Aviation Investigation Final Report

Location:	Whitfield, Alabama	**Accident Number:**	NYC07FA226
Date & Time:	September 13, 2007, 16:20 Local	**Registration:**	N109PA
Aircraft:	Piper PA-32R-301	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Positioning		

Analysis

The airplane's owner and his wife deplaned at their vacation destination, before the pilot departed on the return trip to the airplane's home base. After a lengthy discussion about the approaching storm from the west, the pilot concurred with the owner on a route of flight that would take the airplane east, then north to avoid the storm, before eventually heading west towards its ultimate destination. Instead, the radar data depicted a northerly track for the airplane after departure, before it turned on a northwesterly track directly towards its destination. An air traffic controller advised the pilot of "significant" weather along his route of flight, the pilot acknowledged the radio call, and confirmed that he was "weather radar equipped." A Significant Meteorology Information (SIGMET) was issued for severe embedded thunderstorms in the area that included the route of flight at the time of the accident. Examination of weather radar data revealed "intense" and "extreme" weather in the area of the accident site at the time of the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's intentional flight into known thunderstorms.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: CRUISE - NORMAL

Findings
1. WEATHER CONDITION - THUNDERSTORM
2. (C) FLIGHT INTO ADVERSE WEATHER - INTENTIONAL - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: CRUISE - NORMAL

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
3. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On September 13, 2007, at 1620 central daylight time, a Piper PA-32R-301, N109PA, was destroyed during an in-flight breakup and subsequent collision with terrain near Whitfield, Alabama. The certificated commercial pilot was killed. The airplane departed Jack Edwards Airport (JKA), Gulf Shores, Alabama, at 1534, and was destined for Jonesboro Municipal Airport (JBR), Jonesboro, Arkansas. Instrument meteorological conditions prevailed, and an instrument flight rules flight plan was filed for the positioning flight conducted under the provisions of 14 Code of Federal Regulations (CFR) Part 91.

In an interview, the airplane's owner and his wife said they deplaned in Gulf Shores to visit their summer home. After a lengthy discussion with the pilot about weather, and several invitations to stay the night in Gulf Shores, the pilot elected to depart on the return flight to Jonesboro. According to the owner, he and the pilot agreed on a course that would take the airplane east to Pensacola, Florida, then north to Birmingham, Alabama, before turning northwest on course for Jonesboro, Arkansas, due to approaching storms from the west.

Instead, radar data showed a northerly departure track for about 80 miles toward Birmingham, Alabama, before the target turned northwesterly on a direct track to Jonesboro, Arkansas.

Communication data from the Meridian, Mississippi, air traffic control facility revealed the pilot contacted the facility, at 16:11:06, at 8,000 feet, and the controller issued an altimeter setting. At 16:11:19, the controller asked the pilot, "Are you weather radar equipped?" The pilot responded, "Affirm."

At 16:11:24, the controller stated, "…deviate as required. The only thing I'm showing the next fifty miles uh looks significant. There's a line runs uh from Meridian V-O-R about thirty miles east of Meridian V-O-R ten miles wide north and south."

The pilot responded, "Uh copy that for nine papa alpha and we'll call you with any deviation we need." At 16:19:42, the pilot requested a deviation "left of course," which the controller approved. At 16:20:24, the controller stated, "November nine papa alpha no other traffic. Don't worry about your altitude, verify four thousand six hundred." The pilot did not respond, and there were no further transmissions from the airplane.

A search was initiated and the airplane wreckage was discovered in heavily wooded terrain on September 14, 2007.

PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with a rating for airplane single-engine land, multiengine land, and instrument airplane. His most recent Federal Aviation Administration (FAA) second-class medical certificate was issued August, 2007. A review of the pilot's logbook revealed he had accumulated about 530 total hours of flight experience, 420 hours of which were in single engine airplanes, and 110 hours of which were in multiengine airplanes. The pilot had also logged 24 hours of actual instrument meteorological conditions experience, and 53 hours of simulated instrument experience. His commercial pilot certificate was issued August 31, 2006.

AIRCRAFT INFORMATION

According to the manufacturer, the airplane was a Piper PA-32R-301 that was manufactured in 1996. Interpolation of the airplane's maintenance records as well as the pilot's logbooks revealed the airplane had accrued about 2,024 total aircraft hours. The airplane's most recent annual inspection was completed June 6, 2007, at 1,948 aircraft hours. According to the FAA airworthiness inspector who reviewed the records, all airworthiness directives that applied to the accident airplane were complied with on that date.

METEOROLOGICAL INFORMATION

At 1652, the weather recorded at Meridian Naval Air Station, 30 miles west of the accident site, included a broken ceiling at 2,000 feet with 2.5 miles visibility in light rain and fog. The wind was from 070 degrees at 5 knots. The temperature was 24 degrees Celsius, and the dewpoint was 22 degrees Celsius. The altimeter setting was 29.99 inches of mercury.

Significant Meteorology Information (SIGMET) 37C was issued for the area that included the route of flight for the time of the accident. The SIGMET outlined the following: "Area of severe embedded thunderstorms moving from 210 degrees at 15 knots. Tops to Flight Level 45,000 feet. Wind gusts to 40 knots possible. Thunderstorms associated with Tropical Depression Humberto."

Examination of weather radar data from the National Oceanographic and Atmospheric Administration by a National Transportation Safety Board Senior Meteorologist revealed that a line of thunderstorms crossed the airplane's route of flight in the vicinity of the crash site at the time of the accident.

Weather radar echo intensities of Video Integrator and Processor (VIP) level 5 and 6 were recorded in the area of the accident site at the time of the accident. Levels 5 and 6 are described as "intense" and "extreme," respectively.

WRECKAGE AND IMPACT INFORMATION

The wreckage was examined on September 15, 2007, and all major components were

accounted for at the scene with the exception of the rudder sheet metal skin, and the right portion of the stabilator. The wreckage path was oriented about 190 degrees magnetic, and was about 2,500 feet in length.

The first components along the wreckage path were the left side stabilator and the right aileron, each about 250 feet left and right of centerline respectively. The vertical fin was located 500 feet along the wreckage path, and 250 feet right of centerline. The left wing was suspended in a tree about 60 feet above the ground, 750 feet along the wreckage path, and 500 feet right of centerline. The components displayed impact damage as well as paint transfer consistent with the accident airplane.

The main wreckage was found on its left side, oriented 190 degrees magnetic. Several pieces of angularly cut branches were found around and above the wreckage. Two saplings were cut at sharp angles close to the ground and immediately adjacent to the propeller. The engine was exposed with the propeller assembly still attached. Two propeller blades were visible, and one was buried. The main fuel line and the flow divider manifold contained fuel.

The fuselage and the right wing were oriented in the same direction and the wing main spar had separated from its fuselage mounts. There was a strong odor of fuel below the left wing and at the main wreckage. The cockpit was destroyed by impact, and the cockpit and forward cabin area were crushed aft to the third row of seats. Control continuity was established from the cockpit area to the rudder sector, the stabilator tube, and to the point of left wing separation. All cable breaks exhibited fractures consistent with overstress.

Disassembly and examination of the attitude indicator revealed the pendulous vanes were secure in the gimbaled assembly and the gimbaled assembly was free to rotate. The pendulous vanes had rotational scoring around the circumference, as well as on the inside of the pendulous vane housing. Examination of the main fuel sump revealed several ounces of fuel. The filter elements were clear, and the fuel and elements were absent of water and debris.

MEDICAL AND PATHOLOGICAL INFORMATION

The Alabama Department of Forensic Sciences, Montgomery, Alabama, performed a postmortem examination on the pilot. The cause of death was reported as "multiple blunt force injuries."

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma did not perform toxicological testing on the pilot. According to an FAA research lab technician, no samples were received for testing.

Pilot Information

Certificate:	Commercial	**Age:**	27,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):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	August 31, 2007
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	August 31, 2006
Flight Time:	530 hours (Total, all aircraft), 84 hours (Total, this make and model), 330 hours (Pilot In Command, all aircraft), 59 hours (Last 90 days, all aircraft), 27 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N109PA
Model/Series:	PA-32R-301	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	3246053
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	June 6, 2007 Annual	**Certified Max Gross Wt.:**	3615 lbs
Time Since Last Inspection:	76 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2024 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	IO-540 SER
Registered Owner:	DITTA AVIATION LLC	**Rated Power:**	300 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:	NMM,317 ft msl	**Distance from Accident Site:**	30 Nautical Miles
Observation Time:	16:52 Local	**Direction from Accident Site:**	240°
Lowest Cloud Condition:	2000 ft AGL	**Visibility**	2.5 miles
Lowest Ceiling:	Broken / 2000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	70°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.98 inches Hg	**Temperature/Dew Point:**	24°C / 22°C
Precipitation and Obscuration:	N/A - None - Mist		
Departure Point:	Gulf Shores, AL (JKA)	**Type of Flight Plan Filed:**	IFR
Destination:	Jonesboro, AR (JBR)	**Type of Clearance:**	IFR
Departure Time:	15:34 Local	**Type of Airspace:**	Class E

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	32.396945,-88.076942

Administrative Information

Investigator In Charge (IIC):	Rayner, Brian
Additional Participating Persons:	James West; FAA/FSDO; Birningham, AL Mike McClure; Piper Aircraft Company; Prosper, TX
Original Publish Date:	December 3, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=66667