



Aviation Investigation Final Report

Location:	LEBANON, New Hampshire	Accident Number:	NYC94FA029
Date & Time:	December 2, 1993, 17:28 Local	Registration:	N28163
Aircraft:	AEROSPATIALE TB-21	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal, 1 Serious
Flight Conducted Under:	Part 91: General aviation		

Analysis

THE AIRPLANE COLLIDED WITH TREES ON A HILL, ABOUT 1/2 MILE FROM THE AIRPORT (LEB). THE ACCIDENT SITE WAS ABOUT 250 FEET ABOVE THE AIRPORT ELEVATION. THE PILOT WAS ON A CLEARANCE, IN PART, TO CLIMB TO 6000 FEET; HE WAS IN RADIO CONTACT WITH THE LEB TOWER CONTROLLER. THE CONTROLLER REPORTED HE NOTICED THE AIRPLANE HAD TURNED TOO FAR LEFT AFTER TAKEOFF AND IT WAS HEADED TOWARD A HILL. HE ASKED THE PILOT IF HAD HAD THE HILL IN SIGHT, AND THE PILOT RESPONDED 'SAY AGAIN.' THE SURVIVING PASSENGER REPORTED HE OVERHEARD THE CONTROLLER CALLING THE PILOT TO ALERT HIM OF THE HILL AND THEREAFTER THE COLLISION OCCURRED. A SECOND PILOT WAS ABOARD, AS A SAFETY PILOT; HE WAS AN INSTRUMENT RATED FLIGHT INSTRUCTOR. ALTHOUGH BOTH PILOTS HAD PREVIOUSLY DEPARTED THE AIRPORT SEVERAL TIMES, ACCORDING TO THEIR LOGBOOKS, THE ACCIDENT FLIGHT WAS THEIR FIRST NIGHT DEPARTURE FROM THE AIRPORT. THE DEPARTURE PROCEDURE FOR THE AIRPORT, IN PART STATES, '...CLIMB VISUALLY OVER AIRPORT, TO CROSS THE AIRPORT AT OR ABOVE 1500 FEET, THEN PROCEED ON COURSE.'

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 adequate terrain clearance which resulted in an inflight collision with the terrain. A factor was a dark night condition.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (F) LIGHT CONDITION - DARK NIGHT
2. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY
3. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On December 2, 1993, at 1728, an Aerospatiale TB-21, N28163, owned and operated by Mr. Klaus O. Eberius, of Chagrin Falls, Ohio, struck rising terrain after takeoff from Lebanon Municipal Airport, Lebanon, New Hampshire. The airplane was destroyed by the impact. The two pilots in the front were fatally injured. The passenger in the rear seat received serious injuries. Visual meteorological conditions prevailed and the flight was operating on an instrument flight plan under 14 CFR Part 91.

According to the FAA supplied transcript of air/ground communications between the Lebanon Air Traffic Control Tower, and N28163, at 1720:25, the pilot of N28163 contacted the Control Tower, and requested to taxi and receive his IFR clearance. The following clearance was issued:

Trinidad two eight one six three is cleared to the ah charlie golf foxtrot airport as filed, maintain six thousand, expect one zero thousand five minutes after departure, departure frequency Boston Center will be one three four point seven, squawk three four two six.

The clearance was acknowledged by the pilot.

At 1726:30, the pilot of N28163, said he was ready for takeoff. At 1726:40, the pilot was cleared for takeoff.

At 1728:30, the local controller said, "163, you have that hill in sight there?"

At 1728:33, the pilot replied, "163, say again", and the local controller replied, "could you see that hill there."

At 1728:36, the local controller again said, "163, how do you hear?" No further communications were heard from the pilot of N28163.

In a written statement, the local controller said:

The aircraft appeared to depart normally, and started a left turn. When I observed that the aircraft was turning too far left toward a hill that is adjacent to the airport, I asked the pilot if he could see the hill. The pilot responded, "say again?", and I repeated my question. As I unkeyed my microphone, I observed the aircraft's landing light shining on the tops of the trees near the peak of the hill, and the aircraft appeared to pass behind the hill. I attempted to contact N28163, but there was no reply....

The passenger was interviewed on December 4, 1993, in the hospital. He said he had made this trip several times with both pilots. He said that normally, the pilots would depart straight out and then turn on course. He said the left seat pilot was the flying pilot, and he did not hear any conversation between the pilots after the takeoff clearance was issued. He said he did not observe any warning lights in the cockpit, and did not know anything was wrong until he heard the local controller call the pilot's attention to the hill. He said at this time he looked out and saw they were in the trees.

The accident occurred during the hours of darkness at location, 43 degrees, 36 minutes, 54 seconds North, 72 degrees, 17 minutes, 48 seconds West.

PERSONNEL INFORMATION

The left seat pilot held a private pilot certificate with airplane single engine land and instrument airplane ratings. He held an FAA third class airman medical certificate with a limitation to wear corrective lenses, issued on October 1, 1993. His pilot's log book, which was current through November 21, 1993, showed his total night time was 17.2 hours, with 6.5 hours logged on two flights within the preceding 3 weeks. He had logged two night landings within the preceding 90 days.

The right seat pilot held a commercial pilot certificate with airplane single engine land and instrument airplane ratings.

Additionally, he held a flight instructor certificate for airplane single engine land and instrument airplane. He held an FAA second class airman medical certificate with a limitation to wear corrective lenses, issued on July 19, 1993. His log book, which was current through November 23, 1993, showed the last logged night time was on June 1, 1992. His total logged night time was 166.4 hours. He had no logged night landings within the preceding 90 days.

No logged flights were found for either pilot to indicate a night departure from Lebanon. The left seat had made 10 departures from Lebanon in the preceding 90 days. The right seat flight instructor had made 8 departures from Lebanon in the preceding 90 days.

AIRCRAFT INFORMATION

The airplane was a 1990 Aerospatiale TB-21. The airplane received an annual inspection December 11, 1992. The airplane had a total time of 461 hours and had accumulated 311 hours since the last annual inspection.

METEOROLOGICAL INFORMATION

The 1740 observation at Lebanon recorded a ceiling of 14,000 feet broken, visibility 15 miles, and winds calm. The sun was 12.7 degrees below the horizon, and the moon was 18.7

degrees below the horizon, at the time of the accident.

WRECKAGE AND IMPACT INFORMATION

The wreckage was examined at the accident site on December 3, and 4, 1993. The debris path was spread along a heading of 110 degrees for about 500 feet. The first items noticed on the ground were small pieces of paint and plexiglass. This continued for approximately 150 feet after which portions of the left and right wing were found. Pieces of airplane structure were found both on the ground and in trees.

The first 400 feet of broken tree limbs were on an upward flight path. The final 100 feet was on a downward flight path. Trees in the area were estimated to be 75 to 100 feet high.

In a daylight helicopter flight over the trees, the broken branches appeared to be in a straight line and not curved. In addition, the width of the broken tree branches was similar to the wing span of the airplane. The branches appear to be broken at the same height across the width of the area of broken branches.

The airplane was on its left side with the flaps up and the landing gear retracted. Both wings had impact damage, with the left wing separated from the airplane and in multiple pieces. Impact damage to the wings was oriented up/down across the leading edge.

Flight control continuity was verified between the cockpit, and rudder and elevator. Flight control continuity to the ailerons was not determined due to impact damage.

Both blades of the propeller were bent rearward and exhibited chord wise twisting near the tips.

The engine was separated from the firewall and located about 2 feet in front of the fuselage. Valve train continuity was verified through the accessory drive, with compression found in all cylinders.

Fuel was found in lines leading to the engine and in the engine accessories. The engine controls were found in the full forward position, and the fuel valve was selected to the right tank.

The airplane was equipped with two vacuum pumps. The engine driven pump was located on the rear of the engine. The electric auxiliary pump was mounted on the engine side of the firewall. The shear shaft on the engine driven vacuum source was intact and the vanes were not broken. The vacuum source selector was in the AUX SOURCE (auxiliary source) OFF position. The lines from these 2 pumps are joined by "T" connector. The "T" connector was pulled out of the line that leads through the firewall, to the attitude indicator.

Filament stretch was found in the GYRO (vacuum) light. The green status light AUX SUCT

(auxiliary suction) did not have filament stretch. These lights are mounted on the top center of the left instrument panel. The pressure sensing switch for low vacuum pressure is located next to the attitude indicator.

Compression wrinkles were found on the fuselage skin between the instrument panel and the engine firewall. The rubber line between the firewall and attitude indicator was bent 90 degrees and twisted. There were 2 breaks where the line was bent.

The horizontal situation indicator (HSI) showed a heading of 120 degrees.

All navigation and communications radios were on. All radio and instrument panel lights were set to the full bright position, except the engine lights, which were set to low.

AERODROME INFORMATION

According to the Jeppesen-Sanderson Company, instrument procedure chart for Lebanon, New Hampshire, (11-1) found in the wreckage, the IFR departure procedure for runway 18 is, "...climb visually over airport, to cross airport at or above 1500' [feet], then proceed on course."

Runway 18 was 5,200 feet long. Red warning lights were visible on the left (east) side of the runway. There were 29 lights mounted on poles about 30 feet high, which started prior to midfield, and extended 1200 feet past the departure end.

A night helicopter flight was made over the accident area, just above the trees. Once the flight passed the line of red warning lights, the flight had entered an area of no lighting except for red warning lights on the hill tops were not in line with the airplane flight path. A rearward extension of the flight path through the trees crossed the red warning light prior to the end of the line.

MEDICAL AND PATHOLOGICAL INFORMATION

Autopsies were conducted on December 3, 1993, by Dr. Foss, Chief Medical Examiner, for the State of New Hampshire, Concord, New Hampshire.

A toxicological scan for drugs and alcohol conducted by the FAA Civil Aeromedical Institute in Oklahoma City, Oklahoma, was negative for drugs and alcohol.

TEST AND RESEARCH

According to Metallurgist Factual Report 94-74, by Michael L. Marx, Supervisory Metallurgist"

...The fracture specimens showed curved marking suggestive of cyclic progression....

ADDITIONAL INFORMATION

The pilot would make frequent trips between his residence near Cleveland, Ohio, and Lebanon. He also used the services of the flight instructor in the right seat as a safety pilot, and to ferry the airplane between these two locations.

According to airplane and pilot log book records, the pilot arrived in Lebanon on November 21, 1993. The airplane was flown to Ohio, by the flight instructor, and he returned to pick up the owner on December 2, 1993. The IFR flight plan was filed by the flight instructor. According to a FAA supplied transcript, the following IFR clearance was filed for departure from Lebanon.

...route of flight will be radar vectors LEB Victor four ninety six Utica direct Jamestown and then R-NAV to CFG.

The airplane was released to Mr. Al Ryan, of Ryan Insurance Services, Inc., the insurance adjustor on December 4, 1993.

Pilot Information

Certificate:	Private	Age:	53, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	October 1, 1993
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	434 hours (Total, all aircraft), 85 hours (Total, this make and model), 331 hours (Pilot In Command, all aircraft), 54 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	AEROSPATIALE	Registration:	N28163
Model/Series:	TB-21 TB-21	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	1123
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	December 11, 1992 Annual	Certified Max Gross Wt.:	3086 lbs
Time Since Last Inspection:	311 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	461 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	TIO-540-AB1A0
Registered Owner:	PITTLER INCORPORATED	Rated Power:	250 Horsepower
Operator:	KLAUS EBERIUS	Operating Certificate(s) Held:	None
Operator Does Business As:	PITTLER INCORPORATED	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Night/dark
Observation Facility, Elevation:	LEB ,598 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	17:40 Local	Direction from Accident Site:	345°
Lowest Cloud Condition:	Unknown	Visibility	15 miles
Lowest Ceiling:	Broken / 15000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:	0°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	1°C / -3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		Type of Flight Plan Filed:	IFR
Destination:	CLEVELAND , OH (CGF)	Type of Clearance:	IFR
Departure Time:	17:26 Local	Type of Airspace:	Class D;Class E

Airport Information

Airport:	LEBANON LEB	Runway Surface Type:	Asphalt
Airport Elevation:	598 ft msl	Runway Surface Condition:	Dry
Runway Used:	18	IFR Approach:	None
Runway Length/Width:	5200 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal, 1 Serious	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal, 1 Serious	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	Hancock, Robert
Additional Participating Persons:	ARNIE SILVERSTONE; PORTLAND , ME JOHN HARRINGTON; BURLINGTON , MA
Original Publish Date:	December 2, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=38663

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