ANNUAL REPORT 2019

Serving a world in motion
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NAV CANADA

› BEYOND THE SKIES

NAV CANADA FIRST TO LAUNCH SPACE-BASED DOMESTIC AIRCRAFT SURVEILLANCE

SAFER
MORE EFFICIENT
LOWER EMISSION
AIR TRAVEL

No matter how you look at it, space-based ADS-B (SB ADS-B) air traffic surveillance is a true game-changer. As an investor in Aireon, the joint venture deploying SB ADS-B, NAV CANADA continues to play a leading role in bringing this remarkable innovation to the world.

For decades, air traffic surveillance and monitoring has relied mostly on ground-based radar—a system that has some shortcomings. Because it needs a line-of-sight to its target, ground-based radar can't always track aircraft in hilly or mountainous terrain, and it can't be deployed at all in the oceans. These kinds of limitations mean that the systems we have relied on to monitor global air traffic actually covered just 30 percent of global airspace.

Looking down from a network of 66 satellites in orbit around Earth, Aireon SB ADS-B has no such limitations. It provides complete coverage—100 percent of global airspace—and it does it in real time, relaying the position, speed, heading and other data from transponder-equipped aircraft twice every second.

The implementation of SB ADS-B offers tremendous benefits, especially where safety is concerned. With total coverage in real time, air traffic systems will be able to identify and address potential loss of separation between aircraft before it occurs. Should an aircraft go missing, its precise location will be known in a matter of seconds—at a time when seconds matter.

Real time monitoring also means that separation between aircraft can be reduced safely, allowing more aircraft to fly at the most efficient altitudes and follow the most direct routes. For Canada especially, the 100 percent coverage delivered by Aireon means safer, more efficient use of our northern airspace. With access to more polar and North Atlantic routes, transcontinental flights can be shorter, reducing fuel consumption and emissions.

NAV CANADA has been involved in the development of this revolutionary system from the beginning, as an early supporter and first air navigation service provider (ANSP) to invest in Aireon as a joint venture with Iridium Communications in 2012. Today, NAV CANADA remains a major shareholder as other national ANSPs have become partners in Aireon, including NATS in the UK, Italy's ENAV, the Irish Aviation Authority, and the Danish ANSP Naviair.

Continuing to break new ground in its operations, on March 25, 2019, NAV CANADA became the first air navigation service in the world to deploy SB ADS-B domestically when the system went live in NAV CANADA's Gander Domestic and Edmonton flight information regions—integrating seamlessly with our existing surveillance technologies, thanks to new air traffic management (ATM) systems and sophisticated communications tools developed, deployed and tested by NAV CANADA employees.

Three days later, together with NATS and Isavia, NAV CANADA played a key role in the first deployment of SB ADS-B in an oceanic environment—collaborating with its partner ANSPs to launch operational trials of Aireon in the North Atlantic, the world's busiest oceanic airspace.

Today, as a growing number of ANSPs announce plans to adopt Aireon, we are immensely proud of the part NAV CANADA has played in bringing this technology to fruition, and creating a once-in-a-generation opportunity to make air travel safer, cleaner and more efficient.

In addition to acknowledging and congratulating the individuals at Aireon, we are pleased to recognize and applaud the outstanding expertise and passion NAV CANADA employees have dedicated to ensuring the success of this remarkable undertaking.

For more on the launch of SB ADS-B, see page 23.

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ABOUT NAV CANADA

Our Vision

To be the world's most respected ANS:

- in the eyes of the public for our safety record;
- in the eyes of our customers for our fee levels, customer service, efficiency and modern technology; and
- in the eyes of our employees for establishing a motivating and satisfying workplace with competitive compensation and challenging career opportunities.

Our Mission

To be a world leader in the provision of safe, efficient and cost-effective air navigation services on a sustainable basis while providing a professional and fulfilling work environment for our employees.

Our Overarching Objectives

The Company will achieve its Mission by:

1. Being among the safest ANSPs worldwide and driving continuous improvement in the reduction of operational safety risks;
2. Maintaining ANS customer service charges among the lowest of major ANSPs worldwide, and ensuring over the long term that the growth in operating costs does not exceed the growth in traffic;
3. Providing value to our customers by contributing to improving their operational efficiency through the use of innovative technology and effective delivery of service, domestically and internationally;
4. Having a work environment which places NAV CANADA among the best employers in Canada;
5. Introducing measurable projects and initiatives which support a reduction of the environmental footprint of the aviation industry wherever feasible.

BY THE NUMBERS

Our employees are the air traffic controllers, flight service specialists, engineers, technologists, software developers, managers, analysts and other professionals who manage air traffic, maintain systems and infrastructure, run our business, and develop solutions for improving aviation safety and efficiency.

18
million km^2
OF AIRSPACE

3.4
million flights
ANNUALLY

1,295
flights
IN GANDER OCEANIC AIRSPACE DAILY ON AVERAGE

45,000
customers
(AIRLINES, AIR CARGO OPERATORS, AIR CHARTER OPERATORS, AIR TAXIS, BUSINESS AND GENERAL AVIATION, HELICOPTER OPERATORS)

5,000
employees

109
staffed sites
FROM COAST TO COAST TO COAST

2019 HIGHLIGHT STATS

1.9%
increase in air traffic volumes

THE SIXTH CONSECUTIVE YEAR OF GROWTH

16
sites with required navigation performance arrival procedures

HELPING AIRCRAFT OPERATORS SAVE FUEL AND REDUCE GREENHOUSE GAS EMISSIONS

19.66
IFR-to-IFR losses of separation

ONE OF THE LOWEST RATES IN THE WORLD

330+
registered charities and non-profit community organizations

SUPPORTED THROUGH EMPLOYEE AND COMPANY CHARITABLE CONTRIBUTIONS

1,600
active controller workstations

USING NAVCANATM TECHNOLOGY AT OVER 100 SITES WORLDWIDE

$144
million investment in technology and infrastructure

IN FISCAL 2019

TRAFFIC GROWTH

NAV CANADA measures traffic in weighted charging units. Traffic through NAV CANADA controlled airspace grew 1.9 percent year-over-year in fiscal 2019.

Weighted Charging Units by Route (Fiscal 2019)

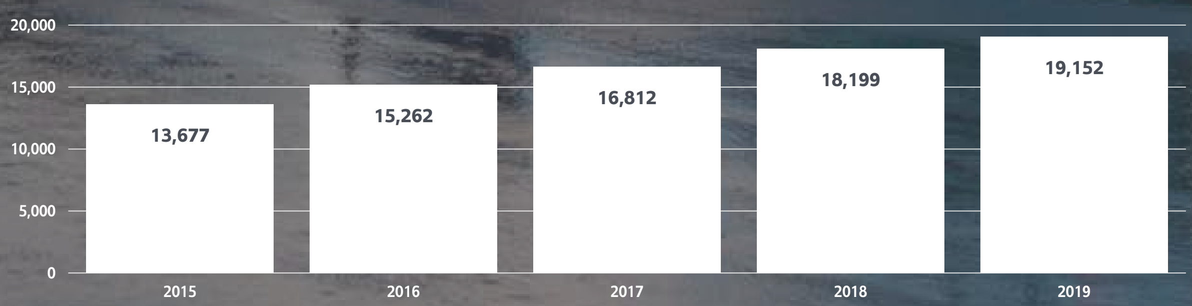
The graphic below shows 2019 traffic growth by weighted charging units, accounting for 90 percent of traffic.

OVERFLIGHTS pass through Canadian controlled domestic airspace and do not take off or land in Canada.

Enroute and terminal charges apply to **FLIGHTS THAT LAND AND/OR TAKE OFF IN CANADA.**

Weighted charging units are calculated based on number of flights, aircraft weight and/or distance flown in Canadian airspace.

Polar Flights by Fiscal Year



NAV CANADA Polar Statistics, count of flights through designated Russian Polar Fixes and flying through Canadian Domestic Controlled Airspace

MESSAGE FROM THE CHAIR OF THE BOARD

MARC COURTOIS

It is my pleasure to introduce the NAV CANADA 2019 Annual Report, detailing the achievements of an outstanding workforce in assuring the safety and efficiency of Canada's air navigation system while advancing our commitment to environmental and social responsibility.

As always, and for everyone at NAV CANADA, safety is the first priority. Indeed, safety is our business. It is the first and most important measure of our success as an air navigation service provider–and I am pleased to report on behalf of our employees that, in 2019, NAV CANADA's safety record was again among the very best in the world.

Beyond safety, the launch of space-based surveillance in Edmonton and Gander in March was certainly one of our top stories for the year. As described in more detail elsewhere in this report, space-based surveillance represents a true revolution in air traffic management, offering significant benefits in safety and efficiency–and NAV CANADA is the first air navigation service in the world to deploy this technology domestically.

That the system was fully operational from the moment it was switched on is a testament to the dedication and expertise that exists throughout NAV CANADA—a true team effort.

The past year has also seen substantial progress in our ongoing work to recruit and train new air traffic controllers and flight service specialists to ensure we have sufficient numbers of the highly trained professionals we need to meet operational requirements across Canada today and into the future.

Having the right people in the right place at the right time is essential to delivering a service that is safe as well as efficient, and that meets the needs of our customers and other stakeholders. In that regard, I am happy to note that the work that has been done to improve NAV CANADA's operations at Canada's four major airports continues to generate positive feedback from our biggest customers, as do our aircraft noise mitigation efforts, especially in Toronto and Calgary.

Looking forward to fiscal 2020, maintaining and improving our safety record will continue to be our first priority, including exploring how technology can enable us to realize a service delivery model that will provide both short- and long-term improvements in safety and service, and remain cost-effective.

We pursue these improvements on the understanding that people are the most important part of the equation. We endeavour to provide a challenging and rewarding workplace and, through the Chairman's Awards for Employee Excellence, ensure proper recognition of especially outstanding contributions to the Company.

In closing, I would like to thank all of my colleagues on the Board for their contributions to another successful year. I must also thank Louise Tardif, who left the Board of Directors in May 2019 after three years of service, and welcome Marc Grégoire to the Board.

Finally, my most sincere thanks and congratulations to Neil Wilson for his outstanding leadership, to the management team and to all the employees of NAV CANADA.

From the successful deployment of ground-breaking technologies to the development of new approaches to air traffic management, you continue to strengthen the safety, efficiency and sustainability of aviation in Canada—at the same time looking beyond the skies to strengthen the communities in which we live and work.

Thank you.

Marc Courtois
Chair of the Board

MESSAGE FROM THE PRESIDENT AND CEO

NEIL R. WILSON

As the contents of this annual report will attest, 2019 was another remarkable year for NAV CANADA—another year in which the Company continued to create and deliver value to all of its stakeholders, further cementing its reputation as one of the world's leading air navigation service providers.

From safety to innovation to community engagement, we are an organization driven by our people. In many ways, this annual report is their story. The accomplishments and progress reported in these pages would not have been possible without the commitment to excellence that our people bring to work with them every day.

There is no better demonstration of that commitment than NAV CANADA's part in realizing the benefits of SB ADS-B. This airspace surveillance system represents a dramatic step forward in air traffic management, enabling substantial gains in safety, efficiency, and environmental responsibility.

NAV CANADA has played a key role in developing this transformative technology, and in the spring of 2019, became the first ANSP in the world to deploy the system in its domestic airspace. We were also the first to deploy it simultaneously with NATS, United Kingdom's ANSP and Isavia, the Icelandic Civil Aviation Administration over the North Atlantic, the world's

busiest oceanic airspace—an achievement that has earned NAV CANADA and its partners awards of excellence from the Civil Air Navigation Services Organisation and the Air Traffic Control Association.

Strategic Plan

We continue to explore—and take advantage of—the opportunities technology offers to improve safety and service. The launch of SB ADS-B is a major accomplishment, but only one of many steps we've taken in the implementation of our strategic plan, which guided our activities in six priority areas, beginning with our first and overarching priority, safety.

During fiscal 2019, we further refined our approach to safety planning, bringing a new rigour and maturity to the process. To further focus our efforts, working with our employees, we have identified the top eight safety risks and are developing strategies to address each of them. Results are what matter—2019 was one of the safest years in NAV CANADA history.

We also continued to focus on improving service to our customers. The introduction of the Established on RNP AR (EoR) standard at Calgary International early in the 2019 fiscal year for example, is delivering significant benefits to our customers in terms of fuel consumption, cost reduction and environmental footprint.

We take special pride in being a great place to work. Over the past year, we have implemented new measures and activities to advance diversity and inclusion and professional development, among others. In 2019—for the fourth year in a row—NAV CANADA was recognized as one of Canada's Top 100 Employers.

From a financial standpoint, our credit ratings were re-affirmed in 2019, allowing the successful completion of a $250 million bond issue in March, with one of the lowest corporate spreads in Canadian history.

Looking ahead

While it is gratifying to reflect on another year of achievement, we remain future-focused.

The pace of technology change is accelerating. The business models of our major customers are shifting. At the same time, traffic patterns are changing, and traffic growth has begun to slow—even showing signs of decline.

Taken together, these events present significant operational and financial challenges. At the same time, expanding deployment of technologies such as SB ADS-B and performance-based navigation (PBN) offers the opportunity to further enhance safety and efficiency, reduce emissions, and mitigate the impact of aircraft-related noise on communities.

As always, to address the challenges, seize the opportunities and maintain excellence in our day-to-day operations, we rely on our outstanding workforce—the people whose commitment, skill and professionalism have made NAV CANADA one of the best ANSPs in the world.

It is a tremendous privilege to lead this organization, a responsibility that would be overwhelming were it not for the ongoing support and counsel of our Board of Directors, our customers and stakeholders. I am truly grateful.

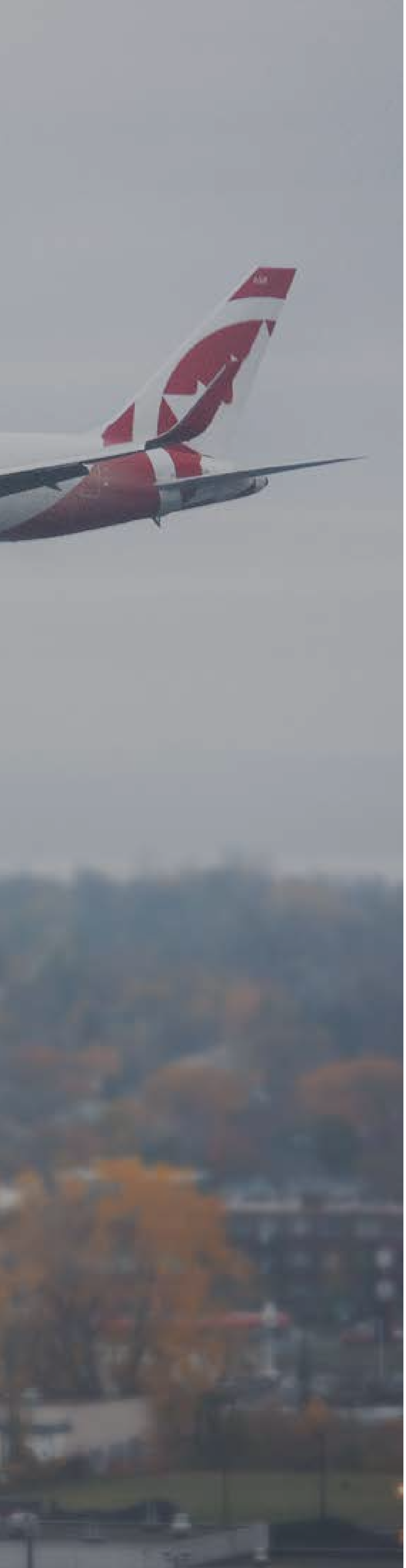
I must also recognize and congratulate Kim Troutman on his retirement in March. Kim's contributions to air navigation span some 43 years, beginning at Transport Canada and finishing as Vice President of Engineering and Technical Operations at NAV CANADA.

I reserve my deepest thanks for our employees. For the dedication you bring to NAV CANADA day in and day out, for the pride you take in your work and in this organization—it is a pleasure to thank you.

Sincerely,

Neil R. Wilson
President and CEO

STRATEGIC PLAN UPDATE



Our Strategic Plan guides us as we build for the future and create value for all stakeholders. It is focused on six high-priority areas for our business. On the following pages, we discuss external factors affecting each of these areas and what we are doing about them.

› SAFETY
World leading

› TECHNOLOGY
Modern platform

› PEOPLE
Best employer

› BRAND
Most respected

› SERVICE
Value focused

› FINANCE AND GOVERNANCE
Stable and sustainable

› STRATEGIC PLAN UPDATE

SAFETY

Safety is the common thread that links all our activities. By creating a safety culture that starts with each employee and extends throughout the Company, we ensure that NAV CANADA achieves its most important priority—keeping Canada's skies safe.

Strengthening risk management

In 2019, we published the inaugural edition of *Navigating Safety*, highlighting for all employees the top eight risks to operational safety, identified by a risk assessment informed by a variety of sources, including frontline NAV CANADA employees. In addition to identifying the top risks—which range from the use of remotely piloted aircraft systems (RPAS, also known as drones or UAVs—unmanned air vehicles) in controlled airspace to miscommunications between pilots and air traffic controllers—*Navigating Safety* lists the actions that will be taken to tackle each of the top eight risks over the next several years.

The actions described in *Navigating Safety* flow from the significant update of our Corporate Safety Plan in 2019. In addition to an in-depth description of our approach to mitigating each of the top eight operational risks, the plan describes the tools we will use to measure our progress in executing the action plans—to be reported in future editions of *Navigating Safety*.

The updated Corporate Safety Plan also identifies a number of opportunities to strengthen our industry-leading Safety Management System (SMS), as well as action plans to guide implementation of the enhancements. The SMS provides a Company-wide, structured approach to addressing risk, based on the understanding that safety is part of every employee's responsibility. As well, sharing our top eight safety risks with the industry contributes to a collaborative relationship among all stakeholders, helping to create an environment in which shared safety information drives continuous improvement.

Recognizing the human element

NAV CANADA collaborated with fellow members of the Civil Air Navigation Services Organisation (CANSO) in developing the CANSO *Standard of Excellence in Human Performance Management*. In an industry increasingly driven by technology and automation, the standard recognizes that people hold the keys to the flexibility and resilience that are essential to keeping the system safe. The new standard provides a framework for ANSPs around the world to assess and improve employee performance management in this fast-changing, complex air navigation services (ANS) environment.

‹ LEFT

Richard Fontaine,
Flight Service Specialist
Gatineau FSS

PHRASEOLOGY GUIDES

Effective voice communications between air traffic service (ATS) personnel, pilots and ground crew is crucial for the safe movement of aircraft. In August 2019, NAV CANADA published its IFR Phraseology Guide as a reference for all pilots flying within Canadian airspace.

The IFR Guide is the third of three phraseology guides created by NAV CANADA, in collaboration with its aviation partners, including Transport Canada, airlines, aviation-related organizations and flight schools. Together with the two guides released previously—VFR Phraseology and Ground Traffic Phraseology—the new guide supports use of a standard phraseology, reducing the risk of error or misinterpretation in these critical communications. Electronic versions of all three guides are available in English and French on our website, at no charge.

Enhancing data collection and analysis

We continue to improve the NAV CANADA Safety Information System (NC-SIS), including deployment of the Safety Risk Management (SRM) module of NC-SIS this year. This gives NAV CANADA a comprehensive tool to manage all aspects of the SRM program in one system.

Ongoing development of the analytics phase of NC-SIS continued through the year with the rollout of a Safety Dashboard, enabling the production of consistent key performance indicators (KPIs) for safety and supporting overall corporate data governance. In the upcoming fiscal year, the new NC-SIS Audit module will be rolled out and work will begin on integrating an enhanced voluntary safety reporting program into the tool.

Check and double-check: Internal Quality Assurance

We further assured the integrity of our SMS in 2019, meeting our commitment to create a Corporate Integrated Quality Assurance Program, and ensuring we maintain compliance with the requirements of Canadian Aviation Regulations. As part of this initiative, key operational processes have been defined, and a process catalogue and document control for related work instructions and checklists have been developed. These are supported by a system that enables reporting and tracking of both discrepancies in process execution and corrective measures implemented to address them.

99%

of IFR-to-IFR losses of separation

WERE CLASSIFIED AT THE VERY LOWEST SEVERITY LEVEL

FAR RIGHT ›

Kyleen Stanton,
Air Traffic Controller, Traffic Management Unit
Vancouver ACC

Re-shaping the skies: Remotely Piloted Aircraft Systems

Recognizing the growing popularity of RPAS for both recreational and commercial use, as Canada's ANSP NAV CANADA is committed to assuming a leadership role in determining how RPAS can be managed without compromising safety or efficiency. Understanding that the use and uses of RPAS will continue to expand, we are taking a proactive approach to shaping the policies and procedures through which the technology will be accommodated and regulated within the air navigation system– engaging and collaborating with stakeholders across the aviation spectrum and around the world, from the RPAS community to the International Civil Aviation Organization (ICAO).

Major initiatives and activities during the past year included staging our first employee RPAS conference in November 2018. The conference featured a number of technical and sector experts, and provided a forum for employees involved with RPAS from each Flight Information Region (FIR) to discuss concerns and brainstorm ideas on shaping the future of ANS that includes RPAS.

In January 2019, we joined Transport Canada in co-chairing the first RPAS Traffic Management Action Team (RTMAT) meeting, bringing the regulator, NAV CANADA and the RPAS industry together in a collaborative effort to define strategies for managing unmanned air vehicles in Canadian airspace.

As part of our work with Transport Canada, we recommended and were granted formal approval for ATS specialists to provide services in support of RPAS operations in controlled airspace, complemented by a new NAV CANADA RPAS web page, through which operators can request authorization to deploy RPAS in controlled airspace.

In the year ahead, we will continue to collaborate with the Department in developing regulations for RPAS beyond visual line-of-sight (BVLOS).

Five-year moving average of 0.69

IFR-TO-IFR LOSSES OF SEPARATION PER 100,000 AIRCRAFT MOVEMENTS

Rate of IFR-IFR Losses of Separation* per 100,000 Movements (5-Year Moving Average)

*IFR-IFR losses of separation measures aircraft flying under instrument flight rules where less than the authorized separation existed or in which the minimum was not assured.

› STRATEGIC PLAN UPDATE

PEOPLE

While our industry is increasingly technology driven, ensuring the safety and efficiency of our air navigation system comes down to people. At NAV CANADA, our human resources strategy is simple: recruit the right people, and ensure they have the tools and support they need to perform at their best.

Top Employer

At NAV CANADA, we strive to provide our employees with an exceptional, challenging and rewarding workplace, and we are very proud to be recognized—for the fourth year in a row—as one of Canada's "Top 100 Employers." At the same time, we recognize that building a great workplace is a collaborative effort—it takes top employees to make a top employer.

Enabling Performance and Professional Development

Ensuring the safety and efficiency of air navigation in Canada requires everyone at NAV CANADA to be a top performer, and we are committed to providing employees with the tools they need to realize their full potential every day. In 2019, for example—understanding the crucial part leadership plays in our success as a Company—we launched new initiatives to support growth in leadership capacity in our management ranks, including a 30-day challenge to encourage managers to document a simple but meaningful personal development plan. We also initiated pilots of innovative new HR approaches designed to build employee engagement and a culture of performance, including Excellence Every Day and a Quarterly Performance Assessment framework.

Strengthening a Canadian workplace: Diversity & Inclusion

As Canada's ANSP, we believe Canadians should be able to see themselves in NAV CANADA, and that the growing diversity of our country should be reflected in our workplace. This is more than exercising social responsibility—a more diverse workforce allows an organization to benefit from a greater diversity of thought and approach. An organization in which all employees feel welcome and valued will be a higher performing organization.

As part of our Diversity and Inclusion (D&I) Strategic Plan, we not only welcome and encourage diversity, we celebrate it—engaging employees with special events throughout the year to mark Black History Month, International Women's Day, Pride Month, International Day for Persons with Disabilities, and others. We continued to move forward with other elements of our D&I Strategic Plan through fiscal 2019, including the launch of D&I committees and D&I goal-setting sessions in our FIRs, as well as two CEO-led D&I goal-setting forums. To help ensure we are on the right track and to guide future initiatives, we are currently analyzing the results of our first-ever Employee D&I Census, conducted in April and May of 2019.

‹ LEFT

Mitchell Vaters
Engineering Project Leader
Edmonton Workcentre

NAV CANADA was recognized as one of Canada's Top 100 Employers

FOR THE FOURTH YEAR IN A ROW

LABOUR RELATIONS

Close to 90 percent of the more than 5,000 people employed at NAV CANADA are represented by one of eight unions. The Company is committed to meeting its obligation to collective bargaining in good faith, with an ongoing focus on meaningful terms and conditions of employment for all its employees.

EDMONTON CONTROLLER HONOURED BY WINGS MAGAZINE

At NAV CANADA, we think each one of the more than 5,000 people who work here is special—so we're especially proud that one of our employees has been recognized by Wings Magazine as one of its "Top 20 Under 40" for leadership and dedication to the Canadian aviation industry. Laura Foote, one of our air traffic controllers in Edmonton, was honoured for her role in developing Elevate Aviation, a non-profit organization aimed at inspiring young people to pursue careers in aviation—with a special emphasis on mentoring young women. In just four years—thanks in large part to Laura's efforts—Elevate Aviation has grown to include more than 200 mentors working with young people across Canada, and secured some $700,000 in funding to support its work.

38% of NAV CANADA senior management positions are held by women

Recruitment: Building for the Future

As a top employer offering challenging and rewarding career opportunities, NAV CANADA attracts a lot of interest from potential employees. Based on the success of the previous fiscal year's pilot of a new approach to ATS candidate selection, we expanded its use to Edmonton, Moncton and Winnipeg in fiscal 2019. The new approach uses advanced simulation tests and problem-solving exercises to help us identify the very best candidates.

To attract those candidates, the NAV CANADA Talent Acquisition Team participated directly or indirectly in more than 60 career-related events across the country in 2019, including college and university career fairs, aviation career and trade fairs, air shows and other aviation-related events.

Enabling employees to connect

Recent feedback from employee engagement sessions indicated they would like to be more connected with their colleagues across the country.

After a successful pilot in 2018, Yammer—an enterprise social networking tool to help employees connect and communicate across an organization—was rolled out across the country in 2019. Its popularity continues to grow, with employees from all regions using Yammer to connect and share information, insights and Company news.

Welcome aboard

NAV CANADA's HR department launched a new website to help newcomers to NAV CANADA feel more at home in their new workplace. Along with a welcome aboard video greeting from President and CEO Neil Wilson and a Company overview, the site covers everything from how to set up a new workstation to how to book a vacation.

Summer camps showcase opportunities in aviation

Following a successful event for young women in 2018, NAV CANADA hosted two Explore Aviation Summer Camps in 2019—adding a second camp for young men—and generating more positive feedback from participants enthused by the experience and the exciting range of opportunities in aviation. Aimed at encouraging young people to consider a career in aviation, campers have an opportunity to go behind the scenes with NAV CANADA employees to learn about careers in air traffic control, electronics technology and others.

RIGHT ›

Young participants of the Explore Aviation Summer Camps

Ottawa Control Tower

126
newly licensed air traffic controllers and certified flight service specialists

IN FISCAL 2019

^ ABOVE

Julie LeBreton, IFR Program Specialist-Controller (Regional Training Instructor)
Brandon Barliak, Air Traffic Controller
Toronto ACC

Sharpening our skills

Our Operational Training team continued to enhance its course offerings to ensure NAV CANADA operational staff continue to be among the best in the world at what they do—keeping our skies safe and maintaining efficient air traffic flow.

Among other changes, following a thorough review, a number of areas in the overall curriculum have been revised, ensuring it continues to be closely aligned with Canadian Aviation Regulations and ICAO Standards and Recommended Practices (SARPs). Additions to the curriculum in 2019 include training in cognitive concepts such as visualization, prioritizing and decision-making, and new training for on-the-job instructors focused on performance coaching.

Learning materials, including simulation technologies and others, are updated and upgraded on a regular basis to keep pace with changes in the aviation industry and advances in ATM technology and procedures. In 2020, for example, in response to the ongoing growth in traffic and complexity of movements, key activities will include updating the Basic Airport Control course to incorporate additional and earlier instructions in instrument flight rules (IFR) arrivals and departures, wake turbulence considerations and helicopter operations.

A total of 126 NAV CANADA trainees succeeded in earning licences in 2019: 50 as IFR controllers; 29 as visual flight rules (VFR) controllers; and 47 as flight service specialists.

Promoting official languages

NAV CANADA is committed to meeting its obligations under Canada's *Official Languages Act*. Beyond language training for managers and employees, we support and encourage the use of English and French in our day-to-day operations and, through a variety of initiatives, foster the use of both of Canada's official languages throughout the broader aviation community.

As part of our ongoing relationship with the Montreal Aviation Museum, we provide the museum with translation and terminology services, and collaborate in the development of French-language materials. Our partnership with Elevate Aviation includes working with that organization to ensure Francophone communities have access to the same support provided in other regions. While continuing to promote awareness of Terminav©—our comprehensive bilingual aviation terminology database—we are building on its success by developing a mobile version, allowing the database to be accessed from a range of devices.

We continued to grow our community level engagement on official languages during 2019 through ongoing relationships with organizations such as the Quebec Community Groups Network, and participation in and support for the Festival Franco-Ontarien. As well, in March 2019—in partnership with les Rendez-vous de la Francophonie—we announced our plans to work together to promote Linguistic Duality Day in September, marking the 50th anniversary of the *Official Languages Act*.

› STRATEGIC PLAN UPDATE

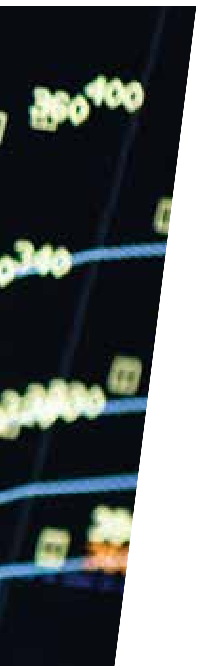
SERVICE

As an organization, we are committed to excellence in every aspect of our business, and to continuous improvement not only in the service we provide, but in the way we deliver that service.

Space-based ADS-B: NAV CANADA leads global transformation

EDMONTON DOMESTIC ROLLOUT

At 2228Z on March 25, 2019, SB ADS-B became active in the Edmonton FIR—making NAV CANADA the first ANSP in the world to deploy the revolutionary technology in domestic airspace. The transition was seamless, and on May 1, the next phase of the system was turned on at the Edmonton Area Control Centre (ACC), bringing space-based surveillance to some 1.3 million square kilometres of our Arctic High airspace where previously there had been no surveillance at all. Implementation of SB ADS-B in the area of airspace known as Alberta High was completed in September 2019, and the phased approach to implementation will continue with the expansion of space-based surveillance to another large section of Arctic High expected early in the 2020 calendar year.



GANDER: NORTH ATLANTIC AND DOMESTIC TRIALS

SB ADS-B also became operational in Gander Domestic airspace on March 25. On March 27, it went live in Gander Oceanic for the beginning of advanced surveillance-enabled procedural separation (ASEPS) trials carried out in collaboration with ANSPs in the UK and Iceland.

In the ASEPS trials, aircraft equipped with the appropriate ADS-B avionics were switched from time-based longitudinal separation on North Atlantic routes to more accurate and efficient distance-based separation—a change enabled by the real-time surveillance provided by SB ADS-B. Additional efficiencies enabled by the service will be realized early in the 2020 fiscal year when a reduction in lateral separation and oceanic clearance without assigned speed come into effect.

INCREASING EFFICIENCY

Enhanced tools added to GAATS+ (Gander Automated Air Traffic System Plus) enabled the development and addition of Dynamic Vertical Split Functionality to CAATS (Canadian Automated Air Traffic System) in fiscal 2019. Sectors can now be split vertically as well as geographically, allowing controllers to distribute their workload by managing air traffic more evenly. Combined with reduced lateral separation of aircraft over the North Atlantic enabled by SB ADS-B, the ability to sectorize using both dimensions also increases safety and efficiency in transitioning aircraft to and from oceanic airspace.

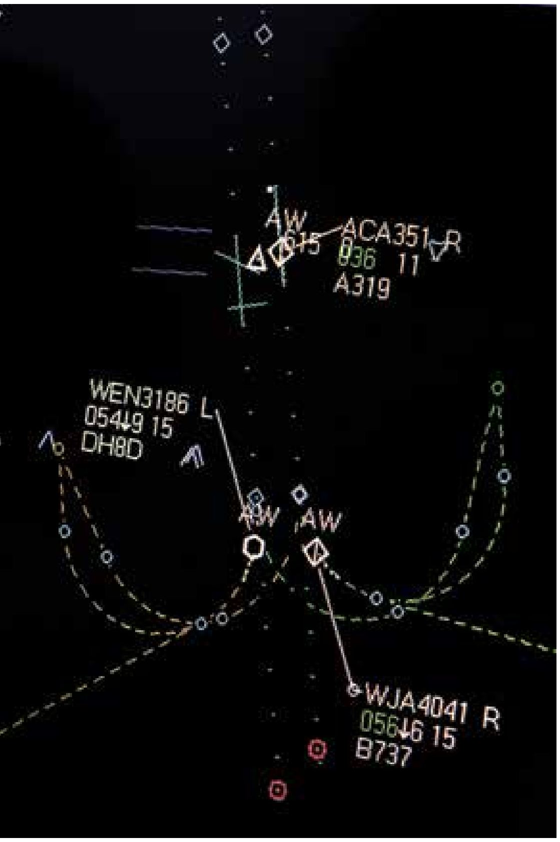
CANSO AWARD HIGHLIGHTS NAV CANADA INNOVATION

Together with NATS and Aireon, NAV CANADA was co-winner of the inaugural CANSO Award of Excellence in Air Traffic Management. The three organizations were cited for their partnership in deploying SB ADS-B surveillance in the North Atlantic. In addition to being co-winner, NAV CANADA was also a finalist for the CANSO award for implementing the new ICAO separation standard 'RNP AR' at Calgary International Airport, and a co-finalist with NATS for replacing paper strips with our Extended Computer Display System (EXCDS) in London Terminal Control. Along with highlighting NAV CANADA and other Award of Excellence finalists, the Q3-2019 edition of CANSO's Airspace magazine included a feature on how NAV CANADA is leading industry efforts to replace magnetic north with true north for air navigation.

99%+

equipment and systems availability

IN FISCAL YEAR 2019



REQUIRED NAVIGATION PERFORMANCE: RNP

RNP technology enables pilots flying aircraft equipped with the appropriate avionics to use satellite positioning to fly shorter, more precise approaches to airports, reducing flight time, fuel consumption and emissions. As well, RNP approaches allow continuous descent operations (CDO), helping to mitigate aircraft noise and, in some cases, also allow better avoidance of populated areas. We continue to develop new applications for this technology in order to take greater advantage of its potential to contribute to the safety, efficiency, and sustainability of our air navigation system.

Performance-based navigation

DELIVERING IMPRESSIVE BENEFITS TO CUSTOMERS AND THE ENVIRONMENT

Further development and deployment of RNP AR (Required Navigation Performance Authorization Required) operations were extended to five more airports in fiscal 2019–Québec City, Thunder Bay, London, Kitchener-Waterloo and Deer Lake. At the end of the fiscal year, 16 airports were fully operational with RNP AR, with deployment at other sites across the country continuing.

Although traffic and other considerations do not allow RNP AR procedures to be used on every landing, approximately 40 percent of aircraft are now suitably equipped to fly RNP approaches at airports where it is available. In fiscal 2019, aircraft flew approximately 65,500 RNP AR approaches to Canadian airports, resulting in a total reduction of some 435,300 track miles–resulting in a saving of over 2.2 million litres of fuel and avoiding over 6 million kilograms of GHG emissions.

CUSTOMERS PRAISE INTRODUCTION OF ESTABLISHED ON RNP AR IN CALGARY

Since the implementation of the new EoR standard in November 2018, the number of aircraft using the RNP AR approach at Calgary has nearly tripled, to some 3,000 a month. Flight times for those aircraft have been reduced by an average of up to four minutes–a total of nearly five hours less flight time per day. The resulting decrease in fuel consumption will lead to a reduction of 2,500 tonnes in GHG emissions in the first year alone–the kind of benefits that are generating strong support from our customers. In a letter congratulating NAV CANADA on the success of EoR at Calgary, WestJet stated that in the eight months since the standard was introduced, it had saved more than a million litres of fuel.

Based on the significant benefits the new standard is delivering in Calgary, deployment at other major airports in Canada is being evaluated, and ANSPs around the world have approached NAV CANADA for information on the implementation of the new standard.

Preparing for tomorrow today: Vancouver Airspace Modernization Project

With 10 airports and aerodromes in close proximity, the Vancouver region is one of the busiest and most complex airspace environments in Canada—and it is getting busier all the time: the number of flights per year through the region has risen by more than 15 percent since 2013, an increase of more than 100,000 flights per annum.

Following an assessment of current operations to better understand operational challenges in this airspace, NAV CANADA launched the Vancouver Airspace Modernization Project in May 2019. This project is aimed at ensuring the ongoing safety and efficiency of air traffic in this demanding environment, alignment with the long-term plans of airports and operators in the region, and addressing priorities such as emissions reductions and aircraft noise mitigation. Consultations with stakeholders, guided by detailed Terms of Reference prepared by NAV CANADA, are expected in fiscal 2020, with implementation planning to follow.

Facilities and infrastructure renewal

Air traffic controllers at the busy Pitt Meadows airport near Vancouver moved into a new tower in November 2018. In addition to upgraded technologies, the new tower is nine metres taller than its predecessor, giving controllers a much better view of the airport's maneuvering areas.

Work on a major renovation at the Edmonton ACC continued through the year and upgrades to the administrative and operational areas will complete the renovation in the upcoming fiscal year to help ensure our employees are equipped with a modern work environment and tools.

Safety and reliability at NAV CANADA facilities in Gander, Moncton and Edmonton will be further assured when three new dual redundant power back-up systems are commissioned early in fiscal 2020, reducing the risk of a power-related service disruption.

Work on the interior design and fit-up of the new NAV CANADA Head Office in downtown Ottawa continues to progress toward our goal of a modernized, functional facility, with a targeted completion and opening in fiscal 2021.

PAPERLESS PUBLICATIONS

As part of our ongoing effort to deliver value to stakeholders, one of the ways NAV CANADA is reducing its environmental footprint is by moving to the electronic publication of documents.

Effective November 2020, the Canada Air Pilot (CAP and CAP GEN) will no longer be published in paper format. In addition, the CD versions of RCAP, ePUB and AIP will be discontinued, and available by download only.

WEATHER SYSTEMS UPGRADE

Guaranteeing the accuracy of the weather information we provide is critical to ensuring the overall safety of air navigation in Canada. In fiscal 2019, we completed a series of improvements under the five-year, $66-million Weather Systems Upgrade Program launched in 2017. These included the installation of 31 new precipitation gauges, five laser ceilometers, and 15 new barometers at locations across the country. As well, as part of other ongoing service enhancements, we installed new Automated Weather Observation Stations (AWOS) in Buffalo Narrows and Pickle Lake.

Stakeholder Relations: Partnering on transformative change

As we continue to modernize the delivery of our services with the deployment of new, emerging and transformative technologies, and as demand on our airspace continues to grow and evolve, we rely more than ever on close engagement with our stakeholders.

Regular communication and consultations enable us to understand and balance the needs of all our partners while delivering on safety, efficiency and cost-effectiveness.

DOMESTIC OUTREACH

Reflecting the importance we place on input from our stakeholders, we expanded our domestic outreach and survey program in 2019 to include industry associations and airports as well as a number of domestic airlines. Our online stakeholder satisfaction surveys generated a 100 percent return rate–and continued to deliver the positive feedback received in previous years, with an average satisfaction rating of 8.6 out of 10.

We continue to explore new ways to expand and add value to our dialogue with stakeholders. In fiscal 2019, for example, we signed Collaboration MOUs with the Greater Toronto Airports Authority (GTAA) and the Vancouver Airport Authority (YVR AA), to better coordinate business planning and initiatives. We are pursuing similar collaboration with other major airports.

WORKING WITH STAKEHOLDERS ON AIRCRAFT NOISE MITIGATION

As part of our collaboration with the industry to reduce the impact of aircraft noise on communities, NAV CANADA works with stakeholders through community and noise consultative committees at airports across the country.

At Pearson Airport in Toronto, for example, we introduced several new procedures in fiscal 2019 that are reducing both aircraft noise and the number of people affected by it. These include leveraging PBN to enable new nighttime arrival procedures that in some instances have cut almost in half the noise levels in residential areas.

We have also increased the use of CDO at Pearson, reducing the noise associated with the thrust and drag needed to maintain level flight during approaches. We continue to monitor the impact of the new procedures, and have developed a new CDO analysis tool to support our efforts to realize the full noise-reduction potential of CDO.

We are also collaborating with the airport authority, airlines and Transport Canada in evaluating the feasibility of additional aircraft noise mitigation opportunities at Pearson through the Industry Noise Management Board (INMB)–created following the Third-Party Review of Toronto Pearson Airspace.

On a broader scale, we developed and published the NAV CANADA Quieter Operations Guide in December 2018, providing controllers and pilots with information on how they can maximize use of aircraft noise mitigating procedures.

Improving ANS Equipment

Noteworthy surveillance upgrade projects completed or launched during fiscal 2019 include installation of a third surface radar at Toronto Pearson to improve ground surveillance at the increasingly busy airport. Our expansion of multilateration system (MLAT) installations continued at Vancouver International, South Vancouver Island, Toronto, Springbank, and Red Deer, offering capacity, efficiency and safety improvements in complex airspace.

We completed the final phase of our multi-year instrument landing system (ILS) replacement program early in fiscal 2019. All 115 of our ILS installations are now running a common model of the ILS system, reducing maintenance costs.

Following consultations with customers and other stakeholders, we implemented the first phase of our multi-year program to reduce the network of ground-based navigational aids (NAVAIDs) across the country, supporting the transition to a more efficient and cost-effective PBN-based air navigation service for our customers. In 2019, 21 NAVAID locations were deleted from aeronautical publications. Additional decommissioning under the NAVAIDs Modernization Program (NMP) will continue in phases, with program completion by mid-2024. A network of ground-based NAVAIDs to support a series of recovery airports will remain in place to maintain safety of operations in the unlikely event of a significant global navigation satellite system (GNSS) loss of service.

SAFETY THROUGH RELIABILITY

NAV CANADA continued to live up to its outstanding reputation for reliability in 2019, with a greater than 99 percent record for critical equipment and systems availability. This performance reflects both our commitment to safety and the expertise and dedication of the members of our Engineering and Technical Operations teams—who often find themselves working in challenging conditions, remote regions and difficult terrain to keep equipment running smoothly.

STAKEHOLDER SATISFACTION SCORE:

8.1 /10 **Domestic airlines**

9.0 /10 **Major airports**

8.8 /10 **Key aviation associations**

⌄ BELOW

**Tom Wang,
Electronics Technologist (left)**

**Shawn Apdian,
Electronics Technologist**

Vancouver Tower

20 YEARS OF CONTINUOUS IMPROVEMENT IN TECHNICAL OPERATIONS

NAV CANADA continues to meet the highest standards for customer service. With strong quality management (QMS) and environmental management systems (EMS) supporting its commitment to safety and quality, the NAV CANADA Technical Operations group has again been recognized for providing the highest level of quality by BSI Group, a major international standards and certification institute. In 2019, BSI renewed the ISO 9001:2015 (QMS) and ISO 14001:2015 (EMS) certifications for Technical Operations for a further three years.

› STRATEGIC PLAN UPDATE

TECHNOLOGY

NAV CANADA understands the value technology can bring to safety and to our service. From the introduction of electronic flight data strips on touch screens in 1998 to the launch of satellite-based surveillance in 2019, our ongoing investments in technology development have enabled us to continually set new standards in operational performance.

ATM Engineering and ANS Technology initiatives

FOUR MAJORS STRATEGIC INITIATIVE: ENSURING SAFETY AND EFFICIENCY AT OUR BUSIEST AIRPORTS

Recognizing their importance as economic engines, in collaboration with our airport partners, we develop and implement technology solutions enabling us to manage increasing traffic, and provide a foundation for future traffic growth at Canada's four major international airports: Vancouver, Calgary, Toronto Pearson and Montréal-Trudeau.

To improve safety, throughput and productivity, NAV CANADA is leveraging new systems and procedures, coordinating these efforts with airports' own plans to enhance efficiency. As an example, we recently installed an arrival management system at our Toronto Pearson facility. Moving forward, we will test and deploy additional technology enablers, including departure and other traffic management systems, as well as tools that support revised wake turbulence categorizations and improved landing rates in headwinds, among others.

UPGRADING COMMUNICATIONS

NAV CANADA's aeronautical fixed telecommunications network (AFTN) infrastructure is significantly more robust and flexible following a series of technology modifications, modernizations and upgrades over the 2019 fiscal year. These included transitioning the AFTN systems from stand-alone servers to CHIP (the Common Hardware Integrated Platform), reducing ongoing support costs and bringing the hardware platform and operating system into alignment with other major NAV CANADA ATM systems.

Other enhancements included a significant modernization of our AFTN Message Handling System (MHS)—part of a global network over which information such as flight plans, weather and navigation data are exchanged internally, and with external customers and other ANSPs. We moved our system to the new ICAO Aeronautical Message Handling System (AMHS) standard, replacing our low-bandwidth, legacy circuits with modern IP-based private network connections, increasing system reliability and adding the bandwidth needed to meet growing data exchange needs.

$2.4 billion invested in technology and infrastructure

OVER THE PAST 20 YEARS.

New tools for controllers

On June 1, 2019, the tower at Montréal-Trudeau International Airport (YUL) became the second in Canada to deploy Integrated Working Position (IWP) technology. In use in Halifax (YHZ) since August 2018, IWP integrates electronic flight plan data, surveillance, operational information and lighting control, allowing controllers to focus their attention on a single interactive display that they can adapt to their working position within the tower cab. By providing controllers with an improved and consistent user interface, IWP technology facilitates traffic management, enhancing safety and efficiency.

Enabling innovation through ingenuity

Combining new technology with older systems can be a challenge. NAV CANADA's ATM Surveillance Systems team played a key role in ensuring the seamless integration of SB ADS-B with our existing radar-based surveillance system.

The team took an existing technology—Fusion—and adapted it to meet our specific needs. Now being rolled out nationally, this customized version of Fusion takes the information collected by all the surveillance sensors available for an aircraft target—including radar, space-based and ground-based ADS-B—and fuses the data from all these sources, so the controller sees a single target. The system also enables important new safety features, including short-term conflict alert (STCA) to warn controllers of a potential loss of separation.

Exploring the possibilities of a digital future

Advances in ATM technology and new uses of air traffic control (ATC)-grade video that go beyond simply eliminating blind spots are providing NAV CANADA the opportunity to evaluate how full digital facilities may offer other ways to deliver our services. A digital facility uses video cameras to provide enhanced 360-degree views of the airfield and surrounding airspace, integrating this video information with ATM and airport systems. Among other potential applications, digital facilities could enable ATS personnel to deliver service from a remote location, or provide a less-costly replacement for some ATS infrastructure. Digital facilities could also provide the flexibility to match our services to air traffic demands, as well as new tools to enhance situational awareness in all visibility conditions and additional automated safety features.

More ANSPs acquire award-winning NAV CANADA technologies

ATM technology solutions developed by NAV CANADA continue to be the choice of more and more ANSPs around the globe. In fiscal 2019, we completed the deployment of NAVCANsuite integrated ATM electronic flight data coordination products at Milan's Malpensa airport—the first of six airports in Italy that have committed to implementing this NAV CANADA technology.

In the UK, NATS and NAV CANADA continued the expansion of our EXCDS electronic flight data technology. With the addition of Bristol, Cardiff, Farnborough and Southampton towers, this NAV CANADA technology is now operational at six major airports in the UK.

Meanwhile, the successful deployment of EXCDS technology at London Terminal Control in fiscal 2018 was recognized this year at the prestigious Association of Project Management Awards, winning in two categories, including Overall Project of the Year. The London EXCDS project was also shortlisted for both a Jane's ATC Award and a CANSO ATM Innovation Award in 2019.

Reviewing service, evaluating technology

Helping to ensure it keeps pace with changing industry requirements and traffic growth, NAV CANADA evaluates the services it provides on a regular basis, with a particular focus on areas where technology can contribute to higher levels of safety and service. In all cases—whether we are considering enhancing existing technologies or deploying new technologies—we aim for phased, iterative changes that offer immediate improvements while also providing a foundation for longer-term improvements in safety and efficiency.

RIGHT ›

Rafy Terzian, Manager, Projects, Systems Engineering (left)
Bob Ballantyne, Systems Specialist
Ottawa Technical Systems Centre

› STRATEGIC PLAN UPDATE

BRAND

We take great pride in the work we do to ensure the safety and efficiency of air traffic in Canada, and we are equally proud of the work we do to be a good corporate citizen—to contribute to and support the industry and the communities of which we are part.

NAV CANADA Cares

At NAV CANADA, we understand that our responsibilities as a Company extend well beyond the skies. With operations at more than 100 sites across Canada, we are mindful that we also have a duty to the communities in which we work and live.

In 2019, we introduced a number of measures to extend the reach and increase the impact of our charitable contributions program, through which we support and match the efforts of our employees as they donate their time, money and energy to their communities, and to relief efforts around the world. In fiscal 2019, NAV CANADA Cares supported over 330 different organizations with hundreds of thousands of dollars in financial contributions and countless hours of volunteer time.

Building on a 20-year history of supporting charitable causes and community organizations, the revamped program provides employees with more options to support the community groups and events that they care about the most, and ensure consistency of opportunities across the country.

CARING COMPANY
SINCE 2018
IMAGINE CANADA

NAV CANADA IS RECOGNIZED AS A CARING COMPANY BY IMAGINE CANADA FOR OUR EXCELLENCE AND LEADERSHIP IN COMMUNITY INVESTMENT

Promoting the industry

Aviation and related industries are an important part of the Canadian economy and, as a major partner, NAV CANADA recognizes its obligation to contribute to the long-term growth and prosperity of the sector. The Company supports a variety of events and organizations that foster conversation and collaboration within the aviation industry; promote careers and recognize achievements in aviation; and advance diversity and inclusion in the industry. In fiscal 2019, we made significant updates to our Corporate Sponsorship Program to provide better alignment with our corporate goals.

In addition to sponsorship, we also engage in partnerships with aviation-related organizations, providing active support through contributions of expertise, materials and resources to groups such as the Elevate Aviation Learning Centre in Edmonton. The Centre opened in March 2019, offering participants the opportunity to explore diverse careers in the aviation industry through mentor presentations and conversations, as well as hands-on activities and tours of aviation industry facilities.

CALGARY TOWER MAKES NETWORK TELEVISION DEBUT

On September 11, 2018, the season finale of The Amazing Race Canada was the most watched television show in the country, attracting an incredible two million viewers—and the Calgary Control Tower was at the centre of the action. The show's producers said it was one of the best episodes they'd ever done, and for NAV CANADA, a unique and interesting way to raise awareness about our role as Canada's ANS provider.

$1 million+ contributed to community causes

IN FISCAL 2019.

Inspiring a new generation of aviation leadership

NAV CANADA and the Canada Aviation and Space Museum (CASM)—together with some 200 students and a range of aviation and space industry leaders in attendance—launched an innovative new partnership with an announcement event at the museum in February 2019. The partnership announcement was followed by a panel discussion on the important theme of future generations of leaders in the aerospace and aviation industry.

Aimed at introducing a new generation of Canadians to the exciting and rewarding career opportunities in aviation, the long-term partnership agreement enables the Company to leverage the popularity and prestige of the museum to raise awareness of NAV CANADA's role as a global leader and innovator in the aviation industry. A permanent, interactive exhibit at the museum—as well as a complementary travelling exhibit—will provide visitors with an overview of our responsibilities as an ANSP, and how the people of NAV CANADA work to ensure Canada's air navigation system continues to be the safest in the world.

Underscoring the new agreement, the partnership launch event also served to kick off a two-day aviation career fair that attracted more than 1,500 students to the museum.

The agreement also saw NAV CANADA return for a second year as the presenting sponsor of Canada Day at the CASM in 2019. The event, with displays and activities provided by two dozen exhibitors, attracted close to 9,000 visitors to the museum.

Engaging decision-makers

We launched our Elected Officials Outreach Program in 2018 to help raise awareness of NAV CANADA and increase understanding of our role as Canada's ANSP. The program focuses on elected officials who have ATS facilities in their riding; are involved in transportation-related legislative committees (such as the House of Commons Standing Committee on Transport, Infrastructure and Communities); or whose constituents may have an interest in ANS and airport operations.

Over the first two years of the program, more than three dozen elected officials from various levels of government have accepted invitations to visit one of our facilities, and meet the people who manage the day-to-day operation of Canada's ANS. These visits are an important opportunity to familiarize elected officials with NAV CANADA's position as a global leader in the development of technologies such as space-based ADS-B that enhance the safety, efficiency and environmental and social responsibility of air navigation. This type of outreach has been well-received by our guests, a number of whom have posted about their experience on social media.

⌄ BELOW

NAV CANADA and CASM aviation career fair

^ ABOVE

Pascal Bilodeau, Pilot

In Iqaluit transferring 13 bags of gear for Hockey North, providing hockey equipment to communities in need.

‹ LEFT

Sponsoring the Toronto Pearson Runway Run

› STRATEGIC PLAN UPDATE

FINANCE & GOVERNANCE

NAV CANADA is a private, not-for-profit company. Our operations are funded entirely by the fees we charge for our services, technology sales and related commercial activities. All profits are re-invested in the air navigation service to ensure that the Company continues to provide Canada with the safest, most efficient and cost-effective air navigation services—which includes ensuring the efficiency of our own operations. While safety is our priority, we are committed to providing value for all our stakeholders.

A UNIQUE CORPORATE AND COMMUNITY ASSET

The NAV CENTRE business continues to evolve while making a steady contribution to corporate finances. Best known as an award-winning venue for corporate, educational and training events, the Centre is also gaining recognition as a safe haven. In the first quarter of this year, the NAV CENTRE worked closely with federal and municipal government agencies to develop an exterior lodging site to provide temporary accommodation for up to 500 people seeking asylum in Canada. Later in the year, the Centre was home to 85 local senior citizens for almost four months after their retirement residence was damaged by flooding.

Financial highlights

For the fiscal year ending August 31, 2019, the Company reported a total revenue of $1,437 million, compared to $1,415 million in the previous year.

Revenue from customer service charges was $25 million higher, reflecting the 1.9 percent increase in air traffic over fiscal 2018 as measured by weighted charging units, as well as a reduction in base rates that had the effect of reducing service charges by an average of 0.4 percent.

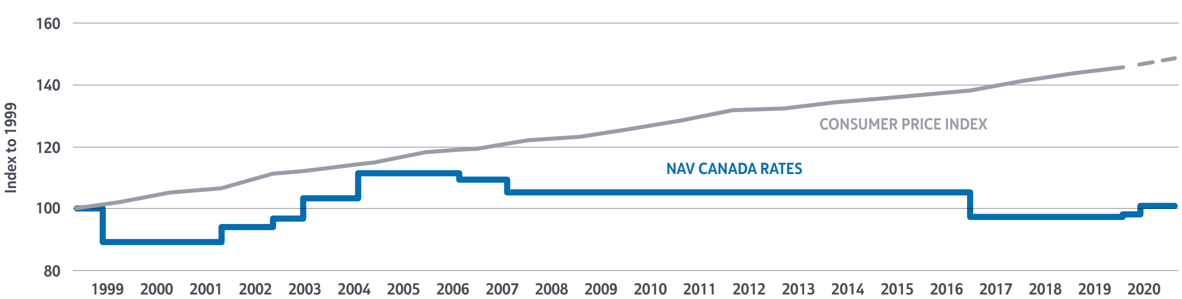
Operating expenses were $1,449 million, up from $1,396 million in fiscal 2018, due largerly to increases in compensation costs. Net other income and expenses were an expense of $91 million. This compares to the same expense in the previous year of $60 million, due primarily to positive fair value adjustments on our investment in Aireon LLC in the third quarter of fiscal 2018.

The Company had a net loss (before net movement in regulatory deferral accounts including rate stabilization) of $100 million in fiscal 2019 as compared to a net loss of $33 million in fiscal 2018.

The balance in the Company's rate stabilization account fell to $93 million in fiscal 2019, the result of a smaller than expected increase in air traffic—following a 5.1 percent increase in air traffic in fiscal 2018.

In keeping with the Company's financial strategy and rate stabilization mechanism, break-even financial results were achieved in fiscal 2019.

History of NAV CANADA Rate Changes [1] versus Consumer Price Index [2]



(1) Average changes since charges were fully implemented on March 1, 1999
(2) Consumer Price Index – Growth assumed to be 2.0 per cent for 2019 and beyond

Cost recovery

After reducing our customer service charges four times since 2004, we announced in August that, for the first time in 15 years, NAV CANADA would be increasing some fees. The increases are intended to recover the cost of providing SB ADS-B surveillance in domestic and North Atlantic oceanic airspace, which has been provided at no charge since the service was launched in March. Higher fees for surveillance data in domestic airspace—equating to an average increase of less than one percent on overall rate levels—are effective as of September 1, 2019. The increase for North Atlantic oceanic airspace will take effect in January 2020. In keeping with input from stakeholders, this will be accomplished through an increase in the existing flat-rate fee per flight.

The Canadian Transportation Agency received an appeal by the International Air Transportation Association (IATA) dated September 13, 2019 of the revised customer service charges set out in the announcement requesting, among other things, the cancellation of the revised charges. The appeal alleges that NAV CANADA did not comply with two of the charging principles in the Civil Air Navigation Services Commercialization Act (the ANS Act) and that it did not comply with the notice requirements of the ANS Act. NAV CANADA disagrees with IATA's appeal and will vigorously defend against it. The outcome is not determinable as of the date of printing of this Annual Report.

Pension and investments update

In December 2018, NAV CANADA submitted a response to the Government of Canada's consultation document, *Enhancing Retirement Security for Canadians*. Our response expressed support for proposals that would provide flexibility to pension plan sponsors, allowing them to work with plan members to implement solutions to protect members' interests and support the long-term sustainability of defined benefit pension plans. Management will continue to participate jointly with our bargaining agents in consultations with the Government in early 2020 on this topic.

Strengthening corporate planning

To bring greater cohesiveness and efficiency to our corporate practices and planning, we brought together a number of existing functions to form the new Corporate Planning and Performance group, added to our organizational structure in fiscal 2019. Among other responsibilities, the new group oversees and directs corporate planning, including leading the development of strategic priorities. The group also leads on workforce planning, helping to ensure we have the people we need when and where we need them to meet our responsibilities as an ANSP and achieve our goals. With a focus on continuous improvement and safety, the new group also promotes corporate and operational performance through analysis and reporting of information.

In fiscal 2020, key activities for the new group include a wide-ranging study of the potential impacts of emerging and transformative technologies such as SB ADS-B on NAV CANADA and the aviation industry in general.

Transforming enterprise resource planning

Further contributing to our growth as a high performance, high efficiency organization, the successful rollout of the first phase of Workday in November 2018 marked the initial step in the complex process of overhauling the Company's entire approach to enterprise resource planning (ERP). The first phase of Workday provides a significant enhancement of our financial and human resource management capacity—employees can now use the cloud-based software to access, enter, approve, manage and analyze data from any device. Additional Workday tools—designed to enhance learning, performance, competency, compensation and time management, among other things—will be brought online in the next phase, rolling out in the spring of 2020.

Securing our critical cyber infrastructure

Our air navigation service plays an essential role in assuring the safety and economic well-being of Canadians. It is part of Canada's national critical infrastructure, and assuring the integrity of the information technology and digital infrastructure that underpins the system is a key, ongoing priority for NAV CANADA.

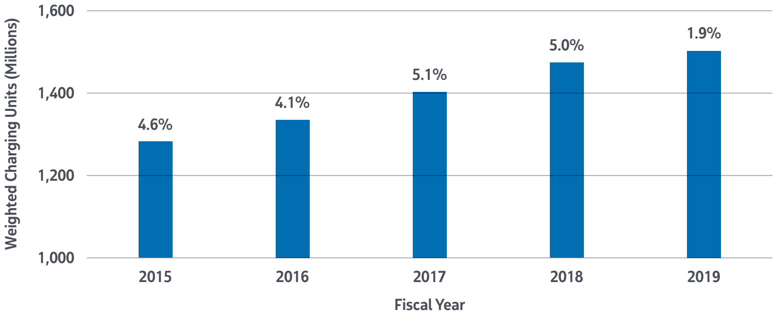
Strong governance and support ensure we are able to maintain the correct balance of people, process and technology to remain cyber safe in all aspects of the business. Collaboration across all departments, together with our Cyber Security Awareness Program, has enabled a strong culture of cyber safety within NAV CANADA. Among other initiatives, computer-based training, regular anti-phishing simulations, and free endpoint security software for employees reinforce both personal and corporate cyber security. In 2019, the results of another in a series of third-party cyber security assessments commissioned by the Company showed that our cyber security compares favourably to that of our peers in other safety and regulated industries.

Reflecting the growing focus on cyber protection in the aviation and related industries, the 2019 edition of our annual Cyber Summit attracted record attendance, as well as a new sponsor, with Air Canada joining NAV CANADA and the Ottawa International Airport Authority in producing and hosting the event. Building on the 2019 Summit theme of "Stronger Together", NAV CANADA led the establishment of the ANS Cyber Exchange forum—an informal, international alliance through which NAV CANADA and four other ANSPs can share information on cyber security strategies and issues.

^ ABOVE

NAV CANADA Cyber Summit

Air Traffic Activity in Weighted Charging Units



‹ LEFT

Mark Colbourne (forefront), Chad Yetman (middle) and Stephen Brown Air Traffic Controllers
Gander ACC

RIGHT ›

Darci Telicki Air Traffic Controller
Saskatoon Tower

HIGH LEVEL FSS EVACUATION

On May 20, 2019, the Chuckegg Creek wildfire was threatening to engulf the northwestern Alberta town of High Level—prompting authorities to order a full evacuation, including our Flight Service Station. The safety of the FSS staff and their families was the first consideration. With the evacuation ordered, NAV CANADA's incident command system (ICS) was put in motion. Employees from several departments were engaged in the response, ensuring appropriate hotel accommodations were waiting for FSS staff and families in Edmonton, along with everything they would need to manage an extended stay, and implementing Business continuity plans to ensure minimal disruption in service through the Edmonton ACC. The evacuation order was lifted on June 3. By June 5, everyone was back in High Level—happy to find the town almost unscathed—and the FSS back online.

Business Continuity and Emergency Planning

Ensuring we can continue to provide our critical services with minimal disruption even in emergency situations is part of NAV CANADA's commitment to safety. Business continuity plans (BCPs) are in place for all aspects of our operations, and are reviewed and updated regularly. In 2019, in addition to 11 tabletop exercises to test the integrity of BCPs at our ACCs and at four major towers, BCPs at more than 100 other NAV CANADA operational sites were reviewed and updated as necessary.

We also maintain a robust emergency management capability through our incident command system (ICS). The ICS is supported by 180 core members of our emergency management team, and training in emergency management and ICS procedures is provided to key staff members throughout the year—more than two dozen seminars in fiscal 2019 alone, including a series of eight, two-day sessions in advanced ICS procedures and protocols.

Adding new links to the security chain

Recognizing the interconnectedness that characterizes the aviation sector, our Supply Chain group—which manages all NAV CANADA purchasing—has initiated an additional cyber security process to assess measures taken by key suppliers. In conjunction with our Enterprise Technology Security Office (ETSO), experts with Supply Chain conduct a preliminary evaluation, followed by a more detailed assessment of any potential issues identified in the initial review. Since being introduced by the Supply Chain team, this assessment has been integrated into our Collaborative Strategic Supplier Program.

Supply Chain has also added to its business continuity and emergency readiness by working with NAV CANADA Emergency Planning to develop and circulate a business continuity management questionnaire to suppliers identified as critical to operations—raising awareness among key suppliers that will enhance our supply chain's readiness in the event of an emergency.

POINTS OF PRIDE AWARD RECIPIENTS

Chairman's Award for Employee Excellence

The Chairman's Award for Employee Excellence recognizes those employees whose efforts have made a truly significant difference in their workplace or in their communities.

PEOPLE

Individual award

Michelle Hewitson
Administrative Assistant, Moncton ACC

Team award

Todd Clark
Shift Manager, Gander ACC

Angela Hodder
Employee Health and Wellness Coordinator, Gander ACC

Dennis Mitchell
Team Supervisor, Gander ACC

Dave Warren
Unit Procedures Specialist, Gander ACC

CUSTOMER SERVICE

Individual award

Shelley Bailey
International Coordination, ATS, Head Office

Nick Paraskevopoulos
Team Supervisor, Toronto ACC

Luc Poirier
Team Supervisor, Facilities Maintenance, Montreal ACC

Team award

Kevin Mason
Electronics Technologist, Terrace FSS

James Munro
Team Supervisor, Head Office

Gabriel Plante
CNS Team Supervisor, Ottawa Logistics Centre

Dave Racine
Contract Equipment Technical Analyst, Winnipeg ACC

Christopher Ross
CNS Team Supervisor, Terrace FSS

PERFORMANCE

Individual award

Adrian Mackay
CNS Team Supervisor, Edmonton ACC

Team award

Michelle Berry
Senior Software Developer – TAT, Ottawa TSC

Kim Macdonald
Senior Software Developer – TAT, Ottawa TSC

Kevin Kotyluk
Senior Software Developer – TAT, Ottawa TSC

Lee Martineau
Senior System Software Development Specialist, Ottawa TSC

COMMUNITY SERVICE

Individual award

Brandi Olenik
Operational Training Specialist, Winnipeg ACC

President's Award for Outstanding Achievement

The President's Award for Outstanding Achievement recognizes those individuals or teams of employees who have made an exceptional contribution to NAV CANADA through their dedication to excellence.

EOR IN YYC TEAM

Members include:

Jonathan Bagg
Senior Manager, Public Affairs, Head Office

Sharon Cheung
Communications Specialist, Head Office

Brett Congram
Unit Operations Specialist, Calgary Tower

Blake Cushnie
General Manager, Flight Information Region, Toronto ACC

Jeff DeHaan
Performance Based Navigation (PBN) Flight Procedures Supervisor, Waterloo Tower

Hassan Hamdan
Manager, Social Media, Head Office

Tracy Lager
ATC Standards and Procedures Specialist, Head Office

Dmitri Limitovsk
Team Supervisor, Edmonton ACC

Brent Lopushinsky
Unit Operations Specialist, Calgary Tower

Kelly McIlwaine
Regulatory and International Planning Specialist, Head Office

Garnet Miller
Air Traffic Controller, Edmonton ACC

Ryan Myles
Air Traffic Controller, Edmonton ACC

Christopher Rieken
National Manager, Performance Based Operations Development, Head Office

Charles Simard
Manager, Client Relations & Production Planning, Ottawa ANS

Scott Young
Team Supervisor, Edmonton ACC

FLIGHT INSPECTION MODERNIZATION TEAM

Members include:

Bob Baggs
Manager, Navigation Systems Life Cycle Support, Ottawa TSC

Steve Bellingham
Manager, Navigation Systems Engineering, Ottawa TSC

Jacqueline Blair
Chief, Commercial Operations, Ottawa ANS

Michael Cooke
Supervisor, Flight Operations Planning and Dispatch, Ottawa ANS

Andrew Graham (retired)
Manager, Flight Inspection Engineering, Ottawa TSC

Joseph Grubesic
Manager, Flight Inspection Operations, Ottawa ANS

Don Cody Goudy
Life Cycle Management Specialist, Ottawa TSC

Hicham Abou Hamad
Senior Planning and Design Engineer, Ottawa TSC

Charles Morrison
Senior GPS Navigation Engineer, Ottawa TSC

Jason Mytrash
Technical Flight Inspector, Ottawa ANS

Paul Papp
Technical Flight Inspector, Ottawa ANS

Raj Verman
Senior Engineer, ILS Control Systems and RVR, Ottawa TSC

CORPORATE GOVERNANCE

Board of Directors Structure and Composition

The Company's overall approach to corporate governance follows best practices and keeps pace with evolving requirements, including those under applicable securities legislation.

The Board is comprised of 15 directors, at least two-thirds of whom, including the President and CEO, are required to be Canadian citizens. One director (the President and CEO) is an employee of the Company. All other directors are "independent" directors as that term is defined in National Instrument 52-110 *Audit Committees* (NI 52-110).

NAV CANADA represents a unique consensus among the major stakeholders in the ANS – the Government of Canada, commercial air carriers, general aviation and our unionized employees. Our governance structure reflects this consensus. All four of these major stakeholders are members of the Company together with a Director member (collectively, the Members).

The result is a board of directors where all stakeholder interests are known but none dominates. The Board's committees are similarly constituted except for the Human Resources & Compensation Committee. The five Members elect the directors as follows:

MEMBER	NUMBER OF DIRECTORS
Government of Canada	3
Commercial Air Carriers	4
General Aviation	1
Labour Unions	2
Directors	4

The Board discharges its responsibilities directly and through committees. The Board holds five scheduled meetings each year and unscheduled meetings are held from time to time as required.

Our By-Laws disqualify from directorship any person elected to the Parliament of Canada or any provincial legislature or territorial legislative assembly; federal, provincial or territorial government employees; and directors or employees of an entity that has a material interest as a supplier, client or customer of the ANS. Every director and officer of the Company is required to sign and abide by our *Code of Conduct and Conflict of Interest Guidelines for Directors and Officers* (Code of Conduct).

Directors

Directors are elected for terms not exceeding three years, with terms expiring at the Company's annual general meeting. No director, other than the President and CEO, may serve as a director for more than 12 years in total. Set out below is information on the current directors, including their Committee membership and meeting attendance records for fiscal 2019.

Marc Courtois

Director; Chair of the Board

Québec, Canada

Elected by: **Board of Directors**
Director since: **February 16, 2012**
Current Term Expires: **2021**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	9/9
Audit & Finance Committee*	5/5
Corporate Governance Committee	3/3
Customer Service Charges Committee*	4/4
Human Resources & Compensation Committee*	4/5
Pension Committee*	4/5
Safety Committee	4/4

**ex officio member.*

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Corporate Director.

Edward M. Barrett

Director; Chair of the Customer Service Charges Committee

New Brunswick, Canada

Elected by: **Board of Directors**
Director since: **February 7, 2013**
Current Term Expires: **2022**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	9/9
Corporate Governance Committee	3/3
Customer Service Charges Committee	4/4
Human Resources & Compensation Committee	5/5
Pension Committee	5/5

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Co-CEO and Chair of Barrett Corporation.

Mary-Ann Bell

Director; Chair of the Safety Committee

Québec, Canada

Elected by: **Government of Canada**
Director since: **May 30, 2014**
Current Term Expires: **2020**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	8/9
Customer Service Charges Committee	4/4
Human Resources & Compensation Committee	5/5
Safety Committee	4/4

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Corporate Director. From 2009 to 2014, Senior Vice President, Québec and Ontario, Bell Aliant Regional Communications.

Jean Coté

Director

Québec, Canada

Elected by: **Commercial Air Carriers**
Director since: **January 14, 2015**
Current Term Expires: **2021**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	9/9
Human Resources & Compensation Committee*	3/3
Pension Committee	5/5
Safety Committee*	2/2

**Mr. Coté was a member of the Human Resources & Compensation Committee, until January 9, 2019 at which time he joined the Safety Committee.*

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Corporate Director. Prior to January 2015, Vice President, Commercial Operations at Air Transat.

Robert J. Davis

Director

Ontario, Canada

Elected by: **Commercial Air Carriers**
Director since: **April 8, 2009**
Current Term Expires: **2021**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	9/9
Audit & Finance Committee	5/5
Human Resources & Compensation Committee*	2/2
Safety Committee*	2/2

**Mr. Davis was a member of the Safety Committee until January 9, 2019 at which time he joined the Human Resources & Compensation Committee.*

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Corporate Director.

Michael DiLollo

Director

Ontario, Canada

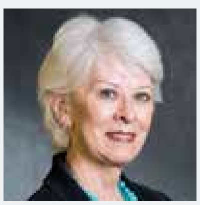
Elected by: **Commercial Air Carriers**
Director since: **February 7, 2013**
Current Term Expires: **2022**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	8/9
Audit & Finance Committee	5/5
Safety Committee	4/4

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Managing Director, Specialty Finance, Fixed Income at Caisse de dépôt et placement du Québec (CDPQ). From June 2017 to April 2019, Senior Director, Investment, Specialty Finance, Fixed Income at CDPQ. Chief Executive Officer of Caribbean Airlines from May 21, 2014 until October 28, 2015.



Bonnie DuPont

Director; Chair of the Human Resources & Compensation Committee

Alberta, Canada

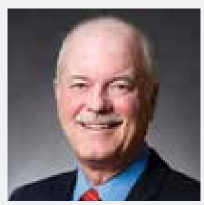
Elected by: **Board of Directors**
Director since: **February 7, 2013**
Current Term Expires: **2022**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	9/9
Corporate Governance Committee	3/3
Human Resources & Compensation Committee	5/5

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Corporate Director.



Marc Grégoire

Director

Québec, Canada

Elected by: **Government of Canada**
Director Since **May 13, 2019**
Current Term Expires: **2022**

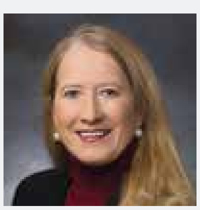
MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board*	3/3
Audit & Finance Committee*	1/1
Customer Service Charges Committee*	2/2

**Mr. Grégoire became a member of the Board on May 13, 2019 and a member of each of the Audit & Finance Committee and the Customer Service Charges Committee on May 30, 2019.*

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Corporate Director. From June 2010 to December 2014, Commissioner of the Canadian Coast Guard, Fisheries and Ocean.



Linda Hohol

Director; Chair of the Audit & Finance Committee

Alberta, Canada

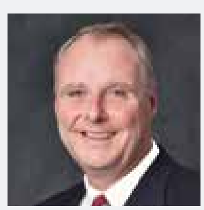
Elected by: **Board of Directors**
Director since: **February 16, 2012**
Current Term Expires: **2021**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	9/9
Audit & Finance Committee	5/5
Customer Service Charges Committee	4/4
Pension Committee	5/5

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Corporate Director.



Robert Reid

Director; Chair of the Corporate Governance Committee

Ontario, Canada

Elected by: **Commercial Air Carriers**
Director since: **April 8, 2009**
Current Term Expires: **2021**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	7/9
Corporate Governance Committee	3/3
Human Resources & Compensation Committee	5/5

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Corporate Director.

Michelle Savoy

Director; Chair of the Pension Committee

Ontario, Canada

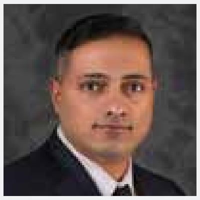
Elected by: **Government of Canada**
Director since: **December 15, 2015**
Current Term Expires: **2021**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	9/9
Corporate Governance Committee	3/3
Pension Committee	5/5

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Corporate Director.



Umar Sheikh

Director

British Columbia, Canada

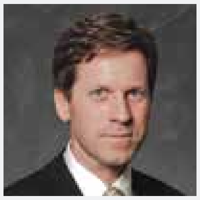
Elected by: **Labour Unions**
Director since: **January 13, 2016**
Current Term Expires: **2022**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	8/9
Audit & Finance Committee	4/5
Safety Committee	4/4

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Chief Executive Officer of the British Columbia Nurses' Union.



Scott Sweatman

Director

British Columbia, Canada

Elected by: **Labour Unions**
Director since: **April 8, 2010**
Current Term Expires: **2022**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	9/9
Corporate Governance Committee	3/3
Customer Service Charges Committee	4/4
Pension Committee	5/5

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Partner at Dentons Canada LLP.

David Weger

Director

Saskatchewan, Canada

Elected by: **General Aviation**
Director since: **January 10, 2018**
Current Term Expires: **2021**

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	9/9
Audit & Finance Committee	5/5
Customer Service Charges Committee	4/4

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

Corporate Director. From January 2011 to May 1, 2018, Senior Director, Administration Services at Nutrien Ltd. (formerly Potash Corporation of Saskatchewan Inc.).

Neil R. Wilson

Director

Ontario, Canada

Director since: **January 1, 2016**
Current Term Expires: N/A

MEETING ATTENDANCE/COMMITTEE MEMBERSHIP

Board	9/9
Pension Committee	5/5
Safety Committee	4/4

PRINCIPAL OCCUPATION HELD IN LAST FIVE YEARS

President and CEO of the Company from January 1, 2016. From December 1, 2012 to December 31, 2015, Executive Vice President, Administration and General Counsel of the Company.

Gender Diversity

The Company and the Board recognize the importance of diversity, including gender, in the selection of directors and executive officers, and believe that diversity enhances corporate and board discussion, viewpoints and, ultimately, performance.

While there are no targets in place regarding the representation of women on the Board or when hiring executive officers, the Company has an *Employment Equity and Diversity Policy* which applies when hiring and promoting executive officers. This policy sets out an objective that the Company's hiring practices are to be as much a reflection of the Canadian labour market as possible, while improving designated group representation within the workplace and supporting diversity in its business practices.

Two-thirds (67%) of the Board's members are elected by the Company's stakeholder members and while the Board cannot dictate requirements to those stakeholders, the Corporate Governance Committee of the Board regularly examines the experience, skills and attributes, including gender, required for filling Board vacancies, and communicates these requirements to our stakeholder members for their consideration when electing directors. The Corporate Governance Committee similarly identifies desirable competencies and attributes, including gender, while ensuring an appropriate mix of skills and experience with respect to those directors elected by the Board.

Currently, 26% of the Board members are women, with 67% of the directors elected by the Government of Canada, and 50% of the Board-elected directors, being women. There are also three women (23%) on the Executive Management Committee of the Company.

Board Committees

Our Board has six committees, as described below, which do not take action or make decisions on behalf of the Board unless specifically mandated to do so.

AUDIT & FINANCE COMMITTEE

MANDATE	MEETINGS HELD IN FISCAL YEAR	CURRENT MEMBERSHIP
Responsible for assisting the Board in fulfilling its oversight responsibilities relating to the Company's financial reporting and disclosure obligations, including review of annual and interim financial statements, the integrity of the Company's financial reporting and internal controls, the oversight of the Company's internal audit function, compliance with legal and regulatory requirements, and the qualifications, independence and performance of the Company's public accountants. The Committee also provides oversight on treasury matters and reviews and recommends to the Board any financing and/or financial risk management transactions proposed by management. In addition, the Committee provides oversight of the Company's cyber security strategies and implementation as they relate to the Company's business systems.	Five	Linda Hohol, Chair Robert Davis Michael DiLollo Marc Grégoire Umar Sheikh David Weger

CORPORATE GOVERNANCE COMMITTEE

MANDATE	MEETINGS HELD IN FISCAL YEAR	CURRENT MEMBERSHIP
Develops general policies relating to corporate governance to ensure that the Company has in force an effective corporate governance system that adds value and assists the Company in achieving its objectives.	Three	Robert Reid, Chair Edward Barrett Marc Courtois Bonnie DuPont Michelle Savoy Scott Sweatman

CUSTOMER SERVICE CHARGES COMMITTEE

MANDATE	MEETINGS HELD IN FISCAL YEAR	CURRENT MEMBERSHIP
Assists the Board in fulfilling its responsibilities in establishing or revising the Company's customer service charges.	Four	Edward Barrett, Chair Mary-Ann Bell Marc Grégoire Linda Hohol Scott Sweatman David Weger

‹ LEFT

John Spence, Billing System and Program Support Specialist

Kathleen Torres-Kropop, Accounts Receivable Collector

Head Office

HUMAN RESOURCES & COMPENSATION COMMITTEE

MANDATE	MEETINGS HELD IN FISCAL YEAR	CURRENT MEMBERSHIP
Provides oversight to ensure a high quality of leadership within NAV CANADA, an employee and labour relations strategy that provides for a productive and fulfilling work environment, and ongoing flexibility and productivity throughout the Company. As well, the Committee ensures that the human resources plans and programs reflect the Company's human resources values and principles.	Five	Bonnie DuPont, Chair Edward Barrett Mary-Ann Bell Robert Davis Robert Reid

PENSION COMMITTEE

MANDATE	MEETINGS HELD IN FISCAL YEAR	CURRENT MEMBERSHIP
Oversees the investment management of plan assets and the administration of the Company's retirement plans, which include two registered pension plans and supplementary retirement arrangements. At the invitation of the Chair, an observer member, nominated by the employees' unions, attends the meetings.	Five	Michelle Savoy, Chair Edward Barrett Jean Coté Linda Hohol Scott Sweatman Neil Wilson Peter Duffey, Observer

SAFETY COMMITTEE

MANDATE	MEETINGS HELD IN FISCAL YEAR	CURRENT MEMBERSHIP
Oversees the safety of the Company's air navigation services and products, primarily by monitoring the integrity and effectiveness of our risk management safety policies. In addition, the Committee provides oversight of the Company's cyber security strategies and implementation as they relate to the Company's operational facilities and operational systems.	Four	Mary-Ann Bell, Chair Jean Coté Marc Courtois Michael DiLollo Umar Sheikh Neil Wilson

Director Compensation

DIRECTORS' COMPENSATION FISCAL 2019

NAME	FEES EARNED ($)	ALL OTHER COMPENSATION [5] ($)	TOTAL ($)
Edward Barrett	114,000	9,000	123,000
Mary-Ann Bell	103,000	1,500	104,500
Jean Coté	91,000	1,500	92,500
Marc Courtois [1]	198,750	1,500	200,250
Robert Davis	91,500	–	91,500
Michael DiLollo	91,000	–	91,000
Bonnie DuPont	99,000	9,000	108,000
Marc Grégoire [2]	24,141	–	24,141
Linda Hohol	112,500	10,250	122,750
Robert Reid	93,500	1,500	95,000
Michelle Savoy	94,000	–	94,000
Umar Sheikh	89,000	7,500	96,500
Scott Sweatman	95,000	7,500	102,500
Louise Tardif [3]	69,250	–	69,250
David Weger	88,500	6,000	94,500
Neil Wilson [4]	–	–	–

(1) Mr. Courtois receives an annual fee of $182,750 as Chair of the Board and no other additional fees for attendance at meetings of the Board and committees of the Company. Mr. Courtois also receives an annual retainer of $10,000 and a per meeting fee of $1,500 from the Company for serving as the chair of the board of directors of Aireon. He is entitled to reimbursement for travel fees.

(2) Mr. Grégoire joined the Board on May 13, 2019.

(3) Ms. Tardif retired from the Board on May 13, 2019.

(4) As President and CEO, Mr. Wilson does not receive directors' fees.

(5) Includes travel fees paid to directors who are required to travel across two provinces for meetings, and per diems, which are paid when a director is required to conduct business on behalf of the Board other than attendance at seminars, trade association meetings, training, or for preparation for Board and/or committee meetings.

‹ LEFT

Gwendolyn Campbell
Flight Service Specialist
Gander IFSS

Executive Compensation

The executive compensation program at NAV CANADA consists of the following elements (referred to as the total compensation program):

- base salary;
- annual cash incentive;
- long-term cash incentive;
- pension plan; and
- benefits and perquisites.

The compensation of executive officers, other than the President and CEO, is recommended by the President and CEO and reviewed and approved by the Human Resources & Compensation Committee. The compensation of the President and CEO is recommended by the Committee and reviewed and approved by the Board. Base salaries for all executive officers, including that of the President and CEO, are designed to be competitive and are determined on the basis of outside market data as well as individual performance, responsibilities and experience level. Base salaries are reviewed annually by the Human Resources & Compensation Committee.

Base salaries for fiscal 2019 for the five highest paid executive officers were as follows:

NAME AND POSITION	ANNUAL BASE SALARY
Neil R. Wilson, President and CEO	$616,800
Rudy Kellar, Executive Vice President, Service Delivery	$352,300
Alexander N. Struthers, Executive Vice President, Finance and Chief Financial Officer	$350,100
Raymond Bohn, Executive Vice President, Human Resources, Communications and Public Affairs	$335,200
Donna Mathieu, Vice President, Pension Investments and Treasurer	$305,300

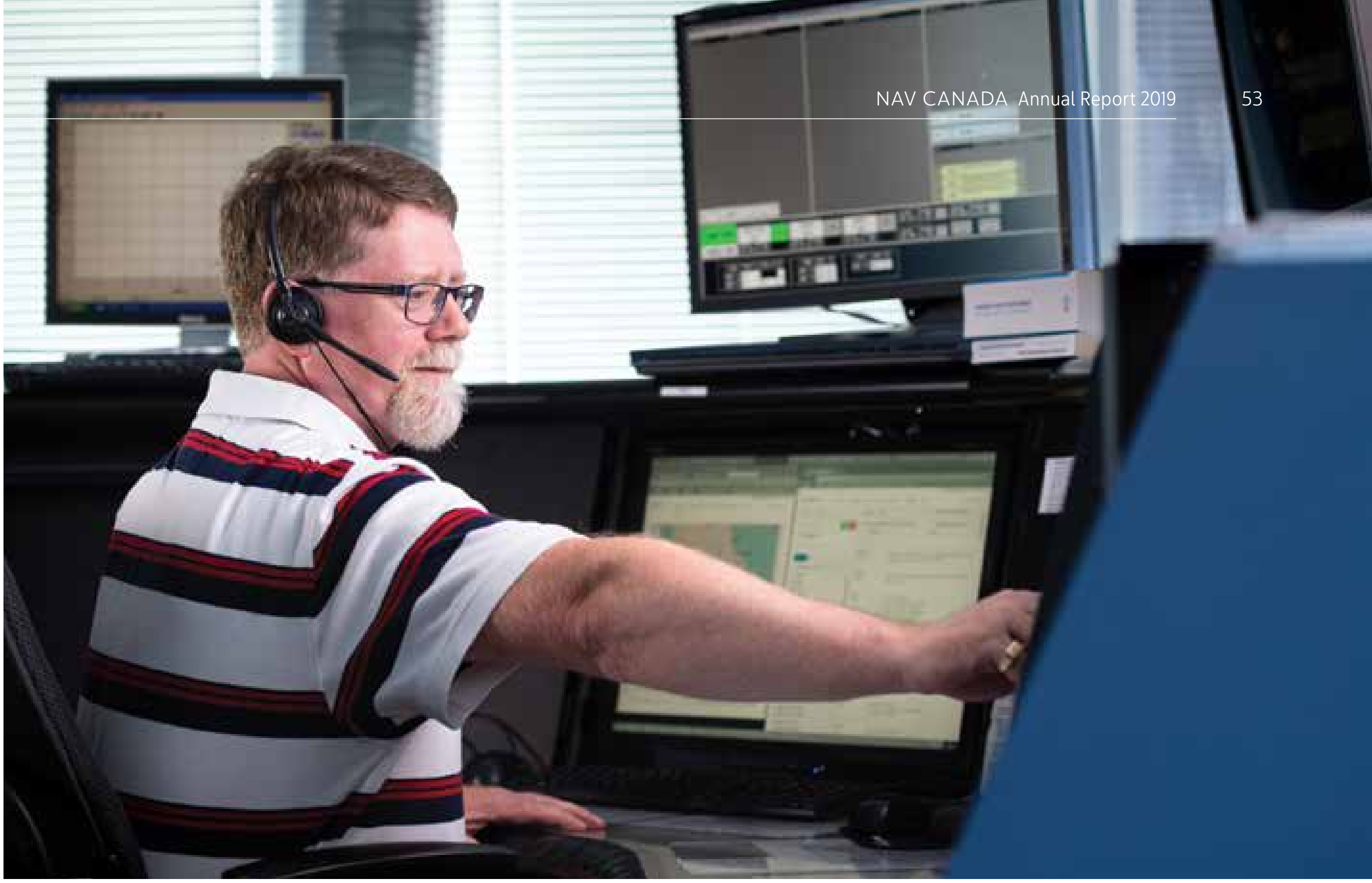
Ethical Business Conduct

The Code of Conduct is designed to govern the conduct of all directors and officers, and the disclosure and avoidance of conflicts of interest. This disclosure is updated annually, or more frequently, as required. All of the Company's directors and officers have signed a Code of Conduct and Conflict of Interest declaration. During fiscal 2019, no proceedings were taken against any director or officer by the Board under the Code of Conduct.

In addition, NAV CANADA has a Code of Business Conduct which applies to all directors, officers and employees of the Company. Copies of both the Code of Conduct and the Code of Business Conduct are available on the Company's website and on SEDAR at **www.sedar.com**. The Corporate Governance Committee is responsible for reviewing with the Board and management the results of an annual review of compliance with the Code of Conduct.

Directors and executive officers of the Company who hold office as a director, officer or elected official of another entity or who are an associate or employee of another entity that might be in conflict with their duty or interest towards the Company, must file a written declaration to this effect with the Company. No director or officer who is in such a position may participate in the consideration of any transaction or agreement in which such other entity has an interest.

The Code of Business Conduct, which applies to all employees, directors and officers of the Company is reviewed and approved by the Board and complies with the requirements of National Policy 58-201 *Corporate Governance Guidelines*. The Board is committed to bringing the highest degree of honesty, integrity and ethical conduct to the Company's operations and business relationships. This commitment is reflected in the NAV CANADA vision and values, as well as in all dealings with employees, customers, bargaining agents, suppliers and other stakeholders. The Code of Business Conduct describes how that commitment is put into everyday practice.



The Code of Business Conduct is not simply a list of rules. It is intended to help employees, directors and officers maintain the very high standard of ethical behaviour expected of a company entrusted with public safety. Throughout the Code of Business Conduct, employees, directors and officers are directed to appropriate internal review and redress mechanisms available within the Company to address specific situations and potential violations. Examples of internal review and redress mechanisms include the Alternate Dispute Resolution Process, the Workplace Accommodation Right of Review Process, the Official Languages Internal Complaints Procedure, grievance processes available to unionized employees, and the Internal Complaints Resolution Process.

The Company has in place policies and processes on whistleblowing. The NAV CANADA whistleblowing system, called Sentinel, is confidential and independently managed, and has procedures for the receipt, retention and treatment of complaints received regarding accounting, internal accounting controls, auditing or pension plan matters, as well as reporting of serious ethical, legal, fraudulent or other concerns that could harm the reputation and/or financial standing of the Company. Sentinel ensures that employees have an outlet for reporting concerns relating to the Company that are not being addressed through existing channels, and that concerns regarding accounting, internal controls or auditing matters are directed to the Chair of the Audit & Finance Committee, concerns relating to pension plan matters are directed to the Chair of the Pension Committee and serious ethical, legal, fraudulent or other concerns are directed to the Chair of the Board.

In addition, the Company has a confidential safety reporting program, called ARGUS, which provides employees with the opportunity to identify potential hazards while remaining anonymous. ARGUS ensures that employees who recognize a potential hazard can report their concerns confidentially. Every employee and manager is encouraged to use the ARGUS program, without fear of recrimination.

The Board, officers and management of the Company are committed to an active disclosure culture. The Company's Corporate Disclosure Policy (available on the Company's website) ensures communications to the investing public are timely, accurate, consistent, informative, compliant with legal and regulatory requirements and broadly disseminated.

^ ABOVE

Shawn Fitzpatrick
FIC Flight Service Specialist
Halifax FIC

ADVISORY COMMITTEE

As an independent not-for-profit corporation, NAV CANADA uses a highly effective governance model in its provision of advanced navigation system infrastructure and delivery of products and services. The NAV CANADA Advisory Committee plays an important role in this governance model working with the NAV CANADA Senior Management Team and reporting directly to the NAV CANADA Board of Directors (the Board).

The Advisory Committee is comprised of 20 key industry stakeholders from numerous aviation industry associations across Canada. Just as NAV CANADA has evolved over the years, so too has the Advisory Committee. Each Association or Council nominates a representative industry expert to become a member for a three-year term. The selected member is appointed to their respective position after careful internal scrutiny to ensure the highest standard of professionalism and sponsorship is realized thereby ensuring their collective input remains valuable to the Board and ultimately to NAV CANADA. The Advisory Committee members are reflective of the broad spectrum of industry stakeholders: from major industry unions to regional associations serving remote communities to hub airports serving our major metropolitan areas and from general aviation to major commercial airlines.

The Advisory Committee meets three times a year to review, report and make recommendations to the Board on matters related to the delivery of services by NAV CANADA to its customers. Two meetings are strategically aligned with major NAV CANADA events in Ottawa to permit efficient and productive interactions with NAV CANADA's senior leadership team and the Board. An October meeting is scheduled with the Safety Committee of the Board and a January meeting is held in conjunction with the NAV CANADA Annual General Meeting. The third meeting is held offsite in regions across the country to allow the members of the Advisory Committee to observe and understand NAV CANADA's operations and meet with stakeholders in the region. Over the past five years the Advisory Committee has visited the Okanagan (Kelowna), Winnipeg, Vancouver, Whitehorse and St John's.

In 2019, the Advisory Committee travelled to Toronto to gain valuable exposure to NAV CANADA's operations in the Greater Toronto Area. The Committee observed how NAV CANADA is working with the Greater Toronto Airports Authority to improve system operations. The Toronto Pearson Airport is the 14th busiest airport in the world and is a major hub with services to 180 destinations around the world. Airport infrastructure and ATC staffing were acknowledged as ongoing challenges.

While in Toronto, the Advisory Committee toured the Air Canada Operations Centre and witnessed the very close and productive working relationship Air Canada has with NAV CANADA. The 4 Majors Project was cited as an example of system-wide improvement that will benefit all stakeholders. Advisory Committee members were impressed with a demonstration of the NAV CANADA Tower Simulator and with the professionalism and talent of NAV CANADA's team at the Toronto ACC.

Over the past three years, the Advisory Committee has noted improvements in communication and collaboration with NAV CANADA at all levels. This is particularly true with senior management as they share successes and concerns along with their strategies for improvement. Improvements to the Aeronautical Study process which allow stakeholders an opportunity to access status updates throughout the timeline of a project is a great example of the positive changes that are being initiated. The Advisory Committee encourages NAV CANADA to continue open exchanges throughout all phases of development and implementation. This will be acutely important for the upcoming Vancouver Airspace Modernization Project. PBN in Canadian airspace continues to increase system capacity and improve operational efficiency while enhancing safety. This has really been evident in Calgary since the introduction of the EoR separation standard. Nearly 100 RNP AR approaches are flown each day in Calgary, which has dramatically reduced the miles flown and GHGs emitted on arrival. NAV CANADA is the first ANSP in the world to implement ICAO's EoR.

Equally impressive in 2019 was the operational deployment of SB ADS-B Surveillance. The associated ALERT system and introduction of SATVOICE will significantly enhance service capabilities especially in oceanic airspace. Although the increase in navigation fees to offset the cost of SB ADS-B was not received well by customers, it is understood that NAV CANADA will continue to look for opportunities to minimize its impact on the operators' bottom line while delivering uninterrupted global communication, navigation and surveillance services.

The Advisory Committee recognizes the challenges NAV CANADA faces in meeting the needs of a rapidly growing and evolving industry and is confident that NAV CANADA is taking appropriate measures to prepare itself to meet these challenges. Strategic plans on workforce management, terminal performance management and improvements in stakeholder consultation processes are all demonstrative of NAV CANADA's ongoing commitment to improve service delivery.

Finally, and again this year, the Advisory Committee recognizes that NAV CANADA's SMS continues to be world class. Redundancy built into technical substructures and equipment, the open non-punitive reporting system and the enhanced data sharing processes are all serving to enhance aviation safety in Canada.

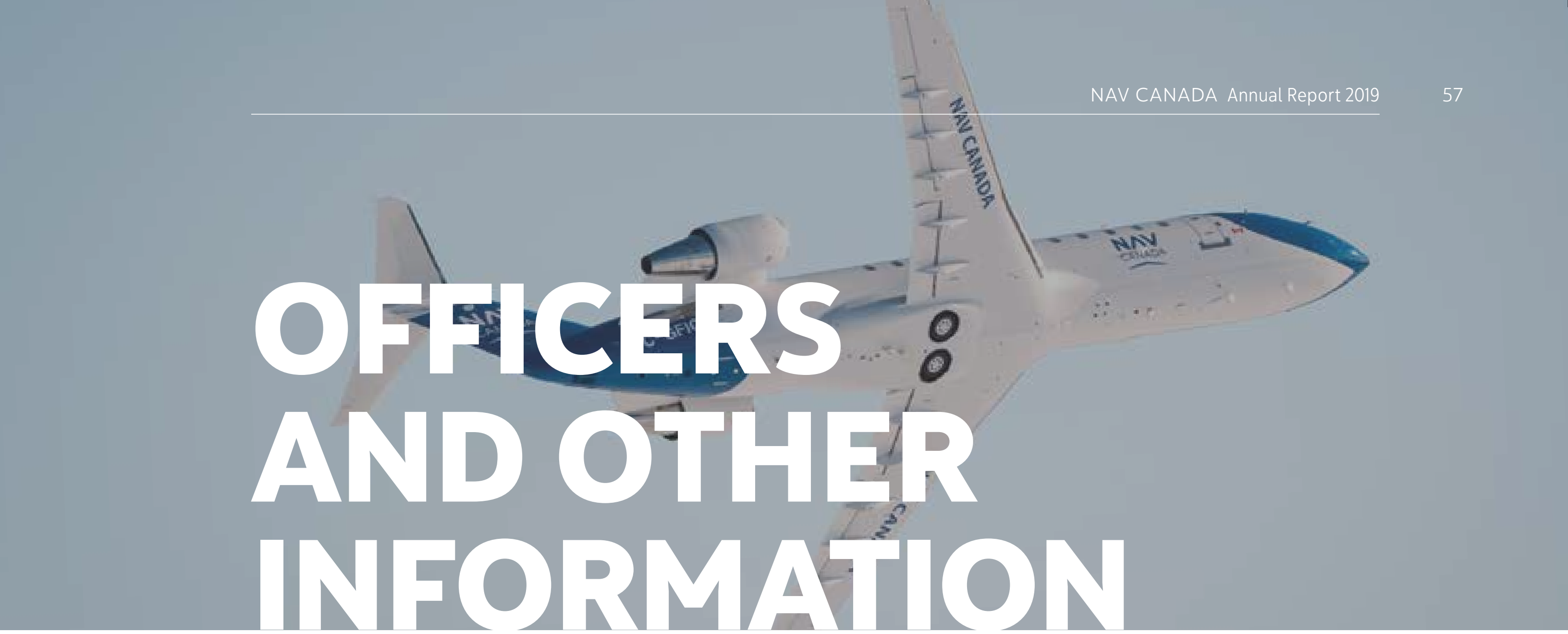
The Advisory Committee commends NAV CANADA for these remarkable achievements and looks forward to continuing to provide advice and support to the Board and the organization's Senior Management Team to meet whatever challenges lie ahead. On behalf of the Advisory Committee, I wish to congratulate NAV CANADA on its many remarkable achievements this past year.

Onward

David Deere
Chairman, NAV CANADA Advisory Committee

Advisory Committee 2019

ADVISORY COMMITTEE MEMBER	NOMINATING ASSOCIATION
David Deere, *Chair* WestJet	Commercial User National Airlines Council of Canada NACC
Brett Patterson, *Vice Chair* Canadian Airports Council (CAC)	National Airports Association CAC
David J. Nowzek, *Secretary* British Columbia Aviation Council (BCAC)	Regional Aviation Associations BCAC
Les Aalders Air Transport Association of Canada (ATAC)	Air Transport Association of Canada ATAC
Peter Black Air Line Pilots Association, International (ALPA)	Professional Pilots Association ALPA
Daniel Cadieux Air Canada Pilots Association (ACPA)	Professional Pilots Associations ACPA
Paul Cameron International Brotherhood of Electrical Workers (IBEW) Local 2228	Unions IBEW Local 2228
Peter Duffey Canadian Air Traffic Control Association (CATCA) Unifor Local 5454	Unions CATCA Unifor Local 5454
Bernard Gervais Canadian Owners and Pilots Association (COPA)	Recreational and Non-Commercial Aviation Association COPA
Fred L. Jones Helicopter Association of Canada (HAC)	National Helicopter Association HAC
Janet Keim Saskatchewan Aviation Council (SAC)	Regional Aviation Associations SAC
Paul McGraw Airlines for America (A4A)	Foreign Air Operators Associations A4A
Chris Mellen Manitoba Aviation Council	Regional Aviation Associations Manitoba Aviation Council
Jeff Miller International Air Transport Association (IATA)	Foreign Air Operators Associations IATA
Anthony Norejko Canadian Business Aviation Association (CBAA)	Non-Commercial User Association CBAA
Elizabeth O'Hurley Air Traffic Specialists Association of Canada (ATSAC) Unifor Local 2245	Unions ATSAC Unifor Local 2245
Chris Reynolds Northern Air Transport Association (NATA)	Regional Aviation Associations NATA
Duane Riddell Airport Management Council of Ontario (AMCO)	Regional Airports Association AMCO
Bram Tilroe Alberta Aviation Council (AAC)	Regional Aviation Associations AAC
Todd Tripp Regional Community Airports of Canada	Member-at-Large



OFFICERS AND OTHER INFORMATION

Neil R. Wilson
President and Chief Executive Officer

Rudy Kellar
Executive Vice President, Service Delivery

Alexander N. Struthers
Executive Vice President, Finance and Chief Financial Officer

Raymond G. Bohn
Executive Vice President, Human Resources, Communications and Public Affairs

Elizabeth Cameron
Vice President, Labour Relations

Ben Girard
Vice President, Operational Support

Trevor Johnson
Vice President, ATS Service Delivery

Leigh Ann Kirby
Vice President, General Counsel and Corporate Secretary

Larry Lachance
Vice President, Safety and Quality

Donna Mathieu
Vice President, Pension Investments and Treasurer

Andrew Norgaard
Vice President, Communications and Public Affairs

Claudio Silvestri
Vice President and Chief Information Officer

As of August 31, 2019.

LEGAL COUNSEL

Gowling WLG (Canada) LLP

AUDITORS

KPMG LLP

BANKERS

Royal Bank of Canada

CORPORATE AND FINANCIAL INFORMATION

Inquiries for additional information relating to the Company should be directed to:

NAV CANADA
Communications
77 Metcalfe Street, Ottawa, Ontario, Canada K1P 5L6

General inquiries can also be made by calling 1-800-876-4693, or by visiting our website at **www.navcanada.ca**.

Copies of the Company's Financial Statements, Management Discussion and Analysis, and Annual Information Form are available on the System for Electronic Document Analysis and Retrieval (SEDAR) at **www.sedar.com**.

NOTICE OF ANNUAL MEETING

The Annual Meeting of the Members of NAV CANADA will be held on Thursday, January 9, 2020, at 2 p.m. at the Shaw Centre, 55 Colonel By Drive, Ottawa, Ontario.

GLOSSARY

For full definitions of many of the terms in this section, please consult Terminav©, NAV CANADA's bilingual terminology database, available online at **navcanada.ca** under "Related Sites."

ACC	Area Control Centre
AFTN	Aeronautical Fixed Telecommunications Network
ANS	Air Navigation Services
ANSP	Air Navigation Service Provider
ASEPS	Advanced Surveillance-Enabled Procedural Separation
ATM	Air traffic Management
ATS	Air traffic Service
BCP	Business Continuity Plan
CANSO	Civil Air Navigation Services Organisation
CAP	Canada Air Pilot
CASM	Canada Aviation and Space Museum
CDO	Continuous descent operations
CHIP	Common Hardware Integrated Platform
D&I	Diversity and Inclusion
EOR	Established on RNP AR
ERP	Enterprise Resource Planning
ETSO	Enterprise Technology Security Office
EXCDS	Extended Computer Display System
FIR	Flight Information Region
ICAO	International Civil Aviation Organization
ICS	Incident Command System
IFR	Instrument flight rules
IWP	Integrated Working Position
NAVAID	Navigational Aid
NC-SIS	NAV CANADA Safety Information System
PBN	Performance-based navigation
RNP AR	Required Navigation Performance Authorization Required
RPAS	Remotely Piloted Aircraft Systems
SATVOICE	Satellite Voice Communications
SB ADS-B	Space-based Automatic Dependent Surveillance – Broadcast
SMS	Safety Management System
UAV	Unmanned Air Vehicle
VFR	Visual flight rules

CONSOLIDATED FINANCIAL STATEMENTS

Management's Report to the Members of NAV CANADA

These consolidated financial statements are the responsibility of management and have been approved by the Board of Directors of NAV CANADA (the Company). These consolidated financial statements have been prepared by management in accordance with International Financial Reporting Standards (IFRS) and include amounts that are based on estimates of the expected effects of current events and transactions, with appropriate consideration to materiality, judgments and financial information determined by specialists. In addition, in preparing the financial information we must interpret the requirements described above, make determinations as to the relevance of information to be included, and make estimates and assumptions that affect reported information.

Management has also prepared a Management's Discussion and Analysis (MD&A), which is based on the Company's financial results prepared in accordance with IFRS. It provides information regarding the Company's financial condition and results of operations, and should be read in conjunction with these consolidated financial statements and accompanying notes. The MD&A also includes information regarding the impact of current transactions and events, sources of liquidity and capital resources, operating trends, risks and uncertainties. Actual results in the future may differ materially from our present assessment of this information because events and circumstances in the future may not occur as expected.

Management has developed and maintains a system of internal control over financial reporting and disclosure controls, including a program of internal audits. Management believes that these controls provide reasonable assurance that financial records are reliable and form a proper basis for the preparation of financial statements, and we have signed certificates as required by National Instrument 52-109 *Certification of Disclosure in Issuers' Annual and Interim Filings* in this regard. The internal accounting control process includes management's communication to employees of policies that govern ethical business conduct.

The Board of Directors has appointed an Audit & Finance Committee that is composed of directors who are independent of the Company and to which the Board of Directors has delegated responsibility for oversight of the financial reporting process. The Audit & Finance Committee meets at least four times during the year with management and independently with each of the internal and external auditors and as a group to review any significant accounting, internal control and auditing matters. The Audit & Finance Committee reviews the consolidated financial statements, MD&A and Annual Information Form before these are submitted to the Board of Directors for approval. The internal and external auditors have free access to the Audit & Finance Committee.

With respect to the external auditors, the Audit & Finance Committee approves the terms of engagement and reviews the annual audit plan, the Independent Auditors' Report and the results of the audit. It also recommends to the Board of Directors the firm of external auditors to be appointed by the Members of the Company.

The independent external auditors, KPMG LLP, have been appointed by the Members to express an opinion as to whether the consolidated financial statements present fairly, in all material respects, the Company's financial position, results of operations and cash flows in accordance with IFRS. The report of KPMG LLP outlines the scope of their examination and their opinion on the consolidated financial statements.

Neil R. Wilson President and Chief Executive Officer	Alexander N. Struthers Executive Vice President, Finance and Chief Financial Officer
October 24, 2019	October 24, 2019

Independent Auditors' Report

To the Members of NAV CANADA:

OPINION

We have audited the consolidated financial statements of NAV CANADA and its subsidiaries (the Group), which comprise the consolidated statements of financial position as at August 31, 2019 and August 31, 2018 and the consolidated statements of operations, comprehensive income, changes in equity, and cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

We have audited consolidated financial statements of NAV CANADA (the Entity), which comprise:

- the consolidated statements of financial position as at August 31, 2019 and August 31, 2018
- the consolidated statements of operations and comprehensive income for the years then ended
- the consolidated statements of changes in equity for the years then ended
- the consolidated statements of cash flows for the years then ended
- and notes to the consolidated financial statements, including a summary of significant accounting policies

(Hereinafter referred to as the "financial statements").

In our opinion, the accompanying financial statements present fairly, in all material respects, the consolidated financial position of the Entity as at August 31, 2019 and August 31, 2018, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards (IFRSs).

BASIS FOR OPINION

We conducted our audits in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report.

We are independent of the Entity in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada and we have fulfilled our other responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

OTHER INFORMATION

Management is responsible for the other information. Other information comprises:

- the information included in Management's Discussion and Analysis filed with the relevant Canadian Securities Commissions.
- the information, other than the financial statements and the auditors' report thereon, included in a document likely to be entitled "Annual Report".

Our opinion on the financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit and remain alert for indications that the other information appears to be materially misstated.

We obtained the information included in Management's Discussion and Analysis filed with the relevant Canadian Securities Commissions as at the date of this auditors' report. If, based on the work we have performed on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact in the auditors' report.

We have nothing to report in this regard.

The information, other than the financial statements and the auditors' report thereon, included in a document likely to be entitled "Annual Report" is expected to be made available to us after the date of this auditors' report. If, based on the work we will perform on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact to those charged with governance.

RESPONSIBILITIES OF MANAGEMENT AND THOSE CHARGED WITH GOVERNANCE FOR THE FINANCIAL STATEMENTS

Management is responsible for the preparation and fair presentation of the financial statements in accordance with International Financial Reporting Standards (IFRS), and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Entity's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Entity or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Entity's financial reporting process.

AUDITORS' RESPONSIBILITIES FOR THE AUDIT OF THE FINANCIAL STATEMENTS

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Entity to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.
- Provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

KPMG LLP

KPMG LLP
Chartered Professional Accountants, Licensed Public Accountants

Ottawa, Canada
October 24, 2019

NAV CANADA
Consolidated Statements of Operations
Years ended August 31 (millions of Canadian dollars)

	Notes	2019	2018
Revenue			
Customer service charges	4	$ 1,384	$ 1,359
Other revenue	4	53	56
		1,437	1,415
Operating expenses			
Salaries and benefits	5	1,027	985
Technical services		114	109
Facilities and maintenance		64	62
Depreciation and amortization	11, 12	154	152
Other		90	88
		1,449	1,396
Other (income) and expenses			
Finance income	6	(14)	(58)
Net interest expense relating to employee benefits	13	38	54
Other finance costs	6	74	77
Other gains, net of losses		(7)	(13)
		91	60
Net loss before income tax and net movement in regulatory deferral accounts		(103)	(41)
Income tax recovery		(3)	(8)
Net loss before net movement in regulatory deferral accounts		(100)	(33)
Net movement in regulatory deferral accounts related to net loss, net of tax	7	100	33
Net income (loss) after net movement in regulatory deferral accounts	1	$ -	$ -

See accompanying notes to consolidated financial statements.

NAV CANADA
Consolidated Statements of Comprehensive Income
Years ended August 31 (millions of Canadian dollars)

	Notes	2019	2018
Net income (loss) after net movement in regulatory deferral accounts		$ -	$ -
Other comprehensive income (loss)			
Items that will not be reclassified to income or (loss):			
Re-measurements of employee defined benefit plans	13	(1,040)	600
Net movement in regulatory deferral accounts related to other comprehensive income	7	1,040	(600)
		-	-
Items that will be reclassified to income or (loss):			
Amortization of loss on cash flow hedge		1	1
Changes in fair value of cash flow hedges		(11)	5
Net movement in regulatory deferral accounts related to other comprehensive income	7	10	(6)
		-	-
Total other comprehensive income (loss)		-	-
Total comprehensive income (loss)	1	$ -	$ -

See accompanying notes to consolidated financial statements.

NAV CANADA
Consolidated Statements of Financial Position
As at August 31 (millions of Canadian dollars)

	Notes	2019	2018
Assets			
Current assets			
Cash and cash equivalents		$ 30	$ 38
Accounts receivable and other	8	98	102
Investments	9	72	71
Other		13	17
		213	228
Non-current assets			
Investment in preferred interests	10, 15	439	418
Property, plant and equipment	11	750	735
Intangible assets	12	906	932
Investment in equity-accounted investee		6	6
Related party loans receivable		3	12
Employee benefits	13	-	2
Other non-current assets		1	1
		2,105	2,106
Total assets		2,318	2,334
Regulatory deferral account debit balances	7	2,087	954
Total assets and regulatory deferral account debit balances		$ 4,405	$ 3,288

See accompanying notes to consolidated financial statements.

NAV CANADA
Consolidated Statements of Financial Position
As at August 31 (millions of Canadian dollars)

	Notes	2019	2018
Liabilities			
Current liabilities			
Bank loan		$ 8	$ -
Trade and other payables		242	247
Derivative liabilities		1	-
Deferred revenue		7	4
Current portion of long-term debt	14	25	275
		283	526
Non-current liabilities			
Long-term debt	14	1,443	1,219
Employee benefits	13	2,226	1,070
Deferred tax liabilities	10	48	50
Other non-current liabilities		1	1
		3,718	2,340
Total liabilities		4,001	2,866
Equity			
Retained earnings		28	28
Total equity		28	28
Total liabilities and equity		4,029	2,894
Regulatory deferral account credit balances	7	376	394
Commitments and contingencies	16, 17		
Total liabilities, equity and regulatory deferral account credit balances		$ 4,405	$ 3,288

See accompanying notes to consolidated financial statements.

On behalf of the Board:

Marc Courtois
Director

Linda Hohol
Director

NAV CANADA
Consolidated Statements of Changes in Equity
(millions of Canadian dollars)

	Retained earnings	Accumulated other comprehensive income	Total
Balance August 31, 2017	$ 28	$ –	$ 28
Net income (loss) and net movement in regulatory deferral accounts	–	–	–
Other comprehensive income (loss)	–	–	–
Balance August 31, 2018	$ 28	$ –	$ 28
Balance August 31, 2018	$ 28	$ –	$ 28
Net income (loss) and net movement in regulatory deferral accounts	–	–	–
Other comprehensive income (loss)	–	–	–
Balance August 31, 2019	$ 28	$ –	$ 28

See accompanying notes to consolidated financial statements.

NAV CANADA
Consolidated Statements of Cash Flows
Years ended August 31 (millions of Canadian dollars)

	Notes	2019	2018
Cash flows from (used in):			
Operating			
Receipts from customer service charges		$ 1,386	$ 1,338
Refund of customer service charges		-	(33)
Other receipts		64	49
Payments to employees and suppliers		(1,131)	(1,051)
Pension contributions – current service	13	(92)	(94)
Other post-employment payments		(6)	(6)
Settlement of curtailed severance benefits		-	(42)
Interest payments		(80)	(79)
Interest receipts		2	3
		143	85
Investing			
Capital expenditures		(133)	(176)
Repayment of loans from (loans to) related parties	10	11	(10)
Income tax refund on investment in preferred interests		-	5
Proceeds from asset-backed commercial paper trusts		-	1
Settlement of derivative assets		-	2
		(122)	(178)
Financing			
Issuance of medium term notes	14	248	273
Repayment of medium term notes	14	(275)	(375)
Net proceeds from bank loans		8	-
Disbursements from settlement of derivatives		(9)	(13)
Debt service reserve fund		(1)	24
		(29)	(91)
Cash flows used in operating, investing and financing activities		(8)	(184)
Cash and cash equivalents at beginning of year		38	222
Cash and cash equivalents at end of year		$ 30	$ 38

See accompanying notes to consolidated financial statements.

NAV CANADA
Notes to Consolidated Financial Statements
As at and for the years ended August 31, 2019 and 2018 (millions of dollars)

1. Reporting entity

NAV CANADA was incorporated as a non-share capital corporation pursuant to Part II of the *Canada Corporations Act* to acquire, own, manage, operate, maintain and develop the Canadian civil air navigation system (the ANS), as defined in the *Civil Air Navigation Services Commercialization Act* (the ANS Act). NAV CANADA has been continued under the *Canada Not-for-profit Corporations Act*. The fundamental principles governing the mandate conferred on NAV CANADA by the ANS Act include the right to provide civil air navigation services and the exclusive ability to set and collect customer service charges for such services. NAV CANADA and its subsidiaries' (collectively, the Company) core business is to provide air navigation services, which is the Company's only reportable segment. The Company's air navigation services are provided primarily within Canada.

The charges for civil air navigation services provided by the Company are subject to the economic regulatory framework set out in the ANS Act. The ANS Act provides that the Company may establish new charges and amend existing charges for its services. In establishing new charges or revising existing charges, the Company must follow the charging principles set out in the ANS Act. These principles prescribe that, among other things, charges must not be set at levels which, based on reasonable and prudent projections, would generate revenue exceeding the Company's current and future financial requirements in relation to the provision of civil air navigation services. Pursuant to these principles, the Board of Directors of the Company (the Board), acting as rate regulator, approves the amount and timing of changes to customer service charges.

The Company plans its operations to result in an annual financial breakeven position on the consolidated statement of operations after recording adjustments to the rate stabilization account. As a result, we expect no net change in retained earnings on an annual basis. The impacts of rate regulation on the Company's consolidated financial statements are described in note 7.

The ANS Act requires that the Company communicate proposed new or revised charges to customers in advance of their introduction and to consult thereon. Customers may make representations to the Company as well as appeal revised charges to the Canadian Transportation Agency on the grounds that the Company either breached the charging principles in the ANS Act or failed to provide statutory notice.

NAV CANADA is domiciled in Canada. The address of NAV CANADA's registered office is 77 Metcalfe Street, Ottawa, Ontario, Canada K1P 5L6. These consolidated financial statements of NAV CANADA include the accounts of its subsidiaries.

2. Basis of presentation

(a) Statement of compliance

These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

These consolidated financial statements were authorized for issue by the Board on October 24, 2019.

(b) Basis of measurement

These consolidated financial statements have been prepared on the historical cost basis except for the following material items:

- financial instruments that are classified and designated as fair value through profit or loss (FVTPL), which are measured at fair value; and
- defined benefit liabilities that are recognized as the net of the present value of defined benefit obligations and plan assets measured at fair value.

(c) Functional and reporting currency

These consolidated financial statements are presented in Canadian dollars (CDN), which is the Company's functional and reporting currency. All information presented has been rounded to the nearest million dollars unless otherwise indicated.

(d) Critical accounting estimates and judgments

The preparation of these consolidated financial statements requires management to make estimates and judgments about the future.

Estimates and judgments are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Accounting estimates will, by definition, seldom equal actual results. The following discussion sets forth management's:

- most critical judgments in applying accounting policies; and
- most critical estimates and assumptions in determining the value of assets and liabilities.

NAV CANADA
Notes to Consolidated Financial Statements
As at and for the years ended August 31, 2019 and 2018 (millions of dollars)

(i) Key sources of estimates and assumption uncertainties:

- Fair value of investment in preferred interests

  The Company's investment in preferred interests in Aireon LLC (Aireon) is accounted for as a financial instrument and designated as FVTPL. In May 2018, NATS, the United Kingdom's air navigation service provider (ANSP) made an investment in Aireon. The Company used the price paid by that investor (note 10) as a basis to estimate the fair value of Aireon and its investment in the entity through preferred interests. In August 2019, an independent assessment of the valuation of Aireon was received, confirming the value of the Company's investment in preferred interests determined based on the price paid by NATS. The measurement is subject to estimation uncertainty and is dependent on the successful achievement of operational, technical and financial objectives by Aireon, as described in notes 3 (a) and 10.

- Employee benefits

  Defined benefit plans, other long-term employee benefits, termination benefits, and short-term employee benefits require significant actuarial assumptions to estimate the future benefit obligations and performance of plan assets. Assumptions include compensation, the retirement ages and mortality assumptions related to employees and retirees, health-care costs, inflation, discount rate, expected investment performance and other relevant factors. The Company consults with an actuary regarding these assumptions at least on an annual basis. Due to the long-term nature of these benefit programs, these estimates are subject to significant uncertainty and actual results can differ significantly from the Company's recorded obligations.

  The majority of the Company's employees are unionized with collective agreements in place. At times, one agreement expires before another is in place. Management is required to estimate the total employee cost for services rendered for the period, and as a result must estimate the retroactive impact of collective agreements when they are finalized. Management's estimate is based on, but not limited to, actual agreements expired, historical experience, number of employees affected and current salaries of those employees.

(e) New standards, amendments and interpretations adopted

Certain pronouncements were issued by the IASB or the IFRS Interpretations Committee that had mandatory effective dates for annual periods beginning on or after January 1, 2018.

The following standard and interpretation were adopted by the Company effective September 1, 2018:

IFRS 15 – Revenue from Contracts with Customers (IFRS 15)

IFRS 15 introduces a new revenue recognition model for contracts with customers to depict the transfer of goods or services to customers in amounts that reflect the consideration to which the Company expects to be entitled in exchange for those goods or services. The model contains two approaches for recognizing revenue, at a point in time or over time, and features a contract-based five-step analysis of transactions to determine whether, how much and when revenue is recognized.

In accordance with the transition provisions in IFRS 15, the new standard has been adopted retrospectively. The effect on net earnings of the application of IFRS 15 to revenue contracts in progress at September 1, 2017 is $nil. The Company reviewed its revenue streams and major contracts with customers using the IFRS 15 five-step model and there were no changes to net earnings or the timing of revenue recognized.

Under IFRS 15, the Company has applied the following practical expedients:

- Completed contracts that begin and end within the same annual reporting period and those completed before September 1, 2017 were not restated.

Refer to note 4 for more information, including additional disclosures as required by IFRS 15.

The Company's significant accounting policies for its revenue streams are described further in note 3 (k).

IFRIC 22 – Foreign Currency Transactions and Advance Consideration (IFRIC 22)

IFRIC 22 clarifies that the date of the transaction for the purpose of determining the foreign currency exchange rate to use on initial recognition of the related asset, expense or income (or part of it) is the date on which an entity initially recognizes the non-monetary asset or non-monetary liability arising from the payment or receipt of advance consideration. The Company has adopted IFRIC 22 effective September 1, 2018, with no resulting impact on the consolidated financial statements.

NAV CANADA
Notes to Consolidated Financial Statements
As at and for the years ended August 31, 2019 and 2018 (millions of dollars)

2. Basis of presentation (continued)

(f) Future accounting pronouncements

The IASB has issued a number of standards and amendments that are not yet effective. The Company continues to analyze these standards and amendments to determine the extent of their impact on its consolidated financial statements. At this time, the Company does not expect to adopt any of these standards or amendments before their effective dates.

IFRS 16 – Leases (IFRS 16)

In January 2016, the IASB issued IFRS 16, completing its project to improve the financial reporting of leases. The new standard will replace IAS 17 – Leases (IAS 17), and sets out the principles for the recognition, measurement, presentation and disclosure of leases for both parties to a contract. For lessees, IFRS 16 eliminates the classification of leases as either operating or finance leases that exist under IAS 17, and requires recognition of assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value. IFRS 16 substantially carries forward the lessor accounting requirements under IAS 17, maintaining the classification of leases as operating or finance leases, and accounting for the lease according to its classification. IFRS 16 is to be applied retrospectively, using either a full retrospective approach or a modified retrospective approach, for annual periods beginning on or after January 1, 2019. Earlier application is permitted.

The Company has completed a detailed review of those contracts in the scope of IFRS 16 and has determined the accounting impacts to be minimal. The Company anticipates using the modified retrospective approach on transition to IFRS 16. For any lease that meets the definition of a lease in accordance with IFRS 16 and was previously classified as an operating lease, the Company anticipates measuring its right of use asset at an amount equal to the lease liability upon adoption of IFRS 16 on September 1, 2019.

Conceptual Framework for Financial Reporting (the Framework)

On March 29, 2018, the IASB issued a revised version of the Framework on which it develops new accounting standards. The Framework is not an accounting standard and does not override the requirements that exist in other IFRS. The revised Framework describes that financial information must be relevant and faithfully represented to be useful, provides revised definitions and recognition criteria for assets and liabilities, and confirms that different measurement bases are useful and permitted.

The IASB also issued *Amendments to References to the Conceptual Framework in IFRS Standards* (the Amendments) to update reference in IFRS to previous versions of the Framework. Both the revised Framework and Amendments are effective January 1, 2020 with earlier application permitted. The extent of the impact of the change has not yet been determined.

IAS 1 – Presentation of Financial Statements (IAS 1) and IAS 8 – Accounting Policies, Changes in Accounting Estimates and Errors (IAS 8)

On October 31, 2018, the IASB issued amendments to IAS 1 and IAS 8 to clarify its definition of material and how it should be applied. The objective of these amendments is to help entities decide whether information should be included in their financial statements.

The amendments are applicable for reporting periods beginning on or after January 1, 2020. The extent of the impact of these amendments on the Company has not yet been determined.

3. Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these consolidated financial statements.

(a) Basis of consolidation

(i) Subsidiaries

Subsidiaries are entities controlled by the Company. The Company controls an investee when it is exposed, or has rights to, variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases. The accounting policies of the subsidiaries are aligned with the policies adopted by the Company. All intercompany balances and transactions are eliminated on consolidation.

NAV CANADA
Notes to Consolidated Financial Statements
As at and for the years ended August 31, 2019 and 2018 (millions of dollars)

The consolidated financial statements of the Company include the following subsidiaries:

Name of subsidiary	Principal place of business and country of incorporation	Percentage ownership
NAV CANADA Inventory Holding Company Inc.	Canada	100%
NAV CANADA ATM Inc.	Canada	100%
NAV CANADA Satellite, Inc.	United States	100%
NCPP Investment Holding Company Inc.	Canada	100%

(ii) Investments in joint ventures and associates

A joint venture exists when there is a contractual arrangement that establishes joint control over its activities and requires unanimous consent of the parties sharing control for strategic financial and operating decisions, and where the parties have rights to the net assets of the arrangement.

Associates are entities over which the Company is able to exert significant influence but which are not subsidiaries.

Interests in joint ventures are accounted for using the equity method. They are initially recognized at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the participant's share of the net income (loss) and other comprehensive income (OCI) of equity-accounted investees, until the date on which joint control or significant influence ceases. The Company's investment in an equity-accounted investee is reduced for distributions received during the fiscal year.

If the Company's share of losses of an equity-accounted investee equals or exceeds its interest in the equity-accounted investee, the Company discontinues recognizing its share of further losses. Additional losses are provided for, and a liability is recognized only to the extent the Company has incurred legal or constructive obligations or made payments on behalf of the equity-accounted investee.

The Company owns 50% (August 31, 2018 – 50%) of the issued and outstanding shares of Searidge Technologies Inc. (Searidge) which is owned through NAV CANADA ATM Inc. The Company has classified its investment in Searidge as an investment in a joint venture.

As discussed in note 10, the Company is party to an arrangement with Iridium and the additional investors which allows the Company to exert significant influence over the strategic financial and operating activities of Aireon. The Company's investment in Aireon is held through NAV CANADA Satellite, Inc. This arrangement is an investment in an associate and the Company will have a right to the net assets of Aireon upon exercising its right to convert its preferred interests to common interests. As at August 31, 2019, the Company's share of Aireon's net assets is $nil and therefore the Company's share of Aireon's net income (loss) and OCI is $nil. Until the Company exercises its right to convert its preferred interests to common interests, it does not have access to Aireon's net assets and accordingly this investment is accounted for as a financial instrument.

(b) Foreign currency

Foreign currency transactions are translated into the functional currency using the exchange rates in effect at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies at the reporting date are translated into the functional currency at that date. Non-monetary assets and liabilities denominated in a foreign currency, which are accounted for at historical cost are translated using the rate in effect at the date of the initial transaction. Foreign currency gains and losses are reported on a net basis in net income (loss) within other income and expenses, except for designated cash flow hedges that are recognized in OCI.

(c) Financial instruments

(i) Recognition

Financial assets and financial liabilities including derivatives are recorded when the Company becomes party to the contractual provisions of the financial instruments.

Financial assets and liabilities are offset and the net amount is reported in the statement of financial position when there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis or realize the asset and settle the liability simultaneously.

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As at and for the years ended August 31, 2019 and 2018 (millions of dollars)

3. Significant accounting policies (continued)

(c) Financial instruments (continued)

(ii) Classification

The Company classifies its financial assets and financial liabilities in the following measurement categories:

- those to be measured subsequently at FVTPL; and
- those to be measured at amortized cost.

The classification of financial assets depends on the business model for managing the financial assets and the contractual terms of the cash flows. Financial liabilities are classified as those to be measured at amortized cost unless they are designated as those to be measured subsequently at FVTPL.

(iii) Measurement

All financial instruments, other than trade receivables without a significant financing component, are required to be measured at fair value on initial recognition. If a financial asset or financial liability is not subsequently measured at FVTPL, then the initial measurement includes transaction costs that are directly attributable to the acquisition or issue of the instrument.

Trade receivables without a significant financing component are initially measured at the transaction price.

The Company's business model objective is to collect contractual cash flows and the contractual cash flows are solely payments of principal and/or interest, and as such financial assets are generally subsequently measured at amortized cost using the effective interest method net of any impairment loss. All other financial assets are measured at fair value with changes, including any interest or dividend income recognized in net income (loss) or OCI. The Company currently has no financial assets measured at fair value through OCI.

Financial liabilities are generally subsequently measured at amortized cost using the effective interest method unless they are held for trading, they are derivatives or they have been designated as those to be measured subsequently at FVTPL. The Company has not designated any financial liabilities as measured at FVTPL.

Financial assets with embedded derivatives are considered in their entirety when determining whether their cash flows are solely payments of principal and interest. Embedded derivatives in financial liabilities are treated as separate derivatives when their risks and characteristics are not closely related to those of the host contract, a separate instrument with the same terms as the embedded derivative meets the definition of a derivative, and the combined instrument is not measured at fair value through profit or loss. Changes in the fair value of separable embedded derivatives are recognized immediately in net income (loss).

(iv) Impairment

The Company uses the "expected credit loss" model for calculating impairment and recognizes expected credit losses as a loss allowance in the consolidated statement of financial position if they relate to a financial asset measured at amortized cost. For trade receivables, the Company applies the simplified approach as permitted by IFRS 9 *Financial Instruments* which requires lifetime expected credit losses be recognized from initial recognition of receivables. The carrying amount of these assets in the consolidated statement of financial position is stated net of any loss allowance.

(v) Derivatives and hedge accounting

Derivatives are initially recognized and subsequently re-measured at fair value at each reporting date. The accounting for subsequent changes in fair value depends on whether the derivatives are designated as hedging instruments, and if so, the nature of the item being hedged and the type of hedge relationship designated. Changes in the fair value of derivative financial instruments designated as hedging instruments in cash flow hedging relationships are recognized in OCI. Changes in the fair value of derivative financial instruments that have not been designated are recognized through net income (loss) as they arise.

The Company uses derivative financial instruments to manage risks from fluctuations in foreign exchange rates and interest rates. The Company's derivative assets and liabilities consist of forward dated interest rate swap agreements and bond and foreign exchange forward agreements. The fair values of these derivatives are calculated by discounting expected future cash flows based on current interest and forward exchange rates.

Where permissible, the Company accounts for these financial instruments as cash flow hedges, which ensures that counterbalancing gains and losses are recognized in income in the same period as the hedged item. On initial designation of the hedge, the relationship between the hedged item and the hedging instrument is formally documented, including the Company's risk management objectives and strategies for undertaking the hedge transaction, together with the methods that will be used to assess the effectiveness of the hedging

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relationship. The effectiveness of the hedging relationship is assessed at inception of the contract related to the hedging item and then again at each reporting date to ensure the relationship is and will remain effective. For a cash flow hedge of a forecasted transaction, the transaction should be highly probable to occur and should present an exposure to variations in cash flows that could ultimately affect reported net earnings.

Cash flow hedges

When a derivative is designated as the hedging instrument in a hedge of the variability of cash flows attributable to a particular risk associated with a recognized asset or liability or a highly probable forecasted transaction that could affect net income (loss), the effective portion of the change in fair value of the derivative is recognized in OCI and presented as part of equity. The amount recognized in OCI is transferred to net income (loss) under the same line item in the statement of operations as the hedged item, in the same period or periods as the hedged cash flows affect net income (loss). Any ineffective portion is recognized immediately in net income (loss).

If the hedging instrument no longer meets the criteria for hedge accounting, expires or is sold, terminated or exercised, then hedge accounting is discontinued prospectively. The cumulative gain or loss previously recognized in OCI remains in equity until the anticipated transaction affects net income (loss). If the forecasted transaction is no longer expected to occur, then the balance accumulated in equity is recognized immediately in net income (loss).

(d) Employee benefits

(i) Defined benefit plans

The defined benefit obligation and estimated costs of the Company's defined benefit pension plans and other post-employment benefits are calculated annually by a qualified actuary using the projected unit credit method. The actuarial calculations are performed using management's estimates of expected investment performance, compensation, the retirement ages of employees, mortality rates, health-care costs, inflation and other relevant factors. The discount rate is determined using the yield at the reporting date on high quality Canadian corporate bonds that have maturity dates approximating the terms of the Company's obligations. The funded status of the plan, or defined benefit asset or liability, corresponds to the future benefits employees have earned in the current and prior periods, discounting that amount and deducting the fair value of any plan assets. Defined benefit assets or liabilities are presented as non-current items in the statement of financial position.

The Company recognizes all actuarial gains and losses on the plan assets (excluding interest) in OCI in the period in which they are incurred, with no subsequent reclassification to net income (loss). The Company has made a policy choice to reclassify adjustments in OCI to retained earnings.

The service costs of employee benefits expense is recorded in salaries and benefits. The interest arising on net benefit obligations is recognized in net income (loss) and is presented in net interest costs relating to employee benefits. A portion of these employee benefit expenses is allocated to the cost of assets under development.

When benefits are amended, the portion of the changed benefit relating to past service by employees is recognized in net income (loss) immediately. Gains and losses on curtailments or settlements are recognized in net income (loss) in the period in which the curtailment or settlement occurs.

The Company's two registered pension plans are subject to minimum funding requirements. The liability in respect to minimum funding requirements is determined using the projected minimum funding requirements based on management's best estimates of the actuarially determined funded status of the plan, market discount rates, salary escalation estimates, the Company's ability to take contribution holidays and its ability to use letters of credit to secure solvency special payments revealed by funding actuarial valuations.

When the funded status of a plan results in an asset (a plan surplus), the recognized asset is limited to the present value of economic benefits available in the form of any future refunds from the plan or reductions in future contributions to the plan. The Company recognizes any adjustments to this limit in OCI in the period incurred, with no subsequent reclassification to net income (loss).

(ii) Other long-term employee benefits

The Company provides other long-term benefits to its employees, including long-term disability (LTD) benefits, accumulating sick leave benefits (vesting and non-vesting) and long-term executive incentive plan benefits. The LTD benefits plan is funded. The same methodology and management estimates are used to value other long-term benefits as in the defined benefit plans; however the actuarial gains and losses are included in net income (loss) in the period when they occur. The net amount of long-term employee benefit expense is presented in salaries and benefits expense net of any costs allocated to assets under development.

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3. Significant accounting policies (continued)

(d) Employee benefits (continued)

(iii) Termination benefits

Termination benefits are recognized as an expense in net income (loss) when the Company has committed to either terminate employment or to provide termination benefits as a result of an offer made to encourage voluntary redundancy. Benefits for voluntary departures are recognized as an expense when it is probable that a voluntary departure offer will be accepted and the number of acceptances can be estimated. When benefits are payable more than 12 months after the reporting date, they are discounted.

(iv) Short-term employee benefits

Short-term employee benefit obligations are measured on an undiscounted basis, taking into account the additional amount the Company expects to pay as a result of the unused entitlement at the reporting date. Expenses are recognized in net income (loss) as the services are provided. Short-term employee benefits include salaries, vacation and other leave.

(e) Property, plant and equipment

Property, plant and equipment is measured at cost less accumulated depreciation and accumulated impairment losses, if applicable. The cost of property, plant and equipment includes expenditures that are directly attributable to the acquisition of the asset. The cost of assets under development includes the cost of materials, direct labour and employee benefits, any other costs directly attributable to bringing the asset to a working condition for its intended use, and the costs of dismantling and removing the items and restoring the site on which they are located when a legal commitment or constructive obligation exists for them. Borrowing costs for qualifying assets are capitalized in accordance with the Company's accounting policy as described in note 3 (h).

Costs subsequent to initial recognition are included in the asset's carrying amount or recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the asset will flow to the Company and its cost can be measured reliably. Repairs and maintenance costs are recorded in the statement of operations during the period in which they are incurred.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as components of property, plant and equipment and are depreciated separately. Depreciation begins when construction is complete and the asset is available for use. Land and assets under development are not depreciated. Depreciation on other assets is recognized in the statement of operations on a straight-line basis over the following estimated useful lives:

Assets	Estimated useful life (years)
Buildings	15 to 40
Systems and equipment	3 to 25

Estimated useful lives, residual values and depreciation methods are reviewed, and adjusted prospectively if appropriate, at each reporting date.

An item of property, plant and equipment is derecognized upon disposal, replacement or when no future economic benefits are expected from its use or disposal. Any gain or loss on derecognition of the asset is determined by comparing the proceeds from disposal to the carrying amount of the asset. Such gains and losses are recognized in the statement of operations in the period in which the asset is derecognized.

Other contributions to property, plant and equipment

Amounts received from third parties, with whom the Company does not have a customer relationship, related to the installation, development or construction of property, plant and equipment, are deducted from the carrying amount of the asset.

(f) Intangible assets

Intangible assets are carried at cost less accumulated amortization and accumulated impairment losses, if applicable. The expenditures capitalized include the cost of materials, direct labour and any other costs that are directly attributable to preparing the asset for its intended use. Borrowing costs for qualifying assets are capitalized in accordance with the Company's accounting policy as described in note 3 (h).

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An internally-developed intangible asset arising from development is recognized if all of the following criteria for recognition have been met: technical feasibility of completing the asset, intent and ability to complete the asset, intent and ability to use or sell the asset, determination on how the intangible asset will generate future benefits, availability of technical, financial and other resources to complete the development and to use or sell the asset, and ability to reliably measure attributable expenditures. Research costs are expensed in the statement of operations as incurred.

Costs subsequent to initial recognition are capitalized only when they increase the future economic benefits embodied in the specific assets to which they relate and the expenditures can be measured reliably; otherwise they are recorded within operating expenses in the statement of operations.

The Company has the right under the ANS Act to provide civil air navigation services and the exclusive ability to set and collect customer service charges for such services. While the ANS Act does not limit the duration of these rights, for accounting purposes the Company's air navigation right will be fully amortized by 2042, which is the recovery period established by the Board, acting as the rate regulator.

Amortization of other intangible assets begins when development is complete and/or the asset is available for use. It is amortized over the period of expected future benefit. Amortization of intangible assets is recognized in the statement of operations on a straight-line basis over the following estimated useful lives:

Assets	Estimated useful life (years)
Air navigation right	46
Purchased software	5 to 20
Internally-developed software	5 to 20

Intangible assets under development are not amortized.

Estimated useful lives, residual values and amortization methods are reviewed, and adjusted prospectively if appropriate, at each annual reporting date.

An intangible asset is derecognized upon disposal, replacement or when no future economic benefits are expected from its use or disposal. Any gain or loss on derecognition is determined by comparing the proceeds from disposal to the carrying amount of the asset. Such gains and losses are recognized in the statement of operations as other income or expense in the period in which the asset is derecognized.

(g) Impairment of non-financial assets

At each reporting date, the Company reviews its property, plant and equipment and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If so, the assets' recoverable amount is estimated. Assumptions in assessing the recoverable amount relate to the continuing right to provide civil air navigation services and the exclusive ability to set and collect customer service charges for such services. If changes in any such expectations arise, impairment charges may be required which could materially impact operating results. Goodwill and assets under development are tested annually for impairment.

The recoverable amount of an asset or cash generating unit (CGU) is the greater of its fair value less costs to sell and its value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a discount rate that reflects current market assessments of the time value of money and the risks specific to the asset or CGU. If the recoverable amount of an asset or CGU is estimated to be less than its carrying amount, the carrying amount of the asset or CGU is reduced to its recoverable amount. An impairment loss is recognized as an expense immediately in net income (loss).

Where an asset does not generate cash flows that are independent from other assets, the Company estimates the recoverable amount of the CGU to which the asset belongs. Because the ANS is operated as a system, it is not possible in a meaningful way to isolate the cash flow that is attributable to individual assets within the system. Thus the air navigation system is considered to be a single CGU. When there are assets within the system that are no longer required, a separate valuation of these specific assets occurs.

Regulatory deferral account balances are anticipated to either be returned or recovered through the Company's customer service charges as approved by the rate regulator per the charging principles set out in the ANS Act. To determine whether there is any indication that regulatory deferral account assets are impaired, the Company reviews its ability to recover regulatory deferral account balances through future customer service charges for the provision of civil air navigation services as defined by the ANS Act.

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3. Significant accounting policies (continued)

(h) Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets are added to the cost of those assets, until such time as the assets are ready for their intended use or sale. Qualifying assets are those that necessarily take greater than one year to prepare for their intended use. All other borrowing costs are recognized in the statement of operations using the effective interest method.

(i) Provisions

A provision is recognized if, as a result of a past event, the Company has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting estimated future cash flows, adjusted for risks specific to the liability, using a risk-free rate that reflects current market assessments of the time value of money. Increases in the provision due to the passage of time (the unwinding of the discount) are recognized as a finance cost.

Provisions are reviewed at each reporting date and adjusted to reflect current estimates.

Decommissioning liabilities are recognized when the Company has a legal or constructive obligation to dismantle and remove an asset and restore the site on which the asset is located. When the liability is initially recorded, an equivalent amount is capitalized as an inherent cost of the associated buildings, systems or equipment. All changes in the decommissioning provision resulting from changes in the estimated future costs or significant changes in the discount rate are added to or deducted from the cost of the related asset in the current period. The capitalized cost is depreciated over the useful life of the capital asset.

(j) Regulatory deferral accounts

The timing of recognition of certain revenue and expenses differs from what would otherwise be expected for companies that are not subject to regulatory statutes governing the level of their charges, the effect of which is described in note 7.

The Company's approach to determining the level of customer service charges is based upon the charging principles set out in the ANS Act which prescribe, among other things, that charges must not be set at levels which, based on reasonable and prudent projections, would generate revenues exceeding the Company's current and future financial requirements in relation to the provision of civil air navigation services. Pursuant to these principles, the Board, acting as rate regulator, approves the amount and timing of changes to customer service charges.

In January 2014, the IASB issued IFRS 14 Regulatory Deferral Accounts (IFRS 14) as an interim standard, permitting entities conducting rate-regulated activities to continue to recognize regulatory deferral account balances according to their previous generally accepted accounting principles. IFRS 14 is restricted to first-time adopters of IFRS and remains in force until either repealed or replaced by permanent guidance on rate-regulated accounting. The Company recognized regulatory deferral account balances in its Canadian GAAP consolidated financial statements prior to adopting IFRS and elected to early adopt this standard as of September 1, 2014 when it adopted IFRS.

In order to mitigate the effect on its operations of unpredictable and uncontrollable factors, principally unanticipated fluctuations in air traffic levels, the Company maintains a rate stabilization mechanism. Amounts are added to or deducted from the rate stabilization account based upon variations from amounts used when establishing customer service charges. In addition, for certain transactions where the timing of the cash flows differs significantly from the accounting recognition, the Company recognizes other regulatory deferral amounts in order to defer the accounting recognition to the period in which they will be considered for rate setting. These certain transactions are generally considered for rate setting when the amounts are expected to be realized in cash, with the exception of the cash flows related to hedging instruments, which are considered for rate setting in the same period as the underlying hedged transaction.

(k) Revenue

Revenue is measured based on the consideration specified in a contract with a customer and is recognized as the Company satisfies the performance obligations in the contract and transfers control over a product or service to a customer.

(i) Customer service charges

The majority of the Company's revenues are from customer service charges for air navigation services. Revenue is recognized as air navigation services are rendered. Rates for customer service charges are those approved by the Board, acting as rate regulator.

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Refunds of customer service charges are recognized when approved by the Board, acting as rate regulator, or when a constructive obligation exists.

The Company's general payment terms provide for payment periods of thirty days for air navigation services, but shorter payment terms are imposed where customer circumstances warrant. Our credit policies also require payments in advance or satisfactory security to be posted under certain circumstances.

(ii) Service and development contracts

Revenue is recognized as services are rendered. Revenue from a contract to provide services is generally recognized on a straight line basis over the period of service.

In general, revenue for development contracts is recognized as performance obligations are satisfied over time. Revenue is recognized by reference to the stage of completion of the contract activity at the end of the reporting date, measured using the cost-to-cost measure of progress. Under the cost-to-cost measure of progress, the extent of progress toward completion is measured based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligation. Revenue is recorded proportionally as costs are incurred.

Estimates of revenues, costs or extent of progress toward completion are revised if circumstances change. Any resulting increase or decrease in estimated revenues or costs are reflected in profit or loss in the period in which the circumstances that give rise to the revision become known by management.

In some cases, revenue is recognized at a point in time, when performance obligations are satisfied; typically upon completion of the contract.

When management determines that it is probable that total contract costs will exceed total contract revenue, the expected loss is recognized as an expense immediately.

Contract balances

The timing of revenue recognition, billings and cash collections results in billed accounts receivable or unbilled receivables (accounts receivable and other), and customer advances and deposits (deferred revenue) on the consolidated statement of financial position.

Customer service charges are billed on a monthly basis in line with revenue recognition, resulting in accounts receivable. The exception to this are annual / quarterly charges, which generally apply to propeller aircraft and are billed annually or quarterly and deferred and recognized over the period in which services are rendered, resulting in deferred revenue.

For service and development contracts, amounts are billed as work progresses in accordance with agreed-upon contractual terms, either at periodic intervals or upon achievement of contractual milestones. Depending on the timing of revenue recognition in relation to billing, it may result in accrued or deferred revenue.

(l) Lease payments

Payments made under operating leases are recognized in the statement of operations as operating expenses on a straight-line basis over the term of the respective lease. Lease incentives received are recognized as an integral part of the total lease expense, over the term of the lease.

(m) Finance income and other finance costs

Finance income comprises interest income on investments and changes in the fair value of financial assets at FVTPL. Interest income is recognized as it accrues in net income (loss), using the effective interest method.

Other finance costs comprise interest expense on borrowings, unwinding of the discount on provisions, changes in the fair value of financial assets at FVTPL, and impairment losses recognized on financial assets. Borrowing costs that are not directly attributable to the acquisition, construction or production of a qualifying asset are recognized in net income (loss) using the effective interest method.

(n) Income taxes

(i) Current taxes

NAV CANADA is exempt from income taxes as it meets the definition of a not-for-profit organization under the *Income Tax Act (Canada)* (ITA); however its subsidiaries operating in Canada and other jurisdictions are subject to Canadian and foreign taxes.

NAV CANADA
Notes to Consolidated Financial Statements
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3. Significant accounting policies (continued)

(n) Income taxes (continued)

(ii) Deferred taxes

Deferred tax assets and deferred tax liabilities are recognized for the tax effect of the difference between carrying values and the tax bases of assets and liabilities. Deferred tax assets are recognized for deductible temporary differences, for unused tax losses and income tax reductions to the extent that it is probable that they will be able to be utilized against future taxable income. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related benefit will be realized.

Deferred tax assets and deferred tax liabilities are measured using enacted or substantively enacted tax rates and tax laws at the reporting date that are expected to apply to their respective period of realization. These amounts are reassessed each period in the event of changes in income tax rates.

Deferred tax assets and liabilities are offset, when there is the legal right and intention to set off current tax assets and liabilities from the same taxation authority.

(o) Segmented reporting

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision maker. The chief operating decision maker, who is responsible for allocating resources and assessing performance of operations, has been identified as the Company’s President and Chief Executive Officer. The Company's core business is to provide air navigation services, for which it collects customer service charges. The core business is the Company's only reportable segment. The Company's air navigation services are provided primarily within Canada. Substantially all of the Company's capital expenditures and assets are located in Canada.

4. Revenue

Customer service charges by type of air navigation service provided for the years ended August 31 were as follows:

	2019	2018
Enroute [1]	$ 706	$ 704
Terminal [2]	537	517
Daily / annual / quarterly [3]	93	93
North Atlantic and international communication [4]	48	45
	$ 1,384	$ 1,359

(1) Enroute charges related to air navigation services provided or made available to aircraft during the enroute phase of the flight, whether they overfly Canadian-controlled airspace or take-off and/or land in Canada. This performance obligation is satisfied at a point in time.

(2) Terminal charges related to air navigation services provided or made available to aircraft at or in the vicinity of an airport. This performance obligation is satisfied at a point in time.

(3) Daily / annual / quarterly charges related to enroute and terminal air navigation services. These charges generally apply to propeller aircraft and the performance obligations are satisfied over the period in which air navigation services are made available.

(4) North Atlantic and international communication charges related to certain air navigation and communication services provided or made available to aircraft while in airspace over the North Atlantic Ocean. These services are provided outside of Canadian sovereign airspace but for which Canada has air traffic control responsibility pursuant to international agreements. The international communication charges also include services provided or made available while in Canadian airspace in the north. These performance obligations are satisfied at a point in time.

The Company has two customers each of which represents more than 10% of revenue. For the year ended August 31, 2019 (fiscal 2019), revenue from the largest customer was $275 (year ended August 31, 2018 (fiscal 2018) – $266) and revenue from the second largest customer was $158 (fiscal 2018 – $167), together representing 30% (fiscal 2018 – 31%) of the revenue of the Company. The revenue from these two major customers arose from air navigation services.

Other revenue for fiscal 2019 consists primarily of service and development contracts revenue of $30 (fiscal 2018 – $37).

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5. Salaries and benefits

Salaries and benefits expenses for the years ended August 31 were comprised of the following:

		2019		2018
Salaries and other	$	808	$	775
Fringe benefits (excluding pension)		84		79
Pension current service cost		169		177
Less: capitalized salaries and benefits		(34)		(46)
	$	1,027	$	985

6. Finance income and other finance costs

Finance income and other finance costs for the years ended August 31 were comprised of the following:

		2019		2018
Finance income				
Interest income on financial assets at amortized cost	$	(3)	$	(4)
Net change in fair value of financial assets at FVTPL		(11)		(54)
	$	(14)	$	(58)
Other finance costs				
Interest expense on financial liabilities at amortized cost	$	79	$	82
Less: Capitalized borrowing costs		(5)		(5)
	$	74	$	77

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7. Financial statement impact of regulatory deferral accounts

In accordance with disclosures required for entities subject to rate regulation, the Company's regulatory deferral account balances are as follows:

	August 31 2018	Regulatory deferral	Recovery/ reversal	August 31 2019	Recovery Period
Regulatory deferral account debit balances					
Deferred income tax	$ 50	$ (2)	$ -	$ 48	(2), (3)
Employee benefits:					
Accumulating sick leave (b)	25	-	2	27	(4)
Other post-employment benefits re-measurements	20	17	(6)	31	(5), (10)
Pension contributions (c)	98	96	-	194	(6)
Pension re-measurements (c)	643	1,010	-	1,653	(6), (10)
Supplemental pension re-measurements	55	13	(4)	64	(5), (10)
Realized hedging transaction	63	9	(2)	70	(1), (9)
	$ 954	$ 1,143	$ (10)	$ 2,087	
Regulatory deferral account (credit) balances					
Rate stabilization account (a)	$ (124)	$ 13	$ 18	$ (93)	(7)
Derivatives	(3)	11	(9)	(1)	(1), (9)
Employee benefits:					
Long-term disability contributions	(5)	-	4	(1)	(8)
Change in the fair value of the investment in preferred interests	(253)	(21)	-	(274)	(2)
Investment in equity-accounted investee	(3)	-	-	(3)	(3)
Realized hedging transaction	(6)	-	2	(4)	(1)
	$ (394)	$ 3	$ 15	$ (376)	

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	August 31 2017	Regulatory deferral	Recovery/ reversal	August 31 2018	Recovery Period
Regulatory deferral account debit balances					
Derivatives	$ 13	$ (13)	$ -	$ -	(1), (9)
Deferred income tax	56	(6)	-	50	(2), (3)
Employee benefits:					
Accumulating sick leave (b)	30	(4)	(1)	25	(4)
Other post-employment benefits re-measurements	41	(14)	(7)	20	(5), (10)
Pension contributions (c)	-	108	(10)	98	(6)
Pension re-measurements (c)	1,251	(608)	-	643	(6), (10)
Supplemental pension re-measurements	33	22	-	55	(5), (10)
Realized hedging transaction	51	13	(1)	63	(1), (9)
	$ 1,475	$ (502)	$ (19)	$ 954	
Regulatory deferral account (credit) balances					
Rate stabilization account (a)	$ (131)	$ (3)	$ 10	$ (124)	(7)
Derivatives	-	(3)	-	(3)	(1), (9)
Employee benefits:					
Pension contributions (c)	(9)	9	-	-	(6)
Long-term disability contributions	(8)	-	3	(5)	(8)
Change in the fair value of the investment in preferred interests	(185)	(68)	-	(253)	(2)
Investment in equity-accounted investee	(4)	1	-	(3)	(3)
Realized hedging transaction	(5)	(2)	1	(6)	(1)
	$ (342)	$ (66)	$ 14	$ (394)	

(1) Cash flow hedges are considered for rate setting in the same period as the underlying hedged transaction.

Fair value losses (gains) on foreign exchange forward contracts are considered for rate setting in the period that they are realized. Fair value losses (gains) on forward-dated interest rate swaps and bond forward derivative instruments are deferred and considered for rate setting over the term of the related debt instrument.

(2) The regulatory deferrals related to the Company's investment in Aireon are considered for rate setting when they are realized in cash through the receipt of dividends net of tax. The total regulatory deferral of income tax related to the Company's investment in Aireon is $48 as at August 31, 2019 (August 31, 2018 – $49).

(3) The unrealized gain on the Company's remaining 50% interest in Searidge, as well as its share of Searidge's net assets, are considered for rate setting when realized in cash net of tax (e.g. through a sale of all or a portion of the Company's interest or the receipt of dividends). The total regulatory deferral of income tax related to the Company's share of the net assets of Searidge is $nil as at August 31, 2019 (August 31, 2018 – $1).

(4) Non-vesting accumulating sick leave is considered for rate setting when the sick leave benefits are used and paid in cash. Vested accumulating sick leave is considered for rate setting over the period in which the employees render service.

(5) These re-measurement amounts will be recovered by amortizing the prior years' annual re-measurements over the expected average service period of the plan members.

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7. Financial statement impact of regulatory deferral accounts (continued)

(6) The Company's cost of pension benefits for its funded plans are considered for rate setting based on the Company's cash contributions to the pension funds as described in note 7 (c) below. Pension adjustments related to the adoption of IFRS and subsequent re-measurements are deferred and are considered for rate setting purposes as cash contributions to the pension funds are made.

The Company made solvency deficiency contributions of $44 for the year ended August 31, 2017 (fiscal 2017) that were deferred. During fiscal 2018, $10 was recovered and the remaining $34 is expected to be recovered through future service charges.

(7) In order to mitigate the effect on its operations of unpredictable and uncontrollable factors, principally unanticipated fluctuations in air traffic levels, the Company maintains a rate stabilization mechanism. Amounts are added to or deducted from the rate stabilization account based upon variations from amounts used when establishing customer service charges.

In addition, for certain transactions where the timing of the cash flows differs significantly from the accounting recognition, the Company recognizes other regulatory deferral accounts in order to defer the accounting recognition to the period in which they will be considered for rate setting.

(8) The Company recovers the annual cost of the LTD contributions to the funded plan.

(9) The net movement in regulatory deferral accounts related to OCI due to changes in fair value of cash flow hedges for fiscal 2019 of $10 is comprised of $1 related to the amortization of losses on realized hedging transactions to net income (loss) and $11 to defer positive fair value adjustments related to derivatives designated as cash flow hedges.

(10) The net movement in regulatory deferral accounts related to OCI due to re-measurements of employee defined benefit plans for fiscal 2019 is $1,040 which consists of pension re-measurements of $1,010, other post-employment benefits re-measurements of $17 and supplemental pension re-measurements of $13.

The cumulative difference between total regulatory debit balances and total regulatory credit balances is reflected in equity at each reporting date.

When establishing customer service charges, the Board considers the balance in the rate stabilization account, the extent to which operating costs are variable and available liquidity and sets the level as appropriate.

On August 15, 2019, the Company issued an announcement dealing with the implementation of revised service charges. The revised charges will be implemented in two phases, taking effect on September 1, 2019 and January 1, 2020. Effective September 1, 2019, revisions to base rates averaged a 0.8% increase from previous base rates, which recovers the cost of domestic space-based surveillance data services. Effective January 1, 2020, rates will increase on average by 3.6% from base rates in effect on August 31, 2019 to recover the cost of oceanic space-based surveillance data services. These revisions vary by service charge. Accordingly, some customers will pay more while others will pay less than the averages noted above.

Subsequent to August 31, 2019, the Canadian Transportation Agency received an appeal by the International Air Transportation Association of the revised customer services charges. Refer to note 21 for further details.

The Company does not use a rate of return to reflect the time value of money for any of its regulatory deferral account balances.

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The table below shows the impact of rate stabilization adjustments and net movement in regulatory deferral accounts on the net income (loss) as reported in the consolidated statement of operations:

	2019	2018
Before net movement in regulatory deferral accounts:		
Revenue	$ 1,437	$ 1,415
Operating expenses	1,449	1,396
Other (income) and expenses	91	60
Income tax recovery	(3)	(8)
	(100)	(33)
Net movement in regulatory deferral accounts:		
Rate stabilization adjustments (see table below)	31	7
Other regulatory deferral account adjustments:		
Employee benefit pension contributions	96	107
Other employee benefits	(5)	(9)
Investment in preferred interests, before tax	(21)	(68)
Investment in equity-accounted investee	-	1
Income tax	(2)	(6)
Realized hedging transactions	1	1
	69	26
	100	33
Net income (loss), after rate stabilization and regulatory deferral account adjustments	$ -	$ -

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Notes to Consolidated Financial Statements
As at and for the years ended August 31, 2019 and 2018 (millions of dollars)

7. Financial statement impact of regulatory deferral accounts (continued)

(a) Rate Stabilization Account

The rate stabilization account credit balance is comprised of operating deferrals. Should actual revenue exceed the Company's actual expenses, such excess is reflected as a credit to the rate stabilization account. Conversely, should actual revenue be less than actual expenses, such shortfall is reflected as a debit to the rate stabilization account. A debit balance in the rate stabilization account represents amounts recoverable through future customer service charges, while a credit balance represents amounts returnable through reductions in future customer service charges. The table below shows the net movements in the rate stabilization account.

	Years ended August 31	
	2019	2018
Rate stabilization account balance, beginning of period	$ 124	$ 131
Variances from planned results:		
Revenue higher (lower) than planned	(10)	24
Operating expenses higher than planned	(3)	(13)
Other (income) and expenses lower than planned	27	62
Net movement in other regulatory deferral accounts	(27)	(70)
Total variances from planned results	(13)	3
Initial approved adjustment [(1)]	(18)	(10)
Net movement in rate stabilization account recorded in net income (loss)	(31)	(7)
Rate stabilization account balance, end of period	$ 93	$ 124

(1) In order to achieve breakeven results of operations in fiscal 2019, the Board approved a reduction of the rate stabilization account as a result of a planned shortfall. As a result, $18 has been transferred out of the rate stabilization account evenly throughout the fiscal year (fiscal 2018 – $10).

(b) Employee benefits – accumulating sick leave debit balances

	August 31, 2019	August 31, 2018
Non-vesting accumulating sick leave	$ 17	$ 17
Vested accumulating sick leave	10	8
Total accumulating sick leave	$ 27	$ 25

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(c) Pension contributions

Included in regulatory deferral account debit balances at August 31, 2019 is $194 relating to the recovery through customer service charges of pension contributions (August 31, 2018 – $98). The accrued pension benefit liability, net of regulatory deferrals is as follows:

	August 31, 2019	August 31, 2018
Employee benefit liability	$ (1,813)	$ (707)
Less:		
Regulatory deferrals of non-cash adjustments	1,653	643
Benefit contributions less than benefit expense	$ (160)	$ (64)
Regulatory debit balances – recovery of contributions	$ 194	$ 98
Regulatory expense cumulatively less than contributions	$ 34	$ 34

The Company uses a regulatory approach to determine the net charge to net income (loss) for pension benefit costs for its funded plans. The objective of this approach is to reflect the cash cost of the funded pension plans in net income (loss) by recording an adjustment to the related regulatory deferral account. These regulatory adjustments are the difference between the pension benefit costs as determined by IAS 19 *Employee Benefits* and the annual going concern cash cost of the plan. Included in the regulatory deferral related to pension contributions of $194, is the recovery of $10 of solvency deficiency contributions of $44 paid in fiscal 2017. The remaining balance of $34 is expected to be recovered through future customer service charges. The funding of employee pension benefits as compared to the expense, net of regulatory adjustments, recorded in the consolidated statement of operations is summarized below.

	Years ended August 31	
	2019	2018
Consolidated statement of operations		
Pension current service expense [(1)]	$ 164	$ 173
Net interest expense [(1)]	24	41
Less: Regulatory deferrals	(96)	(107)
	92	107
Company cash pension contributions		
Going concern current service	92	97
Regulatory recovery of fiscal 2017 solvency contributions	$ –	$ 10

(1) For fiscal 2019, pension current service expense does not include $5 related to the Company's unfunded pension plan (fiscal 2018 – $4) and net interest expense does not include $5 related to the Company's unfunded pension plan (fiscal 2018 – $3).

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Notes to Consolidated Financial Statements
As at and for the years ended August 31, 2019 and 2018 (millions of dollars)

8. Accounts receivable and other

Accounts receivable and other were comprised of the following:

	August 31, 2019	August 31, 2018
Trade receivables	$ 75	$ 84
Accrued receivables and unbilled work in progress	20	19
Commodity taxes receivable	4	-
Allowance for doubtful accounts	(1)	(1)
	$ 98	$ 102

The Company's exposure to credit and foreign exchange risks and to impairment losses related to accounts receivable is described in note 15.

9. Current investments

As at August 31, 2019, current investments is comprised of the debt service reserve fund of $72 (August 31, 2018 – $71).

Pursuant to the Master Trust Indenture (note 14), the Company is required to establish and maintain certain reserve funds, as follows:

At the end of each fiscal year, the amount in the debt service reserve fund must be equal to or greater than the annual projected debt service requirement (principal amortization, interest and fees) on outstanding Master Trust Indenture obligations determined in the manner required by the Master Trust Indenture. Any additional contributions required to be made to the debt service reserve fund must, at a minimum, be made in equal instalments over the following four fiscal quarters. Funds deposited into the debt service reserve fund are held by a trustee in high-quality short-term money market instruments and are released only to pay principal, interest and fees owing in respect of outstanding borrowings under the Master Trust Indenture except that, provided no event of default has occurred and is continuing, surplus funds may be released from time to time at the request of the Company.

Pursuant to the General Obligation Indenture (note 14), the Company is required to maintain certain liquidity levels similar to the reserve fund requirements of the Master Trust Indenture. Specifically, the Company must maintain a minimum liquidity level equal to 12 months net interest expense plus 25% of the annual operating and maintenance expenses. Liquidity is defined to include all cash and qualified investments, amounts held in the operations and maintenance and debt service reserve funds and any undrawn amounts available under a committed credit facility. In addition, the Company must maintain cash liquidity equal to 12 months net interest expense. Cash liquidity includes cash and qualified investments held in the reserve funds maintained under the Master Trust Indenture.

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10. Investment in preferred interests of Aireon

In November 2012, the Company entered into agreements (the November 2012 agreements) setting out the terms of its participation in Aireon, a joint venture with Iridium. Aireon's mandate is to provide global satellite-based surveillance capability for ANSPs around the world through Automatic Dependent Surveillance-Broadcast (ADS-B) receivers built as an additional payload on the Iridium NEXT satellite constellation. Aireon commenced operations on March 27, 2019.

In December 2013, the November 2012 agreements were amended (the December 2013 agreements) to provide for the making of an aggregate investment of $120 U.S. ($160 CDN) in Aireon by three additional major ANSPs, namely ENAV (Italy), the Irish Aviation Authority (IAA), and Naviair (Denmark).

In May 2018, the December 2013 agreements were amended to provide for the making of an investment of $69 U.S. ($92 CDN) in Aireon by NATS.

In accordance with the governing agreements, a portion of Iridium's existing common equity interest in Aireon will be redeemed for a payment from Aireon of $120 U.S. ($160 CDN) to finalize the ownership interests of all of Aireon's investors. Upon this redemption and the related conversion of all preferred interests into common equity interests, NAV CANADA will hold 45.3% of the fully diluted common equity interests of Aireon, ENAV and NATS will hold 11.1%, and each of IAA and Naviair will hold 5.3%, with the remaining 21.8% being retained by Iridium. This redemption is expected to occur by August 31, 2021.

As at August 31, 2019, the Company's investment in Aireon is $150 U.S. ($200 CDN) (August 31, 2018 – $150 U.S. ($196 CDN)). The Company is represented by five out of the eleven directors on Aireon's board of directors. As at August 31, 2019, the Company's total fully diluted common equity interest on a post conversion basis and prior to the redemption by Iridium is 37.2% (August 31, 2018 – 37.2%).

The Company's investment in preferred interests of Aireon provides for a 5% annual cumulative dividend (except for the $40 U.S. ($53 CDN) second stage investment that provides for a 10% annual cumulative dividend), calculated from the date of issuance. The preferred interests are redeemable for cash in three annual instalments beginning in January 2021 in the event the preferred interests have not been converted to common equity or redeemed by that time. The cash payments for these mandatory redemptions will include any unpaid dividends.

The Company may at any time and from time to time elect to convert all or a portion of its preferred interests in Aireon into common equity interests.

As long as the conversion feature remains unexercised, the Company's investment in preferred interests does not give the Company any rights to the residual net assets of Aireon and accordingly the investment is accounted for as a financial instrument classified and measured at FVTPL.

Following the investment by NATS in May 2018, the Company used the price paid by NATS for an investment in preferred interests in Aireon to determine the fair value of its investment in Aireon from that date up to and as at August 31, 2018. In August 2019, an independent assessment of the valuation of Aireon was received, confirming the value of the Company's investment in preferred interests determined based on the price paid by NATS (note 15).

The Company's deferred tax assets and liabilities at August 31, 2019 relate to its investment in Aireon held in one of the Company's wholly owned subsidiaries. Aireon is a limited liability company that is headquartered in the United States and is treated as a partnership for U.S. federal income tax purposes, and therefore is generally not subject to income taxes directly. Rather, the Company, Iridium and the additional investors are each allocated a portion of Aireon's taxable income (loss) based on their respective tax basis interests in Aireon's income or loss under U.S. tax regulations. The Company has recognized deferred tax liabilities amounting to $83 CDN (August 31, 2018 – $60 CDN) primarily due to the increase in the fair value of the Company's investment in Aireon. The Company has recognized deferred tax assets amounting to $35 CDN (August 31, 2018 – $11 CDN) for operating losses and research and development expenses carried forward that have been allocated to the Company's subsidiary. The recognition of deferred tax assets is based on management's assessment that their realization is probable. The operating losses carried forward will begin to expire in calendar year 2033. The deferred tax assets and liabilities are presented net on the consolidated statement of financial position as a deferred tax liability as noted in the table below.

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10. Investment in preferred interests of Aireon (continued)

The table below shows the impact of the Company's investment in preferred interests of Aireon and the impact of the use of regulatory accounting on the Company's statement of financial position:

	August 31, 2019	August 31, 2018
Investment in preferred interests	$ 439	$ 418
Deferred tax liability	(48)	(49)
Financial position impact of the investment in preferred interests of Aireon before regulatory accounting	$ 391	$ 369
Regulatory deferral account debit balances		
Deferred regulatory income tax liability	$ 48	$ 49
Regulatory deferral account credit balances		
Cumulative change in fair value of the investment in preferred interests	$ (274)	$ (253)
Net financial position impact of the investment in preferred interests of Aireon after regulatory accounting	$ 165	$ 165

The net impact on the financial position of the Company's investment in preferred interests of Aireon after regulatory accounting reflects the actual amounts paid for the Company's investment in Aireon (at the exchange rates prevailing on the dates of the transactions).

The use of regulatory deferral accounts defers the accounting recognition of transactions related to the Company's investment in Aireon on the Company's consolidated statement of operations. As a result, there is no net impact on the Company's consolidated statement of operations for the year ended August 31, 2019 related to the Company's investment in Aireon. These amounts are not considered for rate setting purposes until realized in cash through the receipt of dividends net of tax.

During fiscal 2019, Aireon entered into a long-term financing agreement with a major international bank and used a portion of the funds drawn under that agreement to settle the bridge financing made available by the Company of $29 U.S. ($39 CDN) and other long-term liabilities. Aireon repaid $8 U.S. ($11 CDN), representing the total drawn under the bridge financing agreement along with accrued interest.

Aireon's fiscal year end is December 31. IAS 28 limits the difference between the end of the reporting period of an associate or joint venture and that of the investor to no more than three months and requires adjustment to the results for any significant transactions that occur during the intervening period. The Company has chosen a two month lag period and therefore the August 31, 2019 and August 31, 2018 information presented below is based on Aireon's financial position and financial performance as at June 30, 2019 and June 30, 2018, respectively. All amounts are translated from U.S. dollars.

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No significant transactions occurred during the intervening periods that were necessary to adjust for in Aireon's financial information presented as at and for the year ended August 31, 2019.

	August 31, 2019	August 31, 2018
Current assets		
Cash and cash equivalents	$ 45	$ 81
Prepaid expenses and other current assets	21	20
Non-current assets		
Property, plant and equipment	574	582
Other non-current assets	4	-
	$ 644	$ 683
Current liabilities		
Trade and other payables	$ (9)	$ (7)
Deferred revenue	(2)	(2)
Non-current liabilities		
Investor bridge loan	-	(15)
Financial liabilities	(1,027)	(863)
	$ (1,038)	$ (887)
Net assets	$ (394)	$ (204)

	Years ended August 31	
	2019	2018
Revenue	$ 18	$ -
Interest expense	$ 74	$ 31
Depreciation	$ 41	$ 14
Net loss	$ (183)	$ (106)
Other comprehensive loss	(7)	(3)
Total comprehensive loss	$ (190)	$ (109)

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11. Property, plant and equipment

Property, plant and equipment are comprised of the following:

	Land and buildings	Systems and equipment	Assets under development	Total
Cost				
Balance at August 31, 2017	$ 227	$ 626	$ 102	$ 955
Additions	–	–	117	117
Disposals	(3)	(29)	–	(32)
Transfers	42	31	(73)	–
Balance at August 31, 2018	$ 266	$ 628	$ 146	$ 1,040
Balance at August 31, 2018	$ 266	$ 628	$ 146	$ 1,040
Additions	–	–	103	103
Disposal	–	(1)	–	(1)
Transfers	14	118	(132)	–
Balance at August 31, 2019	$ 280	$ 745	$ 117	$ 1,142
Accumulated depreciation				
Balance at August 31, 2017	$ 39	$ 211	$ –	$ 250
Depreciation	15	72	–	87
Disposals	(3)	(29)	–	(32)
Balance at August 31, 2018	$ 51	$ 254	$ –	$ 305
Balance at August 31, 2018	$ 51	$ 254	$ –	$ 305
Depreciation	18	70	–	88
Disposal	–	(1)	–	(1)
Balance at August 31, 2019	$ 69	$ 323	$ –	$ 392
Carrying amounts				
At August 31, 2018	$ 215	$ 374	$ 146	$ 735
At August 31, 2019	$ 211	$ 422	$ 117	$ 750

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12. Intangible assets

Intangible assets are comprised of the following:

	Air navigation right	Purchased software	Internally developed software	Assets under development	Total
Cost					
Balance at August 31, 2017	$ 702	$ 165	$ 193	$ 43	$ 1,103
Additions	-	-	-	68	68
Disposals	-	(8)	(1)	(1)	(10)
Transfers	-	13	37	(50)	-
Balance at August 31, 2018	$ 702	$ 170	$ 229	$ 60	$ 1,161
Balance at August 31, 2018	$ 702	$ 170	$ 229	$ 60	$ 1,161
Additions	-	-	-	41	41
Disposals	-	-	(1)	-	(1)
Transfers	-	25	37	(62)	-
Balance at August 31, 2019	$ 702	$ 195	$ 265	$ 39	$ 1,201
Accumulated amortization					
Balance at August 31, 2017	$ 75	$ 53	$ 45	$ -	$ 173
Amortization	25	19	21	-	65
Disposals	-	(8)	(1)	-	(9)
Balance at August 31, 2018	$ 100	$ 64	$ 65	$ -	$ 229
Balance at August 31, 2018	$ 100	$ 64	$ 65	$ -	$ 229
Amortization	25	19	22	-	66
Balance at August 31, 2019	$ 125	$ 83	$ 87	$ -	$ 295
Carrying amounts					
At August 31, 2018	$ 602	$ 106	$ 164	$ 60	$ 932
At August 31, 2019	$ 577	$ 112	$ 178	$ 39	$ 906

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Notes to Consolidated Financial Statements
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13. Employee benefits

The Company maintains defined benefit plans that provide pension and other post-employment benefits to employees. Long-term employee benefit plans provide accumulating sick leave benefits (vested and non-vesting) and LTD benefits. Pension (other than the supplemental pension plan) and LTD benefits are funded. Other post-employment benefits and other long-term employee benefits are not funded. The Company has recorded net defined pension and other post-employment benefits expenses as follows for the years ended August 31:

	Pension benefit plans		Other benefit plans	
	2019	2018	2019	2018
Statement of operations				
Current service costs	$ 169	$ 177	$ 5	$ 5
Curtailment gain	-	-	-	(1)
Interest cost	257	244	7	8
Interest income on plan assets	(228)	(200)	-	-
Total expense	$ 198	$ 221	$ 12	$ 12
Statement of other comprehensive income				
Re-measurements:				
Return on plan assets, excluding interest income on plan assets	$ (269)	$ (306)	$ -	$ -
Actuarial losses (gains)	1,292	(280)	17	(14)
Total cost (income) recognized in other comprehensive income	$ 1,023	$ (586)	$ 17	$ (14)

Net interest costs relating to employee benefits of $38 for fiscal 2019 (fiscal 2018 – $54) are comprised of interest costs and interest income on plan assets as noted above for pension benefit plans and other benefit plans, including an additional $2 (fiscal 2018 – $2) of interest costs related to long-term sick leave benefits.

The balances of employee benefits recorded on the consolidated statements of financial position are as follows:

	August 31, 2019	August 31, 2018
Recognized asset for long-term disability benefits	$ -	$ 2

	August 31, 2019	August 31, 2018
Present value of funded defined benefit obligations	$ (8,256)	$ (6,740)
Fair value of plan assets	6,443	6,033
Liability for funded defined benefit obligations	$ (1,813)	$ (707)
Liability for unfunded pension defined benefit obligations	(144)	(124)
Liability for unfunded other defined benefit obligations	(218)	(195)
Recognized liability for defined benefit plans	(2,175)	(1,026)
Long-term employee benefit liabilities	(51)	(44)
Total long-term employee benefit liabilities [(1)]	$ (2,226)	$ (1,070)

[(1)] Includes long-term disability liability of $3.

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The most recent actuarial funding valuations were carried out as at January 1, 2019.

The Company has determined that in accordance with:

- the terms and conditions of the funded defined benefit pension plans,
- statutory requirements (such as minimum funding requirements, the ability to take contribution holidays, and the ability to use letters of credit to secure solvency special payments revealed by funding actuarial valuations), and
- the assumptions and methodology adopted to calculate the economic benefit available,

the present value of reductions in future contributions is not lower than the balance of the total fair value of the plan assets plus any minimum funding requirement in respect of past service less the total present value of obligations. As such, no increase in the defined benefit liability is necessary as at August 31, 2019 and August 31, 2018.

(a) Characteristics of defined benefit plans

The Company has established and maintains defined benefit pension plans for its employees. The plans provide benefits based on age, length of service and best average earnings. Employee contribution rates vary by position and by plan. The Company is the administrator and sponsoring employer for two registered defined benefit pension plans that are funded. In addition, the Company maintains a Supplemental Retirement Plan (the Supplemental Plan) that is not funded. The Company's net obligation in respect of the defined benefit pension plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value.

(i) The NAV CANADA Pension Plan (the Plan) was established on November 1, 1996 to provide pension benefits to the employees of the Company. The Plan was established pursuant to an agreement with the Federal Government to provide continuity of pension and other benefits to the employees who transferred to the Company from the public service.

The Plan is a defined benefit plan covering substantially all salaried employees of the Company. The Plan is registered under the federal *Pension Benefits Standards Act, 1985 (PBSA)*. Effective January 1, 2009, the Plan consists of two parts: Part A is the contributory part that provides benefits under the original plan, and Part B is the non-contributory part provided to (a) all new management hires on a mandatory basis after January 1, 2009, (b) effective January 1, 2014, to new hires represented by six of eight unions, (c) effective October 1, 2014 and effective December 1, 2014, respectively, to all new represented hires of the remaining two unions. Prior to these effective dates, participation in Part B was voluntary for employees represented by these unions.

Under the Plan, contributions are made by the Plan members (Part A only) and the Company, which is the Plan sponsor. Part A Plan members contribute at predetermined rates. The Company is required to contribute the balance of the funding necessary for Part A and Part B to ensure that benefits will be fully provided. The determination of the value of these benefits is made on the basis of an annual actuarial valuation for funding purposes performed as at January 1.

The Plan provides, under both Part A and Part B, a benefit based on pensionable service and the average of the best six years' pensionable earnings (five years for members represented by CATCA/Unifor) prior to retirement or termination. Pensionable benefits are reduced at age 65 due to CPP/QPP integration. The two plan parts have different calculation formulas that include benefit entitlement, CPP/QPP integration and early retirement reductions. A separate Supplemental Plan has been implemented by the Company to provide for benefits that exceed the maximum amount allowable under the ITA for registered pension plans.

Pensions are fully indexed during retirement to increases in the Consumer Price Index for Part A members and on an ad-hoc basis for Part B members.

The investment objective of the Plan is to provide for the security of the promised benefits under the Plan at a reasonable cost. In order to achieve this objective, the Plan has adopted a Liability-Driven Investment (LDI) strategy. The strategy aims to reduce and manage the interest rate and inflation risk mismatch between the Plan's assets and liabilities and to balance the risk/reward trade-offs in the selection of a long-term asset mix.

(ii) The Company also maintains the NAV CANADA Executive Pension Plan which is a non-contributory defined benefit plan covering certain senior executive employees of the Company. This plan is also registered under the PBSA. Members are neither required nor permitted to make contributions to the Plan, other than direct rollover contributions on admission to the Plan or remittances by members to purchase remaining eligible pensionable service under the members' former registered pension plan (prior service buy back). Contributions are made by the Company, the Plan sponsor. The Company is required to contribute the funding necessary to ensure that benefits will be fully provided. The determination of the contribution level is made on the basis of an annual actuarial valuation for funding purposes.

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13. Employee benefits (continued)

(a) Characteristics of defined benefit plans (continued)

(iii) The Company also provides other post-employment benefits for its employees including certain health care, life insurance and retiring allowance benefits to eligible retirees and their eligible dependents. Other post-employment benefits are not funded.

Benefit payments for the two defined benefit pension plans are made from trustee administered funds, and benefit payments for the unfunded Supplemental Plan and other post-employment benefit plans are met by the Company as the benefit payment obligations come due. The defined benefit plans' assets are held in trust and are governed by PBSA regulations. The Pension Committee, a committee of the Board, oversees the investment management of the plans' assets and administration of the Company's retirement plans, which include the Company's two registered pension plans and the Supplemental Plan.

(b) Pension plan funding requirements

Actuarial valuations for pension funding purposes are performed annually as at January 1 and are required to be filed with the Office of the Superintendent of Financial Institutions Canada (OSFI) by June of the same year. Accordingly, once the valuations are filed, going concern pension contributions are based on the January 1, 2019 actuarial valuations, with a retroactive adjustment to the beginning of the calendar year. The regulations governing the funding of federally regulated pension plans require actuarial valuations to be performed on both a going concern and a solvency basis. The actuarial valuations performed as at January 1, 2019 reported a going concern surplus of $738 (January 1, 2018 – $503). A statutory solvency surplus of $500 was reported as at January 1, 2019 (January 1, 2018 – $561) based on the assumption that the September 1, 2016 plan text restatement, which included the plan termination amendment, was in effect on the valuation date. Had the amendment not been included, there would have been a statutory solvency deficiency of $164 as of January 1, 2019 (January 1, 2018 – $89).

The Company has funded its calendar 2019 solvency funding requirements of $33 with letters of credit which satisfies its pension solvency funding requirements on a pre-amendment basis. Solvency contributions will continue to be determined on a pre-amendment basis to ensure we are in compliance with the PBSA.

The Company's contributions to its defined benefits plans were as follows:

	Years ended August 31	
	2019	**2018**
Funded pension plan		
Going concern current service costs	$ 93	$ 97
Unfunded pension plan	2	2
Unfunded other defined benefit plans	6	7
Settlement of curtailed severance benefits	-	42
Less: capitalized amounts	(3)	(5)
	$ 98	$ 143

On a preliminary basis, going concern pension contributions for the year ending August 31, 2020 (fiscal 2020) are estimated to be $102 with no requirement for cash special payments expected.

The funding period for solvency deficiencies is five years and past deficits are consolidated on a permanent basis for establishing solvency special payments, resulting in a fresh start every year. Funding of solvency deficits is based on an average of solvency ratios over the three most recent consecutive years (statutory solvency deficiency).

The Company has the option of meeting its pension solvency funding requirements with letters of credit or cash contributions. Pension funding regulations came into effect in April 2011 permitting solvency special payments to be replaced by letters of credit provided the total value of the letters of credit does not exceed 15% of the pension plan's assets. These regulations were amended in June 2017 permitting the letters of credit maximum to be based on 15% of solvency liabilities instead of assets. As at August 31, 2019, the Company has put in place letters of credit totaling $514 to meet its cumulative pension solvency funding requirements on a pre-amendment basis. Outstanding letters of credit represent 9% of solvency liabilities on a post-amendment basis and 8% on a pre-amendment basis.

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The amount of required Company contributions and additional letters of credit in future years will be dependent on the investment experience of plan assets, the discount rates and other assumptions that will be used in future actuarial valuations to determine plan liabilities, as well as any changes in pension plan design or funding requirements that may be enacted.

(c) Movements in defined pension benefit plans and other post-employment employee benefit plans

The movement in the defined benefit pension plans and other post-employment employee benefit plans as at August 31 was as follows:

	Pension benefit plans		Other benefit plans	
	2019	**2018**	**2019**	**2018**
Change in benefit obligations				
Defined benefit obligations at August 31, prior year	$ 6,864	$ 6,891	$ 195	$ 246
Benefits paid	(215)	(202)	(6)	(49)
Plan participants' contributions	33	34	-	-
Current service cost	169	177	5	5
Interest cost	257	244	7	8
Curtailment expense	-	-	-	(1)
Actuarial loss (gain) from change in demographic assumptions	13	(36)	1	1
Actuarial loss (gain) from change in financial assumptions	1,267	(255)	26	(9)
Actuarial loss (gain) arising from experience adjustments	12	11	(10)	(6)
Defined benefit obligations at August 31	$ 8,400	$ 6,864	$ 218	$ 195
Change in plan assets				
Fair value of plan assets at August 31, prior year	$ 6,033	$ 5,596	$ -	$ -
Return on plan assets, excluding interest income	269	306	-	-
Interest income	228	200	-	-
Employer contributions	95	99	6	7
Settlement of curtailed severance benefits	-	-	-	42
Plan participants' contributions	33	34	-	-
Benefits paid	(215)	(202)	(6)	(49)
Fair value of plan assets at August 31	6,443	6,033	-	-
Net defined benefit liability	$ (1,957)	$ (831)	$ (218)	$ (195)
Liability for unfunded defined benefit obligations at August 31	$ (144)	$ (124)	$ (218)	$ (195)
Liability for funded defined benefit obligations at August 31	$ (1,813)	$ (707)	$ -	$ -

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13. Employee benefits (continued)

(d) Fair value measurement of pension plan assets

The composition of the plan assets by major category of the Company's two funded pension plans is as follows:

	August 31, 2019		August 31, 2018	
	Quoted market price in an active market	No quoted market price in an active market	Quoted market price in an active market	No quoted market price in an active market
Equities	20%	12%	26%	10%
Fixed income [1]	0%	39%	0%	37%
Real assets	0%	15%	0%	15%
Absolute return strategies	0%	7%	0%	6%
Private debt	0%	6%	0%	5%
Cash	1%	0%	1%	0%
	21%	79%	27%	73%

[1] The LDI strategy (discussed in (g) below) is comprised of a 1.7:1 leveraged portfolio of long Canadian nominal and real return bonds. Leverage is achieved largely through the use of sale and repurchase agreements. As of August 31, 2019, the strategy represented 30% of net plan assets with leverage providing an additional 21% exposure (fiscal 2018 – 25%).

(e) Actuarial assumptions

Principal actuarial assumptions (expressed as weighted averages) are as follows:

	Funded plans		Unfunded plans	
	August 31 2019	August 31 2018	August 31 2019	August 31 2018
Discount rate, defined benefit obligations	2.90%	3.80%	2.86%	3.78%
Discount rate, defined benefit expense	3.80%	3.60%	3.78%	3.52%
Future salary increases	3.10%	3.30%	3.10%	3.30%
Medical cost trend rate	N/A	N/A	5.00%	5.00%
Inflation	2.00%	2.00%	2.00%	2.00%

The average rate of salary increases is expected to be equal to the rate of inflation with an adjustment for merit and productivity gains. An increase of 5.0% in drug and other health benefit cost was assumed for fiscal 2019 and all years thereafter.

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Assumptions regarding future mortality are based on published statistics and mortality tables. As at August 31, longevities (in years) underlying the values of the liabilities in the defined benefit plans are as follows:

	2019	2018
Longevity at age 65 for current pensioners		
Males	22.9	22.9
Females	24.8	24.7
Longevity at age 65 for current members age 45		
Males	23.9	23.9
Females	25.7	25.7

As at the annual measurement date of August 31, 2019, the weighted-average duration of the defined benefit obligation was 19.2 years (August 31, 2018 – 18.1 years).

(f) Sensitivity analysis

In the sensitivity analysis shown below, the defined benefit obligation is determined using the same method used to calculate the defined benefit obligation recognized in the statement of financial position. The assumptions used are the weighted average rates. The method used is consistent between all periods presented. The sensitivity is calculated by changing one assumption (or set of assumptions, in relation to the assumptions for salary, indexation and government benefit increases) while holding the others constant. The actual change in defined benefit obligation will likely be different from that shown in the table, since it is likely that more than one assumption considered independently will change, and that some assumptions are correlated.

		Defined benefit obligation		Benefit cost	
	Change in assumption + or –	Assumption increase	Assumption decrease	Assumption increase	Assumption decrease
Discount rate	0.25%	$ (399)	$ 428	$ (24)	$ 24
Salary, indexation, government benefit increases	0.25%	$ 402	$ (377)	$ 28	$ (26)
Health care trend rate	1%	$ 22	$ (18)	$ 1	$ (1)
Longevity (in years) for those currently aged 65	1 year	$ 274	$ (274)	$ 15	$ (15)

(g) Risks associated with the defined benefit plans

The nature of these benefit obligations exposes the Company to a number of risks, the most significant of which is funding risk. Funding risk can be expressed as the probability of an unusually high level of required pension contributions or significant fluctuation in required pension contributions.

Adverse changes in the value of plan assets of funded plans, long-term return and inflation expectations, interest rates and life expectancy could have a significant impact on pension funding requirements. The funded plan invests in assets that expose it to a range of investment risks. It has strategies, policies and processes in place to manage these risks. More specifically, funding risk is managed as follows:

(i) interest rate and inflation risks are managed via implementation of a LDI strategy that focuses on reducing the interest rate and inflation risk mismatch between the plan assets and its pension benefit obligations; and

(ii) market risk, credit risk and liquidity risk related to the plan assets are managed through diversification amongst different asset classes, securities, risk factors and geographies while adhering to established investment policies, guidelines and collateral requirements.

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14. Long-term debt

As NAV CANADA is a non-share capital corporation, the Company's initial acquisition of the ANS and its ongoing requirements are financed with debt. Until February 21, 2006, all indebtedness was incurred and secured under a Master Trust Indenture that provided the Company with a maximum borrowing capacity, which declines each year. On February 21, 2006, the Company entered into a new indenture (the General Obligation Indenture) that established an unsecured borrowing program that qualifies as subordinated debt under the Master Trust Indenture. The borrowing capacity under the General Obligation Indenture does not decline each year. In addition, there is no limit on the issuance of notes under the General Obligation Indenture so long as the Company is able to meet an additional indebtedness test.

(a) Security

The Master Trust Indenture established a borrowing platform secured by an assignment of revenue and the debt service reserve fund (note 9). The General Obligation Indenture is unsecured, but provides a set of positive and negative covenants similar to those of the Master Trust Indenture. In addition, under the terms of the General Obligation Indenture, no further indebtedness may be incurred under the Master Trust Indenture; furthermore, the amount of the Company's $675 syndicated bank credit facility (note 15 (c)) that is secured under the Master Trust Indenture is limited to the declining amount of outstanding bonds issued under the Master Trust Indenture. At August 31, 2019, this amount is $450 and will decline by $25 on March 1 of every year in conjunction with the annual principal repayment of the series 97-2 amortizing bonds. The remaining $225 of the $675 credit facility ranks pari passu to the borrowings under the General Obligation Indenture and will increase by $25 on March 1 of each year to offset the decline in the amount secured under the Master Trust Indenture. The $450 portion of the credit facility along with the $250 series 96-3 bonds and $200 series 97-2 bonds gives a total of $900 of indebtedness secured under the Master Trust Indenture and ranking ahead of General Obligation Indenture debt.

As bonds mature or are redeemed under the Master Trust Indenture, they may be replaced with notes issued under the General Obligation Indenture. Borrowings under the General Obligation Indenture are unsecured and repayment is subordinated and postponed to prior payment of Master Trust Indenture obligations unless the Company can meet an additional indebtedness test.

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(b) Debt

The Company's outstanding debt was comprised of the following:

	August 31, 2019	August 31, 2018
Bonds and notes payable		
Issued under the Master Trust Indenture:		
$250 face value 7.40% revenue bonds, series 96-3, maturing June 1, 2027	$ 250	$ 250
$500 initial face value 7.56% amortizing revenue bonds, series 97-2, maturing March 1, 2027	200	225
	450	475
Issued under the General Obligation Indenture:		
$250 face value 3.209% general obligation notes, series MTN 2019-1, maturing September 29, 2050 (1)	250	-
$275 face value 3.293% general obligation notes, series MTN 2018-1, maturing March 30, 2048	275	275
$250 face value 3.534% general obligation notes, series MTN 2016-1, maturing February 23, 2046	250	250
$250 face value 4.397% general obligation notes, series MTN 2011-1, maturing February 18, 2021	250	250
$250 face value 5.304% general obligation notes, series MTN 2009-1, matured April 17, 2019 (1)	-	250
	1,025	1,025
Total bonds and notes payable	1,475	1,500
Adjusted for deferred financing costs and discounts	(7)	(6)
Carrying value of total bonds and notes payable	1,468	1,494
Less: current portion of long-term debt (2)	(25)	(275)
Total long-term debt	$ 1,443	$ 1,219

(1) On March 29, 2019, the Company issued $250 Series MTN 2019-1 General Obligation Notes due on September 29, 2050. The notes have an annual interest rate of 3.209%. The proceeds from these notes were used to repay the Company's $250 Series MTN 2009-1 General Obligation Notes on April 17, 2019.

(2) The current portion of long-term debt relates to the annual amortization payment of $25 for the Series 97-2 amortizing revenue bonds.

The bonds and notes payable are redeemable in whole or in part at the option of the Company at any time at the higher of par and the Canada yield price plus a redemption premium. The Series 97-2 bonds are amortizing bonds repayable in 20 consecutive equal annual instalments of $25 principal on March 1 of each year until maturity on March 1, 2027.

The Company is in compliance with all covenants of the Master Trust Indenture and General Obligation Indenture as at August 31, 2019.

For information about the Company's exposure to interest rate and liquidity risk, see note 15.

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15. Financial instruments and financial risk management

Summary of financial instruments

Financial instruments recorded at fair value on the consolidated statement of financial position are classified using a fair value hierarchy that reflects the observability of the inputs used in making the measurements. The fair value hierarchy has the following levels:

Level 1 Quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company can access at the measurement date.

Level 2 Inputs other than quoted prices included within Level 1 that are observable for the assets or liabilities either directly (i.e. as prices) or indirectly (i.e. derived from prices).

Level 3 Inputs for the assets or liabilities that are not based on observable market data (unobservable inputs).

The Company recognizes transfers between levels of the fair value measurement hierarchy at the beginning of the fiscal year in which the change occurs.

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is an exit price, regardless of whether that price is directly observable or estimated using another valuation technique. The calculation of estimated fair value is based on market conditions at a specific point in time and therefore may not be reflective of future fair values.

The following table presents the carrying amount of the Company's financial instruments, by classification category and includes the fair value hierarchy classification for each financial instrument. Excluding long-term debt, the carrying amount approximates the fair value for all of the Company's financial instruments.

	August 31, 2019		
	Amortized Cost	FVTPL	Fair value hierarchy
Financial assets			
Cash and cash equivalents (1)	$ 30	$ -	
Accounts receivable and other	94	-	
Current investments			
Debt service reserve fund	72	-	
Other current assets			
Derivative assets (2)	-	1	Level 2
Investment in preferred interests (3)	-	439	Level 3
Related party loan receivable	3	-	
Other non-current assets			
Long-term receivables	1	-	
	$ 200	$ 440	
Financial liabilities			
Bank loan (4)	$ 8	$ -	
Trade and other payables			
Trade payables and accrued liabilities	233	-	
Derivative liabilities (2)	-	1	Level 2
Long-term debt (including current portion)			
Bonds and notes payable (5)	1,468	-	Level 2
	$ 1,709	$ 1	

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	August 31, 2018		
	Amortized Cost	FVTPL	Fair value hierarchy
Financial assets			
Cash and cash equivalents (1)	$ 38	$ -	
Accounts receivable and other	102	-	
Current investments			
Debt service reserve fund	71	-	
Other current assets			
Derivative assets (2)	-	3	Level 2
Investment in preferred interests (3)	-	418	Level 2
Related party loans receivable (6)	12	-	
Other non-current assets			
Long-term receivables	1	-	
	$ 224	$ 421	
Financial liabilities			
Trade and other payables			
Trade payables and accrued liabilities	$ 242	$ -	
Long-term debt (including current portion)			
Bonds and notes payable (5)	1,494	-	Level 2
	$ 1,736	$ -	

(1) Cash and cash equivalents include $5 of short-term investments as at August 31, 2019 (August 31, 2018 – $15).

(2) Current and non-current derivative assets and liabilities are recorded at fair value determined using prevailing foreign exchange market rates and interest rates at the reporting date.

(3) This instrument is recorded at fair value based on valuation techniques described in note 10.

(4) This bank loan is drawn from the Company's syndicated credit facility in the form of a Banker's Acceptance and has a discount rate based on the Canadian Dollar Offered Rate (CDOR) plus an applicable margin.

(5) The fair value of the Company's bonds and notes payable is classified as Level 2 in the fair value hierarchy as it is determined using secondary market ask prices at the reporting date. As at August 31, 2019, the fair value was $1,771 (August 31, 2018 – $1,678) inclusive of accrued interest of $20 (August 31, 2018 – $22).

(6) During fiscal 2018, the Company provided bridge financing to Aireon which was repaid during fiscal 2019. See note 10 for details. Of this balance, $2 was receivable from Searidge.

During fiscal 2019, the investment in preferred interests of Aireon was transferred from Level 2 to Level 3 of the fair value hierarchy. The transfer is due to the passage of time since the most recent input of observable market data and the increased level of judgment used in determining the fair value. There have been no other transfers between levels since August 31, 2018.

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15. Financial instruments and financial risk management (continued)

Summary of financial instruments (continued)

The following table summarizes the changes in the fair value of the Company's investment in preferred interests of Aireon, which is classified as Level 3:

	2019	2018
Fair value as at August 31	$ 418	$ 350
Net increase in fair value [(1)]	12	52
Effect of foreign exchange	9	16
Fair value as at August 31	$ 439	$ 418

[(1)] Net increase in fair value includes accrued dividend income.

Derivative financial instruments

From time to time, the Company holds forward dated interest rate swap agreements and bond and foreign exchange forward agreements to hedge risks from fluctuations in foreign exchange rates and interest rates. The time frame and manner in which we manage these risks varies for each item based upon our assessment of the risk and available alternatives for mitigating the risk.

Details of the derivative financial instruments for which the Company has applied hedge accounting are as follows:

	August 31, 2019					
	Contract Rate	Notional amount of hedging instrument	Carrying amount: Assets	Carrying amount: Liabilities	Classification on statement of financial position	Changes in fair value used for calculating ineffectiveness
Cash flow hedges						
Foreign exchange risk						
Foreign currency forwards [(1)]	1.27299	$ 1	$ -	$ -	Other assets (current)	$ -
Foreign currency forwards [(2)]	1.30444	$ 38	$ 1	$ -	Other assets (current)	$ 1
Foreign currency forwards [(3)]	1.31142	$ 8	$ -	$ -	Other assets (current)	$ -

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	August 31, 2018					
	Contract Rate	Notional amount of hedging instrument	Carrying amount: Assets	Carrying amount: Liabilities	Classification on statement of financial position	Changes in fair value used for calculating ineffectiveness
Cash flow hedges						
Foreign exchange risk						
Foreign currency forwards [1]	1.27472	$ 7	$ -	$ -	Other assets	$ -
Interest rate risk						
Bond forward [4]	2.20672	$ 190	$ 3	$ -	Other assets (current)	$ 3

(1) As at August 31, 2019, the Company holds one forward contract to hedge monthly payments to Aireon related to satellite surveillance costs through to the end of fiscal 2019. The contract matured in September 2019. As at August 31, 2018, the Company held seven forward contracts to purchase a total of $5 U.S. ($7 CDN).

(2) The Company holds twelve forward contracts with a total notional value of $29 U.S. ($38 CDN) to hedge monthly payments to Aireon related to satellite surveillance costs for fiscal 2020. The contract rate shown in the table is an average of rates for all twelve forward contracts.

(3) The Company holds four forward contracts with a notional value of approximately $2 each to purchase a total of $6 U.S. ($8 CDN) to hedge payments related to the Company's insurance premiums in fiscal 2020.

(4) In June 2018, the Company settled previously held interest rate swap agreements at a loss of $8 and entered into a bond forward contract to mitigate the potential impact of rising interest rates on the cost of refinancing the Company's $250 Series MTN 2009-1 General Obligation Notes that matured on April 17, 2019. The bond forward was closed in March 2019 at a loss of $9 upon the issuance of the $250 Series MTN 2019-1 General Obligation Notes.

The Company's hedging relationships are subject to ineffectiveness should the timing of the forecasted transaction not occur as intended or as a result of changes in counterparty risk.

The following table summarizes the hedging components of OCI:

	Years ended August 31	
	2019	2018
Net gain (loss) on derivatives designated as cash flow hedges		
Foreign currency forwards	$ 1	$ -
Interest rate swaps	-	4
Bond forward	(12)	1
	$ (11)	$ 5

For the years ended August 31, 2019 and 2018, the derivatives designated as cash flow hedges were considered to be fully effective and no ineffectiveness has been recognized in net income (loss).

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15. Financial instruments and financial risk management (continued)

Financial risk management

The Company is exposed to several risks as a result of holding financial instruments. The following is a description of these risks and how they are managed.

(a) Market risk

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk: interest rate risk, foreign exchange risk and other price risk. The objective of market risk management is to contain market risk exposures within acceptable parameters, as set out in the Company's treasury policy that is approved by the Board.

(i) Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

The following table summarizes financial assets and liabilities exposed to interest risk:

	August 31 2019	August 31 2018
Floating rate financial assets		
Cash and cash equivalents	$ 30	$ 38
Debt service reserve fund investments	72	71
Total floating rate financial assets	$ 102	$ 109
Floating rate financial liabilities		
Bank loan	$ 8	$ -
Fixed rate financial liabilities		
Bonds and notes payable	$ 1,468	$ 1,494

Investments included in the Company's cash and cash equivalents and debt service reserve fund earn interest at prevailing and fluctuating market rates. If interest rates decline, earnings on these instruments would fall. A 100 basis point change in variable interest rates would result in an annual difference of approximately $1 in the Company's earnings before rate stabilization adjustments.

The Company does not account for any fixed rate financial assets or liabilities as FVTPL. Therefore the impact of a change in interest rates at the reporting date on fixed rate assets or liabilities would not affect the Company's earnings, nor its equity.

Interest rate risk related to the Company's fixed-interest long-term debt relates to the re-setting of interest rates upon maturity and refinancing of the debt. The Company mitigates this source of interest rate risk by spreading maturities of borrowings over periods currently up to and including 2050 so that only a portion of outstanding debt will mature in any given fiscal year. In addition, the Company has International Swaps and Derivatives Association Agreements in place and has entered into the following hedging transactions to mitigate the impact of fluctuating interest rates on interest costs relating to the Company's long-term debt.

- In January 2015, the Company entered into forward-dated interest rate swap agreements totaling $200 to hedge the cost of refinancing a portion of the Company's $350 Series MTN 2009-1 General Obligation Notes that matured on April 17, 2019. In June 2018, the forward-dated interest rate swaps were settled, and the Company simultaneously entered into bond forward agreements. The Company incurred a loss of $8 on settlement of the forward-dated interest rate swaps in fiscal 2018.

  In March 2019, the bond forward agreements were settled at a loss of $9. The loss was deferred in OCI and is being reclassified to net income (loss) using the effective interest rate method over the term of the hedged Series MTN 2019-1 General Obligation Notes.

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- In August 2017, the Company entered into a bond forward transaction in the amount of $137 in order to mitigate the potential impact of rising interest rates on the cost of refinancing the Series MTN 2013-1 General Obligation Notes that matured on April 19, 2018. The bond forward agreement was closed in January 2018 as a result of changes in our refinancing plans and a new bond forward agreement for the same amount was entered into simultaneously to align with the revised plan.

  On March 29, 2018, the Company issued $275 Series MTN 2018-1 General Obligation Notes. The January 2018 bond forward was also closed. The Company incurred a net loss of $2 in closing both bond forward agreements.

The Company had applied hedge accounting and accounted for these financial instruments as cash flow hedges. The Company has not entered into any other derivative contracts to manage interest rate risk.

(ii) Foreign exchange risk

The Company is exposed to foreign exchange risk on sales and purchases that are denominated in currencies other than in the functional currency of the Company. However, the Company invoices and receives the vast majority of its revenue in Canadian dollars and also incurs operating expenses and capital expenditures primarily in Canadian dollars. In some cases, the Company uses forward foreign exchange contracts to mitigate its risk on contractual agreements in foreign currencies. The majority of the Company's exposure to foreign exchange risk relates to the U.S. dollar (USD). The Company does not have a significant exposure arising from other currencies.

The Company's exposure to foreign exchange risk related to the U.S. dollar is as follows:

	August 31 2019		August 31 2018	
	CAD	**USD**	**CAD**	**USD**
Financial assets				
Current				
Cash and cash equivalents	$ 4	$ 3	$ 2	$ 1
Accounts receivable and other	3	2	1	-
Non-current				
Investment in preferred interests	439	330	418	321
Related party loans receivable	-	-	10	8
Other non-current assets	1	1	1	1
	$ 447	$ 336	$ 432	$ 331
Financial liabilities				
Current				
Trade and other payables	$ 2	$ 1	$ 5	$ 4
Net exposure	$ 445	$ 335	$ 427	$ 327

The Company designates certain of its forward contracts as cash flow hedging instruments to hedge the Company's exposure to the impact of exchange rate fluctuations. As at August 31, 2019, the Company has designated $1 (fair value) of its forward contracts as cash flow hedging instruments. Refer to the *Derivative financial instruments* section for further details. These instruments are not included in the table above.

The foreign exchange rate sensitivity is the net amount of foreign exchange rate exposure of the items at the reporting date, less foreign currency hedges.

As at August 31, 2019, if the Canadian dollar strengthened or weakened by 10% against the U.S. dollar, all other variables remaining constant, net income (loss) before net movement in regulatory deferral accounts would have been impacted by $40 (August 31, 2018 – $38).

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15. Financial instruments and financial risk management (continued)

Financial risk management (continued)

(a) Market risk (continued)

(iii) Other price risk

Other price risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices (other than those arising from interest rate risk or foreign exchange risk), whether those changes are caused by factors specific to the individual financial instrument or its issuer, or factors affecting all similar financial instruments traded in the market.

In order to mitigate the risk of losses arising from investment activities, the Company only invests in highly-rated (see credit risk discussion below) and short-term instruments, excluding Aireon.

The investment in preferred interests of Aireon (note 10) is subject to price risk. The fair value of this investment may fluctuate over time due to, among other things, economic conditions and the cash flows of Aireon. Aireon is a start-up company and any such changes in the fair value could be material. During fiscal 2019, the fair value of the Company's investment in Aireon increased to $439 as at August 31, 2019 (August 31, 2018 – $418). A change of 5% in the fair value of the investment in preferred interests would impact finance income (other finance costs) by approximately $14 U.S. ($19 CDN) as at August 31, 2019 (August 31, 2018 – $14 U.S. ($18 CDN)).

(b) Credit risk

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation. The maximum credit risk to which the Company is exposed as at August 31, 2019 represents the carrying amount of cash, accounts receivable, reserve funds, investments and forward contracts to purchase or sell foreign currencies.

The debt service reserve fund and cash equivalents, when applicable, are invested in accordance with the Company's restrictive investment policy to manage credit risk. The Company invests only in short-term obligations – usually for periods of 90 days or less. The Company limits investments to obligations of the federal government, certain provincial governments, entities guaranteed by a federal or provincial government or other obligations of entities rated by at least two rating agencies in the top two categories for long-term debt or the highest category for short-term debt. The Company does not invest in instruments with exposure to underlying synthetic assets. The Company's portfolio is diversified, with dollar and percentage limits on investment counterparties. None of the Company's holdings in cash and cash equivalents or in the debt service reserve fund are past due and all have long-term ratings of either AAA or AA or short-term ratings in the highest category. Based on default rates and loss ratios for investment-grade bonds with similar maturities, any loss allowance is not significant and therefore none has been recognized.

Accounts receivable are primarily short-term receivables from customers that arise in the normal course of business. The Company provides air navigation services to various aircraft operators, including Canadian and foreign commercial air carriers as well as small general aviation aircraft. Credit limits and compliance with payment terms are monitored by the Company to manage its exposure to credit loss. The Company has established a maximum credit limit of $4 for its largest air navigation services customers, and it has other credit control measures that reduce its credit exposure. The Company's general payment terms provide for payment periods of thirty days for air navigation services and payment periods of up to forty-five days for some other types of services. Shorter payment terms are imposed where customer circumstances warrant. The Company's credit policies also require payments in advance or satisfactory security to be posted under certain circumstances.

The Company establishes an allowance for doubtful accounts that represents its estimate of lifetime expected credit losses to be incurred in respect to accounts receivable. The Company's loss allowance is not significant and largely relates to air navigation services provided to small general aviation aircraft. As at August 31, 2019, there were no significant balances past due but not impaired and the allowance for doubtful accounts was not significant.

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	August 31, 2019			August 31, 2018
	Gross balance	Loss Allowance	Net balance	Net balance
0-30 days	$ 72	$ -	$ 72	$ 83
31-60 days	2	-	2	1
61-90 days	1	-	1	-
Over 91 days	-	(1)	(1)	(1)
Total	$ 75	$ (1)	$ 74	$ 83

(c) Liquidity risk

Liquidity risk is the risk that the Company will not be able to meet its financial obligations as they fall due. The Company's approach to managing liquidity is to evaluate current and expected liquidity requirements under both normal and stressed conditions to ensure that it maintains sufficient reserves of cash and cash equivalents or an available undrawn committed credit facility to meet its liquidity requirements in the short and longer term. Under the Company's Master Trust Indenture and General Obligation Indenture, the Company is required to maintain certain reserve funds and liquidity levels, as described in note 14.

The Company has a revolving credit facility with a syndicate of Canadian financial institutions, and separate letter of credit facilities for pension funding purposes. The credit facilities have been utilized as follows:

	August 31, 2019
Credit facilities	
Credit facility with a syndicate of Canadian financial institutions (1) (2)	$ 675
Letter of credit facilities for pension funding purposes (3)	540
Total available credit facilities	1,215
Less: Outstanding letters of credit for pension funding purposes (3)	514
Less: Outstanding letters of credit for other purposes (2)	9
Less: Bank loan	8
Undrawn committed borrowing capacity	684
Less: Operations and maintenance reserve fund allocation (4)	310
Credit facilities available for unrestricted use	$ 374

(1) The Company's credit facility with a syndicate of Canadian financial institutions in the amount of $675 is comprised of two equal tranches maturing on September 12, 2021 and September 12, 2023. Subsequent to August 31, 2019, the facility was increased to $850 and these maturity dates were extended to September 12, 2022 and September 12, 2024, respectively. The credit facility agreement provides for loans at varying rates of interest based on certain benchmark interest rates, specifically the Canadian prime rate and the Canadian bankers' acceptance rate, and on the Company's credit rating at the time of drawdown. A utilization fee is also payable on borrowings in excess of 25% of the available facility. The Company is required to pay commitment fees, which are dependent on the Company's credit rating. The Company is in compliance with the credit facility covenants as at August 31, 2019.

(2) At August 31, 2019, $9 was drawn from an uncommitted revolving credit facility. In connection with this facility, an allocation of $25 with a Canadian financial institution has been made under its $675 committed credit facility.

(3) The letter of credit facilities for pension funding purposes are comprised of four facilities with Canadian financial institutions totaling $540, which will mature on December 31, 2019, unless extended. During fiscal 2019, the Company increased these facilities by $25. At August 31, 2019, $514 was drawn for pension solvency funding purposes (note 13).

(4) The Company is required to maintain a reserve fund of at least 25% of its prior year's annual operating and maintenance expenses, as defined in the Master Trust Indenture. At August 31, 2019, the Company met this requirement with an allocation of $310 in undrawn availability under its committed credit facility. If at any fiscal year end the amount in the operations and maintenance reserve fund is less than 25% of the Company's operating and maintenance expense for the year (before other regulatory deferral account adjustments, depreciation, amortization, finance costs, OCI and unusual expenses), the Company must, at a minimum, increase the balance in the fund to the required level over the following four fiscal quarters through additional contributions or an allocation of its committed credit facility. The operations and maintenance reserve fund may be used to pay operating and maintenance expenses, if required.

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16. Commitments

(a) Future payments under commitments and financial liabilities

The following table presents a maturity analysis of the Company's undiscounted contractual cash flows for its financial liabilities as at August 31, 2019:

	Remaining payments – for years ending August 31						
	Total	2020	2021	2022	2023	2024	Thereafter
Bank loan	$ 8	$ 8	$ –	$ –	$ –	$ –	$ –
Trade payables and accrued liabilities	218	218	–	–	–	–	–
Derivative liabilities	1	1	–	–	–	–	–
Long-term debt (including current portion) [(1), (2)]	1,475	25	275	25	25	25	1,100
Interest payments [(2)]	982	70	63	56	54	52	687
	$ 2,684	$ 322	$ 338	$ 81	$ 79	$ 77	$ 1,787

(1) Payments represent principal of $1,475. The Company intends to refinance principal maturities at their maturity dates. The Company may choose to repay a portion of these maturities with available cash, and/or may increase the size of a re-financing to generate additional liquidity or for other purposes, and/or may choose to redeem in whole or in part an issue in advance of its scheduled maturity date.

(2) Further details on interest rates and maturity dates on long-term debt are provided in note 14 to these consolidated financial statements.

(b) Capital commitments

The Company has firm commitments for the acquisition of property, plant and equipment and intangible assets amounting to $77 as at August 31, 2019 (August 31, 2018 – $103). The following table presents a maturity analysis of these capital commitments:

	Remaining payments – for years ending August 31						
	Total	2020	2021	2022	2023	2024	Thereafter
Capital commitments	$ 77	$ 36	$ 6	$ 4	$ 13	$ 3	$ 15

(c) Operating leases

Leases as lessee

The Company's operating lease agreements primarily convey to the Company the right to use land, office space and technical sites and have lease terms ranging from 1 to 60 years. Many of these lease agreements, particularly with government entities, municipalities and airport authorities are at nominal cost to the Company. Many of the leases have options to renew for as long as the Company requires the asset in order to provide air navigation services. Where the Company's leases include escalation clauses, they are generally accounted for on a straight-line basis based on a fixed rate or percentage increase.

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Future minimum lease payments excluding operating costs for operating leases are as follows:

	Remaining payments – for years ending August 31						
	Total	2020	2021	2022	2023	2024	Thereafter
Operating leases	$ 84	$ 7	$ 6	$ 5	$ 6	$ 4	$ 56

The Company recorded operating lease expense during fiscal 2019 of $11 (fiscal 2018 – $9) within facilities and maintenance expense on the statement of operations.

(d) Letters of credit

As at August 31, 2019, the outstanding amount of letters of credit of $523 (note 15 (c)) is comprised of $514 drawn for pension solvency funding purposes (note 13) and $9 for other purposes.

17. Contingencies

(a) Legal contingencies

The Company is party to legal proceedings in the ordinary course of its business. Management does not expect the outcome of any of these proceedings to have a material adverse effect on the consolidated financial position or results of operations of the Company.

(b) Indemnification commitments

The Company has not provided any material guarantees other than indemnification commitments typically provided in the ordinary course of business as described below. These indemnification commitments require the Company to compensate the counterparties for costs and losses incurred as a result of various events and are similar to the type of indemnifications required by the Company from suppliers of services and products, or by other companies in the aviation industry.

The Company has provided the following significant indemnification commitments:

Provision of service and system sales

(i) The Company has entered into five agreements for the sale and maintenance of technology that would indemnify the counterparties up to a maximum of $1,000 for each occurrence and in the aggregate for losses sustained as a result of the negligence of the Company. In addition, the Company has entered into one agreement for the sale and maintenance of technology that would indemnify the counterparty up to a maximum of the Company's ANS liability insurance coverage. The Company's ANS liability insurance provides coverage for these indemnification commitments. These indemnities survive termination of the agreements.

(ii) The Company entered into a sales agreement for the supply of an air traffic services data management system and provision of related services, which would indemnify the counterparty for the cumulative liability of the Company in relation to any claim in any manner howsoever arising out of or in connection with the agreement, up to a maximum. The Company's liability insurance provides coverage for this indemnification commitment. This indemnity survives termination of the agreement.

Other agreements

In the ordinary course of business the Company provides indemnification commitments to counterparties in transactions such as service arrangements, provision of maintenance services, system sales, sales of assets, licensing agreements, leasing and site usage transactions, contribution agreements, and director and officer indemnification commitments. These indemnification commitments require the Company to compensate the counterparties for costs and losses as a result of various events such as results of litigation claims, environmental contamination or statutory sanctions that may be suffered by a counterparty or third party as a consequence of the transaction or in limited cases, for liabilities arising from acts performed by or the negligence of the indemnified parties. The terms of these indemnification commitments vary based on the contract. Certain indemnification agreements extend for an unlimited period and generally do not provide for any limit on the maximum potential amount. The nature of these indemnification commitments does not permit a reasonable estimate of the aggregate potential amount that could be required to be paid. The Company has acquired liability insurance that provides coverage for most of the indemnification commitments described in this paragraph.

Historically, the Company has not made any significant payments under any indemnification commitments and no material amount has been accrued in the consolidated financial statements with respect to these indemnification commitments.

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18. Transactions with the Government of Canada

The Company has arrangements with a number of federal government departments and agencies for the provision of various services, such as enhanced security services, weather forecasting and observation, and facilities. These arrangements are based on commercially negotiated terms and conditions.

The Company also has an agreement with the Department of National Defence (DND) relating to the exchange of a variety of services with DND such as airspace controls, facilities, information and protocols and systems, for mutual benefit without significant cost or expense to either party.

The Company is contractually obligated to indemnify the Government of Canada for any loss suffered by or claimed against it which is covered by the Company's aviation operations liability insurance.

19. Related party transactions

The Company's related parties include its key management personnel, subsidiaries, joint ventures and registered pension plans for its employees.

Balances and transactions between NAV CANADA and its subsidiaries have been eliminated on consolidation and are not disclosed in this note. Details of transactions between the Company and other related parties are disclosed below.

Compensation of key management personnel

Key management personnel of the Company include members of the Board and Executive Management. Executive Management includes executives reporting directly to the President and Chief Executive Officer and Executive Vice Presidents. Key management personnel compensation included in the Company's net income (loss) for the years ended August 31 was comprised of the following:

	2019	2018
Salaries and other benefits	$ 7	$ 7
Defined benefits, including pension benefits	3	2
Management incentive plan	2	2
Other long-term benefits	2	3
Total compensation	$ 14	$ 14

There were no loans provided to key management personnel during fiscal 2019.

Transactions with registered pension plans

The Company's transactions with its two registered pension plans include contributions paid to the plans and letters of credit for pension solvency funding purposes, which are disclosed in note 13, and a reimbursement from the Plan for certain costs in the amount of $10 for fiscal 2019 (fiscal 2018 – $12).

Transactions with joint ventures and associates

As discussed in note 10, the Company has a participation in Aireon. This participation has been classified as an investment in associate since the Company is able to exert significant influence over Aireon's strategic financial and operating activities. The Company's transactions with Aireon for fiscal 2019 were comprised of accrued dividend income of $12 (fiscal 2018 – $12), costs for data services of $5 (fiscal 2018 – $nil) and cost recoveries of $2 (fiscal 2018 – $3).

As at August 31, 2019, the Company has an accrued dividend receivable of $63 (August 31, 2018 – $46) from Aireon. The bridge loan of $10 outstanding as at August 31, 2018 was repaid during fiscal 2019.

The Company has a 12-year commitment with Aireon to purchase data services, which commenced in March 2019. The estimated total remaining commitment is $663 ($510 U.S.).

The Company has a 50% interest in Searidge. This interest has been classified as a joint venture. As at August 31, 2019, the Company has a long-term loan receivable of $3 outstanding from Searidge (August 31, 2018 – $2). During fiscal 2019, the Company paid $3 to Searidge for hardware and software purchases and consulting fees (2018 – $nil).

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20. Capital management

The Company is a non-share capital corporation and, as discussed in note 1, must not set customer service charges higher than what is required to meet its current and future financial requirements for the provision of civil air navigation services. The Company views capital as the sum of its issued long-term debt, retained earnings and accumulated other comprehensive income, regulatory deferral accounts and balances under certain employee benefit plans. This definition of capital is used by management and may not be comparable to measures presented by other companies. The Company's capital is as follows:

	August 31, 2019	August 31, 2018
Bonds and notes payable (note 14)	$ 1,468	$ 1,494
Equity:		
Retained earnings	28	28
Regulatory deferral accounts:		
Debit balances (note 7)	(2,087)	(954)
Credit balances (note 7)	376	394
Employee benefits (note 13):		
LTD liability (asset)	3	(2)
Liability for funded pension benefits	1,813	707
Liability for accumulating sick leave	17	18
Total capital	$ 1,618	$ 1,685

In addition to tracking its capital as defined above for purposes of managing capital adequacy, the Company also takes into consideration known contingent exposures and obligations such as rate setting decisions made by the Board.

The Company's main objectives when managing capital are:

(i) to safeguard the Company's ability to continue as a going concern;

(ii) to provide funds for the ongoing acquisition of systems and equipment necessary to implement and maintain a modern, cost-efficient ANS technology platform;

(iii) to ensure the funding of reserve funds as well as working capital and liquidity requirements;

(iv) to ensure the funding of regulatory requirements such as funding defined benefit pension plan contributions;

(v) to maintain the Company's credit ratings to facilitate access to capital markets at competitive interest rates; and

(vi) to minimize interest costs incurred by the Company subject to appropriate risk mitigation actions.

Given that the Company has no share capital, these objectives are achieved through a process that determines an appropriate period and level of cost recoveries through customer service charge rate setting, as well as the appropriate amount of debt and committed credit facilities. This process includes the Company's operational and capital budgeting process and considers the overall economic and capital market environments. The level of debt and committed credit facilities are approved by the Board. The Company is not subject to any externally imposed capital requirements.

There were no changes in the Company's approach to capital management during the year ended August 31, 2019.

21. Subsequent events

The Canadian Transportation Agency received an appeal by the International Air Transportation Association (IATA) dated September 13, 2019 of the revised customer services charges. The appeal alleges that the Company did not comply with notice requirements and with two of the charging principles in the ANS Act. The Company disagrees with IATA's appeal. The Company and IATA held a mediation on October 17, 2019 but were unable to resolve the matter. The Company will vigorously defend the appeal. The outcome of this appeal is indeterminable at this time.

LEARN MORE

Our success as Canada's air navigation service provider goes beyond the skies.

Every day, our employees further our commitment to collaborate with stakeholders to increase efficiency, help reduce the industry's environmental footprint, and make a difference in the communities where we live and work.

Read our 2019 Corporate Social Responsibility Highlights to learn more about our accomplishments in these areas. It showcases some of our key achievements in making a positive impact both locally and globally, as we continue to lead the industry in safe, efficient and sustainable air travel.

General inquiries can be made to:

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