Aviation Investigation Final Report

Location:	Arrey, New Mexico	**Accident Number:**	CEN18LA226
Date & Time:	June 15, 2018, 10:10 Local	**Registration:**	N6672Q
Aircraft:	GRUMMAN ACFT ENG COR-SCHWEIZER G 164B	**Aircraft Damage:**	Substantial
Defining Event:	Controlled flight into terr/obj (CFIT)	**Injuries:**	1 Serious
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The commercial pilot reported that he completed four agricultural application loads "just fine." However, after the fourth application, he turned the airplane to conduct a clean-up pass of the field, and subsequently, the airplane impacted the east side of a hill. The pilot stated that he did not remember what happened nor why it happened.

Another pilot who had previously sprayed the accident field reported that, when flying east/west in the morning, the east-facing swath was into the sun and toward rapidly rising terrain. At the time of the accident, clear skies and light winds were present, and the sun was in the east. Given this information and that the operator reported that there was no evidence of any preimpact mechanical malfunctions with the airplane that would have precluded normal operation, the pilot likely failed to maintain clearance from rising terrain while facing the sun during the low-level flight.

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 clearance from a hillside during an agricultural application flight while facing the sun.

Findings

Personnel issues	Monitoring environment - Pilot
Environmental issues	Mountainous/hilly terrain - Effect on operation
Environmental issues	Bright light - Contributed to outcome

Factual Information

History of Flight

Maneuvering	Controlled flight into terr/obj (CFIT) (Defining event)

On June 15, 2018, about 1010 mountain daylight time, a Grumman Aircraft Engineering Corporation-Schweizer G-164B airplane, N6672Q, impacted hilly terrain during an aerial application flight near Arrey, New Mexico. The commercial pilot sustained serious injuries. The airplane received substantial wing and fuselage damage during the impact. The airplane was registered to an individual and operated by Valley Ag Aerial Services as a Title 14 *Code of Federal Regulations* Part 137 aerial application flight. Day visual meteorological conditions prevailed in the accident area about the time of the accident, and the flight was not operated on a flight plan. The local flight originated from the Hatch Municipal Airport, near
Hatch, New Mexico, about 0900.

The operator reported that the pilot completed 4 aerial application loads "just fine." The pilot turned to do a clean-up pass of the field and crashed into a hillside. The pilot does not remember what happened nor why it happened. The operator reported that there were no mechanical malfunctions with the airplane.

Another operator in the area had previously sprayed the accident field. He, in part, stated that there is rising terrain that borders the field on the East side. If it were to be sprayed in the morning flying East/West, the East facing swath would be into the sun and rapidly rising terrain.

At 1010, the United States Navy Observatory reported the altitude and azimuth of the sun in Hatch, New Mexico, were 49.7° and 91.6° respectively.

At 0955, the recorded weather at the Las Cruces International Airport, near Las Cruces, New Mexico, was: Wind 160° at 5 knots; visibility 10 statute miles; sky condition clear; temperature 31° C; dew point 7° C; altimeter 29.98 inches of mercury.

Pilot Information

Certificate:	Commercial	**Age:**	60,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Single
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	August 9, 2017
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	February 3, 2018
Flight Time:	6322 hours (Total, all aircraft), 2940 hours (Total, this make and model), 109 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	GRUMMAN ACFT ENG COR-SCHWEIZER	**Registration:**	N6672Q
Model/Series:	G 164B	**Aircraft Category:**	Airplane
Year of Manufacture:	1977	**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	194B
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	June 3, 2018 100 hour	**Certified Max Gross Wt.:**	3140 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	14827.6 Hrs as of last inspection	**Engine Manufacturer:**	P&W
ELT:	Not installed	**Engine Model/Series:**	R-985 AN-14B
Registered Owner:		**Rated Power:**	400 Horsepower
Operator:		**Operating Certificate(s) Held:**	Agricultural aircraft (137)
Operator Does Business As:		**Operator Designator Code:**	V4ZG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KLRU,4454 ft msl	**Distance from Accident Site:**	38 Nautical Miles
Observation Time:	09:55 Local	**Direction from Accident Site:**	149°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	160°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.97 inches Hg	**Temperature/Dew Point:**	31°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	HATCH, NM (E05)	**Type of Flight Plan Filed:**	None
Destination:	HATCH, NM (E05)	**Type of Clearance:**	None
Departure Time:	09:00 Local	**Type of Airspace:**	Unknown

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	32.828056,-107.299446(est)

Preventing Similar Accidents

Preventing Obstacle Collisions in Agricultural Operations

Accidents involving collisions with obstacles, including poles, wires, guy wires, meteorological evaluation towers (MET), or trees, are among the most common types of agricultural aircraft accidents. Some collisions involved obstacles that the pilots did not see (even during survey flights) but others involved obstacles that were known to the pilot and/or had characteristics that would make them visibly conspicuous.

Agricultural pilots should do the following:

- Maintain a quick-reference document (paper or electronic) at the operations base that contains field maps, charts, photographs, and details of all known obstacles.
- Frequently review current aeronautical charts for information about obstacles.

- Before leaving the ground, spend time becoming familiar with all available information about the target field and programming navigation equipment. Such preflight action can help reduce the potential for confusion or distraction in flight.
- Conduct aerial surveys of the target field but do not rely solely on an aerial survey to identify potential obstacles.
- Conduct regular ground surveys of fields. Some towers can be erected in hours, and obstacles can change since you last worked that field. Speak with farmers and land owners to raise awareness about obstacle hazards.
- When possible, use ground crews. They may be in a better position to see certain obstacles and help you ensure that your aircraft remains clear of them.
- Watch for shadows and irregularities in growth patterns to help identify obstacles. Use GPS and other technology to maintain awareness of obstacle locations.
- Be aware that workload, fatigue, sun glare, and distractions in the cockpit can adversely affect your ability to see, avoid, or remember obstacles. Heavier loads and higher density altitudes can affect the performance of your aircraft.

The National Agricultural Aviation Association's Professional Aerial Applicators' Support System reminds pilots that, when ferrying an aircraft or transitioning between sites, flying above 500 feet reduces obstacle collision risks: "Ferry Above Five and Stay Alive."

See http://www.ntsb.gov/safety/safety-alerts/documents/SA_035.pdf for additional resources.

The NTSB presents this information to prevent recurrence of similar accidents. Note that this should not be considered guidance from the regulator, nor does this supersede existing FAA Regulations (FARs).

Administrative Information

Investigator In Charge (IIC):	Malinowski, Edward
Additional Participating Persons:	Ken Hand; Federal Aviation Administration; Albuquerque, NM
Original Publish Date:	November 6, 2019
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=97482