



National Transportation Safety Board Aviation Accident Final Report

Location:	CENTERVILLE, NY	Accident Number:	IAD98FA106
Date & Time:	09/07/1998, 1945 EDT	Registration:	N9150X
Aircraft:	Piper PA-46-350P	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	5 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The airplane was on an IFR flight plan, level at 16,000 feet, when radar and radio contact was lost. The tops of the clouds in the area of the accident were reported to be at 18,000 feet. A pilot who was flying in the area of the accident site at the time of the accident stated that the cloud tops of 'the buildups' were from 16,000 to 20,000 feet. The pilot additionally stated that moderate unexpected turbulence was encountered and 'Obviously, the updrafts in the area were very strong.' Satellite imagery data revealed that an east-west cloud band, about 10 miles wide, was located in the area of the accident. The ground track of the airplane was traversing the cloud band during the minutes prior to and around the accident time. The onboard weather radar was found in the off position. According to Advisory Circular -00-6A, 'Do avoid by at least 20 miles any thunderstorm identified as severe or giving an intense radar echo. Do clear the top of a known or suspected severe thunderstorm by at least 1,000 feet altitude for each 10 knots of wind speed at the cloud top.' The airplane's calibrated airspeed (KCAS) was calculated at 141 knots, and the indicated airspeed (KIAS) was 139 knots. According to the POH, the maneuvering speed at gross weight was 135 KCAS and 133 KIAS.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadvertent flight into adverse weather conditions. Factors related to the accident were the pilot's failure to use weather detection equipment and use of airspeeds in excess of limitations.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: CRUISE - NORMAL

Findings

1. WEATHER CONDITION - UPDRAFT
 2. WEATHER CONDITION - THUNDERSTORM
 3. (F) WEATHER RADAR - NOT USED - PILOT IN COMMAND
 4. (C) FLIGHT INTO ADVERSE WEATHER - INADVERTENT - PILOT IN COMMAND
-

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: CRUISE - NORMAL

Findings

5. (F) AIRSPEED(VA) - EXCEEDED - PILOT IN COMMAND
-

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On September 7, 1998, about 1945 Eastern Daylight Time, a Piper PA-46-350P, N9150X, was destroyed during an in-flight breakup near Centerville, New York. The certificated private pilot and four passengers were fatally injured. Visual meteorological conditions prevailed and an instrument flight rules flight plan was filed for the flight conducted under 14 CFR Part 91. The flight originated from the Manchester Airport (MHT), Manchester, New Hampshire, at 1720, and was destined for the Griffith-Merrillville Airport (05C), Griffith, Indiana.

The Cleveland Air Route Traffic Control Center (ARTCC) reported that radar and radio contact was lost with the airplane, while it was at 16,000 feet over the COLDE intersection. The ARTCC controller stated that other airplanes in the vicinity of the COLDE intersection did not report any significant weather or turbulence. The tops of the clouds were reported to be at 18,000 feet. Within 30 minutes of losing radar contact, local authorities found debris from the airplane, but due to rain and darkness, the fuselage was not located until 2250.

A pilot who was flying a turbo-prop airplane in the area of the accident site at the time of the accident stated that there were numerous cumulonimbus buildups throughout upstate New York. The pilot estimated the cloud tops of "the buildups" were from 16,000 to 20,000 feet. The "cells" were isolated enough that he could successfully navigate around or above the clouds. As the flight passed just west of Rochester (ROC), New York, the airplane was turned southwesterly. It was in that vicinity that the flight flew over a buildup, with tops estimated at 14,000 feet. Moderate unexpected turbulence was encountered, which lasted for approximately 1 minute. The pilot additionally added, "Obviously, the updrafts in the area were very strong."

The accident occurred during the hours of daylight approximately 42 degrees, 29 minutes north latitude, and 78 degrees, 17 minutes west longitude.

PILOT INFORMATION

The pilot held a private pilot certificate with ratings for airplane single engine land, and instrument airplane.

The pilot's most recent Federal Aviation Administration (FAA) third class medical certificate was issued on March 26, 1998.

A review of the pilot's logbook revealed the pilot recorded 910 hours of total flight experience. The pilot logged 21 hours in the accident airplane between August 1996, and July 1998.

AIRCRAFT INFORMATION

The last annual inspection of the airplane was completed on December 10, 1997. The airframe had accumulated 1,773.6 hours of total time at the time of the inspection. The last recorded maintenance was on August 20, 1998, which consisted of an engine oil and filter change. The airframe had accumulated 1,861.4 hours at the time of the maintenance.

METEOROLOGICAL INFORMATION

A Safety Board meteorologist completed a weather study and a Meteorological Factual Report. According to the weather briefing section of the report:

A Surface Analysis chart prepared by the National Weather Service (NWS) National Centers for Environmental Prediction (NCEP) for September 7, at 2000 hours, showed an area of low pressure centered over northern Vermont. A cold front extended from the low, south southwestward through eastern New York-Pennsylvania, then west southwestward through central West Virginia, northern Kentucky, and then into the central United States. Also, the chart indicated generally moderate to strong northwesterly surface winds behind the front over most of the northeastern states.

GOES-8 (Geostationary Operational Environmental Satellite-8) data for the accident area during the period from 1845 to 1945 were obtained through Man Computer Interactive Data System and displayed on a Safety Board workstation. "Looping" of the data revealed that an east-west cloud band located from south of Buffalo (BUF), New York, to southeast of ROC, which slowly drifted south during the hour. Also, the information indicated that the cloud band was around 10 nautical miles wide. The ground track of accident airplane was overlaid on the 1945 data and showed that the airplane was traversing the cloud band during the minutes prior to and around the accident time.

The Aviation Area Forecast for western/central New York, on September 7, at 1345, stated scattered clouds at 3,000 feet, broken clouds at 8,000 feet, cloud tops at FL250. Occasional broken clouds at 3,000 feet, in widely scattered moderate rain showers. Isolated thunderstorms with light rain until 2000. Cumulonimbus tops at FL400. The outlook, valid September 8, from 0200-0800, called for marginal visual flight rules ceiling, rain showers, and mist. Occasional overcast clouds at 1,500 feet, in scattered thunderstorms, and moderate rain. Thunderstorms were to be in lines, possibly severe. Cumulonimbus cloud tops above FL450.

In-Flight Advisories (AIRMETs TANGO and ZULU) issued at 1545, did not forecast any turbulence or icing for New York. AIRMET SIERRA, also issued at 1545, forecasted occasional mountain obscuration for portions of the airplane's flight route.

There were no SIGMETs or Convective SIGMETs issued during the period 1400 to 2000 that were valid for the accident area. The Cleveland Center Weather Service Unit (CWSU) issued no Center Weather Advisories (CWAs) for the accident area.

The Winds Aloft Forecasts at 18,000 feet for the BUF area, issued by the NCEP on September 7, at 1240, were from 270 degrees at 62 knots, and a temperature of -10 degrees Celsius.

WRECKAGE INFORMATION

The wreckage debris field was oriented from the southeast to the northwest with the furthest pieces about 1.1 miles apart. The vertical stabilizer with the rudder attached, the left elevator, and the right horizontal stabilizer with the elevator attached were found in the southeast area. The left horizontal stabilizer, the outboard portions of both left and right wings were in-between the northwest and southeast parts. The fuselage and the left aileron were in the northwest area.

The fuselage was found in a wooded area, upright and facing about 050 degrees magnetic. The missing tree canopies over the fuselage displayed broken tree limbs, and scratching was observed from the top of a 40-foot tall tree down to ground level on the trunk.

The fuselage was split in two areas, aft of the cockpit, and immediately in front of the aft pressure bulkhead, with the tail cone swung open as if hinged on the left side of the empennage. The engine, which displayed no external signs of malfunction, incurred crushing

to its underside. The propeller blades impacted the ground in the horizontal position, with no evidence of cord wise scratching. The left landing gear was found in the down position, and the right landing gear in the up position, underneath the 10-foot stubbed right wing. The left aileron was found in a pasture about 300 feet west-southwest of the fuselage. The right aileron was not found.

Examination of the debris revealed that all the wing attach fittings were accounted for at the accident site. The fracture surfaces of both wings displayed compression on the upper skin surfaces, and tension on the bottom surfaces. The outboard section of the right wing contained a puncture forward of the refueling cap, with blue paint markings found on the inside metal of the hole. The blue vertical stabilizer and rudder displayed an indentation near the top, while the vertical stabilizer cap was not recovered. The aileron cables for both wings displayed damages at the fractured ends consistent with tension overload. Both rudder cables were found attached to the bell crank.

The right horizontal stabilizer, along with the right portion of the elevator still attached, displayed signs of twisting and downward, aft rotation at the attach points. The forward attach bolt, as well as the horizontal rear fuselage attach bulkhead, were in place. Both were bent at their midpoint, consistent with a downward movement of the right horizontal stabilizer. The left horizontal stabilizer and the left portion of the elevator were detached. The left horizontal stabilizer displayed an upward bend in its outboard portion, while the left portion of the elevator displayed a downward bend outboard of the trim tab. The elevator trim drum was found in the full nose up position.

The engine remained attached to its mounts and the firewall, but was separated from the fuselage. The propeller and hub remained attached to the engine. The engine case was intact.

When the engine's crankshaft was rotated, compression was obtained on all six cylinders. Additionally, the accessory gear-drive section rotated, and valve train continuity was confirmed. All spark plugs were removed from the engine. Their electrodes were intact and light gray in color. Spark was noted on all of the leads from the left magneto and on the number two, four, and six cylinder lower leads of the right magneto.

The fuel flow divider was removed from the engine and evidence of fuel odor was noted.

The onboard weather radar was found in the off position.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot, on September 8, 1998, by Monroe County Medical Examiners Office, Rochester, New York.

The FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma conducted toxicological testing.

TESTS AND RESEARCH

An annunciator panel consisting of a group of warning lights was removed from the wreckage and sent to the Safety Board's Materials Laboratory for examination. The annunciator panel contained 18 units, of which each contained two individual lamps. Visual examination with the aid of a bench microscope, revealed that only one lamp (one of the two lamps in the unit identified as "Alternator #2") contained a stretched filament. The remaining lamps contained no evidence of filament damage.

ADDITIONAL INFORMATION

According to FAA Advisory Circular 00-6A, Aviation Weather, "Do avoid by at least 20 miles any thunderstorm identified as severe or giving an intense radar echo. Do clear the top of a known or suspected severe thunderstorm by at least 1,000 feet altitude for each 10 knots of wind speed at the cloud top. This would exceed the altitude capability of most aircraft."

According to radar data, the airplane was traveling over the ground at an average speed of 131 knots, on a heading of 257 degrees.

Using a flight calculator, the true airspeed of the airplane was about 183 knots, and the calibrated airspeed (KCAS) was about 141 knots. Using the PA-46-350P POH performance section, the indicated airspeed (KIAS) was calculated to about 139 knots.

The accident airplanes Pilots Operating Manual (POH) limitations section stated that the maneuvering speed at gross weight was 135 KCAS and 133 KIAS. The limitation section also cautioned that "Maneuvering speed should not be exceeded while operating in rough air."

Weight and Balance

The published maximum gross weight of the airplane was 4,318 pounds. The maximum published takeoff weight of the airplane was 4,300 pounds.

According to the facility that last refueled the airplane, 87.4 gallons of 100 low lead aviation gasoline was added to the fuel tanks. Review of the POH indicated that the airplanes maximum fuel capacity was 122 gallons. Fuel weight was based on full tanks minus 3 gallons for start-up, taxi, take-off, and initial climb.

The weights of the occupants and baggage were estimated to a grand total of 870 pounds. The basic empty weight of the airplane was 3,035 pounds.

The airplane wreckage was released on October 16, 1998, to the owners insurance company.

Pilot Information

Certificate:	Private	Age:	43, 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:	03/26/1998
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	910 hours (Total, all aircraft), 843 hours (Pilot In Command, all aircraft), 21 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N9150X
Model/Series:	PA-46-350P PA-46-350P	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	4222006
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	12/10/1997, Annual	Certified Max Gross Wt.:	4318 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	TIO-540-AE2A
Registered Owner:	DESTINY LEASING INC	Rated Power:	310 hp
Operator:	DESTINY LEASING INC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	BUF, 724 ft msl	Distance from Accident Site:	35 Nautical Miles
Observation Time:	1954 EDT	Direction from Accident Site:	330°
Lowest Cloud Condition:	Scattered / 20000 ft agl	Visibility	10 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	330°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	-8° C / -13° C
Precipitation and Obscuration:			
Departure Point:	MANCHESTER, NH (MHT)	Type of Flight Plan Filed:	IFR
Destination:	GRIFFITH, IN (05C)	Type of Clearance:	IFR
Departure Time:	1720 EDT	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	4 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	5 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC): JIM CAIN **Report Date:** 10/13/2000

Additional Participating Persons: RICHARD SHAUGHNESSY; ROCHESTER, NY
GREGORY ERIKSON; WILLIAMSPORT, PA
MICHAEL C MCCLURE; VERO BEACH, FL

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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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](#).