



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/>.

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