



Ball Aerospace  
& Technologies Corp.

# Radarsat

**B**all Aerospace & Technologies Corp. played a leading role in the development of Canada's first remote sensing satellite, Radarsat.

Radarsat is a cooperative project led by Spar Aerospace Limited, and supported by Ball and several Canadian, European and American companies. The satellite carries a synthetic aperture radar, which is collecting information about the Earth's geologic features, oceans, ice,

weather and vegetation.

Ball built the Radarsat spacecraft bus and performed associated support services for the program based on technical experience gained with the Earth Radiation Budget Satellite, the Relay Mirror Experiment and the Combined Release and Radiation Effects Satellite.

The spacecraft was launched Nov. 4, 1995, aboard a Delta II rocket on a five-year mission, circling the Earth once every 101 minutes. NASA

provided the launch vehicle and services in exchange for mission data, particularly information about the Antarctic region.

Operating in the C-band, at 5.3 Ghz, the satellite is able to steer and shape its radar beam, and because it doesn't rely on reflected sunlight, the radar can collect information in total darkness and through rain or heavy cloud cover.

Radarsat collects images in swaths ranging from 28 to 310 miles wide, and images objects with spatial resolution ranging from 33 to 330 feet in size. Regions of the Earth never before mapped by

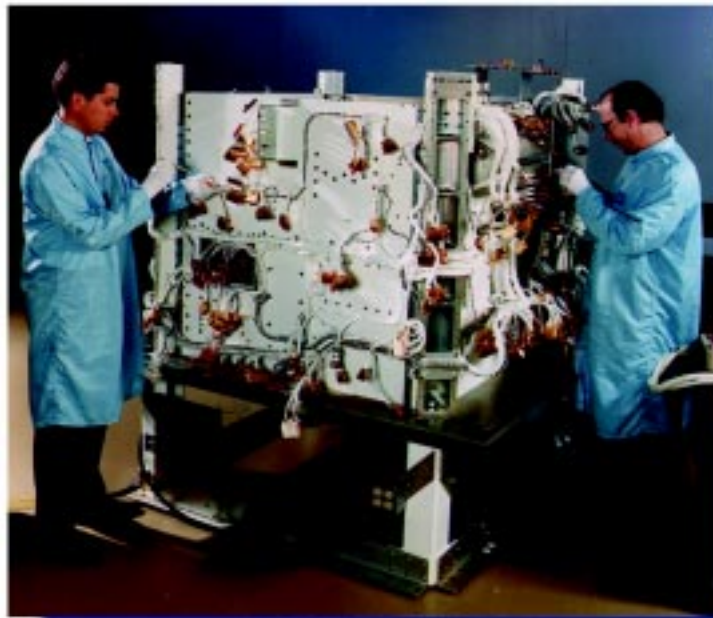


*Through fog, clouds or darkness, Radarsat's sensors will gather data on ice movements, measure ocean waves, winds and features related to biological activity, including information about crop conditions, soil moisture and forest changes.*

radar will be imaged by Radarsat, including areas in South America, Africa and Asia. Because of its polar orbital configuration, the satellite can fully access the equatorial zone in about five days, Canada in three days, and the Arctic in one. Radarsat's surveillance of the Arctic region is the first ever done on a routine basis.

Part of the Radarsat mission is to return information from the area where the warm Gulf Stream meets cooler temperatures in the Labrador current, causing foggy conditions that have previously halted scientific research from space.

The data collected during the mission will be used to make maritime navigation safer and more efficient. Radarsat will monitor global ice, and trace iceberg movement and extreme weather conditions that may hamper ocean shipping and drilling operations. Oil slicks and other environmentally hazardous materials can also be mapped using the radar. Data from the satellite also will be used to create stereoscopic maps that will later be used in gas and mineral exploration, as well as forest and agricultural management.



*Ball technicians integrate the power subsystem on the Radarsat spacecraft bus.*



*The Radarsat spacecraft bus is lowered into a thermal vacuum chamber in Ball's test facilities in Boulder, Colorado.*