

Aviation Investigation Final Report

Location:	MABLETON, Georgia		Accident Number:	MIA99LA156
Date & Time:	May 19, 1999, 15:37 L	ocal	Registration:	N75419
Aircraft:	Champion	GLASTAR	Aircraft Damage:	Destroyed
Defining Event:			Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Instructional			

Analysis

After take off the airplane was observed by the tower controller to enter the downwind leg of the landing pattern. The controller attended to other traffic and when he looked for the airplane, it had disappeared. The airplane was observed by witnesses in straight and level flight between 100 to 200 feet above the trees. One witness stated pitched up about 10 degrees, before the nose pitched straight down. The other witness stated the nose of the airplane pitched straight down. The engine was running and the airplane remained in a nose down attitude until it disappeared from view. Examination of airframe, flight control assembly, engine assembly and accessories revealed no evidence of a pre-crash mechanical failure or malfunction.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: An in-flight loss of control for undetermined reasons, resulting in an in-flight collision with trees and the ground.

Findings

Occurrence #1: UNDETERMINED Phase of Operation: APPROACH - VFR PATTERN - DOWNWIND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: APPROACH - VFR PATTERN - DOWNWIND

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT Phase of Operation: DESCENT - UNCONTROLLED

Findings 1. OBJECT - TREE(S)

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER Phase of Operation: DESCENT - UNCONTROLLED

Findings 2. TERRAIN CONDITION - GROUND

Factual Information

On May 19, 1999, about 1537 eastern daylight time, a Champion Glastar, N75419, registered to a private owner, operating as a 14 CFR Part 91 instructional flight, crashed while on downwind at Charlie Brown Airport, Atlanta, Georgia, in the vicinity of Mableton, Georgia. Visual meteorological conditions prevailed and no flight plan was filed. The airplane was destroyed. The commercial pilot flight instructor (CFI) and private pilot dual student sustained fatal injuries. The flight originated from Charlie Brown Airport, about 3 minutes before the accident.

The FAA controller stated the pilot had made a full-stop landing to runway 08 at Charlie Brown Airport, cleared the runway, and taxied back for another VFR departure. The pilot was asked by ground control if he was going to stay in the pattern or depart. The pilot stated, "we're gonna stay in the pattern." The local controller cleared N75419 for takeoff at 1533:55 (UTC). The pilot stated at 1933:59, "four one niner cleared for takeoff runway. There was no other known recorded conversation with N75419. The local controller observed N75419 lift off, turn crosswind, and then turn downwind. He turned his attention to another airplane calling for departure. He cleared the departing airplane and turned back to locate N75419. N75419 was not on the downwind leg or on radar. The controller attempted radio contact with negative results. He asked another airplane that had reported inbound for landing to make a low pass over runway 8, with a left turn out to see if they could locate N75419. A short time later, the inbound pilot reported seeing emergency vehicles but no wreckage. A helicopter (N11TV) was asked to assist in locating the crash site, and he reported over the wreckage at 2002:54.

Two witnesses observed N75419 in the vicinity of Charlie Brown Airport. Both witnesses stated the airplane was observed in straight and level flight between 100 to 200 feet above the trees. One witness stated he observed the nose of N75419 pitch up about 10 degrees, before the nose pitched straight down, and disappeared from view below the tree line. The other witness stated he observed the nose of the airplane pitch straight down. The engine was running and the airplane remained in the nose down attitude until it disappeared from view below the tree line, and it was heard colliding with the terrain.

A friend of the CFI contacted the NTSB, and stated that the CFI sat down with the deceased pilot on the day of the accident and discussed a pending flight review, which had been scheduled the following day with another instructor. They departed on the accident flight with the CFI going along as an observer. According to the FAA aviation safety inspector conducting the on-scene examination, the son of the deceased pilot stated, his father was receiving a bi-annual flight review at the time of the accident from the CFI. The son of the deceased registered owner / pilot stated, "On the 19th of May of the year 1999. In reference to events prior to the crash of Glastar N75419. Mr. Champion had a 12:30 appointment with Mr. Dodgie Stockmar for a bi-annual flight review. He had expressed to his wife Sharon Champion that during the BFR Mr. Stockmar wanted to make sure that he handled communication

efficiently in a controlled airport environment and would be doing his landings at Charlie Brown Airport (FTY)."

The wreckage of N75419 was located about 1 mile north of Fulton County Airport, Atlanta, Georgia, in a wooded area adjacent to MSC Industrial Tool Supply located in the vicinity of Mableton, Georgia.

Examination of the crash site revealed the airplane descended vertically. The right wing collided with a large tree limb about 40 to 50 feet above the base of the tree separating the right wing. The airplane impacted the ground on a heading of 185 degrees magnetic. The engine and propeller assembly was imbedded below the ground about 4 feet. The left wing front spar ripped out of its attach fitting, and the rear spar remained attached. The left and right fuel tanks were ruptured, and a strong odor of automotive gas was present at the crash site.

Examination of the airframe, flight control assembly revealed no evidence of a precrash mechanical failure or malfunction. All components necessary for flight were present at the crash site. Continuity of the flight control assembly was confirmed for pitch, roll, and yaw.

Examination of the engine assembly and accessories revealed no evidence of a precrash mechanical failure or malfunction. Torsional twisting and bending was present on both propeller blades.

Examination of the pitch trim servo revealed it was in the full nose down position with no evidence of damage. The pitch trim servo and pilots control stick grip with pitch trim switches were removed from the airplane and taken to an avionics shop for further analysis. The pitch trim servo was connected to a 12-volt power supply, and a functional check was completed with no deficiencies. The pitch trim switches located on the pilots control stick were contaminated, and would not give consistent readings when a functional test was performed. For additional information see FAA aviation safety inspector statement.

The FAA aviation safety inspector received a cc mail from an FAA test pilot who had flown a Glastar airplane on loan from the Experimental Aircraft Association with the same pitch trim system that was installed on the accident airplane. The test pilot stated that on several occasions that he had given himself a run away trim with the electric trim system. He further stated, "With close location of the microphone button on the stick grip, I fly with my thumb and index finger around the top of the grip. During times of inattention, busy distractions or fatigue, it is very easy for one of these fingers to unknowingly slide over one of the two trim activation buttons resulting in unintended pilot activated run away trim (nose up or nose down)." For additional information see cc mail dated May 27, 1999.

The aircraft manufacturer obtained parts from the son of the deceased pilot. The parts consisted of the entire elevator control system, control sticks, control yoke assembly and stick pivots all the way back to the elevator bellcrank, and push-pull tube from the bellcrank to the

elevator control horn. The components were forwarded to the NTSB investigator-in-charge, and subsequently forwarded to the NTSB Materials Laboratory for further analysis.

Examination of the elevator/aileron control yoke revealed it had separated from the surrounding hardware through three weld joints. The first two weld fractures were on the mounting block that connects the cross-tube assembly to the control yoke. The surfaces of both fractures were rough and oriented along a shear plane consistent with overstress separations. The third weld separation was between the control yoke and the elevator actuation stem at the weld. Nearly all of the weld bead material stayed attached to the elevator actuation stem leaving a hole in the control yoke. Both sides of the fracture were oxidized and had been mechanically damaged. Both sides of the fracture were removed and examined with scanning electron microscopy. A large amount of the surface on both sides of the fracture had been damaged, in a direction consistent with the two halves of the fracture rubbing against each other during separation. Two very small areas of striations were located on the elevator side of the fracture. These areas were located near the outside of the fracture surface and contained aligned microfissures. No striations were found on the corresponding area of the control yoke half of the fracture. For additional information see NTSB Materials Laboratory Factual Report No. 99-212.

Postmortem examination of the pilot was conducted by Dr. Brian S. First, Chief Medical Examiner, Office of the Medical Examiner, Cobb County, Marietta, Georgia, on May 20, 1999. The cause of death was generalized trauma. Postmortem toxicology of specimens from the pilot was performed by the Forensic Toxicology Research Section, Federal Aviation Administration, Oklahoma City, Oklahoma. These studies were negative for ethanol, basic, acidic, and neutral drugs.

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No determination could be made as to who was manipulating the flight controls at impact based on the injuries described in the Medical Examiners report.

The wreckage and trim servo of N75419 was released to Mr. William J. Champion, son of the deceased pilot on May 21, 1999. The components retained for further analysis were returned to Mr. William J. Champion on October 25, 1999.

Pilot Information

Certificate:	Private	Age:	59,U
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Valid Medicalw/ waivers/lim	Last FAA Medical Exam:	May 21, 1997
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	255 hours (Total, all aircraft), 44 hours (Total, this make and model), 208 hours (Pilot In Command, all aircraft), 9 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Champion	Registration:	N75419
Model/Series:	GLASTAR GLASTAR	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	5043
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	March 10, 1999 Annual	Certified Max Gross Wt.:	1960 lbs
Time Since Last Inspection:	7 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	70 Hrs	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	0-320-E2D
Registered Owner:	WILLIAM J. CHAMPION	Rated Power:	150 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:	FTY ,841 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	14:40 Local	Direction from Accident Site:	80°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	9 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	330°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	28°C / 23°C
Precipitation and Obscuration:	No Obscuration; No Precipitat	tion	
Departure Point:	ATLANTA (FTY)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	15:34 Local	Type of Airspace:	Class D

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	33.810829,-84.559898(est)

Administrative Information

Investigator In Charge (IIC):	Smith, Carrol	
Additional Participating Persons:	MARK L LAUGHRIDGE; COLLEGE PARK, GA	
Original Publish Date:	June 22, 2000	
Last Revision Date:		
Investigation Class:	<u>Class</u>	
Note:		
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=46345	

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 <u>here</u>.