

# SINCLAIR TECHNOLOGIES HELPS NAV CANADA SAFELY MOVE MILLIONS OF AIRCRAFT



## Who is NAV Canada?

NAV CANADA is Canada's Air Navigation Service Provider (ANSP) managing 12 million aircraft movements a year for 40,000 customers over 18 million square kilometres. They are the world's second-largest ANSP by traffic volume. Created in 1996 through the combined efforts of commercial air carriers, general aviation, the Government of Canada, as well as their employees and their unions, NAV CANADA is the world's first fully privatized civil air navigation service provider.

NAV CANADA's airspace stretches from Canada's Pacific West coast to the East coast of Newfoundland and out to the centre of the North Atlantic. This is the world's busiest oceanic airspace with some 1,200 flights crossing to and from the European continent daily. Their airspace also stretches from the busy U.S.-Canada border with major international airports to the North Pole, where aircraft fly polar routes to reach Asia.

NAV CANADA's mission is to be a world leader in the provision of safe, efficient and cost effective air navigation services on a sustainable basis while providing a professional and fulfilling work environment for their employees.

## Problem

In 2005, NAV CANADA's radar coverage of Hudson Bay was limited to line-of-sight (LOS) and did not cover the entire Hudson Bay area. The Company used VHF communication sites around Hudson Bay and HF communications for areas that were not covered by VHF.

During a testing phase, the system produced a result that was less than expected as the coverage was effected by ice buildup on the antenna. Sinclair Technologies was approached to provide a high gain antenna that would be able to withstand ice buildup and to provide the expected coverage.

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## Solution

NAV CANADA asked Sinclair if they could help find a solution to this problem. The fact that the antennas were anodized in black was helping to mitigate the issue, but the ice was simply not melting fast enough.

Sinclair's team of engineers were keen to take on the challenge, and came up with the idea of distributing heat within the Yagi antenna array. As it turns out, this idea proved to be the best solution Sinclair Technologies could offer its customer.

By stacking six antennas from the SY2066 series, the antennas were able to attain a 15.5 dBd gain, thus extending the antenna range. The Engineering team's solution consisted of installing an electrical mechanism within each antenna. This mechanism created energy that heated the antenna's central support boom, which in turn distributed heat to each of the antenna's directors.

The SY2066 antenna arrays are installed at High Power VHF sites (Coral Harbour, Churchill and Fort Severn) that surround Hudson Bay.



This innovative solution was made possible due to the remarkable collaboration and partnership of engineers at both Sinclair Technologies and NAV CANADA. It demonstrates Sinclair Technologies' ability to listen to its customer, effectively put its resources behind its products and quickly come up with a customized solution to meet its customers' needs. This achievement is not only a source of pride, but also a testament to a solid team effort.

**Heated Yagi Antenna Array**  
SY2066-HF9SNM (E-HT-ABK)

