Aviation Investigation Final Report

Location:	Wallis, Texas	**Accident Number:**	CEN14LA372
Date & Time:	July 13, 2014, 13:30 Local	**Registration:**	N60XJ
Aircraft:	JONKER SAILPLANES (PTY) LTD JS1-C	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

About 30 minutes after takeoff, witnesses informed pilots at the departure airport that they heard a high-pitched sound followed by the sound of an impact. The glider was subsequently located in an open field about 1 1/2 miles from the airport. There were no eyewitnesses to the accident. A postaccident examination of the glider did not reveal any anomalies consistent with a preimpact failure or malfunction. Local weather conditions about the time of the accident were favorable for a glider flight.

The pilot did not hold a current Federal Aviation Administration airman medical certificate nor was one required for glider operations. A friend of the pilot reported that the pilot had suffered a stroke about 10 years before the accident. Further, toxicological testing detected several medications commonly used to treat conditions that could be impairing as well as two medications that might also cause impairment. However, the available information was insufficient to determine whether the pilot was impaired by a medical condition or the use of a medication at the time of the accident. In addition, although ethanol was detected in the pilot's liver, it was likely produced postmortem.

Probable Cause and Findings

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

The pilot's loss of glider control and its subsequent impact with terrain for reasons that could not be determined due to a lack of available information.

Findings

Personnel issues	Aircraft control - Pilot
Not determined	(general) - Unknown/Not determined
Personnel issues	Use of medication/drugs - Pilot
Personnel issues	Predisposing condition - Pilot
Aircraft	(general) - Not attained/maintained

Factual Information

History of Flight

Enroute-cruise	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT
On July 13, 2014, about 1330 central daylight time, a Jonker Sailplanes JS1-C glider, N60XJ, was substantially damaged when it impacted terrain near Wallis, Texas. The pilot sustained fatal injuries. The glider was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which was not operated on a flight plan. The local flight originated from the Wallis Glideport (TE71), Wallis, Texas, at 1258.

A friend and fellow pilot of the accident pilot reported that the preflight inspection was performed in the hangar. The glider was then moved into position on the runway and attached to the tow rope. The tow was observed until both aircraft were about 500 feet above ground level. The takeoff was uneventful and the glider appeared to be in a proper position behind the tow plane. Approximately 1340, he was notified that the glider may have crashed. Two individuals informed him that they had heard a high pitched sound followed by the sound of an impact. The accident site was subsequently located after a brief aerial search in an airplane.

PERSONNEL INFORMATION
The accident pilot, age 67, held a private pilot certificate with single and multi-engine land airplane, and glider ratings. He did not hold a current airman medical certificate; however, a current medical certificate was not required for glider operations. His most recent medical certificate was issued on February 19, 2004, and expired on February 28, 2006.

The pilot reportedly maintained two logbooks; one for gliders and a second for airplanes. According to the logbook excerpts, the accident pilot had accumulated about 1,335 hours and 2,831 hours in gliders and airplanes, respectively. This included entries for two flights in the accident glider dated June 22, 2014. These flights totaled 1 hour and 26 minutes flight time, and were his 710th and 711th glider flights. The logbook also included an entry denoting 1 hour of "ground cockpit checkout JS1 Revelation," dated June 20, 2014. The pilot's logbook included a flight review endorsement dated October 3, 2012.

AIRCRAFT INFORMATION
The accident glider was a 2013 Jonker Sailplane Ltd. model JS1-C "Revelation", serial number 1C-049. The aircraft was a high-performance, single-place glider of predominantly composite construction. It was configured with a 21-meter wing span and a retractable single mid-fuselage/tailwheel landing gear design.

The glider was equipped with an M&D Flugzeugbau model TJ42 jet turbine sustainer engine. It was capable of developing about 40 kilograms-force (kgf) [88 pounds-force (lbf)] of thrust. The engine was positioned at the top of the fuselage, aft of the canopy. The engine assembly was retractable and enclosed completely within the fuselage when not in use.

An experimental category special airworthiness certificate was issued for the glider on November 4, 2013, for the purpose of exhibition air racing, with 0.8 hours time in service. The accident pilot purchased the glider on June 20, 2014. The aircraft logbook included an entry, dated November 8, 2013, noting completion of the FAA Program Letter Phase 1 flight time requirements. The logbook indicated that 5.9 hours flight time, and 5 takeoffs and landings were completed on November 7th and 8th. The aircraft logbook did not include any maintenance entries subsequent to the entry noting issuance of the airworthiness certificate.

METEOROLOGICAL INFORMATION

Weather conditions recorded by the Sugar Land Regional Airport (SGR) Automated Surface Observing System (ASOS), located about 19 miles east of the accident site, at 1353, were: wind from 130 degrees at 5 knots, few clouds at 4,200 feet above ground level, 10 miles visibility, temperature 34 degrees Celsius, dew point 22 degrees Celsius, altimeter 30.07 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The glider impacted an open field about 1-1/2 miles east-northeast of the airport. A ground crater appeared consistent with initial impact of the glider. The wreckage was located adjacent to the impact crater. Each wing and the fuselage emanated from the impact crater at approximately right angles consistent with their orientation on an intact glider. The empennage had separated from the fuselage and was located adjacent to the aft fuselage.

A postaccident examination was conducted by the National Transportation Safety Board (NTSB) investigator-in-charge after the glider was recovered from the accident site. The forward portion of the fuselage, including the cockpit area, was destroyed. Both wings were separated from the fuselage. The nose and cockpit were fragmented. The instrument panel was separated from the airframe and fragmented; no useful information was recovered from the instruments. The main landing gear and strut had separated from the fuselage structure. The rudder pedals remained attached to a portion of the cockpit bulkhead/floor structure; they were deformed. The rudder cables were intact through the rudder pedal S-tubes.

The aft fuselage was separated from aft of the cockpit and sustainer engine housing to immediately forward of the vertical stabilizer. The composite structure was also split into halves along the bond line. The sustainer engine remained secured within the engine housing. However, the engine housing and fuel tank had separated from the fuselage. The fuel tank was compromised and contained no fuel.

The left wing was fragmented over the entire span. The wing spar appeared intact at the inboard end; however, portions of the outboard spar were delaminated. Most of the wing skin had separated from the spar assembly. The wing tip extension had separated from the main wing structure; it was located near the main wreckage at the accident site. The inboard portion of the left flap remained attached to the aft, inboard section of wing structure. The flap was separated into two sections near mid-span. The outboard section had separated from the wing, which was located near the main wreckage at the accident site. The aileron was separated into two sections. Both sections had separated from the wing at the hinges. The

outboard section remained attached at the control rod; the inboard section had separated completely and was recovered at the accident site. Separations in the flap and aileron control linkages appeared consistent with overstress failures. The left speed brake and speed brake control linkage were deformed. The speed brake remained attached to wing structure at the inboard end.

The right wing exhibited damage along the entire span. The spar was deformed and delaminated at the inboard end, but appeared otherwise intact. The wing skin was delaminated, torn, and fragmented. The wing tip extension had separated from the main wing structure; it was located near the main wreckage at the accident site. The right flap and aileron remained partially attached to the wing. The control linkage was damaged; however, continuity was confirmed from the control surface to the wing root. The right speed brake remained attached to the wing. The control linkage to the speed brake was damaged.

The empennage had separated from the aft fuselage immediately forward of the vertical stabilizer. The horizontal stabilizer had separated from the vertical stabilizer. The left elevator was fractured near mid-span. The inboard portion of the elevator remained partially attached to the horizontal stabilizer; the outboard portion had separated. The right elevator was separated from the horizontal stabilizer and was deformed. The elevator hinge fitting remained attached to the top of the vertical stabilizer. Control continuity within the vertical stabilizer/aft fuselage section was confirmed. The rudder had separated from the vertical stabilizer. The rudder bellcrank remained secured to the control surface, and the rudder cables remained attached to the bellcrank.

The scope of the examination was limited by fragmentation due to impact damage; however, no anomalies consistent with a preimpact failure or malfunction were observed.

MEDICAL AND PATHOLOGICAL INFORMATION
An autopsy of the pilot was performed by the Galveston County Medical Examiner's Office on July 15, 2014. The pilot's death was attributed to blunt force trauma sustained in the accident.

The FAA Civil Aerospace Medicine Institute forensic toxicology fatal accident report for the pilot noted:
46 (mg/dL, mg;hg) Ethanol detected in Muscle
NO ETHANOL detected in Liver
Atorvastatin detected in Liver
Citalopram detected in Liver
Citalopram detected in Muscle
Diphenhydramine detected in Liver
N-Desmethylcitalopram detected in Liver
N-Desmethylcitalopram detected in Muscle
Valsartan detected in Muscle
Valsartan detected in Liver

A friend of the pilot noted that he had suffered a stroke about 10 years before the accident.

A review of the pilot's FAA medical records revealed that he had reported an instance of skin cancer (cutaneous T-cell lymphoma) on his medical certificate application in December 1999. His next medical certificate application, in January 2002, noted: "lymphoma cutaneous only – no metastasis to other system – total remission." The pilot's most recent medical certificate application was dated February 19,

2004. He noted follow-up physician visits for lymphoma. There was no indication of a stroke or other cardiovascular issues noted on that application. There were no subsequent medical certificate applications on file with the FAA.

An FAA airman medical certificate was not required to conduct glider operations. [14 CFR 61.23(b)(3)] However, regulations prohibit any operations with a medical condition that would make that person unable to operate the aircraft in a safe manner. [14 CFR 61.53(b)]

Pilot Information

Certificate:	Private	**Age:**	67
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Single
Other Aircraft Rating(s):	Glider	**Restraint Used:**	Unknown
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	None None	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	October 3, 2012
Flight Time:	4166 hours (Total, all aircraft), 2 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	JONKER SAILPLANES (PTY) LTD	**Registration:**	N60XJ
Model/Series:	JS1-C	**Aircraft Category:**	Glider
Year of Manufacture:	2013	**Amateur Built:**	
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	1C-049
Landing Gear Type:	Retractable - Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	November 4, 2013 Condition	**Certified Max Gross Wt.:**	1584 lbs
Time Since Last Inspection:		**Engines:**	1 Turbo jet
Airframe Total Time:	1 Hrs as of last inspection	**Engine Manufacturer:**	M&D Flugzeugbau
ELT:	Not installed	**Engine Model/Series:**	TJ-42
Registered Owner:	On file	**Rated Power:**	88 Lbs thrust
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SGR,82 ft msl	**Distance from Accident Site:**	19 Nautical Miles
Observation Time:	13:53 Local	**Direction from Accident Site:**	90°
Lowest Cloud Condition:	Few / 4200 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	130°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.06 inches Hg	**Temperature/Dew Point:**	34°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Wallis, TX (TE71)	**Type of Flight Plan Filed:**	None
Destination:	Wallis, TX (TE71)	**Type of Clearance:**	None
Departure Time:	12:58 Local	**Type of Airspace:**	

Airport Information

Airport:	Wallis Glideport TE71	**Runway Surface Type:**	Grass/turf
Airport Elevation:	127 ft msl	**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

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:**	29.629165,-96.059593(est)

Administrative Information

Investigator In Charge (IIC):	Sorensen, Timothy
Additional Participating Persons:	Jim Stahl; FAA – Flight Standards; Houston, TX
Original Publish Date:	July 7, 2015
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=89679