



Aviation Investigation Final Report

Location:	SPRINGDALE, Ohio	Accident Number:	NYC00LA174
Date & Time:	June 23, 2000, 07:30 Local	Registration:	N383MA
Aircraft:	Enstrom 280 FX	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Aerial observation		

Analysis

The pilot was performing an aerial observation flight of vehicle traffic, operating about 500 feet AGL, when the engine missed and lost power. The pilot performed a run-on landing on the edge of the road, next to a median. One skid was on asphalt and the other skin was in the grass/dirt. The skid in grass/dirt dug in and the helicopter rotated 90 degrees and rolled over. Examination of the helicopter revealed no fuel in the tank, the fuel cap in place, and no evidence of leakage. When fuel was added, the fuel gauge consistently read less than the actual amount of fuel onboard. The pilot told the Safety Board he had checked the fuel prior to departure; however, in follow-up interviews with the FAA, the pilot reported he had not checked the fuel tanks prior to departure and had not paid attention to the fuel gauge while flying.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadequate preflight of the helicopter, and his subsequent failure to monitor his fuel supply, which resulted in a power loss due to fuel exhaustion, over unsuitable terrain.

Findings

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

Findings

1. (C) AIRCRAFT PREFLIGHT - INADEQUATE - PILOT IN COMMAND

2. (C) FUEL SUPPLY - INATTENTIVE - PILOT IN COMMAND
3. (C) FLUID,FUEL - EXHAUSTION

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: ROLL OVER
Phase of Operation: LANDING - ROLL

Findings

4. (C) TERRAIN CONDITION - NONE SUITABLE

Factual Information

On June 23, 2000, about 0730 Eastern Daylight Time, an Enstrom 280 FX, N383MA, operated by Northstar Helicopters on an aerial observation flight was substantially damaged during a forced landing in Springdale, Ohio. The certificated pilot and passenger were not injured. Visual meteorological conditions prevailed for the local flight that was conducted under 14 CFR Part 91.

The helicopter was being used for aerial observation of traffic conditions. The pilot reported that he was cruising about 1,200 feet MSL (500 feet AGL), when the helicopter yawed nose right momentarily, followed by the engine running intermittently. He was over a divided freeway with residential areas on both sides of the freeway. The area between the roadways was sloped and unsuitable for landing, so the pilot elected to land on the side of the road, with the flow of traffic. When he lowered the collective, the engine quit. An autorotation to a run-on landing was conducted. After initial touchdown, the left skid transitioned from asphalt to soft dirt/grass. The skid dug in and the nose rotated left, after which, the helicopter came to rest on its right side. The occupants then exited the helicopter.

The pilot further reported that he had checked the helicopter before departure and the check included both a visual examination of the fuel gage, and removing the fuel cap and looking into the fuel tank. The fuel tank was full before departure.

According to the operator, on the day before the accident, the helicopter was used to give rides from a location near the Cincinnati Lunken Airport.

According to the pilot who gave the rides, the company had positioned a portable refueling tank at the location and fuel was added periodically to the helicopter. The amounts added were not recorded, but the fuel tank was never filled to capacity. He reported that he flew about 4.7 hours. Before returning to the heliport, he added fuel, but did not remember the amount added. He said he was not certain how much fuel was in the helicopter, but thought the fuel tank was about 3/4 full upon departure. He also reported that he did not refuel the helicopter upon return to his home heliport.

According to the inspector from the Federal Aviation Administration (FAA), the fuel cap was in place with no evidence of leakage. There was no smell of fuel at the accident site, and no evidence of a fuel spill. The helicopter was placed on a trailer and returned to the operator's facility. Examination of the fuel system revealed no breaks in the lines and all fuel line fittings were tight with no evidence of leakage. The fuel system was drained and about one quart of gasoline was recovered. The helicopter had flown 1.2 hours since takeoff.

With the fuel tank drained, fuel was added in 5-gallon increments. With no fuel, and with 5

gallons added, the fuel gauge read zero pounds of fuel. All subsequent additions of fuel, the fuel gauge read less than was actually onboard.

The engine was then started and ran with no problems noted.

The FAA inspector further reported that he interviewed the pilot who reported:

"That he [the pilot] did not check the fuel quantity visually prior to departing for the flight and that he did not pay too much attention to the fuel gage during the flight."

The accident pilot reported his total flight experience as 5,114 hours, with 4,200 hours in Enstrom Helicopters. He had flown 175 hours in the preceding 90 days.

Pilot Information

Certificate:	Commercial	Age:	26, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	June 22, 1999
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	5114 hours (Total, all aircraft), 4200 hours (Total, this make and model), 4545 hours (Pilot In Command, all aircraft), 175 hours (Last 90 days, all aircraft), 58 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Enstrom	Registration:	N383MA
Model/Series:	280 FX 280 FX	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	2048
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	June 14, 2000 100 hour	Certified Max Gross Wt.:	2600 lbs
Time Since Last Inspection:	30 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1527 Hrs	Engine Manufacturer:	Lycoming
ELT:	Not installed	Engine Model/Series:	H10-360-F1AD
Registered Owner:	NORTHSTAR HELICOPTERS	Rated Power:	225 Horsepower
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Does Business As:		Operator Designator Code:	NH8A

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	HAO ,633 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	07:53 Local	Direction from Accident Site:	350°
Lowest Cloud Condition:	Clear	Visibility	7 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:	0°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	20°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	BLUE ASH , OH (220H)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	06:15 Local	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	Grass/turf
Airport Elevation:		Runway Surface Condition:	Dry
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

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:	39.289829,-84.469276(est)

Administrative Information

Investigator In Charge (IIC):	Hancock, Robert
Additional Participating Persons:	STANLEY P FASKE; CINCINNATI , OH
Original Publish Date:	April 6, 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=49497

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](#).