

# Remote system transforms minehunting missions

By Virginia Beaton  
Trident staff

Defence Research and Development Canada (DRDC) will collaborate with the Canadian Navy in the integration of the Remote Minehunting System (RMS) into Navy operations.

"We are transforming the way the mine warfare mission is completed," stated Dave Hopkin, head of the signature section at DRDC Atlantic. "We are really the only nation now that has that capability."

Hopkin described the RMS as being like a mini-submarine. It is comprised of a vehicle called the Dorado, which is approximately 30 feet long and cylindrical. The Dorado has a keel mounted on the underside and attached to that is a second vehicle called the variable depth towfish, or the Aurora, which carries the minehunting sensor suite.

When it operates, the Dorado is approximately two metres below the surface of the water. Hopkin observed "The only thing you see when it operates is the mast sticking up out of the water." Since the vehicle runs on a diesel engine, the mast provides a path for the air down to the diesel "and it also gives you a very stable platform to mount radio antennae. That gives you the communication link back to the control centre. It also provides a location to mount the GPS antenna so you can accurately measure the vehicle position."

This semi-submersible system can detect and classify mines in water as deep as 200 metres. According to Hopkin, with the main part of the body below the wave and surface interactions, "It results in a very stable vehicle and that stability is important when you

are trying to image the sea bottom."

The RMS is a remote controlled system and Hopkin stated the command and control could be on a ship or ashore. There have been operations during which the RMS command and control was ashore "and as long as you're within seven kilometres, which is the maximum distance that the high bandwidth communication link will work at, you can operate the vehicle from shore."

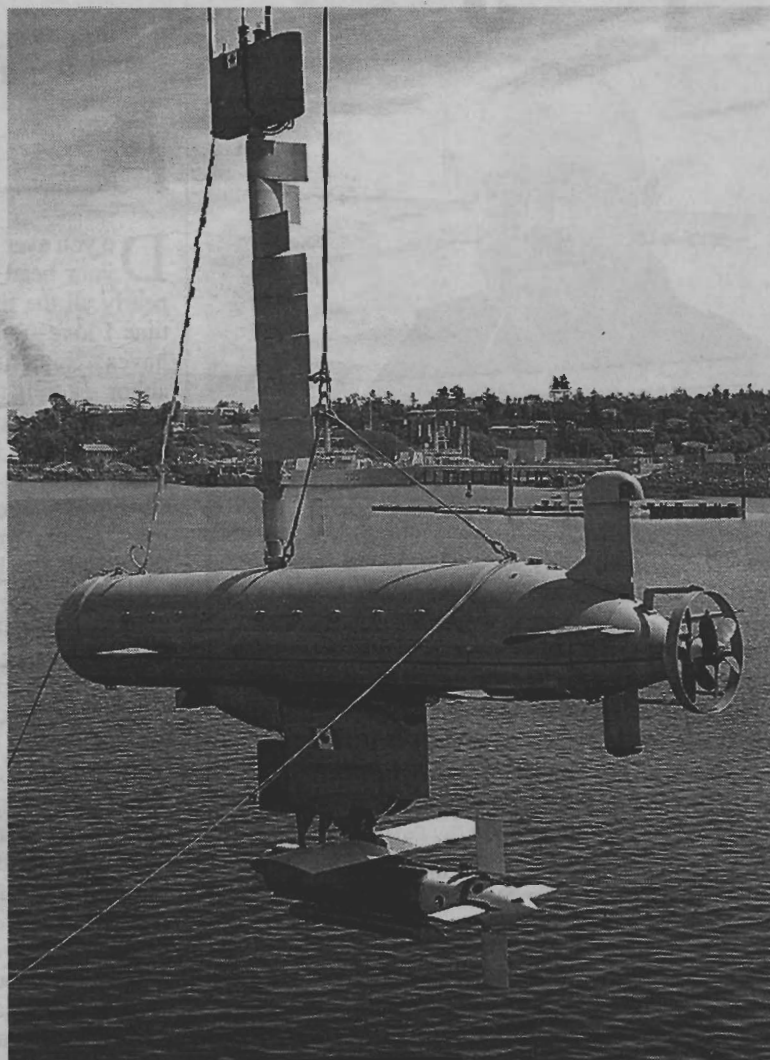
The computers are mounted in a 20-foot isocontainer and Hopkin stated "That's where the operators sit. They look at the displays to analyze the sonar data."

Though the RMS concept was originally designed with the Navy's MCDVs in mind, "It's much more flexible than that," stated Hopkin. The command and control centre could be carried on any platform that has space on deck. Hopkin observed the RMS also is easy to transport; the RMS goes in a 40-foot isocontainer, the command and control in another 20-foot isocontainer and spare parts in a third 20-foot isocontainer and Hopkin noted "With those three containers you can ship it anywhere in the world."

From 2000 to 2003, DRDC sponsored the development of the RMS under the RMS Technology Demonstration Project. Later, DRDC spent two years with directed funding from CMS to improve the reliability of the system "and most importantly, train a newly formed detachment on the West Coast, of six full-time people."

Together with industry, DRDC spent two years training this group on the job "so that as of April 1, 2007, the system was designated as an operational capability."

Canada contributed the RMS to



*The Remote Mine hunting System (RMS) will be integrated into Navy operations.*

MONGOOSE '07, a trial held from May 30 to June 15, 2007 under the auspices of The Technical Cooperation Program (TTCP) TP-13 (Mine Warfare) at the Naval Surface Warfare Centre, Panama City. Hopkin observed "MONGOOSE was a landmark trial in the sense this was the first time the system was used as an

operational capability by the Navy." He stated the focus of the trial was to look at the interoperability of coalition navies using unmanned systems to perform a coalition mine warfare mission.

Hopkin stated DRDC would work with the Navy during the next year and a half to make mine dis-

posal capability part of the overall RMS package. "So that a year from now, they will have that full operational capability to do an unmanned mine warfare mission."

Lt(N) Chad Naefken, Interim Remote Mine Disposal System (IRMDs) Detachment Commander at CFB Esquimalt, stated that the RMS has many advantages. "It provides real-time data," he stated, adding "You gain the advantage of time." He described the RMS as "a product on the leading edge of global skill and technology."

Richard Pederson, Interim Remote Minehunting System plan manager for DRDC Atlantic, noted the collaboration with the Navy has been highly productive. "It's been really good working with the operators of the equipment because we're getting their perspectives. We're taking their ideas and comments and reworking those ideas back into new technology to continuously improve the equipment so it's usable and meets their expectations, to make it better for them as the operators."

A French company named DCNI has been marketing the RMS under the name SeaKeeper for several years, according to Pederson.

He stated "Canadian industry is a critical team member of this project, as well as DRDC and the Canadian Navy... Without industry, we couldn't have done this. They have contributed, in some cases, their own money to this project."

According to Hopkin, the two main companies in question are International Submarine Engineering Ltd. and MacDonald Detweiler and Associates. "This has been a real partnership between the research world, industry and the operators to make it such a success."