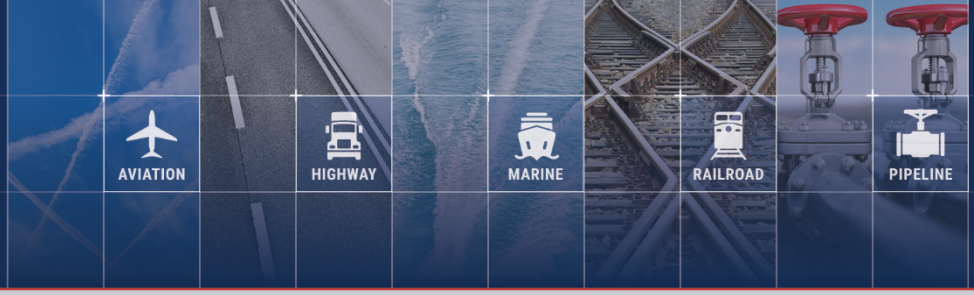

Aviation Investigation Final Report

Location:	Cedar Key, Florida	**Accident Number:**	MIA03FA071
Date & Time:	March 3, 2003, 19:29 Local	**Registration:**	N6369C
Aircraft:	Piper PA-28R-201T	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The flight experienced an in-flight breakup during a VFR flight into instrument meteorological conditions. The pilot did not obtain a preflight weather briefing before departure but he did obtain three in-flight weather briefings from the Miami Automated Flight Service Station. During one of the briefings he was provided information about the location of a front that existed along the intended route of flight. About 32 minutes before the accident, the non-instrument rated pilot advised the controller that he was flying in the clouds and was trying to maintain VFR. The pilot was asked if he wanted to obtain an IFR clearance and asked for assistance to avoid the clouds several times; he was advised what radar could and could not depict. About 1 minute before the accident, the controller advised the pilot that he was depicting a heavy weather echo at his twelve o'clock position and 2.5 miles. The pilot responded by stating that he needed assistance. The controller provided a heading for the pilot to fly but the pilot did not acknowledge that transmission. The controller then advised on the frequency for the pilot not to turn that tight and to level the wings. That transmission was also not acknowledged by the pilot. Recorded radar data shows the aircraft descended from 12,600 feet to 8,800 feet MSL, before the flight path entered an area of depicted weather echoes. The flight subsequently went into a left descending turn, reaching a descent rate in excess of 5000 feet per minute. Post-accident examination of the aircraft did not reveal evidence of mechanical malfunction. Review of the pilot's logbook revealed he logged 15 hours actual instrument flight time on 34 flights as pilot-in-command (PIC); the entries for these flights did not contain a signature by a certified flight instructor or safety pilot. He also logged actual instrument flight time as PIC before receiving his private pilot certificate. In the area and time of the accident, no SIGMET's, Convective SIGMET's, or Center Weather Advisories were in effect. The pilot's medical was expired 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 inadequate in-flight planning/decision by his continued VFR flight into instrument meteorological condition after receiving an in-flight weather advisory. Also causal was his failure to maintain aircraft control, which resulted in flight that exceeded the design limits of the aircraft and resulted in an in-flight breakup. Contributing factors were the pilot's overconfidence in his personal ability, and the failure of the National Weather Service to issue an Airmet to identify IFR conditions for the area of the accident.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: DESCENT

Findings
1. PREFLIGHT BRIEFING SERVICE - NOT OBTAINED - PILOT IN COMMAND
2. (F) HAZARDOUS WEATHER ADVISORY - NOT ISSUED - NWS PERSONNEL
3. WEATHER CONDITION - RAIN
4. (C) IN-FLIGHT BRIEFING SERVICE - DISREGARDED - PILOT IN COMMAND
5. (C) VFR FLIGHT INTO IMC - CONTINUED - PILOT IN COMMAND
6. (F) OVERCONFIDENCE IN PERSONAL ABILITY - PILOT IN COMMAND

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

Findings
7. AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND

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

Findings
8. TERRAIN CONDITION - WATER

Factual Information

HISTORY OF FLIGHT

On March 3, 2003, about 1929 eastern standard time, a Piper PA-28R-201T, N6369C, registered to Cherry Hill Aviation, Inc., was lost from radar and radio contact with Jacksonville Air Route Traffic Control Center and crashed in the Gulf of Mexico near Cedar Key, Florida. Instrument meteorological conditions prevailed in the area at the time and no flight plan was filed for the 14 CFR Part 91 personal flight from Key West International Airport, Key West, Florida, to Tallahassee Regional Airport (KTLH), Tallahassee, Florida. The airplane was destroyed and the private-rated pilot and one passenger were fatally injured. The flight originated about 1733, from Key West International Airport.

After takeoff, air traffic control communications (ATC) were transferred to several air traffic control facilities including Miami Air Route Traffic Control Center (Miami ARTCC), Southwest Florida International Airport Air Traffic Control Tower (KRSW ATCT), and Jacksonville Air Route Traffic Control Center (Jacksonville ARTCC). Before establishing ATC communications with the KRSW ATCT, the pilot contacted the Miami Automated Flight Service Station En Route Flight Advisory Service (Miami AFSS EFAS), and was provided in part AIRMET, SIGMET, rain and thunderstorm information. The pilot established contact with the KRSW ATCT at approximately 1807, and while in contact with that facility, the pilot inquired about the weather conditions ahead to which he was advised of the limitations of the radar and that the only weather observed was located northeast of his position. The flight continued and ATC communications were transferred to the Miami ARTCC. While in contact with the R24 sector controller of that facility, the pilot advised the controller that he observed "buildups" that were located 70-80 miles ahead and questioned the best route by asking whether he needed to "...go ahead and make a turn inland now or ah if it looks like we will be alright." The controller replied, "ah there’s a big front it its ah covering the whole pan handle...." The pilot responded, "ok roger that um how’s it looking out ah on the in the gulf is it worse in the gulf or is it better over land." The controller replied, "it is a big long front that is extending out into the gulf and up towards new york." The pilot acknowledged the comment from the controller who then advised the pilot that the Federal Aviation Administration (FAA) Flight Service Station might have more information. The pilot requested to go off frequency for a period of time which was acknowledged by the controller. At approximately 1821, the pilot established contact again with the Miami AFSS EFAS and obtained pilot reports. The pilot re-established contact with the Miami ARTCC R24 sector controller, and ATC communications were then transferred to the R7 sector controller, then to the R8 sector controller of the Miami ARTCC.

While in contact with the Sector 8 controller, the pilot was advised by the controller, "...i am depicting some uh weather in the vicinity of tampa but I believe that's mainly at high altitude." The pilot reported, "ah roger that ah we are looking at some ah buildups up ahead it looks um if

we kinda headed (garbled area of transmission) direct um tampa at this time um we might ah kinda go through it is that not accurate" The controller advised the pilot that the transmission from him was garbled and requested the pilot repeat his question. The pilot advised the controller that he was turning to a heading of 345 degrees which looked to him to fly between "...a couple of ah larger buildups is that ah are you painting that same picture." The controller replied, "yeah that looks like about just to the west of ah saint Petersburg about 3 miles or so", which the pilot acknowledged. The controller then advised the pilot that the higher intensity weather was located at higher altitudes, and if he needed anything different to let him know. The pilot then advised the controller that he would stay on a heading of 345 degrees, which was acknowledged by the controller. The pilot then contacted the controller and advised that, "...we are just ah coming up on some of these ah overcast buildups (portion unreadable) and want to ah check and see how its looking out there in front of us if ah it looks like its going to be fairly broken or ah if we need to get on down." The controller questioned if the pilot wanted to contact Flight Watch to which he replied, "ah yeah unless um unless you can tell us what you're painting there ah we'll be glad to ah check flight watch." The controller advised the pilot he was, "...welcome to check flight watch in addition to ah im showing ah a couple of cells ah but like I said that all appears to be high altitude it looks like from your present position a heading of about 310 or about 010 will keep you clear to the big stuff." The pilot replied that he wanted to be sure that he was not getting into too many overcast areas, was going to stay on a heading of 345 degrees, there was buildups to his left, and then he would be able to make a turn for Tallahassee. The controller did not acknowledge that transmission and ATC communications were then transferred to Jacksonville Air Route Traffic Control Center (Jacksonville ARTCC).

The pilot established contact with the Jacksonville ARTCC at 1855:10, and advised the controller that the flight was at "twelve five." The controller acknowledged that transmission and provided the pilot with an altimeter setting. The pilot then questioned the controller as to what type of weather his radar was depicting to which the controller responded that between his present position and Tallahassee, "...not that much some stuff off your ten o'clock and about 40 miles but looks like its not in your flight path right now." The pilot questioned the controller if he was depicting any cloud cover between his position and Tallahassee to which the controller responded, "i don't paint that uh all i paint is heavy [precipitation] on my radar...." At 1856:53, the non-instrumented rated pilot advised the controller, "...we are in a little bit of clouds here and uh trying to uh maintain vfr." At 1857:09, the controller questioned the pilot if he wanted to obtain an instrument flight rules clearance to which he responded, "well we'll uh give it just a second here"; the controller did not respond. At 1903:38, the pilot contacted the controller and questioned if a 336 heading would keep the flight out of, "...most of the weather." The controller questioned the pilot if wanted to stay "...vfr" and fly heading 336 to which the pilot replied, "...we're picking our way through it pretty good didn't want to make sure we're running ourselves into some little hole up ahead of us." The controller advised the pilot that weather radar does not depict "cloud cover", that VFR or IFR was available to him, and that if he continued VFR he would point out traffic to him. The pilot advised the controller that, "...we got a little uh reliability problem with ah with one of our instruments this afternoon so we're going to do our best to stay out of the ifr"; the controller did not acknowledge that

transmission. At 1904:56, the pilot advised the controller that he would like to go to flight watch which the controller approved.

At 1905:06, the pilot contacted Miami AFSS EFAS and questioned what the weather radar depicted between his present position (approximately 30 miles northwest of Tampa International Airport), and Tallahassee. The briefing specialist advised the pilot that based on his position report the airplane appeared to be in an area of heavy rain showers and asked the pilot if he was encountering any precipitation. The pilot responded negative bit he did report some buildups to his left with scattered heavy cloud cover. The briefing specialist advised the pilot to expect continuous rain showers off an on for his route of flight with "activity" moving from the southwest to the northeast, with the latest data indicating broken area of moderate to heavy rain showers "...just in front of you...", with no reported tops. While the briefing specialist looked to determine the tops, the pilot advised the briefing specialist that the flight was coming out of, "...a little more extensive cloud cover...", and reported that the cloud cover, "we've been coming through was pretty close to uh twelve thousand five hundred...." During that same transmission the pilot asked the controller if a 334 heading would "keep working for us." The briefing specialist advised the pilot that moderate to heavy rain showers existed across his route of flight, that there were some isolated imbedded thunderstorms, but there was no convective sigmet for his route of flight.

At 1912:14, the Miami AFSS EFAS briefing specialist advised the pilot that he was seeing a "...fairly good size uh level three thunderstorm approximately uh thirty miles west of cedar key with a uh area of uh light to moderate rain showers extending northward up to coastline...", and also, "...i probably uh try to swing east of that cell uh along the coastline and east of the key cedar key area and on up towards tallahassee from there over." The pilot responded by stating that he would go a little more westbound to which the briefing specialist advised, "...you stay about that far out off the coast you probably going to run right into it looks like you probably want to swing a little east of that cell and uh linger along the coastline near cedar key...." The briefing specialist also advised the pilot to contact Jacksonville Flight Watch and that the cell he was looking at was located approximately 30 miles west-southwest of cedar key and it could diminish but it also could continue in its present state and, "you probably [want] to steer a little bit east of that over." The briefing specialist asked the pilot if he anticipated the possibility of flying into instrument conditions to which he advised of "one instrument that ah we're not relying on real heavily so we're going to go ahead and take a more northerly turn at this time and uh more or less uh you think heading direct cross city...." At 1916:10, the briefing specialist asked the pilot for a more current position report to which the pilot replied that the flight was 65 miles south-southwest of the Cross City VOR. The briefing specialist advised the pilot, "...direction is recommended to toward cedar key and uh at this point you can still swing into the cedar key area and move north along the coastline uh heading towards cross city is recommended at this point over." The pilot advised the briefing specialist that he was heading 010 degrees, and the briefing specialist provided the pilot the cross city altimeter setting and advised him to contact Jacksonville Flight Watch for further updates. The pilot only reported hearing the flight watch information and advised the briefing specialist at 1918:42, that he was changing back to Jacksonville ARTCC frequency.

The pilot re-established two-way communications with the Jacksonville ARTCC at about 1920, and advised the controller that the flight was descending from 12,500 to 10,500 msl. The controller acknowledged hearing the part that the airplane was descending and at 1924:32, the pilot asked the controller what the weather currently looked like at the Cedar Key. The controller advised the pilot, "...just west of cedar key im painting uh just a couple of heavy returns out there but uh over cedar key im not painting anything right now." At 1927:50, the controller advised the pilot, "...i got uh one heavy return painting about twelve o'clock and two and a half miles." The pilot responded at 1928:19, by stating, "jacksonville center six niner charlie uh we could use some help." The controller responded that a 120 heading would take him into the clearest area; the pilot did not respond to this transmission. At 1929:12, the controller stated, "...uh don't uh turn too tight there you might want to level your wings and stay straight for a bit." The pilot did not acknowledge that transmission and there were no further recorded radio transmissions from the pilot of the accident airplane.

Review of NTSB plotted radar data revealed that from 1900:04, to 1915:54, the airplane flew at 12,600 feet mean sea level (msl) on a northwesterly heading while flying over the Gulf of Mexico. At 1915:54, the airplane turned right and proceeded on a north-northeasterly course and continued flying at 12,600 feet msl, until 1919:30. From 1919:30, to 1927:18, the airplane remained on the north-northeasterly course but descended from 12,600 feet msl to 8,800 feet msl. A review of the radar targets overlaid onto a weather radar chart indicates that no weather radar echoes were noted along the flight path for the altitude flown between 1917:06, and approximately 1922:06, at which time the airplane was at the south edge of depicted weather echoes. Between approximately 1922:06, and 1928:42, the airplane remained nearly continuously in depicted weather echoes. The plotted radar targets indicate that at 1927:54, the airplane began a left descending turn with an average rate of descent of 4,000 feet-per minute between the 1927:54, and 1928:06 radar targets. The airplane continued in a left turn but descended only 200 feet at the next radar target at 1928:18. The airplane continued in a left descending turn flying in a southerly then southeasterly direction. The calculated average rate of descent between the 1928:30 radar target (8,300 feet msl), and the last radar target at 1929:18 (1,700 feet msl), was in excess of 5,000 feet-per-minute. The last radar target was located at 29 degrees 06.216 minutes North latitude and 083 degrees 08.950 minutes West longitude.

The airplane crashed in the Gulf of Mexico during the hours of darkness; there were no known witnesses to the accident. The wreckage was located on March 4, 2003, at 1431 hours, in about 12 feet of water at 29 degrees, 06.060 minutes North latitude and 083 degrees 06.890 minutes West longitude.

PERSONNEL INFORMATION

The pilot was the holder of a private pilot certificate with airplane single-engine land rating which was issued on August 8, 2000. A review of Federal Aviation Administration records revealed he did not have any accidents or incidents or enforcement actions when checked

using his pilot certificate number. He was last issued a third class medical certificate with no limitations on September 27, 1999.

A review of his pilot logbook that contained entries from November 4, 1998, to an entry dated October 6, of an unknown year (presumed to be 2001), revealed he logged a total time of approximately 682 hours. Of the 682 logged hours, 616 were in the accident airplane. He logged a total time of 646 hours as pilot-in-command (PIC), of which 604 hours were in the accident airplane. He also logged a total of approximately 17 and 20 hours of actual instrument and simulated instrument flight time, respectively. He logged approximately 15 hours actual instrument flight time on 34 flights as PIC; the entries for these flights did not contain a signature by a certified flight instructor or safety pilot. He also logged approximately 12 hours simulated instrument flight time on 20 flights as PIC; the entries for these flights also did not contain a signature by a certified flight instructor or safety pilot. Further review of his pilot logbook revealed that prior to the date of obtaining his private pilot certificate (August 8, 2000), he logged 3.25 hours of actual instrument flight time as PIC during 10 separate flights. None of the entries contained a signature by a certified flight instructor; one entry dated April 25th, has "20 min in IFR" in the remarks section for that flight. His last logged instrument instruction flight occurred on August 1, 2001, in which 1.3 hours simulated instrument time of a 1.6 hour flight occurred with a certified flight instructor.

No determination was made as to the date of his last biennial flight review.

AIRCRAFT INFORMATION

The airplane was manufactured by The Piper Aircraft Company, Inc., in 1978, as model PA-28R-201T, and designated serial number 28R-7803222. It was certificated in the normal category and was equipped with a 200-horsepower Teledyne Continental Motors TSIO-360-FB engine, and a Hartzell BHC-C2YF-1BF constant speed propeller.

No maintenance records were located. According to a pilot-rated individual who is a registered agent of the corporation which owned the airplane, he reported that he does not have the maintenance records and they were typically kept in the airplane. He also reported that he last flew the airplane on February 16, 2003, on a 1.5 hour, local flight. During that flight, he reported no airplane related discrepancies and the autopilot system was functional during his flight.

A review of Federal Aviation Administration records revealed the pilot purchased the airplane on March 7, 2000, and made a registration application that same date to the Federal Aviation Administration.

METEOROLOGICAL INFORMATION

There was no record that the pilot obtained a preflight weather briefing for the flight with any of the two DUAT vendors or with a FAA facility. While in-flight, the pilot did establish two-way radio communications with Miami Flight Watch and obtained weather information.

According to the National Transportation Safety Board (NTSB) Meteorology Factual Report (Weather Factual Report), a METAR weather observation taken from the Cross City Airport on the accident date at 1953 hours, or approximately 24 minutes after the accident, indicates the wind was from 100 degrees at 3 knots, the temperature and dew point were 12 and 11 degrees Celsius, respectively, and the altimeter setting was 30.01 inHg. A review of a National Weather Service (NWS) surface analysis chart for the accident date at 1600 hours local (approximately 1 hour 33 minutes before departure), indicates a stationary front that extended across the state of Florida into the Gulf of Mexico and the Atlantic Ocean. The western edge of the front was located just south of the Tampa area. The NWS Weather Depiction Chart for the accident date at 1700 hours local (approximately 33 minutes before the flight departed), indicates marginal VFR weather conditions in north-central and north Florida. The NWS Area Forecast issued on the accident date at 1345 hours local (approximately 3 hours 48 minutes before the flight departed indicates that for northern and central Florida, scattered to broken clouds at 2,000 feet, broken to overcast clouds at 4,000 feet. The area forecast also indicated the tops were to flight level (FL) 20,000, with occasionally visibility 3-5 miles in light rain showers, and thunderstorms with light rain. Cumulonimbus cloud tops were forecast to FL350. The Weather Factual Report also indicates that update 3 of Airmet Sierra, issued on the date of the accident at 1545 hours local (approximately 1 hour 48 minutes before the flight departed), and valid until 2200 hours that same day, indicates that no significant IFR was expected. There were no SIGMET's, Convective SIGMET's, or Jacksonville Center Weather Service Unit Center Weather Advisories in effect for the time and area of the accident.

The NTSB Weather Factual Report also depicts weather radar data from Tallahassee, Florida, with the flight path of the airplane overlaid onto several charts. The weather radar image taken at 1929:19, or approximately at the time of the accident, indicates the airplane encountered Video Integrator and Processor Level (VIP) level 1 to level 2 intensity weather echoes.

COMMUNICATIONS

The pilot was last in contact with the Jacksonville, Florida, Air Route Traffic Control Center, and there no reported communication difficulties before the in-flight loss of control occurred.

WRECKAGE AND IMPACT INFORMATION

The National Transportation Safety Board (NTSB) did not examine the wreckage during recovery. Review by NTSB of underwater video footage taken by the company that recovered the wreckage revealed the wreckage was inverted with a portion of both wings visible. The visible portion of the bottom side of the left wing had the landing gear near the extended position, and the inboard portion of the left wing root was in very close proximity to the fuselage. The engine was separated from the airframe and the propeller was separated from the engine. The engine and separated propeller with attached crankshaft flange were found in close proximity to the main wreckage and were recovered; however, the left wing was not recovered with the main wreckage.

Examination of the airplane following recovery by NTSB revealed the cabin roof was separated and not recovered, while the top of the empennage which was separated at the aft side of the baggage compartment, was crushed down. The vertical stabilizer and rudder were separated and not recovered; the aft attachment bracket of the vertical stabilizer remained secured to the airframe. The front attach bolt of the vertical stabilizer was in place; the front bracket was displaced aft approximately 10-15 degrees. The stabilator remained secured to the structure but the left side was fractured approximately 10 inches outboard of the attach bolt, while the right side was fractured near the attach bolt. The separated sections of the left and right sides of the stabilator were not recovered. No evidence of preexisting cracks were noted in the fracture surfaces of the horizontal stabilator. The left wing main spar was fractured at the wing root area with no evidence of preexisting cracks. An approximate two foot-long section of left wing leading edge remains secured by or at the front attach bolt. The front attach bolt of the left wing was in position while the aft attach bolt was not in position. The bottom of the hole of the aft fuselage fitting had a shiny area. A section of right wing from the wing root to the fuel tank remained secured to the airplane by the main spar; the portion of the right wing outboard of the fuel tank was not recovered. The leading edge of the right wing from the wing root to the outboard section of the fuel tank was displaced down and aft, and was rotated down approximately 90 degrees. The front attach bolt of the right wing remained in position while the aft attach bolt was not in position. Examination of the flight control cables for roll, pitch, and yaw revealed all exhibited tension overload.

Examination of the cockpit revealed the flap selector handle was at the 10 degrees extended position, and the landing gear selector handle was in the down position. The fuel selector was positioned to the right tank. The pilot's and co-pilots seats were each attached to the inboard and outboard seat tracks, and both lapbelts were found buckled. The seat lock pin of the pilot's seat was noted to be in the fourth hole from the front, while the right front seat lock pin position could not be determined. Impact damage was noted to the circuit breaker panel and the stall warning circuit breaker was popped. The EGT, CHT, and oil temperature gauges needles were each in the green arc range, and were indicating 1,300, approximately 320 degrees, and 120 degrees Fahrenheit, respectively. The throttle control was approximately 1/4 inch forward of the idle stop, while the propeller control was in the high pitch range, and the mixture control was approximately 1/4 inch from the idle cutoff position. The beacon switch was in the on position, while the landing light was in the off position. The magneto switch was found in the both position. The tachometer faceplate was recovered; however the needle was needle was missing. The gyro suction gauge was indicating 2 inHg, and the airspeed indicator was off scale. Examination of the impact damaged attitude indicator revealed the unit was depicting an inverted attitude greater than 20 degrees nose low.

Examination of the engine revealed the crankshaft was fractured just aft of the front oil seal; 45-degree shear lips were noted along the circumference. Impact damage was noted to the air induction and exhaust system components. The ignition leads were damaged in various locations and only the left magneto was recovered. Attempts to rotate the engine using the propeller governor drive gear were unsuccessful. All cylinders were removed and corrosion

was noted which precluded rotation of the engine; no drive train components were failed. Examination of the lubrication system revealed no evidence of lack of lubrication. The oil filter element was examined which revealed no evidence of ferrous material. The vacuum pump remained attached to the accessory case. The drive coupling and rotor vanes were not failed; however, the rotor was cracked in several locations. Examination of the fuel pump/fuel control unit revealed the aneroid case and bellows was cracked and deformed; the drive shaft was not fractured and the pump was able to be rotated by hand. The throttle plate was noted to be in the full open position. Examination of the partially attached fuel manifold valve revealed sand and corrosion at the screen. Examination of the turbocharger revealed it was free to rotate by hand, with no notable damage to the compressor or turbine blades. Examination of the propeller revealed one blade was slightly bent aft while the other blade exhibited minimal damage.

MEDICAL AND PATHOLOGICAL INFORMATION

Postmortem examinations of the pilot and passenger were performed by District 8 Medical Examiner's Office. The probable cause of death for both was listed as "injuries sustained in airplane crash."

Toxicological testing of specimens of the pilot and passenger were performed by FAA Toxicology and Accident Research Laboratory (CAMI), and University of Florida Diagnostic Referral Laboratories (UF Laboratory). The results of analysis of specimens of the pilot by CAMI were negative for carbon monoxide, cyanide, ethanol, and tested drugs. The results of analysis of specimens of the pilot by UF Laboratory was negative in blood and urine for volatiles and the comprehensive drug screen. The results of analysis of specimens of the passenger by CAMI was negative for carbon monoxide, cyanide, and ethanol. The CAMI drug screen identified citalopram (0.059 ug/ml) detected in blood, and unquantified amount was detected in the liver. Ephedrine and phenylpropanolamine were detected in blood and liver specimens. Additionally, N-Desmethylcitalopram (0.079 ug/ml) was detected in blood and an unquantified amount was detected in the liver, while an unquantified amount of Di-N-Desmethylcitalopram was detected in the liver specimen. The results of analysis of specimens of the passenger by UF Laboratory was negative in blood for volatiles. The result by UF Laboratory was positive in the blood specimen for a "trace" amount of Citalopram.

TESTS AND RESEARCH

Examination of the aircraft's vacuum operated attitude indicator revealed the housing was crushed and the frame was bent upwards on the bottom portion. The gimball was broken from the yoke shaft and the airplane silhouette indicated an inverted position. The rotor housing was separated from the gimball. Removal of the rotor from the rotor housing revealed very slight scoring on the rotor with no obvious scoring on the rotor housing.

Examination of the aircraft's vacuum operated directional gyro revealed the frame was broken and one end of the rotor housing was broken off. The rotor housing with rotor was separated

from the gimball housing, which was broken. Slight scoring was noted on the rotor housing with no obvious scoring on the rotor.

The retained magneto was placed on a test bench and was noted to produce spark at five of the six ignition towers when operating at 2,484 revolutions-per-minute (rpm), although the impulse coupling did not operate when the magneto was operated at low rpm. Continued operation of the magneto revealed that the impulse coupling attempted to engage and the bench testing was stopped. The magneto was removed from the test bench and internal examination revealed corrosion on the internal components. No evidence of carbon tracking was noted on the distributor block. The contact surface gap measured .011 inch (specification .018 inch plus or minus .006 inch), and the electronic gap measured 13 degrees (specification is 10 degrees, plus or minus 4 degrees). The distributor gear measured .917 inch (specification is .933 inch plus 0.00 inch, minus 0.023 inch), and the condensor bench tested within limits. Corrosion on components of the magneto was removed, the magneto was reassembled on the test bench, and found to produce spark at all ignition towers when operated at 2,484 rpm.

As discussed in the Personnel Information section of this report, the pilot's last medical certificate (3rd class), was issued on September 27, 1999. Review of 14 CFR Part 61.23 revealed that based on the pilot's age at the time of the medical certificate issuance (33 years old), the class of medical certificate issued, and the date the certificate was issued, the certificate expired the 36th month after the month of the date of the examination.

National Transportation Safety Board review of a video tape which was located in the wreckage revealed it did not contain any images associated with the accident flight.

ADDITIONAL INFORMATION

The airplane minus the retained magneto, attitude indicator, and directional gyro was released to Mark C. Thompson, Assistant Vice President, Claims, of United States Aviation Underwriters, on November 5, 2003. The retained components were also released to Mark Thompson on November 6, 2003. The retained pilot's logbook was released to Daniel R. Winchester, on June 14, 2003.

Pilot Information

Certificate:	Private	**Age:**	36,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Expired	**Last FAA Medical Exam:**	September 27, 1999
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	682 hours (Total, all aircraft), 616 hours (Total, this make and model), 646 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N6369C
Model/Series:	PA-28R-201T	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	28R-7803222
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	2900 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	TSIO-360-FB
Registered Owner:	Cherry Hill Aviation, Inc.	**Rated Power:**	200 Horsepower
Operator:	Augustus R. Winchester	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	KCTY,42 ft msl	**Distance from Accident Site:**	
Observation Time:	19:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:		**Visibility**	
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	100°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.01 inches Hg	**Temperature/Dew Point:**	12°C / 11°C
Precipitation and Obscuration:			
Departure Point:	Key West, FL (KEYW)	**Type of Flight Plan Filed:**	None
Destination:	Talllahassee, FL (KTLH)	**Type of Clearance:**	VFR flight following
Departure Time:	17:33 Local	**Type of Airspace:**	Class E

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	29.10111,-83.114723

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	Stephen Stiyer; FAA FSDO; Tampa, FL Ralph K Wetherell; Teledyne Continental Motors; Mobile, AL Robert Martellotti; The New Piper Aircraft, Inc.; Vero Beach, FL
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