



Aviation Investigation Final Report

Location:	MINOT, North Dakota	Accident Number:	DEN87DTG02
Date & Time:	September 8, 1987, 15:30 Local	Registration:	N2238W
Aircraft:	BELL 47G-4A	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

THE PLT RPRTD THAT WHEN HE TOOK OFF FM A NRBY NURSE TRUCK, THE WIND WAS FM THE NE AT 5 TO 7 MPH. HE MADE AN OBSERVATION PASS ACROSS THE AREA TO BE TREATED, THEN BGN A DSCNDG RGT TURN TO MAKE A SWATH RUN IN THE OPPOSITE DRCTN. HE STATED HE WAS UNAWARE OF A WIND-SHIFT TO THE NW. SUBSEQUENTLY, THE HELICOPTER ENCOUNTERED WHAT THE PLT THOUGHT WAS WAKE TURBC FM THE OBSERVATION PASS. THE ACFT BGN TO SETTLE & THE PLT INCREASED THE COLLECTIVE IN AN EFFORT TO STOP THE DSCNT. THE PLT SAID THE 'RECOVERY ENDED IN A DEEP CANYON APPROX 150 TO 200 FT DEEP. EMERGENCY TRIP DOOR SOLENOID TO RELEASE LOAD FAILED TO WORK. WAS ONLY ABLE TO SUSTAIN HOVER FOR APPROX 2 MIN BEFORE A/C SETTLED ON A 30 TO 40 (DEGREE) EMBANKMENT & SLID DOWN 40 FT TO TREES, TAIL FIRST.' RPRTDLY THE DUMP VLV FAILED TO OPERATE DUE TO CORROSION FM CHEMICALS CARRIED ON THE PREVIOUS FLT.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

Findings

Occurrence #1: VORTEX TURBULENCE ENCOUNTERED
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
2. WEATHER CONDITION - UNFAVORABLE WIND

Occurrence #2: ALTITUDE DEVIATION, UNCONTROLLED
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

3. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY
4. (F) WEATHER CONDITION - DOWNDRAFT
5. (F) SPRAY/DUSTING EQUIPMENT - CORRODED
6. LOAD JETTISON - NOT POSSIBLE
7. DESCENT - NOT CORRECTED

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings

8. (F) TERRAIN CONDITION - DOWNHILL

Occurrence #4: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: OTHER

Findings

9. (F) OBJECT - TREE(S)

Factual Information

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	54, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Helicopter; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	June 3, 1987
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	16488 hours (Total, all aircraft), 1850 hours (Total, this make and model), 16400 hours (Pilot In Command, all aircraft), 265 hours (Last 90 days, all aircraft), 87 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BELL	Registration:	N2238W
Model/Series:	47G-4A 47G-4A	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal; Restricted (Special)	Serial Number:	7704
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	July 25, 1987 100 hour	Certified Max Gross Wt.:	2950 lbs
Time Since Last Inspection:	60 Hrs	Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	VO-540-B1B3
Registered Owner:	LARIMORE AIR SERVICE, INC.	Rated Power:	280 Horsepower
Operator:	JAMES H MORTEN	Operating Certificate(s) Held:	
Operator Does Business As:		Operator Designator Code:	WFBG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	MOT ,1668 ft msl	Distance from Accident Site:	12 Nautical Miles
Observation Time:	15:00 Local	Direction from Accident Site:	85°
Lowest Cloud Condition:	Scattered	Visibility	20 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	0°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	15:25 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:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	47.260036,-101.770217(est)

Administrative Information

Investigator In Charge (IIC): Addion, Verl
Additional Participating Persons: KING K WESLEY;

Original Publish Date: August 2, 1988

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.ntsb.gov/Docket?ProjectID=17069>

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](#).