



The Sky's the Limit @ PAL

Photo Courtesy Provincial Aerospace Ltd.

by Andrew Safer

Having seen its staff grow by 38 percent over the last two and a half years—from 650 to 900—Provincial Aerospace Limited (PAL) is preparing to deliver on a \$370 million contract with the United Arab Emirates: modifications of two maritime patrol aircraft that will patrol UAE territorial waters, monitor pollution, and support search and rescue activities. PAL will deliver the two customized Bombardier Dash-8 Q300 aircraft in the first quarter of 2012. Seated in his St. John's, Newfoundland office, PAL Vice President Derek Scott said with pride, “These will be the most sophisticated Dash 8's on the planet.”

The UAE government purchased the aircraft and, in February 2009, turned it over to PAL who then designed the refit, selected the technologies that would best meet the requirements, stripped the aircraft down to the metal, installed and tested the systems, and trained the UAE government's pilots and sensor operators.

Key components have been provided by a global cast of defense suppliers including Thales (France), FLIR (US), Saab Aviatronics, (South Africa), Elettronica (Italy), Rhode and Schwarz (Germany), and Honeywell (UK).

PAL opened its doors in 1972 to offer flight training and charter operations in St. John's, and in 1980, began offering passenger services in Newfoundland which later expanded throughout eastern Canada. Meanwhile, in 1979, the Hibernia oil discovery on the Grand Banks of Newfoundland and Labrador highlighted the threat icebergs posed to the development of this resource. In 1986, PAL met this challenge by installing an X-band radar on a civilian aircraft and, after demonstrating the ability to detect icebergs, landed their first surveillance contract with the federal government (Department of Fisheries and Oceans). In 1996 the company began modifying aircraft to meet client requirements such as

L to R: Derek Scott, Vice President, Airborne Surveillance and Jake Trainor, Vice President, Maintenance and Modifications Division, Provincial Aerospace Ltd.

range, speed, and payload, for maritime patrol, and has done so for many governments including the Netherlands, Malaysia, Trinidad, Barbados, Mexico, and the UAE. PAL also provides air reconnaissance flights using their own aircraft for clients such as the Netherlands Antilles Coast Guard and the Government of Canada. They also provide training to the Colombian National Police, Government of Trinidad and most recently, the Government of the UAE.

When modifying an aircraft, PAL installs a variety of equipment including: 360-degree maritime radars, gyro-stabilized forward-looking infrared, nighttime photography, digital communication, airborne data acquisition and management, anti-submarine acoustic, and signals intelligence systems.

Focused on assisting governments in fulfilling their civilian maritime requirements, PAL has had success executing on its business model. "It's not cost-effective to have military assets looking at fishing vessels and ships pumping their bilges," explained Scott.

Newfoundland's harsh marine environment has been the key factor in PAL's rise to global stature. "This location has forced us to be innovative in our technology development," Scott said. "It's our playground for developing capabilities in all of our operations: target detection, ice reconnaissance mapping, and satellite communications." After acing iceberg detection, Scott and his colleagues soon realized they had a capability that could be applied to fisheries surveillance, pollution monitoring (oil spills and the discharge of ships' bilges), search and rescue, and defense.

Whereas PAL purchases sensors and other electronics off the shelf, they use their proprietary Asynchronous Data Acquisition and Management System software for in-flight mission management and data collection (which PAL began developing in 1986), real-time mapping, and report generation.

The UAE contract has been the main growth driver over the last three years, but PAL's ice management business had also been increasing. Since the late 1970s, the company has conducted ice reconnaissance missions and ice management operations on the Grand Banks for Hibernia Management and Development Corporation, Petro-Canada/Suncor, ExxonMobil Canada, Husky Energy, Norsk Hydro, and Chevron Canada Ltd. In 2010, PAL expanded its ice management operations to western Greenland, managing icebergs for Cairn Energy's drilling program in the Baffin Basin—the first wells drilled in the Greenland Arctic in the



Photo credit: Andrew Safer

last 10 years. In 2011, PAL continued this service for Cairn's ongoing drilling program as well as the operations of Shell Norway, also off the coast of western Greenland.

"We have to know where the ice is at all times," said Scott. "These are floating chunks of concrete the size of this room that can do serious damage to a platform offshore if they go undetected."

PAL's ice and weather observers and weather forecaster work together to identify iceberg threats and, when deemed necessary, the berg's trajectory is redirected by means of towing, prop washing, or the use of a water cannon. The company is currently in discussions to provide ice management services for the Shtokman project in the Russian Arctic. "Over the next 20 years, there are many opportunities when we look North," Scott noted.

PAL's third growth center has been in the area of training, having added 20 employees in this new business unit over the last two and a half years. Most are former military personnel who specialized in training in their careers.

In 2006, the company became the first to launch a commercial flight of an unmanned aerial vehicle (UAV) in Canadian airspace. Looking ahead, Scott sees PAL utilizing UAVs to conduct surveillance in the vast reaches of Canada's North. "There is a need to express Canadian sovereignty over that territory," he said. "Canada needs to increase its awareness of who is out there, where they're coming from, if they are a threat to the environment, and if they are breaking the law." For the past four years, the company has been engaged in the RAVEN AUV research and development project in conjunction with Memorial University. "I see all kinds of benefits coming out of that for PAL," Scott observed.



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Referring to PAL’s \$750 million in booked business over the next five years, Scott is looking to maintain the current level of employment in 2012 and is anticipating a further expansion in 2013 and 2014.