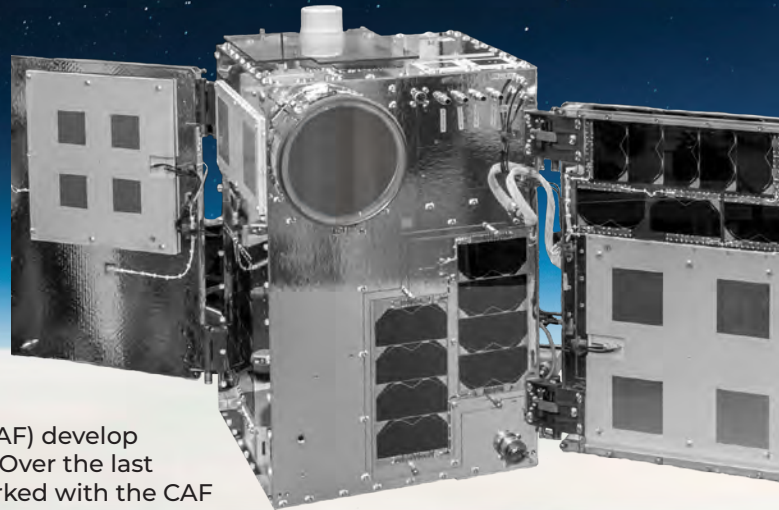


TAKING YOU FURTHER

Defence leaps into space



Modern warfare demands that our Canadian Armed Forces (CAF) develop and adopt technology to deter and defend in Canada's Arctic. Over the last year, Defence Research and Development Canada (DRDC) worked with the CAF and other Defence Team stakeholders to launch the first cluster of satellites in will increase our ability to detect, geolocate and characterize ships and aircraft in Canadian satellites, named Gray Jay Pathfinder, are the latest step in developing new space-based intelligence, surveillance and reconnaissance (ISR) technology.

a project that the Arctic. These three small

The Gray Jay constellation of three microsattellites now orbits 520 kilometres above Earth. It is testing the capability of small satellites to collect and share data in real time.

The data collected will demonstrate how space-based ISR can support personnel on the ground and in the air. For the Royal Canadian Air Force, and the rest of the CAF, this means faster access to imagery, better awareness in the Arctic, and stronger coordination during missions.

Ship signature system gives crews a clearer picture of their own stealth

With the longest coastline in the world, it is essential that the Canadian Navy be equipped with superior underwater capabilities to protect Canada's security and sovereignty. While DND works to procure a new submarine fleet, DRDC's research is underway to bridge the capability gap. DRDC is developing a next-generation ship signature management system designed to enhance naval stealth and survivability. Understanding a ship's own signature, what it sounds and looks like to an adversary, matters more than ever. The prototype successfully demonstrated how naval crews can measure their own ship's acoustic, magnetic and electric signatures in real time during operations.

Trials aboard HMCS Charlottetown provided proof that the concept was valid, and allied navies have taken note. The system is now being refined to support the river-class Destroyer project, with plans to add infrared and radar cross-section tracking using drones.

Modern detection systems are sharper than ever, making it harder for naval vessels to stay unnoticed by adversaries. Until now, ships could only measure their signatures during controlled trials ashore. This new system brings that capability onboard, letting crews monitor and adjust their ship's acoustic, magnetic and electric profiles in real time while deployed. This gives them greater awareness and the ability to manage how visible they are.



New combat helmet puts brain protection on the front line

Working together, CANSOFCOM and DRDC engineers developed a combat helmet that goes beyond stopping bullets. Designed to protect Canadian Special Operations Forces from blast-related brain injuries, this innovation was recently featured on Global News: *The West Block*, highlighting Canada's leadership in military brain protection technology.

These new helmets tackle a problem operators know too well: traditional helmets are designed to protect from bullets and fragments, but not from the repeated blast pressure that over time can lead to mild traumatic brain injury. This new helmet is built to absorb and deflect blast pressure shock waves, an important improvement over older models.

Drawing from sports science, medical research and CAF medical expertise, the project went from advanced testing into practical design. This has resulted in a helmet built for the demands of elite operators which is lighter, smarter and tougher where it counts.

