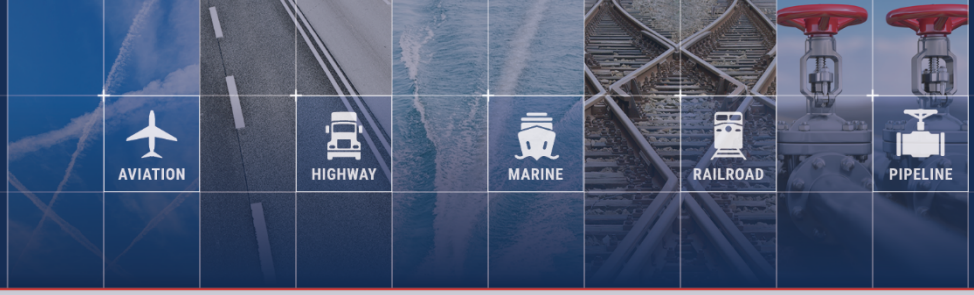

Aviation Investigation Factual Report

Location:	Brooklyn, Iowa	**Accident Number:**	CHI04FA044
Date & Time:	December 17, 2003, 18:30 Local	**Registration:**	N3733W
Aircraft:	Piper PA-32-260	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	4 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Factual Information

HISTORY OF FLIGHT

On December 17, 2003, approximately 1830 central standard time, a Piper PA-32-260, N3733W, was destroyed when it impacted a cornfield about 1.5 miles southwest of Brooklyn, Iowa. The private pilot and three passengers received fatal injuries. The 14 CFR Part 91 personal flight departed Palwaukee Airport (PWK), Wheeling, Illinois, at 1640 en route to the Ankeny Regional Airport (IKV), Ankeny, Iowa. Night instrument meteorological conditions prevailed at the time of the accident. The flight was operating under visual flight rules (VFR), and no flight plan was filed.

There was no record of the pilot contacting air traffic control facilities or Flight Service Stations while en route to IKV. The expected of time arrival at IKV was approximately 1900. When it became apparent that the flight did not arrive, authorities were notified and a search for the airplane was initiated. The accident site was discovered on December 18, 2003, at approximately 0930.

PERSONNEL INFORMATION

The pilot was a private pilot with a single engine land rating. He did not have an instrument rating. He held a Third Class medical certificate. He had a total of 583 hours of flight time with 103 hours in make and model. The pilot's logbook indicated that he flew 0.5 hours of night time on November 17, 2003, and he recorded 3 landings to a full stop. The pilot's previous night flight was logged on March 18, 2003, which was 0.6 hours in length. The pilot had logged 12 hours of flight time in the last 30 days. The pilot had completed a flight review on March 7, 2003.

AIRCRAFT INFORMATION

The airplane was a single engine Piper PA-32-260, serial number 32-647. The airplane seated six and had a maximum gross weight of 3,400 pounds. The engine was a 260 horsepower Lycoming O-520-E4B5 engine. The last annual inspection was conducted on November 1, 2003. The airplane had flown 16 hours since the last annual inspection and had a total time of 3,535 tachometer hours.

METEOROLOGICAL INFORMATION

At 1752, the observed weather at Cedar Rapids (CID), Iowa, located about 33 nautical miles to the east-northeast of the accident site, was: Winds 170 degrees at 4 knots, visibility 8 statute miles, light snow, ceiling 6,500 feet overcast above ground level (agl), temperature -1 degree C,

dew point -4 degree C, altimeter 29.88 inches of mercury.

At 1822, the observed weather at CID was: Winds 180 degrees at 5 knots, visibility 6 statute miles, light snow, few clouds at 6,000 feet agl, temperature -1 degree C, dew point -4 degree C, altimeter 29.87 inches of mercury, snow began at 1818.

At 1852, the observed weather at CID was: Winds 170 degrees at 5 knots, visibility 3 statute miles, light snow, clear at or below 12,000 feet agl, temperature -2 degree C, dew point -3 degree C, altimeter 29.86 inches of mercury, snow began at 1818.

At 1755, the observed weather at Newton, Iowa (TNU), located about 26 nautical miles west of the accident site, was: Winds 250 degrees at 5 knots, visibility 4 statute miles, light snow, 1,700 feet scattered agl, ceiling 2,300 feet overcast agl, temperature 1 degree C, dew point 0 degree C, altimeter 29.89 inches of mercury.

At 1815, the observed weather at TNU was: Winds 260 degrees at 7 knots, visibility 2 statute miles, light snow, ceiling 700 feet overcast agl, temperature 1 degree C, dew point 0 degree C, altimeter 29.89 inches of mercury.

At 1835, the observed weather at TNU was: Winds 260 degrees at 8 knots, visibility 2 1/2 statute miles, light snow, ceiling 500 feet overcast agl, temperature 1 degree C, dew point 0 degree C, altimeter 29.89 inches of mercury.

At 1753, the observed weather at Marshalltown (MIW), Iowa, located about 31 nautical miles northwest of the accident site, was: Winds 280 degrees at 5 knots, visibility 1 3/4 statute miles, light snow, mist, ceiling 1,000 feet overcast agl, temperature -2 degree C, dew point -2 degree C, altimeter 29.86 inches of mercury.

At 1830, the observed weather at MIW was: Winds 280 degrees at 7 knots, visibility 1 1/2 statute miles, light snow, mist, ceiling 800 feet broken agl, 1,200 feet overcast agl, temperature -2 degree C, dew point -2 degree C, altimeter 29.86 inches of mercury.

At 1853, the observed weather at MIW was: Winds 280 degrees at 9 knots, visibility 1 3/4 statute miles, light snow, mist, ceiling 800 feet broken agl, 1,200 feet overcast agl, temperature -2 degree C, dew point -2 degree C, altimeter 29.85 inches of mercury.

The in-flight weather advisory, AIRMET Zulu update 4 for ice and freezing level, was valid from December 17, 2003, from 1445 to 2100. The AIRMET warned of occasional moderate rime/mixed icing in cloud and precipitation between freezing level and FL180 (18,000 feet).

The in-flight weather advisory, AIRMET Sierra update 5 for IFR and mountain obscuration, was valid from December 17, 2003, from 1445 to 2100. The AIRMET warned of occasional ceiling below 1,000 feet agl and/or visibility below 3 miles precipitation/mist.

The Area Forecast (FA) that was in effect for the northern/eastern portions of Iowa warned of: Scattered to broken clouds 3,500 feet agl, 7,000 feet overcast agl, tops to FL250. Occasional ceiling 2,000 feet agl overcast, visibility 3 to 5 miles, light snow showers, mist.

WRECKAGE AND IMPACT INFORMATION

The accident site was located in a harvested cornfield in an area of rolling hills. The coordinates were 41 degrees 42.342 minutes north latitude, 092 degrees 27.005 minutes west longitude. The wreckage path was approximately 700 feet from the initial point of impact to the main wreckage on a 035 degree magnetic heading. Both of the wings, the wingtip fuel tanks, and the outboard section of the right horizontal stabilator separated from the fuselage during the impact sequence. The vertical stabilator was displaced to the left and partially separated from the empennage. There was no ground fire.

The left and right wingtip fuel tanks were located about 150 feet from the initial point of impact. The left wing was located about 285 feet in the wreckage path. The wing was bent upward near mid span. The aileron and flap remained attached. The aileron bellcrank was separated from its mounting and pulled inboard. The aileron control and balance cable was verified from the left bellcrank to the control wheel chain and from the left bellcrank to the right side bellcrank. The landing gear was separated and was found along the wreckage path.

The right wing was located about 375 feet in the wreckage path. The wing was pushed inboard and buckled near mid span and was in a "U" shape. The aileron remained attached but the aileron bellcrank was separated from its mounting and pulled inboard. The balance cable continuity was verified to the left bellcrank. The control cable was separated near the wing root. The separation was frayed and was consistent with overload impact damage. The landing gear was separated and was found along the wreckage path.

The empennage remained attached to the fuselage. The horizontal stabilator remained in place, although the outboard section of the right horizontal stabilator was separated along the rivet line. The hinge points were secure and the stop bolts were in place. The control cables were secure and continuity was verified to the control wheel 'T' bar in the cockpit. Elevator trim was found at a setting of about 1 1/2 - 2 degrees nose down trim.

The cabin of the fuselage was partially separated at the windshield line. All control cables remained attached to the cockpit controls. The air-driven attitude gyro, the air-driven directional gyro, and the electric-driven turn and bank gyro were disassembled. The gyros exhibited no rotational impact marks.

The inspection of the engine revealed that the crankshaft rotated. The engine drive train exhibited continuity to all the aft gears and rocker arms. Thumb compression and suction were confirmed to all cylinders. Both magnetos were rotated and they exhibited spark from all leads at the caps. The carburetor was separated from the engine and found along the wreckage path.

The propeller and spinner remained attached to the engine. One blade was bent more that 90 degrees aft near mid span. There was a gouge in the leading edge of the blade and chordwise scratches on the front of the blade. The other blade was twisted and bent opposite the direction of rotation and the tip was curled near the end of the blade. The spinner was crushed in a spiral shape.

MEDICAL AND PATHOLOGICAL INFORMATION

The autopsy was performed on the pilot at the Broadlawn's Hospital, Des Moines, Iowa.

A Forensic Toxicology Fatal Accident Report was prepared by the FAA Civil Aeromedical Institute. The report was negative for all substances tested.

ADDITIONAL INFORMATION

The Federal Aviation Administration, the New Piper Aircraft Company, and Textron Lycoming were parties to the investigation.

The wreckage was released to the Midwest Aviation Adjustment Bureau, Inc.

Pilot Information

Certificate:	Private	**Age:**	55,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
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 None	**Last FAA Medical Exam:**	March 21, 2003
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	March 7, 2003
Flight Time:	583 hours (Total, all aircraft), 103 hours (Total, this make and model), 476 hours (Pilot In Command, all aircraft), 16 hours (Last 90 days, all aircraft), 12 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N3733W
Model/Series:	PA-32-260	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	32-647
Landing Gear Type:	Tricycle	**Seats:**	6
Date/Type of Last Inspection:	November 1, 2003 Annual	**Certified Max Gross Wt.:**	3400 lbs
Time Since Last Inspection:	16 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3535 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-540-E4B5
Registered Owner:	Dan Lawson	**Rated Power:**	260 Horsepower
Operator:	Dan Lawson	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	TNU,953 ft msl	**Distance from Accident Site:**	37 Nautical Miles
Observation Time:	18:15 Local	**Direction from Accident Site:**	325°
Lowest Cloud Condition:		**Visibility**	2 miles
Lowest Ceiling:	Overcast / 700 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	260°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.87 inches Hg	**Temperature/Dew Point:**	1°C / 0°C
Precipitation and Obscuration:	Light - Freezing - Rain		
Departure Point:	Wheeling, IL (PWK)	**Type of Flight Plan Filed:**	None
Destination:	Ankeny, IA (IKV)	**Type of Clearance:**	None
Departure Time:	16:40 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	3 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	4 Fatal	**Latitude, Longitude:**	41.706665,-92.461669

Administrative Information

Investigator In Charge (IIC):	Silliman, James
Additional Participating Persons:	Chris Matthews; Federal Aviation Administration; Des Moines, IA Mike McClure; New Piper Aircraft Company; Prosper, TX Greg Erikson; Textron Lycoming; Wayne, IL
Report Date:	March 15, 2005
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=58517