Aviation Investigation Final Report

Location:	ST. MARTINVILLE, Louisiana	**Accident Number:**	FTW98FA185
Date & Time:	April 16, 1998, 20:20 Local	**Registration:**	N238BC
Aircraft:	Young GLASAIR III	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The non-instrument rated commercial pilot lost control of the airplane after encountering instrument meteorological conditions and moderate to severe turbulence while on a night cross-country flight. The wreckage of the airplane was located the following day in a remote unpopulated area approximately 19 miles east of Lafayette. There were no reported eye witnesses to the accident. Prior to the loss of control, the pilot received VFR traffic advisories from Air Traffic Control (ATC) while conducting flight at 11,500 feet. Radar and radio contact were lost when the airplane was about 20 nautical miles east of Lafayette. The airplane was last observed by radar at 10,200 feet. No distress calls were received from the aircraft. ATC advised the pilot of a weather advisory which called for a 30mile wide area of moderate to severe turbulence from 4,000 to 12,000 feet associated with wind shear. About 20 minutes prior to the accident, a pilot of an ATR72 airplane reported encountering moderate to severe turbulence between 5,000 and 8,000 feet, about 10.5 nm north of the accident site. The pilot had been provided with weather advisories calling for adverse weather and marginal VFR along his anticipated route of flight. No structural or mechanical anomalies were observed during an examination of the airplane.

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 control of the aircraft as a result of VFR flight into instrument meteorological conditions and flight into known adverse weather conditions. Contributing factors were turbulence, clouds, dark night and lack of an instrument rating.

Findings

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

Findings
1. (F) WEATHER CONDITION - TURBULENCE
2. (F) WEATHER CONDITION - CLOUDS
3. (F) LIGHT CONDITION - DARK NIGHT
4. (C) VFR FLIGHT INTO IMC - INADVERTENT - PILOT IN COMMAND
5. (F) LACK OF CERTIFICATION - PILOT IN COMMAND
6. (C) FLIGHT INTO KNOWN ADVERSE WEATHER - CONTINUED - PILOT IN COMMAND
7. (F) LACK OF TOTAL INSTRUMENT TIME - PILOT IN COMMAND

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

Findings
8. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND

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

Findings
9. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On April 16, 1998, approximately 2020 central daylight time, a Young Glasair III experimental amateur built airplane, N238BC, was destroyed upon impact with terrain following an in flight encounter with weather near St. Martinville, Louisiana. The non-instrument rated commercial pilot and his pilot rated passenger were fatally injured. Dark night visual meteorological conditions prevailed throughout the area, and a flight plan was not filed for the Title 14 CFR Part 91 personal flight. The airplane was owned and operated by the pilot. The night cross country flight originated from Lake Charles, Louisiana, at 1950.

According to recorded data provided by the FAA, departure control, as well as Houston Center, provided the pilot with timely and accurate weather advisories concerning the moderate to severe turbulence associated with the adverse weather conditions along his route of flight. Additionally, the Houston Flight Watch provided the pilot an in-flight weather briefing prior to his refueling stop at Lake Charles.

According to FAA recorded radar data, the airplane was in VFR conditions receiving VFR traffic advisories from Houston Center at 11,500 feet msl, while on a flight from Lake Charles, Louisiana, to Lakeland, Florida. The airplane was last observed on radar at 10,200 feet, at a point approximately 20 nautical miles east of Lafayette, Louisiana, when radar and radio contact was lost with the airplane. No distress calls were received from the airplane.

The wreckage of the airplane was located by the Civil Air Patrol the following day in a remote unpopulated area approximately 19 miles east of Lafayette. There were no reported eye witnesses to the accident.

PERSONNEL INFORMATION

The 64-year-old pilot's flight logbook was not located, therefore, instrument and total flight time could not be determined. The date of his last biennial flight review also could not be determined; however, the pilot's son reported that it was completed in July 1996. According to FAA records, the non-instrument rated pilot was issued a commercial pilot certificate on August 26, 1992, and an airframe and powerplant mechanic certificate on May 9, 1992. According to the pilot's most recent aviation medical application, dated December 12, 1996, he had accumulated a total of 2,000 flight hours, of which 70 hours were in the previous six months.

AIRCRAFT INFORMATION

The Glasair III kit-built aircraft is a high performance two-place, low wing airplane, with an airframe constructed primarily from fiberglass composite material. The airplane was equipped for flight into night instrument meteorological conditions.

The weight of the aircraft at the time of the accident was estimated at 2,727 pounds. The maximum gross weight of the aircraft was 2,500 pounds. The aircraft's flight CG limits were 79.65 forward and 87.88 aft. The aircraft's CG at the time of the accident was estimated at 85.93.

A review of the airframe and engine records did not reveal evidence of any anomalies or uncorrected maintenance defects. The aircraft's last condition inspection was completed on September 22, 1997, at an aircraft total time of 261.6 hours. The last recorded maintenance performed was on March 13, 1998, and the aircraft had a total time of 286.8 hours.

METEOROLOGICAL INFORMATION

At 1747, prior to reaching Lake Charles, Louisiana, on a flight from Phoenix, Arizona, N238BC contacted Houston Flight Watch and requested weather reports for the panhandle of Florida. Houston Flight Watch advised N238BC to expect lower stratus cloud layers starting about the Texas Louisiana border and extending across the Gulf Coast states and coastal areas to Florida. East of the frontal boundary in east Texas areas of light shower activity, mostly along the coastal routes, were reported more significantly, there were patchy areas of IFR reported around Gulfport, Mobile, and the Florida panhandle. Houston Flight Watch further advised N238BC to expect marginal VFR, with ceilings between nine hundred broken to overcast, up to about two thousand and three thousand broken to overcast around Mobile. Cloud tops were unknown; however, after passing Tallahassee, Florida, they were to expect scattered conditions for the Florida peninsula. Houston Flight Watch also advised N238BC to obtain a standard briefing while on the ground at Lake Charles for an update on the weather conditions for their continued route of flight.

According to FAA records, no weather briefings were provided to the pilot while he was on the ground at Lake Charles.

At 1952, Lake Charles Departure Control issued the Center Weather Service Unit (CWSU) advisory One Series Two (CWA 102) to N238BC. The advisory stated, in part: From McComb to 35 nm south of Lake Charles to Corpus Christi to 45 east of Laredo, area moderate-severe turbulence 4,000 to 12,000 feet associated with wind shear...30 nm wide.

At 2000, the pilot of an ATR72 transport airplane, reported encountering moderate to severe turbulence between 5,000 and 8,000 feet, while 230 degrees at 20 nautical miles from Baton Rouge. This location is about 10.5 nm north of the accident site.

The Lafayette Regional Airport special weather observation at 2010 reported a broken ceiling at 1,300 feet broken, 3,000 feet overcast, 4 miles visibility with haze, altimeter 29.73 inches of

Mercury, winds from 200 degrees at 8 knots, temperature 75 degrees and a dew point of 72 degrees Fahrenheit.

The Aviation Area Forecast (FA) for the South Central Area, issued by the Aviation Weather Center (AWC) at Kansas City, Missouri, and valid just after the accident time, stated in part:

FA issued April 16, at 2045, clouds/weather valid until April 17, 0900; Louisiana, southern half...ceiling 2,000 feet overcast and 10,000 feet overcast with tops to FL300. Occasional visibility 3-5 miles with mist. April 17, 0300 ceiling broken-overcast at 1,000 feet. Widely scattered moderate rain showers. Visibility 3-5 miles with mist. Outlook...marginal visual flight rule ceilings with moderate rain showers and mist.

Astrological data for the accident area at 11,500 feet msl was as follows: Sunset at 1943 and end of twilight at 2007. The moon illumination was established at 77 percent. See NTSB Meteorological Factual Report for further meteorological details.

WRECKAGE IMPACT INFORMATION

The aircraft wreckage was located approximately 19 nm east of Lafayette, Louisiana, in the Atchafalaya Swamp at latitude 30 degrees 07 minutes 53 seconds north and longitude 091 degrees 38 minutes 07 seconds west. Examination of the accident site revealed that the aircraft came to rest upright on a 350 degree magnetic heading within a 50 to 70 feet diameter open area in about 4 feet of water. A small tree 4 inches in diameter, located in front of the aircraft had slash marks. Both the left and right wing tips were up against small trees of about 6 feet in height. The fuselage was separated from the cabin and the empennage was partially separated from the fuselage. The lower sides of the fuselage were separated from its bottom side and spread outwards. Both flaps were found separated from their respective wings. One flap was found to the left of the left wing and the other flap was found aft of the aircraft. The rudder was separated from the vertical stabilizer and found aft of the aircraft. A post-impact fire damaged the upper portion of the cabin and fuselage, and both wing tips. The surrounding trees also sustained fire damage. An inventory at the site revealed that all major components and flight controls for the airplane, were located within a 50-70 foot radius of the resting place of the aircraft. See enclosed wreckage diagram for details of the wreckage distribution.

The aircraft was recovered from the accident site and secured at the St. Martinville Sheriff's Office impound lot, and an examination of the aircraft was conducted on April 30, 1998. Both main landing gear were found retracted, the left and right wing speed brakes were found in the stowed position. Both left and right flaps were found separated from their respective hinges. Flight control continuity was established to the ailerons. Control continuity could not be established to the elevator and rudder due to the elevator push pull tube being separated and the separation of the rudder cables; however, no evidence was observed that would indicate that they had separated prior to terrain impact.

Further examination of the aircraft revealed that the 250 horsepower Lycoming engine

remained attached to the airframe. No evidence was observed of any pre-mishap catastrophic mechanical malfunction or engine compartment fire. The crankshaft was free and easy to rotate. Thumb compression was observed on all cylinders, and the complete valve train was observed to operate in proper order. The vacuum pump was secured to its mounting pad in the accessory section. The vacuum pump was removed, disassembled, and examined. The rotor/vane assembly was intact and undamaged. The left magneto was securely attached to the engine. The impulse coupling was heard clicking during rotation of the crankshaft. The magneto to engine timing was not ascertained due to water contamination (the engine had been submerged in swamp water for about seven days). The right magneto drive pad was covered with a block-off plate. The top position spark plugs were aviation style spark plugs with conventional style spark plug wires. The bottom spark plugs were automotive type utilizing thread adapter to enable their use in the cylinder spark plug hole. The bottom spark plugs utilized automotive type push-on spark plug wires and they were connected to an electronic ignition source.

The two-bladed McCauley constant speed propeller was securely attached to the crankshaft flange, and both blades were bent aft. One blade had a nick in the leading edge about 2.5 inches from its tip.

MEDICAL AND PATHOLOGICAL INFORMATION

The autopsy was performed by Emil M. Laga, M.D., New Iberia, Louisiana. There was no evidence of any preexisting disease that could have contributed to the accident. Toxicological findings were negative.

ADDITIONAL DATA

The aircraft wreckage was released to the owner's representative on May 8, 1998.

Pilot Information

Certificate:	Commercial	**Age:**	64,Male
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 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	December 12, 1996
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	2000 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Young	**Registration:**	N238BC
Model/Series:	GLASAIR III GLASAIR II	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	3099
Landing Gear Type:	Retractable - Tricycle	**Seats:**	2
Date/Type of Last Inspection:	September 22, 1997 Annual	**Certified Max Gross Wt.:**	2500 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	IO-540-K1G5D
Registered Owner:	JACK D. SIEBENHAAR	**Rated Power:**	250 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
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:	LFT ,42 ft msl	**Distance from Accident Site:**	19 Nautical Miles
Observation Time:	20:10 Local	**Direction from Accident Site:**	285°
Lowest Cloud Condition:	Unknown	**Visibility**	4 miles
Lowest Ceiling:	Broken / 1300 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	200°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	24°C / 22°C
Precipitation and Obscuration:	N/A - None - Haze		
Departure Point:	LAKE CHARLES , LA (LCH)	**Type of Flight Plan Filed:**	None
Destination:	LAKELAND , FL (LAL)	**Type of Clearance:**	VFR on top
Departure Time:	19:50 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:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	30.12017,-91.829826(est)

Administrative Information

Investigator In Charge (IIC):	Wigington, Douglas
Additional Participating Persons:	RONALD G FOLKS; BATON ROUGE , LA MARK W PLATT; WILLIAMSPORT , PA
Original Publish Date:	July 2, 1999
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=20412