

the parameters planned for RADARSAT. The satellite will be able to operate continuously for 15 min on each orbit and up to 28 min for limited periods of time.⁴⁵

Data will be provided within 3 hours of overflight, and the system will provide daily coverage of the high Arctic, coverage of Canada every three days and global coverage every 24 days. The radar will use a 300 watt transmitter with power coming from a 2.5 kw solar array.

The Canadian government has also committed itself to a joint research programme with the United States for space-based air surveillance⁴⁶ and decided to cooperate with the United States on the Air Defence Initiative looking for ways to "develop technologies appropriate to surveillance, interception and battle management in regard to hostile bombers and cruise missiles."⁴⁷ This programme will investigate both infrared and radar technologies, although it appears at this point that radar is the favoured sensor. The primary infrared satellite experiment, called Teal Ruby, has been placed in storage.⁴⁸ The space-based radar programme will likely employ pulse doppler radar technology and a large constellation of satellites designed to provide worldwide coverage - a requirement clearly stated for the US Air Force and the US Navy. Although the wide area surveillance project is a joint venture with the US, a strictly Canadian research and development project for \$50 million has been funded to investigate these technologies.⁴⁹

⁴⁵ This limit is imposed because of heat dissipation requirements.

⁴⁶ *Challenge and Commitment*, pp. 56 - 59.

⁴⁷ Joel Sokolsky, *Defending Canada, US - Canadian Defense Policies*, New York: Priority Press Publications, 1989, p. 31.

⁴⁸ "Teal Ruby Spacecraft to be put in Storage at Norton AFB," *Aviation Week & Space Technology*, 8 January 1990, p. 22.

⁴⁹ "Canada Regards Space-Based Radar As Follow-On to North Warning System," *Aviation Week & Space Technology*, 28 September 1987, pp. 136 - 137. This article states that the \$47 million research and development program under the auspices of the Department of National Defence is intended to expand Canada's industrial base in space-based radar technologies and facilitate future collaboration with the U.S. Department of Defense.