



Aviation Investigation Final Report

Location:	OLATHE, Colorado	Accident Number:	FTW98LA315
Date & Time:	July 17, 1998, 12:30 Local	Registration:	N92HA
Aircraft:	Bell 47-GB31	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

While on its third aerial application pass, to dispense a rinse load, the helicopter flew into its own wake turbulence and had insufficient power to overcome the settling which ensued. The helicopter struck the ground in a nose low attitude and the main rotor blades severed the tail boom. Density altitude at the time was computed to be approximately 8,900 feet.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadequate in-flight planning which resulted in an encounter with his own wake turbulence. Related factors were high density altitude and wake turbulence.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. (C) IN-FLIGHT PLANNING/DECISION - INADEQUATE - PILOT IN COMMAND
2. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE
3. (F) WEATHER CONDITION - TURBULENCE
4. (C) WAKE TURBULENCE - INADVERTENT - PILOT IN COMMAND
5. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings

6. TERRAIN CONDITION - OPEN FIELD

Factual Information

On July 17, 1998, at 1230 mountain daylight time, a Bell 47-GB31 helicopter, N92HA, settled to a hard landing while maneuvering near Olathe, Colorado, during an aerial application flight. The commercial pilot and sole occupant was not injured and the helicopter sustained substantial damage. The flight was being operated as an aerial application flight under Title 14 CFR Part 137, and no flight plan was filed. Visual meteorological conditions prevailed.

According to the pilot, he was dispensing a rinse load and had made three passes over the same path. He said the wind came up as he turned the helicopter for another pass and he flew into his own wake turbulence. The pilot said he had insufficient power to overcome the ensuing descent and the helicopter settled onto the ground in a nose low attitude. This caused the main rotor blades to strike the tail boom and sever it from the aircraft.

Density altitude at the time was computed to be approximately 8,900 feet.

Pilot Information

Certificate:	Commercial	Age:	52, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
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 Valid Medical--w/ waivers/lim	Last FAA Medical Exam:	January 12, 1998
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	20245 hours (Total, all aircraft), 351 hours (Total, this make and model), 334 hours (Last 90 days, all aircraft), 87 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	Registration:	N92HA
Model/Series:	47-GB31 47-GB31	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	3696
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	January 29, 1998 Annual	Certified Max Gross Wt.:	2950 lbs
Time Since Last Inspection:	35 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	6260 Hrs	Engine Manufacturer:	Lycoming
ELT:	Not installed	Engine Model/Series:	TVO-435-B1A
Registered Owner:	OLATHE SPRAY SERVICE, INC.	Rated Power:	260 Horsepower
Operator:		Operating Certificate(s) Held:	
Operator Does Business As:		Operator Designator Code:	HKVG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	MTJ ,5759 ft msl	Distance from Accident Site:	30 Nautical Miles
Observation Time:	12:53 Local	Direction from Accident Site:	360°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	350°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	31°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(1C04)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	00:00 Local	Type of Airspace:	Class E

Airport Information

Airport:	CLIFFORD FIELD ICO4	Runway Surface Type:	Dirt
Airport Elevation:	5550 ft msl	Runway Surface Condition:	Dry
Runway Used:	17	IFR Approach:	
Runway Length/Width:	4000 ft / 100 ft	VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	38.600212,-107.979423(est)

Administrative Information

Investigator In Charge (IIC):	Wiemeyer, Norman
Additional Participating Persons:	JEAN F MPOULI; SALT LAKE CITY, UT
Original Publish Date:	September 28, 1999
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=43169

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