



Aviation Investigation Final Report

Location:	LEWISTOWN, Montana	Accident Number:	GAA17CA225
Date & Time:	April 10, 2017, 17:00 Local	Registration:	N9004M
Aircraft:	WEATHERLY AVIATION CO INC 620B	Aircraft Damage:	Substantial
Defining Event:	Loss of visual reference	Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot reported that, during a low-altitude, practice agricultural application flight, he lost depth perception between the snow-covered ground and overcast sky. He added that the airplane impacted the ground and came to rest after sliding about 500 ft.

The airplane sustained substantial damage to the right wing and fuselage.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

The Federal Aviation Administration's pamphlet, "Flying in Flat Light and White Out Conditions," states the following:

Flat light is an optical illusion, also known as "sector or partial white out." It is not as severe as "white out" but the condition causes pilots to lose their depth-of-field and contrast in vision. Flat light conditions are usually accompanied by overcast skies inhibiting any good visual clues. Such conditions can occur anywhere in the world, primarily in snow covered areas but can occur in dust, sand, mud flats, or on glassy water. Flat light can completely obscure features of the terrain, creating an inability to distinguish distances and closure rates. As a result of this reflected light, it can give pilots the illusion of ascending or descending when actually flying level. However, with good judgment and proper training and planning, it is possible to safely operate an aircraft in flat light conditions.

Probable Cause and Findings

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

The pilot's failure to maintain altitude during low-altitude maneuvers in flat light conditions.

Findings

Personnel issues	Aircraft control - Pilot
Aircraft	Altitude - Not attained/maintained
Environmental issues	Flat light - Effect on personnel

Factual Information

History of Flight

Maneuvering-low-alt flying	Loss of visual reference (Defining event)
Maneuvering-low-alt flying	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Commercial	Age:	51, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Center
Other Aircraft Rating(s):	None	Restraint Used:	Unknown
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	March 30, 2017
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	August 2, 2016
Flight Time:	2601 hours (Total, all aircraft), 557 hours (Total, this make and model), 2403 hours (Pilot In Command, all aircraft), 90 hours (Last 90 days, all aircraft), 6.1 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	WEATHERLY AVIATION CO INC	Registration:	N9004M
Model/Series:	620B UNDESIGNAT	Aircraft Category:	Airplane
Year of Manufacture:	1995	Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	1604
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	March 23, 2017 Annual	Certified Max Gross Wt.:	4000 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2534.5 Hrs as of last inspection	Engine Manufacturer:	P&W
ELT:	Not installed	Engine Model/Series:	R-985/AN14B
Registered Owner:	SKYLINE AVIATION LLC	Rated Power:	450 Horsepower
Operator:	SKYLINE AVIATION LLC	Operating Certificate(s) Held:	Agricultural aircraft (137)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KLWT,4146 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	22:54 Local	Direction from Accident Site:	13°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Broken / 8000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	13 knots / 26 knots	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	220°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	29.95 inches Hg	Temperature/Dew Point:	4°C / -3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	LEWISTOWN, MT (LWT)	Type of Flight Plan Filed:	None
Destination:	LEWISTOWN, MT (LWT)	Type of Clearance:	None
Departure Time:	16:45 Local	Type of Airspace:	Class E

Airport Information

Airport:	LEWISTOWN MUNI LWT	Runway Surface Type:	Dirt;Snow
Airport Elevation:	4170 ft msl	Runway Surface Condition:	Rough;Snow
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Full stop

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:	47.033611,-109.463333(est)

Administrative Information

Investigator In Charge (IIC):	Benhoff, Kathryn
Additional Participating Persons:	Bryan Hanson; FAA; Helena, MT
Original Publish Date:	June 20, 2017
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=94988

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