



Aviation Investigation Final Report

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| Location: | TWIN FALLS, Idaho | Accident Number: | SEA01LA003 |
| Date & Time: | October 10, 2000, 08:30 Local | Registration: | N223RS |
| Aircraft: | Enstrom F-28F | Aircraft Damage: | Substantial |
| Defining Event: | | Injuries: | 2 None |
| Flight Conducted Under: | Part 91: General aviation | | |

Analysis

The pilot reported that during a maintenance test flight to check controls, collective pitch position, throttle positioning, and rpm correlation control entering an autorotation, he entered the autorotation with low rpm. When the pilot corrected with collective pitch, the correlator over responded, resulting in an rpm overspeed. The pilot closed the throttle and increased the collective, however, the rpm dropped and the pilot had to complete the autorotation to touch down on rough terrain. So as not to have any forward speed at touch down, and fearing that the helicopter might roll over, the pilot anticipated a hard flare to stop the forward speed. Just prior to touch down, the tailrotor contacted the ground, and the tailrotor gearbox separated from the tail boom. The helicopter yawed to the right about 150 degrees before the pilot was able to level the helicopter, arrest the yaw and land without further incident.

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 rotor rpm. Unsuitable terrain was selected for the maintenance test flight operation.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: LANDING

Findings

1. (C) ROTOR RPM - NOT MAINTAINED - PILOT IN COMMAND
2. (F) UNSUITABLE TERRAIN OR TAKEOFF/LANDING/TAXI AREA - SELECTED - PILOT IN COMMAND

Factual Information

On October 10, 2000, about 0830 mountain daylight time, an Enstrom F-28F, N223RS, registered to and operated by Reeder & Hays Aircraft as a 14 CFR Part 91 maintenance test flight, landed hard in a field located about five miles southeast of Twin Falls, Idaho. Visual meteorological conditions prevailed at the time and no flight plan was filed for the local flight. The commercial pilot and passenger were not injured. The flight originated from Twin Falls about 30 minutes prior to the accident.

During a telephone interview and subsequent written statement, the pilot reported that this was a maintenance test flight to check controls, collective pitch position, throttle positioning, and rpm correlation control entering an autorotation. The pilot stated that during the first autorotation, the rpm was high and the correlator wanted to overspeed. During the second autorotation, the rpm was low and when the pilot corrected with collective pitch, the correlator over responded, resulting in an rpm overspeed. The pilot closed the throttle and increased the collective, however, the rpm dropped and the pilot had to complete the autorotation to touch down on rough terrain. So as not to have any forward speed at touch down, and fearing that the helicopter might roll over, the pilot anticipated a hard flare to stop the forward speed. Just prior to touch down, the tailrotor contacted the ground, and the tailrotor gearbox separated from the tail boom. The helicopter yawed to the right about 150 degrees before the pilot was able to level the helicopter, stop the yaw and land without further incident.

Pilot Information

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|----------------------------------|--|--|----------------|
| Certificate: | Commercial; Flight instructor | Age: | 40, Male |
| Airplane Rating(s): | Single-engine land | Seat Occupied: | Left |
| Other Aircraft Rating(s): | Helicopter | Restraint Used: | |
| Instrument Rating(s): | Airplane | Second Pilot Present: | No |
| Instructor Rating(s): | Helicopter | Toxicology Performed: | No |
| Medical Certification: | Class 2 Valid Medical--no waivers/lim. | Last FAA Medical Exam: | March 16, 2000 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | |
| Flight Time: | 1599 hours (Total, all aircraft), 196 hours (Total, this make and model), 1398 hours (Pilot In Command, all aircraft), 132 hours (Last 90 days, all aircraft), 70 hours (Last 30 days, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|------------------------|---------------------------------------|-----------------|
| Aircraft Make: | Enstrom | Registration: | N223RS |
| Model/Series: | F-28F F-28F | Aircraft Category: | Helicopter |
| Year of Manufacture: | | Amateur Built: | |
| Airworthiness Certificate: | Normal | Serial Number: | 748 |
| Landing Gear Type: | Skid | Seats: | 3 |
| Date/Type of Last Inspection: | October 5, 2000 Annual | Certified Max Gross Wt.: | 2300 lbs |
| Time Since Last Inspection: | 2 Hrs | Engines: | 1 Reciprocating |
| Airframe Total Time: | 2949 Hrs | Engine Manufacturer: | Lycoming |
| ELT: | Not installed | Engine Model/Series: | H10-360 |
| Registered Owner: | REEDER & HAYE AIRCRAFT | Rated Power: | 225 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: | TWF ,4151 ft msl | Distance from Accident Site: | 5 Nautical Miles |
| Observation Time: | 07:53 Local | Direction from Accident Site: | 315° |
| Lowest Cloud Condition: | Unknown | Visibility | 10 miles |
| Lowest Ceiling: | Broken / 10000 ft AGL | Visibility (RVR): | |
| Wind Speed/Gusts: | 6 knots / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 360° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 29 inches Hg | Temperature/Dew Point: | 8°C / 8°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | TWIN FALLS , ID (TWF) | Type of Flight Plan Filed: | None |
| Destination: | | Type of Clearance: | None |
| Departure Time: | 08:00 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 None | Aircraft Damage: | Substantial |
| Passenger Injuries: | 1 None | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 2 None | Latitude, Longitude: | 42.410942,-114.589126(est) |

Administrative Information

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| Investigator In Charge (IIC): | Eckrote, Debra |
| Additional Participating Persons: | MIKE MISNICK; BOISE , ID |
| Original Publish Date: | May 18, 2001 |
| Last Revision Date: | |
| Investigation Class: | Class |
| Note: | The NTSB traveled to the scene of this accident. |
| Investigation Docket: | https://data.ntsb.gov/Docket?ProjectID=50429 |

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](#).