



Aviation Investigation Final Report

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| Location: | BOONSBORO, Maryland | Accident Number: | IAD97LA102 |
| Date & Time: | July 21, 1997, 19:10 Local | Registration: | N416RS |
| Aircraft: | Lardas SPIRIT | RENEGADE | Aircraft Damage: Destroyed |
| Defining Event: | | Injuries: | 1 Fatal |
| Flight Conducted Under: | Part 91: General aviation - Personal | | |

Analysis

Witnesses watched as the pilot/owner maneuvered his homebuilt airplane at a low altitude. Some witnesses reported the engine sounds stopped before impact. The airplane's nose dropped down and it descended until ground impact and was destroyed during a post crash fire. Witnesses reported observing the airplane on numerous other occasions performing low level maneuvering. Examination of the airframe and engine did not reveal an anomalies. The propeller blades were not damaged. Toxicological tests revealed a blood-alcohol level of .049 percent and a vitreous fluid-alcohol level of .055 percent. Federal Aviation Regulation (FAR) 91.17 stated: (a) No person may act or attempt to act as a crew member of a civil aircraft...(4) while having .04 percent by weight or more alcohol in the blood.

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 his homebuilt airplane during a low level maneuver after a loss of engine power due to undetermined reasons. A factor in the accident was the pilot's alcohol impairment.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: MANEUVERING

Findings

1. REASON FOR OCCURRENCE UNDETERMINED
2. (C) LOW ALTITUDE FLIGHT/MANEUVER - PERFORMED - PILOT IN COMMAND

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

Findings

3. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
4. (F) IMPAIRMENT(ALCOHOL) - PILOT IN COMMAND

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

Factual Information

On July 21, 1997, about 1910 eastern daylight time, a homebuilt Renegade Spirit, N416RS, was destroyed as it impacted the ground while maneuvering near Boonsboro, Maryland. The certificated private pilot/owner was fatally injured. Visual meteorological conditions prevailed and no flight plan was filed for the personal flight conducted under 14 CFR Part 91. The flight originated from the pilot's private property, about 1900.

A witness gathering hay opposite the pilot's property stated:

"He (the pilot) appeared to try a steep climb, at which time I made the comment that he could tail stall if he's not careful. After recovering just in time from that climb, he appeared to attempt the maneuver again. This time he completely stalled, the left wing turned down towards the ground and the nose then turned straight down as he plummeted."

Another witness stated that on the day of the accident:

"My daughter and I started watching from the dining room windows, in the SW corner of our house when he zoomed SE right over us. He performed the same sequence-tight right hand turn/ steep climb/ cut engine/ dive/ start engine/ climb-over a field just to the NE of his home. He seemed barely to clear the tree tops...A couple of seconds later, he dipped a little and momentarily headed straight for us! We screamed and started to run...but by the time I got halfway around, he had recovered direction, and climbed a little again...As he passed by, I had a good, clear view of the plane about 70 feet south and 20 feet above me...about ten seconds before it crashed. There was certainly no flame or smoke visible...In a very few seconds it turned very tightly to the right 180 degrees, but hardly climbed at all; the engine went quiet, and from here it looked like it just dived straight down into the ground..."

This witness also reported that she and her family had observed the airplane on other occasions. She stated:

"He usually flew fairly low-at least relative to the ridge we live on. As time went by he seemed to become more daring. He did a lot of tight turns and dives...Once I saw him doing loop-de-loops above a field...About a week before [the accident]...He flew from the direction of his house N/NW...made a tight, climbing turn over the big clearing...cut the engine, dove, then at the last split-second started the engine, revved it, and pulled up steeply just in time to clear our neighbor's...house..."

A Federal Aviation Administration Inspector examined the wreckage and the debris field. All major components of the airplane were contained with the wreckage. The wreckage was consumed in a post crash fire. The engine was removed and examined on July 24, 1997, at

JRA Executive Air, Hagerstown, Maryland. According to the Federal Aviation Administration Inspector's report on the engine tear down dated July 25, 1997, there were no mechanical anomalies discovered. Examination of the propeller did not reveal any evidence of scoring or twisting.

The pilot's flight logbooks and the airplane's maintenance records were requested, but not located during the investigation.

An autopsy was performed on the pilot, on July 22, 1997, by Daniel K. Brown, M.D., at the Office of the Chief Medical Examiner for the State of Maryland.

The toxicological testing was conducted by the Federal Aviation Administration Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma. The results were positive for ethanol as follows:

55.000 (mg/dl, mg/hg) Ethanol detected in Vitreous fluid 49.000 (mg/dl, mg/hg) Ethanol detected in Blood 53.000 (mg/dl, mg/hg) Ethanol detected in Muscle fluid 55.000 (mg/dl, mg/hg) Ethanol detected in Brain fluid

Federal Aviation Regulation 91.17 (Alcohol or drugs) stated: "(a) No person may act or attempt to act as a crew member of a civil aircraft...(4) while having .04 percent by weight or more alcohol in the blood."

Pilot Information

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| Certificate: | Private | Age: | 46, Male |
| Airplane Rating(s): | Single-engine land | Seat Occupied: | Rear |
| 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: | May 19, 1997 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | |
| Flight Time: | 300 hours (Total, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|----------------------------|---------------------------------------|-----------------|
| Aircraft Make: | Lardas | Registration: | N416RS |
| Model/Series: | RENEGADE SPIRIT RENEGADE S | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | Yes |
| Airworthiness Certificate: | Experimental (Special) | Serial Number: | 0136 |
| Landing Gear Type: | Tricycle | Seats: | 2 |
| Date/Type of Last Inspection: | Unknown | Certified Max Gross Wt.: | 950 lbs |
| Time Since Last Inspection: | | Engines: | 1 Reciprocating |
| Airframe Total Time: | | Engine Manufacturer: | Bombardier |
| ELT: | Not installed | Engine Model/Series: | ROTAX 582 |
| Registered Owner: | RICHARD L. CRANE | Rated Power: | 65 Horsepower |
| Operator: | | Operating Certificate(s) Held: | None |
| Operator Does Business As: | | Operator Designator Code: | |

Meteorological Information and Flight Plan

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| Conditions at Accident Site: | Visual (VMC) | Condition of Light: | Day |
| Observation Facility, Elevation: | HGR ,704 ft msl | Distance from Accident Site: | 16 Nautical Miles |
| Observation Time: | 18:45 Local | Direction from Accident Site: | 340° |
| Lowest Cloud Condition: | Scattered / 5000 ft AGL | Visibility | 5 miles |
| Lowest Ceiling: | None | Visibility (RVR): | |
| Wind Speed/Gusts: | 5 knots / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 0° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 29 inches Hg | Temperature/Dew Point: | 32°C / 18°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | (NONE) | Type of Flight Plan Filed: | None |
| Destination: | | Type of Clearance: | None |
| Departure Time: | 00:00 Local | Type of Airspace: | Class G |

Airport Information

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|-----------------------------|---|----------------------------------|------|
| 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

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|----------------------------|---------|-----------------------------|---------------------------|
| Crew Injuries: | 1 Fatal | Aircraft Damage: | Destroyed |
| Passenger Injuries: | | Aircraft Fire: | On-ground |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 1 Fatal | Latitude, Longitude: | 39.499164,-77.649406(est) |

Administrative Information

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| Investigator In Charge (IIC): | Cain, Jim |
| Additional Participating Persons: | DOUGLAS J LUNDGREN; BALTIMORE , MD |
| Original Publish Date: | June 9, 1999 |
| Last Revision Date: | |
| Investigation Class: | Class |
| Note: | |
| Investigation Docket: | https://data.ntsb.gov/Docket?ProjectID=28217 |

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](#).