



National Transportation Safety Board



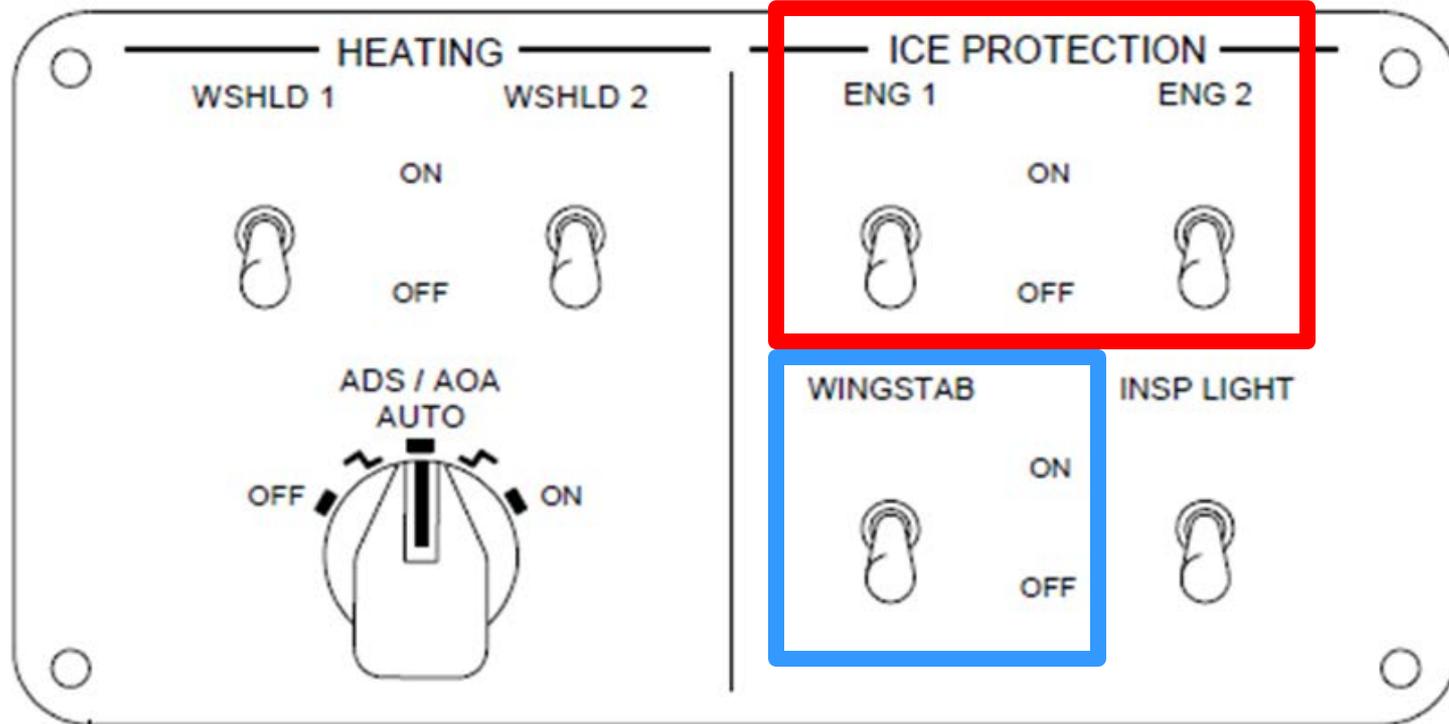
Operational Issues

Operations Group Chairman
Presentation

Pre-Takeoff Checks

- Pilot appeared to be in a hurry
- CVDR– pilot did not do takeoff configuration check
- Abbreviated pre-takeoff checks
 - Experienced EMB-500 pilot: 9:19
 - Accident Flight: ~ 6:00
- Inaccurate weight input

Anti-Ice/Deice System Operation



ICE PROTECTION/HEATING
CONTROL PANEL

EMB-500 Icing Procedures

- Icing procedure requirements
 - Engine anti-Ice: Visible moisture and temp below 10 deg. C
 - Wing/Stabilizer deice: Visible moisture and temp below 5 deg. C
- Visible moisture defined in AFM
 - Clouds, fog, rain, snow, sleet, and ice crystals
- Pilot used ice protection systems during cruise

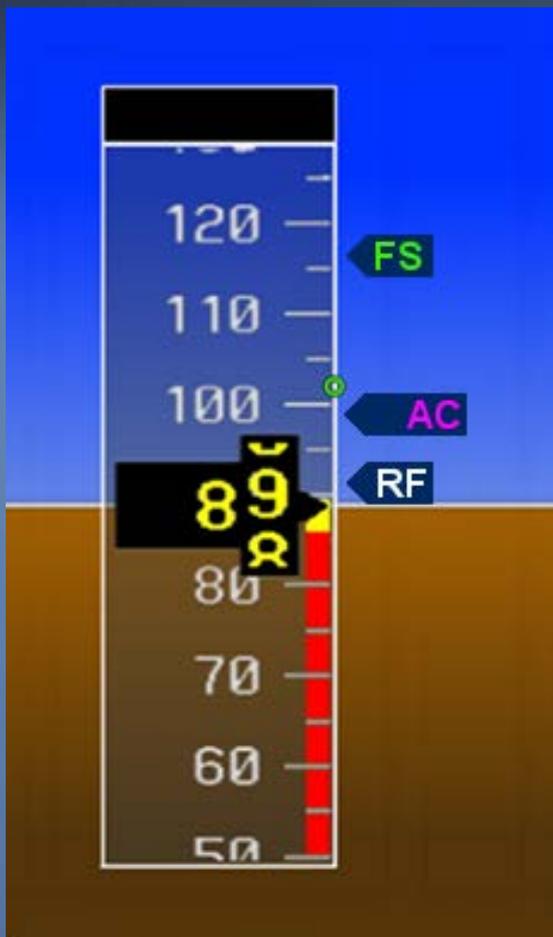
Weather Conditions During Approach

- Pilot listened to GAI weather prior to descent
 - Overcast clouds at 2,800 feet
 - Temperature: -1 deg C
- Conditions conducive to icing for descent
 - Visible moisture and temperature less than 5 deg C
- Pilot should have planned for approach in icing conditions
- Clouds and snow encountered during approach

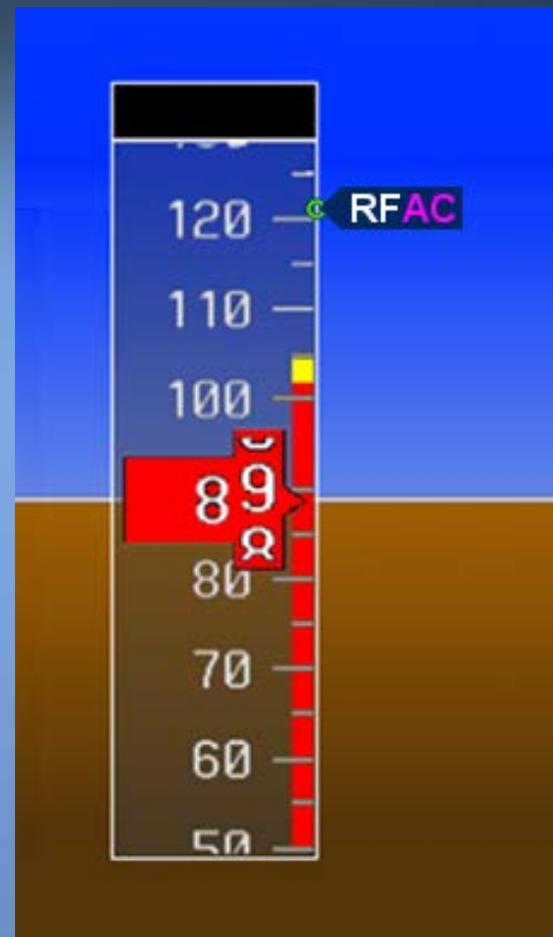
Landing Speeds

- Accident flight landing speeds
 - Pilot entered a final approach speed of 92 knots, for a non-icing approach at full flaps
- Appropriate landing speeds
 - Flaps 3 maximum due to single-engine climb
 - Calculated final approach speed should have been 126 knots
- The accident approach was flown 34 knots below the appropriate speed of 126 knots.

Landing Speeds



Deice not activated



Deice activated

Landing Distance

- Available runway length
 - 4,202 feet
- Runway requirement based on accident approach speed
 - 2,441 feet
- Calculated runway requirement
 - 4,117 feet

Possible Scenarios

- Reasons for non-use of ice protection systems
 - Concerned about runway length
 - Forgot due to task saturation
 - Did not properly assess icing impact on airplane performance

Icing Cues



TAT 24°C | SAT 24°C

Winter Weather Operations

- Enhanced training guidelines
 - Risk management
 - Ice protection system usage
 - Importance of adhering to checklists



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