



National Transportation Safety Board Aviation Accident Final Report

Location:	REMINGTON, VA	Accident Number:	IAD00FA003
Date & Time:	11/01/1999, 1530 EST	Registration:	N743TC
Aircraft:	Coughlin LONG-EZ	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal, 1 Serious
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot had given an airplane ride to a passenger earlier in the day, and departed on a second flight with another passenger. Two witnesses described the airplane's flight path from east to west over their heads and then returning from the south over the river. They described the engine noise as smooth and without interruption. The airplane descended into the river channel, below the tops of the trees, at a steep angle of bank. The airplane 'fluttered' as it continued through a steep left turn and struck the treetops along the riverbank. The airplane continued through the trees approximately 500 feet before it struck terrain and caught fire. Several composite propeller fragments and pieces of angular cut wood were found along the wreckage path. Other than extensive fire damage, no discrepancies were noted in the wreckage of the airframe or engine. Immediately after the crash, the pilot reported to one of the witnesses, 'I don't understand. I just couldn't get it out of my bank.'

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 adequate altitude/clearance from the trees while maneuvering at low altitude.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: MANEUVERING

Findings

1. OBJECT - TREE(S)
2. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On November 1, 1999, at 1530 Eastern Standard Time, a homebuilt Long-EZ airplane, N743TC, was destroyed during a collision with trees and terrain while maneuvering over the Rappahannock River, Remington, Virginia. The airplane was consumed by post-crash fire. The certificated airline transport (ATP) rated passenger was seriously injured, and the ATP rated pilot/owner died as a result of his injuries on November 3, 1999. Visual meteorological conditions prevailed for the personal flight that originated at the Culpeper Regional Airport (CJR), approximately 1515. No flight plan was filed for the flight conducted under 14 CFR Part 91.

In telephone interviews, two witnesses who were fishing in the Rappahannock River at the time of the accident described seeing the accident airplane earlier in the day and at the time of the accident. Both witnesses described the airplane's flight path from east to west over their heads and then returning from the south over the river.

The first witness said:

"They flew over us. They were up fairly high heading [west]. They circled around and when they came back over the river he was making an extreme hard left to go back [west] and when I saw him, I could see the underbelly. The wings were at about a 60 or 70 degree angle and it sort of fluttered a little bit.

"It looked like he was gonna make it but he hit the very, very, top of the trees. He just kept clipping off the tops. They were really big tall trees. There was no explosion, just a big 'woof' and a black cloud of smoke."

When questioned about the sound of the airplane's engine, the witness said:

"The engine sounded fine. I commented to my son how good it sounded. The plane sounded outstanding. Good running, real smooth running machine."

The second witness provided a telephone interview, a written statement, and a diagram of the airplane's flight path. He said the airplane crossed over head from east to west and turned left over the woods on the west side of the river. The witness stated the airplane continued in a left turn and reappeared over the river, heading north towards his position. He said:

"He banked down left into the river channel and never came out of his bank. He was flying about 200 to 250 feet then he banked it down into the river like the biplanes do. It was something around a 45-degree bank. Halfway between 90 degrees and zero. It was a fairly aggressive bank. I don't know where he lost control, whether it was over the trees or over the channel. He appeared to be back under control before he hit the trees; he just couldn't get the nose up. When he dove into the river, I didn't think anything of it. But he just didn't pull out. The pilot said, 'I don't understand. I just couldn't get it out of my bank'."

When questioned about the sound of the airplane's engine, the second witness said:

"I didn't notice any unusual sounds. If there was smoke, or a sputter, or a stall, I think I would have recognized it."

In a telephone interview, a friend and coworker of the pilot said he was at the Culpeper Airport waiting for the airplane to return when he learned of the accident. He said he flew with

the pilot/owner just prior to the accident flight. According to the witness:

"I flew for about half and hour. Then I jumped out and [the passenger] jumped in. The plane flew great. I sat in the back seat. The back seat had a side-stick, but no rudder or engine controls."

When asked if the routing of his flight was similar to that of the accident flight, the witness said:

"No. When I flew, we flew out to the west and flew around. We climbed to altitude and I got to fly around a while. [The pilot] demonstrated some of the characteristics of a canard airplane. It handled really nice."

The witness said that after landing, the pilot serviced the airplane with fuel and then departed on the accident flight.

The accident occurred during the hours of daylight approximately 38 degrees, 32 minutes north latitude, and 77 degrees, 45 minutes west longitude.

PILOT INFORMATION

The pilot held an airline transport pilot's certificate with ratings for airplane multi-engine land. He held a commercial pilot's certificate with ratings for airplane single engine land and single engine sea. A review of the pilot's logbooks revealed that entries stopped on March 10, 1999. However, several handwritten notes were attached to the pages and noted flight time until August 1, 1999. The pilot logged approximately 3,000 hours of total time with approximately 60 hours noted in the Long EZ.

The pilot's most recent Federal Aviation Administration (FAA) first class medical certificate was issued July 13, 1999. The pilot reported 3,000 hours of flight experience on that date.

The passenger held an airline transport pilot's certificate with ratings for airplane multi-engine land and a commercial pilot's certificate with ratings for airplane single engine land.

The passenger's most recent FAA first class medical certificate was issued May 12, 1999, and he reported 2,400 hours of flight experience on that date.

AIRCRAFT INFORMATION

The airplane's maintenance records were not recovered. Searches of the accident site, the airplane's hanger, the pilot's vehicle, and his home were unsuccessful. However, the first entry in the pilot's logbook that reflected a flight in N743TC was recorded on October 4, 1997. In the remarks section it stated, "First flight of rebuilt Long EZ with retractable gear."

METEOROLOGICAL INFORMATION

Weather reported at Manassas Regional Airport, 20 miles northeast of CJR, was clear skies with winds from 130 degrees at 9 knots.

WRECKAGE INFORMATION

The wreckage was examined at the site on November 2, 1999, and all major components were accounted for at the scene. The wreckage path was oriented 210 degrees and measured approximately 460 feet from the initial point of tree contact to the main wreckage. The wreckage path was divided into one-foot increments called wreckage points (WP). The first tree contact (WP zero) was 60 feet west of the river's edge, approximately 45 feet above the

ground.

Structural foam, aircraft skin, and composite propeller fragments were scattered along the wreckage path from WP 160 to the main wreckage. The left rudder and the left winglet were at WP 220 and 235 respectively. Several angular cut branches were found along the wreckage path.

The main wreckage came to rest upright, oriented 320 degrees, and was consumed by post-crash fire. An elliptical burn scar, approximately 90 feet long and 30 feet wide, surrounded the main wreckage. Trees inside the scar were burned to heights approximately 40 feet above the ground.

The airframe, instruments, gauges, and controls were destroyed by fire. Power control cable continuity was established from the cockpit to the engine. Routing of flight control cables, push-pull tubes, and bellcranks was determined from the cockpit to the flight control surfaces. Control continuity could not be determined. Excessive deformation, melting, and complete destruction of components by fire was noted throughout the flight control system.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot by the Office of the Chief Medical Examiner for the Commonwealth of Virginia.

TESTS AND RESEARCH

The engine was removed from the site and examined in a maintenance garage in Remington, Virginia, on November 2, 1999. The engine and its associated components were extensively damaged by fire. Impact and fire destroyed the accessory case. The composite propeller blades were fragmented and fire damaged. Impact and fire destroyed the oil sump and carburetor.

The fragmented, melted accessory case and its associated components were removed from the back of engine to facilitate rotation of the internal components.

The spark plugs were intact and the electrodes were tan and gray in color. The cylinders, pistons, and valves were examined by borescope. These components displayed uniform wear and no anomalies.

The engine was rotated by hand and continuity was established throughout the powertrain and valvetrain. Compression was confirmed using the thumb method.

ADDITIONAL INFORMATION

Examination of fuel records revealed that N743TC was serviced with 18.5 gallons of 100LL aviation fuel prior to the accident flight.

The aircraft wreckage was released to the pilot/owner's roommate on November 6, 2000.

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	39, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	07/13/1999
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	3000 hours (Total, all aircraft), 60 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Coughlin	Registration:	N743TC
Model/Series:	LONG-EZ LONG-EZ	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental	Serial Number:	1458
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:		Engine Model/Series:	O-320
Registered Owner:	JOHN GRAVES	Rated Power:	180 hp
Operator:	JOHN GRAVES	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	HEF, 193 ft msl	Distance from Accident Site:	20 Nautical Miles
Observation Time:	1555 EST	Direction from Accident Site:	60°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	10 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	130°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	22° C / 13° C
Precipitation and Obscuration:			
Departure Point:	CULPEPER, VA (CJR)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	1515 EST	Type of Airspace:	Class G

Airport Information

Airport:	CULPEPPER COUNTY AIRPORT (CJR)	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:	1 Fatal, 1 Serious	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal, 1 Serious	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	BRIAN C RAYNER	Report Date:	05/17/2001
Additional Participating Persons:	RONALD E NUTTER; WASHINGTON, DC DAVID C MOORE; ARDSLEY, PA		
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](#).