

Solar Ship

Solar Ship is a manufacturer of hybrid aircraft. The primary goal of the company is to produce hybrid aircraft that are able to take off and land nearly anywhere to allow for the shipment of goods and emergency services to the most remote regions of the world.

Headquarters	175 Aviation Avenue, Brantford, Ontario, N3T 5L7
Year Established	2006
NAICS	336410 - Aerospace product and parts manufacturing
Employees	-
Major Expansions	N/A
Exports	Central Africa
Parent Company	N/A
Other Locations	Corporate Headquarters - 366 Adelaide Street E, Suite 500, Toronto, Ontario, M5A 3X9

Imagine being completely cut off from the modern world: no paved roads, no supermarkets, no phone service, and no Internet. These challenging circumstances represent everyday life for many communities living in Northern Canada. The lack of paved roads to this part of the country means that getting supplies to those who live and work in the region is very difficult and extremely expensive. Warming global temperatures have eliminated many ice roads—thick, year-round ice that once linked areas not accessible by paved or dirt roads—and there are no airfields for landing planes, making it even more difficult to provide essential goods and services. Brantford and Toronto, Ontario-based firm Solar Ship Inc. seeks to solve these issues through the creation of new aviation technology that can reach remote locations.

Solar Ship's mission is to produce airships that allow for the transportation of goods and communication services to the most isolated regions in the world. Solar Ship's founders, Jay Godsall and Michel Rugema, and their team came up with the idea of taking the classic Canadian bush plane and reworking it to allow for a small takeoff area and a larger payload. Godsall's family had been in the building of bush planes for several years, and Godsall was well aware of the reliability and reputability of Canadian-made bush planes. However, Godsall also knew that while a bush plane could withstand the weather and landscapes of Northern Canada, it was lacking in its ability to carry a large amount of cargo, forcing pilots to make multiple trips to deliver basic necessities to one location. As a result, Solar Ship took the successful bush plane concept and added buoyant gas, creating a hybrid airship that could handle a significant cargo load while also allowing for a short takeoff and landing strip. Solar Ship was incorporated in 2006 and has grown rapidly since.

The company's manufacturing centre is located at Brantford, Ontario's small airport, and its aircraft range in size from the 20-metre-wide Caracal, which is able to take off and land in an area as small as a soccer field and carry a payload of 200 kilograms, to the 50-metre-wide Wolverine, which is able to carry a 6-metre-long shipping container of up to 5,000 kilograms, and can take off and land in dirt, grass, pavement, mud, and water. Solar Ship is also in the process of developing the massive, 100-metre-wide Nanuq, which can carry up to 30,000 kilograms and fly as far as 2,000 kilometres. These airships vary in range and specialty. For example, the Wolverine is mainly for medium-haul cargo services in remote areas, while the smaller Caracal is designed for delivering emergency services to an area. Solar Ship also manufactures balloons that can be placed above a large area to provide phone and Internet service there, enabling workers, emergency services, and peacekeepers to communicate in even the most remote areas.

Solar Ship's products are all powered by solar panels that have been developed to have a slight bend in order to fit the aircraft.

These panels provide special advantages compared to traditional bush plane engines: (1) they eliminate the need to have a steady source of fuel when in remote areas; (2) a solar powered electric motor allows for faster takeoff speeds, and more flexibility in terms of where the motor can go, making more efficient placement possible; and (3) the solar panels generate power that is environmentally friendly. Jay emphasizes that electric power is better and more powerful than traditional fuel overall, while its eco-friendly aspect is an added side benefit—not the primary driving factor. Solar Ship's airships do have the capacity to be equipped with a traditional bush plane engine and fuel if the customer prefers, but having the ships use solar electric power is very advantageous. This advantage can be seen in Solar Ship's results. Godsall proudly states that, contrary to what many people believe, Solar Ship is able to beat Chinese manufacturers on prices and American manufacturers on quality.

Godsall believes that a competitive nature is what separates the acceptable from the great, referring to Brantford's own Wayne Gretzky as an example of this philosophy. While Gretzky was not necessarily the biggest or faster hockey player, his competitive nature and attitude pushed him to become "the Great One." Similarly, Jay and his team believe it is of paramount importance that they embrace this "Canadian-style" competitiveness—that is, be friendly and helpful when dealing with suppliers, customers, and employees, but continuously and aggressively seek to produce a better product than any competitors. Solar Ship has even organized races against some of its competitors' products. Recently they have even challenged American aerospace giant Lockheed Martin's hybrid aircraft to a competition once it is completed in 2019.

Godsall attributes Solar Ship's success to a few factors, not least of which is the company's employees at every stage of production.

Solar Ship encourages and uses suggestions from employees at all levels on how to improve the speed, efficiency, and overall quality of its aircraft. Jay strongly believes that new ideas from fresh minds have the potential to take a product to a high level, no matter which employees the ideas come from. For instance,

Solar Ship hired a team that used to work for a raincoat manufacturer in the area before it closed. Now, that team builds airships for Solar Ship. Godsall feels that this move of personnel is indicative of Canadian manufacturing in general, moving from the old to the new, and towards a high-tech economy. The ship-building division receives designs from customers via computer before an automated cutting machine cuts the waterproof and non-rip material to the received design. The team on the floor then makes the balloon that goes on top of each ship by using machines that produce high levels of heat to weld the fabric together. The welds on Solar Ship's products are much thicker and more durable than those on any other similar product in the market. Finally, the team puts the solar panels on the fabric and places a kind of raincoat over everything that keeps the panels safe from the weather but still allows them to collect energy.

Solar Ship's employees come from some of the best-known technology and manufacturing companies in the world, including Virgin Group and Tesla Inc. Godsall utilizes the Canadian brand, landscape, and culture to attract outstanding talent. Solar Ship routinely holds races between its own models and concepts to determine which designs work best, as the firm is constantly competing against global companies for contracts around the world. Jay emphasizes that this is one of the reasons that Canadian government leaders must maintain good working relationships with foreign governments and groups, so that Canadian firms can better their chances of winning foreign contracts. The company's current contracts include the federal government's Build in Canada Innovation Program, and Peace + Freedom Services, a network of peacekeepers that helps connect remote regions of Africa.

Solar Ship is a highly innovative and uniquely Canadian company that is striving to make a difference in the world while creating the next stage in aircraft. The firm's desire to help and grow, its respect for employees and their ideas, and its passion for competition will ensure that it continues to be a powerful force in this exciting industry.