

## **A New Era of Digital Sailboat Navigation** **SailTimer Inc. and Nova Scotia's Seafaring Heritage**

SailTimer Inc. has been doing R&D on marine electronics for sailboat navigation since 2005. Although we serve worldwide markets through SailTimerInc.com, an online shopping cart, and iTunes, it is fitting that we obtained our recent patent on navigation methods with R&D in Nova Scotia. There is a long history of technology development here.

Some 250 years ago, James Cook arrived in Halifax as Master of the ship *Pembroke*, captained by John Simcoe, the founder of York (Toronto). The *Pembroke* sailed from Halifax for the British siege of Fort Louisbourg. On July 27th 1758, the day after the French garrison surrendered the fort, Cook met Samuel Holland on the beach in nearby Kennington Cove. Holland, the namesake of Holland College in PEI, was a surveyor who happened to be using a "plane table" for sighting angles to various points.

Cook extended Holland's sighting method for triangulation to coastal mapping from his ship. His charting of the Gulf of St. Lawrence and Newfoundland led to his later appointments as a Pacific explorer. He did the first recorded circumnavigation of New Zealand, and searched for *Terra Australis Incognita*, the hypothesized "unknown land of the south" (Australia). He also made the first European contact with Hawaii, and charted the coast of modern-day BC, Oregon and the Bering Strait. Capt. Cook's first trip to Tahiti was a scientific expedition concerning the Transit of Venus across the sun (a rare event which also happened to occur in 2012), which also used triangulation to determine the distance to the sun and size of the solar system. So this is big, and it all began on a beach in Nova Scotia.

Another famous sea captain, Joshua Slocum, was born near Middleton, Nova Scotia on the Bay of Fundy. He was the first person to sail around the world single-handed, which he recounted in his famous book about the experience.

Although SailTimer Inc. uses wireless technology like Bluetooth and wifi in our products, some pioneering work on wireless radio transmissions was also done here a century ago by Guglielmo Marconi. He did an unverified test reception from Ireland to St. John's NF in 1901, using an antenna raised on a kite. However, after resistance from the Anglo-American Telegraph Company, he continued in Glace Bay, Nova Scotia, at the invitation of Alexander Graham Bell. From that site in 1902, he transmitted the first wireless radio (morse code) message to cross the Atlantic. Marconi had a mobile radio laboratory on his yacht *Elettra*, and received the Nobel Prize in Physics at the age of 35.

Bell is of course another technology pioneer, who owned a home in Baddeck, NS. Aside from telephony, Bell was involved with the first aircraft flight in Canada (1909), and did research on using lift with hydrofoils for boats and airplanes, using the same principle of lift as on sails and airplane wings. From 1914-17 he built the 55' yawl *Elsie* in Baddeck NS (custom-designed for Bras d'Or Lake winds and water depths), as a wedding present for his daughter of the same name and his son-in-law Gilbert Grosvenor (the founder of National Geographic magazine).

When LORAN wireless positioning came out for marine navigation in the 1970s, it provided some amazing new features such as displaying your ETA (Estimated Time of Arrival). LORAN was displaced by GPS a decade later. Unfortunately, the calculations for ETA were originally designed for airplanes and powerboats, and don't work for sailors. ETA doesn't account for a sailboat's tacking distances. That is where our patented SailTimer software comes in. We have developed a method of calculating the exact distances on each tack, to continuously display and update the optimal tacks and the Tacking Time to Destination (TTD™).

The Sailing GPS is the first GPS that accounts for tacking distances, and the only GPS that can learn the "polar plots" for individual sailboats. Pretty revolutionary for sailors.

When the iPhone and iPad came out, we were able to add high-resolution marine charts, with overlays of the optimal tacks.

Our newest innovation is the wireless, solar-powered SailTimer Wind Vane. It has the unique ability to send wind speed and direction magically through the air to a handheld device like The Sailing GPS, an iPhone or iPad.

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