



Aviation Investigation Final Report

Location:	Twin Brooks, South Dakota	Accident Number:	CHI05CA147
Date & Time:	May 19, 2005, 18:00 Local	Registration:	N8505F
Aircraft:	Bell 47G	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The helicopter collided with power lines during an aerial application flight. The pilot reported that he saw the power lines just prior to contacting them. He stated the lines hit the bubble then they traveled over the top of the helicopter contacting the main rotor shaft. He stated the helicopter then settled in a level attitude onto the tracks. The pilot stated he was spraying for the purpose of weed control along the Burlington Northern Santa Fe railroad when the accident occurred. The pilot stated he was about 2.75 miles into the 3 mile run when the helicopter contacted the lines. The pilot reported that he saw a pole to his left, but it was off in the distance. The pole on his right, which he did not see, was nestled in a group of trees. The pilot reported he was flying at an altitude of 15 to 20 feet above the tracks at an airspeed of 43 to 45 miles per hour. He stated the bubble was clean and the sun was to his back as he flew to the east.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadequate lookout and his failure to maintain clearance with the power lines. A factor was the low altitude at which the helicopter was operating.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. LOW ALTITUDE FLIGHT/MANEUVER - PILOT IN COMMAND
2. (C) VISUAL LOOKOUT - INADEQUATE - PILOT IN COMMAND
3. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

4. TERRAIN CONDITION - GROUND

Factual Information

On May 19, 2005, at 1800 central daylight time, N8505F, a Bell 47G-3B-1, collided with power lines during an aerial application flight in Twin Brooks, South Dakota. The commercial pilot received minor injuries. The helicopter was substantially damaged. The 14 Code of Federal Regulations Part 137 flight was operating in visual meteorological conditions without a flight plan. The local flight originated at Summit, South Dakota, at 1630.

The pilot reported that he saw the power lines just prior to contacting them. He stated the lines hit the bubble then they traveled over the top of the helicopter contacting the main rotor shaft. He stated the helicopter then settled in a level attitude onto the tracks.

The pilot stated he was spraying for the purpose of weed control along the Burlington Northern Santa Fe railroad when the accident occurred. The pilot stated he was about 2.75 miles into the 3 mile run when the helicopter contacted the lines. The pilot reported that he saw a pole to his left, but it was off in the distance. The pole on his right, which he did not see, was nestled in a group of trees. The pilot reported he was flying at an altitude of 15 to 20 feet above the tracks at an airspeed of 43 to 45 miles per hour. He stated the bubble was clean and the sun was to his back as he flew to the east.

Pilot Information

Certificate:	Commercial	Age:	48, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	December 1, 2004
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	5124 hours (Total, all aircraft), 2000 hours (Total, this make and model), 5100 hours (Pilot In Command, all aircraft), 13 hours (Last 90 days, all aircraft), 13 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	Registration:	N8505F
Model/Series:	47G	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	3379
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:	Lycoming
ELT:		Engine Model/Series:	VO-435
Registered Owner:	Dakota Helicopter, Inc.	Rated Power:	
Operator:		Operating Certificate(s) Held:	

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:	Summit, SD	Type of Flight Plan Filed:	None
Destination:	Milbank, SD	Type of Clearance:	None
Departure Time:	16:30 Local	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	
Total Injuries:	1 Minor	Latitude, Longitude:	45.230556,-96.566108

Administrative Information

Investigator In Charge (IIC):	Sullivan, Pamela
Additional Participating Persons:	J R Wallingford; FAA; Rapid City, SD
Original Publish Date:	September 13, 2005
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=61517

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](#).