Aviation Investigation Final Report

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 & Haye 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

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

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:**	HIO-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

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

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

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

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