

## THE SOLARIZATION OF SAMBRO LIGHTHOUSE, OLDEST OPERATING LIGHTHOUSE IN THE AMERICAS

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The solarization of the Sambro Lighthouse was successfully completed by the Canadian Coast Guard (CCG) on Easter Sunday, March 28, 2008. Members of The Nova Scotia Lighthouse Preservation Society had been concerned about solarization of Sambro for several years. The CG has been solarizing lighthouses in recent years, some of them in a manner which was not well



Sambro's new lens

received by lighthouse enthusiasts and mariners alike. Fortunately for Sambro, some changes in staffing at the CCG Base in Dartmouth, Nova Scotia and the appointment of Tom Roberts, an understanding and caring technician, to supervise the project lead to a very successful conclusion. In addition, there was good media coverage of the situation and members of the public and mariners made their opinions and wishes known.

In April, 2007, a strong storm surge tore out the underwater power cable which connected Sambro Island to the mainland, supplying the electricity to operate the light and foghorn. This happens every three or four years. Replacement of the cable is extremely expensive. Solarization of the lighthouse was deemed the only solution, since the ongoing expense of maintaining the power cable was drawing money away from necessary repairs to Sambro and other lighthouses. Approval for the project from the Federal Heritage Building Review Office (FHBR) was necessary because Sambro is a classified building. Approval was received in December, 2007.

The Coast Guard maintained the light for months, using auxiliary diesel generators and flying fuel to the lighthouse by helicopter, a very expensive situation. The foghorn was deemed unnecessary and was shut off pending a four month long period during which mariners were invited to voice their opinions regarding the necessity for continued operation of the horn. Many submissions were filed, the majority calling for continuation based on historical and personal grounds.

Initially the light recommended by the CCG Level of Service people was an Automatic Power APRB252 with a 2.03 amp lamp in it and a range of about 14 miles. Tom did not consider this a system sufficient to match Sambro's DCB36 which had a range of over 24 nautical miles. There was a Tideland TRB400 lens system at the CCG shop and Tom requested that lens be installed instead. It



Sambro's new fog horn

nearly matches the DCB lantern's brilliance. Tom's managers did not argue with that request. Due to the public protest and some sympathetic staff in Dartmouth, the decision was made to reinstate the horn.

Twelve 80 watt solar panels have been installed on the island, on the spot where the outdoor fuel tanks once stood. Nine batteries run the entire system, four for the light and five for the fog detector and horns.

The lens must rotate 24 hours a day to prevent burning up the lamp changer inside. If the lens did not rotate, the sun's rays would be concentrated on the lamp changer mechanism much like a magnifying glass, and this would be hot enough to melt the unit. (The lens is a contemporary Fresnel. Since 1906 there has been a Fresnel system lens in the Sambro tower.) The nominal range of the TRB-400 with a 50 watt quartz lamp installed as it is on Sambro is 24 nautical miles. The light beam will be different because the unit is much smaller and more focused on

the water than what came from the previous DCB36. The DCB36 is an aviation lantern which is focused more on the sky for aircraft.

Tom oversaw the installation with great care. As a result, we have at Sambro Lighthouse a powerful solarized light and foghorn as close as possible to the previous system, and worthy of a landfall lighthouse.



[Sambro Island Lighthouse](#)  
[March 2008](#)

In Toms words:

"Those participating in this project included carpenters and technicians from Dartmouth and Saint John, helicopter pilots and engineers from Shearwater, as well as our truck driver, crane operator and labourer from Dartmouth. The teamwork and dedication of all of these people have restored Sambro to its proud heritage as the lighthouse that will always be closer than any other to the hearts of the people it protects. The Sambro Light and fog alarm not only reflects a powerful beacon still visible 24nm away, but it reflects the hearts and souls of the people of Sambro Village. It now stands as not only the oldest working lighthouse in the Americas, but also the most technologically advanced one as well.

You will note in the photo that Sambro Lighthouse badly needs painting. This will be done this summer. Sambro Lighthouse is 250 years old this year.

[Kathy Brown \(Canada\)](#)  
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