Aviation Investigation Final Report

Location:	Jackson, New Jersey	**Accident Number:**	IAD02FA074
Date & Time:	July 20, 2002, 13:45 Local	**Registration:**	N79CW
Aircraft:	Wehrlen Glassair II RG	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane was observed flying "kind of low" before it spiraled "straight down." It completed three rotations before impacting trees. Post-accident examination revealed no mechanical anomalies. The pilot's operating handbook stated that due to the many variables that affect spin recovery, and the lack of control over those variables, intentional spins were prohibited.

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 airspeed, which resulted in an inadvertent stall/spin and subsequent impact with terrain.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING

Findings
1. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
2. STALL/SPIN - INADVERTENT - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On July 20, 2002, about 1345 eastern daylight time, a homebuilt Glassair II RG, N79CW, was destroyed when it collided with terrain in Jackson, New Jersey. The certificated private pilot was fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight conducted under 14 CFR Part 91.

A witness, who was working in his backyard, first noticed the airplane when it was about 400 feet above the tree line. The airplane was "spiraling straight down," and completed three rotations before it impacted the trees. The witness described the rotations as "similar to tricks you would see in an air show." According to the witness, the engine was running at a "steady, normal" speed.

A second witness was sitting in her backyard about 300 yards from the accident site. She said that her brother pointed out the airplane to her, and commented that it was "flying kind of low." The airplane then started to "spiral downwards," and looked like it was "doing some tricks." The witnesses said it appeared the pilot had attempted to "pull the plane up," just before it impacted the trees.

A Safety Board Air Traffic Control (ATC) Specialist examined radar data provided by the Federal Aviation Administration (FAA), and identified a target flying in the vicinity of the accident side at the time of the accident.

The target was first observed at 1341 at an altitude of 1,700 feet, approaching the Jackson area from the north. For the next 4 minutes, the target continued on a track of 140 degrees and maintained an altitude of 1,600-1,700 feet. The last radar contact was observed at 1745, about 3 miles to the northwest of the accident site, at an altitude of 1,700 feet.

The accident occurred during the hours of daylight, approximately 40 degrees, 03 minutes north latitude, and 74 degrees, 16 minutes west longitude.

PERSONNEL INFORMATION

The pilot's logbook was not located. However, a review of FAA records revealed the pilot held a private pilot certificate with a rating for airplane single engine land. His most recent FAA third class medical certificate was issued on April 30, 2002. At that time, he reported 800 hours of total flight experience.

AIRCRAFT INFORMATION

Examination of fuel records provided by the fixed base operator (FBO) at the Lakewood Airport (N12), Lakewood, New Jersey, revealed that the airplane was refueled on the day of the accident, at 1230, with 24 gallons of 100LL aviation fuel. A sample of fuel from the fuel tanks at the FBO was examined, and revealed no anomalies.

A review of the airplane logbook revealed that the airplane received its last annual inspection on May 1, 2002, at a tachometer time of 238.2. The tachometer time at the accident site was 249.4.

METEOROLOGICAL INFORMATION

The weather reported at McGuire Air Force Base, about 17 miles west of the accident site, at 1355, included winds from 340 degrees at 7 knots, 6 miles visibility with haze, scattered clouds at 5,000 feet, broken clouds at 20,000 feet, temperature 82 degrees F, dew point 64 degrees F, and a barometric pressure of 29.98 inches Hg.

COMMUNICATIONS

A survey of air traffic control facilities revealed no communications with the pilot on the day of the accident.

WRECKAGE AND IMPACT INFORMATION

The airplane was examined at the accident site on July 20-21, 2002. All major components of the airplane were accounted for at the scene. The airplane came to rest on an approximate heading of 220 degrees, at an elevation of 81 feet msl.

Initial tree impact scars started about 67 feet from the main wreckage, and became progressively lower on the trees in the direction of the main fuselage. The wreckage path was oriented on a heading of 190 degrees.

Observed along the wreckage path were the outboard section of the right wing, right aileron, both wing tank fuel caps, the left aileron, a section of the left flap, and several pieces of the fiberglass wings. Also noted along the wreckage path was a 45-degree angular slash mark in a standing tree, about 4 feet from the main wreckage.

The main wreckage consisted of the fuselage, empennage, engine, and inboard sections of both wings. The empennage was oriented on a heading of 150 degrees, and the fuselage section from the wings forward, had separated from the empennage and was oriented on a heading of 220 degrees.

The vertical stabilizer, rudder, and horizontal stabilizer remained intact and attached to the empennage. Rudder and stabilizer control continuity were established from the control

surfaces to the cockpit area.

The inboard 4-foot sections of both wings remained attached to the fuselage at their wing roots, and both main landing gear assemblies were observed in the retracted position. A 3-foot section of the left flap was connected to the inboard section of the wing at its inboard hinge. The 5-foot outboard section of the left wing was separated, and resting adjacent to the inboard section. Reddish-brown transfer marks and concave dents were noted along the leading edge of this section.

The right flap was observed connected to the inboard section of the right wing, at its inboard hinge.

Aileron control continuity was established from the control column to the outboard separation points of the control rods.

The engine remained attached to the airplane and the propeller had separated from the engine. Both propeller blades displayed chordwise scratching and leading edge gauges on the blade tips. The engine starter ring gear and the engine starter nose housing displayed rotational scoring. The header fuel tank located in the engine cowling was compromised; however, the fuel cap was secured to the cowling. Approximately 1 pint of liquid similar to aviation fuel was drained from the gascolator, and was absent of debris. In addition, examination of the soil underneath the engine revealed it was saturated, and a strong odor of aviation fuel was noted.

On July 22, 2002, the engine was examined at a salvage facility, under the supervision of the Safety Board. The examination revealed that when the engine was rotated by hand through the accessory section, valvetrain continuity was established to the propeller flange. Compression was confirmed on each cylinder using the thumb method.

During manual rotation of the engine, the left magneto was tested, and produced spark on all terminal leads. The right magneto was removed from the engine and rotated by hand. Spark was produced on all terminal leads.

The spark plugs were removed from the engine and visual examination revealed their electrodes were intact, and light gray in color.

Borescope examination of the cylinders, pistons, and valves revealed no mechanical deficiencies or anomalies.

Fuel was observed in the fuel lines, gascolator, carburetor, and engine driven fuel pump.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot, on July 22, 2002, at the Kimball Medical Center, Lakewood, New Jersey.

Toxicological testing was performed by the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma.

ADDITIONAL INFORMATION

According to an excerpt from the LIMITATIONS Section of the Glassair Pilot's Operating Handbook:

"Due to many variables that affect spin recovery, and our lack of control over these variables, we prohibit the Glassair from intentional spins."

The airplane wreckage was released on July 23, 2002, to a representative of the pilot's insurance company.

Pilot Information

Certificate:	Private	**Age:**	49,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 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	April 30, 2002
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	800 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Wehrlen	**Registration:**	N79CW
Model/Series:	Glassair II RG	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	1
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	May 1, 2002 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:	11 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	249 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-320
Registered Owner:	Russell Terhune	**Rated Power:**	180 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	WRI,133 ft msl	**Distance from Accident Site:**	17 Nautical Miles
Observation Time:	13:55 Local	**Direction from Accident Site:**	70°
Lowest Cloud Condition:	Scattered / 5000 ft AGL	**Visibility**	6 miles
Lowest Ceiling:	Broken / 20000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	340°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.97 inches Hg	**Temperature/Dew Point:**	28°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lakewood, NJ (N12)	**Type of Flight Plan Filed:**	None
Destination:	(N12)	**Type of Clearance:**	None
Departure Time:	12:45 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Lakewood airport N12	**Runway Surface Type:**	
Airport Elevation:	43 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

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:**	40.052223,-74.26667

Administrative Information

Investigator In Charge (IIC):	Andrews, Jill
Additional Participating Persons:	Morrie Wiener; FAA/FSDO; Philadelphia, PA Dave Moore; Textron-Lycoming Engines; Williamsport, PA
Original Publish Date:	November 25, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=55255