Aviation Investigation Final Report

Location:	Lago Vista, Texas	**Accident Number:**	CEN14FA448
Date & Time:	August 23, 2014, 07:09 Local	**Registration:**	N254AC
Aircraft:	AMERICAN CHAMPION AIRCRAFT 7GCBC	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

A witnesses in the area reported seeing an airplane matching the description of the accident airplane flying near the accident site at a low altitude over water. A camera mounted to the airplane captured the accident flight. The video footage depicted the airplane flying low near terrain up until the collision with a power line. The video did not depict any abrupt maneuvers before the accident, thus, the pilot likely did not see the wires. The airplane impacted the ground and a postimpact fire ensued. An examination of the airframe, engine, and related systems revealed no evidence of mechanical malfunction or failures that would have precluded normal operation.

Probable Cause and Findings

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

The pilot's decision to fly at a low altitude and his subsequent failure to see and avoid the power lines.

Findings

Personnel issues	Decision making/judgment - Pilot
Personnel issues	Monitoring environment - Pilot
Environmental issues	Wire - Awareness of condition
Aircraft	Altitude - Not attained/maintained

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 August 23, 2014, at 0709 central daylight time, an American Champion Aircraft 7GCBC, N254AC, was destroyed when it impacted terrain 5.5 miles northwest of Lago Vista, Texas. A postimpact fire ensued. The private pilot was fatally injured. The airplane was registered to and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which operated without a flight plan. The local flight originated from Breakaway Park Airport (40XS), Cedar Park, Texas, approximately 0630.

A family member of the pilot reported that he routinely departed early on Saturday morning to fly to the west of 40XS. Between 0700 and 0715, a witness located near Lake Travis observed an airplane, matching the description of the accident airplane, flying 25 feet above the water of Lake Travis. The airplane continued approximately 1.5 miles before it pitched up into a climb and banked 30 degrees to the right. During the pitch up, the witness noted an audible decrease in engine RPM and lost sight of the airplane as it continued to the west.

Approximately 0730, the North Travis fire department responded to a grass fire northwest of Lake Travis. During the aerial aspect of the fire suppression effort, personnel identified the wreckage of the airplane.

A GoPro video camera was mounted to the airplane and was recording the accident flight. The recording captured the takeoff and the entire accident flight. The last portion of the video showed the airplane flying low over water for several minutes followed by a left turn over a field. At 0708:13 the airplane pitched up and began to increase altitude. At 0709:21 the airplane began to pitch down into low altitude flight and trees became visible under the airplane. At 0709:34 the airplane initiated a shallow bank to the right and at 0709:36 the camera was deflected downward and the impact sequence started immediately thereafter. A set of powerlines is visible just before the camera was deflected downward.

Pilot Information

Certificate:	Private	**Age:**	24
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Front
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 1, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 29, 2013
Flight Time:	(Estimated) 248 hours (Total, all aircraft), 95 hours (Total, this make and model)		

The pilot, age 24, held a private pilot certificate with an airplane single-engine land rating. He was issued a third class airman medical certificate without limitations on August 1, 2011.

According to a family member, the pilot kept his flight log in a digital format application on his smart telephone. The telephone was destroyed in the accident. The family provided a log for the accident airplane with dates ranging between February 1, 2014, and July 12, 2014. During this time the pilot had logged no less than 38.5 hours in the accident airplane. On August 15, 2014, the pilot submitted his total time of 248 hours, 95 in the make and model, to the insurance company.

In addition, copies of endorsements were provided. The pilot received an endorsement for high performance airplanes on May 11, 2012, and endorsements for complex and tailwheel airplanes on July 1, 2012. He successfully completed the requirements of a flight review on November 29, 2013.

Aircraft and Owner/Operator Information

Aircraft Make:	AMERICAN CHAMPION AIRCRAFT	**Registration:**	N254AC
Model/Series:	7GCBC	**Aircraft Category:**	Airplane
Year of Manufacture:	2001	**Amateur Built:**	
Airworthiness Certificate:	Aerobatic; Normal	**Serial Number:**	1319-2001
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	November 5, 2013 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	527.6 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-320-B2B
Registered Owner:	On file	**Rated Power:**	160 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The accident airplane, an American Champion 7GCBC (serial number 1319-2001), red and white with blue pinstripes, was manufactured in 2001. It was registered with the FAA on a standard airworthiness certificate for normal and aerobatic operations. A Lycoming engine rated at 160 horsepower at 2,700 rpm powered the airplane. The engine was equipped with a 2-blade, Sensenich propeller.

The airplane was maintained under an annual inspection program. A review of the maintenance records indicated that an annual inspection had been completed on November 5, 2013, at an airframe total time of 527.6 hours.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KRYW,1230 ft msl	**Distance from Accident Site:**	55 Nautical Miles
Observation Time:	07:15 Local	**Direction from Accident Site:**	100°
Lowest Cloud Condition:	Scattered / 900 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	23°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Cedar Park, TX (40XS)	**Type of Flight Plan Filed:**	None
Destination:	Cedar Park, TX (40XS)	**Type of Clearance:**	None
Departure Time:	06:30 Local	**Type of Airspace:**	

The closest official weather observation station was Rusty Allen Airport (KRYW), Lago Vista, TX, located 5 nautical miles (nm) east of the accident site. The elevation of the weather observation station was 1,230 feet msl. The routine aviation weather report (METAR) for KRYW, issued at 0715, reported wind 180 degrees at 3 knots, visibility 10 miles, sky condition scattered clouds at 900 feet, temperature 23 degrees Celsius (C), dew point temperature 22 degrees C, altimeter 30.05 inches.

According to the United States Naval Observatory, Astronomical Applications Department Sun and Moon Data, the sunrise was recorded at 0703. The sun's approximate position at the time of the accident was between 70 and 72 degrees azimuth and -1 and 2 degrees altitude. The video recording depicted the airplane flying towards the sun just prior to the impact. The sun was just barely coming over the horizon.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	30.506944,-98.055(est)

An impact point was identified at the top of a live oak. Fresh broken branches at the top of the oak tree exhibited red paint transfer and cuts or damage consistent with contact with propeller blades. Branches were scattered directly below the tree and forward of the tree, in the direction of impact, within the debris field. High tension powerlines were located just prior to the tree. Small red paint chips were located between the powerlines and the tree.

Red paint chips, red lens fragments, broken plexiglass, broken tree branches, and fabric were located within the debris field. The debris field extended from the top of the tree, on an approximate bearing of 073 degrees, approximately 200 feet to the start of a ground scar. Plexiglass, inspection panels, and fabric were located within the debris field that continued from the start of the ground scar, 90 feet, to the main wreckage. Green lens fragments were located to the west/left of the start of the ground scar.

The main wreckage consisted of the fuselage, empennage, both wings, and the engine and propeller assembly. The airplane came to rest inverted, with the nose of the airplane oriented to the northeast. The entire airframe was charred, melted, and partially consumed by fire.

The fuselage included the forward and aft seat frames, the flight controls, the instrument panel, and the engine and propeller assembly. The skin on the entire fuselage was charred, melted, and partially consumed by fire and the tubular structure remained. The engine had separated partially from the airframe and was crushed aft into the lower forward portion of the cabin. The instrument panel was destroyed by fire.

The right wing included the burnt remains of the fuel tank, the right aileron, and the right wing flap. The majority of the skin on the right wing was charred, melted, and partially consumed by fire. The entire leading edge of the right wing exhibited impact damage. The outboard wing tip remained with its red and white skin and exhibited exposure to heat and fire. The right fuel tank was impact and fire damaged. The flight controls for the right aileron were continuous from the aileron, inboard to the flight controls in the fuselage.

The left wing included the burnt remains of the fuel tank, the left aileron, and the left wing flap. The majority of the skin on the left wing was charred, melted, and partially consumed by fire. The entire leading edge of the left wing exhibited impact damage. The outboard wing tip remained with its red and white skin and exhibited exposure to heat and fire. The left fuel tank was impact and fire damaged. The flight controls for the left aileron were continuous from the aileron, inboard to the flight controls in the fuselage.

The empennage included the vertical stabilizer, horizontal stabilizer, rudder, elevator, and tail wheel assembly. The skin on the entire empennage was charred, melted, and partially consumed by fire and the tubular structure of the empennage remained. The top portion of the rudder and vertical stabilizer was bent. The remaining portion of the rudder and vertical stabilizer were unremarkable. The elevator and horizontal stabilizer were unremarkable. The tailwheel was canted to the left but was otherwise unremarkable. The control cables for the elevator, rudder, and elevator trim tab were continuous and correct from the control surface, forward to the flight controls in the fuselage.

The engine remained partially attached to the forward fuselage. The engine cowling and engine baffles were charred, melted, and partially consumed by fire. The carburetor, airbox, and oil filter were impact and fire damaged. The propeller separated from the engine at the propeller flange and came to rest, directly adjacent the engine assembly. The propeller blades were labeled "A" and "B" for identification purposes. Blade A was twisted and bent. The blade exhibited leading edge polishing, scoring, and scratches long the face of the blade. Blade B was bowed aft and twisted. The blade exhibited leading edge polishing, scoring, and scratches along the face of the blade.

Flight recorders

A GoPro Hero3+ was recovered from the accident site was sent to the NTSB Vehicle Recorders Lab in Washington D.C. for download. An internal micro SD card contained the accident flight over 5 files. According to a family member, the camera was mounted on the outside of the airplane, on the top of the right wing strut, just below the bottom of the wing. The field of view of the recording did not include any part of the airplane. Airplane sounds such as the engine and exhaust are audible for the duration of the video. The departure time for the accident flight was supplied by a family member as 0630 and the time stamps associated with the recording are calculated from that time.

Medical and Pathological Information

The Travis County Office of the Medical Examiner performed the autopsy on the pilot on August 24, 2014. The autopsy concluded that the cause of death was "blunt force injuries" 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 #201400189001). Results were negative for all tests conducted.

Administrative Information

Investigator In Charge (IIC):	Rodi, Jennifer
Additional Participating Persons:	Michael Garvin; FAA; TX Jerry Mehlhaff; American Champion Aircraft; Rochester, WI John Butler; Lycoming Engines; Williamsport, PA
Original Publish Date:	June 18, 2015
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=89934