



Aviation Investigation Final Report

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|--------------------------------|--------------------------------------|-------------------------|-----------------|
| Location: | Alexandria, Minnesota | Accident Number: | CEN13LA212 |
| Date & Time: | March 29, 2013, 10:45 Local | Registration: | N1967N |
| Aircraft: | Cirrus SR22T | Aircraft Damage: | Substantial |
| Defining Event: | Loss of control in flight | Injuries: | 2 Minor, 2 None |
| Flight Conducted Under: | Part 91: General aviation - Personal | | |

Analysis

About 18 months prior to the accident flight, the airplane underwent maintenance to remove and replace both the left and right flaps. While on pattern downwind, the pilot adjusted flaps from up to half, at which time the right flap rod end separated from the right flap actuation fitting. The pilot initiated a climb and struggled to maintain roll control. He briefly adjusted flaps to the up position in an attempt to alleviate the problem, and then adjusted the flaps back to half. The pilot then adjusted the flaps from half to full and the airplane began to roll right due to flap asymmetry, eventually reaching 86 degrees of right bank. The airplane began to stall and the pilot initiated the airplane's ballistic parachute recovery system about 509 feet above ground level. Subsequently, the airplane descended to the ground with the aid of the parachute and came to rest upright on a frozen lake. A postflight examination of the right flap rod end area revealed the mounting bolt and washer were missing and lying under the airplane. No evidence of a safety wire was present on the mounting bolt or on the right flap actuation fitting. The safety wire was most likely not installed when the right flap was reinstalled and went unnoticed for over 211 hours of operation. During this time there was a subsequent annual inspection at 114 hours prior to the accident and a pre-buy inspection at 101 hours prior to the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The improper reinstallation of the right flap by maintenance personnel. Contributing factors were an inadequate examination of the right flap during the subsequent annual, pre-buy, and pre-flight inspections.

Findings

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| Aircraft | TE flap control system - Incorrect service/maintenance |
| Personnel issues | Installation - Maintenance personnel |
| Personnel issues | Scheduled/routine inspection - Maintenance personnel |
| Personnel issues | Preflight inspection - Pilot |

Factual Information

History of Flight

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| Approach-VFR pattern downwind | Loss of control in flight (Defining event) |
| Approach-VFR pattern downwind | Sys/Comp malf/fail (non-power) |
| Emergency descent | Collision with terr/obj (non-CFIT) |

This report was modified on 9/20/2013. Please see the public docket for this accident to view the original report.

On March 29, 2013, about 1045 central daylight time, a Cirrus SR22T airplane, N1967N, was substantially damaged after impact with terrain (frozen lake) near the Chandler Field Airport (AXN), Alexandria, Minnesota. The private pilot and one passenger sustained minor injuries, and two passengers were not injured. The airplane was registered to MWBS Holdings LLC and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 with no flight plan filed. Day visual meteorological conditions prevailed for the flight, which originated from the Marv Skie-Lincoln County Airport (Y14), Tea, South Dakota about 0904.

While on pattern downwind to AXN, the pilot reported a loud noise during flap extension. The pilot initiated a climb as he struggled to maintain roll control. He attempted to reduce the airplane's rolling tendency by adjusting flap position. As his control of the airplane worsened, the pilot pulled the ballistic recovery system handle. The parachute deployed and the airplane descended onto a frozen lake.

The flight recording device was recovered from the accident airplane and forwarded to the National Transportation Safety Board's Vehicle Recorder Laboratory for evaluation. While on pattern downwind, the recorder indicated that the flaps were adjusted from up to half and the airplane made several left bank turns, with a maximum of 30 degrees of left bank. About 18 seconds after initial flap movement, the flaps were briefly adjusted to up and returned to half.

About 36 seconds after initial flap movement, the flaps were adjusted from half to full and the airplane began a right roll to a steep right bank attitude. A stall indication was recorded 38 seconds after the flaps were adjusted to full. The Cirrus Airframe Parachute System (CAPS) was deployed two seconds after the stall indication. The CAPS handle pull occurred at a pitch of 22 degrees nose down, a roll attitude of 86 degrees right bank, and an altitude of about 519 feet above ground level.

The airplane was examined at the accident site by Federal Aviation Administration (FAA) inspectors and a representative of Cirrus Design Corporation. The right flap rod end was found disconnected from the right flap actuation fitting. The right flap rod end mounting bolt and washer were found lying on the

snow under the airplane. No evidence of a safety wire was present on the mounting bolt or on the right flap actuation fitting.

An examination of the CAPS Rear Harness assembly revealed that both reefing line cutters had fired but the rear harness remained “snubbed.” The impact scars on the snow and Ice, and the damage to the aircraft indicated that touch-down occurred while the airplane was in a 40-50 degree nose-down attitude. This nose-down attitude is consistent with a touch-down prior to “tail drop.”

A review of maintenance records indicated that the right flap was reinstalled on August 3, 2011, at a Hobbs time of 66.4. According to maintenance manual procedures, the mounting bolt and washer hardware were to be torqued to a measured 50-70 inch pounds, then safety wired to the flap actuation fitting. An annual inspection was conducted on July 10, 2012 (163.9 Hobbs), a pre-buy inspection was conducted on November 5, 2012 (177.2 Hobbs) and the accident occurred with a Hobbs time of 278.0.

According to the Cirrus SR22T pilot operating handbook, the preflight checklist states to "inspect flap hinges, actuation arm, bolts, and cotter pins.....secure."

Pilot Information

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| Certificate: | Private | Age: | 44, 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): | | Toxicology Performed: | No |
| Medical Certification: | Class 3 With waivers/limitations | Last FAA Medical Exam: | June 20, 2012 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | November 8, 2012 |
| Flight Time: | 138 hours (Total, all aircraft), 80 hours (Total, this make and model), 90 hours (Pilot In Command, all aircraft), 70 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft) | | |

Aircraft and Owner/Operator Information

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| Aircraft Make: | Cirrus | Registration: | N1967N |
| Model/Series: | SR22T | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | |
| Airworthiness Certificate: | Normal | Serial Number: | 0031 |
| Landing Gear Type: | Tricycle | Seats: | 4 |
| Date/Type of Last Inspection: | November 15, 2012 Annual | Certified Max Gross Wt.: | 2500 lbs |
| Time Since Last Inspection: | 114 Hrs | Engines: | 1 Reciprocating |
| Airframe Total Time: | 278 Hrs at time of accident | Engine Manufacturer: | Continental |
| ELT: | Installed, activated, did not aid in locating accident | Engine Model/Series: | TSIO550 |
| Registered Owner: | MWBS Holdings LLC | Rated Power: | 314 Horsepower |
| Operator: | Hamid Abbasi | 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: | KAXN,1425 ft msl | Distance from Accident Site: | 2 Nautical Miles |
| Observation Time: | 09:53 Local | Direction from Accident Site: | 120° |
| Lowest Cloud Condition: | Few / 7500 ft AGL | Visibility | 5 miles |
| Lowest Ceiling: | None | Visibility (RVR): | |
| Wind Speed/Gusts: | 6 knots / None | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 150° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 30.19 inches Hg | Temperature/Dew Point: | 1°C / -1°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | Marv Skie, SD (Y14) | Type of Flight Plan Filed: | None |
| Destination: | Alexandria, MN (KAXN) | Type of Clearance: | None |
| Departure Time: | 09:04 Local | Type of Airspace: | |

Airport Information

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|-----------------------------|---------------------------------|----------------------------------|-----------------|
| Airport: | Chandler Field, Alexandria KAXN | Runway Surface Type: | |
| Airport Elevation: | 1425 ft msl | Runway Surface Condition: | |
| Runway Used: | | IFR Approach: | None |
| Runway Length/Width: | | VFR Approach/Landing: | Traffic pattern |

Wreckage and Impact Information

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|----------------------------|-----------------|-----------------------------|----------------------|
| Crew Injuries: | 1 Minor | Aircraft Damage: | Substantial |
| Passenger Injuries: | 1 Minor, 2 None | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 2 Minor, 2 None | Latitude, Longitude: | 45.885276,-95.430274 |

Administrative Information

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| Investigator In Charge (IIC): | Folkerts, Michael |
| Additional Participating Persons: | Kevin Morris; Federal Aviation Administration; Minneapolis, MN David Nelson; Federal Aviation Administration; Minneapolis, MN Brannon Mayer; Cirrus Aircraft; Duluth, MN |
| Original Publish Date: | December 11, 2013 |
| Last Revision Date: | |
| Investigation Class: | Class |
| Note: | |
| Investigation Docket: | https://data.nts.gov/Docket?ProjectID=86545 |

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](#).