Aviation Investigation Final Report

Location:	Jennings, Louisiana	**Accident Number:**	CEN13LA163
Date & Time:	February 15, 2013, 17:10 Local	**Registration:**	N4305D
Aircraft:	PZL Mielec M-18A	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot was conducting aerial application activities to the southeast of the airport. After the pilot finished spraying a field with a radio tower located in the northwest corner, the airplane struck the tower's guy wires. Although the tower was marked, the guy wires were not nor were they required to be marked. The tower was also depicted on the relevant aeronautical sectional chart. An examination of the airframe, engine, and related systems revealed no malfunctions or failures that would have precluded normal operation. At the time of the accident, the reported weather conditions were scattered clouds at 7,000 feet with the sun setting and visibility greater than 10 miles. It is unknown the extent that the clouds may have obscured the guy wires. The setting sun should have been behind the pilot during his pass and therefore not a factor. Based on the available evidence, it is likely the pilot lost track of the tower's location relative to his and did not notice the guy wires in time to avoid a collision.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's inadequate visual lookout, which resulted in a collision with guy wires during an aerial application flight.

Findings

Aircraft	Altitude - Not attained/maintained
Personnel issues	Monitoring environment - Pilot
Environmental issues	Tower/antenna (incl guy wires) - Contributed to outcome

Factual Information

History of Flight

Maneuvering-low-alt flying	Collision with terr/obj (non-CFIT)
Maneuvering-low-alt flying	Loss of control in flight (Defining event)

On February 15, 2013, about 1710 central standard time, N4305D, a PZL Mielec M-18A, single-engine airplane, was substantially damaged when it impacted the guy wire for a radio tower southeast of Jennings, Louisiana. The pilot was fatally injured. The airplane was registered to and operated by Riceland Aviation, Inc. Day visual meteorological conditions prevailed at the time of the accident. The aerial application flight was being conducted under the provisions of 14 Code of Federal Regulations Part 137 without a flight plan. The local flight had departed about 1650 from the Jennings Airport (3R7), Jennings, Louisiana.

According to Riceland Aviation, the pilot was applying the herbicide Round Up to a rice field southeast of 3R7. The wreckage of the airplane was found near a radio tower in a field where the airplane had been conducting aerial applications. An examination of a radio tower to the southwest of the main wreckage revealed damage to the number 7 and 8 guy wires on the east side of the tower.

Satloc data recovered from the accident airplane depicted the airplane having made multiple passes, consistent with spray passes, in the vicinity of the radio tower. The last two minutes of the recording depict eda spray path from north to south, followed by a right turn to the west and then a course reversal to the east. The flight path depicted the airplane just to the south of the radio tower, with a flight path from the southwest to the northeast; the recorded decrease in altitude is consistent with an approach for the next spray pass to the north. The altitude increased at the end of the field and the airplane reversed course again. The flight path reversed to the south and then a right turn, back around to the north for a second pass along the same course as the previous pass. The airplane had just initiated a descent for the southwest to northeast pass when the recording ended.

Pilot Information

Certificate:	Commercial	**Age:**	52
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Single
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	February 28, 2012
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	September 19, 2011
Flight Time:	19325 hours (Total, all aircraft), 10627 hours (Total, this make and model), 19139 hours (Pilot In Command, all aircraft), 110 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

The pilot, age 52, held a commercial pilot certificate with airplane single and multiengine land ratings. He was issued a second class airman medical certificate on February 28, 2012. The certificate contained the limitation "must have available glasses for near vision."

According to the National Transportation Safety Board Pilot Operator Aircraft Accident Incident Report Form submitted by the operator, the pilot had logged 19,325 hours of flight experience; 10,627 hours were in the make and model of the accident airplane. The pilot had successfully completed the requirements of a flight review on September 19, 2011.

According to Riceland Aviation, the pilot had not attended formal training for agricultural operations and had obtained all of his knowledge and experience through on-the-job training. The pilot had attended the Professional Aerial Applicators' Support System (PAASS) training provided by the National Agricultural Aviation Association in 2013. The pilot also held a chemical applicators license as required by the State of Louisiana.

Aircraft and Owner/Operator Information

Aircraft Make:	PZL Mielec	**Registration:**	N4305D
Model/Series:	M-18A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	1Z022-19
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	October 11, 2012 100 hour	**Certified Max Gross Wt.:**	11000 lbs
Time Since Last Inspection:		**Engines:**	1 Turbo prop
Airframe Total Time:	6999 Hrs as of last inspection	**Engine Manufacturer:**	Pratt & Whitney Canada
ELT:	Not installed	**Engine Model/Series:**	PT6A-65B
Registered Owner:	RICELAND AVIATION INC	**Rated Power:**	
Operator:	RICELAND AVIATION INC	**Operating Certificate(s) Held:**	Agricultural aircraft (137)

The accident airplane, a PZL Mielec M18-A (serial number 1Z022-19), was manufactured in 1991. It was registered with the Federal Aviation Administration (FAA) on a special airworthiness certificate for restricted agriculture and pest control operations. A Pratt & Whitney PT6A-65B turbo-prop engine powered the airplane. The engine was equipped with a 4-blade, Hartzell propeller.

The airplane was registered to and operated by the Riceland Aviation Inc., and was maintained under an annual inspection program. A review of the maintenance records indicated that a 100-hour inspection had been completed on October 11, 2012, at an airframe total time of 6,999 hours.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	K3R7,23 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	17:15 Local	**Direction from Accident Site:**	130°
Lowest Cloud Condition:	Scattered / 7000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	360°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	30.11 inches Hg	**Temperature/Dew Point:**	17°C / 5°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Jennings, LA	**Type of Flight Plan Filed:**	None
Destination:	Jennings, LA	**Type of Clearance:**	None
Departure Time:	16:50 Local	**Type of Airspace:**	Class G

The closest official weather observation station was Jennings Airport (3R7), Jennings, Louisiana, located 3.5 nautical miles (nm) northwest of the accident site. The elevation of the weather observation station was 23 feet mean sea level (msl). The routine aviation weather report (METAR) for 3R7, issued at 1715, reported, wind 360 degrees at 7 knots, visibility 10 miles, sky condition, scattered clouds at 7,000 feet, temperature 17 degrees Celsius (C), dew point temperature 5 degrees C, altimeter 30.11 inches.

According to the United States Naval Observatory, Astronomical Applications Department Sun and Moon Data, the sunset was recorded at 1759 CST and the end of civil twilight was 1823 CST.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	30.188333,-92.632225

The airplane wreckage was located in a dry rice field just northeast of the radio tower. The accident site was at an elevation of 15 feet mean sea level.

A small piece of the left wing was wrapped around one guy wire. Torn and bent metal from the left wing and the outboard section of the left wing were located directly below the east tripod of guy wires. Damage to the inboard section of the left wing, at the separation point, was consistent with a wire strike.

The main wreckage came to rest just north of the east tripod of guy wires. The main wreckage included the inboard portion of the left wing, the right wing, the empennage, and the engine. The spray booms, the propeller assembly, and bent and torn metal were located in the short debris field and ground scar directly adjacent to the main wreckage.

An examination of the airframe, engine, and related systems, conducted by the responding FAA inspector, revealed no anomalies.

Flight recorders

The accident airplane was equipped with Hemisphere AgJunction Satloc G4 control system designed to control the application of chemicals during aerial application flights. The Satloc G4 operates a cockpit mounted lightbar guidance system and a real-time graphic moving map display providing visual guidance to the pilot. Flow rates can be pilot selected or based on mapping. The unit was sent to the National Transportation Safety Board (NTSB) Vehicle Recorders Lab in Washington, D.C. for download. The log files downloaded from the unit were dated between January 8, 2013, and February 15, 2013. The last recording, which included the accident flight, lasted over two hours and was not corrected for the local time zone.

Medical and Pathological Information

The Calcasieu Parish Coroner's Office and Forensic Facility performed the autopsy on the pilot on February 16, 2013, as requested by the Jefferson Davis Parish Coroner's Office. The autopsy concluded that the cause of death was due to the "multiple injuries sustained in an airplane crash" and the report listed the specific injuries.

The FAA's Civil Aerospace Medical Institute, Oklahoma City, Oklahoma, performed toxicological tests on specimens that were collected during the autopsy (CAMI Reference #201300071001). Results were negative for carbon monoxide and ethanol. Tests of the urine detected 40.8 ug/ml of Salicylate; a metabolite of aspirin.

Additional Information

The radio tower, which was owned by Global Tower Partners, was located in the northwest corner of the target field. The radio tower was guyed by 8 wires in a tri-pod configuration. The tower stood approximately 480 feet in height and was painted red and white. The radio tower was depicted on the Houston Visual Flight Rules Sectional Chart as a cluster of two towers to the southeast of Jennings, Louisiana. The broadcast tower was marked in accordance with guidance outlined in FAA Advisory Circular 70/7460-1K and the requirements found in the Federal Communications Commission Regulation 47 CFR §§ 17.21-17.50.

According to officials at Riceland Aviation Inc., the pilot was familiar with the field and had flown that field at least 15 times in the previous spray season. There were no ground crews present during the aerial application flight. They stated that it appeared that the pilot had finished spraying the field and was "dressing up around the tower."

Administrative Information

Investigator In Charge (IIC):	Bothwell, Stuart
Additional Participating Persons:	Keith Kibodeaux; Federal Aviation Administration; Baton Rouge, LA
Original Publish Date:	March 24, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=86235