

Operations / Human Performance



Operations / Human

Performance

- Activities associated with N47BA operations
- Flight crew qualifications and background
- Oxygen & pressurization systems procedures and training
- Crew actions at the time of the event



N47BA Operations

- No operational anomalies at Sanford
- No operational anomalies at Orlando
- No operational anomalies departing Orlando, up to and including last radio transmission



Flight Crew

- - Both held Learjet 35 type rating
 - Captain
 - 4,280 hrs total time, 60 hours Learjet time.
 - First Officer
 - 1,751 hrs total time, 99 hours Learjet time



Flight Crew

- Favorable comments about skills and abilities from supervisors and peers
- No pre-existing medical, behavioral, or physiological factors that might have affected their performance
- No evidence that fatigue contributed to the accident
- Certificated and trained in accordance with company & FAA requirements



Pressurization & Oxygen System Training

- **Ground training**
 - Aircraft & Operating manuals
 - Computer-based systems training
- **Aircraft training**
 - Preflight & Configuration procedures
 - Normal operations
 - Abnormal & Emergency procedures



Warnings and Indicators

- Physical sensations
- Cockpit display
 - Cabin altitude, differential pressure, cabin rate of climb
- Cabin altitude aural warning
 - 10,000 feet cabin altitude
 - Discrete horn, can be silenced for 60 seconds
- Passenger masks
 - Drop at 14,000 feet cabin altitude



Loss of Pressurization Procedure

- Pressurization loss at altitude:
Up to 10,000 (\pm 500) Feet Cabin Altitude

| | |
|------------------------------------|-------------|
| 1. Oxygen Masks..... | Don |
| 2. Engine RPM..... | Maintain |
| 3. IN NORMAL OUT DEFOG Knob..... | Push in |
| 4. WSHLD Heat Switch..... | AUTO |
| 5. CABIN AIR Switch..... | OFF |
| 6. AUTO MAN Switch..... | MAN |
| 7. UP DN Manual Control (red)..... | As required |



Loss of Pressurization Procedure

- Pressurization loss at altitude (continued):
At 10,000 (\pm 500) Feet Cabin Altitude

1. Cabin altitude aural warning horn will sound
2. If cabin pressurization cannot be maintained, execute EMERGENCY DESCENT as follows:

- a. Oxygen Masks..... Don. Select 100% oxygen
- b. Thrust Levers..... Idle
- c. Autopilot..... Disengage
- d. Spoilers..... Extend
- e. Landing Gear..... Down as appropriate
- f. Descend at M_{MO} or V_{LE} As appropriate for altitude



Closure of Flow Control Valve

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- **Possibility considered: cabin air was not turned on before departure**
 - Cabin would have been unpressurized
 - Ear discomfort
 - Cabin altitude aural warning
 - No signs of hypoxia during radio communications



Closure of Flow Control Valve

- **Possibility considered: cabin air was selected off during flight**
 - Switch not normally used in flight
 - Switch is part of checklist used in loss of pressurization
 - Emergency pressurization requires additional steps to be accomplished
 - Cues would have been ignored



Failure to Receive Supplemental Oxygen

- **Possibility considered: crew did not don oxygen masks**
 - Impairment because of hypoxia
 - Troubleshooting
- **No evidence why crew did not receive supplemental oxygen**
- **Recommendations have been proposed**

