

1.0 SEAWIND BUSINESS SUMMARY

1.1 Introduction

The Seawind aircraft is a perfect union of form and function. The sleek flowing lines make it the most striking of land or sea planes. We have developed the world's best and fastest four-place amphibian.

The spacious cabin, panoramic view, quiet environment, and form-fitting seats all combine to create total traveling comfort.

Since the dawn of aviation, designers have been trying to create a seaplane that would fly as fast and as far as a land plane and carry a reasonable useful load over a long distance.

Using advanced composite technology and innovative design, Seawind has accomplished that lofty goal.



The unique design offers a top speed of 174 knots (200 mph) and a high cruise of 168 knots (190 mph) with a useful load of 1,100 lbs. and a no fuel reserved range of 1,270 nautical miles (1,460 statute miles).

High speed stability is superb. The standard slotted flaps and the swept back wingtip floats (sponsons) create an extraordinary ground effect, cushion touch down and speed lift-off. Low speed stability is excellent.

Never before has an amphibian offered so much comfort. The Seawind has the widest cabin in its class with family five-place seating or an executive deluxe four-place configuration. The seats are bucket-style adjustable, with temper foam cushion, for ultimate comfort.

The wrap-around windshield offers a spectacular panoramic view even for the rear seats. With the wings mounted aft of the cabin, you have excellent visibility both up and down.

Whether the mission is a business meeting in the city or a fishing trip into the wilderness, the Seawind fills the bill. The Seawind is the only plane that fulfills every customer's needs.



1.2 The Product

Product Uniqueness

The Seawind, being a high performance amphibian aircraft is, by definition, unique. The Seawind is the only aircraft that can bridge both the general aviation single engine land and single engine seaplane/amphibian markets. The "crossover" market for the Seawind includes: high performance, single engine retractable gear and light twin engine aircraft of either metal or composite construction. The Seawind is the only amphibian that is compared to a high performance land plane in the air. The Seawind is the only high performance airplane that is compared to slow, utilitarian seaplanes on the water. THE SEAWIND HAS NO COMPETITION. IT IS THE BEST OF BOTH WORLDS.

Future Production and Product Improvement

The primary focus is to further develop the Seawind by certifying it under the guidance of Transport Canada and the FAA and to bring it to market in a commercially successful venture. Production and sales of the certified Seawind and ongoing derivatives is the future of the company. The kit version Seawind has been phased out. A primary category version of the certified aircraft will be

made available in countries where approved. Emphasis will be placed on continuing product development and improving performance, utility, and load and passenger capacity. A future six passenger model would have commercial applications.

The original prototype has been successfully flying for 16 years and over 2500 hours. The certified Seawind is manufactured with a unique infusion process that meets all the stringent TCCA and FAA requirements. This unique process gives the Seawind a major competitive advantage in the market.

Product Outgrowth

An outgrowth of the Seawind's unique room temperature molding process is the manufacturing of parts for other certified aircraft or military projects. WE ARE THE ONLY COMPANY IN THE WORLD THAT HAS MIL HANDBOOK 17-E "A-BASIS" APPROVAL for cost effective vinyl ester resin. We can make parts for Boeing or Airbus.

Intellectual Property

The Seawind project has achieved approval of crashworthy seats meeting the stringent 26 g criteria. These patented seats can be licensed to other general aviation manufacturers. This and other products have potential for use in other aircraft as subcontracts or in licensing to other manufacturing companies.

1.3 The Project

The successful future of the Seawind is in its Transport Canada's CAR Subpart 523 and U.S. Federal Aviation Administration (FAA) Part 23 certification, and production and sales of the completed, certified and ready-to-fly aircraft on a worldwide basis.

When the certified Seawind aircraft is available for worldwide sales distribution, sales at the rate of 100 to 150 units per year are conservatively projected for production. The Seawind will be self-sustaining within two years of startup in Canada and after Transport Canada issues a Type Certificate.

It is estimated that the Seawind project will create 200 jobs.

The Seawind was formerly produced in component parts form, commonly referred to as a kit plane. The kit versions of the Seawind were for owner assembly and operation in the Amateur Built/Experimental Aircraft category. Kit sales and production from the USA were ended in 2003. The kit company, SNA, Inc., is unrelated to the certified Seawind organization. It is responsible only for supporting its customers.

STATUS – WORK REMAINING

The certification process is in its final phase of flight evaluation, and production had commenced on the first customer aircraft.

Upon resumption of the project, the second flight test aircraft, which is currently two-thirds assembled, will be completed.



The flight testing, which was 65% complete, will be resumed. It is expected that about 20% of the previous flight testing will have to be repeated to prove consistency between the two aircraft.

The only in-house structural test remaining is the second lifetime fatigue testing requiring three months. One lifetime has been completed. Some firewall and flame tests of fabrics remain to be done.

Final reports and documentation will require about four to five months.

Upon receipt of the certification Type Certificate for VFR, deliveries may be made to customers.

The final IFR, autopilot, and glass cockpit approvals will require about three months (one month each). These tests are fairly routine with minimal risk.



1.4 The Market

A comprehensive market study was performed by McNeal Associates that reviewed general aviation industry trends, including recent Federal Aviation Administration (FAA) forecasts and General Aviation Manufacturer's Association (GAMA) production figures. Changes in the general aviation market are discussed, and the study outlines the renewed optimism for general aviation growth since the 1994 General Aviation Revitalization Act.

The Seawind does not have a direct competitor in the seaplane market. Because of the Seawind's performance and its perfect suitability for land operations, it will compete with land aircraft, something a seaplane has never done.

Over 75 percent of Seawind sales have been to land pilots with no seaplane experience. Most, as a result of their purchase, later became water pilots, but that is not a requirement in order to operate the Seawind from a land base.

Amphibians normally pay a performance reduction of 25 to 45 percent and a payload reduction of up to 40 percent over a comparable land plane. The Seawind, in most cases, has better performance than comparable aluminum aircraft and is within 10 percent of a comparable composite land plane.

The Seawind will compete in the personal transportation use market segment, which includes recreational use and is considered the largest market segment in general aviation and the primary use category for the Seawind. Business use by the owner-pilot is identified as the second largest market segment. Other market segments, including commercial, governmental and utility applications are considered, but these will be smaller, although lucrative, markets for the Seawind.

Fifty-six orders with deposits have been received from customers for the certified aircraft. Because of the Seawind's appeal to both land and water pilots, orders are conservatively expected for 125 to 150 aircraft annually. The company expects the production rate to top 200 Seawinds per year. The breakeven point is estimated to be 14 aircraft per year.

1.5 The Companies

The Seawind organization is comprised of Sea Air Composites, inc., which is the Canadian manufacturing company, and Seawind LLC, which is the marketing, sales and customer service company in the USA.

Sea Air Composites, inc. (SAC) is a foreign-owned Canadian corporation. It owns an 82,000-square-foot office/manufacturing/hangar facility on four acres of land at Saint-Jean Airport in Saint-Jean-sur-Richelieu, Quebec. It can easily be expanded up to 100,000 sq. ft. for an additional product line.



Seawind LLC is located in Chester County, Pennsylvania. It is scheduled to relocate to a new corporate sales and service headquarters location at Chester County Airport.

2.0 MANAGEMENT

President

Mr. Richard F. Silva, B.S.C.E., Professional Engineer, Registered Architect, has developed the Seawind from the conceptual prototype state to its present final form since he acquired all rights in 1991. He has assembled a design and production team of consulting engineers and designers unparalleled in the general aviation light aircraft sector. He will continue to oversee the certification and manufacturing development effort through to full production as well as the marketing and sales operation.

Project Manager

Mr. Frank Hofmann, B.Sc., MEd., AME, is the Project Manager and will be in charge of the production operation in Canada when the program resumes. Mr. Hofmann has extensive experience in mechanical and machine design and aircraft system design. He is a certified aircraft mechanic, flight instructor, and has built three experimental aircraft. He developed an aircraft maintenance and business program for John Abbott College and taught many classes there. He had his own business developing highway construction equipment. He will be right at home training production employees.

Mr. Jean-Francois Bolduc, B.A. Mechanical Engineering, is the Quality Assurance Manager. He has 11 years of experience in incoming inspection, vendor evaluation audits, manufacturing procedure, quality assurance testing and employee training. He developed the Seawind Quality Assurance Plan, which has been approved by Transport Canada.

Mr. David Arnold, B.S. Aeronautical Science, is Marketing and Sales Director for Seawind. He has five years of sales experience and has an ATP rating to complement his commercial and seaplane rating. He is also an FAA certified mechanic and has an IA rating. He is anxious to resume the sales program.

Mr. Paul Marshall was responsible for setting up the Seawind service organization, maintenance manuals and parts distribution. Mr. Marshall has 20 years of aircraft service experience and is an FAA certified mechanic.

3.0 ECONOMIC DEVELOPMENT

The project will create 190 jobs in Quebec, Canada and 12 jobs in Pennsylvania. The Seawind project is an anchor facility for the Saint-Jean-sur-Richelieu Airport.

4.0 ENVIRONMENTAL

Any environmental issues for the facilities were mitigated by the city, Quebec provincial and Canadian federal governments when the airport was transferred from the federal to the city government. The Seawind facility meets or exceeds all the current environmental regulations. Reports are available for review.



5.0 SCHEDULE

5.1	It is expected that restarting the certification program and completing the next flight test aircraft will take:	3 months	Cumulative TOTAL
5.2	Completion of flight testing and certification documents and reports is expected to take five months. There is a two-month overlap with 5.1.	5 months	6 months
5.3	Manufacturing of customer aircraft is scheduled to commence in seven months with deliveries to customers in nine months.	2 months	9 months
5.4	Production ramp-up will overlap certification by two months and will require an additional nine months to reach a production level of five aircraft per month.	<u>9 months</u>	15 months
	Total		15 months

6.0 FUNDING STATUS

To date the Seawind project has been funded by Richard Silva as the sole owner of SAC and Seawind LLC. He has supplemented his investment with a number of provincial and federal research and development programs and bank business loans.

6.1 The **first phase** was intended to commence research and development and to identify and solve any problem that might preclude certification and production techniques. The work completed was:

- ~ 3D Catia and Solid Works modeling of the aircraft
- ~ Development of the master plugs used to make the production molds
- ~ Development of the production molds for all the composite parts
- ~ Qualifying the composite manufacturing process under MIL Spec 17E – “A” BASIS
- ~ Development and testing of our own adhesives
- ~ Certification testing of the primary structure
- ~ Design and testing of the new main landing gear design
- ~ Design, development and testing for lightning protection

6.2 The **second phase** was primarily funded for the final structure and systems testing, flight testing, and tooling development. The work completed was:

- ~ The design and development of the tooling fixtures for the subassembly of all the parts for the air frame for a production rate of 24 aircraft per year
- ~ Assembly of the first flight test vehicle and completion of two thirds of the second aircraft
- ~ Completion of all the drawings for the aircraft except the electrical
- ~ Quality Assurance Program
- ~ The design and testing of the 26g crashworthy seats forward and aft
- ~ Production of quality composite parts for 4.5 Seawinds
- ~ Development of a flight test program
- ~ Completion of approximately 65% of the flight test program
- ~ Permission to construct five customer aircraft

6.3 The **third phase** is directed to:

- ~ Reviving the flight testing program by completing the second test aircraft, which is 66% complete, and start assembling the third aircraft.
- ~ Completing the flight testing with the Canada National Research Center (NRC).
- ~ Completing the damage tolerance (fatigue) testing. One lifetime is complete on the horizontal tail. The tests have been started on the wings and two lifetimes will be performed. Complete component testing.
- ~ Completing engineering reports and certification documentation. Upon the receipt of the type certification, the phase 4 funding will be required.

6.4 The **fourth phase** is directed to:

- ~ Ramping up production at a faster rate to reduce the order backlog to one year.

- ~ Supplementing assembly tooling to increase production and accelerate employee training.
- ~ Reducing cost by increasing order quantities and increasing inventories.
- ~ Funding marketing and advertising program during initial ramp-up of production.
- ~ Completing the certification of customer options, i.e., IFR, autopilot, FADEC engine.
- ~ Establishing the sales and service and customer training program.



7.0 FUNDING REQUIRED

For further financial investment information, please contact us at seawind@seawind.net or 610-384-7000.