



Aviation Investigation Final Report

Location:	Heart, North Dakota	Accident Number:	CHI07CA215
Date & Time:	July 16, 2007, 17:11 Local	Registration:	CFYAR
Aircraft:	Rotorway 162F	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The helicopter was involved in a hard landing during an autorotation following a loss of engine power. The pilot reported that during the flight, while drinking from a water bottle, the bottle contacted the overhead electric fuel pump switch. The switch was knocked to the off position, resulting in the loss of engine power. The pilot stated that he entered an autorotation. He said he realized that he had contacted the switch, but by that time he was already committed to land. The pilot reported, "...the auto was poorly executed at the bottom end, resulting in a hard landing." He reported that during the landing, the rear landing gear collapsed and the main rotor blades struck the tailboom.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot inadvertently shut off the fuel pump switch which resulted in fuel starvation and the subsequent loss of engine power. An additional cause was the pilot's poorly executed autorotation/flare which resulted in a hard landing.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: CRUISE

Findings

1. (C) FUEL SYSTEM - INADVERTENT DEACTIVATION - PILOT IN COMMAND

2. (C) FLUID,FUEL - STARVATION

Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

Findings

3. AUTOROTATION - PERFORMED - PILOT IN COMMAND

Occurrence #3: HARD LANDING

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

4. (C) FLARE - INADEQUATE - PILOT IN COMMAND

Factual Information

The helicopter was involved in a hard landing during an autorotation following a loss of engine power. The pilot reported that during the flight, while drinking from a water bottle, the bottle contacted the overhead electric fuel pump switch. The switch was knocked to the off position, resulting in the loss of engine power. The pilot stated he entered an autorotation. He said he realized that he had contacted the switch, but by that time he was already committed to land. The pilot reported, "...the auto was poorly executed at the bottom end, resulting in a hard landing." He reported that during the landing, the rear landing gear collapsed and the main rotor blades struck the tailboom.

Pilot Information

Certificate:	Commercial; Foreign	Age:	57, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	
Other Aircraft Rating(s):	Glider; Helicopter	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:	Class 1	Last FAA Medical Exam:	October 1, 2005
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	3000 hours (Total, all aircraft), 122 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Rotorway	Registration:	CFYAR
Model/Series:	162F	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Experimental (Special)	Serial Number:	6212
Landing Gear Type:	Skid	Seats:	
Date/Type of Last Inspection:		Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Rotorway
ELT:		Engine Model/Series:	162
Registered Owner:	Russell A. Yard	Rated Power:	
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:		Visibility	
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:			
Departure Point:	Beach, ND (20V)	Type of Flight Plan Filed:	VFR
Destination:	Dickenson, ND (DIK)	Type of Clearance:	None
Departure Time:	16:07 Local	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	
Total Injuries:	1 None	Latitude, Longitude:	46.819721,-103.10083

Administrative Information

Investigator In Charge (IIC):	Sullivan, Pamela
Additional Participating Persons:	Vance Q Emerson; Fargo, ND FSDO
Original Publish Date:	October 31, 2007
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=66462

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](#).