Aviation Investigation Final Report

Location:	Van Dyne, Wisconsin	**Accident Number:**	CEN11FA505
Date & Time:	July 25, 2011, 11:45 Local	**Registration:**	N81BF
Aircraft:	Piper J3L-65	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane was one of a flight of two that departed for a local sightseeing flight over the lake. The pilot of the other airplane stated that they flew east to the lake and followed the lake shore south at altitudes varying between 1,000 and 1,400 feet. He stated that the accident airplane began a maneuver by pitching up and then climbing. The left wing then dropped and the airplane yawed to the left and descended. During the descent, the airplane became inverted, and the nose of the airplane started to rise and the airplane began to roll to the right. As the airplane rolled, the right wing contacted the water and the airplane crashed into the lake. Rescue divers reported the rear seat passenger was not restrained and the pilot was restrained in his seat. It is possible that there could have been some inadvertent interference with the flight controls by the passenger, but it could not be determined conclusively. A postaccident examination of the airframe and engine did not reveal any failures or malfunctions that would have resulted in the loss of control. An autopsy performed on the pilot determined that multiple cysts that were caused by a parasite were located in the white matter of his brain. It could not be determined if this condition played a role in the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inability to maintain airplane control while maneuvering for reasons that could not be determined from the available evidence.

Findings

Personnel issues	Aircraft control - Not specified
Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

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

On July 25, 2011, at 1145 central daylight time, a Piper J3L-65, N81BF, collided with the waters of Lake Winnebago, near Van Dyne, Wisconsin, following a loss of control while performing an aerobatic maneuver. The airline transport certificated pilot and the passenger onboard were both fatally injured. The airplane was substantially damaged. The local personal flight was being operated under 14 Code of Federal Regulations (CFR) Part 91. Visual meteorological conditions prevailed and no flight plan was filed. The flight originated from the Wittman Regional Airport (OSH), Oshkosh, Wisconsin, at 1127.

The pilot flew to OSH on the day prior to the accident to attend the EAA AirVenture fly-in.

The accident airplane departed OSH along with another Piper Cub for a local sightseeing flight over Lake Winnebago. The pilot and the pilot-rated passenger in the other airplane stated both airplanes flew down the coastline at altitudes varying between 1,000 feet and 1,400 feet. They stated the accident pilot was performing a maneuver when the accident occurred. The airplane pitched up, climbed, and yawed to the left, entering a descent. During the course of the maneuver, the airplane became inverted and impacted the lake. They contacted air traffic control at OSH and circled the area until they saw a boat approach the accident site at which time they returned to OSH.

A witness reported seeing two airplanes flying at an altitude estimated to be about 300 feet above the water. The airplanes were traveling from the north to south. The witness stated that both airplanes were flying slow and making slow turns above the lake. He stated they were not flying aerobatic maneuvers. He stated he looked away momentarily when his wife stated that one of the airplanes was flying upside down. He stated he looked back toward the airplanes and saw one of them upside down and descending into the lake. He stated he did not see how the airplane got to be upside down.

PERSONNEL INFORMATION

The pilot, age 47, held an airline transport pilot certificate with an airplane multi-engine rating and commercial privileges for single-engine land airplanes. The pilot held type ratings in B747, B727, B737, B757, B77, CE-560XL, and L-1011 airplanes. He held a first-class airman medical certificate dated February 14, 2011. The medical certificate did not contain any limitations.

The pilot’s wife provided four pilot logbooks the first of which began in May 1983, and the last

of which ended March 1997. The pilot's wife stated he kept an electronic logbook on his cell phone and that he had stopped logging small airplane time some time ago.

The pilot was currently employed as a Boeing 747 first officer for a CFR Part 121 operator. The operator provided the resume that the pilot submitted to them when he was seeking employment. On the resume, the date of which is unknown, the pilot listed having 12,256 hours of flight time, of which 1,840 hours were in single-engine airplanes. The operator also supplied a Pilot Flight and Duty Time Record listing the hours the pilot had flown during his employment. This document contained flights between December 5, 2010, to July 28, 2011, which totaled 534 hours.

The pilot purchased the accident airplane in April 2010. It could not be determined from the records available, how much flight time the pilot had in the accident airplane.

AIRCRAFT INFORMATION

The high-wing, fabric covered, tail-wheeled airplane, serial number 6084, was manufactured in 1940. The 2-place airplane contained a tandem seating arrangement. Shoulder harnesses and seatbelts were installed in both the front and rear seats in October 2009. A Continental C90-8 engine, serial number 30158-5-A., powered the airplane

The airframe and engine logbooks were not located during the course of the investigation. The tachometer hour meter indicated 219.7 at the time of the accident.

METEOROLOGICAL INFORMATION

A review of the recorded surface observation weather data from the Wittman Regional Airport (OSH), Oshkosh, Wisconsin, located approximately 8 miles northwest of the accident site, revealed the conditions at 1153 were: wind from 230 degrees at 5 knots; visibility 10 miles; clear sky; temperature 26 degrees Celsius; dewpoint 16 degree Celsius; and altimeter setting 29.97 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The wreckage was located in Lake Winnebago, approximately ½ mile east of Wendt's Harbor. The crew of a barge that was in the area heard about the accident on the marine radio and went to the area to try and assist. With the assistance of rescue divers, they were able to place straps around the airplane and lift it from the lake onto the barge. The airplane was then brought to shore and transferred to a flatbed truck.

The fuselage aft of the rear seat was intact and relatively undamaged with the exception of fabric wrinkles. The elevator and rudder were intact. Both the left and right sides of the cockpit were crushed inward. The top of the fuselage was broken open.

Both wings were bent forward, the wooden wing spars were broken at the fuselage, and the wing struts for both wings were bent. With the exception of the spar near the fuselage, the remainder of the left wing was intact and it sustained relatively little damage. The right wing sustained impact damage. The fabric along the entire right wing was wrinkled in a relatively uniform manner. The right aileron remained attached to the wing. The outboard section of the aileron and the wing tip were crushed upward.

Control continuity was established from the cockpit to all of the flight control surfaces.

The fuel selector was positioned to Both, the throttle was in the Open position, the carburetor heat was Off, and the airplane was trimmed to nose down.

The engine remained attached to the firewall. The outboard section on both wooden propeller blades was shattered. An examination of the engine revealed the spark plugs exhibited normal operating signatures. The propeller was rotated by hand and thumb compression was achieved on all four cylinders. Sparks were viewed on all of the spark plug leads when the engine was turned by hand. Oil was present in and around the engine. No anomalies were noted that would have prevented normal operation of the engine.

MEDICAL AND PATHOLOGICAL INFORMATION

Autopsies were performed on both the pilot and passenger on July 26, 2011, at the Fond du Lac County Medical Examiner's Office, 134 Western Avenue, Fond du Lac, Wisconsin 54935.

The cause of death for the passenger was listed as drowning with a significant factor of blunt force trauma.

The cause of death for the pilot was listed as drowning with a significant factor of blunt force trauma to the head. An autopsy finding listed "multiple cysts to white matter of cerebral hemispheres of brain, consistent with Cysticercosis" and that no larvae were found during a microscopic examination.

The Center for Disease Control and Prevention states, "Cysticercosis is a parasitic tissue infection caused by larval cysts of the pork tapeworm. These larval cysts infect brain, muscle, or other tissue, and are a major cause of adult onset seizures in most low-income countries. An individual acquires Cysticercosis from ingesting eggs excreted by a person who has an intestinal tapeworm. "

The pilot's wife was not aware that he had Cysticercosis. It is unknown if the pilot was aware of his condition.

Forensic toxicology was performed on specimens from the pilot by the FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. The test results were negative for all substances tested.

SURVIVAL FACTORS

The occupants of the other airplane that was flying with the accident airplane made a MAYDAY call informing OSH tower that the accident had occurred. They then circled the area until they saw a boat approach the accident site at which time they returned to land at OSH.

OSH tower contacted Milwaukee approach control to coordinate the search for the airplane. A Civil Air Patrol (CAP) airplane was in the area and heard the MAYDAY call. The Lieutenant on the CAP airplane stated they coordinated with Milwaukee approach control and proceeded to the area where the accident occurred. They descended to 2,500 feet and circled the southwest portion of Lake Winnebago. They saw the other airplane circling the lower part of the lake near the shore line. He stated that after circling a couple times, they did not see any wreckage so they headed north along the western shoreline which is where they located the wreckage at 1205 to the southwest of Warbird Island. After reporting that they located the wreckage they were informed that a rescue helicopter was en route to the site. The helicopter arrived and the CAP airplane stayed on scene until 1225. By this time the helicopter had made several trips to the shore and there were numerous boats in the area.

The depth of the water at the accident site was approximately 6 to 7 feet. Several pleasure boats that were out on the lake responded to the area after the accident. A Winnebago County Sheriff's Deputy who arrived at the scene was transported by a pleasure boat out to the accident site. He stated he was able to see a female victim in the airplane. He put on a life vest and entered the water in an attempt to remove the female. He stated that after he entered the water, EAA personnel from the seaplane base arrived and attempted to hold the wing up. According to the Deputy's statement, two other people then entered the water and tried unsuccessfully to assist him in removing the occupants.

The occupants were recovered from the wreckage by Fond du Lac Sheriff's Department rescue divers. The divers reported the pilot was restrained in his and the back-seat passenger did not appear to be restrained with either seatbelt or shoulder harness. The passenger was floating within the airplane when they located the wreckage.

ADDITIONAL INFORMATION

A Garmin GPSMAP 295 was located in the cockpit of the airplane. The GPS was removed and sent to the NTSB Vehicle Recorder Division for a data download.

The tracklog data began at 1127:53. The data showed the airplane taking off from OSH in a northerly direction. The airplane turned to the southeast and continued to climb until reaching the western shoreline of Lake Winnebago. Upon reaching the shoreline the airplane descended to a GPS altitude of 756, prior to beginning a climb. The airplane reached a GPS altitude of 1,055 feet prior to descending to an altitude of 759 feet. During this time period the calculated groundspeed varied from 59 knots to 72 knots. The airplane continued on a south-

southeasterly heading prior to making a climbing left turn. During the turn, the airplane climbed to a GPS altitude of 1,339 prior to descending while still in the turn. The last GPS data point placing the airplane above the surface of the lake (748 feet, based on Google Earth imagery) was at 1144:22. This data point placed the airplane at a GPS altitude of 1,251 feet. The calculated velocity at this point was 73 knots.

Pilot Information

Certificate:	Airline transport; Commercial; Flight instructor	**Age:**	47,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	February 16, 2011
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	November 17, 2010
Flight Time:	12790 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N81BF
Model/Series:	J3L-65	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	6084
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	1220 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-90
Registered Owner:	Tri Star Aviation Services Inc	**Rated Power:**	90 Horsepower
Operator:	Steven A. Staples	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	OSH,808 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	11:53 Local	**Direction from Accident Site:**	320°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.96 inches Hg	**Temperature/Dew Point:**	26°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Oshkosh, WI (OSH)	**Type of Flight Plan Filed:**	None
Destination:	Oshkosh, WI (OSH)	**Type of Clearance:**	None
Departure Time:	11:27 Local	**Type of Airspace:**	Class E

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:**	43.888053,-88.454444(est)

Administrative Information

Investigator In Charge (IIC):	Sullivan, Pamela
Additional Participating Persons:	Raymond Yank; FAA-MKE-FSDO; Milwaukee, WI
Original Publish Date:	November 26, 2012
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=81221