Aviation Investigation Final Report

Location:	Nuiqsut, Alaska	**Accident Number:**	ANC20LA046
Date & Time:	May 14, 2020, 22:00 Local	**Registration:**	N5454E
Aircraft:	Cessna A185	**Aircraft Damage:**	Substantial
Defining Event:	Controlled flight into terr/obj (CFIT)	**Injuries:**	1 Fatal, 1 Serious
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The pilot was conducting a commercial flight in his wheel/ski-equipped airplane with one passenger onboard in support of an arctic research project. He had overflown a potential landing site on a snow-and-ice-covered lake at a low altitude, and the area was determined to be unsuitable for landing. According to the passenger, after overflying the area the pilot initiated a left turn, toward the shoreline to return to their destination and subsequently impacted the ground.

GPS data from the accident flight revealed that the airplane flew along the north shore of the lake at a GPS altitude of about 136 ft variable to 232 ft before initiating a left turn and descending until it impacted terrain.

The passenger stated that the pilot had not voiced any concerns before the accident with regard to any preaccident mechanical failures or malfunctions that would have precluded normal operation and the plane sounded “good” during the accident flight.

While the passenger reported a cabin and potential vegetation and terrain features visible in the left turn just before impact, it is likely that cloud conditions and snow-covered terrain present in the area resulted in flat light conditions, which would have hindered the pilot’s ability to perceive terrain features and closure rates.

Probable Cause and Findings

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

The pilot’s controlled flight into flat snow-covered terrain in weather conditions that were conducive to flat light conditions.

Findings

Personnel issues	Decision making/judgment - Pilot
Environmental issues	Flat light - Contributed to outcome

Factual Information

History of Flight

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

On May 14, 2020, about 2200 Alaska daylight time, a Cessna A185F, N5454E sustained substantial damage when it was involved in an accident about 72 miles northwest of Nuiqsut, Alaska. The pilot was fatally injured, and the passenger sustained serious injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 135 on-demand passenger flight.

The flight was operated by Webster's Flying Service as a day, visual flight rules flight to support a research project being conducted by the University of Alaska Fairbanks.

The airplane had departed Fairbanks International Airport, Fairbanks, Alaska on Wednesday May 13, 2020, and was repositioned to a cabin located on Teshekpuk Lake, North Slope Borough, Alaska, in support of the project.

According to the passenger, the "Old Knarl Cabin," located on the northwest corner of Teshekpuk Lake, was being used as a remote arctic research facility and their base of operations. One flight had been completed earlier in the day and returned to the Old Knarl Cabin at about 1700 Alaska daylight time. After dinner, the pilot checked the weather via satellite internet and filed an FAA flight plan. About 1945, they departed for multiple off-airport landing sites located in the vicinity of Teshekpuk Lake. Upon their return, they elected to fly over the North Slope Borough Wildlife Cabin located on the northern shore of Teshekpuk Lake and assess the area as a possible landing site. The cabin was overflown at an altitude estimated to be 200-300 ft above ground level (AGL) and the area was determined to be unsuitable for landing. He said that after overflying the cabin and proceeding over the lake, they entered a left turn towards the shoreline, for the 4-mile flight back to the Old Knarl Cabin and subsequently impacted the ground. The passenger stated that flat light conditions would have been a concern out on the lake where no terrain features were visible; however, off the pilot's side of the airplane and in the left turn, the cabin and vegetation sticking through the snow would have been visible to the pilot providing some definition to the white-on-white background. Following the accident, the passenger manually activated the airplane's emergency locator transmitter and sent a distress signal via his personal satellite communicator. The passenger said the pilot had not voiced any concerns before the accident with regard to any preaccident mechanical failures or malfunctions that would have precluded normal operation and the plane sounded "good".

GPS data logs downloaded for the accident flight revealed a date and time that did not correspond to the accident flight. However, a data log was discovered that corresponded to the last flight and ended near the accident location. That data log revealed that the airplane flew along the north shore of Teshekpuk Lake at a GPS altitude of about 136 ft variable to 232 ft before initiating a left turn and descending. The last fully recorded in-flight data point was when the airplane was at a GPS altitude of 232 ft and 89 knots groundspeed on a track of 335° (see figure).

Figure - Last minutes of flight ground track.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	76,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land; Multi-engine sea	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	March 20, 2020
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	26132 hours (Total, all aircraft)		

The pilot's personal flight records were not located. On the application for his most recent medical certificate, he indicated about 28,132 hours of total flight experience, of which 0 were in the previous 6 months.

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N5454E
Model/Series:	A185 F	**Aircraft Category:**	Airplane
Year of Manufacture:	1980	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	18503974
Landing Gear Type:	Tailwheel; Ski/wheel	**Seats:**	
Date/Type of Last Inspection:	January 17, 2020 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	15202.9 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed	**Engine Model/Series:**	IO-520
Registered Owner:	Webster James M	**Rated Power:**	300 Horsepower
Operator:	Webster James M	**Operating Certificate(s) Held:**	On-demand air taxi (135)

No maintenance records were located for the accident airplane.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Unknown	**Condition of Light:**	Day
Observation Facility, Elevation:	PAQT,45 ft msl	**Distance from Accident Site:**	72 Nautical Miles
Observation Time:	05:53 Local	**Direction from Accident Site:**	165°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Overcast / 700 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	40°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.43 inches Hg	**Temperature/Dew Point:**	-4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Nuiqsut, AK	**Type of Flight Plan Filed:**	VFR
Destination:	Nuiqsut, AK	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 1 Serious	**Latitude, Longitude:**	70.735275,-153.73777(est)

Due to its remote arctic location, at the date of this report, the wreckage had not been recovered and therefore, a detailed wreckage examination was not conducted. The wreckage and accident site were evaluated using available photographs provided by North Slope Borough Police Department.

The airplane impacted on its left side in a nose low attitude and came to rest inverted in an area of flat snow-covered terrain. An area believed to be the initial impact site was marked by disturbed snow and small wreckage debris followed.

The three-blade propeller separated from the engine's crankshaft and was located within the debris field. Two blades exhibited torsional bending. One blade exhibited substantial torsional twisting and S-bending.

Additional Information

FAA Handbook 8086-23, Seaplane, Skiplane, and Float/Ski Equipped Helicopter Operations Handbook and states, in part:

Pilots routinely encounter three types of lighting conditions when flying skiplanes. They are flat light, whiteout and nighttime.

Flat lighting is due to an overcast or broken sky condition with intermittent sunlight. Hills, valleys and snow mounds take on varying shade of white, and may appear taller, shorter, or wider than they really are. This indirect lighting alters depth perception. The pilot may not realize that depth perception has been compromised and this can cause serious consequences when operating ski planes near hilly terrain. When flat light is encountered, avoid or discontinue flight operations, especially at an unfamiliar strip.

Administrative Information

Investigator In Charge (IIC):	Banning, David
Additional Participating Persons:	Dustin Hopkins; Federal Aviation Administration; Fairbanks , AK
Original Publish Date:	March 18, 2022
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=101276