



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Unknown, GM	<b>Accident Number:</b>	ERA11FAMS1
<b>Date &amp; Time:</b>	08/01/2011, 1033 CDT	<b>Registration:</b>	N4533R
<b>Aircraft:</b>	PIPER PA-28-140	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of control in flight	<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The non-instrument-rated pilot arranged with a flight instructor to fly with him for the purpose of obtaining a flight review. Before the pilot's arrival at the airport, he phoned the operator's facility and requested that the fuel tanks be filled. The fuel tanks were filled as requested, and after his arrival at the operator's facility, he requested that the customer service representative take the flight instructor's name off the reservation and put his name on it because he did not want the flight instructor responsible in case anything were to occur. This comment was overheard by the flight instructor, prompting him to reassure the pilot that they would have a good flight. The pilot was given the book and keys for the airplane and went to it, started the engine, taxied out, and departed from runway 9 about 7:14 am without the flight instructor.

The flight instructor, who intended to fly with the pilot later, thought that the pilot was planning to execute several touch-and-go landings and takeoffs in advance of their lesson. When the pilot did not return, the instructor attempted to communicate with the pilot on a VHF frequency; however, the pilot did not respond. Uncorrelated radar data tracked the airplane from takeoff until it was lost from radar while over the Gulf of Mexico. The uncorrelated radar data indicates that after takeoff, the pilot proceeded northwest where he orbited several times, then proceeded south, flying over the Gulf of Mexico. The flight climbed to a maximum altitude of 13,100 feet mean sea level (msl), then descended to 10,900 feet msl, where 3-D modeling indicates the flight penetrated level 2 radar returns, which are known to have light to moderate turbulence, precipitation, updrafts and downdrafts. This was the last radar return from the airplane. About 3 hours 19 minutes after takeoff, the airplane was lost from radar; a search for the airplane was initiated by the U.S. Coast Guard; however, no wreckage, debris, or the pilot's body were ever located. The pilot did not contact an air traffic control facility at any time during the flight.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The non-instrumented rated pilot's flight into instrument meteorological conditions for undetermined reasons, resulting in an in-flight loss of control, uncontrolled descent, and

collision with the water.

## Findings

<b>Aircraft</b>	Performance/control parameters - Not attained/maintained (Cause)
<b>Personnel issues</b>	Decision making/judgment - Pilot (Cause)
<b>Environmental issues</b>	Thunderstorm - Contributed to outcome (Cause)

## Factual Information

### HISTORY OF FLIGHT

On August 1, 2011, about 1033 central daylight time, a Piper PA-28-140, N4533R, registered to and operated by Gulf Air Center, Inc., was lost from radar over the Gulf of Mexico and is missing and presumed to be substantially damaged. No flight plan was filed for the 14 Code of Federal Regulations (CFR) Part 91, personal flight from Jack Edwards Airport (JKA), Gulf Shores, Alabama. The certificated private pilot is missing and presumed to be fatally injured. The flight originated from JKA about 0714.

According to a certified flight instructor (CFI), the pilot made an appointment with him to obtain a flight review at 0700, on August 1, 2011; the airplane was rented until 0830. On that date just before 0700, the pilot phoned the front desk requesting that the airplane's fuel tanks be completely filled. Upon the pilot's arrival at the fixed base operator (FBO), he told the customer service representative to give him all the responsibility for the airplane and none to the CFI, "in case something happened." That comment which was overheard by the CFI, prompted him to advise the pilot they would have a good flight. The pilot took the book and keys and went to the airplane.

The CFI further reported that when he was away from the airplane, the pilot started the engine, and departed from runway 09. Security video obtained at the departure airport confirmed the departure time. The CFI observed the airplane make a left turn to the north, and he believed the pilot was going to execute a "touch-and-go or two in preparation for the [flight review]." After about 10 minutes, the CFI attempted to communicate with the pilot using the FBO's VHF transceiver but there was no response.

According to the NTSB's Air Traffic Radar and Meteorology Study, an uncorrelated radar return for transponder code 1200 at 0715:37, was located at approximately 0.77 nautical mile and 057 degrees from the departure end of runway 09 at JKA. The uncorrelated radar returns were tracked to the northwest where radar data indicates several orbits over a residential area while flying between 500 and 1,000 feet mean sea level (msl); the radar targets were in the area of the pilots ex-wife's house. The flight then proceeded south flying over the Gulf of Mexico, making several turns, then proceeded in a westerly direction climbing to a maximum altitude of 13,100 feet msl. The radar report reflects that the airplane slowed, then descended to 10,900 feet which was the last radar target. The airplane at that time (1032:47) was located at 29 degrees 04.77 minutes North latitude and 088 degrees 37.90 minutes West longitude. The Air Traffic Radar and Meteorology Study further indicate that 3-D modeling of weather radar returns in the area of the last radar target indicate 20 to 30 dBz that correlate to VIP level 2, which are known to have light to moderate turbulence, precipitation, updrafts and downdrafts.

A search for the airplane was initiated by the U.S. Coast Guard in areas of the Gulf of Mexico, but no airplane or debris were located. A copy of the U.S. Coast Guard Search and Rescue report is an attachment in the NTSB public docket for this case.

### PERSONNEL INFORMATION

The pilot, age 68, held a private pilot certificate with rating airplane single engine land, issued April 16, 1990. He held a third class medical certificate with no medical restrictions issued June 25, 2008. On the application for his last medical certificate he listed 1,200 hours as his total flight time.

According to a “New Renter Account Information” sheet signed by the pilot on July 25, 2011, or 7 days before the flight, he did not list his flight time, last flight review date, or date of his last medical.

Safety Board review of a certified copy of the pilot’s medical certification records, revealed it contained applications from his last application dated June 25, 2008, to his first application dated September 14, 1989. A review of the application dated June 22, 2006, indicates he was taking 150 mg daily Wellbutrin, but indicated he did not have any mental disorders or any sort including depression, anxiety, etc. A review of this medical application was performed by Federal Aviation Administration (FAA) personnel, and the pilot was advised to have his physician submit documents indicating he was no longer taking the medication for 90 days and was symptom free. The requested documents were provided to the FAA and on November 2, 2007, the pilot was advised by the FAA that he was eligible for a third-class medical certificate.

The pilot’s ex-wife reported that in June 2011, her ex-husband was briefly hospitalized for self-inflicted trauma, and then underwent a mental health evaluation. He was released from the mental health facility about 3 ½ weeks later, and since release, she reported he, “went back to normal.”

On the morning of the accident date, her son drove the pilot to the airport, and her son reported his demeanor was OK. She spoke with her ex husband on the accident date between 0600 and 0630, and he advised her he will, “see you in a little while.”

#### AIRCRAFT INFORMATION

The airplane was manufactured in 1965 by Piper as model PA-28-140, and was designated serial number 28-21237. At the time of the accident, it was powered by a 150 horsepower Lycoming O-320-E2A engine and equipped with a fixed pitch propeller.

Review of the maintenance records revealed the airplane was last inspected in accordance with a 100-Hour inspection on May 26, 2011. The tachometer and airplane total time at that time were recorded to be 702.9 and 5,889.0 hours respectively. The engine maintenance records indicate that the engine oil and oil filter were changed on July 20, 2011. The tachometer time at that time was recorded to be 6,007.47.

#### METEOROLOGICAL INFORMATION

According to the National Transportation Safety Board Weather Study, the National Weather Service (NWS) Surface Analysis Chart for 1500 UTC did not depict any significant surface fronts in the area of the aircraft’s last known position, however a stationary front was identified stretching from northeastern Mississippi through southeastern Georgia. Station models along the coast and in the Gulf of Mexico in the region of the aircraft’s last known position indicated temperatures were in the mid- to high-80’s degrees Fahrenheit (F), and many dew point depression measurements were 10 degrees F or less. Wind measurements in this region indicated the wind was generally out of the northwest at 10 knots or less.

An automated surface weather observation taken at Boothville, Louisiana, at 1051, or approximately 18 minutes after lost from radar, indicates the wind was calm, the visibility was 10 miles or greater, few clouds at 2,600 feet above ground level (agl). The temperature and dew point were 31 and 25 degrees Celsius, respectively, and the altimeter setting was 30.02 inches of mercury. The remarks section associated with the observation indicated thunderstorm information not available.

A North American Mesoscale (NAM) model sounding for the aircraft's last known position at 1500 UTC was retrieved from NOAA's Air Resources Laboratory. The NAM model sounding indicated the lower 1,000 feet of the atmosphere was unstable, with the rest of the atmosphere up through 17,000 feet retrieved as conditionally unstable. The Lifting Condensation Level (LCL) and Level of Free Convection (LFC) were calculated at approximately 2,300 feet and 3,350 feet, respectively. The freezing level was at about 16,000 feet. The wind profile indicated a light northwesterly wind near the surface, which veered to the north through 10,000 feet.

No pilot reports were made within 100 miles of the aircraft's last known position within three hours of the accident time.

Geostationary Operational Environmental Satellite (GOES)-13 visible (0.65 $\mu$ m) and infrared (10.7 $\mu$ m) data were obtained. The 1515 UTC GOES-13 visible imagery identified clouds in the area of the aircraft's last known position. GOES-13 infrared data indicated cloud-top brightness temperatures near this location at 1515 UTC were between approximately 13 degrees and 8 degrees Celsius, which, when considering the NAM model sounding, corresponded to cloud-top heights of about 8,800 and 12,000 feet, respectively. This height estimation technique is only valid when cloud tops are opaque. Optically thin clouds "contaminate" the scene and tend to produce erroneously high cloud-top heights when comparing brightness temperatures to vertical temperature profiles. Because visible imagery identified cirrus-like clouds in the region, and because the spatial resolution from the GOES-13 10.7 $\mu$ m channel is relatively coarse at ~4km, confidence in cloudtop heights for the aircraft's last known position at 1515 UTC is very low. It should be noted that the satellite images in this section are not corrected for parallax error. The 1545 UTC GOES-13 visible imagery identified clouds in the area of the aircraft's last known position. GOES-13 infrared data indicated cloud-top brightness temperature near this location at 1545 UTC were between approximately -2 degrees Celsius and -9 degrees Celsius, which, when considering the NAM model sounding, corresponded to cloud-top heights of about 16,800 and 22,100 feet, respectively.

WSR-88D Level-II 0.53 degree base reflectivity at 1536 UTC from Mobile, Alabama (KMOB), located approximately 98 miles to the north-northeast of the aircraft's last known position, indicates that assuming standard refraction and considering the WSR-88D 0.95 degree beamwidth, at this tilt the radar would have "seen" altitudes between about 7,100 and 17,000 feet msl at the aircraft's last known position. The KMOB WSR-88D identified a reflectivity pattern consistent with convection that was nearly coincident with the last known position of the aircraft.

An Area Forecast for the coastal waters of the Gulf of Mexico issued at 1030 UTC advised of rain and thunderstorms east of -90 degree latitude, with activity expected mainly during the afternoon and evening hours. For the area of the aircraft's last known position, the Area Forecast forecasted scattered clouds at 2,500 and 5,000 feet msl, broken cirrus, widely scattered rain showers and thunderstorms with rain, and cumulonimbus cloud tops to FL450.

No SIGMETs or AIRMETs were active for the aircraft's last known position at accident time.

No Meteorological Impact Statements or Center Weather Advisories were issued for ZHU airspace during the times surrounding the accident in the region of the aircraft's last known position.

The astronomical data obtained from the United States Naval Observatory for 29.1 degrees N

latitude and 88.7 degrees W longitude on August 1, 2011, indicated sunrise was at 1115 UTC, Sun transit was at 1801 UTC, and Sunset was at 0046 UTC (August 2, 2011).

#### COMMUNICATIONS

The pilot did not establish contact with any FAA air traffic control facility at any time during the flight.

#### FLIGHT RECORDERS

The airplane was equipped with a Garmin 496 global positioning system (GPS) receiver.

#### WRECKAGE AND IMPACT INFORMATION

No wreckage was ever recovered. The airplane's base color was white with a red stripe.

#### MEDICAL AND PATHOLOGICAL INFORMATION

The pilot's body has not been recovered.

#### TEST AND RESEARCH

The operator contacted local law enforcement regarding the missing airplane. According to the report by the Gulf Shores Police Department, the "Type of Incident or Offense" block indicated, "Theft by deception first degree greater than \$2,500.00 false pretenses/confidence game." The report is an attachment in the NTSB public docket for this case.

At the pilot's request, the fuel tanks were filled before the flight departed.

### History of Flight

Enroute-cruise	VFR encounter with IMC Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

### Pilot Information

Certificate:	Private	Age:	68, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Unknown
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 None	Last Medical Exam:	06/25/2008
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	1200 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Manufacturer:	PIPER	Registration:	N4533R
Model/Series:	PA-28-140	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal; Utility	Serial Number:	28-21237
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	05/26/2011, 100 Hour	Certified Max Gross Wt.:	2150 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	5889 Hours	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	O-320 SERIES
Registered Owner:	GULF AIR CENTER INC	Rated Power:	150 hp
Operator:	GULF AIR CENTER INC	Air Carrier Operating Certificate:	None

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	BVE	Observation Time:	1051 CDT
Distance from Accident Site:	43 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	290°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Few / 2600 ft agl	Temperature/Dew Point:	31°C / 25°C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	Calm	Visibility (RVR):	
Altimeter Setting:	30.02 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Gulf Shores, AL (JKA)	Type of Flight Plan Filed:	None
Destination:	Unknown	Type of Clearance:	None
Departure Time:	0714 CDT	Type of Airspace:	

## Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal		

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Timothy W Monville	<b>Adopted Date:</b>	11/26/2012
<b>Additional Participating Persons:</b>	Ed Blount; FAA/FSDO; Birmingham, AL		
<b>Publish Date:</b>	11/27/2012		
<b>Investigation Docket:</b>	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=81383">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=81383</a>		

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