



Aviation Investigation Final Report

Location:	Lakeview, Oregon	Accident Number:	WPR12FA237
Date & Time:	May 24, 2012, 17:22 Local	Registration:	N26837
Aircraft:	GULFSTREAM AMERICAN CORP AA-5A	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot dropped off two passengers at an airport where overcast clouds and occasional snow showers were present and then departed for the return flight to the original departure airport. GPS data indicated that during the return flight the airplane crossed mountainous/hilly terrain. When the pilot reached the western edge of the last mountain ridge, he turned and flew in a northerly direction along its steep western slope. The pilot then performed a 180-degree turn, during which the airplane's groundspeed increased significantly in a short period of time. Just after the pilot rolled out of the turn, the airplane's groundspeed suddenly decreased below that required to maintain flight, and, almost immediately, the airplane descended into the terrain. A review of weather information indicated that the base of the overcast cloud layer was below the tops of some of the terrain in this area. Snow showers, strong wind, and patches of fog were present beneath the overcast. It is likely that the pilot flew into the adverse weather or was maneuvering around it when the loss of airplane control occurred. Postaccident examination of the airframe and engine revealed no evidence of a mechanical malfunction or failure that would have precluded normal operation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's decision to take off in known adverse weather conditions and his subsequent failure to maintain sufficient airspeed while maneuvering in mountainous terrain and an area of low ceilings, snow, and fog, which resulted in a loss of airplane control.

Findings

Personnel issues	Decision making/judgment - Pilot
Aircraft	Airspeed - Not attained/maintained
Personnel issues	Aircraft control - Pilot
Environmental issues	Low ceiling - Effect on operation
Environmental issues	Snow - Effect on operation
Environmental issues	Fog - Effect on operation
Environmental issues	Mountainous/hilly terrain - Effect on operation

Factual Information

History of Flight

Maneuvering	Loss of control in flight (Defining event)
Maneuvering	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On May 24, 2012, about 1722 Pacific daylight time, a Gulfstream American AA-5A, N26837, impacted the terrain about 40 miles northeast of Lakeview, Oregon. The private pilot, who was the sole occupant, was fatally injured, and the airplane, which was owned and operated by the pilot, sustained substantial damage. The 14 Code of Federal Regulations Part 91 personal cross country flight, which departed Lakeview County Airport, Lakeview, Oregon, about 27 minutes prior to the accident, was being operated in an area where instrument meteorological conditions were reported. The pilot's intended destination was a private airstrip near Hubler, Idaho, which would normally have been about a 2 hour flight. No flight plan had been filed. When the pilot did not arrive at his destination he was reported missing, and a search was initiated. On Wednesday, May 30, the airplane's wreckage was found near the 6,500 foot level of the steep western slope of Hart Mountain, in the Hart Mountain National Antelope Refuge.

According to search and rescue personnel, about 2 hours prior to the time he landed at Lakeview, the pilot departed the private airstrip near Hubler, with the intention of flying direct to Lakeview, dropping off two passengers, and then returning to Hubler. According to witnesses on the ground at Lakeview County Airport, the pilot landed there, deplaned two passengers, used the restroom, and then departed again. Recorded global positioning system (GPS) data shows that after his departure from Lakeview, he initially followed a ground track on nearly a direct line between Lakeview, Oregon, and Hubler, Idaho. Then, when he reached a point about 30 miles northeast of Lakeview Airport, near the east shoreline of Plush Lake, he made a 90 degree left turn, flew out toward the middle of the lake, and then turned about 75 degrees back to the right. From there he flew along the west side of the face of the steep mountain ridge that defines the west boundary of the Hart Mountain Antelope Refuge. Then, about five minutes after he had passed over Plush Lake, the pilot initiated a turn to the left. At the time that he initiated the turn, he was flying at a groundspeed of about 95 knots. The GPS data shows that the turn continued for about 180 degrees, so that the plane was then heading almost directly back in the direction from which it had come. The data also showed that just after rolling out of the turn, the airplane's groundspeed increased to about 158 knots, and then over a period of about 10 seconds, rapidly decreased to about 45 knots. Almost immediately thereafter, the airplane made a nearly 90 degree turn to the left, followed almost immediately by nearly a 90 degree turn back to the right. The last recorded GPS data point was recorded about 3 seconds after the last turn to the right, with the last groundspeed recorded being 21 knots.

PESONNELL INFORMATION

The pilot was a 48 year-old male, who possessed an FAA private pilot certificate, with an airplane single engine land rating. He did not possess an instrument rating. His last FAA airman's medical, a class 3 with no limitations or waivers, was signed off on March 7, 2012. His last annotated flight review was signed off in his pilot log on May 12, 2010, and although his last flight time total of 467 hours appears in his pilot log in 2010, he reported at the time of his last medical that his total flight time was 600 hours.

AIRCRAFT INFORMATION

The airplane was a 1978 Gulfstream American AA-5A, serial number AA5A0755, with a Lycoming O-320E2G engine, and a model 1C172BTM-7359 fixed-pitch McCauley Propeller. Its last annual inspection was signed off on 10 July, 2011, at which time the airframe had accumulated 2,535.88 hours total time. As of February 15, 2011, the engine had accumulated 645.95 hours since a major overhaul. At the time of the accident, the airplane had accumulated about 2,556 hours total time.

METEOROLOGICAL INFORMATION

The May 24, 2012, 1715 recorded aviation weather surface observation (METAR) for Lakeview Airport indicated a wind of 250 degrees at 10 knots, a visibility of 10 miles, few clouds at 5,000 feet, broken clouds at 7,000 feet, overcast clouds at 8,500 feet, a temperature of 05 degrees C, a dew point of 02 degrees C, and an altimeter setting of 29.72 inches of Mercury.

The METAR taken one hour later at the same location indicated a wind from 020 degrees at 14 knots, gusting to 22 knots, a visibility of 10 miles, few clouds at 2,200 feet, broken clouds at 3,300 feet, overcast clouds at 5,000 feet, a temperature of 03 degrees C, a dew point of 01 degrees C, and an altimeter setting of 29.71 inches of Mercury.

According to a NTSB Staff Meteorologist, there was an unofficial weather station located about 4 miles west of the accident site at an elevation of 5,650 feet. That station indicated that there had been a significant increase in relative humidity, from 61% to 98%, during the hour prior to the accident. This increase, according to the meteorologist, would suggest cloudy conditions in the general area of the accident site near the time of the accident. The site records also show that during the hour prior to the accident the temperature dropped below freezing, and that about two hours prior to the accident, there was a measured peak wind gust of 33 knots. There was also an AIRMET (Airmen's Meteorological Information) in effect for the area around the accident site for moderate turbulence. In addition, there were several non-aviation National Weather Service products in effect for the area at the time of the accident, including a Winter Weather Advisory that advised winter conditions, to include snow, terrain obstruction, and gusty west winds up to 30 mile per hour.

According to a representative of the Lake County Sheriff's Office, there was a small group of

people who were near the area of the accident site about the time that the airplane impacted the terrain. Although they did not see or hear the airplane, they were able to describe the general weather conditions around that time. According to those individuals, the wind was blowing at a speed estimated to be above 20 mph, with periods of stronger gusts up to about 30 mph. They also stated that the top of the mountain ridge was covered in solid clouds, that it was snowing around much of the area, and that there were some areas of light patchy fog below the clouds.

About the same time that the accident pilot was flying toward Lakeview from the north, another pilot, who was flying a Mooney 201 en route from Chandler, Arizona, to Hillsboro, Oregon, was approaching Lakeview from the south. As with the accident pilot, the Mooney pilot was flying by visual flight rules, and in his specific case, was basically trying to follow the Victor airways. When interviewed by the NTSB Investigator-In-charge (IIC), he stated that at first the weather had been mostly okay along his route, with only a few scattered rain showers. But as he reached a point about half way between Reno, Nevada, and Lakeview, in the area just northeast of Susanville, California, the ceilings started to lower, and the areas of precipitation increased. When he reached the Lakeview area, the weather became significantly worse. The ceilings near Lakeview Airport were about 6,500 mean sea level (msl), which was about 1,800 feet above ground level (agl), which ultimately was determined to be within 100 feet of the altitude of the accident site. He also reported that the ceilings were occasionally lower, and that about the same time, he also began encountering a mix of rain showers and snow showers. He reported that the snow was moderate at times, and that as he proceeded north of Lakeview, ice started to accumulate on the airplane's wings. As he proceeded further north, he was in and out of snow and rain showers, which were interspersed with clear areas underneath the overcast ceilings where he could see up to 20 miles. But the further he proceeded to the north, the open areas occurred less and less, and when he was in the snow showers he could only see the ground directly below him, with no ability to see anything horizontally out in front of him. He reiterated that visibility in the snow showers was "very bad." As he flew up the west side of the valley north of Lakeview, he was under a 1,000 foot agl solid overcast ceiling, and he could see that the tops of the ridges on all sides were in the clouds. As he got about 30 miles north of Lakeview, near Paisley State Airport, he could see that the weather was closing in on him and getting worse in every direction. He therefore made the decision to turn back to Lakeview, with the hope of getting a rental car to finish his journey. After he landed at Lakeview he checked the weather to see if it was going to improve, which it was not, and then arranged for a rental car. As he was driving away from the airport, which was about an hour after he had landed, he saw the AA-5A enter the pattern for landing. At that time there were a number of localized snow showers in the area, and he said that his thought at that time was that he had been foolish to push it as far as he had, and that the pilot that was then entering the pattern in the AA-5A had to be even more foolish than he had been. Within a mile of leaving the airport to the west in the rental car, he entered another snow shower. He estimated that once he was within the snow shower, the visibility was less than one mile. He did not see the AA-5A actually land, as he was driving away from the airport at that time, and he therefore did not know if that airplane was also encountering any of the local snow showers during the landing sequence. He said that during the hour he had been on the ground at Lakeview the weather did not change

significantly. It was not getting much worse, but it did not get any better. It just kind of stayed the same, with constant low ceilings and some occasional localized snow showers.

As part of the investigation the IIC asked Lockheed Martin Flight Services and both of the contracted Direct User Access Terminal Service (DUATS) providers to review their records to see if the pilot had made use of any of their weather briefing services on either May 23 or May 24, 2012. All three entities replied that there had been no weather or flight planning services provided.

COMMUNICATIONS

Although there were no communications between the pilot and any FAA facility, after he took off from Lakeview and began to work his way north after departure, there were a series of text messages sent between himself and his wife using Verizon wireless cell phones. The first text was sent by the pilot at 1658, about 3 minutes after he took off, and the last text was sent by the pilot about 1715, which was about 7 minutes prior to the impact. The sequence, timing, and content of those messages is as follows:

- 1658:27 – Pilot to wife -- “Back in the air”
- 1659:11 – Wife to pilot-- --“Good! Fly safe!!”
- 1659:42 – Pilot to wife -- --“Just bet me out of lake view”
- 1701:20 – Wife to pilot -- --“Based on current weather or bad history?”
- 1702:04 – Pilot to wife ---“Both, zero visibility over the mountains”
- 1703:02 – Wife to pilot -- --“Let me know when you have cleared the mountains theN.”
- 1712:44 – Pilot to wife -- --“That was not good, batteries died in that mess, I am clear”
- 1713:32 – Wife to pilot -- --“Oh babe, hurry home!!!”
- 1715:34 – Pilot to wife ---“Have a nice tail wind, hopefully no more stupid stuff. I should have replaced that bat before I took off”

Of special interest to the investigation was the texts sent from the pilot at 1702:04, wherein he says there is zero visibility over the mountains, and the text he sent at 1712:44, wherein he indicates that he is clear of the mountains. A review of the global positioning system (GPS) data extracted from the Garmin GPSIII Pilot recovered from the airplane wreckage, showed that at the time he sent the text indicating he had cleared the mountains, that he had only

cleared the mountains west of Crump Lake and Hart Lake, but he had not yet cleared the last mountain ridge to the east of Hart Lake, where the accident ultimately occurred.

WRECKAGE AND IMPACT INFORMATION

The airplane impacted the terrain about ½ mile west, and about 800 feet below, the top of a north-south running mountain ridge on the west edge of the Hart Mountain National Antelope Refuge. The wreckage came to rest at 42 degrees, 31 minutes, 56 seconds north, 119 degrees, 44 minutes, 37 seconds west. The initial impact point was near the uphill edge of a small, relatively flat plateau on the otherwise steeply up-sloping rocky terrain. The entire propeller, which was still attached to the fractured crankshaft flange, was located at that location, along with numerous small pieces of Plexiglas from the windscreen. One of the blades was buried about 6 inches deep in the middle of a depression that measured about 3 feet by 4 feet. The other blade protruded from the ground. All of the remainder of the airplane's primary structure came to rest in the upright position, about 20 feet to the east (090 degrees) of the initial impact. The entire cabin area, except for the floor, had been torn into numerous small pieces, but the engine, which had suffered significant impact damage, was still attached to the remains of the firewall. The fuselage aft of the cabin area had been severely torn, twisted and distorted. Both of the horizontal stabilizers were still attached to the aft end of the fuselage, and both elevators were still attached to their respective stabilizers. The vertical stabilizer had been torn from the fuselage, but the rudder was still attached to the fuselage pivot point at its base, and to the vertical stabilizer cap at its top. The entire wing was still attached to its tubular main spar, and the spar itself was still connected to its fuselage attach fittings. The entire leading edges of both wings were crushed almost directly aft along their entire span to almost the depth of the tubular spar. The left aileron and flap were still attached to the trailing edge of the wing, and the right flap was still attached to its wing at its inboard pivot point, but not at its outboard pivot. The right aileron was detached from the wing, but was lying on the ground directly below its associated position on the wing. Flight control continuity and function were able to be established from the point where the cables departed the cockpit area to the point where the flight controls themselves were actuated.

After the wreckage was recovered from the accident site it was taken to the facilities of Nu Venture Air Services in Dallas, Oregon, for further examination. There, after the dirt was cleaned from the propeller blades. The cambered face of one blade had chord-wise scarring lines running in an unbroken pattern from its leading edge to its trailing edge along the outboard ½ of its span. This same blade had numerous leading edge indentations and gouges along the inboard ½ of its span, with the most inboard one foot of the leading edge showing almost continuous gouges and aft crushing deformation to a depth of ½ inch. The flat face of the same blade displayed chord-wise scarring lines running at an outward 45 degree angle, continuously from the leading edge to the trailing edge, along the middle ½ of its span. The outboard ½ of the blade was bent aft about 20 degrees in a constant continuous arc. The second blade, which was bent sharply aft about 45 degrees at a point about 1 foot from its root, displayed chord-wise scarring of its cambered face from its root to within about 8 inches from its tip. This blade also displayed a series of small leading edge dents and indentations

along a 1-foot section about half way along its span. The spinner, which had been crushed nearly straight aft into the propeller hub area, as well as its backing plate, both displayed numerous circumferential scars around their outer edges. The spinner itself had torn near the trailing edge of both blades, and was crushed into and formed around the leading edge of both blades in a direction opposite that of normal propeller rotation.

A further inspection of the engine did not reveal any signs of lack of lubrication, breeches of the crankcase, or any preimpact damage or anomalies associated with any of the engine accessories. Due to the scarring and impact signatures associated with the propeller blades and the spinner, an internal engine examine was not performed.

MEDICAL AND PATHOLOGICAL INFORMATION

The Oregon State Medical Examiner’s Office performed an autopsy on the pilot, and the manner of death was determined to be accidental, with the cause of death being massive blunt trauma.

The FAA’s Civil Aerospace Medical Institute performed a forensic toxicological examination on samples taken from the pilot, and the results were negative for carbon monoxide, cyanide, ethanol, and screened prescription and non-prescription drugs.

Pilot Information

Certificate:	Private	Age:	48, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	March 7, 2012
Occupational Pilot:	No	Last Flight Review or Equivalent:	May 12, 2010
Flight Time:	(Estimated) 600 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	GULFSTREAM AMERICAN CORP	Registration:	N26837
Model/Series:	AA-5A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	AA5A0755
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	October 7, 2011 Annual	Certified Max Gross Wt.:	2200 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2556 Hrs at time of accident	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	O-320 SERIES
Registered Owner:	REGISTRATION PENDING	Rated Power:	180 Horsepower
Operator:	Tony L. Nicholls	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:		Visibility	2 miles
Lowest Ceiling:	Overcast / 100 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	20 knots / 30 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	-1°C
Precipitation and Obscuration:	Moderate - None - Snow		
Departure Point:	Lakeview, OR (KLKV)	Type of Flight Plan Filed:	None
Destination:	Hubler, ID	Type of Clearance:	None
Departure Time:	16:55 Local	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	42.526111,-119.73944(est)

Administrative Information

Investigator In Charge (IIC):	Anderson, Orrin
Additional Participating Persons:	Dan Ridgeway; Portland FSDO; Hillsboro, OR
Original Publish Date:	March 13, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=83807

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