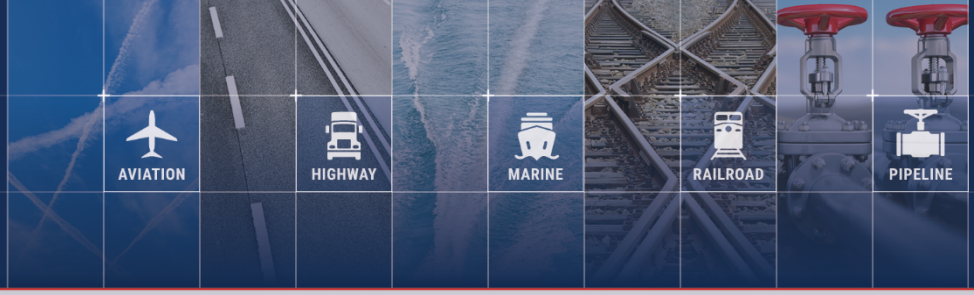

Aviation Investigation Factual Report

Location:	Destin, Florida	**Accident Number:**	ERA11FA070
Date & Time:	November 23, 2010, 19:30 Local	**Registration:**	N548C
Aircraft:	Piper PA 46-350P	**Aircraft Damage:**	Substantial
Defining Event:	Controlled flight into terr/obj (CFIT)	**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Factual Information

HISTORY OF FLIGHT

On November 23, 2010, about 1930 central standard time, a Piper PA-46-350P (Malibu Mirage), N548C, was substantially damaged when it impacted water during an approach to Destin/Ft.Walton Beach Airport (DTS), Destin, Florida. The airplane had departed Lake Front Airport (NEW), New Orleans, Louisiana about 1820. Night instrument meteorological conditions prevailed and an instrument flight rules (IFR) flight plan had been filed. The certificated private pilot and two passengers were fatally injured. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91.

The accident flight departed NEW about 1820 and flew at a cruise altitude of 13,000 feet mean sea level (msl). According to the Eglin Radar Control Facility, recordings and radar data indicated that prior to the approach the pilot had turned to an approximate 180 degree heading and appeared to be heading in the direction of another airport. The controller reassigned the pilot a heading in order to intercept the final approach for the RNAV/GPS 14 approach. The airplane was cleared for the RNAV/GPS 14 approach to DTS, then approximately 200 feet msl, radar contact went into Coast mode followed by a loss of radar contact. A search of the local airports and ground environment began and the aircraft was located in the Choctawhachee Bay, in the water, about 2024. The last two recorded transmissions from the airplane were about two minutes apart and both were recorded on the Destin Unicom frequency. The last transmission was about 1929 and was "destin traffic mirage five four eight charlie is on a three and half mile final on the uh rnav one four." No transmission was recorded indicating a malfunction with the airplane.

According to Lockheed Martin Flight Service records, the accident pilot received a weather briefing at 1547.

Airport records indicated that the airplane was fueled the day of the accident at DTS and received 68.6 gallons of 100LL aviation fuel. The fuel invoice indicated a time of 1508 which coincided with family statements that the pilot departed around 1500 after requesting the fuel to be "topped off." According to a phone conversation with a representative of the family, the pilot played golf during the morning of the accident, had a conference call about 1300, departed for NEW with one of the passengers, picked up the other passenger at NEW, and was returning to DTS at the time of the accident.

PERSONNEL INFORMATION

The pilot, age 47, held a private pilot certificate with a rating for airplane single-engine land and instrument airplane. His most recent application for a Federal Aviation Administration (FAA)

third-class medical certificate was issued on February 18, 2009. The pilot's flight time log book was recovered and the last entry was dated November 20, 2010. At that time, his total flight experience was 407.5 hours; of which, 33.7 hours were in the same make and model as the accident airplane. According to documentation, the pilot had completed a flight review and instrument competency review on November 6, 2010.

AIRCRAFT INFORMATION

The airplane was manufactured in 2001 and was issued an FAA airworthiness certificate on December 11, 2001. It was equipped with a Lycoming TIO-540-AE2A engine. According to the airplane's maintenance logbooks, two annual inspections were completed within the 12 months prior to the accident. The most recent annual inspection was completed on September 14, 2010; however, the logbook entry was not signed by an FAA licensed airframe and powerplant (A&P) with inspection authorization (IA) mechanic. At the time of the inspection, the reported aircraft total time was 717.5 hours. A signed annual inspection was conducted by an FAA A&P IA on May 21, 2010 and the reported aircraft total time was 711.5 total hours. The tachometer was located in the wreckage and indicated 760.7 hours. According to FAA records, the airplane was purchased by the accident pilot on October 29, 2010.

METEOROLOGICAL INFORMATION

The 1953 recorded weather observation at DTS, located approximately 1 mile to the south of the accident location, included winds from 140 degrees at 3 knots, visibility 1/4 mile due to fog, vertical visibility of 100 feet, temperature 19 degrees C, dew point 19 degrees C, and altimeter 30.11 inches of mercury.

The closest Terminal Area Forecasts (TAF) were issued for Eglin Air Force Base (VPS) located 5 miles northwest and Hurlburt Field (HRT) located 10 miles west. Both forecasts issued at 1654 CST (2254Z) expected 1/2 mile (0800 meters) in fog, with a ceiling or vertical visibility of 100 feet at the time of the accident.

AIRPORT INFORMATION

The airport was equipped with a single runway oriented northwest to southeast and designated as 14/32. The runway was 4,999-feet-long and 100-feet-wide, constructed of asphalt, was equipped with a 4-light precision approach path indicator (PAPI) on the left side of the runway, and had a displaced threshold of 200 feet on both ends of the runway. The airport did not have an air traffic control tower. Communication was accomplished utilizing a common traffic advisory frequency; however, it was not recorded.

The airport was served by two RNAV approaches. The accident flight had been cleared for the RNAV runway 14 approach. The approach required a minimum of 1 mile of visibility and a ceiling no lower than 460 feet msl. The inbound course for the approach was 143 degrees. The approach had two step down fixes, the first was located 10 nautical miles (NM) from the

runway threshold and was 2,000 feet msl, the second was 4.8 NM from the runway threshold and was 1,600 feet msl. After the second fix the flight could descend down to the minimum descent altitude of 460 feet, the altitude required to be maintained until the runway was visually acquired or the missed approach point, which was the runway 14 threshold.

WRECKAGE AND IMPACT INFORMATION

The airplane was found inverted in the water and the right wing, cabin, and cockpit area remained attached. The main wreckage was located 512 yards (approximately 1,500 feet) from the shore and approximately 5,000 feet from the runway 14 threshold. The engine was impact separated and located approximately 30 feet northwest of the main wreckage. The left wing was located approximately 80 feet to the south of the main wreckage. The tail section was located approximately 25 feet from the main wreckage. The airplane was recovered and transported to the Destin Coast Guard Station.

Examination of the airplane indicated that the right main and nose landing gear were in the down and locked position. The left main landing gear was in the retracted position and the landing gear door was not recovered. Examination of the landing gear revealed no anomalies; the left landing gear was moved to the down position, by hand, and locked automatically. The landing gear actuator was removed for testing. The flaps were in the retracted, or zero degree position. The flap actuator was examined and indicated one exposed thread which correlated to zero degrees.

The left wing had impact crumpling on the wingtip and was bowed in the positive direction beginning approximately halfway spanwise on the wing and extended towards the wing tip. It was separated from the fuselage, the aileron was fractured, and the outboard section remained attached; the inboard section and counter weight had separated and were recovered. The wing skins had become separated causing a breach in the integrated fuel system. The fuel cap remained secured and in place. The right wing had impact crumpling on the wingtip and remained attached to the fuselage, the aileron was impact damaged, and the flap remained attached. The fuel cap was secured and in place; however, the retractable handle was extended.

The empennage was separated, at the cabin door area, from the forward cabin section. The vertical stabilizer and rudder remained attached to the empennage. The horizontal stabilizer and tail cone section were twisted to the right and attached by the airplane skin only; all support structures were impact separated.

The fuel gascolator screen was clean and void of fuel or water. The fuel selector valve located in the right wing was found beyond the "OFF" position and off the cam.

Aileron, rudder, and elevator cables were all attached to the cockpit controls. The aileron trim had one exposed thread, which correlated to a full nose down position. The cables were attached to their respective attach points at the control surfaces.

The cockpit seats shoulder harness reels remained attached to structure, were impact damaged, and attached at all attachment points. No stretching of the webbing or tearing was observed and the belts were found latched. The left front seat was deformed toward the right, separated from the floor, the seat pan was fractured, and the seat cushion was separated. The right front seat remained attached to the flooring; however, the flooring was separated from the rest of the structure and the seat was deformed slightly to the right.

The center row seats remained attached to the structure; however, the structure was damaged but remained in place, and the lap belt and shoulder harness reel remained attached. The restraint system was unlatched and no stretching of the webbing was observed. The seat bottom was detached from the Velcro bottom and the pan was broken and separated.

The right rear seatbelt was detached from the structure but remained latched and evidence of stretching on the webbing was observed. The shoulder harness retract reel was pulled out of the structure and the attach bolt was not in the mounting lug. The seat back and frame were separated from the structure. The left rear seatbelt was unlatched and remained attached at all attachment points to the structure. The left seat back and frame were separated from the structure; the bench seat was separated from the pan. The seatbelt webbing was not stretched.

The throttle, mixture, and propeller levers were located in the full forward position. The fuel tank selector lever was broken; however, the piece that remained was indicating that it had been set to the right fuel tank. The speed brake lever, located on the pilot's control wheel, was found in the stowed position. The Kollsman window on the pilot's altimeter was set to 30.11 inches. The airplane was equipped with two Garmin 530s, an Avidyne 750, and an enhance digital display indicator, which were removed and sent to the National Transportation Safety Board's Recorders laboratory to be downloaded.

The engine remained attached to the firewall. The engine was equipped with a three bladed composite fiber propeller. All three of the blades were impact separated at the hub and only two of the blades were recovered. The spark plugs were removed and appeared medium gray in color with normal wear and were salt contaminated. The engine was rotated by hand and salt water was observed coming out through the spark plug holes; internal gear and drive train continuity was confirmed. All six cylinders produced compression and borescope examination of the top end components revealed no anomalies. The oil suction screen and filter were free of debris. The propeller governor was recovered intact and the control arm was approximately 1/2 inch from the high rpm stop. The unit was removed, the spline shaft remained intact, the gasket oil screen was clean and free of debris, it contained oil, and pumping action was noted when the shaft was rotated by hand. The right side engine turbocharger remained attached to the crankcase, the turbine shaft rotated freely, and the compressor and turbine wheels were intact. The left side turbocharger was impact separated from the engine. The turbocharger shaft could not be rotated and the unit was opened by investigators. The compressor vanes were damaged and score marks were present on the housing interior and the turbine was

intact. The waste gate valve was observed in the open position. The turbocharger controller was recovered intact and the waste gate actuator was impact damaged, and the actuator shaft was bent while in the retracted position. The turbocharger system overboost valve was intact.

Both magnetos were intact, and remained secure on the engine case. The magnetos were removed and their drives rotated freely. The steel drive gear was also intact; however, spark could not be produced when the drives were turned by hand.

Both vacuum pumps remained attached to the engine and were intact. They were removed from the engine, rotated smoothly, and the internal vanes were intact.

The engine-driven fuel pump was intact, the drive shaft was intact, pumping action was noted when rotated by hand, and fuel was found throughout the engine fuel system.The fuel injection servo was found intact, the throttle was found in the open position, and the mixture control arm was in the idle cut off position. The fuel inlet screen was free of debris. The regulator assembly was opened and the diaphragm valve was intact. The flow divider was intact and remained attached to the top of the engine; it was removed, and opened. The unit contained water and fuel, the diaphragm valve was removed, found intact, and free to move. The fuel injector nozzles were removed and found to be free of debris and unobstructed.

MEDICAL AND PATHOLOGICAL INFORMATION

The Office of the Medical Examiner for the District 1, Florida, performed an autopsy on the pilot on November 24, 2010. The reported cause of death was "multiple blunt impact trauma."

Toxicological testing was performed post mortem at the FAA's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. The tests were negative for carbon monoxide, cyanide, ethanol, and drugs, legal or illegal.

TESTS AND RESEARCH

Left Main Landing Gear Actuator

The left main landing gear actuator was taken to the manufacturer facility for examination and testing. According to the Acceptance Test Procedures at the facility the actuator performed within the tolerance allowed. A detailed examination report with accompanying pictures is contained in the public docket for this accident.

GPS devices

Several GPS devices were sent to the National Transportation Safety Board's Vehicle Recorders Laboratory for download and analysis. Due to the salt water intrusion and loss of internal battery charge, no information could be extracted from any of the units.

Pilot Information

Certificate:	Private	**Age:**	47,Male
Airplane Rating(s):	Single-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 3 With waivers/limitations	**Last FAA Medical Exam:**	February 18, 2009
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	May 14, 2010
Flight Time:	408 hours (Total, all aircraft), 34 hours (Total, this make and model), 295 hours (Pilot In Command, all aircraft), 62 hours (Last 90 days, all aircraft), 43 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N548C
Model/Series:	PA 46-350P	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	4636322
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	May 21, 2010 Annual	**Certified Max Gross Wt.:**	4340 lbs
Time Since Last Inspection:	49 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	761 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	C91A installed	**Engine Model/Series:**	TIO-540-AE2A
Registered Owner:	On file	**Rated Power:**	350 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	DTS,23 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	19:53 Local	**Direction from Accident Site:**	179°
Lowest Cloud Condition:	100 ft AGL	**Visibility**	0 miles
Lowest Ceiling:	100 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	140°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.11 inches Hg	**Temperature/Dew Point:**	19°C / 19°C
Precipitation and Obscuration:	Heavy - None - Fog		
Departure Point:	New Orleans, LA (NEW)	**Type of Flight Plan Filed:**	IFR
Destination:	Destin, FL (DTS)	**Type of Clearance:**	IFR
Departure Time:	18:22 Local	**Type of Airspace:**	

Airport Information

Airport:	Destin/Ft. Walton Beach Airpor DTS	**Runway Surface Type:**	Asphalt
Airport Elevation:	23 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	14	**IFR Approach:**	Global positioning system;RNAV
Runway Length/Width:	4999 ft / 100 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	30.419445,-86.480552

Administrative Information

Investigator In Charge (IIC):	Etcher, Shawn
Additional Participating Persons:	John D Park; FAA/FSDO; Vestavia Hills, AL Charles R Little; Piper Aircraft; Vero Beach, FL Edward Rogalski; Lycoming Engines; Williamsport, PA Ken Allen; Triumph Actuation Systems; Clemmons, NC Gene Hurak; Triumph Actuation Systems; Clemmons, NC
Report Date:	August 22, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=77866