



The Newtsuit, from International Hard Suits Inc., allows its wearer to dive to 300 m without suffering from the effects of compression and decompression.

Canadians are also combining technologies in new and effective ways to assist ships in ice-bound seas. New shipboard navigation systems unite airborne radar with satellite imaging. Together, they plot safe, efficient routes and pinpoint dangerous weather or ice conditions. A new Canadian satellite called *Radarsat*, for example, will be launched in the early 1990s. Using radar it will scan the Arctic at least once a day, through clouds, darkness or any atmospheric conditions. This technology will aid marine navigation throughout the world.

Under the sea

Canada's marine experience has also led to major achievements in undersea exploration. Two Canadian companies — International Submarine Transportation Systems and Can-Dive — have developed a line of submersibles that are adaptable to a variety of marine environments.

The *Deep Rover* is the world's most advanced one-person submarine. Looking like a spherical, transparent crab, it can dive to depths of 1 000 m and stay there for seven days. Like a helicopter, it can move vertically and horizontally, has 360-degree visibility, and is simple to operate. Its two manipulator arms can pick up objects as delicate as an egg, without risk of breakage. The *Deep Rover* has been used extensively by American marine biologists to study undersea life, and is readily adaptable to all types of underwater operation.

The *Dolphin* and the *Arc* are part of a family of radio-remote-controlled submersibles, manufactured for the world market. The *Dolphin* uses a sonar system to bounce sound waves off the sea floor. It can perform hydrographic surveys used for planning navigation routes and for all kinds of underwater mapping. It travels steadily about 3 m down, just beneath the motion of the waves. Its Arctic equivalent, the *Arc*, is designed specifically to work under the polar ice caps.

The *Newtsuit* is a Canadian breakthrough in diving gear. Made of material five times stronger than steel, it allows divers to go to depths of over 230 m and return rapidly without risk of decompression. This suit, weightless in water, has joints that can bend and freely rotate under extreme pressure.

The U.S. National Aeronautical Space Administration is currently interested in adapting the *Newtsuit* for use in outer space.

Canadian industry has also developed expertise in oceanographic and hydrographic equipment and survey capabilities, as well as navigation and positioning equipment and services.