



Aviation Investigation Final Report

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| Location: | Lake Elmo, Minnesota | Accident Number: | CEN10FA519 |
| Date & Time: | September 3, 2010, 16:05 Local | Registration: | N333HK |
| Aircraft: | KWECH GLASAIR RG SUPER 11S | Aircraft Damage: | Substantial |
| Defining Event: | Loss of control in flight | Injuries: | 1 Serious |
| Flight Conducted Under: | Part 91: General aviation - Personal | | |

Analysis

The pilot was departing in his experimental amateur-built airplane on a personal cross country flight. Witnesses in the area of the accident reported they observed the low-flying yellow airplane climb over a tree line, pass over the roadway they were on, encounter wind, and then bank. The airplane subsequently descended during the turn and impacted terrain in a field about 1/2 mile north of the departure runway, where it sustained substantial damage to its fuselage. The recorded wind was 19 knots gusting to 28 knots. The pilot sustained serious injuries and indicated that he did not recall anything regarding the accident flight. A postaccident examination of the wreckage revealed no evidence of mechanical malfunctions or anomalies with the airframe or engine.

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 airplane during takeoff with gusty wind conditions, which resulted in a collision with terrain.

Findings

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| Environmental issues | Gusts - Contributed to outcome |
| Personnel issues | Aircraft control - Pilot |

Factual Information

History of Flight

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| Takeoff | Loss of control in flight (Defining event) |
| Uncontrolled descent | Collision with terr/obj (non-CFIT) |

HISTORY OF FLIGHT

On September 3, 2010, about 1605 central daylight time, an experimental amateur-built Kwech GLASAIR RG SUPER 11S airplane, N333HK, piloted by a private pilot, sustained substantial damage on impact with terrain during initial climbout from runway 32 (2,850 feet by 75 feet, asphalt) at Lake Elmo Airport (21D), near Lake Elmo, Minnesota. The personal flight was operating under 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed at the time of the accident. An instrument flight rules flight plan was on file and was activated. The pilot sustained serious injuries. The flight was originating from 21D at the time of the accident, and was destined for the Pine River Regional Airport, near Pine River, Minnesota.

Witnesses in the area of the accident reported to Washington County Sheriff's Office representatives that they observed the low-flying yellow airplane. According to the witnesses, the airplane climbed over a tree line, passed over Manning Avenue, encountered wind, and banked. The airplane subsequently descended during the turn and impacted terrain in a field south of 40th Street and east of Manning Avenue.

A Federal Aviation Administration (FAA) Inspector interviewed the pilot in a physical rehabilitation center. The pilot indicated that he did not recall anything regarding the accident flight.

PERSONNEL INFORMATION

The 39-year-old pilot held a FAA private pilot certificate with airplane single engine land and instrument ratings. The pilot held a third-class medical certificate issued to him on February 1, 2010, without limitations. An endorsement in his logbook showed that he completed a flight review on March 2, 2009 and that he completed an instrument competency check on September 3, 2009. The last entry in the pilot's logbook was dated December 18, 2009, and his total recorded flight time was 446.9 hours. A family member supplied a list of flights that the pilot was reported to have taken between January 6 and August 15, 2010.

AIRCRAFT INFORMATION

N333HK was an experimental amateur-built Kwech GLASAIR RG SUPER 11S, single-engine, low-wing, retractable tri-cycle landing gear, two-place airplane, with serial number 2313. A Lycoming IO-360-B1E engine, rated at 205-horsepower, with serial number L-11581-51A, custom built by DeMars Aero LTD, powered the airplane.

Maintenance records for the airplane were requested and were not located.

METEOROLOGICAL INFORMATION

At 1553, the recorded weather at the St. Paul Downtown Airport / Holman Field, near St Paul, Minnesota, about 240 degrees and 10 miles from the accident site, was: Wind 300 degrees at 19 knots gusting to 28 knots, visibility 10 statute miles, sky condition broken 3,400 feet, overcast 4,300 feet, temperature 16 degrees C, dew point 9 degrees C, altimeter 29.94 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The airplane wreckage came to rest in a field about one half mile north of the departure runway. Pictures of the wreckage path showed that the propeller separated from the engine and the engine separated from the fuselage. The propeller and engine were found in the northwest portion of the debris field and the airframe in the southeast portion of the debris field. The propeller had chordwise abrasion and leading edge nicks on its blades. The fuselage exhibited deformation and crushing consistent with substantial damage. FAA Inspectors examined the wreckage and did not find any pre-impact anomalies.

TESTS AND RESEARCH

The engine was recovered and sent to a local fixed base operator for a test run. Damaged parts that included a cracked oil sump, a magneto with a broken flange, a fuel injector line, and damaged ignition leads were replaced with exemplar parts. The engine was installed in a test cell and it was observed by the National Transportation Safety Board Investigator In Charge to be operational during the test run. The damaged magneto was mounted on a lathe and it produced spark when the lathe rotated.

Pilot Information

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| Certificate: | Private | Age: | 39,Male |
| Airplane Rating(s): | Single-engine land | Seat Occupied: | Unknown |
| Other Aircraft Rating(s): | None | Restraint Used: | |
| Instrument Rating(s): | Airplane | Second Pilot Present: | No |
| Instructor Rating(s): | None | Toxicology Performed: | No |
| Medical Certification: | Class 3 Without waivers/limitations | Last FAA Medical Exam: | February 1, 2010 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | March 2, 2009 |
| Flight Time: | 447 hours (Total, all aircraft) | | |

Aircraft and Owner/Operator Information

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| Aircraft Make: | KWECH | Registration: | N333HK |
| Model/Series: | GLASAIR RG SUPER 11S | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | Yes |
| Airworthiness Certificate: | Experimental (Special) | Serial Number: | 2313 |
| Landing Gear Type: | Retractable - Tricycle | Seats: | 2 |
| Date/Type of Last Inspection: | Unknown | Certified Max Gross Wt.: | 2200 lbs |
| Time Since Last Inspection: | | Engines: | 1 Reciprocating |
| Airframe Total Time: | | Engine Manufacturer: | LYCOMING |
| ELT: | C91A installed | Engine Model/Series: | IO-360-B1E |
| Registered Owner: | On file | Rated Power: | 205 Horsepower |
| Operator: | On file | Operating Certificate(s) Held: | None |

Meteorological Information and Flight Plan

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| Conditions at Accident Site: | Visual (VMC) | Condition of Light: | Day |
| Observation Facility, Elevation: | STP,705 ft msl | Distance from Accident Site: | 10 Nautical Miles |
| Observation Time: | 15:53 Local | Direction from Accident Site: | 240° |
| Lowest Cloud Condition: | | Visibility | 10 miles |
| Lowest Ceiling: | Broken / 3400 ft AGL | Visibility (RVR): | |
| Wind Speed/Gusts: | 19 knots / 28 knots | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 300° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 29.94 inches Hg | Temperature/Dew Point: | 16°C / 9°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | Lake Elmo, MN (AID) | Type of Flight Plan Filed: | IFR |
| Destination: | Pine River, MN (PWC) | Type of Clearance: | IFR |
| Departure Time: | 16:05 Local | Type of Airspace: | |

Airport Information

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| Airport: | Lake Elmo Airport AID | Runway Surface Type: | |
| Airport Elevation: | 933 ft msl | Runway Surface Condition: | |
| Runway Used: | | IFR Approach: | None |
| Runway Length/Width: | | VFR Approach/Landing: | None |

Wreckage and Impact Information

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|----------------------------|-----------|-----------------------------|---------------------------|
| Crew Injuries: | 1 Serious | Aircraft Damage: | Substantial |
| Passenger Injuries: | | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 1 Serious | Latitude, Longitude: | 44.997501,-92.855552(est) |

Administrative Information

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| Investigator In Charge (IIC): | Malinowski, Edward |
| Additional Participating Persons: | Richard Shearman; Federal Aviation Administration; Minneapolis, MN |
| Original Publish Date: | June 13, 2011 |
| Last Revision Date: | |
| Investigation Class: | Class |
| Note: | The NTSB traveled to the scene of this accident. |
| Investigation Docket: | https://data.nts.gov/Docket?ProjectID=77203 |

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](#).