

NAV CANADA BRIEF

Senate of Canada Standing Committee on Transportation and Communication

Submission regarding the study the impacts of climate change on critical infrastructure in the transportation and communications sectors and the consequential impacts on their interdependencies meeting of February 15, 2023

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INTRODUCTION

NAV CANADA welcomes the opportunity to make the following submission to the Senate of Canada Standing Committee Transport and Communications (the Committee) to provide important context regarding the motion to study recent issues related to public air travel pursuant to the study of the impacts of climate change on critical infrastructure in the transportation industry.

From the outset, NAV CANADA wishes to make clear that it does not play a significant role in terms of causality for the air travel delays that Canadians have faced in the past year. Where NAV CANADA has played an exceedingly critical role, is continuing to ensure the safe departure, transit, and arrival of hundreds of thousands of flights into, across and out of Canada despite the disruptions at times in schedule regardless of the cause.

While NAV CANADA plays a lead role in air traffic management and conveying information between parties, it has not been the primary cause of delays experienced by travellers in the recent months. The Company has taken specific measures and continues to evaluate all options to ensure that it will not be the source of delays for air travel.

NAV CANADA recognizes the considerable effort the Government of Canada has put into the development and implementation of Air Passenger Protection Regulations (APPR) and is supportive of responsible protections for consumers. We also believe that any approach regarding the application of Air Passenger Regulations must be sustainable for the aviation sector to remain strong and competitive and consider impacts on affordability of air travel and competitiveness of the unique Canadian operating environment.

Safety is the driving force behind every decision we make. With one of the best safety records in the world, NAV CANADA has built a trusted, collaborative environment amongst our aviation stakeholders, where safety information is regularly shared to drive continuous improvement in the reduction of operational safety risks. As such, all standards setting should not interfere with our primary mission to keep Canada's sky safe, nor that of the broader industry's prioritization of safety.

Furthermore, additional financial pressure on NAV CANADA, via a shared responsibility for air travel restitutions, would have a detrimental impact on passengers. As we will describe within this submission, such measures would ultimately fall back on airlines and, in turn, the consumers of air travel services.

NAV CANADA, by virtue of its mandate, is neutral on many of the APPR issues raised before this Committee (e.g. length of rebooking times, length of time to resolve customer complaints by airlines and the Canadian Transportation Agency (CTA), etc.). We do agree in substance with many of our stakeholders that the timing of the introduction of the APPR, just before the pandemic, did not account for the massive industry upheaval caused by the pandemic and that its effectiveness should not be judged until there is a normalization of the aviation sector for which it was designed.

This brief provides information related to:

1. NAV CANADA's model, and service principles
2. Ground Delay Programs and Data
3. Amending Air Passenger Protection Regulations
4. NAV CANADA's role in system resiliency

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1. NAV CANADA's Model and Service Standard

About NAV CANADA

NAV CANADA is the not-for-profit corporation that owns and operates the world's first privatized Air Navigation System (ANS), ensuring the safest, most efficient movement of aircraft from the Pacific to the Arctic to the mid-Atlantic, 24 hours a day, seven days a week.

As the ANS Provider or ANSP, we oversee air traffic through a sophisticated network of area control centres, air traffic control towers, flight service stations, maintenance centres, flight information centres and navigation aids across the country. NAV CANADA supports 45,000 customers, including airlines, business aviation and air cargo operators, air charters and air taxis, helicopter operators and general aviation pilots and owners.

NAV CANADA is but one part of a vast aviation system and while a critical component from an essential safety perspective, we are a relatively small component of the air transportation challenges which consumers faced through the summer 2022 air transport recovery period. NAV CANADA works with airlines, airport authorities, Transport Canada, and industry associations to provide a timely, seamless service within the context of its mandate to aircraft operators who provide their services to travellers and businesses.

Safety First

Safety is why NAV CANADA exists and our safety record is one of the best in the world. A key metric that is used to measure safety in air navigation services internationally is the rate of "losses of separation". This represents the number of times per million movements where the required distance between aircraft was not achieved. All ANSPs must keep a record of separation losses and NAV CANADA has one of the world's lowest rates of "IFR-to-IFR" losses of separation.

Maintaining and increasing our safety focus has been achieved through significant investments in system upgrades since acquiring the ANS, and the work of our air traffic service professionals, technologists, and managers. Future technology implementation and system enhancements are and will always be made through a safety lens first. Since becoming the world's first privatized ANS in 1996, NAV CANADA has invested more than \$2.6 billion in enhancing and developing Canada's air navigation system, to safely manage one of the world's largest airspaces – something made possible only by the privatization of the organization.

Throughout our existence, we have continually introduced world-class technologies to enhance the safety and efficiency of air travel. We will continue this evolution through new technologies such as space-based flight tracking, predictive air traffic management, and our recently announced Digital Aerodrome Air Traffic Services (DAATS) strategy to transform how our customers safely transit the skies from departure to arrival.

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NAV CANADA is regulated by Transport Canada on all safety matters. We are continuously building a culture of safety, and our record demonstrates our success. Tactical management of airspace requires our operational personnel to make swift, safety-based decisions at all times.

For example, when conditions are clear and during peak periods, Toronto Pearson International Airport has a total arrival and departure rate of approximately 80 to 90 aircraft per hour, which represents a little over one arrival or departure per minute. In planning this rate, our team must take into consideration a number of factors. These factors can range from weather and visibility, the number of arrivals versus departures, runway conditions and occupancy times, airport construction, gate or taxiway layout and availability, as well as taking into consideration the traffic mix (types of aircraft) in the surrounding airspace. The rate can be pushed higher or lower based on planning (within infrastructure and resource constraints) and anticipated demand. These factors are assessed throughout the day in coordination with airlines and airports to determine the optimal and safe movement rate for periods of the day. While NAV CANADA must respond to all these factors, it has limited control over their occurrence situationally. The bottom line is that NAV CANADA's response prioritizes safety above all while working actively to maintain high-capacity levels.

More tactically, air traffic controllers must analyze and address similar factors in real time to ensure aircraft can navigate safely. For instance, a small aircraft that is following a large aircraft must be spaced further to avoid wake turbulence. If this occurs multiple times in an hour, compression occurs and the ability to land as many aircraft can decrease. Imposing service standards must not be taken lightly; air traffic controllers and flight service specialists must have the flexibility required to make safe decisions.

Service Delivery Standards

NAV CANADA's objective is to deliver the highest levels of safety and service.

In 2022, NAV CANADA announced its new Strategic Direction focused on responding to the impacts of the pandemic and modernizing our ANS to respond effectively to shifting customer requirements. The goal is to better serve our customers, meet future demand, prepare for new airspace users, and minimize our environmental impact. It is a future-focused plan dedicated to meeting the challenges of long-term growth across our global industry.

NAV CANADA regularly evaluates its services and determines how best to meet changing industry needs while maintaining a high level of safety and a consistent level of service across Canada. This process and associated requirements are outlined in NAV CANADA's Level of Service policy. Our primary service delivery standards are safety driven.

We also support airlines and airports by planning capacity levels at the four major airports in Canada using "arrival rates" – the number of aircraft that can safely arrive at an airport in an hour based on separation requirements and airspace and airport infrastructure. Established in coordination with stakeholders, and dependent on daily conditions, NAV CANADA safely manages the highest arrival rates possible on any given day, while maintaining open communication channels with operators and airports regarding possible changes. This constant communication allows NAV CANADA to respond to airport and airline's needs regarding their scheduling and availability, as much as weather, infrastructure and operating conditions allow.

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Throughout the pandemic, NAV CANADA has maintained a very high level of service reliability and is still doing so today; NAV CANADA's direct contribution to system delays represents only a very small percentage of delays experienced within the aviation ecosystem.

Moreover, service standards that are passenger-focused from an airline perspective are not necessarily applicable or appropriate from an ANS perspective where our priority will always be on the safe movement of aircraft. In fact, imposing additional standards to NAV CANADA operations would potentially have an opposite, adverse impact on safety if NAV CANADA personnel felt they couldn't have the flexibility required to use the air traffic management practices at their dispositions to make the safest decisions possible.

2. Ground Delay Programs and Data

Ground Delay Programs (GDPs) and other Delays

There are many sources of delays that can affect air traffic, such as adverse weather, infrastructure maintenance, construction and staffing and many parties involved – airlines, security, baggage handling, airport operations and others in addition to NAV CANADA. Weather is by far the most frequent source of delays that air traffic control helps manage. Despite all best efforts and intentions, aircraft movement delays and cancellation do occur at times. When this occurs, from NAV CANADA's perspective, it is for one primary reason – safety. Our goal is to get aircraft moving and, on their way, as expeditiously as possible within the constraint of safety, which is regulated by Transport Canada.

One of the mechanisms to safely manage demand at an airport environment is a Ground Delay Program (GDP). GDPs are used to regulate the flow of air traffic to a specific airport when arrival and departure demand exceeds capacity for a period of time. While NAV CANADA is the body which typically communicates a GDP to various affected parties, it is important to note that in the vast majority of cases, NAV CANADA is not the cause of the GDP. The majority of GDPs are usually due to compounding factors such as increased complexity due to weather, surges in demand due to non-ATC delays upstream, infrastructure availability, or system outages. When traffic is disrupted with delays and more flights shift to off-peak hours, the flow of traffic may need to be managed for safety; however, NAV CANADA is not the cause for any further delays through this period. Unanticipated staffing absences of NAV CANADA personnel can impact GDPs, but their occurrence is infrequent with only minor impact in most instances and NAV CANADA works to actively mitigate these.

When GDPs occur, they are always temporary, and we do everything we can reduce their duration and increase the arrival rate. We are regularly able to cancel GDPs early or systematically increase the arrival rate within a GDP due to mitigations. GDPs are implemented to ensure safety of operations, first and foremost, and often serve to protect future capacity by avoiding gridlock.

In many cases, the arrival rate during a GDP often meets or exceeds the traffic demand at the time. While NAV CANADA is often the interface in communicating and managing delays, the number of delays and cancellations we are directly responsible for are few.

It is important to highlight, delays can be a traffic management tool used to balance airspace and airport demand and to keep skies safe. While we work to keep them to a minimum, they help ensure that

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airspace and airport infrastructure do not get overwhelmed or gridlocked. For example, in certain wind or runway surface conditions, an aircraft may not be able to slow down to exit the runway at the first available taxiway and instead may need to roll to the end of the runway before exiting. This additional time on the runway means that aircraft must be spaced further to allow that aircraft to get off the runway. That impacts the total number of aircraft that can land in an hour. Air traffic control will meter the traffic to ensure safety.

Having enough people to deliver safe and efficient air navigation services is a top priority for NAV CANADA. This includes recruiting, training, and staffing across many roles such as air traffic controllers, flight service specialists, technologists, aeronautical information specialists, pilots, engineers, and a range of supporting corporate employees. NAV CANADA employs a total of 4,400 employees at 100 staffed sites, each with an important role to play in the provision of essential air navigation services. To meet the increased need for staff over the coming years, our front-line air traffic services training programs are currently being run at full capacity. We currently have more than 350 employees in training and more than 500 individuals will enter our training programs in the following two years. It is a company-wide priority to make every effort to support the anticipated increased traffic during busy travel seasons and we are committed to working with our employees and unions on this front.

NAV CANADA sets staffing targets based on anticipated air movements and planned flight schedules at aerodromes. When major impacts such as bad weather disrupt these schedules and airlines reschedule flights to a time period where that volume of air movements exceeds the capacity of the scheduled staffing level, a GDP may be implemented, or the arrival rate may be adjusted to ensure the safe handling of the arriving or departing aircraft as we work to meet the changing demand as efficiently as possible.

We take any NAV CANADA-related delays extremely seriously. Due to unplanned absences and sick leave, there is increased pressure on staffing. Overall, the impact to service due to staffing has been limited due to the excellent efforts of our air traffic controllers, flight service specialists and employees across the country and we anticipate that these impacts will continue to be limited. In the few instances when a staffing shortage may impact service delivery, NAV CANADA does everything possible to minimize our impact on the ecosystem. Ultimately, the goal is to be in a place where delay risk related to our service availability is mitigated to the full extent practical for factors that are within our control (weather and infrastructure delays will always occur to some extent).

Data availability and sharing

NAV CANADA is actively working on performance data that will increase understanding and information availability, which will support greater transparency. We have a significant initiative underway to improve performance measurement and develop new metrics with and for stakeholders and our business.

We are engaging directly with operators and others to understand what metrics will best serve to drive improved performance, such as how the industry can measure delays effectively, and how they assign value to our services. This will require data held by industry partners.

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Our engagement with other parties is proactive - supporting involvement in our strategic direction and tactically involving stakeholders on localized or daily traffic management topics. Stakeholder engagement is facilitated in many collaborative forums including, but not limited to:

- NAV CANADA's Advisory Committee (customers, unions, airports, and industry associations)
- Air Navigation System National Advisory Committee and the Air Transport Operations Consultation Committee (leaders and subject matter experts)
- Area Operations Consultation Meetings (regional meetings with operators and airports)
- Regular operations engagement with mid-level and executive management from customers and stakeholders
- Multiple daily teleconferences with operators and airports through our National Operations Centre

Continued data sharing with our customers and airports is essential as it assists us in optimizing our staff scheduling and as we introduce new technology and capabilities as part of our strategic transformation and establish increasingly seamless operations. This work is foundational in terms of understanding issues and opportunities within the system where there are ANS touchpoints.

As we are building the tools and capabilities to measure performance in new ways, we are also working with the industry to ensure a good degree of data integration. Many data points may be proprietary or competitive and so we need to ensure appropriate data sharing agreements are in place between stakeholders, and that data is only used as intended.

3. Amending Air Passenger Protection Regulations

NAV CANADA recognizes the considerable effort the Government of Canada has put into the development and implementation of Air Passenger Protection Regulations (APPR). It is NAV CANADA's view that the APPR needs to balance consumer interests with the competitiveness of the sector. Greater compensation liabilities for airlines (that often surpass the cost of a ticket) and efforts to improve affordability and increased air service may represent opposing policy directions.

NAV CANADA supports the view that the timing of the introduction of the APPR vis-à-vis the impact of the pandemic and the unprecedented industry upheaval must be considered. Any changes to the terms and conditions for compensation under the APPR and obligations to the airlines and potentially other parties, should be deferred until the industry experiences a reasonable period of operational and traffic stability.

Air traffic controllers and flight service specialists need to have the flexibility to use the traffic management tools at their disposal to ensure safe navigation. The Canadian airspace is the second largest in the world, and with 18 million square kilometres comprised of various aircraft operations, populations, climate, and terrains, it is a unique and increasingly complex airspace to manage. NAV CANADA's privatized model is recognized internationally for its safety record and continues to invest directly in our operations, people, and infrastructure to keep Canada's air navigation system as safe, efficient, and innovative as it can be.

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Any significant new costs will ultimately be passed onto consumers either after the fact or by airlines factoring in the potential requirements for compensation into pricing, or in the case of government entities, potentially passed onto taxpayers.

The primary relationship identified in APPR must remain between the airline and its customers as they respond to all sources of delay, interface directly with customers and are best positioned to make adjustments to itineraries.

NAV CANADA is a not-for-profit corporation which recovers the cost of providing civil ANS through customer service charges. Given the continued uncertainty that the aviation industry faces, we remain focused on carefully controlling our spending to mitigate the need for any further rate increases while positioning ourselves to support the post-pandemic recovery in air travel. The COVID-19 pandemic saw passenger travel down more than 80 per cent which severely impacted NAV CANADA's revenue. During this period, we still had to operate 100 per cent of the ANS and associated services, despite the reduced traffic. These services have a significant fixed cost base that is not easily scalable to traffic levels. Therefore, to cover our financial requirements we were forced to increase our fees and our debt levels. An assignation of responsibility for cost of recovery from NAV CANADA could affect our future ability to decrease service charges to the airlines, adding to their cost burden - not reducing it.

We need to better understand and communicate the root causes of delays and cancellations. Delays involving NAV CANADA actions always have important safety considerations. A fundamental principle of APPR amendments should be to clearly define what constitutes a safety delay and/or cancellation that results in an exemption for compensation. To that end, NAV CANADA safety-related delays should continue to be considered outside of the control of airlines and not be subject to compensation requirements.

Furthermore, passengers need to be actively informed not just on the availability of, but on the risks of not using existing protections (e.g., travel insurance offered at the time of travel purchases, protections offered by different tiers of ticket pricing, etc.). APPR should be a last line of defense, not the first line of recourse.

4. NAV CANADA's role in system resiliency

Since NAV CANADA was founded in 1996, as the world's first privatized, not-for-profit ANS we have invested more than \$2.6 billion to upgrade and enhance the system for safety and efficiency. These investments are continuing under our strategic direction. NAV CANADA's long term strategic direction has important transformative changes which will bring several benefits in terms of service delivery and improvements to the ANS including resiliency, predictability, efficiency, and an opportunity to reduce impact of delays in support of Canada's supply chains.

NAV CANADA's new system-of-systems puts safety first. In lockstep with providers around the world, we are building a new seamless, space-enabled, digitally enhanced, air navigation system to address future growth in air travel and to reduce environmental impacts.

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The implementation of Trajectory-Based Operations, Airspace Modernization, and Digital Facilities will improve aircraft operations from the moment an aircraft departs to the time it lands at its destination.

This transformation will ensure the ANS is ready to accommodate projected growth in traffic while supporting Canadian competitiveness, supply chain resiliency, and affordable air travel. It will unlock economic and societal benefits offered by new and recent airspace entrants - such as Remotely Piloted Aircraft Systems, Urban Air Mobility and Supersonic Aircraft - by ensuring we can safely integrate them into our airspace.

We have already delivered tangible benefits in this regard. NAV CANADA – in conjunction with the United Kingdom’s NATS – was the first in the world to deploy space-based automatic dependent surveillance-broadcast (ADS-B) in 2019 over the North Atlantic, the world’s busiest oceanic airspace. ADS-B now supports new routes and separation standards resulting in shorter flight times and reduced fuel consumption, especially for transcontinental flights in the North Atlantic and over the North Pole, to Europe and Asia. We are now in the process of deploying ADS-B service across Canada which will support changes to airspace boundaries and sectors. The result will be improved capacity, new traffic flows that reduce fuel burn and greenhouse gas emissions, and enhanced safety benefits in all classes of airspace.

NAV CANADA recently introduced new arrival procedures at Toronto Pearson Airport, taking advantage of new capabilities called Required Navigation Performance – Authorization Required (RNP-AR) approach procedures and a new separation standard introduced by the International Civil Aviation Organization (ICAO) called Established on RNP-AR (EoR). By leveraging satellite-based positioning and modern aircraft flight management systems, equipped aircraft benefit from shorter flight paths and flying times and arrive simultaneously on parallel runways on more direct and efficient routes. This improves predictability, reduces emissions, increases capacity, and improves the overall passenger experience.

CONCLUSION AND RECOMMENDATIONS

Canada will always experience some level of travel delays and other disruptions. We believe that a balanced approach that supports a competitive industry as well as protects airline passengers is essential to maintain a healthy aviation industry in Canada.

NAV CANADA makes the following recommendations to the Committee with respect to any consideration being given to further amendments to the Air Passenger Protection Regulations:

- 1) The APPR should not be amended further until such time as the air sector has returned to normalcy and stability. The current pandemic environment and fluctuating economic conditions continue to be a challenge. Until there has been a reasonable window of opportunity to evaluate the APPR in a normalized state, further changes are potentially premature.
- 2) NAV CANADA supports the need for improved development of data and metrics and sharing of this information between industry stakeholders to help everyone identify and address root causes of delay to improve industry performance. However, NAV CANADA does not

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- support the use of this data to impose an external service delivery standard on the ANS beyond what already exists given our core safety mandate.
- 3) Safety must always be prioritized; safety-driven decisions resulting in delays and/or cancellations should continue to be protected from disproportionate compensation requirements.
 - 4) NAV CANADA should be exempt from any assignation of financial responsibility for refunds or compensation. These costs would ultimately be passed back to our customers and would have an adverse financial impact on the ecosystem at a time when we are still recovering.