Aviation Investigation Final Report

Location:	Oklahoma City, Oklahoma	**Accident Number:**	DFW08LA055
Date & Time:	January 3, 2008, 02:25 Local	**Registration:**	N398J
Aircraft:	Pilatus PC-12/45	**Aircraft Damage:**	None
Defining Event:	AC/prop/rotor contact w person	**Injuries:**	1 Fatal, 8 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

After an uneventful landing at night, the commercial rated pilot taxied the single-engine turbo propeller equipped airplane to a FBO based at the airport. Upon reaching the FBO's dimly lit ramp, a line technician, who was employed by the FBO, used lighted wands to marshal the airplane to a parking spot. When the airplane came to a complete stop, the pilot set the parking brake. As the pilot was initiating the engine shut down procedures, he heard a loud "thud" and felt the engine, propeller, and airplane begin to vibrate. He looked up and saw the line technician rolling on the ramp toward the airplane's left wing tip. Upon exiting the airplane, the pilot and one of the passengers, who was a physician, noted that the line technician was critically wounded and immediately initiated first aid. It was also noted that a set of wheel chocks and the severed sections of the two lighted wands were near the propeller at the front of the airplane. The line technician had received a written warning from his employer approximately three months before the accident for attempting to chock the nose wheel of another airplane while the engines were operating.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The line technician's failure to remain clear of the propeller. A factor was the night lighting conditions.

Findings

Environmental issues	Dark - Not specified
Personnel issues	Identification/recognition - Ground crew

Factual Information

History of Flight

Standing-engine(s) operating	AC/prop/rotor contact w person (Defining event)

On January 3, 2008, approximately 0225 central standard time, a Pilatus PC-12/45, N398J, a single-engine turbo-prop airplane, was not damaged when a line technician was struck and killed by its moving propeller while parked at the ramp at Wiley Post Airport, Oklahoma City (PWA), Oklahoma. The commercial pilot and the 7 passengers were not injured. The airplane was operated by and registered to Oklahoma Cardiovascular Associates, Oklahoma City, Oklahoma. An instrument flight rules flight plan was filed for the flight that had departed the Phoenix Sky Harbor International Airport (PHX), Phoenix, Arizona, about 2200. Night visual meteorological conditions prevailed for the cross country flight that was conducted under 14 Code of Federal Regulations Part 91.

According to the Oklahoma City Police Department report, the pilot stated that after landing, he taxied to the fixed base operator (FBO) located at the airport. When he reached the FBO's dimly lit ramp, the line technician used lighted wands to guide the airplane to a parking spot. Once the line technician gave the pilot the "stop" hand signal, the pilot stopped the airplane, set the brake, and began shutting down the engine. The pilot said that when he was about to move the throttle to the fuel-cut-off position, he heard a loud "thud" and the engine, airplane and propeller began to "vibrate badly." He looked up and saw a "rapid movement" out of the corner of his eye to the left of the airplane and realized it was the line attendant tumbling along the ramp surface. The pilot immediately engaged the fuel-cut-off switch, and waited for the propeller to stop turning. At that point, the pilot and a passenger, who was a physician, exited the aircraft and immediately administered first aid to the technician until emergency response personnel arrived.

The police report also reported that a set of wheel chocks, a shoe, and broken pieces of the lighted wands were found near the propeller.

The FBO's third shift supervisor was on the ramp when the accident occurred, but he did not witness the line technician being struck by the propeller. According to the supervisor, he was operating an airplane tug and had last observed the line technician marshalling the airplane. The supervisor had turned away from the airplane when he heard a loud "thud." When he turned around, he saw that the line technician was critically injured and was rolling on the ground toward the airplane's left wing tip.

Although there were seven passengers on board the airplane, none of them witnessed the accident.

A review of training records provided by the FBO revealed that the line technician had successfully completed Professional Line Service Training (PLST) on September 4, 2007. This training included the dangers associated when working around propellers. According to the PLST Training Manual, Section 2.2.5, titled Propeller Danger, it stated, "The propeller blades spin at a high rpm and may present a significant hazard to ramp workers. Line service personnel have been killed by spinning propellers. Because propellers can become invisible when spinning at high revolution, it is easy to become distracted and forget that the aircraft's engine is, indeed, running." In addition, section 2.5 of the manual, titled Aircraft Marshaling and Hand Signals, stated, "...Some additional rules which must be followed when marshaling and parking of all types of aircraft...Propellers and rotors must be completely stopped before positioning the chocks."

Further review of the line technician's training file revealed that he received a Disciplinary Action from his employer on October 11, 2007. The reason for the action was defined as,"[Line technician] chocked the nose wheel of [registration number] (King Air) while the engines were still running. This violates previous training he has received." The Disciplinary Action was signed by the Line Technician, his supervisor, the General Manager of the FBO, and a witness.

As a result of this accident, The FBO issued training Bulletin #08-001, titled Aircraft Propeller Safety, to its 2,600 employees. This purpose of the bulletin was to "Ensure all personnel, who work, provide service or transition near aircraft, recognize the potential danger which exists with aircraft propellers, whether moving or stationary, and always observe propeller safety operating procedures."

Weather reported at Wiley Post Airport at 0253 included wind from 170 degrees at 16 knots, visibility 10 miles, clear skies, and a barometric pressure setting of 30.65 inches of Mercury.

Pilot Information

Certificate:	Commercial	**Age:**	59,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 2	**Last FAA Medical Exam:**	June 1, 2007
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	February 1, 2007
Flight Time:	10571 hours (Total, all aircraft), 475 hours (Total, this make and model), 17 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Pilatus	**Registration:**	N398J
Model/Series:	PC-12/45	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	398
Landing Gear Type:	Retractable - Tricycle	**Seats:**	9
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	9920 lbs
Time Since Last Inspection:		**Engines:**	1 Turbo prop
Airframe Total Time:	1871 Hrs	**Engine Manufacturer:**	Pratt & Whitney Canada
ELT:	Installed, not activated	**Engine Model/Series:**	PT6A-67A
Registered Owner:	Oklahoma cardiovascular Associates PC	**Rated Power:**	1200 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	PWA,1299 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	02:53 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	16 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.64 inches Hg	**Temperature/Dew Point:**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Phoenix, CA (PHX)	**Type of Flight Plan Filed:**	IFR
Destination:	Oklahoma City, OK (PWA)	**Type of Clearance:**	None
Departure Time:	22:00 Local	**Type of Airspace:**	

Airport Information

Airport:	Wiley Post PWA	**Runway Surface Type:**	
Airport Elevation:	1299 ft msl	**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	None
Passenger Injuries:	7 None	**Aircraft Fire:**	None
Ground Injuries:	1 Fatal	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 8 None	**Latitude, Longitude:**	35.533611,-97.641387

Administrative Information

Investigator In Charge (IIC):	Yeager, Leah
Additional Participating Persons:	Don Cook; FAA/FSDO; Oklahoma City , OK
Original Publish Date:	March 31, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=67331