



Aviation Investigation Final Report

Location:	SEYMOUR TWP., Wisconsin	Accident Number:	CHI98FA356
Date & Time:	August 31, 1998, 19:46 Local	Registration:	N5056J
Aircraft:	Cessna 310R	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

Witnesses reported seeing the twin-engine airplane (Cessna 310) climbing on a north-northeast heading. The airplane was operating on an IFR flight plan. The pilot of that airplane contacted air traffic control as it climbed through 2,500 feet above mean sea level. The controller said he had acknowledged the pilot's transmission and then heard an ELT signal. A witness reported seeing a single engine airplane (Cessna 185) flying in a westerly direction. He said the airplanes collided and were '...engulfed in flames...' as they descended toward the ground. Both airplanes impacted the ground at a 90 degree angle about 3/8 mile apart. Examination of the wreckage revealed that the Cessna 185 left wing tip section had collided with Cessna 310 left wing tip fuel tank. The Cessna 185 left wing tip section crushing matched the shape of the wing tip fuel tank.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilots of both airplanes not maintaining visual separation from the other airplane.

Findings

Occurrence #1: MIDAIR COLLISION
Phase of Operation: CLIMB - TO CRUISE

Findings

1. (C) VISUAL SEPARATION - NOT MAINTAINED - PILOT IN COMMAND

2. (C) VISUAL SEPARATION - NOT MAINTAINED - PILOT OF OTHER AIRCRAFT

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: DESCENT - UNCONTROLLED

Findings

3. OBJECT - TREE(S)

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

4. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On August 31, 1998, at 1946 central daylight time (cdt), a Cessna 310R, N5056J, piloted by a commercial pilot, and operated as Night Chase Cargo Flight 303 under 14 CFR Part 135, collided with a Cessna 185B, N100TS, which was piloted by a private pilot. Visual meteorological conditions prevailed at the time of the accident. N5056J's pilot had just activated an IFR flight plan and was climbing to its assigned altitude of 4,000 above mean sea level (msl). N100TS was a 14 CFR Part 91 personal flight that was not operating on a flight plan. Witnesses reported that N100TS was in level cruise flight. Both pilots were fatally injured. There were no other occupants in the airplanes. N5056J had departed Eau Claire, Wisconsin, exact time unknown. N100TS had departed a restricted landing area near Wissota, Wisconsin, 1935 cdt.

According to the Federal Aviation Administration (FAA) Minneapolis, Minnesota, Air Route Traffic Control Center controller handling N5056J, the "...pilot of [N5056J] checked in on frequency climbing out of 2,500 feet. I acknowledged the check on and I was requesting a report level at 5,000 feet... [when] an ELT signal sounded in the overhead speaker. No further communications were received from [N5056J]."

A witness reported seeing N5056J climbing while flying in a north-northeast direction. He said he saw N100TS flying on a westerly heading. He said the airplanes collided and both "...aircraft [were] engulfed in flames on the way to [the] ground. No glide, both aircraft fell straight down to [the] ground." A second witness confirmed the first witnesses' statement. A third witness wrote, "[I] think [the] 185 was circling- maybe taking pictures around 7:30. Heard a 'pop'... saw [the airplanes] after [they] hit." A fourth witness said he heard a loud pop and "...observed [the] left engine of [a] white 2-engine plane on fire." He said this airplane's "...left wing [went] vertical and [it] rolled over to [the] right and spun over the hill."

PERSONNEL INFORMATION

According to the employer of N5056J's pilot, the pilot was hired on August 3, 1998. Company records showed N5056J's pilot had completed his Cessna 310 pilot-in-command 14 CFR Part 135 flight training on August 14, 1998. The pilot received a 14 CFR Part 135 instrument flight rules check ride on August 17, 1998. The company's monthly flight/duty time records showed N5056J's pilot had not flown for the company since August 28, 1998. Copies of these records are appended to this report. As of August 28, 1998, N5056J's pilot had a total time of 1,959.5 hours and 1,893.6 hours of pilot-in-command flight time according to his logbook. The pilot's FAA first class medical was issued on September 26, 1997, with no restrictions.

According to the logbook belonging to N100TS's pilot, he had a total time of 182.9 hours of which 70.0 hours were pilot-in-command flight time. He had completed a flight review according to 14 CFR Part 61.56 on August 11, 1997. His logbook showed he began flying N100TS on June 20, 1994, when he had a total time of 100.5 hours. The pilot's FAA third class medical was issued on April 29, 1998, with no restrictions.

AIRCRAFT INFORMATION

N5056J was a 1975 Cessna 310R, serial number 310R-0176, operated by Heartland Aviation, Eau Claire, Wisconsin, under 14 CFR Part 135. N5056J had 8,094.4 hours total time on its airframe at the time of the accident. N5056J received a 100 hour inspection on August 19, 1998, when it had 8,059 hours on its airframe. Maintenance records showed N5056J had 7,961.7 hours on its airframe when it received its annual inspection on July 7, 1998.

N100TS was a 1963 Cessna 185B, serial number 1850639 that was operated as a personal airplane by the accident pilot. N100TS had 5,236.0 hours on its airframe at the time of the accident. Maintenance records showed N100TS received its annual inspection on August 8, 1997. At that time N100TS had 5,196.1 hours on its airframe.

WRECKAGE AND IMPACT INFORMATION

The wreckage site was about 3 miles east, southeast of the Eau Claire County Airport, Eau Claire, Wisconsin. N5056J's main wreckage was located about 1/2 mile east of 50th Avenue and about 3/4 mile north of Burnell Drive in Seymour township, Eau Claire County, Wisconsin. N100TS's wreckage was located about 150 yards west of 50th Avenue and 1/2 mile north of Burnell Drive in Seymour Township, Eau Claire County, Wisconsin. A map showing the wreckage sites is appended to this report. Various sized pieces of N5056J's airframe were randomly scattered between both airplanes main wreckage sites.

N5056J impacted the ground at an approximate 90 degree angle on a heading of 275 degrees. The empennage had separated from the fuselage and was found upside down in front of the wing's leading edge. The majority of the wing and fuselage had been destroyed by fire and collision forces. The fire damaged right wings' outboard section equal to the aileron's span had its leading edge crushed aft to the main spar. Both engines were buried to their rear cylinders. N5056J's belly center-section had cut marks that varied in length and direction. The fire damaged left wings' outboard section from about mid span on the aileron to the wingtip tank was found about 300 yards southwest of N5056J's main wreckage site.

Aileron control cable continuity was established for N5056J. The aileron interconnect cable was found broken on the left side of the center bell crank. The ends of the separated cables were broomed and the individual strands of the separated cable were necked when viewed under 10 power magnification. Rudder control cable continuity was established between the rudder and cockpit area. Elevator control cable continuity was established between the elevator and cockpit area. The cables had been separated from the elevator bell crank due to

fire destruction of the bell crank.

The right engine propeller blades were recovered unattached from the engine. The left engine propeller blades were not found except for one blade section that was about 20 inches long. The surface of that blade had chord wise scoring and scratching and white paint transfer marks on its leading edge and surfaces. The left engine's crankshaft flange propeller holes exhibited elongated holes. The elongated damage was positioned opposite the direction of engine's rotation. The axis of the elongated holes was about 10-30 degrees to the flange's rotational arc.

N100TS impacted the ground at a 90 degree angle on a 340 degree heading. Its left wing was found in a wooded area about 1/2 mile east of the main wreckage. The wing separated at its root. The outboard bay between the tip rib and first rib inboard had separated from the wing. The wing's spars and surface metal edges were bent aft about 60 degrees from the wing's centerline. The separated section had an oval shaped crush area that started at its leading edge and went aft to the main spar. This crush area matched N5056J's left wingtip fuel tank bulkhead shape.

N100TS's fuselage was crushed aft to the vertical stabilizer's leading edge. The empennage was laying inverted over the wreckage. The vertical stabilizer's leading edge and tip were crushed aft to the rudder hinge line. The right wing was crushed aft and wrinkled along its span. The engine was buried about 3 feet into the ground.

N100TS's left main landing gear tire had a cut through it from the wheel hub to the tread area. The left main landing gear wheel rim was separated from the main structure. The interior of the wheel, in line with the missing rim section was crushed inward toward the axle. Small pieces of white paint were found on the wheel rim fracture surface. Both propeller blades had chord wise scratching and scoring. One blade had about 3 inches missing from its tip. This piece was not recovered. A 1 inch deep "vee" shaped gouge was in this blade's leading edge located about 6 inches from the blade's end. This blade was twisted along its span and had an "S" curve shaped bend at its mid span point and at the gouge location. The second blade was intact and was bent forward about 20 degrees at the mid span point. Flight control continuity was established for all three axes.

MEDICAL AND PATHOLOGICAL INFORMATION

The autopsy on the pilot's of N5056J and N100TS was conducted on September 2, 1998, at the Sacred Heart Hospital, Eau Claire, Wisconsin. The toxicology examination related to N5056J's pilot was conducted by the FAA's Civil Aeromedical Institute in Oklahoma City, Oklahoma. The results of that examination showed 17 (mg/dL, mg/hg) ethanol and 12 (mg/dL, mg/hg) acetaldehyde were detected in the kidney sample. The toxicology examination related to N100TS's pilot was conducted by the FAA's Civil Aeromedical Institute in Oklahoma City, Oklahoma. The results of that examination showed 17 (mg/dL, mg/hg) ethanol and 11 (mg/dL, mg/hg) acetaldehyde were detected in the blood sample. According to the manager of

Toxicology and Accident Research Laboratory at the FAA's Civil Aeromedical Institute, the alcohol and acetaldehyde were the result of post mortem production.

ADDITIONAL INFORMATION

According to the U.S. Naval Observatory's Astronomical Applications Department, sunset on the accident date was 1945 cdt. On August 31, 1998, at 1946 cdt, the sun was 1 degree below the horizon and 283 degrees east of North for the Eau Claire, Wisconsin, area. Data from the U.S. Naval Observatory is appended to this report.

The FAA's Minneapolis, Minnesota, Air Route Traffic Control Center radar coverage for the airspace east of Eau Claire, Wisconsin, begins at 3,500 feet msl, according to the FAA Principal Operations Inspector assisting with the accident investigation.

The wreckage of N5056J and N100TS was released to Mr. Larry Husby, Heartland Aviation, Eau Claire, Wisconsin, on September 3, 1998.

Pilot Information

Certificate:	Commercial	Age:	24, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	Toxicology Performed:	Yes
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	September 26, 1997
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	1960 hours (Total, all aircraft), 160 hours (Total, this make and model), 1894 hours (Pilot In Command, all aircraft), 209 hours (Last 90 days, all aircraft), 68 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N5056J
Model/Series:	310R 310R	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	310R-0176
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	August 19, 1998 100 hour	Certified Max Gross Wt.:	5500 lbs
Time Since Last Inspection:	35 Hrs	Engines:	2 Reciprocating
Airframe Total Time:	8094 Hrs	Engine Manufacturer:	Continental
ELT:	Installed	Engine Model/Series:	IO-520-MB1B
Registered Owner:	HEARTLAND AVIATION, INC.	Rated Power:	285 Horsepower
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Does Business As:		Operator Designator Code:	AZNA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	EAU ,907 ft msl	Distance from Accident Site:	3 Nautical Miles
Observation Time:	19:51 Local	Direction from Accident Site:	290°
Lowest Cloud Condition:	Scattered / 6000 ft AGL	Visibility	20 miles
Lowest Ceiling:	Broken / 25000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	250°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	21°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	EAU CLAIRE , WI (EAU)	Type of Flight Plan Filed:	IFR
Destination:		Type of Clearance:	IFR
Departure Time:	00:00 Local	Type of Airspace:	Class E

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	

Wreckage and Impact Information

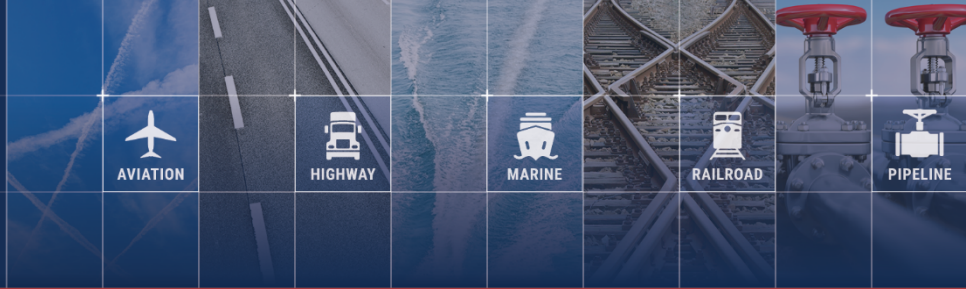
Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	Unknown
Total Injuries:	1 Fatal	Latitude, Longitude:	44.820892,-91.490867(est)

Administrative Information

Investigator In Charge (IIC):	GATTOLIN, FRANK
Additional Participating Persons:	ROBERT BRANDT; MILWAUKEE , WI JON A COOPER; WICHITA , KS LARRY HUSBY; EAU CLAIRE , WI
Original Publish Date:	October 15, 1999
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=43834

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).



Aviation Investigation Final Report

Location:	SEYMOUR TWP., Wisconsin	Accident Number:	CHI98FA356
Date & Time:	August 31, 1998, 19:46 Local	Registration:	N100TS
Aircraft:	Cessna 185B	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Witnesses reported seeing the twin-engine airplane (Cessna 310) climbing on a north-northeast heading. The airplane was operating on an IFR flight plan. The pilot of that airplane contacted air traffic control as it climbed through 2,500 feet above mean sea level. The controller said he had acknowledged the pilot's transmission and then heard an ELT signal. A witness reported seeing a single engine airplane (Cessna 185) flying in a westerly direction. He said the airplanes collided and were '...engulfed in flames...' as they descended toward the ground. Both airplanes impacted the ground at a 90 degree angle about 3/8 mile apart. Examination of the wreckage revealed that the Cessna 185 left wing tip section had collided with Cessna 310 left wing tip fuel tank. The Cessna 185 left wing tip section crushing matched the shape of the wing tip fuel tank.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilots of both airplanes not maintaining visual separation from the other airplane.

Findings

Occurrence #1: MIDAIR COLLISION
Phase of Operation: CRUISE

Findings

1. (C) VISUAL SEPARATION - NOT MAINTAINED - PILOT IN COMMAND

2. (C) VISUAL SEPARATION - NOT MAINTAINED - PILOT OF OTHER AIRCRAFT

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

3. TERRAIN CONDITION - OPEN FIELD

Factual Information

See narrative from CHI-98-F-A356A

Pilot Information

Certificate:	Private	Age:	41,U
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	April 29, 1998
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	183 hours (Total, all aircraft), 81 hours (Total, this make and model), 142 hours (Pilot In Command, all aircraft), 7 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N100TS
Model/Series:	185B 185B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	1850639
Landing Gear Type:	Tailwheel	Seats:	6
Date/Type of Last Inspection:	August 8, 1997 Annual	Certified Max Gross Wt.:	3200 lbs
Time Since Last Inspection:	41 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	5236 Hrs	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	IO-470-F18
Registered Owner:	D.R. HENNING/C.W. SIREK	Rated Power:	260 Horsepower
Operator:		Operating Certificate(s) Held:	
Operator Does Business As:		Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	EAU ,907 ft msl	Distance from Accident Site:	3 Nautical Miles
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Lowest Cloud Condition:	Scattered / 6000 ft AGL	Visibility	20 miles
Lowest Ceiling:	Broken / 25000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	250°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	21°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	WISSOTA , WI (RLA)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	19:35 Local	Type of Airspace:	Class E

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	44.820892,-91.490867(est)

Administrative Information

Investigator In Charge (IIC):	GATTOLIN, FRANK
Additional Participating Persons:	ROBERT BRANDT; MILWAUKEE , WI JON A COOPER; WICHITA , KS LARRY HUSBY; EAU CLAIRE , WI
Original Publish Date:	October 15, 1999
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=43834

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