



MEMORANDUM OF RECORD

Luke Schiada
Senior Air Safety Investigator
Eastern Region Aviation

Subject: ERA16FA033, Zenith CH701, N56553, Okeechobee, Florida

Name: Martin Schy

Date: November 9, 2015

Mr. Schy was a witness to the subject accident. During our conversation, he stated that he was a licensed private pilot. He had accumulated about 2,000 hours in Cessna airplanes and about 2,500 hours in various ultralight aircraft.

Mr. Schy further stated, that he was at his residence when he first heard and then observed the accident airplane "flying erratically," "rocking back a forth." The airplane was about 100 feet above the ground. He thought the airplane might have been trying to land on a waterway behind his house. He then heard "something snap" followed by one or both wings "folding back about 45 degrees." The airplane immediately entered a steep "60-degree nose dive" and he lost sight of the airplane just before it impacted the ground. He further stated that the airplane experienced a "total structural failure."

Mr. Schy further stated that he could hear the engine during the entire accident sequence and the engine sounded loud and constant, with "no issues."



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Name: John Palko

Date: November 9, 2015

Mr. Palko witnessed the subject accident from about 1/4 mile east of the accident site. He was interviewed via telephone. During our conversation, he stated:

He observed the airplane flying "very low, a couple hundred feet above the ground." The airplane was "tilting its wings," as if the pilot was acknowledging people on the ground below, when the right wing "folded up 90 degrees, like when you park airplanes on an aircraft carrier." The airplane then "entered a dive and crashed."

Mr. Palko did not recall hearing any unusual engine sound during the time that he observed the airplane.



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Subject: ERA16FA033, Zenith CH701, N56553, Okeechobee, Florida

Name: Joe Allen

Date: November 9, 2015

Mr. Allen was a witness to the subject accident. During our conversation, he stated that he was not a licensed pilot, but had flown a Cessna 172 in the past and was an active model airplane hobbyist. Mr. Allen further stated that he was working on a roof at the Seminole Cove Condo Association, which was located about 1/4 mile north-northwest from the accident site. The sound of the airplane's engine first caught his attention. He initially described the sound as "loud and whirling" and further described it as "screaming with power on." He estimated that the airplane was about 300 to 320 feet above the ground, at a nose down angle of about 30 degrees, and rolling to the right. He stated the airplane was descending and rotating "wing over wing" to the right for about 4 or 5 revolutions before he lost sight of the airplane, which was followed by the sound of an impact.

----- Forwarded message -----

From: **Eric Avant** [REDACTED] >

Date: Thu, Sep 29, 2016 at 9:09 AM

Subject: Re: FW: Airplane Accident Okeechobee, Florida – 11/6/15

To: Schiada Luke [REDACTED]

Luke,

Good morning sorry for the delayed response. It was quite a while ago this happened although I do remember quite well what happened. I do not remember the exact date and time. I was on the front porch of the Gilbert Chevrolet dealership located at 3550 Hwy 441 South Okeechobee, FL 34974. At first I didn't see the plane but could here it coming from east to west over the top of the dealership probably 600 to 700 feet in the air. I could hear what sounded like the engine cutting in and out of power. I'm not sure but it seemed like the pilot kept trying to restart the engine. He looked to be losing altitude pretty fast. He made it over the Publix building probably still at least 500 feet in the air. At this point it looked like to me he was going to try to sit the plane down in a vacant pasture behind Publix and before Seminole Cove. He started with doing a circle to the North so he went from west to north then back east and then headed west. As he headed back to the west he was moving slower and slower. This is when I watched one wing tip go up I believe the right side was up first then the left side went up. This probably happened three times just like that, one up one down. At this point the left wing tip went down and he went into the ground disappearing from my sight. I saw the plume of smoke and I think I was already on the phone with 911 at that point. To me it looked like he was trying to avoid hitting any populated are as much as he could. I hope you can understand my description. If you have any questions please call my cell phone at [REDACTED]

Sincerely

Eric Avant

Federal Aviation Administration, Orlando FSDO-15
5950 Hazeltine National Drive Orlando, Florida 32822

Inspector Statement

This statement is in response to an accident reported to the Orlando Flight Standards District office FSDO-15 on, November 6, 2015, an experimental amateur built, light sport Zenith CH701 amphibian airplane, N56553, was destroyed and consumed mostly by post-crash fire when it impacted the ground in Okeechobee, Florida. The aircraft departed Homestead General (X51) destined for Okeechobee (FD70) airport.

The aircraft was powered by a Rotax 912ULS, 100 horsepower engine and attached was a three blade composite blade assembly. The aircraft was said to remain idle for a period to exceed the annual condition inspection, in which records indicate the last inspection performed was in November 2011. Also there was no record of acquiring a ferry permit from the Miramar FSDO-19. Preliminary reports indicate the engine did not appear to have power issues.

During inspection identified the engine appeared to be severely fire damaged. Initial examination of the engine did not reveal any pre-impact mechanical malfunctions. The engine was transferred to Lockwood Aviation, Sebring, FL for assistance and further evaluation. It has been determined that all visual damage was deemed impact and post-crash fire.

The case was separated and found a cylinder cracked and as well a piston rod bent, preventing the engine case to be separated initially at the crash site and considered new, with no evidence of previous damage. All oil journals contained oil as expected, with no defects there. The oil appeared dirty however, as stated would not hinder performance. The carburetors were too severely burnt to determine damage if any. The aforementioned damage is consistent with impact and post-crash fire; no visible or deteriorated components could be ascertained and, remains accurate with the preliminary findings.

The aircraft historical records show that Lockwood Aviation, Sebring, FL previously rebuilt this engine. Since then multiple hours have been logged and function tests were previously completed. Overall inspection of the engine determined nothing that could be contributed to the crash and all damage incurred was from impact and post-crash fire.

Furthermore all items inspected and witness statements obtained, the engine appears to have been in operational. The fact is, the engine inspection status is unclear and what precautions were taken prior to flight is unknown. The engine remains at Lockwood Aviation pending transfer to the owner if necessary and remains secured.

Cheryl King ASI


Zenith C701 #56552 Timeline History, re-created December 2015

2008

Robert E. "Bob" Musgrove, [REDACTED] Homestead, FL 33030 purchased the Zenith Amphibian C701 #56552 on 2/4/2008 for [REDACTED]¹ from a relief organization (ITEK) that had purchased it for their charity work. They had received its numbers and the annual. It had sustained some hail damage when they had left it outside. The airframe only had a few hours on it.²

After Bob bought it, he went about getting his training and type certificate to fly in amphibians.³ Bob flew it in-and-around freshwater rock quarries and canals for practice. He never wanted to land in salt water.⁴ Only months after his purchase it overheated, had a loss of power and was found to have a loose cylinder, resulting in engine damage. It was removed from the quarry on a trailer.⁵ Records show a purchase of [REDACTED] from Lockwood Aviation for a new engine, was paid on 9/30/2008.⁶

2009

We believe that it was Bob and a fellow LAFA member and Safety Officer, Barry Hawkes, who installed the new engine.⁷ Bob enjoyed flying with the Light Aircraft Flying Association (LAFA) flying out of Homestead's General Aviation Airport runway X-51 and served as Fly Out Chairman and author of the monthly newsletter page, *The Instructor's Corner*. He sometimes flew the Zenith, which was hangared there; however, more often than not, he flew his ultralights, a Firestar and especially, the Ultrastar.⁸

Bob's [REDACTED] impending divorce caused him to relocate to Seattle, with his son, for the month of December and through to April of 2010. The Zenith remained hangared.

2010

In May, Bob flew a friend, John Colby Stroud, (a non-pilot) down to Key Largo for sightseeing. The engine overheated again and lost power.⁹ He decided on an offshore landing and brought it out of the water onto a boat ramp. This was the only time the

¹ Prudential bank statement records.

² Recollection from David R. Musgrove, Bob's son.

³ Recollection from Roger Zimmerman, Bob's son-in-law.

⁴ Recollection from David R. Musgrove.

⁵ Recollection from Roger Zimmerman.

⁶ Prudential bank statement records.

⁷ Recollection of David Musgrove, and Roger, and Debbie Zimmerman, Bob's daughter.

⁸ Recollection of David Musgrove, and Roger and Debbie Zimmerman.

⁹ Recollection of Roger Zimmerman.

Zenith was near salt water. The carbon fiber propeller was shredded by contact with the waves as he brought it to shore. We, Debbie and Roger Zimmerman, met him with a trailer, and with the help of friends (Mark Bell, Greg Goebel and some of his RV dealership employees) drained the gas, removed the wings, and then drove it to our home where it received a long fresh-water bath. It stayed in our yard for months. ¹⁰

[REDACTED] Bob flew his two ultralights for the rest of 2010. After much research and lots of phone conversations, he eventually decided on getting a new engine for the Zenith and worked with Lockwood Aviation to determine why these expensive engines were over-heating and losing power. It was determined that it had a poor setup of the engine cooling system. ¹¹

Lockwood Aviation rebuilt and customized the cowl, changed the location of the radiator and the oil cooler, replaced the 80 hp engine with a used Rotax 912UC 100 hp engine (with 100 hours on it, according to Lockwood Aviation). A new Warp Drive carbon fiber propeller with a metal leading edge was installed since the water landing had chewed up the last prop. Lockwood tested the engine and new cooling system for several hours on the ground. ¹²

Bank records show: ¹³

09/27/2010	[REDACTED]	Lockwood Aviation	Engine down payment
10/01/2010	[REDACTED]	Lockwood Aviation	Replacement engine
01/01/2011	[REDACTED]	Lockwood Aviation	Statements 12/6 & 12/8
01/01/2011	[REDACTED]	John Bubel	Fixing Kolb wing, Engine in Amphib., wings on, annual license.

2011 - 2012

The Zenith was then trailered to John Bubel's home/hangar in Okeechobee, FL to be re-assembled by John and get its annual inspection. He had it for several months, reattaching the wings, adding fuel and fluids. It may have been housed both inside and outside. John flew it to CopaAir Maintenance Services, Inc. in Indiantown, FL, where Charles Spence performed the annual and had several items replaced, including control cables, hydraulic lines to the brakes, and more. Again it may have been housed both inside and outside at CopaAir. The Zenith passed its inspections after these modifications and adjustments were made. ¹⁴

Bank records show payments to CopaAir Maintenance Services, Inc. on 11/10/2011 for \$ [REDACTED] and 12/19/2011 for \$ [REDACTED]. ¹⁵

¹⁰ Recollection of Roger and Debbie Zimmerman.

¹¹ Recollection of David Musgrove, and Roger and Debbie Zimmerman.

¹² Recollection of Roger Zimmerman.

¹³ Prudential bank statement records.

¹⁴ Recollection of Roger Zimmerman

¹⁵ Bank of America records.

Bob remained active with LAFA, attending meetings and social events. At one such event, on October 29, 2011, two LAFA friends, Rick Blanco and Sandy Bronnenberg, died in a gruesome accident that Bob and his girlfriend were two of the first to reach (just 1000 feet from a LAFA party). ¹⁶ This crash was extremely upsetting to Bob and Carol. After a career beginning with Capitol Airways at the age of 21-and-six days -- to retirement as Chief Pilot for United Air Lines with 25,000+ hours, serving as Safety Officer for the LAFA club, author of safety articles, and the promoter of Fly-Ins and Fly-Outs; Bob stopped flying. He was 77.

In early 2012, Bob, Roger and his son, Alexander Zimmerman, were flown by a LAFA pilot friend, Robert Moses, to Indiantown, FL where Bob picked-up the Zenith from Charles Spence, and after one flight with Spence, Bob flew it home to its hangar at Homestead. Bob has no memory of flying it again. This was his last flight (see photo). The Zenith stayed hangared. ¹⁷

2013 - 2014

The Zenith remained hangared and eventually Bob's son, David; his son-in-law, Roger and daughter, Debbie, started discussing the old boats, planes and parts and what to do with everything. Bob sold and gave away the old boat and rowboat; but couldn't contemplate giving up the planes. He relented only because it was John Bubel who offered to fix-up and sell the ultralights and then the Zenith. During these years Bob declined with minor Transient Ischemic Attacks/TIAs (mini-strokes) affecting his memory. ¹⁸

2015

Bob has only flown as a passenger with friends' planes this year, including a trip with Robert Moses and John Bubel, to the Lakeland Sun & Fun Air Show on Saturday, April 25, 2015.

John and his daughter's boyfriend, Mike, came down to Bob's house and "picked" through the warehouse and sea container for airplane parts for several hours, taking two flying wings and their trailers (one towed by Bob's work van), several engines, helmets, radios and parts to sell. Then days later, Roger and Debbie drove up to Okeechobee trailering the Firestar, towed by Debbie's GMC Yukon. John then painted Debbie's SUV, and we paid him for that with a check. Roger and Debbie also trailered the Ultrastar in its hulking hangar/trailer to John's home/ hangar/ airstrip west of Okeechobee, FL. After clean up, painting and engine work, John sold the Firestar on or around May 26, 2015. ¹⁹

¹⁶ Recollection of Bob Musgrove and Carol Evans, his girlfriend.

¹⁷ Recollection of Roger and Debbie Zimmerman.

¹⁸ Recollection of David Musgrove, Roger and Debbie Zimmerman.

¹⁹ Recollection of Roger and Debbie Zimmerman.

We discussed having John “keep” the Ultrastar, rather than sell it, as one form of payment for selling the Firestar and the Zenith, depending on the price received and the value of all the aircraft and “picked” items. Bob only received income from the sale of the Firestar. He has received nothing from the picked items, the wings, the engines, the Ultrastar, and of course, the loss of the Zenith.

John did not want us to trailer the Zenith possibly because he knew how hard it was to re-assemble, and possibly because the Firestar had a lot of road rash from the open and exposed road trip on top of a trailer. He told Debbie that he wanted to fly the Zenith back to Okeechobee, “no problem!”²⁰

10/31/2015 On Saturday, October 31st a bunch of us (Bob, Roger & Debbie, Barry Hawkes, and hangar-mates Paul Davies and John Hodges who were working on their own planes) showed up at the hangar to clean the Zenith inside and out, pump up the tires, install a new battery, load fuel and check it out completely. Roger recollects 16 to 18 gallons of fuel in the wings. He added 10 gallons for a total of 26 to 28 gallons. After the Zenith had been started-up and ran extremely well, we all spoke to John on a speakerphone call. He said he would come down the following Saturday morning, November 7th, to ferry the plane to his house, then prep it for sale. Later in the week he called to say that he had a tour bus gig in Orlando that Saturday and so he asked to see if we could meet him at the hangar a day earlier, Friday morning, around 8:30 am.²¹

11/6/2015 On Friday, November 6th, we talked on our phones a couple of times as we all neared the airport. We told John that Roger had purchased breakfast burritos for everybody and he was relieved because he and his wife, Doris, couldn’t find food at the gas station they picked on Krome Avenue (8:32am). When he and Doris drove up, he jumped out of the car and seemed very much in a hurry and anxious to get underway. We pulled the two trikes out and Debbie sat in one and Roger in the second so that they wouldn’t move in the brisk breeze. John pulled the Zenith out of the hangar, with Doris steadying the wing tip, and then he pulled it out and onto the grass. Bob and Carol joined us at the hangar. John did his walk-around quickly and Debbie followed him. John asked for more fuel. Roger drove out for more gas.²²

Debbie was very upset to see that the cord connections for his three sets of radio headsets that he brought, would not work on the Zenith’s connections. She insisted on trying to borrow a headset from the other aircraft in the hangar; they would not work, either. Then she offered that we ask the airport folks. He refused saying “there are no towers where I am leaving from or going to.” He also said he had a radio and a phone.²³

Roger returned with five more gallons of ethanol-free Rec-90 gas from the Tom Thumb station on Krome Avenue. Roger and John poured more into the left inside tank to

²⁰ Recollection of Debbie Zimmerman.

²¹ Recollection of Roger and Debbie Zimmerman.

²² Recollection of Roger and Debbie Zimmerman.

²³ Recollection of Debbie Zimmerman.

“even it out”. They measured it with the wood gauge from ladders. John commented that he didn’t want to come up short on fuel again – cause “I ended up on my back the last time.” ²⁴

Debbie had no idea he had ever had a forced landing. Later, we found out he had had three forced landing/accidents; and that he wasn’t rated on the amphibian Zenith as he had led us to believe all these years. Since the accident we now know that he/we should have requested a ferry permit from the FAA. We suppose he didn’t try because that would have been denied due to his not having an amphib. rating. ²⁵

Doris told John three times, “Call me when you land.” Then he strapped in his flight bag, dropped his phone and keys inside, jumped in and taxied off very quickly. We never got a photo of him in the plane. Debbie does have photos of the Zenith taxiing out, the lift-off and ascending. He gave us a teeter-totter acknowledgment and turned north, climbing away from us. We believe he took off at approximately 9:30-9:40 am. ²⁶

Okeechobee Sheriff’s Detective Faulkner called Roger at 12:45 pm as the “emergency contact” for John Andrew Bubel. ²⁷ Later, we heard from news reports that the crash time was somewhere around 11:38 to 11:50 am.

FYI: Having just itemized and cleaned everything on the Zenith, here are the whereabouts of each item: The logbooks for the Zenith and the Ultrastar were in a Ziploc bag on the shelf behind the pilot/passenger seats. Also on the shelf were the yellow chocks, the paddle and the life-buoy ring that were thrown clear of the aircraft and fire (we saw them on news reports). The phone and his keys were inside his leather pilot’s pouch, which he secured in the passenger seat with the seatbelt. ²⁸

Thank you. We hope this timeline helps you with the investigation. We have paid the warehouse folks in Okeechobee, John’s Towing, and trailered the Zenith’s rubble to Homestead, Florida and will retain it until the final NTSB report is filed.

Thanks again. You have been very professional and easy-going during this huge tragedy in our lives. None of us has slept well in all these weeks.

²⁴ Recollection of Roger and Debbie Zimmerman.

²⁵ Recollection of Debbie Zimmerman.

²⁶ Recollection of Roger and Debbie Zimmerman.

²⁷ Recollection of Roger and Debbie Zimmerman.

²⁸ Recollection of Roger and Debbie Zimmerman.