



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	Plato Center, Illinois	Accident Number:	CEN12FA073
Date & Time:	November 20, 2011, 13:28 Local	Registration:	N61XT
Aircraft:	SKYKITS SAVANNAH VGW	Aircraft Damage:	Substantial
Defining Event:	Aerodynamic stall/spin	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

A witness reported that the student pilot taxied the airplane to the west end of the runway, and then he taxied the length of the runway to the east. He then taxied the airplane back to the west end of the runway before departing. The airplane became airborne and climbed to about the height of a nearby barn (about 50 feet above ground level) when the airplane's wings began to "wobble." Then the airplane turned left and nosed straight down. The student pilot intended to obtain a sport pilot's certificate with a single-engine land rating but had not started his flight instruction at the time of the accident. He was an accomplished noncertificated ultra-light gyroplane pilot, but he did not possess a Federal Aviation Administration gyroplane pilot's certificate. The pilot had purchased the airplane but had not received any flight instruction in the airplane, and he did not have a solo endorsement to fly the airplane. Except for a 0.4-hour demonstration flight in the airplane, the accident flight was the first time the accident pilot flew the airplane. The postaccident examinations of the airframe and engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation. Postaccident toxicology testing indicated that the pilot had used chlorpheniramine, but it could not be determined if impairment from the medication contributed to the accident.

Probable Cause and Findings

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

The noncertificated pilot's decision to fly the airplane without receiving any flight instruction in the airplane, which resulted in his failure to maintain sufficient airspeed during takeoff and the subsequent aerodynamic stall.

Findings

Aircraft	Airspeed - Not attained/maintained
Personnel issues	Incorrect action performance - Pilot
Personnel issues	Total experience w/ equipment - Pilot
Personnel issues	Decision making/judgment - Pilot

Factual Information

History of Flight

Takeoff	Aerodynamic stall/spin (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On November 20, 2011, about 1328 central standard time, a Skykits Savannah VGW, N61XT, sustained substantial damage when it impacted the runway after takeoff from Runway 6 (2,400 feet by 28 feet, asphalt) at the Olson Airport (LL53), Plato Center, Illinois. The pilot, the sole occupant, received fatal injuries. The airplane was registered to the Northern Illinois Rotorcraft Club and was operated by the pilot as a personal flight under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed at the time of the accident. No flight plan was filed.

A witness reported that the pilot intended to depart from LL53 and land at an airstrip on the pilot's property, which was located about 3 nautical miles to the northwest. She reported that the pilot started the airplane near its hangar for about 10 to 15 minutes to warm up the engine. She stated that the engine quit, but the pilot started it again and began to taxi the airplane. The witness reported that she observed the pilot taxi the airplane to the west end of the runway, and then he taxied the length of the runway to the east. The pilot then taxied the airplane back to the west end of the runway before departing. The witness reported that the airplane became airborne and climbed to about the height of a nearby barn (about 50 feet above ground level) when the airplane's wings began to "wobble." She stated that the airplane's wings wobbled back and forth, and then the airplane turned left and nosed straight down. The airplane impacted the side of the asphalt runway and fell inverted on the south side of the runway.

Student pilot Information

Certificate:	Student	Age:	69
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
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:	
Flight Time:	(Estimated) 10 hours (Total, all aircraft), 0.4 hours (Total, this make and model), 0 hours (Pilot In Command, all aircraft)		

The 69-year-old student pilot intended to obtain a sport pilot's certificate with a single-engine land rating. The pilot did not have a Federal Aviation Administration (FAA) medical certificate, because as a sport pilot, a valid state driver's license was sufficient to indicate that the pilot was medically qualified to operate the airplane.

The student pilot's flight logbook was not obtained, but it was reported by a witness that the student pilot had a total of about 10 hours of flight time in airplanes. The witness reported that around 1990, the student pilot had obtained a student pilot certificate and received about 10 hours of flight instruction in a Cessna 172. FAA medical records indicated that the pilot did receive a third class medical and student pilot certificate in June 1990 and December 1992; however, there was no record of the pilot renewing the medical certificate or obtaining a private pilot's certificate.

Witnesses reported that the student pilot was an accomplished uncertificated ultra-light gyroplane pilot. He built and piloted numerous ultra-light gyroplanes for a number of years, but he did not obtain a FAA gyroplane pilot's certificate. The number of flight hours in ultra-light gyroplanes was not determined.

He purchased the airplane from Skykits Corporation on June 1, 2011. A flight instructor flew the airplane from the manufacturer's location in Tennessee, to Valparaiso, Indiana, on June 29, 2011. The flight instructor reported that he flew with the accident pilot on July 4, 2011, in the airplane for 0.4 hours. The accident pilot did not perform a takeoff or landing during that flight. According to the flight instructor, that was the only time the accident pilot flew in the accident airplane. The flight instructor delivered the airplane to LL53 on July 16, 2011. The flight instructor reported that he planned to provide flight instruction to the accident pilot, but that was delayed because the accident pilot did not receive his student sport's pilot certificate until September or October. He did not provide flight instruction in the accident airplane. The accident pilot did not have a logbook endorsement for solo flight in the accident airplane.

The flight instructor reported that the airplane had about 13 hours of operation when he delivered it to LL53. He stated that the accident pilot intended to taxi the airplane to become familiarized with the airplane.

Aircraft and Owner/Operator Information

Aircraft Make:	SKYKITS	Registration:	N61XT
Model/Series:	SAVANNAH VGW	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Special light-sport (Special)	Serial Number:	10-03-51-905
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	May 31, 2011 Annual	Certified Max Gross Wt.:	1235 lbs
Time Since Last Inspection:	15 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	15 Hrs at time of accident	Engine Manufacturer:	ROTAX
ELT:	Installed, not activated	Engine Model/Series:	914UL2
Registered Owner:	Northern Illinois Rotorcraft Club	Rated Power:	115 Horsepower
Operator:	Frank J. Kehoe	Operating Certificate(s) Held:	None

The airplane was a Skykits Savannah VGW light-sport airplane, serial number 10-03-51-905, manufactured in 2011. It seated two and had a maximum gross weight of 1,235 pounds. It was powered by a 115-horsepower Rotax 914UL2 engine, serial number 6774029. The airplane's recording hour meter reading at the accident site indicated 15 hours of operation on the engine and airframe since manufacture. The flight instructor who flew it from Tennessee to LL53 described the airplane as a "rocket ship," because of its performance with the 115 horsepower engine combined with the light weight of the airplane.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	DPA, 759 ft msl	Distance from Accident Site:	11 Nautical Miles
Observation Time:	12:53 Local	Direction from Accident Site:	150°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Overcast / 2300 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	10 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	10°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.23 inches Hg	Temperature/Dew Point:	6°C / -1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Plato Center, IL (LL53)	Type of Flight Plan Filed:	None
Destination:	Hampshire, IL	Type of Clearance:	None
Departure Time:	13:28 Local	Type of Airspace:	

At 1252, the surface weather observation at DuPage Airport (DPA), West Chicago, Illinois, located about 11 nm southeast of LL53 was: wind 010 at 10 knots; visibility 10 miles; overcast 2,300 feet; temperature 6 degrees Celsius; dew point -1 degrees Celsius; altimeter 30.24 inches of mercury.

Airport Information

Airport:	Olson Airport LL53	Runway Surface Type:	Asphalt
Airport Elevation:	955 ft msl	Runway Surface Condition:	Dry
Runway Used:	06	IFR Approach:	None
Runway Length/Width:	2400 ft / 28 ft	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:	42.008888,-88.457496(est)

The airplane impacted the south edge of runway 6 about 1,560 feet from the approach end of the runway. The impact ground scars at the edge of the asphalt runway were about 10 feet from the inverted main wreckage. The right wingtip was crushed inboard and the entire leading edge of the right wing exhibited aft crushing. The nose and engine compartment were crushed aft. The left wing exhibited buckling along the entire span of the wing, but did not exhibit aft crushing of the leading edge. The fuselage behind the cabin was buckled. The empennage was intact, but had impact damage to the left and right side of the horizontal stabilizer and elevators. The ground scars and impact damage to the airplane were consistent with a steep nose down, right wing low attitude upon impact.

Flight control continuity was confirmed from the cockpit flight controls to the associated flight control surfaces.

The three-bladed propeller hub remained attached to the engine. However, two of the three composite blades were broken from the hub at the blade roots. The blade that remained attached to the hub had a partial fracture near the blade's midspan. One of the blades that separated from the hub was broken in two pieces. The separation of the blade was opposite the direction of travel, and the blade exhibited chordwise scratching. The other blade that separated from the hub exhibited a partial fracture of the blade opposite the direction of travel.

The engine remained intact and exhibited minimal impact damage. It was transported to the Poplar Grove Airport, Poplar Grove, Illinois, for an engine examination and engine run on a test stand.

Medical and Pathological Information

An autopsy of the pilot was performed at the Kane County Coroner's Office in Geneva, Illinois, on November 23, 2011. The "Cause of Death" was listed as multiple blunt force trauma resulting from an aircraft crash. A Forensic Toxicology Fatal Accident Report was prepared by the FAA Civil Aerospace Medical Institute. The results were negative for carbon monoxide, cyanide, and ethanol. The following substances were identified in the toxicology report: chlorpheniramine detected in blood (heart); chlorpheniramine detected in urine; ephedrine detected in urine; ephedrine not detected in blood (heart); metoprolol detected in urine; metoprolol detected in blood (heart); pseudoephedrine detected in urine; and pseudoephedrine detected in blood (heart).

Metoprolol is a prescription beta blocker used to treat high blood pressure and heart disease. Pseudoephedrine is a non-sedating over-the-counter decongestant found in various cold and allergy medications. Chlorpheniramine is a sedating antihistamine used to treat allergy and common cold symptoms. It is available over the counter under various trade names including Chlor-Trimeton and Chlortabs. Chlorpheniramine carries the warning – "may impair mental and/or physical ability required for the performance of potentially hazardous tasks (e.g., driving, operating heavy machinery)." The normal therapeutic range is from 0.0100 to 0.0400 ug/ml.

Tests and Research

The engine was examined at the Poplar Grove Airmotive engine shop. The engine compression was checked and the No. 1 cylinder had 80/80, No. 2 cylinder had 80/80, No. 3 cylinder had 78/80, and the No. 4 cylinder had 79/80. The engine was run on a test stand, and the engine operated normally from idle to full power.

The examination of the gearbox revealed that the vacuum drive gear made contact with the gearbox case when the propeller impacted the terrain. A series of circular scrapes and grooves were created in the gearbox that was consistent with the engine rotating at the time of impact.

The ROTAX TUR 113.0 turbo control unit (TCU) was downloaded at the Rotech Flight Safety facility in Vernon, British Columbia, Canada. The downloaded data indicated that during the last time the engine was operating, 13 lines of data were recorded during the 13 minutes of engine operation recorded by the TCU. (The data is recorded at 1 minute intervals) The engine rpm recorded in the 13 lines of data ranged from a low of 2,865 rpm to a high of 4,194 rpm. The last line of recorded data indicated that the rpm was 3,841 rpm. The rpm typically produced using takeoff power is between 5,500 to 5,800 rpm. If power to the TCU is turned off prior to the one minute interval recording rate, the data stored during that partial minute will be lost.

Administrative Information

Investigator In Charge (IIC):	Silliman, James
Additional Participating Persons:	Kris Kortokrax; FAA DuPage FSDO; West Chicago, IL Spencer Cull; FAA DuPage FSDO; West Chicago, IL Robert Seaton; Rotech Flight Safety; Vernon
Original Publish Date:	October 30, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=82342

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