



L-3 WESCAM and L-3 Communication Systems-West

Joining forces to supply critical systems for the Canadian Forces

BY JERRY LANGTON

Surveillance systems for Griffons operating in Afghanistan



Vice President, Government Sales and Business Development

A half a generation ago, when Paul Jennison joined L-3 Wescam back in 1993, he said the sensor of choice for most aircraft was radar, and although available, electro-optics and infra red were not prevalent like they are today. Not that long after, James Diefenderfer was a soldier thinking about ways to get better situational awareness to other soldiers in the field.

Now, Jennison is still at Burlington, Ontario-based L-3 Wescam. But the company is now an important international defence contractor, supplying the most sophisticated imaging equipment in the world. And, yes, they are still mounting them on helicopters – among many other platforms. And, Diefenderfer is now Director of Canadian business for Salt Lake City, Utah-based

L-3 Communication Systems-West, which works closely with L-3 Wescam and other divisions within the L-3 family of companies to bring better situational awareness through video to soldiers on the ground. “We do lots of work with our friends at CSW,” said Jennison, using the common nickname for L-3 Communication Systems-West.

While L-3 Wescam supplies imaging equipment to many different organizations around the world for a huge variety of roles and applications, the important ones from

a Canadian perspective right now are a pair of Electro-Optical/Infrared (EO/IR) imaging turrets for Intelligence, Surveillance and Reconnaissance (ISR) tasks. L-3 Wescam is supplying MX-15 units as part of the INGRESS program for CH-146 Griffon helicopters and MX-20 units for the CP-140 Aurora fixed-wing maritime patrol aircraft.

INGRESS came out of the necessities of Canadian helicopter operations in Afghanistan. Faced with a lack of suitable transport helicopters, the Canadian



Diefenderfer is Director, Canadian Business at L-3 Comms West

government in April 2008 purchased six CH-47D Chinook helicopters from U.S. army stocks in-theatre (interestingly, Canada operated Chinooks from 1974-91 before selling them to the Netherlands, which later operated them in Afghanistan). But, the huge, lumbering Chinooks need major ISR support, and that's where INGRESS comes in.

"The Canadian Forces needed the Griffon to have increased capabilities in Afghanistan very quickly," Jennison recently told CDR. "So we applied our expertise to INGRESS." An acronym for the Interoperable Griffon Reconnaissance Escort Surveillance System, the original description of INGRESS called for the installation of surveillance/ targeting turrets and video datalinks in the CH-146 Griffons, "along with equipment that will allow for the operation of the sensor for Intelligence, Surveillance and Reconnaissance (ISR) and Escort tasks."

EYES ABOVE THE BATTLEFIELD

That mandate gives the Griffon the responsibility of detecting and – when also equipped with a General Electric M134D minigun – fighting off threats to the Chinooks. "The type of conflict and the geography of Afghanistan and Iraq call for more and better ISR imaging," said Jennison. "It's important to have eyes above the battlefield – it's kind of like the American Civil War when they would gain a strategic advantage by sending a man with a telescope up in a hot-air balloon to survey the battlefield."

L-3 Wescam won a \$25.9 million contract in July 2008 to supply 19 MX-15 True HD EO/IR sensors, imaging turrets and data links for the Griffons. And the MX-15 is truly HD, offering full high-definition video – 1080 lines of vertical resolution, while most other HD systems are still at 720 – in real-time. L-3 Wescam is providing two different mission configurations for the Griffon's two roles. One configuration for escort will provide a cockpit display and moving maps to enhance situational awareness for the crew and a data recorder, while those for surveillance operations will have extra situational awareness capabilities with multiple displays, another moving map and a Comms Systems West TCDL datalink housed in a stand-alone workstation console. They provide imagery and geospatial data in day, night and many different types of environments – including the difficult urban and mountainous terrain in Afghanistan. And, as interoperability had become so important with multi-national forces, the MX-15 is totally compliant to the very demanding NATO ISR interoperability architecture standards.

DATALINK FOR CANADA

Of course, none of this would be possible if it wasn't for wireless communication. And that's where L-3 Communication Systems-West comes in. It makes the essential datalinks that provide high-bandwidth, real-time communications between various ISR devices and the operators. "We have a great deal of experience with similar systems in hundreds of rotary-wing and fixed-wing applications; we have off-the-shelf solutions employed and proven by a great number of users and this includes the INGRESS Program" said Diefenderfer.

Aside from INGRESS, L-3 Wescam has a number of other contracts with the Canadian military, but the best known was to supply MX-20 ISR systems for the CP-140. "The MX-20 on the Aurora is used for all kinds of ISR," said Wescam's Jennison. "As our equipment has become more sophisticated and more capable by going digital and multispectral, we have added more lasers and better cameras."

The project was a great learning experience for the Canadian military one that was guided by L-3 Communication Systems-West. "Datalinks are fairly new to the Canadian Forces," said Diefenderfer. "It started when the CP-140 organization came to us years ago on a 'try-and-buy' basis." And despite the enormous amount of data flowing through the CP-140's many sensors, CSW had little problem finding an appropriate solution very quickly. "Interoperability is very important these days," said Diefenderfer. "So the Canadians really wanted the same datalink solution used by P-3 fleets around the world." It's important to keep in mind that Canada's CP-140 Aurora maritime patrol aircraft is virtually identical to the American P-3 Orion.

But running the data on a complex information-gathering behemoth like a CP-140 is a remarkably different task for a datalink than, say, transmitting video from a ScanEagle UAV to a soldier on the ground. "The smallest of our datalinks that Canada has would be for the ScanEagle and it's about the size of two BlackBerries," said Diefenderfer, pointing out that CSW has datalinks half that size in service with other countries.

TECHNOLOGY USED AT WINTER OLYMPICS

"The airborne datalinks for something like a CP-140 Aurora with a dedicated crew



Eyes in the sky



ROVER from L-3 Comms West

inside an aircraft are far more complex than the handheld Remotely Operated Video Enhanced Receiver or ROVER units used by warfighters on the ground to receive the video" said Diefenderfer. "They don't want to have to stop and think about how to operate their system; while the guys in the back of the CP-140, that's their primary task."

And the kinds of devices that L-3 Wescam and L-3 Communication Systems-West offer are used all over the world and in various types of operations. "They were used at the Winter Olympics in Vancouver this year providing persistent surveillance in an overview capability to keep an eye out for anyone who might want to cause trouble," said Jennison. "And they are likely to be used again in London for the 2012 Games." And there are many other uses for the equipment other than traditional military functions. "It's used in places like the Seychelles Islands to look for pirates, and they even go up and down the English Channel looking for illegal activity like people smuggling," Jennison said. He also noted that the equipment could have a role in Arctic Sovereignty operations.

Because this technology has so many potential applications, Jennison says the number of countries that could use it is limitless.



INGRESS Console

MX-15 Family



MX-15Di

MX-10



L-3 WESCAM supplies EO/IR equipment for the CP 140 Aurora

WESCAM's MX-Series: Turreted EO/IR/Laser Imaging Systems

"Any country that has a border – and that's all of them – can use it; they don't have to be in an armed conflict," he said. And since many of the organizations – border patrols, search and rescue – that would like to use L-3 Wescam's products don't have defence department-sized budgets, they are available as rental units.

CAPABILITIES FOR JUSTAS PROGRAM

Of course, training is a major issue with any sophisticated system, and L-3 Wescam provides it. Luckily, all of their ISR products are intuitive and easy to get started on. "It's pretty intuitive, and the operator can pick up and use it from day one," said Jennison. "But to get the best out of it really requires someone with more training to use it properly." To keep crews up to date, L-3 Wescam trains a small cadre of 10-15 personnel to operate the equipment and also prepares them to teach other personnel. Then the original cadre is invited back for periodic refresher courses.

Of course, the new technology was greeted with praise in Afghanistan. "Most of the regular forces were not used to real-time video, so when we delivered it, they were ecstatic," Diefenderfer said.

Because of L-3 Wescam's enviable spot as

the market leader in the design and manufacture of a product that is so widely used and finding increasingly more roles, business is booming. "We've experienced 25 percent compounded growth over each of the last four years," said Jennison. "We currently employ about 500 people in the Toronto area – divided between Burlington and Don Mills – and are looking to hire another 100 or so in the next year."

And because the products from both companies have proven to be so desirable, business could be getting even better. "We've been selected for the Boeing Medium-Heavy Lift Helicopter (MHLH) program, which was announced last year", said Jennison.

L-3 TECHNOLOGY IN MANY ISR PLATFORMS

And that's just Canada. "Obviously, our big market is the United States – about 65 to 75 percent of our products go south of the border for such diverse organizations as the US Coast Guard and US Customs and Border Patrol," said Jennison. "But we also have great relationships with the U.K., North Africa and other places, and things are moving along well in the Middle East." A look at the MX-15's marketing literature shows such users as the Spanish Coast guard, the Latvian Army

and the U.S. Air force, but that doesn't tell the whole story. "We have many customers, but we can't publish all of their identities," Jennison said. Diefenderfer estimated that 90 percent of all flying ISR platforms have at least some L-3 technology in them.

The world has changed a great deal since Jennison joined L-3 Wescam in 1993. The conflicts in Afghanistan and Iraq, along with a need by other organizations for sophisticated ISR technology, has required L-3 Wescam to get not only bigger, but better and faster at what it does. "I'd say our products are ten times better than they were just a few years ago," he said. "And we have gotten quicker

at meeting the needs of clients in places like Afghanistan because we know they need our products fast – with the Griffon, we went from contract to operation in just 14 months."

And it's a good feeling to be at the top of your trade. "All of our products go to deployed forces, and they have told us very frankly that the datalinks we provide saves lives," said Diefenderfer. "They say it's the No. one preventive aid; and that's important when you're the one driving a truck and someone might otherwise have tried to plant a bomb in your way.", said Jennison.

Of course, that's also very important to Diefenderfer and L-3 Communication Systems-West. He admits that while it's nice that business is good, he stresses that the real reward comes from helping soldiers in the field. "We're looking forward to getting more situational awareness to the people on the ground; to enable the forces to do what they were sent there to do," he said. "And I know that the work we have done has really paid off for the Canadian Forces, and they are looking to L-3 Communication Systems-West more and more." ■

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