



National Transportation Safety Board Aviation Accident Final Report

| | | | |
|-------------------------|----------------------------|-------------------------|-------------|
| Location: | HIBBING, MN | Accident Number: | CHI93MA061 |
| Date & Time: | 01/02/1993, 1942 CST | Registration: | N342PX |
| Aircraft: | Saab-Scania AB (Saab) 340A | Aircraft Damage: | Substantial |
| Defining Event: | | Injuries: | 31 None |

Flight Conducted Under: Part 135: Air Taxi & Commuter - Scheduled

Analysis

DURING THE APPROACH, THE 1ST OFFICER (FO) ASKED THE CAPT IF HE WANTED TO '...POP THE BOOTS?' TO REMOVE ICE OFF THE WINGS. THE CAPT RESPONDED '...IT'S GOING TO THE HANGAR. I'LL RUN'EM ON THE GROUND...' THE FO RETARDED POWER OVER THE THRESHOLD & THE SINK RATE INCREASED; THE CAPT OBSERVED 900 FPM. THE FO APPLIED ADDITIONAL BACK PRESSURE ON THE YOKE, BUT IT WAS INADEQUATE TO ARREST THE HIGH SINK RATE. ADDITIONAL BACK PRESSURE WAS APPLIED, AND THE STALL HORN SOUNDED FOLLOWED SHORTLY THEREAFTER BY THE CAPT STATING 'I GOT IT.' DURING THE HARD LANDING THE RIGHT MAIN LANDING GEAR BROKE, THE FUEL TANK RUPTURED, AND THE RIGHT WING REAR SPAR BENT UPWARD. APRX 18 HRS AFTER THE ACCIDENT, 3/16 INCH OF RIME MIXED WITH CLEAR ICE WAS OBSERVED ON THE LEADING EDGES OF THE WING, HORIZ STAB, AND VERT STAB. THE ICE HAD FINGER-LIKE PROTRUSIONS POSITIONED VERTICALLY TO THE WING SURFACES. THE COMPANY'S LINE OPS MANUAL DOES NOT DISCUSS FLIGHT CHARACTERISTICS OR LANDING TECHNIQUES SPECIFIC TO WING ICE. NEITHER PILOT HAD RECEIVED COMPANY'S CURRENT CRM TRAINING.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE FIRST OFFICER'S FAILURE TO MAINTAIN A PROPER DESCENT RATE DURING THE LANDING, AND THE CAPTAIN'S INADEQUATE SUPERVISION BY NOT TAKING TIMELY ACTION TO ENSURE A SAFE LANDING. FACTORS WHICH CONTRIBUTED TO THE ACCIDENT WERE: THE COMPANY'S FAILURE TO PROVIDE ADEQUATE TRAINING ON THE AIRPLANE'S FLIGHT CHARACTERISTICS AND/OR HANDLING TECHNIQUES UNDER CONDITIONS OF WING ICE CONTAMINATION, THE COMPANY'S FAILURE TO ASSURE THAT BOTH PILOTS HAD RECEIVED THE CURRENT CREW RESOURCE MANAGEMENT (CRM) TRAINING, AND THE EXISTING WEATHER CONDITIONS WHICH RESULTED IN AN ACCUMULATION OF ICE ON THE AIRPLANE'S WING.

Findings

Occurrence #1: HARD LANDING

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

1. LIGHT CONDITION - DARK NIGHT
2. (F) WEATHER CONDITION - SNOW
3. (F) WEATHER CONDITION - DRIZZLE/MIST
4. (F) WEATHER CONDITION - ICING CONDITIONS
5. (F) WING - ICE
6. ANTI-ICE/DEICE SYSTEM - NOT USED
7. (C) PROPER DESCENT RATE - NOT MAINTAINED - COPILOT/SECOND PILOT
8. (F) INADEQUATE TRAINING - COMPANY/OPERATOR MANAGEMENT
9. (C) SUPERVISION - INADEQUATE - PILOT IN COMMAND
10. (F) INADEQUATE TRAINING - COMPANY/OPERATOR MANAGEMENT

Occurrence #2: MAIN GEAR COLLAPSED

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

11. LANDING GEAR,MAIN GEAR STRUT - OVERLOAD

Factual Information

Pilot Information

| | | | |
|----------------------------------|---|--|----------------------------|
| Certificate: | Airline Transport | Age: | 30, Male |
| Airplane Rating(s): | Multi-engine Land; Single-engine Land; Single-engine Sea | Seat Occupied: | Left |
| Other Aircraft Rating(s): | None | Restraint Used: | Seatbelt, Shoulder harness |
| Instrument Rating(s): | Airplane | Second Pilot Present: | Yes |
| Instructor Rating(s): | Airplane Multi-engine; Airplane Single-engine; Instrument Airplane | Toxicology Performed: | No |
| Medical Certification: | Class 1 Valid Medical--no waivers/lim. | Last FAA Medical Exam: | 11/25/1992 |
| Occupational Pilot: | | Last Flight Review or Equivalent: | |
| Flight Time: | 6500 hours (Total, all aircraft), 2800 hours (Total, this make and model), 195 hours (Last 90 days, all aircraft), 75 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft) | | |

Aircraft and Owner/Operator Information

| | | | |
|--------------------------------------|------------------------------|---------------------------------------|----------------------------|
| Aircraft Make: | Saab-Scania AB (Saab) | Registration: | N342PX |
| Model/Series: | 340A 340A | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | No |
| Airworthiness Certificate: | Transport | Serial Number: | 340A-147 |
| Landing Gear Type: | Retractable - Tricycle | Seats: | 33 |
| Date/Type of Last Inspection: | 01/02/2000, AAIP | Certified Max Gross Wt.: | 27275 lbs |
| Time Since Last Inspection: | | Engines: | 2 Turbo Prop |
| Airframe Total Time: | | Engine Manufacturer: | GE |
| ELT: | | Engine Model/Series: | CT-7 |
| Registered Owner: | STATE BANK AND TRUST COMPANY | Rated Power: | 1735 hp |
| Operator: | EXPRESS I | Operating Certificate(s) Held: | Commuter Air Carrier (135) |
| Operator Does Business As: | NORTHWEST AIRLINK | Operator Designator Code: | REXA |

Meteorological Information and Flight Plan

| | | | |
|----------------------------------|-----------------------|---|------------------|
| Conditions at Accident Site: | Instrument Conditions | Condition of Light: | Night/Dark |
| Observation Facility, Elevation: | HIB, 1353 ft msl | Distance from Accident Site: | 1 Nautical Miles |
| Observation Time: | 1945 CST | Direction from Accident Site: | 260° |
| Lowest Cloud Condition: | Unknown / 500 ft agl | Visibility | 1 Miles |
| Lowest Ceiling: | Obscured / 500 ft agl | Visibility (RVR): | 0 ft |
| Wind Speed/Gusts: | 10 knots / 18 knots | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 170° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 28 inches Hg | Temperature/Dew Point: | -7° C / -8° C |
| Precipitation and Obscuration: | | | |
| Departure Point: | MINNEAPOLIS, MN (MSP) | Type of Flight Plan Filed: | IFR |
| Destination: | | Type of Clearance: | IFR |
| Departure Time: | 1845 CST | Type of Airspace: | |

Airport Information

| | | | |
|----------------------|------------------------|---------------------------|------------------------------------|
| Airport: | HIBBING-CHISHOLM (HIB) | Runway Surface Type: | Asphalt |
| Airport Elevation: | 1353 ft | Runway Surface Condition: | Ice; Snow--compacted; Snow--wet |
| Runway Used: | 31 | IFR Approach: | ILS |
| Runway Length/Width: | 6758 ft / 150 ft | VFR Approach/Landing: | Full Stop |

Wreckage and Impact Information

| | | | |
|---------------------|---------|----------------------|-------------|
| Crew Injuries: | 3 None | Aircraft Damage: | Substantial |
| Passenger Injuries: | 28 None | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 31 None | Latitude, Longitude: | |

Administrative Information

Investigator In Charge (IIC): FRANK S GATTOLIN **Report Date:** 04/21/1994

Additional Participating Persons: JAMES FULLWOOD; MINNEAPOLIS, MN
MICHAEL R MCINTOSH; MINNEAPOLIS, MN
WALLACE T JOHNSON; MINNEAPOLIS, MN
DUANE WOODS; ARLINGTON, VA

Publish Date:

Investigation Docket: NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).