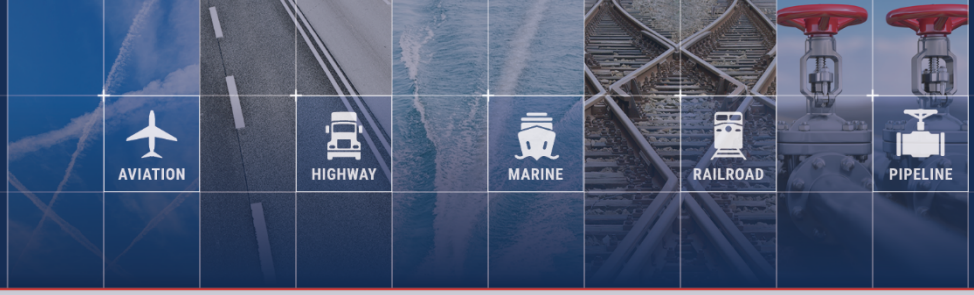

Aviation Investigation Final Report

Location:	Norfolk, Nebraska	**Accident Number:**	CEN11FA079
Date & Time:	November 21, 2010,	**Registration:**	N8675P
Aircraft:	Piper PA-24-260	**Aircraft Damage:**	Substantial
Defining Event:	Controlled flight into terr/obj (CFIT)	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The non-instrument rated pilot and passenger departed on a night cross-country flight. When the airplane did not show up at its destination, a search was initiated. The following evening, the airplane wreckage was located in an open field. A local resident near the accident site reported that she saw an airplane flying really low, at night. She added, that at the time she saw the airplane, the weather was misty and cold. Around the time the witness saw the airplane, the automated weather reporting station, located about 12.5 miles from the accident site, reported a cloud ceiling at 700 feet mean sea level. The airplane collided with the top of a tree, located along a tree line that crossed the airplane's flight path. A postaccident examination did not disclose any evidence of a pre-impact mechanical malfunction. The accident information is consistent with a non-instrument rated pilot trying to fly beneath the clouds at low altitude, at night, in marginal weather conditions. Due to the night and instrument meteorological conditions the pilot most likely would not have been able to see and avoid the tree; the impact and subsequent ground collision were consistent with a controlled flight into terrain event.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot’s decision to continue the flight into instrumental meteorological conditions which resulted in a collision with a tree.

Findings

Personnel issues	(general) - Pilot
Environmental issues	Low ceiling - Contributed to outcome

Factual Information

History of Flight

Enroute-cruise	VFR encounter with IMC
Enroute-cruise	Controlled flight into terr/obj (CFIT) (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On November 21, 2010, at an undetermined time, a single-engine Piper PA-24-260, Comanche airplane, N8675P, impacted terrain near Norfolk, Nebraska. The pilot and passenger sustained fatal injuries and the airplane was substantially damaged. The airplane was registered to and operated by Four Wins LLC., Omaha, Nebraska. No flight plan had been filed for the night cross-country flight that reportedly originated from the Chamberlain Municipal airport (9V9), Chamberlain, South Dakota, about 1700, and was destined for the Millard airport (MLE), Omaha, Nebraska.

The airplane was reported overdue, and an ALNOT (alert notification) for the aircraft was issued. A search was conducted and the airplane wreckage was located about 1600, on November 22, 2010 in an open field.

There were no reported witnesses to the accident; however, an individual located a few miles from the accident site, reported that on the evening of 21 November, she saw an airplane "flying really low" at night time, before disappearing out of sight. She also added that the time was between 1830 and 1930 and the weather was misty and cold.

PERSONNEL INFORMATION

The pilot held a private pilot certificate for airplane, single-engine land. There was no record of him holding an instrument rating. The pilot was issued a third class FAA medical, on August 11, 2010. A review of the pilot's logbook revealed that he had accumulated approximately 780 total flight hours, with about 90 hours in the accident airplane.

AIRCRAFT INFORMATION

The airplane was a 1965 model Piper PA-24-260, Comanche, which was a single-engine, low-wing airplane, with retractable tricycle landing gear.

The airplane was powered by a Lycoming IO-540 reciprocating engine, rated at 260

horsepower. The engine drove a McCauley 2-blade constant speed propeller.

A review of the airplane's maintenance logbooks revealed the last annual inspection was completed on May 6, 2010 with an airframe total time of about 6,223 hours. At the time of the annual inspection, the airplane's engine had accumulated approximately 1,503.3 hours since overhaul. On October 7, 2010 the airplane's vacuum pump was replaced at a tachometer time of 3230.5 hours.

METEOROLOGICAL

The automated weather station at Norfolk Regional Airport/Karl Stefan Memorial Field (KOFK), North Fork, Nebraska, located about 12.5 miles southwest of the accident site reported at 1856, winds from 360 degrees at 7 knots, temperature 28 degrees Fahrenheit, dew point 25 degrees Fahrenheit, visibility 10 miles, an overcast ceiling at 900 feet with a variable ceiling of 800 to 1300 feet, altimeter pressure setting 29.86 inches of Mercury.

At 1956, the automated station (KOFK) reported, winds from 330 degrees at 5 knots, temperature 28 degrees Fahrenheit, dew point 25 degrees Fahrenheit, visibility 10 miles, an overcast ceiling at 700 feet, altimeter pressure setting 29.87 inches of Mercury.

COMMUNICATIONS

The pilot was not in contact with an Air Traffic Control facility, nor was there any reported emergency or distress calls from the pilot.

WRECKAGE AND IMPACT INFORMATION

An on-site examination was conducted by the NTSB, FAA, and a technical representative from the Piper Aircraft Company. The airplane came to rest on the fuselage's belly, in an open, rolling field. The initial impact point appeared to be a tree positioned among a tree line that bordered the field on two sides. The tree line was located across the airplane's flight path. Additionally, the impact marks left on the tree were nearly parallel to the ground, consistent with the airplane being in a level attitude at the time of impact.

From the initial impact point with the tree line, to the main wreckage, the wreckage path continued on a 140 degree heading, for approximately 800 feet. The initial impact point with terrain, contained several ground cuts that appeared consistent with propeller strikes. Located near the ground impact point was about a 4 foot outboard section of the right wing; the right aileron was also found near the section.

Numerous pieces of the airplane and personnel effects were spread along wreckage path. The

main wreckage consisted of the fuselage, both wings, engine, and the empennage. The fuselage was nearly separated into two sections just aft of the cabin area; the front section of the fuselage, at the instrument panel, was twisted about 180 degrees. All of the instruments and engine gauges appeared to have received some impact damage. The altimeter was set with the barometric setting of 29.81, and the flight hour meter read 3,507.9 hours. The landing gear switch was in the up (retracted) position. The fuel selector was on the right main fuel tank. There was no post-impact fire.

The right wing was nearly separated from the fuselage near the wing root. Fuel was visible from the filler neck of the right wing auxiliary fuel tank; the right main landing gear was found in the gear well. The left wing had a slight twist in the outboard section of the wing, and less damage when compared to the right wing. When viewed from the fuel filler neck, the left wing's auxiliary fuel tank also had visible fuel present. The left main gear was in the extended (down) position.

Cable continuity was confirmed from the "T" column to the stabilizer. Aileron cable continuity was confirmed from the cockpit controls to the left and right aileron bellcrank locations. The flap actuators were found in the up position. The elevator pitch trim was in the neutral position.

The 2-bladed propeller remained attached to the engine crankshaft propeller flange. Starting about mid-span, the first blade was bent toward the non-cambered side, to about a 90 degree angle. Blade two exhibited a similar bend to the first blade and the entire blade was twisted inside the prop hub.

MEDICAL AND PATHOLOGICAL INFORMATION

The Douglas County Morgue, Stanton, Nebraska, conducted an autopsy on the pilot on November 24, 2010. The cause of death was determined to be "blunt trauma ... with multiple injuries"

The FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma, conducted toxicological testing. The pilot tested negative for carbon monoxide, cyanide, ethanol; Ibuprofen was detected in the urine.

TEST AND RESEARCH

The aircraft wreckage was retrieved to a salvage yard, where the NTSB along with a technical representative from Lycoming examined the engine. Continuity was established from the propeller flange to the rear gear drive section of the engine. The engine rotated without hesitation or binding, and a borescope of the cylinders did not reveal any abnormalities. Both magnetos rotated freely and produced spark at each terminal. The top sparkplugs were removed and examined. When compared to the Champion check-a-plug chart, the top spark plugs exhibited "normal to worn-out normal" operation. The vacuum pump remained attached

to the engine. The vacuum pump drive shaft rotated freely by hand and movement of the vanes could be heard.

The examination of the engine did not reveal any pre-impact mechanical anomalies.

Pilot Information

Certificate:	Private	**Age:**	63,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Unknown
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 Without waivers/limitations	**Last FAA Medical Exam:**	August 11, 2010
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	730 hours (Total, all aircraft), 70 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8675P
Model/Series:	PA-24-260	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:		**Serial Number:**	24-4123
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	May 6, 2010 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	6223 Hrs as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	C91 installed, not activated	**Engine Model/Series:**	IO-540
Registered Owner:	FOUR WINS LLC	**Rated Power:**	260 Horsepower
Operator:	FOUR WINS LLC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	KOFK	**Distance from Accident Site:**	
Observation Time:	18:52 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Unknown	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 900 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	350°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.87 inches Hg	**Temperature/Dew Point:**	-2°C / -4°C
Precipitation and Obscuration:			
Departure Point:	Chamberlain, SD (9V9)	**Type of Flight Plan Filed:**	None
Destination:	Omaha, NE (MLE)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	42.038333,-97.200279(est)

Administrative Information

Investigator In Charge (IIC):	Hatch, Craig
Additional Participating Persons:	Tim Saddler; FAA FSDO; Lincoln, NE Mike McClure; Piper Aircraft Company; Duncanville, TX Troy Helgeson; Lycoming Engines; Denver, CO
Original Publish Date:	August 11, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=77860