



The Seawind Flyer

Fall 2007

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"The evolution of an intelligent design."

THE SEAWIND FLIGHT TEST AIRCRAFT CRASHES

This is the most difficult newsletter I have ever had to write. Many of you might not know of the recent events that have devastated our program.

Two events have combined to overwhelm us. The summer 2007 newsletter described the funding problems that were facing us, but the flight testing was continuing, albeit at a slow pace. Then we had to announce that the certified flight test aircraft crashed and the pilot, Glenn Holmes, died. I will relate these events in chronological order.

EVENTS LEADING UP TO THE CRISIS

I do not have to tell you that the project was behind schedule. We should have started flight testing in the spring of 2006. It did not start until the fall of 2006, when it should have been completed. Our flight test team had the knowledge and talent but proved to be difficult to deal with, especially when they did not get along with each other.

The flight testing was dragging out month after month, and I decided to engage the Canadian Research Council (NRC) to complete the flight test work in conjunction with the current flight analyst.

THE FUNDING PROBLEM

We had an agreement with a government agency to directly advance a loan on some funds due us in 2008. Then they re-neged, and we had to interrupt operations on August 6 and temporarily lay off our employees.

The flight testing was prepaid through August 24. I notified the pilot on August 15 to bring the plane back to Quebec because we were shutting down and when we resumed, it would be with the NRC.

On August 16, I had a verbal commitment from an investor for funding for the remainder of the project. The papers needed only to be drawn up.

I hung up the phone and, 15 minutes later, it rang with the news that the aircraft had crashed and the pilot was killed.

The next day the investor withdrew his offer because of the accident.

So we were immediately faced with the need to find private investors. Unless we find an investor(s), we are faced with a permanent shutdown. It is sad because we were finally very close to completion. As the DAR test pilot from the NRC said, "Even if there was a problem with the aircraft, it can be modified and overcome."

THE ACCIDENT AND THE INVESTIGATION

Our first obligation was to keep all our order holders informed, and we are now prepared to share that information with all of you.

The following was posted on the Seawind web site at the time of the accident:

The Certified Seawind 300C Flight Test Aircraft Crashes

We regret to inform you that the certified flight test aircraft crashed on August 16, 2007 during a flight from Saint Andrews Airport near Winnipeg, Manitoba.

Sadly the test pilot, Glenn Holmes, perished in the crash. Our prayers and condolences go out to his wife, Elizabeth, and his family.

At this time, the cause of the crash is not known and some of the early speculation, as usual, has been inaccurate. We are in touch with the Transportation Safety Board of Canada. It will take time for the accident investigators to release a preliminary finding. When they do, we will pass on the information. The engine monitor will provide the data throughout the flight. The flight data computer was damaged, but we hope they will be able to retrieve the flight information. If so, the Safety Board should be able to reach a definitive conclusion.

A temporary interruption of business has been instituted. It will be in effect until we can determine the cause of this event and develop a plan to complete the project.

In the meantime, we appreciate your patience and understanding. We will keep you informed.

We released the first accident update on August 27 and a second on August 29, which included the following information:

Accident Update

This update is intended to be factual. No conclusions can be drawn until the engine monitor record and the flight computer data can be retrieved and analyzed.

What do we know?

- ~ The Seawind to date has been spin proof.
- ~ It was equipped with a spin chute, which had been tested on the ground and in the air.
- ~ The test pilot had repacked the spin chute about two weeks before the accident.
- ~ The spin chute had not been deployed. The drogue chute was partially out of its bag, which was attributed by the Safety Board to the impact.
- ~ The aircraft was reported to have had 61 gallons of fuel on board according to the engine monitor.
- ~ The aircraft flew for 40 minutes, which should have consumed a minimum of 10 gallons and a maximum of 15 gallons of fuel. The remaining fuel should have been 46 gallons or more.
- ~ There was no fuel remaining in any tank nor were there any more than a few drops in the fuel lines. There was also no sign of any leak or spill and no odor.
- ~ The engine was not providing power. Only one propeller blade had moderate damage. The other two were not damaged.
- ~ All the control surfaces were still on the aircraft and all the cables and push rods were connected.
- ~ The flap drive through shaft was intact, providing symmetrical flaps.
- ~ The Safety Board representative said there was no malfunction prior to impact.
- ~ The experimental Seawind kit aircraft has a 10.9 to 1 glide ratio: The certified should be similar.

As we reported in the notification on August 18, the engine monitor records the last 50 hours of operation. The flight data computer was damaged and was sent to a government laboratory in Ottawa to see if any data can be retrieved. If it had been switched on to record, then all the flight parameters should be recorded. Between both instrument systems, we should have a very accurate assessment of the last flight of the Seawind.

We hope you will leave your escrowed deposits for the next few weeks in case we find investors. If we do not, we will notify you and have the bank return your deposit.

In either event, we will pass on the final report from the Safety Board no matter when it is received.

No one wants to know the cause of the crash more than we do regardless of the outcome.

The test pilot from the NRC who is slated to pilot the test Seawind, encouraged me to continue. He said even if it was an airframe problem, anything can be fixed. This was not the first crash during certification flight testing. Cirrus and Columbia both had incidents that included fatalities.

I hope that we will have answers in 30 days. Of course, we do not have any control over the schedule of the Safety Board. Their laboratory has received the EDM 900 engine monitor computer and the damaged flight test computer.

With the flight position data, engine data, the radar altitude printout, and a very good eyewitness, we should be able to determine what happened.

On September 27, we learned that the test pilot turned off the flight computer right after takeoff. If he intended to do a flight test, turning off the computer made no sense. The following summary report was sent out, which repeats some of the information in the September 12 update:

I wish I could say that the accident report is finished and was conclusive. I have been waiting and delaying this update in the hope that the cause of the crash would be found. To date it has not happened, and I owe you all a status report.

So I have decided to describe the events prior to, during, and after the accident in a file memo form so that you would know the history and facts. We had staked our hopes that it would be possible to determine the cause of the crash from the flight test computer data. We just learned that the test pilot turned the computer on and two minutes later turned it off, just after takeoff. So there is no irrefutable flight data available.

WHAT LED UP TO THE DAY OF THE CRASH?

The project had been dragging out. I was told in April that the flight testing would be completed by the end of June. The spin testing had started and it would take 10 more hours of testing. Glenn estimated a total of 45 hours of testing remained to be completed..

In the beginning of May, the tests resumed and they were to be completed in two months, which equated to about five hours of testing per week. By the end of May, a few spin tests were completed. I was told there were still two months to go. The end of June came with little done and still two months to go. The same for the month of July.

We could not tolerate the continuing delays. The extension of time was exhausting our funds.

So I contacted the Canadian National Research Council (NRC) to see if they would take on the test flying effort. We had contacted them in winter of 2005, but they were too busy at the time. This time they were available and very interested in our project. They planned on flight testing four to six hours a day. We were doing well if we got that per week.

Our last business funding did not come as planned in the beginning of July, and we had to interrupt operations in August until we could acquire the funding. We decided to bring the test Seawind back to Quebec and, when testing was resumed, to move it to the NRC in nearby Ottawa.

On August 15, I advised the test pilot, Glenn Holmes, that we were interrupting the flight testing and asked him to return the Seawind to St. Jean, Quebec on August 20. I was trying to make arrangements for him to check out the NRC test pilots in Ottawa on the way back.

I knew he would be unhappy because he had told many people that the flight testing of the Seawind was the highlight of his career and it would be his last project. He wanted to go out on top. I asked him if he planned to do any test flying before bringing the Seawind back to St. Jean on Saturday. His response was, "Why would I test fly when you just fired me?"

Glenn told Marc Vachon, our engineer at the test site, that he might not bring the aircraft back. Glenn called Marc about two hours later and said he decided he would bring the aircraft to Quebec. He also said he would do one more test flight. Marc said that Glenn was very happy the next morning at the airport. He rarely saw Glenn happy.

Marc would normally oversee the fueling of the aircraft and would record the fuel level readings from the engine monitor and dipstick the tank to verify the fuel levels. That morning the fuel was already added and he only recorded the readings of the level sensors on the EDM-900 engine monitor.

We had two systems on board that could tell us what happened. The J. P. Instruments EDM-900, which records all engine parameters for the last 50 hours of flight. The other was the flight test computer, which records the position of all flight control surfaces, altitude, heading, pitch, roll and yaw, vertical speed and many other things. It is always operated throughout the test flight.

The flight test computer was damaged and was sent to a government lab in Ottawa. It revealed that during this flight, unlike every other flight, the computer was turned on and, two minutes later, it was turned off. No data was recorded that fateful morning.

The Seawind climbed to 11,500 feet as Glenn flew it north up

along the east side of Lake Winnipeg for 28 minutes and 48 seconds. He then descended 900 feet in 34 seconds and leveled off for 15 seconds.

It is interesting to note that, at the Sun-n-Fun air show, Glenn told me that with the wing flow energizers installed, he could put the Seawind in a deep stall and descend at 3,000 feet per minute while doing 45° bank turns.

He then descended from 10,400 to 2,200 feet, a total of 8,200 feet in 58 seconds (84-knots/hour descent rate). At this point the radar lost contact with the aircraft. There was, however, an eyewitness on the ground.

ACCIDENT INVESTIGATION

A young lady truck driver was the only eyewitness to the crash of the test aircraft. She gave a very accurate account of her observations to the local newspaper. I spoke with her on August 28 to clarify some questions I had.

She had told the local newspaper reporters that her truck had just been loaded and she noticed the airplane when she heard the engine sputter. Then she said she "heard the engine quit and then it kind of glided a little bit. Then it just turned straight down the nose and started spiraling. I lost sight of it behind the trees and about two seconds later I heard a sickening thuck."

Following is a link to the newspaper article: <http://www.cnews.canoe.ca/CNEWS/Canada/2007/08/16/4422990-cp.html> To view a news video, go to: <http://www.winnipegssun.com/Video/home.html>, scroll down to Video Archive, and then click on Pilot killed in crash.

I asked her whether the airplane was level or did the nose pitch up when the engine quit. She said it stayed level for a few seconds and then the nose went straight down and started to spiral. I asked her if it turned flat like the blades of a helicopter. She said no, the nose was pointing straight down.

I asked her was it turning like a corkscrew, to which she answered yes. I asked her if it descended on a 45° or a 60° or a 90° angle. She answered 90° straight down. It was not flat. I asked her how many turns it made. She answered it turned three or four turns to the right.

I asked her if there was anything that didn't seem right. She asked if the airplane couldn't turn. I said it turns very well. She said she could not understand why it flew straight toward the trees when there was a strip clearing about 150 feet to the right.

She also asked if the plane could glide. I said it glides very well. She could not understand why it nosed straight down into the trees. I asked her if there were farms nearby. She said there were farms within a mile.

After a conversation with a Canadian Transportation Board

(TSB) representative who suggested the accident looked like a classic stall/spin right to the ground, I called the eyewitness again to ask: When she spotted the Seawind, was it descending rapidly or flying level?

She was absolutely clear that the Seawind was not descending but was straight and level for 10 to 12 seconds with no turns before the nose went straight down. She repeated he was quite low, about 100 feet above the ground.

I asked her the approximate size of the nearby field? She estimated it is about 1,000 feet long and 150 feet wide.

I asked again if anything seemed unusual. She said that she could not understand why the pilot did not turn toward the open field; instead he kept heading straight into the stand of trees.

I was impressed with the detail of her description with the exception of her estimate of the height above the ground. To make three spiral turns would require about 1,000 feet. Sometimes it is difficult to estimate height.

In contrast, the TSB member finds little credibility with general public eyewitnesses and, to date, she has not been interviewed by them. I formally requested they interview her. I understand she will be interviewed next week.

The Seawind crashed about 10:00 a.m. CDT, or 11:00 a.m. EDT. The accident respondents reached the scene about two hours later. Sadly, Glenn was dead in the seat, which was still intact on the cabin floor.

The TSB released the preliminary finding that there was no malfunction of the aircraft prior to impact. All flight control surfaces were still attached and connected to the control system. The photos revealed the flaps were still connected to the drive shaft and the actuator was in the full up (-10°) position.

The TSB found no smell of fuel and no fuel in the wing main tank or in the header tank or in the fuel lines up to the engine. There were a few drops in the fuel injection spider. Last week we received a printout of the data from the engine monitor and a plot on the fuel level quantity. I forwarded a copy to J. P. Instruments (JPI). Yesterday, we discussed the data and JPI maintains that the fuel level readings were correct. I have requested that they talk directly with the TSB. If JPI is correct, then there had to be a fuel spill. Then the obvious question is: Why did the engine lose power?

The TSB team made two more reviews of the aircraft and found no loose fittings or leaks (except a very small blue stain under one fitting in the wing), and no sign of dye or other traces of leaking fuel.

The TSB learned that 21 gallons of fuel was pumped that Wednesday morning and determined that the aircraft ran out of fuel.

That would mean the previous flight landed on fumes. An experienced test pilot would have at least 45 minutes of fuel on board at the end of a flight. So I requested they look at the end of the previous flight.

They found that the previous flight terminated with an indicated 41 gallons of fuel on board.

The engine monitor's computer plot for the last flight started with about 61 gallons and used about 10 gallons. At 38 minutes into the flight, the fuel quantity spiked from 51 gallons to 70 gallons and immediately went to zero.

The TSB representative suggested that the engine monitor fuel sensors were erroneous. If so, that would mean that two separate previously reliable sensors went bad at the same time. The TSB representative suspects a stall/spin to the right.

The aircraft descended at about 1,600 feet per minute down to 10,400 feet and leveled off for 15 seconds. It then descended rapidly to 2,200 feet in 58 seconds. That was more than enough time to deploy the spin chute if needed. The vertical speed was 84 knots. The spin chute had previously been tested in flight at about 85 knots. Glenn had repacked the spin chute about two weeks earlier.

A number of people asked if there was an autopsy and could he have had a heart attack? The TSB said there was an autopsy but results would not be published unless they could have had an effect on the accident. I have requested confirmation.

ANALYSIS

The absence of fuel remains a mystery but it does not explain the nose of the airplane going straight down vertically.

The Seawind has a 10.9 to 1 glide ratio. Allowing for the drag of the spin chute bags and frame the ratio might be reduced to 9.5 to 1.

A number of Seawind Kit builders modified their fuel systems and ended up with a power failure. They were able to glide and land on land or water. Even student pilots know to select the best glide speed and a place to land. Glenn was an experienced test pilot.

The eyewitness said the nose went straight down and then made three or four spiral turns to the right. She estimated the Seawind was about 100 feet above the ground. To make three turns would require about 1,000 feet. At 1,000 feet the Seawind can glide almost two miles. There were open farms within a mile. Even if the aircraft was at 100 feet, why didn't Glenn land in the open 1,000-foot-long strip a few feet to the right?

PRELIMINARY CONCLUSION

Without the flight computer data we have only radar position and encoder data down to 2,200 feet. I have to believe the observations of an eyewitness. She saw the Seawind straight, stable, and level for 10 to 12 seconds before it dove straight down.

THIS COULD NOT BE A STALL/SPIN ACCIDENT.

We do not believe therefore that any aerodynamic characteristics or performance could be the cause of the accident.

The fuel remains a mystery but the Seawind glides, and the lack of power would not cause the nose to go straight down.

We will keep you informed if we receive any new information or information that is contrary to this update. We will also pass on TSB findings when available.

After learning that the TSB would not be making an accident report, the following update was sent October 8 to the order holders:

On October 4 I spoke again to the Transportation Safety Board (TSB). Since my update of September 27, there is little to add. The TSB did interview the eyewitness, but they are sticking with their position that eyewitnesses are not reliable. They would not reveal any of the discussion with her because it is against regulations, even though we are the manufacturer. They did confirm there was an open field 50 meters, or 150 feet, from the crash site. They also said that the flight computer was turned off right after takeoff.

They continue to believe the aircraft did not level off. They also continue to believe that the JPI engine monitor fuel level sensors were faulty and the aircraft was totally out of fuel. They did say there was a faint smell of fuel but not what would be expected with a 40 to 50 gallon spill. The first responders arrived within two hours and the investigators in four hours. They found no leaking of fuel. No soil samples were taken. They reiterated that there was no fuel in the lines.

I had told you in my last update that we would pass on the TSB findings when available. What shocked and dumbfounded me was that they will not release an accident report. They said that in this case they are working for the coroner and not performing an accident investigation. I was told that, for small aircraft such as the Seawind, they do not carry out full investigations because that could take a year or more. I just assumed they would. I reminded them that this was a certification test aircraft intended for full production. That did not make a difference. They said it would be up to us to determine the cause.

All I can say is that I intend to review all the data we have collected with the National Research Council (NRC). The NRC pilot did tell me that even if the cause was the aircraft,

anything can be corrected. However, the TSB did state that there was no malfunction of the structure prior to impact.

SO WHERE DO WE GO FROM HERE?

Obviously the highest hurdle will be to raise the funding to resume the program.

We sent a request to our order holders, who have made a secured deposit on a Seawind. A number of them have stepped up to the plate and have made a commitment to invest in the Seawind providing that:

- We have sufficient funding commitments to complete certification.
- We have an understanding of the cause of the accident and a solution. Our findings are that there was no failure of the Seawind structure.
- We have an equitable shareholder agreement.

Canadian law requires that to offer stock to the public a company must file the equivalent documentation required to be on a major stock exchange unless the stock price is \$150,000 or more.

We currently need commitments for two more shares to be able to resume the project. Of course, we would be pleased to have four or five more.

If you or anyone you know is interested in this opportunity, please call or e-mail us for further details.

THE LAST HURDLE WILL BE FINDING TWO KEY MANAGERS

Like any company, we are only as good as our employees. We need two managers that will lead and motivate people and who will maintain a schedule.

We need a **PROJECT MANAGER** with general aviation experience who will oversee the administration and coordination of the engineering group, production group, and quality control. He must be able to work in Quebec for a minimum period of two years. He must be fluent in English and speaking French is helpful.

We need an **ENGINEERING MANAGER** with experience in certification of general aviation aircraft. He will supervise the final testing of components and the flight testing program as well as the documentation of results and reports. He must be willing to work in Quebec for one year to complete the VFR certification and the ongoing options and accessories certification.

If you are qualified and interested, please call or e-mail us or if you know someone who qualifies, please let us know.

On that fatal day of August 16, I never expected that we would be able to even consider resuming operations.

We have lost 11 order holders during this period, but 84 have stayed with the program. This is essential if we are to complete our goal.

I want to thank the many people who sent us letters of encouragement and support.

To many of you this will appear to be a very unorthodox newsletter with more information than you care to know. Many of our readers have followed the Seawind from the time of the initial kit version development. We have always tried to give everyone as much information as possible.

I hope that some of those ardent followers may wish to join in the effort as an investor or may know someone who could fill one of the management positions.

I had feared that this would be the last newsletter.

IT MIGHT NOT BE.

Dick Silva



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