



# The Seawind Flyer

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"The evolution of an intelligent design."™

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## THE SEAWIND TAKES TO THE SKY!

I know that this saga has been terribly long for all of you who dream of having a Seawind. I know that feeling because I was in that position 20 years ago. I took it to the extreme by taking on the project. Now that we are certifying the Seawind, we know the frustration of having to meet a myriad of regulations and the endless paperwork involved.

We requested Transport Canada to issue a flight permit for Seawind 002. What followed were weeks of intense paper generation.

As with any test aircraft, there are last minute tweaks to be done.

The test pilots from the Canada National Research Council (NRC) were very helpful and patient in getting all the characteristics just right.

Paul Kissman was scheduled to fly the Seawind, and Anthony Brown was slated to fly the Harvard chase plane.

## READY TO GO



All the ground tests had been successfully completed including the full RPM brake test. The brakes held. Paul tested the differential brake steering and the hydraulic assist steering and then both systems acting together. The Seawind was now ready to fly.

Paul and Anthony gave us a full pre-flight briefing, at the end of which I was confident that we had put the Seawind in the right hands. They expected that, if everything went well, the flight would take 45 minutes. If there was any problem, they would return to the field right away.



Above: Harvard taxiing out. Below: Harvard taking off.



We stationed ourselves at the third point of the runway with the company pickup truck with emergency gear as a safety precaution. We waited for them to complete the preflight run-up and checklist.

## READY TO FLY

The Harvard taxied out first and took off.

The plan was that Anthony would take off and come back around the airport pattern and would be abeam the Seawind during its takeoff.

Paul taxied the Seawind out and started its takeoff roll.



*The Seawind taxied out.*



*Takeoff roll.*



*Start rotation nose wheel lifts.*



*Liftoff.*



*In the air.*

Paul and Anthony were to climb and check the system in flight while in close proximity to the airport to determine if everything was a go. If not they would return to the airport. If everything was working correctly, they would go to the test area.

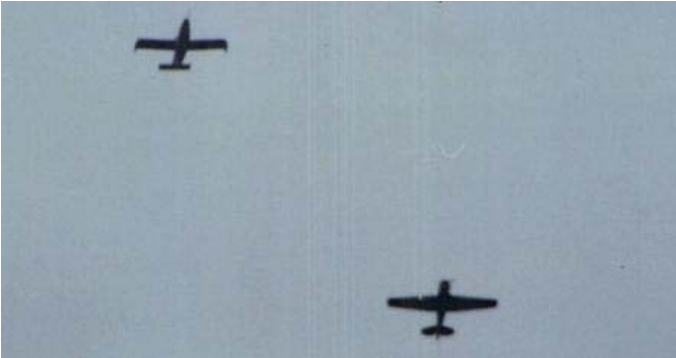
Then we heard them tell the tower they were departing to the test area. Everybody was elated the tests were to begin. This was a major milestone.



*The two aircraft heading to the test area.*

Now we had to wait. The longer the wait, the better the flight tests were going. We were able to pick up some of their communication, so we knew that they were accomplishing some of their objectives.

About 45 minutes later, we heard them call the tower to return. They were right on time. They had expected to take 45 minutes in the test area.



*The two aircraft return.*

The Seawind turned final with the Harvard in tow. Paul made a smooth touchdown in a five-knot crosswind component as the Harvard passed overhead.



*Turning final.*



*Short final.*



*Level off.*



*Flair.*



*Touchdown! (Forgive the bad focus.)*

Paul was cleared to back taxi as Anthony entered the pattern.



*Seawind back taxis.*



*Paul and the Seawind pass close by.*

After the Seawind passed, Anthony landed the Harvard.



*The Harvard lands.*

We gathered up our gear and drove back to our building to meet the pilots. We were anxious to learn what happened.

## POST FLIGHT BRIEFING

We arrived to see an ear-to-ear smile on Paul's face. The post flight briefing followed with very detailed information from both pilots. I was very impressed with the precise observations Anthony made from the chase plane.

First the snags:

- ~ The flaps had a differential of about 1/16 of an inch high on the right wing and 1/16 of an inch low on the left wing. It required 0.6 inches of down aileron trim — the flaps will be readjusted, which should move the trim tab to its neutral position.
- ~ The full power fuel pressure was still a bit high and will be adjusted lower.
- ~ The cowl flap handle needs an adjustment in the closed position.

## NOW THE GOOD PART:

- ~ Differential brake steering was nominal, and the hydraulic nose wheel steering was nominal as well, with no shimmying on landing. (Note: In test pilot speak, nominal means there were no problems and the Seawind performed as expected. I have never heard a test pilot say *very good* or *excellent* until now.)
- ~ The elevator pitch control was very good with very good stick to force ratio. Forces were light and manageable and, when a doublet maneuver was applied, the elevator immediately returned to neutral.
- ~ The same applied to the ailerons, which immediately came back to neutral after a doublet.
- ~ The rudder took two cycles with a little bit of Dutch roll but returned to neutral. On a short coupled aircraft, Paul had expected much more. It was lighter than expected. I had preadjusted the rudder trim to half of the trim I carry on my experimental version Seawind. (I carry about 3/8-inch of trim tab trailing edge right. I set 002 about 3/16-inch right.) Paul said the rudder was dead on, and he did not have to adjust it. Anthony did not observe any Dutch roll from the chase plane.
- ~ Paul summed up the overall deadbeat control as "excellent." Now we were smiling from ear to ear.
- ~ Paul said that 60° banks were linear with proper up elevator force as the bank angle was increased.
- ~ Paul did not intend to do stalls at the time. He did go to the beginning of the pre buffet warning, and the Seawind was stable at all flap settings.
- ~ The fuel balance was spot-on, and the fuel and hydraulic system performance was nominal.
- ~ Engine cooling was very good. CHTs were in the mid 300° F range. The oil temperature was an almost too cool 170° to 180° F. The EGTs generally had a spread of 25° to 40°F. Paul did not fully lean out the mixture because he was doing so many different maneuvers at different altitudes and power settings.

It was an excellent report, and we are elated.

It is a comfort to know that we truly do have a very professional and talented flight test team. Now we can almost relax. It was a very emotional day.

## WHAT IS DIFFERENT NOW

There are a number of differences now that did not exist before with aircraft 001. The last time the NRC was too busy to take on the Seawind project. Unhappily we had to settle for who was available. Transport Canada questioned the first test pilot's qualification to do the job. I should have listened.

This time we have the NRC. Chief Test Pilot Robert Erdos, who is a Delegated Airworthiness Representative (DAR), has stated: "We are treating the Seawind project like any other; if anything is found to be wrong we will fix it. Anything can be fixed." Both Robert and Anthony have flown my experimental version of the Seawind. Paul has now flown the certified version.

The NRC is the Canadian equivalent of the USA National Aeronautics and Space Administration (NASA). The NRC is also providing the instrumentation installation and the data acquisition.

This time we have probably the best flight analyst in Canada. John Taylor, DAR, has recently retired. He was the vice president of engineering at Bombardier. John spent a week at our plant in Saint-Jean to see if he would take on the Seawind project with the NRC. He had no idea that we had all new CNC plugs and molds as well as one set of assembly tooling. He was impressed with the engineering, quality and thought that went into the Seawind. He decided to take on the project.

This time I am convinced we have the best and most professional team that could be assembled in Canada.

This time we have a full conforming article, i.e., exactly the aircraft we intend to build for our customers.

This time we have our own staff AME, Patrick Desautels, who has all four AME ratings and who has extensive experience in single- and multi-engine general aviation aircraft.

I suspected that a number of problems we had with 001 were a result of the first flight test team.

We restored the cowling to its original design and we avoided excessive coils of wire and large Canon plugs crosswise to the cooling air flow. We are testing with our standard equipment JPI – EDM 930, which uses temp probes in the cylinder heads not the ring-type under the spark plugs from the first team. As reported cylinder head and oil temp readings are all now on the low end.



*The Seawind in the NRC hangar in Ottawa.*

A number of other "problems" discovered by the first test team, which "required modification," have also vanished.

The plan calls for the instrumentation to be completed by the middle to end of April and the flight testing to be completed the end of July or August. This time I am confident we will be successful, and we will be dealing with a professional team.

## SUN-N-FUN

It became evident that we would not be in a position to have the flight test aircraft at Sun-n-Fun, so we had to opt out to preserve capital and to concentrate our efforts on certification.

## OSHKOSH

Unless we are lucky enough to finish ahead of the schedule, we will be finishing flight testing just after the Oshkosh convention.

I do not want to have the experimental Seawind on display. If we can't have the flying certified version on display, then I would rather wait until next year. We will keep in mind some air shows during the fall of this year.

## THE NEXT STEP

We have started assembling Seawind 003 for IFR certification as well as autopilot and other customer options.

All the fiberglass parts have been made and the fuselage and wings are being assembled.

We are also preparing a production schedule for the Transport Canada regional office along with a request to build the first five customer aircraft.

## **DELUXE IFR**

We are still planning to have a deluxe IFR package featuring Garmin equipment. Consideration is being given to a basic IFR starter option, which can be built up to the deluxe system over time.

We are late in getting out the survey and questionnaire regarding what advanced avionics, engine and other options you may wish to have in your Seawind.

## **ENGINE OPTIONS**

By now I had expected to see the FADEC systems being the rage. I also expected to see the turbo-charged diesel engine in competition with the conventional turbo-charged engine. Not so.

Between fundraising, continuing certification documentation, assembling aircraft, and getting the flight testing underway, I haven't been able to keep up with all the latest developments. It's time to do some research.

Please feel free to send in items you would like to suggest.

## **LAST, BUT IMPORTANT**

With only a relatively small amount to raise for completion of certification we must at the same time turn our final fundraising efforts to Phase 4 for ramping up production.

Along those lines, we have updated our business plan for duplication of production tooling, inventory and training.

With over 50 orders we have not been concentrating on pursuing orders. That will be changing in the next two to three months.

If you would like to invest in the Seawind project, we would like to hear from you.

Richard Silva