

Controlling their destiny

After more than 15 years, NAV CANADA continues to safely monitor our skies

Written by Rob Seaman

For just over 15 years, NAV CANADA has been safely navigating aircraft in Canadian airspace – and it's not exactly an easy task.



The tower at Toronto's Pearson International Airport is part of NAV CANADA's \$1.7-billion infrastructure upgrade.

Photos: NAV CANADA

As a private-sector, non-share capital corporation, NAV CANADA owns and operates Canada's civil air navigation service (ANS). Best known for its roles in air-traffic control, flight information, weather briefings, aeronautical information, airport advisory services, and electronic aids to navigation – as well as, of course, assigning and collecting fees to pay for it all – NAV CANADA plays a huge role in one of the largest nationally assigned airspaces in the world.

NAV CANADA's ANS facilities include seven area control centres and 41 control towers. The "company," as they liked to be called, also operates 58 flight service stations and eight flight information centres. These facilities are supported by a network of more than 1,000 ground-based aids to navigation located across the country. In addition to the head office in Ottawa, NAV CANADA has a technical systems centre, simulation centre and a national operations centre also in Ottawa, as well as its NAV CENTRE, a conference facility located in Cornwall, Ont.

One fact lost on many Canadians is that NAV CANADA is a private-sector company and not an offshoot of the federal government. However, the company's safety performance

is regulated by Transport Canada, just as TC regulates the safety of individual airlines.

The company is governed by a board of directors – 10 appointees from the four founding members of NAV CANADA as follows:

- Air carriers (four);
- General and business aviation (one);
- Representatives of the federal government (three);
- Bargaining agents (two);
- Independent directors, appointed by the board, with no ties to stakeholders;
- The president and chief executive officer, John Crichton, is also a director.

NAV CANADA is financed through publicly traded debt that owns and operates Canada's civil air navigation service ANS. The system was purchased from the federal government on Nov. 1, 1996, for \$1.5 billion.



**NAV CANADA's Multilateration antenna and sensor at Montreal's Pierre Elliot Trudeau Airport.
PHOTO: NAV CANADA**

A look back

When first acquired, NAV CANADA inherited an organization of 6,300 employees with six regional administrative offices and duplication of administrative functions. It was a large system contract that was over budget and behind schedule, and much of the ANS infrastructure was obsolete.

“We had customers who were dissatisfied with the service they were getting, and with high expectations,” says Crichton. “We had a regulator that was watching us closely to

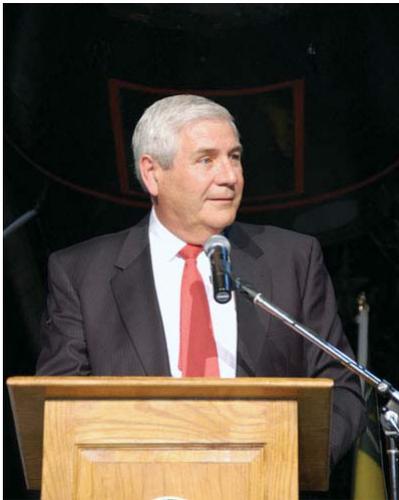
ensure we lived up to our commitment to make the safe system we inherited even safer.”

After 15 years, Crichton says the system is indeed safer – traffic has grown but IFR-to-IFR operating irregularities have come down. At the same time, the company is more efficient, with 4,800 employees, much less administrative overhead and the bulk of its investment directed towards a multitude of service-enhancing technologies and procedures.

Crichton notes that \$1.7 billion has been invested since 1996, and technology is being sold around the world to other Air Navigation Service Providers (ANSP). That large “system contract” has been delivered and deployed across the country. “With regard to customer service, this is the one area with the most visible difference – the company has developed a strong customer service culture, and we are determined to maintain this edge as we set our course for 2020,” Crichton says.

The commitment to enhancement

NAV CANADA has made significant inroads in Canadian aviation, but Crichton is well aware much more needs to be done. A strong commitment to safety remains at the top of his wish list. “At this 15-year mark, we look back with pride on all that has been achieved, yet we also look ahead knowing there is more to be done, confident in our ability to build on the progress we have made,” he says. “We are especially proud of our employees’ record of achievement. It is through their skill, dedication and determination that the private-sector model adopted for the company in 1996 has stood the test of time.”



John Crichton, NAV CANADA’s president and CEO, speaking at his induction into the Canadian Aviation Hall of Fame. Crichton notes the continuing commitment to the highest safety standards possible as the company’s most critical mission. PHOTO: NAV CANADA

Key achievements include the aforementioned and all-important enhanced safety, which defines the core of their business; a comprehensive \$1.7-billion modernization program; substantially improved customer service; and success in managing an efficient operation with enhanced productivity and low services charges.

“With lower overhead and a sharper focus on our customers, we’ve been able to speed up decision making and empower employees to help solve business problems,” Crichton says. “Our customers have recognized these achievements with three International Air Transport Association (IATA) Eagle Awards over that 15-year period – two of them in the last two years, 2010 and 2011.”

NAV CANADA’s success is built on a solid relationship with its customers. These clients appoint five members to the NAV CANADA board, through the National Airlines Council of Canada (four directors), and the Canadian Business Aircraft Association (one director). So, customers are involved in all processes. NAV CANADA also works with clients daily, whether through organizations such as the NACC or directly with airline staff across the country, or in the many consultation forums they facilitate, including the Air Transport Operations Consultation Committee (ATOCC), the Air Navigation Services National Advisory Committee (ANSNAC), or the more recently established NAV CANADA Area Operations Consultation forums.

A significant change over the years has been the improved speed of response, and ability to stay ahead of the innovation curve, especially in areas that affect customer directly. Says Crichton: “Customers demand more efficient flight operations, and we are delivering, although there will always be new technologies and procedures to develop and implement, as we push the envelope together. Customers also expect we will invest in our core operation and avoid unnecessary overhead, and our track record in this area is sound. Our service charges have increased by only five per cent since 1999 – 24 percentage points less than inflation.”



Controllers in the operations room at the Winnipeg ACC using CAATS to monitor the skies. PHOTO: NAV CANADA

Applying the overall strategy

Several examples illustrate how NAV CANADA has interacted/integrated with the industry and brought such advances into everyday application. For example, the \$1.7-billion modernization program has been an important factor behind improvements in safety, with new tools such as conflict alert and minimum safe altitude warning, in addition to airspace warning features.

As well, NAV CANADA is on its way to doubling the amount of airspace covered by air traffic surveillance. They have accomplished this by expanding the use of radar in Canada's north, and by pioneering the deployment of a new technology known as Automatic Dependent Surveillance – Broadcast (ADS-B), also in Canada's north. Customer consultation was a key factor in the decision to go with ADS-B.

“The value of expanded surveillance, for our customers, cannot be overstated,” says Crichton. “Today, in the airspace over Hudson Bay – which was formerly restricted to inefficient procedural separation based on H/F radio communications – more than 800 aircraft are now ADS-B equipped and are taking advantage of the optimum altitudes and routes this makes available to them. That's because ADS-B surveillance, combined with direct controller-to-pilot communications, allows for radar-like separation and thus a significant expansion of available airspace for equipped aircraft.”



Controllers using GAATS+ at Gander Oceanic Centre in Gander, N.L. With GAATS+, the Gander controllers now have the world's most advanced oceanic air traffic system. PHOTO: NAV CANADA

In another region of significance – the busy airspace over the North Atlantic managed by controllers in the Gander Oceanic Centre – NAV CANADA has recently completed the second major upgrade in the last decade to its Oceanic Air Traffic Control System, now known as GAATS+. There are well over 1,000 flights per day in this airspace, to and from Europe. With GAATS+, the Gander controllers now have the world's most advanced oceanic air traffic system, and will also soon be able to offer a significant enhancement in customer service as they bring on stream the ADS-B surveillance extending east of Greenland, integrated with the GAATS+ operation.

“One of our key areas of focus has been to work collaboratively with customers to take advantage of new technologies and procedures to improve flight efficiency and reduce

customer fuel burn,” says Crichton. “We measure the impact of these initiatives – and we plan for future gains through a program called Collaborative Initiatives for Emission Reductions, or CIFER. We estimate that by 2016, cumulative customer fuel savings resulting from all our efficiency initiatives combined will total \$4.3 billion dollars. We also forecast that corresponding reductions in greenhouse gas emissions will equal about 13.4 million metric tons.”

Some key CIFER initiatives include: the introduction of surveillance and enhanced communications in Canada’s North; the rollout of expanded surveillance, communications and other technologies in the North Atlantic Operation; and the continued expansion of polar routes, cutting flight times and fuel burn for flights to and from the Asia-Pacific region.

On the horizon is the deployment of new features in NAV CANADA’s advanced, integrated flight data management system known as the Canadian Automated Air Traffic System (CAATS). New CAATS features such as Medium-Term Conflict Detection will help to enhance efficiency and safety. NAV CANADA is also on the verge of deploying datalink in domestic airspace.

Working to take advantage of the fuel-saving capabilities of Performance Based Navigation (PBN) is another important initiative. NAV CANADA continues to work with customers and other stakeholders, to focus on the design and implementation of more efficient approaches across the country. A great deal of this work involves collaboration with customers, employees and TC on its PBN strategy.

“We are actively engaging our customers when we design and implement more efficient, PBN-based procedures through projects such as the Toronto-Ottawa-Montreal airspace review, for which we have just completed extensive community consultations, aiming for a 2012 implementation,” reports Crichton. “And we are working closely with customers and other stakeholders on the development of our RNP AR [Required Navigation Performance – Authorization Required] roadmap.”

The international perspective

On the international front, NAV CANADA works in support of TC in many International Civil Aviation Organization (ICAO) activities. Company personnel participate in ICAO panels and study groups to provide expertise and leadership in the development of standards and recommended practices, documents and guidance material. Areas of involvement include Performance Based Navigation, unmanned aerial systems and North Atlantic operations.

They also deal directly with international customers who fly through Canadian airspace. One prime example is their productive relationship with the IATA and its member airlines. In addition, they have extensive operational dealings with other Air Navigation Service Providers such as the Federal Aviation Administration (FAA), NATS, NAV Portugal, ISAVIA and others with whom they exchange traffic.

“Our focus in all of these cases is to be a constructive voice in ensuring safe, efficient and cost-effective air navigation services worldwide” says Crichton. NAV CANADA is also an active member of the Civil Air Navigation Services Organization (CANSO).

Building for the future

With several impressive accomplishments in place after its first 15 years, NAV CANADA is looking forward to meeting the challenges of the future. The most important of these? Staying focused on the core safety and service mandate, especially as the aviation industry continues to face economic headwinds. And that means working to address demands to make the industry more efficient and environmentally friendly. Innovation in safety, service and efficiency, with all stakeholders – TC, airports, airlines, air navigation service providers, suppliers to the industry – is imperative.

Crichton is proud of the NAV CANADA team and is quick to highlight them for their contributions to the company’s success. “They are world leaders and they should be proud of what we have achieved,” he says. “I would also like to thank our customers, whose unwavering focus on safety, efficiency and innovation has been so important to our ability at NAV CANADA to set the right course and evolve along with them.”

With its own commitment to safety and innovation, it’s clear Canadians can count on NAV CANADA to deliver safe and efficient air traffic services in the years to come – no matter what the future might bring. Congratulations on more than 15 years of excellence in navigation.