

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Who is Textron Aviation?
Air Safety Investigations (ASI)
Qualifications

- 9 College Degrees
- 5 Advanced Degrees
- Pilot Certificates
  - 4 CFI-I
- 9 A & P Mechanic Certificates
  - 4 Inspection Authorizations
- 140+ years of investigation experience
- 1,400+ field investigations
Primary Duties

- Provide assistance to NTSB, FAA, and foreign governments
- Conduct an accurate detailed investigation
- Reports
  - Field Notes
  - Preliminary
  - Final
    - Company Management
    - Engineering Department
- Offer technical assistance during separate component analytical examinations
• Fatal Injury
• Serious Injury
• When our help is requested
• Special interest
  – New production singles
  – Trends
  – Survivability
    • New seats and rails on new production singles
    • 206 rear door system
    • Air bags
Simple single engine
Challenging
Climb Up
Mountain Top
Swamp
Wind 30 knots; Temperature -20° F
Snow, 4’ Deep
Winds, Calm; Temperature 80° F; Sand, Warm
All Here
Consumed by fire
Notification of Accidents

- NTSB or Foreign Authority notification
- FAA Preliminary Accident and Incident Reports
- Local and International news services
- Law Enforcement
- Other manufacturers
On Call

24/7
Questions?
Case Studies

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Case Study 1

- Cessna 172M
- San Juan, PR
- During final approach
  - Fernando Luis Ribas Dominicci Airport (TJIC)
- Pilot reported problems with aileron control
- Aircraft impacted the water surface with the right wing tip
  - The aircraft cart wheeled and disappeared below the water surface
- Pilot received fatal injuries
Investigation

- All flight control surfaces were observed and attached
- Left and right wings remained attached to fuselage
- Control cable continuity was established
  - Through multiple cable separations
- Flap actuator was found at 10º
- Elevator trim was found with 10º tab up
- Co-pilot control yoke was fractured
  - Recovered within the pilot’s hands
- Pilot control yoke remained attached
  - Operation and continuity of the control yoke was confirmed
Investigation

- Ailerons interconnect control cable exhibited broomstrawing
- Right aileron direct control cable was found separated
- Top left doorpost pulley exhibited signs of scoring on the rim
Aileron Pulley
“Maintenance personnel’s improper lubrication of the right direct aileron control cable and failure to detect the severe corrosion of the cable during a maintenance inspection, which resulted in the in-flight failure of the cable, the pilot’s subsequent inability to maintain aircraft control, and the airplane’s impact with terrain.”
Questions?
Case Study 2

- 525B (CJ3)
- Sao Paulo, Brazil
- Owner is PIC
- Low time co-pilot
- Landed at Congonhas Airport (SBSP)
  - Runway 35R (4,708’ x 148’ Asphalt)
- Aircraft exited the end of Runway 35R
  - Impacted the perimeter fence
- Crew reported brake issues to SERIPA
Investigation

- Aircraft flying too fast and too high.
- Aircraft touched-down halfway down the runway and bounced.
- Touched-down a second time almost at end of runway.
- Radar shows aircraft airspeed of 170 knots
  - 100’ from Runway 35R threshold
- Landing calculations
  - Approach Speed (Vapp) of 117 knots
  - Touchdown Speed (Vref) of 107 knots
- Flaps 15° (Takeoff and Approach)
- The tires had no flat spots, the wheels spun normally, and the brake pads were not worn.
Questions?