



NOTES FOR AN ADDRESS

by

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Thank you – Tim – for that kind introduction.

And thanks to you and your team for the invitation to speak here today.

It's a pleasure to talk aviation safety with such a dedicated group of industry professionals.

After 85 years representing airline pilots around the world, it's clear – that ALPA is more relevant – and important – than ever.

Tim, I would also like to thank you, and ALPA, for your ongoing support of the space-based ADS-B initiative – with an emphasis on its safety and operational benefits – which I will touch on later.

ALPA's communications remind us that the airline industry has made enormous strides in operational safety during the first decade of the 21st century.

The "safety dividend" – which we have seen from all of our investments in people and technology – is truly impressive.

But, there's more to do and ALPA – correctly – emphasizes an approach to safety that is "data-driven, rather than headline-driven".

Today, I want to emulate that approach, and try to leave you not with headlines, but with some useful insights on the challenges and opportunities we have addressed – and those which we will all face – over the coming years.

At NAV CANADA, the year 2016 marks two milestones – one for the Company, and one for me.

On November 1, 2016, we will celebrate our 20th Anniversary as the owner and operator of Canada's civil Air Navigation System or ANS.

Not long after that, I will complete my first year as the Company's President and CEO.

A top priority during the year has been renewing our external connections – and I can say that our connection with ALPA is one of the strongest.

At the working level – there is no relationship more important than the collaboration between an air traffic controller or flight service specialist – and the pilot of an aircraft.

This point is well illustrated by the actions of one of our own Air Traffic Controllers – Anne Breen – who works out of the Vancouver Area Control Centre...Anne is also a pilot.

In December of 2014 – she was providing control service to a local commercial flight from Nanaimo to Abbotsford, British Columbia.

Flying in poor weather conditions, the pilot reported an engine failure, and requested a return to Nanaimo...The cloud ceiling was low, and he required radar vectors for an ILS approach.

At that point, Anne realized the pilot was having great difficulty maintaining the assigned altitude and heading – and was flying toward higher terrain.

In her composed and professional manner, she provided timely instructions that allowed him to steer the aircraft away from the hills, and out of danger.

I share this story because it exemplifies why we are all here today.

No matter where we work in the industry – we all care passionately about air safety.

It's not just our business – it's what we live and breathe every day.

With that in mind, I'd like to share with you some background to the NAV CANADA story.

Then I'll touch on some of our current safety and service initiatives.

Finally, I'll look forward to new technology – especially space-based ADS-B – which promises to revolutionize global air traffic surveillance – and safety.

So first, some basic NAV CANADA facts.

We are the world's second-largest Air Navigation System, or ANS, by traffic volume. I don't need to tell you which ANSP handles the most traffic.

But we're just fine with second position.

After all, we are responsible for 18 million square kilometres of airspace – from Vancouver Island in the west, to oceanic airspace in the North Atlantic, and from Point Pelee in southern Ontario, all the way to the North Pole.

Much of this airspace is at the crossroads of global aviation, with flight paths linking North America, Europe and the Asia-Pacific Region.

Our services include air traffic control, flight information, weather briefings, aeronautical information management, and electronic aids to navigation.

We operate:

- 7 area control centres,
- 41 control towers,
- over 60 flight service stations and flight information centres,
- and 51 Community Aerodrome Radio Stations in Canada's North...
- all supported by 4,700 employees.

One of the benefits of managing our vast airspace is that it challenges us to do better – to keep striving to conquer distance, geography and climate.

For example, the Controllers and Flight Service Specialists in Gander, Newfoundland, have an enviable record of providing first-rate safety and service to customers who fly the North Atlantic – the busiest and most dense oceanic airspace in the world.

Not surprisingly, the oceanic air traffic system they operate is one of the most advanced of its kind in the world.

As for Canada's North, the growth in polar routes over the past 15 years has been significant – going from about 1,000 flights in the Year 2000 – to over 14,000 in the Year 2015.

Even though we are marking our 20th Anniversary, the history of NAV CANADA began several years before the actual transfer of the ANS from the Canadian government to the Company in 1996.

It began with the realization that the old system was failing to keep pace with the demands of modern commercial aviation.

All the key stakeholders were unhappy.

Transport Canada – the Canadian government department that operated the ANS – was constrained by government-wide fiscal cutbacks.

Customers – and that included airline pilots – were not happy with that constrained service.

Employees were also frustrated with inferior technology and severe wage restraint.

Canada's serious fiscal situation, at the time, was an important element in generating the political will to deal with the problem and generate the consensus for change.

As a result, the stakeholders came together, and the private-sector, non-share capital model was born.

The core of this stakeholder-driven model has not changed in 20 years.

And since the beginning, at NAV CANADA, we've understood that safety is not only our first priority – it is, in essence – our product.

The company is regulated by Transport Canada in respect of safety. We are also subject to the investigations of Canada's Transportation Safety board.

In addition, we have our own Office of Safety and Quality, reporting directly to me, and our Board of Directors has its own Safety committee.

Consistent with this over-riding safety mandate, we are a not-for-profit entity.

Surplus revenues are re-invested in the system, or used to pay down debt, or reduce customer charges.

There is no motivation to make profit at the expense of safety.

The early promise of NAV CANADA was severely tested by external challenges, some of which will be familiar.

They began with the closing of US airspace on September 11, 2001, and the diversion of some 238 US-bound flights to Canada.

The 9/11 attacks brought on a major aviation industry downturn, which was made worse by the 2003 SARS outbreak in Canada, followed by industry bankruptcies.

Then, just as things were looking up, we had the financial crisis and the Great Recession, with another downturn in traffic.

Through all of this adversity – our people never wavered.

They established an early lead in modernization, and today, we operate one of the world's most advanced and modern air navigation systems.

While there is always room for improvement, service delivery in Canada is considered leading edge.

For instance, Controller-Pilot Datalink Communications or CPDLC, has been successfully implemented in domestic high-level airspace, with rapid adoption by controllers and pilots.

Since 2012, the number of domestic CPDLC messages has grown to well over 500,000 per month.

Of course, we've had CPDLC in oceanic airspace for some time.

And we provide this service in a very cost-effective manner.

Starting September 1, 2016 – with our most recent rate reduction – our customer charges will be lower than they were when we introduced them on a full cost-recovery basis, in March 1999.

This reflects our third rate reduction since 2006.

Compare that with the rate of inflation – which since 1999 has been well over 40 per cent cumulatively.

This time, we are able to offer our customers \$150 million in savings over two years, through a reduction in base rates of 3.9 per cent, and a temporary, one-year reduction of 3.7 per cent.

But of course – from our beginnings – safety has been the common thread that links everything we do.

Since 1996, we have cut the rate of IFR-to-IFR operating irregularities per 100,000 movements in half.

Our current five-year rate stands at .72 per 100,000 aircraft movements – which is among the lowest for major air navigation service providers worldwide.

At the core of this excellent record is our dedicated and skilled workforce.

They are the people who work with all of you to deliver safe and efficient air transportation – in an industry where everyone takes ownership of safety.

At NAV CANADA, it begins with each employee, extends to teams and units, and rolls up to the entire Company.

From there, it encompasses our customers and all our key stakeholders – with whom there is a great deal of collaboration and learning.

In one example, NAV CANADA is responsible for organizing and running the meetings of the Runway Safety Incursion Prevention Panel, or RSIPP.

This panel, which meets three times a year, involves airlines, pilots, airport managers, ground-handlers, the regulator and many other stakeholders.

In addition to the discussion of analytical insights – such as a recent Normal Operations Safety Survey at a major tower – RSIPP has also mounted campaigns to raise awareness of runway safety.

This has included communications material for Air Traffic Services, pilots, airport personnel, and others in the aviation community.

ALPA is an active member of RSIPP, and your expertise is much appreciated.

ALPA also plays an important role in the Canadian Safety Officer's Partnership, or CASOP – which has a broader safety focus – and meets regularly to address a wide variety of industry safety issues.

Interactive panels such as RSIPP and CASOP are national in scope, and of course involve airlines and other organizations with global responsibilities.

Two other efforts worth mentioning include:

- the Air Transport Operations Consultation Committee – bringing together our major customers to discuss technical and operational issues;
- and the Air Navigation System National Advisory Committee – involving a broader group of industry stakeholders in regular meetings focused on the delivery of ANS services.

Many other, similar initiatives are regional or local – driven by our management and professional staff and welcomed by customers and stakeholders.

Beyond these initiatives, we see more and more participation at our Area Operations Consultation Meetings, which are held regularly in each of our Flight Information Regions.

Although not exhaustive, this list demonstrates that collaboration and connections – especially around safety – are built into our DNA.

As we all know, safety challenges continue to evolve.

We must all stay focused on finding new and better ways to identify, manage and mitigate risk.

At NAV CANADA, an important element of our Safety Management System is our Annual Corporate Safety Plan.

This plan defines how we will continue to strengthen safety management across the Canadian ANS.

For instance, we are working closely with Transport Canada on new regulations to address the safety issues associated with Remotely Piloted Aircraft Systems.

The Transport Canada regulations are scheduled for introduction in 2017.

Another example is the progress we continue to make with the new NAV CANADA Safety Information System – which will replace the multiple information sources we have today.

Once implemented, this system will enhance our ability to access accurate, timely, relevant and comprehensive safety data.

It will also strengthen our ability to share information and enable us to gain new insights and apply lessons learned.

Another NAV CANADA safety initiative is focused on enhancing communications – through a new series of online Phraseology Guides.

In the past year, we developed and launched the first of these – for VFR pilots flying in Canadian airspace.

The other two guides in the series will address communications with IFR pilots, and with ground-vehicle operators.

Another way NAV CANADA has enhanced safety is through the development and application of new technology.

Three key areas of innovation have included:

- the Canadian Automated Air Traffic System – our national flight-data processor – with important safety features such as Medium-Term Conflict Detection;
- the continuous evolution of our Gander Automated Air Traffic System – most recently in collaboration with NATS of the UK;
- and the development, deployment and international sales success of our Tower-Terminal Automation System.

Beyond these areas, we have also modernized virtually the entire Canadian ANS, from voice switches, to new Instrument Landing Systems, to our just-completed aviation weather systems upgrade.

As you all know, access to timely and reliable weather information is critical to flight safety – especially in Canada’s northern and remote regions.

Our weather systems upgrade was a massive undertaking – to replace all 68 of our old Automated Weather Observation Systems – and expand the network to 23 sites across the country.

In addition, the project included the replacement of old analogue weather cameras with digital versions, and their continued expansion to many more locations.

As a result, there will soon be digital weather cameras at over 200 airports and VFR routes in Canada.

We have also upgraded all of our 176 Human Weather Observation Systems.

And we have introduced a Limited Weather Information System as a key safety backup in many locations throughout the North.

In total, since 1996, NAV CANADA has invested well over \$2 billion dollars in technology, systems and facilities.

But the need for modernization never stops.

We have now entered a new phase – with a three-year, \$500-million-dollar capital program.

Through this program, we will move to the next generation of business systems – make needed facility upgrades – and invest in new air traffic management and surveillance capabilities.

The next major advance will be the shift to space-based ADS-B – to be available on a global basis.

We will make this shift through Aireon – our joint venture with Iridium Communications – ENAV of Italy – the Irish Aviation Authority – and Naviar of Denmark.

Aireon surveillance will be especially welcome in airspace over the world's oceans and remote regions – where it will deliver significant safety and efficiency benefits.

And while this is a new innovation, it uses proven technology – Automatic Dependent Surveillance-Broadcast – that has already produced results through ground-based systems, in Canada and elsewhere.

But despite these efforts, today only 30 per cent of the world's airspace is subject to air traffic surveillance...That is all about to change.

When the Aireon ADS-B payloads are in orbit, on the Iridium NEXT constellation of 66 low-earth orbiting satellites – the remaining 70 per cent of the world's airspace will be visible, for the first time.

We are investing not only in Aireon itself – but also in changes to our procedures, systems and technology.

Much of this work is focused on upgrading our oceanic air traffic management capabilities, in conjunction with NATS, our peers in the UK.

We also expect to incorporate SATCOM VOICE into our ATM systems, allowing for global communications to complement and augment global surveillance.

The result of all this will be a significant expansion in airspace capacity – with opportunities for big savings due to more efficient routes and altitudes.

In fact, we anticipate total customer savings in the North Atlantic alone of 125 million litres of fuel per year.

On the manufacturing side, all 81 of the ADS-B payloads have been produced and tested, here in the United States, by Harris Corporation.

And the first 10 Iridium satellites carrying the Aireon payload are scheduled for launch this fall, with subsequent launches to follow.

We anticipate that Aireon surveillance service – along with the expected improvements in North Atlantic air traffic efficiency – will become a reality in 2018.

And that includes our commitment – with all our Aireon partners – to also offer Airline Locating and Emergency Response Tracking, or Aireon ALERT.

This service will be offered to the aviation community at no charge – providing global coverage, GPS location, and real-time tracking data to assist rescue coordination centers in emergencies.

Through a 24/7 communications facility operated by the Irish Aviation Authority, Aireon ALERT will determine the precise location and flight track of any ADS-B equipped aircraft in distress.

As we approach 2018, momentum is building.

So far, Aireon has signed data services agreements with ENAV, the IAA, NATS, NAV CANADA, Naviair, the Civil Aviation Authority of Singapore, South Africa’s Air Traffic Navigation Service, and Curaçao’s ANSP.

Eight additional contracts are under negotiation, and MoUs have been signed with 11 other ANSPs, with more to come.

Aireon is a good example of how innovation can enhance safety and efficiency – on a global scale.

Even more, it demonstrates how progress is driven by connections, collaboration and partnerships – which is why we are all here today.

And now, let me conclude with a quote from Ashlee Vance, the biographer of Elon Musk.

Vance wrote that Musk believed “the very idea of America was intertwined with humanity’s desire to explore”.

Together with our employees, customers and partners, NAV CANADA shares in this desire to push the boundaries of the possible.

And that includes the ongoing collaboration with Space X – in the launch of the Iridium NEXT satellite constellation – and the Aireon payload.

Our collective task – as a Company and an industry – is to allow exploration like this to happen, while finding more and better ways for humanity to do so safely, efficiently, and responsibly.

Thank you, and I hope you enjoy the rest of the conference.