



The Seawind Flyer

Summer 2010

"The evolution of an intelligent design."™

Seawind LLC

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The spring 2010 Seawind Flyer ended with the first flight of the new test aircraft before heading to Ottawa. The past three months get a mixed review. Rarely in aviation does anything go faster or easier than you hope, and these months are no exception. Let's start with the positive events first.

PRODUCTION MANAGER

We are pleased to announce that Marc Jacobs will be joining the project at the end of June. He has extensive experience in both maintenance and manufacturing of aircraft as well as quality control and administration.

We have been refining our tooling and procedures to minimize special handwork, which is time consuming and expensive. This time when all our major fixtures are finalized, then we will expand the number of time-saving templates and jigs.



PREPRODUCTION APPROVAL

Marc will be attending the meeting with Transport Canada in July to review our request for permission to assemble the first five customer aircraft.



Of course, any configuration change required to complete flight testing must also be made to the preproduction Seawinds. We are planning to restart the making of production parts in September.

ENGINEERING MANAGER

We are pleased to announce that François Côté Ing. has accepted the position of Engineering Manager. François has been working on the project since 2004. He has been involved in virtually every system in the aircraft. The work will not end when the Seawind is certified. We will still have work to do on a variety of customer options.

DAMAGE TOLERANCE TESTING (FATIGUE)

We had completed the equivalent of one lifetime of testing on the horizontal tail. One lifetime is equivalent to 10,000 hours of flight.

After a much delayed start, we have completed 60% of one lifetime on the wings and mid fuselage section. We

will continue testing for two lifetimes, equivalent to 20,000 hours.



The two wings and the center of the fuselage are upside down for this testing..

After that we will resume testing of the horizontal tail for its second lifetime.

Prior to testing, all composite test parts are assembled intentionally with a one-inch disbond every 12 inches. In addition, we have to induce damage to the surfaces to simulate dropped tools and the like. None of the induced damage is allowed to grow. There are over 100 induced damage locations on this test article.

The most stringent test for composite fiberglass structures are the elevated temperature moisture saturated static tests. We tested the Seawind wing and stabilizer to an ultimate load of 3.8g times a factor of safety of 150%, plus an additional 10% totaling 6.27g at 150° F and 85% relative humidity.

FLIGHT TESTING

Now, for the ups-and-downs news. The instrumentation work for flight testing was completed by mid-May only to find that there were a number of brand new devices that had to be replaced.

We had a number of snags that were a result of our work and the adjustment of the engine operation.

We have never been worried about flutter because the Seawind is such a strong aircraft and the parts are so stiff. However we forgot one item, the thin, almost flat main landing gear doors. At a speed of 160 knots, the

test pilot heard a hum coming from the wing landing gear doors in the up position. We made hinge and attachment adjustments only to find out that those changes now affected the down position aerodynamics at approach speed. Evidently this is not unusual; Cessna had a similar problem with the Citation. In Cessna's case, nobody is concerned about it. In our case, they are.

Back to the drawing board, and now we are assembling a reshaped door which should meet both the high speed closed and the low speed extended load requirements.

Unfortunately a few weeks have gone by with little flight data other than the in-flight stall speeds being within a knot of the predicted performance. Hopefully we should be flying reliably within a few days.

We know you are anxious to receive flight test results. So are we, but we want to do it safely and deliberately.

OSHKOSH AIR VENTURE

We have decided to forego Oshkosh again this year. Had we started flight testing last fall, we would have attended Oshkosh. The one week exhibition actually requires almost three weeks of effort and, at this point in time, it is most important that we concentrate on flight testing.

OPTIONS SURVEY

In the spring 2010 Seawind Flyer, we posted a survey for our current and future order holders to learn what options you would prefer. We want to thank everyone who participated. Certifying the Seawind's use of avionics, autopilots, and engines is an expensive and time consuming endeavor, and we want to keep the cost as low as possible for you as well.

We gave a "rough estimated cost" so that you could make a more informed choice. As suspected, the popularity of the higher-priced options went down, i.e., the Garmin 1000, and the more cost-effective items went up in popularity.

BACKGROUND

We decided some time ago to select Garmin Avionics, S-Tec Autopilot, and the Continental IO-550 standard 310 hp engine and the reasons for that selection has not changed.

GARMIN AVIONICS

The deluxe IFR was preferred by 41% of the respondents, and we will offer it.



Deluxe IFR



G600 Glass Cockpit



This is a sophisticated system with great graphics and endless capabilities. It consists of the following Garmin equipment (top to bottom):

- GMA 340 Audio Panel with intercom and marker beacon
- GMX 200 Moving Map (Multi-function Display)
- GNS 430 WAAS – GPS/COMM/NAV with Glideslope
- SL 30 – Nav/Comm with Glideslope
- GI-106A – Course Deviation Indicator
- GTX 327 – Mode C transponder

The G600 was preferred by 30% of the respondents. It has synthetic vision.

The G500 was preferred by 8%. It does not have synthetic vision, but it can be added as a retrofit. According to Garmin, if we test the G600, then the G500 requires no additional testing. If that remains true, we will be offering both the G600 and G500 glass cockpit.

The Seawind Glass Cockpit configuration consists of:

- G600 or the G500 as described

The Garmin 1000 glass cockpit is preferred by 19%. Their second choice was largely the G600. Garmin's position has not changed regarding the autopilot for the G1000. They do not want to certify their autopilot for the high thrust line Seawind. For those and other reasons, we do not intend to offer the G1000.

GARMIN ACCESSORIES

The Garmin accessories recommendations are difficult to determine at this time because the ADS-B has not been fully deployed and, like everything in aviation, it is behind schedule. The survey results are:

The ADS-B weather was preferred by 60% of the respondents.

The XM weather was preferred by 40%.

We will monitor the deployment of the ADS-B and make a thorough review before recommending which system to buy.

The GMX 200-I0 Moving Map with the GTX 330 mode S transponder traffic warning system was preferred by 46% of the respondents.

AUTOPILOT

The S-Tec 55X was preferred by 64% of the respondents.



System 55X has altitude intercept as well as built-in GPSS for automatic GPS approaches. The 55X reduces pilot workload through the many features available, such as:

- Simple course navigation tracking by heading and NAV or GPS;
- GPSS for precision and non-precision approaches;
- ILS, localizer and VOR approaches;
- Climb, altitude hold, descent, vertical speed command, and coupling to glideslope;
- Separate selection for approach or reverse back course and intercept.

We recommend this autopilot for the frequent IFR pilot who wants all the bells and whistles.

The less sophisticated S-Tec 50 was preferred by 35% of the respondents.



The S-Tec 50 is a 2-axis autopilot with heading hold (D.G. bug) and nav coupling to GPS or VOR/LOC. It has altitude hold and does *not* vertically track. A GPSS for making GPS approaches is available as an option.

The folks at S-Tec have told us if we certify the 55X in the Seawind, then it should cover the S-Tec 50 as well. We hope that will hold true because we would like to offer both models to our customers.

POWER PLANT

We are certifying the Seawind with the Continental IO-550-N standard 310 hp engine with a 3-blade McCauley propeller.

STANDARD

The standard Continental IO-550 engine with three-lever control was preferred by 34% of the respondents. The same engine with FADEC was preferred by 26%. Between both versions, 60% preferred the standard fuel-injected IO-550-N engine.

TURBO-CHARGED

Only 5% preferred the turbo-charged TIO-550 without FADEC. However 26% preferred the turbo-charged engine with FADEC. A total of 31% of the respondents wanted a turbo-charged engine with or without FADEC.

We will probably not certify the Seawind with a turbo-charged engine until Seawind production number 009.

There are some new developments we are watching in turbo-charged engines that may be available in 2011.

Finally, only 8% of the respondents would prefer a turbo-diesel if one were available.

Again, our sincere thanks to the people who took the time to participate in the survey.