Aviation Investigation Final Report

Location:	Iowa City, Iowa	**Accident Number:**	CHI08FA150
Date & Time:	June 3, 2008, 10:07 Local	**Registration:**	N849MA
Aircraft:	Socata TBM 700 (850)	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal, 2 Minor
Flight Conducted Under:	Part 91: General aviation - Other work use		

Analysis

The private pilot arrived at the accident airport as part of an Angel Flight volunteer program to provide transportation of a passenger who had undergone medical treatment at a local hospital. About 0937, the airplane landed on runway 30 (3,900 feet by 150 feet) with winds from 073-080 degrees and 5-6 knots, which continued to increase due to an atmospheric pressure gradient. The pilot met the passengers and departed the terminal about 1003, with winds at 101-103 degrees and 23-36 knots. About 1005 the airplane was near the approach end of runway 30 with wind from 089-096 degrees and 21-31 knots. The pilot stated that he began rotating the airplane about 3,000 feet down the runway. About 1006, the airplane was approximately 3,553 feet down the runway while flying about 30 feet above the runway. The airplane experienced an aerodynamic stall, and the left wing dropped before it impacted the ground. No mechanical anomalies that would have precluded normal operation of the airplane were noted during the investigation. The fatally injured passenger, who had received medical treatment, was 2 years and 10 months of age at the time of the accident. She was held by her mother during the flight, as she had been on previous Angel Flights, but was otherwise unrestrained. According to 14 CFR 91.107(3), each person on board a U.S.-registered civil aircraft must occupy an approved seat with a safety belt properly secured during takeoff, and only unrestrained children who are under the age of 2 may be held by a restrained adult. Although the accident was survivable (both the pilot and the adult passenger survived with non-life-threatening injuries), an autopsy performed on the child revealed that the cause of death was blunt force trauma of the head.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper decision to depart with a preexisting tailwind and failure to abort takeoff.

Contributing to the severity of the injuries was the failure to properly restrain (FAA-required) the child passenger.

Findings

Personnel issues	Decision making/judgment - Pilot
Personnel issues	Weather planning - Pilot
Aircraft	Takeoff distance - Incorrect use/operation
Personnel issues	Use of equip/system - Passenger
Environmental issues	Tailwind - Response/compensation

Factual Information

History of Flight

Takeoff	Other weather encounter
Initial climb	Stall warn/stick-shaker/pusher
Initial climb	Loss of control in flight (Defining event)
Uncontrolled descent	Other weather encounter

HISTORY OF FLIGHT

On June 3, 2008, at 1007 central daylight time, a Socata TBM-700 (850), N849MA, owned and piloted by a private pilot, received substantial damage on impact with terrain during initial climb from runway 30 (3,900 feet by 150 feet, concrete) at Iowa City Municipal Airport (IOW), Iowa City, Iowa. Visual meteorological conditions and convective activity prevailed at the time of the accident. The 14 CFR Part 91 Angel Flight Central, Inc. (Angel Flight) flight was operating on an instrument flight rules (IFR) flight plan. The pilot and one passenger received minor injuries, and the second passenger received fatal injuries. The flight originated from IOW at 1005 and was en route to Pryor Field Regional Airport, Decatur, Alabama.

The two passengers were a mother and her daughter who had flown to Iowa City, Iowa, from Thomasville, Georgia, for a scheduled medical procedure for the daughter. The mother stated that during the past three years she had used a scheduled air carrier once to fly with her daughter to Iowa City for her daughter's medical treatments, and thereafter, flew on Angel Flights.

She learned of the Angel Flight program through a volunteer worker and that her daughter's doctor had many national and international patients who used Angel Flight for transportation. She used Angel Flight for monetary and convenience reasons due to difficulties with flying on a scheduled air carrier, difficulties in security screening, and changes in medical treatment schedules, which other families had also encountered.

She visited the Angel Flight's web site to research their program and pilot qualifications. She felt "very good" about Angel Flight pilot qualifications (Angel Flight requires pilots to have a minimum of 250 hours). She said that a pilot with 250 hours meant that a pilot had been in control of an airplane for that many hours. She did know the privileges associated with an instrument rating prior to flying on Angel Flights. She did not know how the pilot qualifications differ from those on commercial operations. She did understand that pilots involved in commercial operations have regulations that are more stringent, and large airplanes used by air carriers are more complex.

She was first introduced to the pilot over the telephone when he called her telling her that he

would be the pilot for her Angel Flight and arranged a meeting time of 0915 at IOW. She stated that there were "some" storms on the morning on the day of the accident, but when she arrived at 0845, it was drizzling. When she saw the airplane land, she could tell that there was water on the runway because upon the airplane's touchdown, water splashed up. She thought that a "big storm" was not present when the airplane arrived. She met the pilot and completed the Angel Flight paperwork (passengers are required to sign an Angel Flight Transportation Authorization, Liability Release and Indemnification Form prior to flight). The pilot went to the pilot's room and checked the weather. The pilot told her that it was clear in Alabama and did not discuss the weather any further. After their baggage was loaded, they boarded the airplane and at that time it was not raining. The pilot called the pilot in Birmingham letting him know that they were taking off and what time to expect them.

She stated that during the taxi to runway 30, the pilot turned around and asked them if they were "good to go." The pilot gave the "thumbs up" and turned around. She was not wearing any headsets and did not hear any radio transmissions. The pilot performed an engine run-up and checks.

At 1503, N849MA called Cedar Rapids Approach for an IFR clearance to Decatur, Alabama, by radio, and an IFR clearance was issued; cleared as filed, maintain 10,000 feet. The final clearance altitude was flight level 290.

The pilot stated that during the takeoff roll, the airplane "swerved" to the left, "swerved" back to the right, and then "straightened" up again. She asked herself why the airplane was swerving and thought maybe it had something to do with the tires. The airplane then lifted off the runway, and "immediately" the airplane "tipped dramatically" to the left, like a banking turn. She did not remember seeing any flashing lights in the cockpit but remembered hearing a "buzzer" sound. The buzzer was first heard when they "tipped sideways." She added that in a "couple of seconds" after the airplane lifted off the runway, the airplane tipped to the left and she heard the buzzer. She remembered seeing through the window that the tail "went up." She then saw the ground coming towards them. The next thing she remembered was that she was pulled out of the airplane. She did not know how the emergency exit opened after the accident.

The IOW airport manager stated that he looked at the Automated Surface Observing System (ASOS) weather screen "shortly" before the airplane's takeoff. He recalled the ASOS showed the wind conditions were steady with winds of 25 knots gusting to 33 knots. He did not recall the wind direction and stated that the visual wind tee visible from the terminal building favored runway 12. He saw the airplane during its takeoff roll on runway 30. The takeoff appeared normal, but as the airplane reached the runway departure end, the airplane was about 100 feet above ground level. The airplane then "suddenly" went nose up and into the vertical direction. The airplane then began to roll with the nose rolling counter clockwise.

The pilot stated that he listened to the automated surface observing system and announced his taxi intentions to runway 30 on unicom. While taxiing to runway 30, he contacted Cedar Rapids Flight Service and obtained an IFR clearance. Before takeoff, he noticed the wind was

"nearly the same as on landing," which was from 360 - 010 degrees and may have been 355 - 015 degrees at the time of takeoff. The first 2/3 of the takeoff was "normal," but he then "felt a wind change and gust that pushed the aircraft a little to the left." He "glanced" at the airspeed indicator, saw that it indicated a rotation speed of 85 knots, and rotated about 3,000 feet down the runway.

PERSONNEL INFORMATION

The pilot was issued a private pilot certificate with a single-engine land rating on September 23, 1975, and was issued an airplane instrument rating on January 1, 1997. He was issued a multiengine land rating on June 5, 1998, at total flight time of 531 hours. The pilot reported that at the time of the accident, he had an accumulated total flight time of 5,688 hours, of which 4,388 hours were in the accident airplane make and model, 145 hours were in the last 90 days, and 58.4 hours in the last 30 days.

The pilot completed his last flight review using a simulator at Simcom on April 26, 2008.

FAA records for the pilot show no record of previous accidents, incidents, or enforcement actions.

AIRCRAFT INFORMATION

The airplane was a 2007 TBM 700 (850), serial number 412, that accumulated a total time of 420.0 hours. The airplane was powered by a Pratt & Whitney of Canada, Ltd., PT6A-66D turboprop engine. The airplane was equipped with a four-bladed Hartzell HC-E4N-3 constant speed propeller.

The airplane was last inspected during a 100-hour inspection on May 27, 2008, at a total time of 418 hours.

The airplane Weight and Balance Report, dated July 25, 2007, lists the airplane maximum takeoff weight - 7,394.2 lbs, empty weight – 4668.976 lbs, center of gravity – 21.6 percent, basic index – 57.4. The pilot reported that approximately 275 gallons of Jet A was on board at the time of the departure. FAA records list the pilot weight as 215 lbs, and the Angel Flight Mission Itinerary lists the passenger weights as 140 lbs and 24 lbs with baggage weight listed as 50 lbs.

The TBM 850 Pilot's Operating Handbook (POH) lists takeoff ground roll distances and takeoff distances to clear a 50 foot obstacle for weights of 5,512 lbs, 6,579 lbs, and 7,394 lbs. Corrections to theses values include:

Reduce total distances of 10 percent every 10 knots of headwind
Increase total distances of 30 percent every 10 knots of rear wind
Increase by: 7 percent on hard sod, 10 percent on short grass, 15 percent on wet runway, 25

percent on high grass, 30 percent on slippery runway

At a takeoff weight of 5,512 lbs, the takeoff ground roll and distance to clear 50 feet above ground level (D50) at an international standard atmosphere and pressure altitude of 0 and 2000 feet are listed as:

Pressure altitude - 0 feet, ground roll - 1,017 feet, D50 - 1,591 feet
Pressure altitude - 2000 feet, ground roll - 1,132 feet, D50 - 1,772 feet

At a takeoff weight of 6,579 lbs, the takeoff ground roll and distance to clear 50 feet above ground level (D50) at an international standard atmosphere and pressure altitude of 0 and 2000 feet are listed as:

Pressure altitude - 0 feet, ground roll – 1,378 feet, D50 – 2,133 feet
Pressure altitude - 2000 feet, ground roll – 1,542 feet, D50 – 2,362 feet

At a takeoff weight of 7,394 lbs, the takeoff ground roll and distance to clear 50 feet above ground level (D50) at an international standard atmosphere and pressure altitude of 0 and 2000 feet are listed as:

Pressure altitude - 0 feet, ground roll – 2,035 feet, D50 – 2,840 feet
Pressure altitude - 2000 feet, ground roll – 2,280 feet, D50 – 3,150 feet

Section 4 of the POH, Before Starting checklist, states that the oxygen supply is to be available for the planned flight and the ‘OXYGEN’ switch is to be in the "ON" position. Chapter 7.10, Emergency Oxygen System, states that the oxygen system will be used by crew and passengers when the cabin altitude is greater than 10,000 feet following a loss of pressurization or cabin air contamination. The emergency indicating and control panel located in the cockpit overhead panel includes a two-position ‘OXYGEN’ to permit the supply of oxygen to the front seat masks. The panel also contains a two-position ‘PASSENGERS OXYGEN’ to permit the supply of oxygen to the four passenger masks.

The TBM-700 (850) is equipped with at stall sensor in the leading edge of the right wing. The sensor fitted with a vane is electronically connected to an audible warning. The vane senses the change in airflow over the wing and operates the warning unit, which produces a tone over the alarm speaker. This warning tone begins between 5 and 10 knots above the stall in all configurations.

METEOROLOGICAL INFORMATION

National Weather Service Surface Analysis shows a stationary front south through southwest of IOW with a low pressure area in northeast Kansas. Easterly winds were noted north of the front. Winds were the result of the pressure gradient enhanced by the convection. Doppler weather radar for Quad Cities, Iowa, shows an area of convective activity over IOW at 0936:17

and at 1003:59, this area of activity was approximately 6.2 miles east of IOW.

The IOW ASOS, which was located at the airport, provided minute by minute observations available via telephone and on a radio frequency of 128.075 MHz. The recorded minute by minute observations for wind direction (true), wind speed, peak wind direction (true), and peak wind speed, from 0931 - 0941 and 0958 - 1009 are:

0931 - 326 degrees, 5 knots, 321 degrees, 5 knots
0932 - 349 degrees, 4 knots, 015 degrees, 6 knots
0933 - 012 degrees, 4 knots, 038 degrees, 5 knots
0934 - 035 degrees, 4 knots, 068 degrees, 6 knots
0935 - 066 degrees, 5 knots, 055 degrees, 7 knots
0936 - 080 degrees, 5 knots, 073 degrees, 6 knots
0937 - 086 degrees, 6 knots, 087 degrees, 11 knots
0938 - 093 degrees, 8 knots, 096 degrees, 12 knots
0939 - 103 degrees, 9 knots, 093 degrees, 11 knots
0940 - 105 degrees, 9 knots, 111 degrees, 11 knots
0941 - 103 degrees, 9 knots, 104 degrees, 11 knots

0958 - 100 degrees, 21 knots, 100 degrees, 28 knots
0959 - 096 degrees, 21 knots, 090 degrees, 26 knots
1000 - 093 degrees, 21 knots, 111 degrees, 28 knots
1001 - 094 degrees, 22 knots, 097 degrees, 33 knots
1002 - 098 degrees, 24 knots, 111 degrees, 30 knots
1003 - 101 degrees, 23 knots, 103 degrees, 36 knots
1004 - 098 degrees, 23 knots, 101 degrees, 34 knots
1005 - 096 degrees, 21 knots, 089 degrees, 31 knots
1006 - 095 degrees, 22 knots, 081 degrees, 29 knots
1007 - 097 degrees, 25 knots, 103 degrees, 36 knots
1008 - 099 degrees, 27 knots, 094 degrees, 35 knots

AIRPORT INFORMATION

IOW is a non-towered airport with an elevation of 668 feet mean sea level. The airport has two runways, runway 07-25 (4,335 feet by 150 feet, concrete) and runway 12-30 (3,900 feet by 150 feet, concrete). The airport has the following instrument approaches: GPS RWY 25, GPS RWY 30, and VOR-A.

The airport wind direction indicator was located between the terminal ramp and runway 18-36, which had been closed, and a windsock was located on top of a building east of the airport terminal.

A Notices to Airman, issued by IOW and valid at the time of the accident, stated that runway 07-25 was closed Monday to Friday from 0700-1900 for visual flight rules (VFR) operations.

Instrument approach charts retrieved from the airplane wreckage had the following handwriting on the airport runway diagram included in the IOW approach chart(s). The handwriting has an arrow drawn to runway 07-25 and states, "Clsd 7 AM – 7 PM IF VFR."

WRECKAGE AND IMPACT INFORMATION

The main wreckage, consisting of the airframe without the empennage and engine, was located in the parking lot of an office building. The main wreckage was about 0.28 miles and 282 degrees from the departure end of runway 30, at an elevation of about 682 feet mean sea level. The wreckage path was about 640 feet in length from a ground scar consistent with an initial impact point to the main wreckage. The wreckage path was oriented along a heading of about 244 degrees. The empennage was located about 100 feet behind the main wreckage. Pieces of the left wing were located in an area about 90-150 feet from the initial impact point.

The propeller and hub assembly were located about 170 feet from the initial impact point. The propeller blades displayed S-shaped bending and twisting about the blade's spanwise axis. One of the propeller tips was separated from its propeller blade and exhibited a granular fracture surface consistent with overload. The fracture surface of the hub shaft displayed a granular 45-degree fracture surface consistent with a torsional overload.

The flaps and cockpit flap control were both in takeoff positions.

The landing gear and cockpit landing gear control were both in the down positions.

The oxygen system supply pressure indication was 1,600 psi. The OXYGEN and PASSENGER OXYGEN switches were in the off positions.

The DATCON hour meter indicated 420.0 hours.

No mechanical anomalies that would have precluded normal operation of the airplane were noted.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy of the patient was conducted by the Johnson County Medical Examiner, Iowa City, Iowa, on June 3, 2008. The cause of death was blunt force trauma of the head.

SURVIVAL ASPECTS

Federal Aviation Regulation 91.107 Use of Safety Belts, Shoulder Harnesses, and Child Restraint Systems, states, in part:

(1) No pilot may takeoff a U.S.-registered civil aircraft (except a free balloon that incorporates a basket of gondola, or an airship type certified before November 2, 1987) unless the pilot-in-

command of that aircraft ensures that each person on board is briefed on how to fasten and unfasten that person's safety belt and, if installed, shoulder harness.

(2) No pilot may cause to be moved on the surface, takeoff, or land a U.S.-registered civil aircraft (except a free balloon that incorporates a basket of gondola, or an airship type certified before November 2, 1987) unless the pilot in command of that aircraft ensures that each person on board has been notified to fasten his or her safety belt and, if installed, his or her shoulder harness.

(3) Except as provided in this paragraph, each person on board a U.S.-registered civil aircraft (except a free balloon that incorporates a basket of gondola, or an airship type certified before November 2, 1987) must occupy an approved seat or berth with a safety belt, and if installed, shoulder harness, properly secured about him or her during movement on the surface, takeoff, and landing. For seaplane and float equipped rotorcraft operations during movement on the surface, the person pushing off the seaplane or rotorcraft from the dock and their person mooring the seaplane or rotorcraft at the dock are excerpted from the preceding seating and safety belt requirements. Notwithstanding the preceding requirements of this paragraph, a person may:

(i) Be held by an adult who is occupying an approved seat or berth, provided that the person being held has not reached his or her second birthday and does not occupy or use any restraining device.

FAA Advisory Circular AC 91-65, states, in part:

The Safety Board found that 20 percent of the fatally-injured occupants would have survived with shoulder harness (assuming the seat belt was fastened) and 88 percent of the seriously injured could have had significantly less severe injuries with the use of shoulder harness. Energy-absorbing seats could have benefited 34 percent of the seriously injured. The Safety Board concluded that shoulder harness use is the most effective way of reducing fatalities and serious injuries in general aviation accidents.

Each pilot seat and passenger seat on the accident airplane was equipped with seatbelts and shoulder harness

An Angel Flight Central Mission Itinerary, recovered form the airplane wreckage, shows that it was emailed to the pilot on June 2, 2008. The Mission Itinerary lists the daughter’s age as being older than two years old.

The mother stated that she used to use a child carrier for her daughter when they initially flew but when her daughter reached the age of two, she no longer used a carrier. During previous Angel Flights, when her daughter was "little," she would sit in the copilot’s seat and her daughter would be in a carrier. She stated that her daughter flew on all their previous Angel Flights unrestrained.

The mother stated that the pilot of the accident airplane told her the location and operation of the normal and emergency exists, and asked her if she knew how the seat belts work and she told him she did. The pilot told her to ask him if she had any questions. She was seated in the right rear forward facing seat holding her daughter on her lap. Her daughter was not using any restraints. She held her daughter because her daughter could not fit into the airplane seat if there was a shoulder harness present.

TESTS AND RESEARCH

During landing at IOW, the airplane's Global Positioning System receiver recorded a data point on runway 30, at 0936:59, at an elevation of 650 feet, and approximately 656 feet down runway 30, consistent with an airplane touchdown. Another data point was recorded at 0937:38, at an elevation of 658 feet, and approximately 3,256 feet down runway 30, followed by a turn down the runway and towards the airport terminal. A data point recorded near the airport terminal was recorded at 1003:40 at an elevation of 641 feet prior to taxi to runway 30 for takeoff. A data point was recorded at 1005:54, at an elevation of 653 feet, near the approach end of runway 30. A data point was recorded at 1006:23, at an elevation of 686 feet, and approximately 3,553 feet down runaway 30, consistent with an airplane lift-off.

ADDITIONAL INFORMATION

Aeronautical charts recovered from the airplane wreckage consisted of Jeppesen US Low Altitude En Route charts. A currency review of these charts revealed the following charts to be expired at the time of the accident:

US LO 31-32 effective 4 May 07
US LO 33-34 effective 23 Mar 07
US LO 39-40 effective 18 May 07

A Simcom TBM 700/850 pilot checklist ("For Training Purposes Only") was found in the airplane.

FAA publication, FAA-P-8740-7, The Safe Pilot's 12 Golden Rules, was developed from insurance company files on aircraft accidents and provide "sound" guidelines for safe operating practices, Section 9.Takeoff/Landing Limits-Plan Ahead...states, "abort takeoff if not solidly 'airborne' in first 1/2 of runway."

The Angel Flight Central pilot qualification requirements are that pilots are to have logged a minimum of 250 hours of flight time as pilot-in-command and are "properly licensed and certified" by the FAA. An instrument rating is "desired." There is no requirement for pilot's to hold a commercial or airline transport pilot certificate.

National Transportation Safety Board Aviation Accident Statistics are available at

http://www.ntsb.gov/aviation/Stats.htm. Within this site, Table 1 lists 2007 preliminary statistics for accidents, fatalities and rates. The table shows that accidents per 100,000 hours for U.S. air carriers operating under 14 CFR Part 121 scheduled was 0.128. For U.S air carriers operating under 14 CFR 135 on-demand, the accident rate for all accidents was 1.69 and the accident rate for fatal accidents was 0.38. The accident rate for all accidents for U.S general aviation was 6.84 and the accident rate for fatal accidents was 1.19.

From 1988 - 2007, Table 6 lists accidents, fatalities, and rates for air carriers operating under 14 CFR 121, scheduled air carriers. During this time period, the accident rate range for all accidents per 100,000 flight hours was 0.126 – 0.302 and the fatal accident rate range as 0.008 – 0.047. For the same time period, Table 9 list the 14 CFR 135 on-demand accident rate range for all accidents as 1.42 – 4.76 and the fatal accident rate range as 0.27 – 1.29. Table 10 lists the accident rate range for all general aviation accidents as 6.33 – 9.08 and the fatal accident rate range for fatal accidents as 1.16 – 1.82.

Pilot Information

Certificate:	Private	**Age:**	56,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	August 1, 2006
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	April 26, 2008
Flight Time:	5688 hours (Total, all aircraft), 4138 hours (Total, this make and model), 5688 hours (Pilot In Command, all aircraft), 145 hours (Last 90 days, all aircraft), 58 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Socata	**Registration:**	N849MA
Model/Series:	TBM 700 (850)	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	412
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	May 27, 2008 100 hour	**Certified Max Gross Wt.:**	7934 lbs
Time Since Last Inspection:	2 Hrs	**Engines:**	1 Turbo prop
Airframe Total Time:	420 Hrs at time of accident	**Engine Manufacturer:**	Pratt and Whitney of Canada
ELT:	Installed	**Engine Model/Series:**	PT6-66D
Registered Owner:	Pilot	**Rated Power:**	700 Lbs thrust
Operator:	Pilot	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	IOW,668 ft msl	**Distance from Accident Site:**	
Observation Time:	10:05 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	5 miles
Lowest Ceiling:	Broken / 2100 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	21 knots / 36 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	100°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.51 inches Hg	**Temperature/Dew Point:**	14°C / 14°C
Precipitation and Obscuration:			
Departure Point:	Iowa City, IA (IOW)	**Type of Flight Plan Filed:**	IFR
Destination:	Decatur, AL (DCU)	**Type of Clearance:**	IFR
Departure Time:	10:05 Local	**Type of Airspace:**	

Airport Information

Airport:	Iowa City Municipal IOW	**Runway Surface Type:**	Concrete
Airport Elevation:	668 ft msl	**Runway Surface Condition:**	Wet
Runway Used:	30	**IFR Approach:**	None
Runway Length/Width:	3900 ft / 150 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Fatal, 1 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 2 Minor	**Latitude, Longitude:**	41.642223,-91.559722

Administrative Information

Investigator In Charge (IIC):	Gallo, Mitchell
Additional Participating Persons:	Terence Carr; Federal Aviation Administration; Des Moines, IA Bernard Boudaille; Bureau d'Enquêtes et d'Analyses Wayne Miller; EADS SOCATA North America, Inc.; Pembroke Pines, FL Jim Robbins; Pratt & Whitney Engine Services; Fairport Harbor, OH
Original Publish Date:	January 14, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=68155