OUR STRATEGIC PRIORITIES

- Safety: World Leading
- People: Best Employer
- Technology: Modern Platform
- Brand/Reputation: Most Respected
- Finance and Governance: Stable and Sustainable
- Service: Value Focused
A COMMITMENT TO EXCELLENCE

- World-leading safety record
- No increase in service charges since 2004
- Innovative technology development
- Domestic system modernization
- Canada’s top 100 employer (2017, 2018, 2019)
- Aireon, a global game changer
The facts and figures presented here were accurate as of 2018.

OUR STORY
TOLD IN FACTS AND FIGURES

Private, non-share capital company | One of the largest ANSPs in the world by total IFR flight hours

| 18 million km² Airspace managed by NAV CANADA | 40,000 Customers, which includes airlines, air cargo operators, air charter operators, air taxis, business and general aviation, helicopter operators |
| 3.3 million Flights handled each year | 5,000 NAV CANADA employees across the country |
| 8.4 B litres Forecasted achievable fuel savings for our customers from 1997 to 2020 | 21 million Tonnes Forecasted achievable GHG emissions savings for our customers by 2020 |
| 1,600 Active controller workstations using NAV CANADA developed technology world-wide | $2.4 B+ Invested in enhancing and developing NAV CANADA infrastructure since 1996 |
| 330 Charities and community organizations supported in fiscal 2017 | 1,270 Flights in the Gander oceanic airspace daily on average |

The facts and figures presented here were accurate as of 2018.
OUR PEOPLE

Support Functions
Operations
Engineering
Technical Operations

5000 employees
Across the country
OUR FACILITIES

Area Control Centres

Air Traffic Control Towers

Flight Service Stations

Flight Information Centres

Maintenance Centres

Community Aerodrome Radio Stations
The facts and figures presented here were accurate as of Jan 2019.
Current Status of Weather Systems

97 AWOS sites installed

176 HWOS sites installed

of which 23 are AWOS/HWOS co-located sites

Effective date: January 3, 2019
42 radar sites in southern Canada

1 million km$^2$ of airspace across Baffin Island, Lower Hudson Bay and Great Slave Lake Region
MULTILATERATION (MLAT)

> Tracks/identifies transponder-equipped targets
> Capacity, efficiency and safety improvements
> Wide Area MLAT (WAM):
  > Fort St. John, Vancouver Lower Mainland, Kelowna, Fredericton, Springbank,
  > Red Deer (operational in 2019)
  > Toronto and South Vancouver Islands (operational in 2020)
> Surface surveillance MLAT:
  > Montreal Trudeau, Toronto Pearson, Calgary International
  > Vancouver International Airport (operational in 2019)
EXTENDING COVERAGE WITH GROUND-BASED ADS-B

› Supports radar-like separation at a fraction of installation cost
› Preferred routes, reductions in fuel consumption and GHG emissions

A flight through ADS-B coverage (Greenland, East Coast, Hudson Bay) could traverse approximately 3,300 km of ADS-B surveillance.
Surveillance Coverage (radar & ground-based ADS-B) 2018
IRIDIUM NEXT CONSTELLATION

› 6 planes of
  11 active satellites
  (+ 9 on-orbit spares)
› Near-polar orbits
› 780 km altitude
› 100 min orbit period
› ADS-B payload on all satellites
› Data passed between satellites via crosslinks to the satellite currently over a ground station
AIREON DATA FOR NAV CANADA
SURVEILLANCE PROGRESSION

Initial Focus
Procedural Airspace in Northern Canada and Gander OCA
Edmonton Implementation Plan

ARCTIC HIGH
OVERVIEW

EG2

EG3

EG4

POLAR SECTOR

GLYDER SECTOR

EG2

EG3

EG4
ALL AIRSPACE, ALL FLIGHT LEVELS

Canadian Airspace
~2.5 million unique IFR flights/year
**ALERT Service**

Aircraft Locating and Emergency Response Tracking

- Service available free of charge
- Location and last flight track of missing ADS-B equipped aircraft accessed by Rescue agencies and Air Navigation Service Providers

**GlobalBeacon Service**

Powered by Aireon and FlightAware

- Real-time global tracking of ADS-B equipped aircraft
- Helping airlines to become compliant with ICAO Global Aeronautical Distress Safety System standards
SAFETY RECORD  IFR-to-IFR losses of separation per million flight hours

2004  24.9

-27%

2018  18.0
KEY STAKEHOLDER GROUPS

Aircraft Operators
- Domestic Airlines
- International Airlines
- Business Aviation
- General Aviation
- Professional Pilots Associations
- Flight Training
- Military (DND)

Communities
- Elected and Non-elected Officials
- Community Developers
- Public
- Municipal Government

Airports
- Airport Associations
- Regional
- Medium
- Major
- Heliports
- DND
- Transport Canada
- Remote Airports
HELPING THE INDUSTRY REDUCE ITS ENVIRONMENTAL IMPACT

› Improving air traffic management
  • Modernizing Canada’s airspace
  • Implementing new technologies

› Reduces our impact on the environment

› Helps industry lessen its impact on the environment
In 2015 NAV CANADA initiatives saved enough jet fuel to fill 3.6 million barrels of oil.
REQUIRED NAVIGATION PERFORMANCE (RNP)

“Short turn” approaches feature constant descent and reduced track miles

**Total Benefits to 2020**
- 367,000 metric tonnes CO$_2$e
- CAD $132 million in avoided fuel costs

AREA NAVIGATION (RNAV)

Uses GNSS and space-based systems and improves airport accessibility and enroute efficiency

**Total Benefits to 2020**
- 2,084,000 metric tonnes CO$_2$e
- CAD $605 million in avoided fuel costs
FUEL BURN SAVINGS

Estimated Total Fuel Burn Savings of 1,686,636 L*

* Based on published RNP AR approaches and available surveillance data
TRAFFIC GROWTH, FY 2018

- ALASKA: +6.9%
- ASIA: +10%
- CARIBBEAN: +4.1%
- TRANSBORDER (US): +8.8%
- WITHIN CANADA: +4.1%
- EUROPE: +8.9%
- OVERFLIGHTS: +6.0%
- FLIGHTS WHICH LAND AND/OR TAKE OFF IN CANADA: +6.0%
THANK YOU

QUESTIONS?

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