



# Aviation Investigation Final Report

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<b>Location:</b>	Springfield, Kentucky	<b>Accident Number:</b>	ERA10FA148
<b>Date &amp; Time:</b>	February 23, 2010, 00:30 Local	<b>Registration:</b>	N7778W
<b>Aircraft:</b>	Piper PA-28-180	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The pilot departed on the final 2-hour leg of a multi-leg flight into night instrument meteorological conditions after purchasing enough fuel to fly approximately 2 hours. He conducted the flight to his destination without the navigational publications for the route of flight, the instrument approaches at the destination airport, and with a Global Positioning System (GPS) navigational software data card that expired 4 years prior to the accident. Nearing his destination, the pilot contacted an air traffic controller and requested a non-directional beacon approach that was out of service, as posted in a notice to airman. The pilot then asked for a "GPS overlay" of the approach, and was advised that there was none. The pilot was issued a clearance for a GPS approach, subsequently reported crossing waypoints on the approach, then announced that his destination was in sight before cancelling his instrument clearance. There were no further transmissions received from the pilot.

Examination of the airplane at the accident site, approximately one-half mile from the destination airport, revealed no evidence of fuel and no evidence of mechanical anomalies with the engine or airframe. A 375-ml bourbon bottle, which contained approximately 100 ml of bourbon, was removed from the pilot's pocket during the medical examiner's recovery at the site.

Toxicological testing revealed that the pilot's blood alcohol content was 0.11 percent. A review of law enforcement and Federal Aviation Administration (FAA) records revealed that the pilot had been arrested for driving while intoxicated or driving under the influence (DUI) on at least two occasions, only one of which he reported. Further research of the pilot's records by the FAA revealed that they had improperly coded the pilot's medical application, which precluded

the FAA from crosschecking information from his medical applications with the National Driver Register for potential alcohol-related motor vehicle actions. FAA processes did not independently identify at least two prior convictions of the pilot for DUI, though he had informed them of one of the events, and the FAA had not requested details of the offense reported. The NTSB obtained the arrest report for the event reported to the FAA by the pilot, and the arrest report noted that the pilot had been driving with a blood alcohol level of 0.20 percent. Given the pilot's history of multiple episodes of driving while intoxicated, and particularly given the level of tolerance exhibited by driving with a blood alcohol level of 0.20 percent, it is almost certain that he was substance dependent, a condition that is disqualifying for medical certification. Had the appropriate information been requested, the FAA would have known that the pilot was likely substance dependent and could have taken appropriate action, particularly given that the pilot had applied for and received 1st class medical certification.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadequate preflight planning, which resulted in a total loss of engine power due to fuel exhaustion, and the pilot's impairment due to alcohol. Contributing to the accident was the Federal Aviation Administration's failure to adequately oversee the pilot's medical certification.

### Findings

<b>Aircraft</b>	Fuel - Fluid management
<b>Personnel issues</b>	Alcohol - Pilot
<b>Organizational issues</b>	Oversight of personnel - FAA/Regulator
<b>Personnel issues</b>	Fuel planning - Pilot

## Factual Information

### History of Flight

<b>Prior to flight</b>	Preflight or dispatch event
<b>Approach-IFR final approach</b>	Loss of engine power (total) (Defining event)
<b>Emergency descent</b>	Collision with terr/obj (non-CFIT)

#### HISTORY OF FLIGHT

On February 23, 2010, at 0020 eastern standard time, a Piper PA28-180, N7778W, operated by Douglas Aviation LLC, was substantially damaged when it collided with terrain while maneuvering for landing at the Lebanon-Springfield Airport (6I2), Lebanon, Kentucky. The commercial pilot was fatally injured. Instrument meteorological conditions (IMC) prevailed, and an instrument flight rules flight plan was filed for the personal flight that was conducted under the provisions of Title 14 Code of Federal Regulations Part 91. The flight departed Saint Claire County Airport (PLR), Pell City, Alabama, about 2221, on February 22, 2010.

According to a statement by the owner of the airplane, the purpose of the flight was for the pilot to fly a passenger from 6I2 to Anniston Metropolitan Airport (ANB), Anniston, Alabama. The passenger stated that the flight to ANB was uneventful, and that they landed at Anniston about 2030. While the passenger waited for the owner to pick her up, the pilot researched nearby airports open for fuel sales, as no fuel was available at ANB at that hour.

The pilot decided on an airport "about 20 minutes away" and departed ANB about 2130. The passenger who the pilot dropped off observed the airplane depart and stated that the engine "sounded good." Examination of a fuel receipt recovered at the accident site revealed that pilot purchased 24.5 gallons of 100LL gasoline at Saint Claire County Airport (AND), at 2159.

Air traffic control (ATC) data provided by the Federal Aviation Administration (FAA) revealed that the pilot obtained NOTAMS (Notice to Airmen), a weather briefing, and filed a flight plan to 6I2 (his home airport) through a commercial vendor (DUATS). The airplane departed Saint Claire about 2221, and eventually climbed to a cruise altitude of 9,000 feet mean sea level (msl).

At 2340, the pilot contacted the Indianapolis Air Route Traffic Control Center and requested the Automated Weather Observation Service frequency and the NDB RWY 11 approach at 6I2. The controller provided the frequency and advised the pilot that an "out of service" NOTAM was in effect for the NDB approach. The pilot then requested a "GPS overlay" of the approach, and was advised by the controller that there was no GPS overlay for the NDB RWY 11 approach at 6I2.

At 0007, the airplane was cleared to cross the initial approach fix, LEVFO waypoint, at 3,100 feet and was cleared for the GPS RWY 11 approach at 6I2. At 0010, the pilot was advised that radar contact was lost, and was instructed to report passing LEVFO waypoint. The pilot acknowledged the instruction.

Between 0016 and 0018, the pilot reported crossing LEVFO waypoint at 3,100 feet, and then reported light rime icing and an outside air temperature of -5 degrees Celsius (C). The pilot subsequently reported passing ROCCO waypoint, 10.4 miles from the runway, and then reported 6I2 in sight, and cancelled his IFR clearance. There were no further transmissions received from the pilot.

#### PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with ratings for airplane single engine and multiengine land. He also held a flight instructor certificate with a rating for airplane single engine and instrument airplane. The pilot's logbook was recovered; but could not be reconciled due to inconsistent entries. His most recent FAA first-class medical certificate was issued on June 6, 2008. Annotations in the pilot logbook suggested that the pilot had 1,522 total hours of flight experience as of May 4, 2009, which was the last entry in his logbook. The pilot's estimated experience in the make and model of the accident airplane was 232 hours.

#### AIRCRAFT INFORMATION

According to FAA records, the airplane was manufactured in 1964. The airplane's maintenance logbooks were not recovered, and the airplane's maintenance and inspection history could not be determined. The tachometer reading at the crash site was 3,884.8 total aircraft hours.

According to the owner of the airplane, the pilot was using his airplane to provide flight instruction through the pilot's company, Douglas Aviation LLC, which was based at 6I2, and would occasionally give him flight instruction in the airplane. The owner explained that the maintenance, upkeep, and inspection requirements for the airplane were all handled through Douglas Aviation. He added that he knew the airplane was due for an annual inspection in November 2009.

According to Douglas Aviation receipts, a repair to the right landing gear strut, and an oil change were performed on February 19, 2010, at 3,875.6 aircraft hours. The mechanic stated that the pilot did not provide the logbooks prior to or following the repair and recovered the airplane without paying his bill. The mechanic added that the oil filter that was removed from the engine during the oil change was stamped "November 11, 2008" and "3,765.0" aircraft hours.

#### METEOROLOGICAL INFORMATION

At 0030, the weather conditions reported at 6I2, at 865 feet elevation, included an overcast

ceiling at 800 feet, visibility 3 miles, temperature 3 degrees C, dewpoint 2 degrees C, and an altimeter setting of 29.81 inches of mercury. The wind was from 330 degrees at 6 knots.

## WRECKAGE AND IMPACT INFORMATION

The airplane was examined at the accident site on February 24, 2010. No odor of fuel, no fuel sheen on standing water, and no evidence of fuel blight on the surrounding foliage were present at the scene.

The accident site was located in a small wooded area between corn fields, approximately one mile from the Lebanon-Springfield airport, at an elevation of 829 feet. The initial impact point was located about 50 feet above ground level in a tree, where approximately 4 feet of the outboard section of the right wing, including the aileron, was found. The wreckage path and the main wreckage were oriented about 10 degrees magnetic. The main portion of the wreckage was located about 100 feet beyond the initial impact point, and consisted of the fuselage, left wing, inboard section of the right wing, and the empennage.

The cockpit and cabin area were completely destroyed by impact, but the instrument panel was found separated and was mostly intact. Flight control continuity was traced from the cockpit area out to all flight control surfaces through several cable breaks. All the cable breaks displayed features consistent with overload failures. Wing flap position could not be determined. The entire left wing was located with the main wreckage, and exhibited extensive crush damage and rupturing of the fuel tank. The right fuel tank which was located about 20 feet from the main wreckage, was found ruptured and separated from the inboard right wing. The right main wing spar which was located about 25 feet from the main wreckage, was separated from the wing, but remained attached to the right landing gear. All fractures and separations displayed features consistent with overload failures.

The engine was examined at the Lebanon-Springfield Airport on February 25, 2010. It exhibited significant impact damage to the oil sump and the accessory section. Both magnetos were separated from their mounts. The No. 1 cylinder exhaust valve pushrod was impact damaged, along with several of the No. 1 cylinder's cooling fins. The engine starter ring was impact damaged, but all gear teeth remained intact.

The engine crankshaft was rotated by hand at the propeller and continuity was established from the powertrain through the valvetrain to the accessory section. Cylinder compression was confirmed using the thumb method.

The fuel pump had separated from the engine on impact, and was disassembled for examination. The diaphragm remained intact and both in-and outflow ports were clear. The fuel pump was actuated by hand with no anomalies noted and contained approximately one teaspoon of fuel.

The carburetor was intact but had separated from the engine. The carburetor throttle and

mixture arms were separated from their respective cables and moved freely when manipulated by hand. The carburetor was opened and the floats were examined, and the float bowl contained no fuel.

Both left and right magnetos were rotated by hand and produced spark at all terminal leads. All spark plugs were removed, with the exception of the bottom No. 1 plug. All electrodes remained intact, were clean, and exhibited an ashen color. The oil filter was impact damaged and could not be opened for examination.

Both propeller blades remained attached to the hub, which remained attached to the engine. One of the two propeller blades was bent aft about 6 inches outboard from the hub, but was otherwise undamaged. The other propeller blade was bent forward approximately 6 inches from the tip, and was also relatively undamaged.

The airplane was equipped with a Garmin 430 Global Positioning System receiver. The navigational software data card was removed, and the expiration date was February 16, 2005.

The only flight publications recovered from the scene were two St. Louis Sectional Aeronautical charts with an expiration date of December 17, 2009, and an Alabama/Georgia Terminal Procedures book with an expiration date of October 22, 2009.

#### MEDICAL AND PATHOLOGICAL INFORMATION

The Office of the Chief Medical Examiner, University of Louisville, for the Commonwealth of Kentucky performed the autopsy on the pilot in Louisville, Kentucky. The autopsy report indicated that the pilot died as a result of "multiple injuries."

The FAA's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed toxicological testing of the pilot. The testing revealed 112 (mg/dL, mg/hg) ETHANOL detected in Blood and 118 (mg/dL, mg/hg) ETHANOL detected in Vitreous.

During the medical examiner's recovery of the pilot from the accident site, the FAA inspector removed a 375-ml bourbon bottle from the pocket of the pilot's jacket. The bottle contained an estimated 100 ml of bourbon.

A review of law enforcement and FAA records revealed that the pilot had been arrested for driving while intoxicated or driving under the influence (DUI), on at least two occasions; only one of which he reported.

The pilot's application for a first class airman medical certificate on December 19, 2006, noted a DUI arrest with suspension in May 2006. The pilot's subsequent and most recent application for a first class airman medical certificate on June 6, 2008, noted only "previously reported, no change" regarding his history of alcohol-related convictions. Both applications noted "no" to "Alcohol dependence or abuse." There was no indication that the FAA requested or received

any additional information regarding the pilot's DUI history.

A search following the accident by the FAA Security and Investigations Division turned up records on the pilot of a conviction for "Driving While Intoxicated" in Indiana on August 30, 2006 and in Kentucky on February 28, 2007. A copy of the arrest report from the 2006 conviction was obtained by the NTSB and noted, in part, that a "truck driver attempted to pass the [pilot's] vehicle when the [pilot's] vehicle crossed into the left lane sideswiping the truck's trailer causing both vehicles to pull over onto the emergency lane...arrived just as the [pilot's] vehicle was stopping. ...[the pilot] exited the vehicle and staggered towards me. ... inside the ... [pilot's] vehicle was two empty Seagram's 7 bottles ... wasn't wearing any shoes but had socks on ... attitude towards the accident was that it wasn't no big deal. ... given a portable breath test which revealed a 0.20% BAC ..."

According to a declaration from the FAA Security and Investigations Division:

"[The pilot's] September 28, 2000, Application for Airman Medical Certificate, FAA Form 8500-8, was inadvertently given a path code of 4974 during medical review. This code indicates there is no signature on item 20 (authorization for the NDR [National Driver Register] check) which prevented the FAA from crosschecking information from his medical applications with NDR for potential alcohol related motor vehicle (MVA) actions."

"[The pilot] reported, per 14 CFR 61.15(e), his 2006 alcohol related MVA, in the State of Indiana, and properly disclosed such on his 2006 Application for Airman Medical Certificate."

"[The pilot] failed to notify this office, per 14 CFR 61.15(e), of his 2007 alcohol related conviction in the State of Kentucky. He also falsified his Application for Airman Medical Certificate, dated June 6, 2008, by failing to disclose this MVA. "

"Management for the Administrator's Hotline and the Aviation Safety Hotline verified there were no hotline complaints to the FAA regarding [the pilot]."

Federal Aviation Regulations note that a history or clinical diagnosis of substance (including alcohol) dependence is a disqualifying condition for all classes of medical certificate, and defines substance dependence as "evidenced by (A) increased tolerance, (B) manifestation of withdrawal symptoms, (C) impaired control of use, or (D) continued use despite damage to physical health or impairment of social, personal, or occupational functioning" (14 CFR 67.107(a)(4)(ii), 67.207(a)(4)(ii), and 67.307(a)(4)(ii)).

The NTSB has previously noted deficiencies in the FAA's evaluation of pilots with possible substance dependence and has issued recommendations (A-07-041 through -043) to address these issues.

## Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	40, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	June 6, 2008
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	1522 hours (Total, all aircraft), 232 hours (Total, this make and model), 1280 hours (Pilot In Command, all aircraft), 5 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N7778W
<b>Model/Series:</b>	PA-28-180	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	28-1784
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	November 2, 2008 Annual	<b>Certified Max Gross Wt.:</b>	2550 lbs
<b>Time Since Last Inspection:</b>	119 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	3884 Hrs at time of accident	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O&VO-360 SER
<b>Registered Owner:</b>	KMT CONSULTANTS INC	<b>Rated Power:</b>	180 Horsepower
<b>Operator:</b>	KMT CONSULTANTS INC	<b>Operating Certificate(s) Held:</b>	None



## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Instrument (IMC)	<b>Condition of Light:</b>	Night/dark
<b>Observation Facility, Elevation:</b>	612,865 ft msl	<b>Distance from Accident Site:</b>	1 Nautical Miles
<b>Observation Time:</b>	00:30 Local	<b>Direction from Accident Site:</b>	10°
<b>Lowest Cloud Condition:</b>	Thin Overcast / 800 ft AGL	<b>Visibility</b>	3 miles
<b>Lowest Ceiling:</b>	Overcast / 800 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	6 knots / None	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	330°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.8 inches Hg	<b>Temperature/Dew Point:</b>	3°C / 2°C
<b>Precipitation and Obscuration:</b>	Light - Freezing - Ice crystals		
<b>Departure Point:</b>	Pell City, AL (PLR )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Springfield, KY (612 )	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	22:21 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	Lebanon-Springfield 612	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	866 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	11	<b>IFR Approach:</b>	Global positioning system
<b>Runway Length/Width:</b>	5000 ft / 75 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal	<b>Latitude, Longitude:</b>	37.634998,-85.267776

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Rayner, Brian
<b>Additional Participating Persons:</b>	John W Cox; FAA/FSDO; Louisville, KY Michael McClure; Piper Aircraft Company; Vero Beach, FL
<b>Original Publish Date:</b>	October 3, 2011
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB traveled to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=75401">https://data.ntsb.gov/Docket?ProjectID=75401</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).