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Meet the makers of the camera that spied killer Justin Bourque crouched behind a tree in the dead of night



York Regional Police have confiscated \$3-million worth of marijuana plants simply by hovering over suspicious areas at night and letting L-3 Wescam's electro-optic/infrared camera mounted on the underbelly of the chopper detect "thermal anomalies" such as extra-hot vents on the roofs of houses.
Tyler Anderson/ National Post

by Suzanne Wintrob, Special to Financial Post

Last June, residents of a Moncton, N.B., trailer park were stunned to see one of their neighbours brandishing firearms and dressed in camouflage. Police responded to frantic 911 calls and the gunman opened fire, killing three RCMP officers and wounding two. He then fled into the woods. The city went into partial lockdown and a massive 30-hour manhunt ensued.

Police initially attempted to track the suspect by foot. Knowing it was a risky mission, Transport Canada dispatched an airplane to help with the search. The plane, used by the National Aerial Surveillance Program, normally patrols Canada's coastline to monitor shipping lanes and detect oil spills. But that night police hoped its powerful infrared surveillance camera would find the armed and dangerous suspect.

Working on a tip, the plane took off for a certain area and soon the sensitive heat-detecting camera spotted the shape of a man crouching behind a tree. The crew alerted ground troops, who quickly swooped in and caught their man, Justin Bourque. Last week, the 24-year-old received five life sentences in prison — the harshest penalty in Canada since the country's last executions in 1962.

This type of drama isn't unusual for L-3 Wescam, makers of the camera that helped calm a panicked city on that frightening spring day. The company has been the eyes of crews in the air and on the ground and sea for more than four decades.

Back in 1957, engineers from Westinghouse Canada Inc. secured funding from the Department of National Defence to develop stabilizing camera systems for moving vehicles. By the 1970s it had morphed into Wescam and went public on the TSX in the 1990s. Filmmakers and television broadcasters pounced, mounting the cameras on helicopters to shoot airborne movie scenes, boost traffic reports and chase news. One Los Angeles TV station used a Wescam camera to broadcast the infamous 1994 O.J. Simpson car chase.

Two Academy Awards and an acquisition later, L-3 Wescam now employs 900 workers in Burlington, Ont., and Toronto. Though the entertainment industry still beckons, today's customers do dangerous work: police forces tracking on-the-lam criminals and searching for missing people; coast guards operating search-and-rescue and anti-piracy missions; militaries surveilling people and borders during government summits or in combat zones. The Canadian army uses the cameras on choppers and ships, as do police forces in the United Kingdom and Australia and marine units in Sweden, Australia and Norway.

What entices them is electro-optic/infrared (EO/IR) technology that can be swapped out depending on the time of day.

“Television camera runs out of steam at night because it gets too dark,” explains Paul Jennison, L-3 Wescam’s vice-president of government sales and business development. “That’s where the infrared technology kicks in. It operates on a different wave band. The moving picture looks like a black-and-white image but it’s really just sensing the heat from objects on the ground and the ground itself. So a police mission would use the full-motion video cameras during the day and perhaps the infrared cameras at night to actually perform their missions.”

York Regional Police have confiscated \$3-million worth of marijuana plants simply by hovering over suspicious areas at night and letting the camera mounted on the underbelly of the chopper do its thing. Tactical flight officer Christopher Duffield is the guy at the controls, using the camera’s IR technology to search for what he calls “thermal anomalies” such as extra-hot vents on the roofs of houses.

“IR measures the heat and provides us with an image that we can figure out whether it’s a person or a vehicle or a tree or an animal,” he says.

The heat-seeking technology is so sensitive that Mr. Duffield once spied a field mouse from 1,000 feet in the air. He can read car licence plates from 800 feet up to deter street racing. He can also track vehicles for miles, recently leading to the arrest of two break-and-enter suspects.

Earlier this year, the crew located a lost six-year-old boy with autism within minutes of his mother’s distraught call because the camera zoomed in on the boy’s hair colour and clothing description and broadcast it to officers on the ground.

“When our crew is dispatched to look for a missing vulnerable person, they become pit bulls,” says Sergeant Gary Phillips, the force’s flight operations supervisor. “They’re not going to leave that scene until they’ve utilized every resource in that aircraft using every piece of technology to try and locate the people.” In this instance the camera solved the case in under six minutes. “That’s the technology that’s helping us.”

L-3 Wescam's EO/IR cameras could be fighting ISIS, too. "We know from our service records that the equipment is being used," says Mr. Jennison, noting that Canadian, U.S. and coalition forces in Iraq and Afghanistan have been using it for more than a decade. He's now trying to get the cameras on tanks and other ground vehicles to assist commanders on the battlefield or when moving through towns.

Not surprisingly, engineering and technology students from McMaster University and Mohawk College have taken notice and are clamouring for co-op spots.

"The cool factor certainly weighs in among students," says Jeff Olligner, McMaster's manager of engineering co-op and career services. "It does for me!"