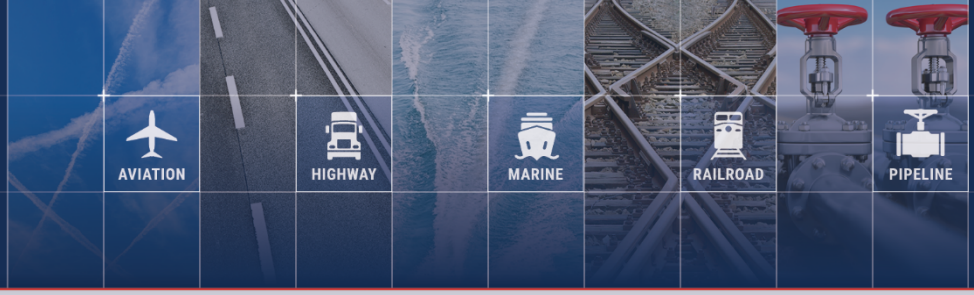

Aviation Investigation Final Report

Location:	Marlinton, West Virginia	**Accident Number:**	NYC96FA192
Date & Time:	November 28, 1995, 09:40 Local	**Registration:**	N28901
Aircraft:	Cessna 414	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Positioning		

Analysis

The pilot took off from an uncontrolled airport. He attempted to obtain an IFR clearance and reported that he was VFR at 3,500 feet. While air traffic control personnel were locating the flight plan and coordinating the IFR clearance, they lost radio contact with the pilot. The pilot continued to fly towards his destination, transiting rising mountainous terrain which was partially obscured by clouds. Wreckage was located about 28 nautical miles from the departure airport, at the 4,050-foot level. There was no evidence of mechanical failure or malfunction. According to FAR Part 91.3, the pilot had the ultimate authority for the operation of the airplane, and in the case of an in-flight emergency, had the authority to deviate from flight rules "to the extent required to meet that emergency." According to the AIM, an emergency could be either "a distress or an urgency condition." An urgency condition would exist "the moment the pilot becomes doubtful about position...weather, or any other condition that could adversely affect flight safety." Under FAR Part 91.3, the pilot would have been authorized to climb the airplane under IFR conditions, even if he were to enter controlled airspace.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's continued VFR flight into obscured, rising mountainous terrain, and his failure to climb the airplane as conditions worsened. Factors included the rising terrain and the weather obscuration.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: CRUISE

Findings
1. (C) VFR FLIGHT INTO IMC - CONTINUED - PILOT IN COMMAND
2. (C) REMEDIAL ACTION - NOT PERFORMED - PILOT IN COMMAND
3. (F) TERRAIN CONDITION - RISING
4. (F) WEATHER CONDITION - OBSCURATION

Factual Information

HISTORY OF FLIGHT

On November 28, 1995, about 0940 eastern standard time (EST), a Cessna 414, N28901, was destroyed when it impacted rising terrain in the Monongahela National Forest, near Marlinton, West Virginia. The certificated airline transport pilot was fatally injured. Instrument meteorological conditions prevailed. An instrument flight rules (IFR) flight plan had been filed for a direct flight, between Braxton County Airport (48I), Sutton, West Virginia, and Lynchburg Regional Airport/Preston Glenn Field (LYH), Lynchburg, Virginia. The positioning flight was conducted under FAR Part 91. The airplane's wreckage was located on November 13, 2001.

The accident flight was the third flight of the day. The first was a positioning flight from Lynchburg to Raleigh-Durham International Airport (RDU), Raleigh, North Carolina, the second was to transport a passenger from Raleigh to Sutton, and the third was a return flight to Lynchburg.

According to the Federal Aviation Administration (FAA) air traffic control accident transcripts and reports:

At 0618, the day of the accident, the pilot contacted the Leesburg Automated Flight Service Station (AFSS) by telephone, obtained a weather briefing, and filed three IFR flight plans.

About 0930, the airplane departed Braxton County Airport.

At 0932, the pilot contacted the air traffic control tower at Clarksburg, West Virginia, stated that he had taken off from Braxton County, was VFR and level at 3,500 feet, and requested an IFR clearance. The pilot was told that his clearance was on request, and was asked what his proposed off-time was. The pilot stated 1930 (GMT, 1430 EST).

At 0933, the pilot corrected his proposed off-time time to 1430 (GMT, 0930 EST). He was then advised that no flight plan was stored, and was asked where he was heading. The pilot stated that he was heading 145 degrees. Clarksburg personnel contacted Charleston, West Virginia, air traffic control personnel to see if an IFR flight plan had been stored in the Indianapolis Center computer. Charleston personnel advised that nothing for the airplane had been stored.

At 0934, the pilot was asked if he had filed a flight plan with the Elkins AFSS. The pilot stated that he had filed his flight plan with the Raleigh-Durham AFSS, with a destination of Lynchburg. The pilot also stated that he was having trouble hearing, and was switched to another frequency for better reception. The pilot reestablished contact with the controller, and requested direct to Lynchburg at 7,000 feet.

At 0934:48, the Clarksburg controller contacted a Washington Center controller and asked, "can you check in your computer for a proposal for november two eight niner zero one?"

At 0934:56, the Washington Center controller reported, "okay, i've got one."

At 0934:57, the Clarksburg controller responded, "oh, so you do have one?"

At 0934:58, the Washington Center controller answered, "yes, q number six eighty seven," then asked why.

At 0935:03, the Clarksburg controller stated, "he's in the air v-f-r. in fact, he's in your airspace now, thirty five hundred feet thirty southwest of elkins. we can't get a flight plan on him. we'd like to turn him over to you v-f-r and you give him the clearance."

At 0935:14, the Washington Center controller answered, "yeah, we can do that."

At 0935:15, the Clarksburg controller thanked him, and shortly thereafter, told the pilot to contact Washington Center to receive his IFR clearance. The pilot acknowledged the frequency change.

At 0935:39, the pilot contacted Washington Center and reported being VFR at 3,500 feet, and requested IFR to Lynchburg. The pilot was issued an Elkins altimeter setting of 30.00 and a transponder code of 7036.

At 0936:09, the pilot called a second time. The controller asked twice how the pilot heard him, and the pilot responded after the second call with, "barely readable if that's washington. it's barely readable on twenty eight six, niner zero one."

At 0936:34, the controller told the pilot to "squawk seven zero three six, seven zero three six."

At 0936:40, the pilot responded with, "seven zero three (unintelligible)"

At 0938:14, the pilot asked the Washington Center, "do you have a clearance for ah, niner zero one?"

At 0938:22, the controller responded with, "november two eight niner zero one, squawk seven zero three six and ident now please."

At 0938:26, the pilot responded with, "(unintelligible) three six ident nine zero one."

At 0938:44, the controller asked the pilot what altitude he was leaving.

At 0939:03, the controller again asked the pilot for his altitude.

At 0941:33, the controller asked the pilot, "how do you read?"

At 0943:19, the controller reported to the Clarksburg controller, "i heard him call and ah, i never saw him and ah, i don't see him now. do you have any clue where he's at out there?"

At 0943:31, the Clarksburg controller asked, "okay, he didn't call you back?"

At 0943:33, the Washington Center controller answered, "no, he did not. he was direct lynchburg, that's where he was heading, looking for the i-f-r. he was at thirty five hundred is where i lost him."

Clarksburg air traffic control personnel also reported that about 0936, they observed a VFR transponder code, approximately 15 miles southeast of Sutton, at 3,500 feet msl, on a heading of 145 degrees. A letter by an FAA inspector, dated December 4, 1995, reported the position as 38 degrees, 30 minutes north latitude, 80 degrees, 30 minutes west longitude.

A witness in the vicinity of Webster Springs, West Virginia, which was located along the flight planned route, about 18 nautical miles southeast of Sutton, reported seeing an airplane flying at low altitude in foggy weather conditions. Additional witness sightings in the vicinity were confirmed by the director of the county emergency operations center.

The accident occurred during the hours of daylight, and the initial tree impact marks were at 38 degrees, 20.09 minutes north latitude, 80 degrees, 16.83 minutes west longitude.

PERSONNEL INFORMATION

The pilot held an airline transport pilot certificate with single engine and multiengine land ratings, and an instrument rating. He also held a flight instructor certificate for single and multi-engine airplanes, and instrument airplane. His latest FAA first class medical certificate was issued July 14, 1995. At that time, he reported 4,850 hours of flight time.

AIRCRAFT INFORMATION

The Cessna 414, serial number 414-0353, was equipped with two Continental TSIO-520-NB1B engines. According to the airplane's logbook, the airplane had accumulated over 3,378 hours of flight time as of October 5, 1995, the date of the last 100-hour inspection.

METEOROLOGICAL INFORMATION

The 0945 surface weather observation for Greenbrier Valley Airport (LWB), Lewisburg, West Virginia, included a 900-foot broken layer; visibility 5 statute miles in fog; temperature 44 degrees Fahrenheit (F); dew point 39 degrees F; winds from 270 degrees at 5 knots; and an altimeter setting of 30.03 inches Hg.

The Greenbrier Valley Airport elevation was 2,302 feet msl. The airport was about 30 nautical miles south of the accident site.

The 0952 surface weather observation at Elkins-Randolph County-Jennings Randolph Field (EKN), Elkins, West Virginia, included a 2,200-foot overcast with a visibility of 10-statute-miles, winds from 240 degrees at 9, gusting to 15 knots, and an altimeter setting of 30.01 inches Hg.

The Elkins Airport elevation was 1,987 feet msl. The airport was located about 38 nautical miles north northeast of the accident site.

The Leesburg AFSS weather briefing included flight precautions for Virginia and West Virginia, for occasional mountain obscuration in clouds and precipitation through 1600, and occasional moderate turbulence below 10,000 feet.

AIRPORT INFORMATION

Braxton County Airport elevation was 1,270 feet msl. The airport did not have an operating control tower. Terrain elevation rose to the southeast, with peaks about 2,600 feet msl in the vicinity of Webster Springs. Terrain elevation continued to rise to the southeast, with a peak topping 4,600 feet, about 6 nautical miles southeast the crash site and along the approximate route of flight to Lynchburg.

WRECKAGE AND IMPACT INFORMATION

The wreckage was located on rising terrain, about a 5-degree incline, in the Cranberry Wilderness Area of the national forest, about 28 nautical miles southeast of Braxton County Airport. The wreckage was located approximately along a direct line between the airport and Lynchburg.

A debris path, consisting of broken tree branches and airplane wreckage, was about 500 feet in length. The first 100 feet was oriented on an axis of approximately 140 degrees magnetic. The remainder was oriented on an axis of approximately 155 degrees magnetic.

The wreckage path began in the tops of trees estimated to be 80-100 feet tall. Initial tree cuts appeared to be relatively level, with subsequent tree cuts, after the change in the wreckage path direction, descending at an angle of approximately 5 degrees. Some branches were found cut at a 45-degree angle. The main wreckage was located at an elevation of approximately 4,050 feet msl.

There was no evidence of pre-impact airframe or engine malfunction. Both engines were separated from the airframe, and both sets of propellers were separated from the engines. Five of the six propeller blades could be moved freely within the hubs. The sixth blade was separated from the hub. The blades had varying degrees of bending, some with severe bending at the tips. Most of the blades had leading edge damage, and several also had trailing

edge damage.

Flight control continuity could not be confirmed due to the positioning and extent of wreckage, although some control cables exhibited "boom straw" separation. Engine control positions were unreliable due to impact damage.

The three landing gear were found extended. However, there was almost no leading edge damage to any of the gear or gear doors, and the landing gear actuator position indicated that the landing gear had been retracted.

The instrument panel was destroyed. Individual gauges revealed a course dialed into the HSI of 135 degrees magnetic and the heading indicated 140 degrees magnetic; the altimeter indicated about 4,000 feet, however, the face plate was broken and movement of the needle revealed no slap marks; the RMI indicated 120 degrees; and the turn coordinator indicated ½ standard rate turn to the right.

MEDICAL AND PATHOLOGICAL INFORMATION

No remains were recovered from the accident site.

ADDITIONAL INFORMATION

An FAA inspector reported that he conducted an interview with the passenger on November 29, 1995. According to the inspector, the passenger stated that "the pilot appeared to be physically and emotionally okay, that they picked up no ice going into 48I [Braxton County Airport], and that everything was working okay on the aircraft."

According to FAR Part 91.3, in effect at the time of the accident :

"(a) The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft.

(b) In an in-flight emergency requiring immediate action, the pilot in command may deviate from any rule of this part to the extent required to meet that emergency."

According to the Airmen's Information Manual, revised July 20, 1995:

"4-4-8. VFR/IFR Flights

A pilot departing VFR, either intending to or needing to obtain an IFR clearance en route, must be aware of the position of the aircraft and the relative terrain/obstructions. When accepting a clearance below the MEA/MIA/MVA/OROCA, pilots are responsible for their own terrain/obstruction clearance until reaching the MEA/MIA/MVA/OROCA. If pilots are unable to maintain terrain/obstruction clearance, the controller should be advised and pilots should

state their intentions.

NOTE- OROCA is an off-route altitude which provides obstruction clearance with a 1,000-foot buffer in no mountainous terrain areas and a 2,000-foot buffer in designated mountainous areas within the U.S. This altitude may not provide signal coverage from ground-based navigational aids, air traffic control radar, or communications coverage.

6-1-1. Pilot Responsibility and Authority

a. The pilot-in-command of an aircraft is directly responsible for and is the final authority as to the operation of that aircraft. In an emergency requiring immediate action, the pilot-in-command may deviate from any rule in the FAR...General and...Flight Rules, to the extent required to meet that emergency.

6-1-2. Emergency Condition- Request Assistance Immediately

a. An emergency can be either a distress or urgency condition as defined in the Pilot/Controller Glossary. Pilots do not hesitate to declare an emergency when they are faced with distress conditions such as fire, mechanical failure, or structural damage. However, some are reluctant to report an urgency condition when they encounter situations which may not be immediately perilous, but are potentially catastrophic. An aircraft is in at least an urgency condition the moment the pilot becomes doubtful about position, fuel endurance, weather, or any other condition that could adversely affect flight safety. This is the time to ask for help, not after the situation has developed into a distress condition.

b. Pilots who become apprehensive for their safety for any reason should request assistance immediately. Ready and willing help is available in the form of radio, radar, direction finding stations and other aircraft. Delay has caused accidents and cost lives.

6-3-2. Obtaining Emergency Assistance

a. A pilot in any distress or urgency condition should immediately take the following action, not necessarily in the order listed, to obtain assistance:

1. Climb, if possible, for improved communications, and better radar and direction finding detection. However, it must be understood that unauthorized climb or descent under IFR conditions within controlled airspace is prohibited, except as permitted by FAR 91.3(b).

2. ...Continue squawking assigned Mode A/3 discrete code...and Mode C altitude encoding....

3. Transmit a distress or urgency message....

6-4-1. Two-way Radio Communications Failure

a. It is virtually impossible to provide regulations and procedures applicable to all possible situations associated with two-way radio communications failure. During two-way radio communications failure, when confronted by a situation not covered in the regulation, pilots are expected to exercise good judgment in whatever action they elect to take. Should the situation so dictate they should not be reluctant to use the emergency action contained in FAR 91.3(b).

b. Whether two-way communications failure constitutes an emergency depends on the circumstances, and in any event, it is a determination made by the pilot. FAR 91.3(b) authorizes a pilot to deviate from any rule in Subparts A and B to the extent required to meet an emergency."

The accident was previously documented by the Safety Board as a missing aircraft, accident/incident number BFO96AMS01.

On November 17, 2001, the wreckage release was acknowledged by an official of the United States Forest Service.

Pilot Information

Certificate:	Airline transport	**Age:**	31,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**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:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	November 3, 1994
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	4850 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N28901
Model/Series:	414	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	414-0353
Landing Gear Type:	Retractable - Tricycle	**Seats:**	7
Date/Type of Last Inspection:	October 5, 1995 Annual	**Certified Max Gross Wt.:**	6350 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	3378 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	TSIO-520
Registered Owner:	Casey Industrial, Inc.	**Rated Power:**	310 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	LWB,2302 ft msl	**Distance from Accident Site:**	30 Nautical Miles
Observation Time:	09:45 Local	**Direction from Accident Site:**	180°
Lowest Cloud Condition:		**Visibility**	5 miles
Lowest Ceiling:	Overcast / 900 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	270°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.03 inches Hg	**Temperature/Dew Point:**	7°C / 3°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	Sutton, WV (48I)	**Type of Flight Plan Filed:**	IFR
Destination:	Lynchburg, VA (LYH)	**Type of Clearance:**	None
Departure Time:	09:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Braxton County 48I	**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	Unknown
Runway Length/Width:		**VFR Approach/Landing:**	Unknown

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	38.334999,-80.279998

Administrative Information

Investigator In Charge (IIC):	Cox, Paul
Additional Participating Persons:	David Green; FAA/FSDO; Charleston, WV Joeseph Hutterer; Cessna Aircraft Company; Wichita, KS John Burres; Teledyne Continental Motors; Mobile, AL
Original Publish Date:	January 16, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=53786