



# National Transportation Safety Board

## Aviation Accident Final Report

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<b>Location:</b>	Ithaca, NY	<b>Accident Number:</b>	NYC01FA214
<b>Date &amp; Time:</b>	08/24/2001, 0542 EDT	<b>Registration:</b>	N153TW
<b>Aircraft:</b>	Learjet 25	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	2 Fatal
<b>Flight Conducted Under:</b>		Part 135: Air Taxi & Commuter - Non-scheduled	

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## Analysis

While departing from the airport, with the second-in-command (SIC) at the controls, the airplane impacted a fence, and subsequently the ground about 1,000 feet beyond the departure end of the runway. A witness on the ramp area south of the runway, stated that he heard the engines spool up; however, due to the fog, he could only see the strobe lights on the airplane. He then observed the airplane rotate about 3,500 feet from the departure end of the runway and begin to climb at a steep angle, before losing sight of it when it was about 150 feet above ground level. The weather reported, at 0550 was, calm winds; 1/2 statute miles of visibility, fog; overcast cloud layer at 100 feet; temperature and dew point of 17 degrees Celsius. Excerpts of the cockpit voice recorder (CVR) transcript revealed that the flightcrew discussed the prevailing visibility at the airport on numerous occasions, and indicated that it appeared to be less than one mile. Examination of the wreckage revealed no anomalies with the airframe or engines. According to the FAA Instrument Flying Handbook, "Flying in instrument meteorological conditions (IMC) can result in sensations that are misleading to the body's sensory system...A rapid acceleration, such as experienced during takeoff, stimulates the otolith organs in the same way as tilting the head backwards. This action creates the somatogravic illusion of being in a nose-up attitude, especially in situations without good visual references. The disoriented pilot may push the aircraft into a nose-low or dive attitude."

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain a proper climb rate while taking off at night, which was a result of spatial disorientation. Factors in the accident were the low visibility and cloud conditions, and the dark night.

## Findings

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Occurrence #1: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: TAKEOFF - INITIAL CLIMB

### Findings

1. OBJECT - FENCE
2. (C) PROPER CLIMB RATE - NOT MAINTAINED - COPILOT/SECOND PILOT
3. (C) SPATIAL DISORIENTATION - COPILOT/SECOND PILOT
4. (F) WEATHER CONDITION - LOW CEILING
5. (F) LIGHT CONDITION - DARK NIGHT
6. (F) WEATHER CONDITION - FOG

## Factual Information

### HISTORY OF FLIGHT

On August 24, 2001, about 0542, eastern daylight time, a Learjet 25, N153TW, operated by Ameristar Jet Charter, Inc., was destroyed when it impacted terrain while departing from the Tompkins County Airport (ITH), Ithaca, New York. The certificated airline transport pilot and the commercial pilot were fatally injured. Night instrument meteorological conditions prevailed, and an instrument flight rules (IFR) flight plan was filed for the 14 CFR Part 135 on-demand cargo flight, destined for the Jackson County-Reynolds Field, Jackson, Michigan.

The airplane had departed Newark International Airport (EWR), Newark, New Jersey, the morning of the accident, and arrived at Ithaca about 0430. The airplane was refueled with 100 gallons of Jet A, and about 400 pounds of cargo was loaded. The flight crew obtained an IFR release on the ground by radio, and departed from runway 32, with the second-in-command (SIC) at the controls.

A witness, who was walking on the ramp area south of the runway, stated that he heard the engines spool up; however, due to the fog, he could only see the strobe lights on the airplane. He then observed the airplane rotate near taxiway "Charlie," which was about 3,500 feet from the departure end of the runway. He observed the airplane begin to climb at a steep angle, before losing sight of it when it was about 150 feet above ground level. The witness added that as he continued walking, he heard a loud "bang," and felt a tremor, which he thought was a hangar door.

The airplane came to rest in a wooded area about 1/2 mile from the departure end of runway 32, about 10 feet to the right of the extended runway centerline.

Excerpts of the cockpit voice recorder (CVR) transcript revealed that the flightcrew discussed the prevailing visibility at the airport on numerous occasions, and indicated that it appeared to be less than one mile. At 0540:30, the pilot-in-command (PIC) transmitted on the common traffic advisory frequency that the flight was departing from runway 32. As the airplane was taxied onto the runway, the SIC stated "that's not a # mile. I can't even see the other end of the runway." The airplane departed, and at 0541:41, the PIC stated, "rotate," which was captured by the cockpit area mike (CAM) on the recording. At 0541:45, standard calls for "positive rate," "gear up," "yaw damper on," "plus thirty," and "flaps up, climb checklist," were captured by the CAM on the recording. At 0542:00, the word "I" followed by a sound similar to the ground impact was recorded by the CAM. The recording ended at 0542:01.

The accident occurred during the hours of darkness, at 42 degrees, 30.08 minutes north, 76 degrees, 28.40 minutes west, at an elevation of 1,104 feet msl.

### FLIGHTCREW INFORMATION

#### Pilot-in-Command

The PIC held an airline transport certificate with a rating for airplane multi-engine land, and commercial privileges for airplane single-engine land. In addition, the PIC was type rated in the Learjet (LR-JET) and Dassault DA-20.

A review of company records revealed that the PIC had accumulated about 4,826 hours of total flying experience, of which, 760 hours were in Learjet 24 and 25 models.

The PIC's most recent FAA first class medical certificate was issued on April 30, 2001.

The PIC attended and successfully completed LR-JET recurrent training at Simuflite, on October 24, 2000.

#### Second-in-Command

The SIC held a commercial pilot's certificate with ratings for airplane single engine, multi-engine land, instrument airplane.

A review of company records revealed that the SIC had accumulated about 3,534 hours of total flying experience, of which, about 430 hours were in Learjet 24 and 25 models.

The SIC's most recent FAA first class medical certificate was issued on September 5, 2000.

#### AIRCRAFT INFORMATION

According to the operator's records, the airplane was maintained on an approved inspection program, and had accumulated 12,485.8 total airframe hours. The left engine had 7,103.7 hours of total time since overhaul, and 883 hours since its last inspection. The right engine had 10,465.8 hours of total time, 7,497.4 hours since overhaul, and 1,012.5 hours since its last inspection.

The airplane was equipped with an electrically driven horizontal stabilizer, which was operated by a "high hat" control button, installed on the pilot's yoke, which activated the electrically driven horizontal stabilizer trim motor.

#### METEOROLOGICAL INFORMATION

The weather reported by a certified meteorologist, at 0550 was, calm winds; 1/2 statute mile visibility, fog; overcast cloud layer at 100 feet; temperature and dew point of 62 degrees Fahrenheit; and an altimeter setting of 30.05 inches of mercury.

#### AIRPORT INFORMATION

Runway 32 was a 6,601-foot-long, 150-foot-wide, hard surfaced asphalt runway. The runway was illuminated by pilot-controlled high intensity runway lighting when the control tower was inoperative. The runway was not equipped with centerline lighting.

#### FLIGHT RECORDERS

##### Cockpit Voice Recorder

The airplane was equipped with a B&D Instruments and Avionics CVR. The CVR was transported to the Safety Board, Office of Research and Engineering, on September 6, 2001. The CVR group convened on October 2, 2001. A transcript was prepared for the last 7 minutes and 51 seconds of the 32-minute recording.

#### WRECKAGE INFORMATION

The airplane impacted an airport fence located about 1,000 feet beyond the departure end of runway 32. There were no ground scars or airplane wreckage observed on the runway surface, or the grass area leading from the approach end of the runway to the fence. Examination of a 60-foot section of the fence revealed that four vertical poles were sheared near ground level and displayed blue paint transfer on their surfaces. The damage to the farthest pole to the left was measured at 32 inches from the ground, and the damage to the pole farthest to the right was measured at 63 inches above the ground. The chain-link portion of the fence, and the

upper support rail, were missing.

Beginning at the base area of the fence, was a winding 1-foot wide path of burned grass, which continued forward for about 30 feet to a county road.

Ground scars began about 25 feet beyond the perimeter fence on the shoulder of the road. The ground scars contained blue paint chips, blue paint transfer on stones, and pieces of aluminum aircraft skin. Additional airplane parts and jet fuel were observed on the road.

The debris path continued forward into a grass field, oriented on a 320-degree bearing. Items located in the field included: sections of the left and right wing tip fuel tanks, a 4-foot section of the right flap, the bottom section of the left engine nacelle cover, two vertical fence posts, a section of the fence upper support rail, two sections of chain link fence, sheet metal from the center belly area of the airplane, and sheet metal from both wings.

No impact marks were observed in the field, except for an area of dirt, about 1-foot in diameter, and 800 feet from the two sections of fence, which contained blue paint transfer on the surface. About 5 feet beyond the impact mark was a forward tip tank section. A 2-foot wide, 70-foot long, trail of burnt grass was also observed in the field.

About 900 feet from the fence, on the shoulder of a second road, ground scars containing blue paint chips, blue paint transfer on stones, and pieces of aluminum aircraft skin were observed. Blue and white colored paint transfer scars, additional airplane parts, and jet fuel were also observed on the crowned asphalt road.

The debris path continued into a wooded area, which consisted of low-lying brush, and hardwood trees, that reached a height of about 40 feet. The width of the wreckage path swath through the brush and trees was about 8 feet. Two of the hardwood trees were sheared off about 15 feet above the ground. To the left of the wreckage path centerline was the outboard right wing, with the mid-section of the tip tank. About 30 feet forward was a 4-foot-wide 6-foot-long section of the left wing, which was exposed to a post crash fire. Along the wreckage path centerline was a piece of the bottom right engine nacelle cover, the forward right tip tank section, cockpit windshield shards, drag chute cord, and the cabin heater.

About 250 feet beyond the second road, along the wreckage path centerline, was an inboard section of the left wing. The wing flap was separated, and was lying on top of the wing section. Scratches were observed on the underside of the flap, which extended from the leading edge aft. No crushing or punctures to the flap skin were observed. Attached to the wing was the left main landing gear in the retracted position. Examination of the landing gear actuator revealed that it was in the retracted position. The outboard landing gear door remained attached to the landing gear strut. Scratches were observed on the aft edge of the door, which extended from forward to aft.

To the left side of the left wing section was the left engine, parts of its accessory case, the empennage section, and the inboard section of the right wing. About a 5-foot section of the right horizontal stabilizer was separated from the empennage. The rudder was deflected to the right, about 35 degrees. The elevator on the right horizontal stabilizer was deflected upward about 45 degrees. The elevator on the left horizontal stabilizer was deflected upward about 20 degrees. The exposed threaded portion of the horizontal stabilizer trim assembly measured about 19.75 inches. A post crash fire destroyed the empennage systems equipment bay.

The inboard section of the right wing was exposed to a post crash fire. About a 3-foot section of

the flap was lying on top of the wing. Scratches were observed on the underside of the flap, which extended from the leading edge aft. No crushing or punctures to the flap skin were observed. Attached to the wing was the right main landing gear, which was observed in the retracted position. Examination of the landing gear actuator revealed that it was in the retracted position. The outboard landing gear door remained attached to the landing gear strut. Scratches were observed on the aft edge of the door, which ran from forward to aft.

About 500 feet beyond the second road was the main fuselage wreckage. It came to rest among thick underbrush, inverted, on a 230-degree bearing. Examination of the cockpit area revealed the landing gear and flap selectors were in the retracted position.

About 200 feet beyond the main fuselage, was the right engine, its separated accessory case, the left engine starter generator, and shattered pieces of an aircraft battery.

#### AUTOPSY AND TOXICOLOGY INFORMATION

Autopsies were performed on both pilots by the Tompkins County Medical Examiner's Office, Ithaca, New York.

Toxicological testing for both pilots was performed by the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma.

#### TEST AND RESEARCH

##### Annunciator and Attitude Indicator Examinations

Examination of the annunciator panel, control panel, "Fire" annunciator, and two "Armed" annunciators, were conducted by the Safety Board Materials laboratory. The annunciator panel had 30 indicator housings, each of which contained two 28-volt, 40-milliamp light bulbs. Each light bulb filament was examined with a binocular microscope with magnifications of up to 40X. The filaments in one "L fuel press" bulb, one "R fuel press" bulb, and both "Low fuel" bulbs were stretched and deformed. Many filaments in the remaining indicators contained minor relaxing of the coils; however, none of the remaining filaments displayed significant evidence of hot filament stretching. The light bulb filaments in the control panel, the "Fire" annunciator, and the two "Armed" annunciators were also examined microscopically. The filaments in the control panel bulbs were broken into many fragments, and no evidence of stretching or deformation could be noted on the filament pieces. The filaments in the "Fire" annunciator and the "Armed" annunciators contained minor relaxing of the coils; however, none displayed significant evidence of hot filament stretching.

Examination of the pilot's and co-pilots attitude indicators was also conducted by the Safety Board Materials laboratory. No damage was noted to the face plates of the indicators, and due to the indicators being electrically driven, no determination could be made as to the operational capabilities of the units.

##### Simulator Demonstrations

On September 9, 2001, a representative of the operator conducted simulator demonstrations utilizing a Lear 20 series simulator at Simuflite, Dallas, Texas.

From recorded data obtained during the accident investigation, the representative calculated two weight and balance plots for the simulator models.

The first plot, which calculated the most forward center of gravity (CG) location, placed the CG

approximately near the middle on the operating envelope; 21.2% mean aerodynamic chord (MAC), with a takeoff weight of 13,700 pounds, based on a basic operating weight (BOW) weight of 8,545 pounds, and a corresponding MAC of 23.2%. Included in the calculation were the cargo (400 pounds loaded just aft of the main entry door), and the required fuel for the flight (4,700 pounds, which was placed in the wings).

The second plot, which calculated the most rearward CG location, placed the CG approximately near the aft of the operating envelope, with a MAC of 29.2% and a takeoff weight of 13,700 pounds, based on a BOW weight of 8,545 pounds, and a corresponding MAC of 23.2%. The cargo was placed just aft of the entry door, 3,400 pounds of fuel was placed in the wings, and the fuselage tank was filled to its maximum capacity of 1,300 pounds.

The following scenarios were flown at both CG locations with the following results noted.

1. NO FLAPS EXTENDED FOR TAKEOFF: The airplane lifted off the ground at an indicated airspeed 12-18 knots above rotation speed, and obtained a climb.
2. INADVERTENT STICK PUSHER BEFORE 100 FEET AGL: Upon activation of the stick pusher, airplane pitch attitude decreased from 12 degrees to 3 degrees before the "memory items" were completed. Airplane did not lose any altitude during this process.
3. TAKEOFF WITH PITCH TRIM SET AT FORWARD STOP: The takeoff Trim light illuminated which would alert pilot of the mis-configuration. Airplane would not rotate to proper pitch attitude within available runway length.
4. TAKEOFF WITH SPOILERS DEPLOYED: The red SPOILER light illuminated on master warning panel would alert pilot to mis-configuration. The airplane required more backpressure on control yoke and a higher pitch attitude to become airborne.
5. TAKEOFF WITH PITCH TRIM SET AT FORWARD TAKEOFF LIMIT: The airplane lifted off ground at higher indicated airspeed in a flatter pitch attitude, if any back pressure on the control yoke was relaxed, airspeed increased rapidly and the airplane eventually struck the ground at a indicated airspeed of 235 kts and a sink rate of 2,300 fpm.
6. NORMAL TAKEOFF WITH NOSE DOWN TRIM ACTIVATION UPON REACHING 12 DEGREES PITCH ATTITUDE: The airplane reached approximately 500 feet agl before starting descent, during descent airspeed reached 270 kts and a sink rate of 3,000 fpm developed. Airspeed and sink rate increases developed rapidly over the last 5 seconds of the event.

#### Engine Disassembly and Examination

The left and right engine were forwarded to Garrett Aviation Services, Ronkonkoma, New York, for examination on October 30 and 31, 2001, under the supervision of a Safety Board investigator.

The disassembly and examination revealed that all significant damage to the engines was the result of terrain impact. Turbine and compressor airfoil damage to the left engine, and compressor airfoil damage and wood ingestion to the right engine, were consistent with rotor rotation in both engines at the time of terrain impact.

#### Horizontal Stabilizer Trim Assembly

On January 15, 2003, the jackscrew of a horizontal stabilizer trim assembly was measured on a sister ship of the accident airplane. The assembly was of similar make and model to that which

was installed on the accident airplane. When the horizontal stabilizer was trimmed to the nose down limit, the exposed threaded portion of the jackscrew measured about 18.75 inches.

The actuator had a two-speed pitch trim motor. It operated in the "Normal" mode when the flaps were positioned more than 3 degrees. When the flaps were positioned less than 3 degrees, the pitch trim motor operated at approximately 1/4 the normal rate.

The actuator installed on the sister ship was tested to observe its operational speeds. When the flaps were positioned less than 3 degrees, with the stabilizer assembly positioned at a normal takeoff setting, the motor took 48 seconds to move the stabilizer assembly to the nose down stop.

When the flaps were positioned more than 3 degrees, with the stabilizer assembly positioned at a normal T/O setting, the motor took 14 seconds to move the stabilizer assembly to the nose down stop.

In addition, the motor was timed with the stabilizer positioned from a point just before the illumination of the 'Takeoff Trim Light,' with the flaps retracted. The time it took the motor to move the stabilizer assembly to the nose down stop, was 19 seconds.

#### ADDITIONAL INFORMATION

According to the FAA Instrument Flying Handbook:

"Flying in instrument meteorological conditions (IMC) can result in sensations that are misleading to the body's sensory system.

Orientation is the awareness of the position of the aircraft and of oneself in relation to a specific reference point. Disorientation is the lack of orientation, and spatial disorientation specifically refers to the lack of orientation with regard to position in space and to other objects.

Orientation is maintained through the body's sensory organs in three areas: visual, vestibular, and postural. The eyes maintain visual orientation; the motion sensing system in the inner ear maintains vestibular orientation; and the nerves in the skin, joints, and muscles of the body maintain postural orientation. When human beings are in their natural environment, these three systems work well. However, when the human body is subjected to the forces of flight, these senses can provide misleading information. It is this misleading information that causes pilots to become disoriented.

#### Eyes

During flight in visual meteorological conditions (VMC), the eyes are the major orientation source and usually provide accurate and reliable information. Visual cues usually prevail over false sensations from other sensory systems. When these visual cues are taken away, as they are in IMC, false sensations can cause the pilot to quickly become disoriented.

The only effective way to counter these false sensations is to recognize the problem, disregard the false sensations, and while relying totally on the flight instruments, use the eyes to determine the aircraft attitude. The pilot must have an understanding of the problem and the self-confidence to control the aircraft using only instrument indications.

#### Ears

The inner ear has two major parts concerned with orientation, the semicircular canals and the

otolith organs. The semicircular canals detect angular acceleration of the body while the otolith organs detect linear acceleration and gravity. The semicircular canals consist of three tubes at right angles to each other, each located on one of the three axes: pitch, roll, or yaw. Each canal is filled with a fluid called endolymph fluid. In the center of the canal is the cupola, a gelatinous structure that rests upon sensory hairs located at the end of the vestibular nerves.

The otolith organs detect linear acceleration and gravity in a similar way. Instead of being filled with a fluid, a gelatinous membrane containing chalk-like crystals covers the sensory hairs. When the pilot tilts his/her head, the weight of these crystals causes this membrane to shift due to gravity and the sensory hairs detect this shift. The brain orients this new position to what it perceives as vertical. Acceleration and deceleration also cause the membrane to shift in a similar manner. Forward acceleration gives the illusion of the head tilting backward.

The sensory system responsible for most of the illusions leading to spatial disorientation is the vestibular system in the inner ear. The major illusions leading to spatial disorientation include:

#### Somatogravie Illusion

A rapid acceleration, such as experienced during takeoff, stimulates the otolith organs in the same way as tilting the head backwards. This action creates the somatogravie illusion of being in a nose-up attitude, especially in situations without good visual references. The disoriented pilot may push the aircraft into a nose-low or dive attitude.

#### Inversion Illusion

An abrupt change from climb to straight-and-level flight can stimulate the otolith organs enough to create the illusion of tumbling backwards, or inversion illusion. The disoriented pilot may push the aircraft abruptly into a nose-low attitude, possibly intensifying this illusion."

#### Wreckage Release

The airplane wreckage was released to a representative of the operator on September 5, 2001.

## Pilot Information

<b>Certificate:</b>	Airline Transport; Flight Instructor; Commercial	<b>Age:</b>	32, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	04/30/2001
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	04/18/2001
<b>Flight Time:</b>	4826 hours (Total, all aircraft), 760 hours (Total, this make and model), 4412 hours (Pilot In Command, all aircraft), 161 hours (Last 90 days, all aircraft), 59 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

## Co-Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	30, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	09/05/2000
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	07/02/2001
<b>Flight Time:</b>	3634 hours (Total, all aircraft), 377 hours (Total, this make and model), 1669 hours (Pilot In Command, all aircraft), 221 hours (Last 90 days, all aircraft), 53 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	Learjet	Registration:	N153TW
Model/Series:	25	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	53
Landing Gear Type:	Retractable - Tricycle	Seats:	3
Date/Type of Last Inspection:	05/21/2001, AAIP	Certified Max Gross Wt.:	15000 lbs
Time Since Last Inspection:	252 Hours	Engines:	2 Turbo Jet
Airframe Total Time:	12486 Hours at time of accident	Engine Manufacturer:	General Electric
ELT:	Not installed	Engine Model/Series:	CJ-610-6
Registered Owner:	Ameristar Jet Charter Inc.	Rated Power:	2950 lbs
Operator:	Ameristar Jet Charter Inc.	Operating Certificate(s) Held:	On-demand Air Taxi (135)

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	ITH, 1087 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	0550 EDT	Direction from Accident Site:	130°
Lowest Cloud Condition:		Visibility	0.5 Miles
Lowest Ceiling:	Overcast / 100 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:	Variable	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.05 inches Hg	Temperature/Dew Point:	17°C / 17°C
Precipitation and Obscuration:			
Departure Point:	Ithaca, NY (ITH)	Type of Flight Plan Filed:	IFR
Destination:	Jackson, MI (JXN)	Type of Clearance:	IFR
Departure Time:	0542 EDT	Type of Airspace:	Class E

## Airport Information

Airport:	Tompkins County Airport (ITH)	Runway Surface Type:	Asphalt
Airport Elevation:	1070 ft	Runway Surface Condition:	Dry
Runway Used:	32	IFR Approach:	None
Runway Length/Width:	6600 ft / 100 ft	VFR Approach/Landing:	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	On-Ground
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 Fatal	<b>Latitude, Longitude:</b>	42.501389, -76.473333

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Steve Demko	<b>Report Date:</b>	05/30/2003
<b>Additional Participating Persons:</b>	Richard Shaughnessy; FAA; Rochester, NY James Tidball; Bombardier Aerospace; Wichita, KS Teak Biondo; Ameristar; Dallas, TX Mark Taylor; GE; Lynn, MA		
<b>Publish Date:</b>			
<b>Investigation Docket:</b>	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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.ntsb.gov/pubdms/">http://dms.ntsb.gov/pubdms/</a> .		

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](#).