



Aviation Investigation Final Report

Location:	Mica, Washington	Accident Number:	SEA01FA060
Date & Time:	March 8, 2001, 14:20 Local	Registration:	CGISV
Aircraft:	Cessna U206G	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The Canadian ATP rated pilot, who was reported to have in excess of 30,000 hours of flight experience, was attempting to fly the company's Cessna U206G from Seattle, Washington, to Calgary, Alberta. He obtained 3 weather briefings from Seattle Flight Service between 0823 and 1040 on the day of the accident. VFR flight north to Vancouver, British Columbia, and east across the Cascade Mountains was not recommended and the pilot chose a southerly route taking him south from Renton, WA, to the Columbia River, then east along the River to The Dalles, Oregon, and then northeast to Spokane, WA, where he planned to stop en route to Calgary, Alberta. The pre-departure weather briefing, as well as the in-flight briefing the pilot subsequently received, as well as the validity of the weather information provided (forecasts and advisories) was found to be correct and satisfactory. Although the pilot was IFR rated, he did not file an IFR flight plan. Additionally, he filed his flight plan as transponder Mode "C" equipped, but approaching Spokane advised the tower that "...we're having some transponder trouble here...." The pilot's son reported that the aircraft's transponder was questionable. Unable to utilize radar vectors approaching the Spokane area due to the lack of a transponder signal, the pilot radioed "...I'm going to see if I can work my way over to Coeur d'Alene or go back south and pick up a small airport...." The aircraft was observed heading north-northeast at an elevation of approximately 300 feet AGL by a witness driving on highway 27 (2,600 MSL) . The witness reported that the aircraft was under the fog line and then it disappeared into the fog heading toward Mica Peak. The aircraft impacted trees on a heading of approximately 015 degrees and in a slightly nose up attitude before impacting the rising terrain near Mica Peak at an elevation of 4,760 feet MSL. The witness reported weather conditions at his location as poor visibility, strong rain, low clouds and fog.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's continued flight into instrument meteorological conditions. Contributing factors were fog, low ceilings, drizzle/mist, rising terrain, and the non-availability of a functioning transponder.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: CLIMB

Findings

1. (F) WEATHER CONDITION - FOG
2. (C) VFR FLIGHT INTO IMC - CONTINUED - PILOT IN COMMAND
3. (F) WEATHER CONDITION - LOW CEILING
4. (F) TRANSPONDER - UNAVAILABLE
5. (F) WEATHER CONDITION - DRIZZLE/MIST
6. (F) TERRAIN CONDITION - RISING

Factual Information

HISTORY OF FLIGHT

On March 8, 2001, at 1420 Pacific standard time (PST) a Canadian registered Cessna U206G, C-GISV, registered to Great Bear Aviation, Ltd., and being flown by a Canadian certificated airline transport pilot, was destroyed during a collision with trees/terrain five nautical miles east/northeast of Mica, Washington. The pilot, who was the sole occupant, sustained fatal injuries. There was no fire. Instrument meteorological daylight conditions prevailed, and a VFR flight plan had been filed and activated. The flight, which was personal, was operated under 14CFR91, and originated from the Renton Municipal Airport, Renton, Washington (WA), approximately 1107 on the morning of the accident. Radio contact was lost with the aircraft at 1420 and a search was initiated. The aircraft was located on the afternoon of March 10, 2001.

According to personnel at Action Aviation, a fixed base operator (FBO) located on Renton Municipal airport, Renton, Washington, the fueler arrived at the FBO earlier than the usual opening time of 0730 to service an outgoing medevac flight on the morning of March 8. Upon his arrival at the FBO he encountered the pilot of C-GISV who reported that he had been at the FBO since 0300 local. The fueler allowed the pilot to sleep on the FBO's couch and reported that the aircraft departed around 1115.

The pilot's first known contact with the Seattle Automated Flight Service Station (AFSS) was at 0823 (March 8th). This was a telephonic preflight weather briefing for a flight from Renton (RNT) to Calgary (YYC), Alberta (AB), Canada, with an estimated departure time frame of 0930-1000. The briefing included routings from 1) Seattle, WA, to Vancouver, British Columbia (BC) and then to Calgary, 2) Seattle to Spokane, WA, and then Calgary, and 3) Seattle south toward Portland, Oregon (OR), then east along the Columbia River toward The Dalles, OR, and then Spokane. The briefer recommended against VFR flight and the pilot chose to delay the departure about an hour and then recheck the weather (refer to ATTACHMENT WB-I).

This initial contact was followed by a second call to the Seattle AFSS at 0944, during which the pilot received an updated weather briefing for a flight from RNT to Spokane (GEG). The briefing included routings from 1) Seattle to Spokane direct over the Cascade Mountains, and 2) Seattle to Spokane via a routing south toward Portland, east along the Columbia River toward The Dalles, and then Spokane. The briefer recommended against VFR flight on the direct routing and indicated that the southerly route was better. The briefer also advised the pilot that the recently transmitted terminal forecast for the Spokane area indicated VFR conditions with intermittent periods of overcast at 2,500 feet and three miles visibility due to moderate rain showers and mist. The pilot stated that he would call back in about 10-15 minutes to check on conditions on a direct routing (refer to ATTACHMENT WB-II).

At 1029, the pilot telephonically contacted Seattle AFSS and received an updated weather briefing. The briefer advised of an Airmet for IFR conditions in the Seattle area as well as mountain obscuration and icing for the direct routing concluding with "...certainly VFR wouldn't be recommended at this time...." The briefer continued, providing the pilot with current and forecast conditions along the routing south toward Portland, east along the Columbia River toward The Dalles, and then Spokane. The pilot then filed a Visual Flight Rules (VFR) flight plan with the briefer for the southerly route and terminated his telephone communication just before 1040 (refer to ATTACHMENTS FP-I and WB-III).

At 1106, C-GISV received clearance for takeoff from Renton, and at 1109 the Renton local controller, located at the Renton Air Traffic Control Tower, attempted to contact C-GISV to advise the pilot that his transponder was not being received. At 1114, the pilot contacted the Renton local controller requesting a frequency change and was advised of lack of transponder signal, and at 1115 the pilot activated his VFR flight plan (refer to ATTACHMENTS FPA - I and FAA 8020-6).

At 1237, the pilot radioed Seattle flight watch and provided a pilot report from the vicinity of the Dalles and was advised, "...we still show along the route for mountain obscurement and icing..." (refer to ATTACHMENT IF - I).

At 1352, the pilot radioed the GEG air traffic control tower stating he was "...15 south..." and requested the current weather. The controller responded including "...visibility 5, light rain, mist, few clouds at 700, our ceiling 1,100 overcast..." and the pilot responded with "...we have a lower ceiling where we are at this altitude..." The pilot indicated he wanted radar vectors to land at GEG and was then switched to Spokane approach control (refer to ATTACHMENT IF - II).

Just before 1354, the pilot contacted Spokane approach control indicating he was "12 south." He then requested vectors to land and, when given a discreet transponder code of 0345, advised approach "...we're having some transponder trouble here...." The pilot then radioed that he was 12 miles south of the airport inbound on 350 degrees at an altitude of 2,700 feet. The controller advised the pilot that he would be unable to provide radar vectors at his current altitude and the pilot indicated he was orbiting "...just on the bottom edge of the clouds...."

At 1357, the controller advised the pilot "...I won't be able to pick you up at that altitude so therefore I can't give you radar vectors to any type of approach or to the airport..." and the pilot then inquired as to the weather at Coeur d'Alene (COE), Idaho. The controller responded with the 1330 COE weather reporting in part "...visibility reported 7 miles, few clouds at 100, ceiling of a 2,000 overcast..." and the pilot radioed back in part "...I'm going to see if I can work my way over to Coeur d'Alene or go back south and pick up a small airport..." and stating the he was presently on the 347 degree radial of the GEG VOR inbound (refer to CHART I).

At 1402, after several inquiries from the controller, the pilot radioed that he was 21.7 miles out from the airport (which airport is not clear) and on an inbound track of 352.

At 1403, the controller inquired as to whether the pilot was still navigating toward GEG or going to try for COE. No response was received until 1417:29, when the pilot radioed in part "...on a heading to Coeur d'Alene of 020 and we're 22 miles out..." (refer to CHART II).

At 1419:54, the pilot radioed the controller "...Spokane center could you give me the ah last weather for Coeur d'Alene...?" This was the last known radio transmission from the pilot (refer to ATTACHMENT IF-III).

Thirty seconds after the initiation of this last radio call, Spokane approach control received a brief ELT transmission (1420:24).

A witness traveling in his automobile east on highway 27 about a mile southeast of Freeman, Washington, reported seeing a Cessna aircraft between 2:00 and 2:15 PM on the afternoon of the accident. He reported the aircraft as being about 300 feet above the elevation of the highway and heading northeast. He reported that the aircraft was under the fog line and then it disappeared into the fog heading toward Mica Peak (refer to attached Witness statement and associated chart).

PERSONNEL INFORMATION

The pilot had been issued a Canadian Airline Transport Pilot license on November 9, 2000. The license was valid for all single-pilot, non-high performance, single and multi-engine land and sea aeroplanes, as well as a Group 1 instrument rating and a Class 3 instructor rating. Additionally, he had been issued a Category 1 medical certificate on December 27, 2000, containing the restriction that "...glasses must be worn intra-ocular contact lens in left and right eye...."

No pilot logbook was located at the accident site. The pilot reported 30,700 hours of flight experience at the time of his most recent medical certificate issuance. A business associate reported that the pilot owned two other Cessna 206 aircraft in association with the Great Bear Aviation Company, and that he had logged approximately 2,000 hours in Cessna models 206/207 and 210 aircraft.

AIRCRAFT INFORMATION

C-GIZV, a Cessna 206, serial number U20606017, was registered to Great Bear Aviation, Ltd., Yellowknife, NWT, Canada. The aircraft's Technical logs (airframe, engine and propeller), as well as the aircraft Journey log, were recovered at the accident site. The last entry within the Journey log was dated "Feb 07/2001" and showed a flight from BFI (Boeing Field, Seattle, Washington) to RNT (Renton Field, Washington) with a respective departure and arrival time of 1720 and 1742. The aircraft total air time since manufacture was recorded as 2,755.6 hours.

According to a telephone conversation between the Washington State Department of Transportation - Aviation Division Air SAR Coordinator, and the pilot's son, the aircraft was equipped with long-range fuel tanks (84 gallons total). The following operational instrumentation was reported: one VOR receiver, one VHF transceiver, a hand-held portable GPS, and a functional attitude indicator. The following items were also reported: number two radio removed, DME removed, autopilot inoperative, transponder questionable, and a possible ELT problem (refer to Statement WDOT - I).

An undated fuel receipt (VISA) found with the pilot at the accident site showed 54.6 gallons of fuel being purchased at Action Aviation. A telephone interview with the fueler at Action Aviation determined that the aircraft was fueled on March 8, 2001, at 0650 local time, and the aircraft was topped off.

METEOROLOGICAL INFORMATION

Surface weather observations near the time of the accident are reported as follows:

Spokane, Washington - Felts Field (KSFF)

Elevation: 1,953 feet

The accident site is located about 125 degrees at 11.3 nautical miles from KSFF

1353PST ... Winds 100 degrees at 3 knots; visibility 6 miles; light rain, mist; ceiling 1,000 feet broken, 1,500 feet broken, 1,900 feet overcast; temperature 7 degrees C; dew point 6 degrees C; altimeter setting 30.04 inches of Hg.; ceiling 600 feet variable 1,100 feet; 0.04 inch of precipitation recorded between 2053Z and 2153Z.

1453PST ... Winds 220 degrees at 6 knots; visibility 10 miles; light rain; ceiling 1,000 feet overcast; temperature 7 degrees C; dew point 6 degrees C; altimeter setting 30.03 inches of Hg.; 0.05 inch of precipitation recorded between 2153Z and 2253Z.

Spokane, Washington - Spokane International Airport (KGEG)

Elevation: 2,381 feet

The accident site is located about 100 degrees at 17.8 nautical miles from KGEG

1356PST ... Winds 200 degrees at 9 knots; visibility 5 miles; light rain, mist; 700 feet scattered, ceiling 1,100 feet broken, 2,000 feet overcast; temperature 6 degrees C; dew point 5 degrees C; altimeter setting 30.02 inches of Hg.; 0.03 inch of precipitation recorded between 2056Z and 2156Z.

1456PST ... Winds 200 degrees at 7 knots; visibility 8 miles; light rain; ceiling 800 feet overcast; temperature 6 degrees C; dew point 5 degrees C; altimeter setting 30.01 inches of Hg.; 0.04 inch of precipitation recorded between 2156Z and 2256Z.

Coeur d'Alene, Idaho (KCOE)

Elevation: 2,320 feet

The accident site is located about 223 degrees at 15.7 nautical miles from KCOE

1355PST ... AUTO (Automated Observation) ... Winds 170 degrees at 5 knots; visibility 5 miles; ceiling 100 feet broken, 2,000 feet overcast; temperature 5 degrees C; dew point 3 degrees C; altimeter setting 30.03 inches of Hg.

1415PST ... AUTO ... Winds 170 degrees at 4 knots; visibility 5 miles; ceiling 100 feet broken, 1,600 feet overcast; temperature 5 degrees C; dew point 4 degrees C; altimeter setting 30.03 inches of Hg.

1435PST ... AUTO ... Winds 160 degrees at 5 knots; visibility 4 miles; few clouds at 100 feet, ceiling 1,200 feet overcast; temperature 5 degrees C; dew point 4 degrees C; altimeter setting 30.03 inches of Hg (refer to attached Meteorology Factual Report).

Personnel at the Geiger International Airport air traffic control tower, located approximately 20 nautical miles west of Mica Peak, reported to the investigator-in-charge that clouds obscured the top of the mountain on the afternoon of the accident.

A witness traveling eastbound on Highway 27 on the afternoon of the accident reported observing a Cessna aircraft crossing the highway and heading northeast about 300 feet above ground. The time of the observation was approximately 1400-1415 PST and the witness's location was approximately five nautical miles south-southwest of the accident site about 2,600 feet MSL. The witness reported that the aircraft was "...under the fog line...." The witness described the weather as consisting of poor visibility, strong rain, low clouds and fog (refer to attached Witness statement and associated chart).

COMMUNICATIONS

There was no evidence of any voice communication difficulties during the latter portion of the flight (refer to previously referenced attachments).

At 1354:51, the Spokane West Radar Controller radioed C-GISV requesting that the pilot set code '0345' on his transponder, and four seconds later the pilot responded "...we're having some transponder trouble here...."

The FAA's Spokane Air Traffic Control Tower reported that there was no recorded radar data associated with C-GISV and that the aircraft's altitude was such that it was below radar coverage.

WRECKAGE AND IMPACT INFORMATION

The aircraft crashed into upsloping, heavily wooded terrain along the west side of Mica Peak (5,205 feet MSL) at a latitude and longitude of 47 degrees 34.160 minutes North and 117 degrees 05.528 minutes West respectively. The ground impact site was at approximately 4,760 feet above sea level (refer to CHART III).

On-site examination revealed a wreckage distribution path through tall coniferous trees oriented along an approximate 015/195 degree magnetic bearing line with the first evidence of tree strikes at the south end of the bearing line. The fuselage was observed approximately 100-200 feet north-northeast of the initial tree strikes and with its longitudinal axis oriented along the same relative bearing line referenced previously with the exception that the aircraft's nose was now pointed south-southwest (refer to photograph 1). The general slope of the terrain at the accident site was approximately +25 degrees with a significant slope increase at the fuselage site.

The fuselage was observed in a steep, nose-low attitude at its final resting place. Both wings had separated from the fuselage at the wing attach points and the empennage, including the vertical and horizontal stabilizers and their associated control surfaces, had separated (refer to photographs 2 and 3). The forward windscreen was absent and the left upper doorpost frame (aft edge of the left side windscreen) displayed impact damage and was deformed rearward (refer to photograph 4). The forward portion of the fuselage (engine and associated cowling) was buried in snow and the one exposed propeller blade displayed substantial rearward tip bending (refer to photograph 5).

All major components of the aircraft were located either at or near the fuselage's final resting place or along the bearing line leading back to the first tree impacts. The left wing was broken into two sections along the chord line and slightly inboard of the flap-aileron seam. The outboard section was captured among the limbs of a conifer located slightly to the right of the bearing line looking north-northeast (refer to photograph 6). Level with the outboard left wing section, and centered along the bearing line, was a dead conifer with its upper trunk section separated and displaying fresh break surfaces (refer to photograph 7). The inboard section of the left wing was observed lying in the snow just beyond the base of this tree and towards the fuselage. A short distance to the left of this dead conifer, and just slightly above the level with the previously described break, was a second conifer. This conifer displayed a significant scrape or impact mark along its south face (refer to photograph 8).

The outboard section of the left wing was recovered from the tree and examined on site. A substantial impact deformation at the outboard leading edge progressing aft to the spar was noted. The impact deformation contained small fragments of pine bark and traces of tree sap (refer to photograph 9). A small (one inch diameter) straight tree limb was nested into the center of the leading edge impact and was observed to be roughly perpendicular to the lateral axis of the wing when viewed along the wing's chord line (refer to photograph 10). Likewise, the same straight tree limb was nested into the center of the leading edge impact and was

observed to be canted nose-up approximately 15 degrees from horizontal when viewed along the wing's lateral axis (refer to photograph 11).

MEDICAL AND PATHOLOGICAL INFORMATION

George R. Lindholm, M.D., at the Holy Family Hospital, Spokane, Washington, conducted post-mortem examination of the pilot on March 12, 2001, (autopsy number 01-74-SA).

The FAA's Toxicology Accident and Research Laboratory, Oklahoma City, Oklahoma conducted toxicological evaluation of samples from the pilot. Findings for Carbon Monoxide, Cyanide, Ethanol, and drugs were all negative (refer to attached Toxicology report).

ADDITIONAL INFORMATION

On-site examination of the wreckage was conducted on March 11, 2001, after which the wreckage was verbally released to the pilot's son. Written wreckage release was accomplished on March 25, 2001, and is documented on NTSB form 6120.15 (enclosed).

Pilot Information

Certificate:	Airline transport	Age:	70, 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:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	Toxicology Performed:	Yes
Medical Certification:	Class 1 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	December 27, 2000
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	30700 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	CGISV
Model/Series:	U206G	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	U20606017
Landing Gear Type:	Tricycle	Seats:	6
Date/Type of Last Inspection:	June 5, 2000 Annual	Certified Max Gross Wt.:	3600 lbs
Time Since Last Inspection:	29.5 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	2758.7 Hrs at time of accident	Engine Manufacturer:	Continental
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	IO-520D
Registered Owner:	Great Bear Aviation, Ltd.	Rated Power:	300 Horsepower
Operator:	Robert O. Jensen	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	Condition of Light:	Day
Observation Facility, Elevation:	GEG, 2372 ft msl	Distance from Accident Site:	19 Nautical Miles
Observation Time:	13:56 Local	Direction from Accident Site:	260°
Lowest Cloud Condition:	Scattered / 700 ft AGL	Visibility	5 miles
Lowest Ceiling:	Broken / 1100 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	9 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	180°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.02 inches Hg	Temperature/Dew Point:	6°C / 5°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	Renton, WA (RNT)	Type of Flight Plan Filed:	VFR
Destination:	Spokane, WA (GEG)	Type of Clearance:	VFR
Departure Time:	11:07 Local	Type of Airspace:	Class G

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:	47.569442,-117.092224

Administrative Information

Investigator In Charge (IIC):	Mccreary, Steven
Additional Participating Persons:	Donnie D Ware; FAA FSDO (Spokane); Spokane, WA
Original Publish Date:	June 4, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=51908

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