



March 12, 2019

Mr. Nicholas Robinson
Director General Civil Aviation
Department of Transport
330 Sparks St.
Ottawa, ON
K1A 0N5

Re: Nav Canada's Proposal for ADS-B Requirements in Canadian Airspace

Dear Mr. Robinson,

As the advocacy group for avionics manufacturers, maintainers and technicians we have been monitoring the development of ADS-B requirements worldwide. We count among our membership nearly 100 aviation maintenance organizations and aviation equipment manufacturers throughout Canada.

We have been one of the principals in the development and implementation of the ADS-B mandate in the United States and have worked closely with the FAA to ensure that the U.S. mandate is implemented in the least disruptive and most efficient manner. In nearly 10 years of implementing this mandate in the U.S., we have seen extensive changes in the technology and approach to installing the required equipment.

We also have been monitoring the process in Canada and providing feedback to TCCA and Nav Canada.

While the Nav Canada report is not yet available, we attended the Nav Canada teleconference on January 11, 2019, and the TCCA teleconference on February 12, 2019.

We have several concerns regarding the implementation of ADS-B in Canada.

1. The Phase II implementation to require ADS-B capable transponders in Class B airspace has not appropriately accounted for the impact on general aviation, and the details provided by Nav Canada to justify this are not accurate.
 - a. There are 28,000 privately owned aircraft in Canada and the clear majority of these aircraft will be affected by this requirement. Many of these aircraft have already had ADS-B equipment installed that meet the FAA mandate. As the solution presented by Nav Canada will require diversity (antenna on top and bottom of the aircraft), this will create a significant impact on the Canadian fleet. The already-installed systems only have the antenna installed on the bottom of the aircraft. Therefore, a new system will need to be installed on these aircraft. Many of the current systems on the market for GA aircraft do not support diversity and any that do are thousands of dollars more expensive. The cost associated for the Nav Canada proposal is completely underestimated.

- b. Many GA aircraft regularly fly above 12,500 feet. Assumptions made by Nav Canada indicate that any aircraft that do fly above 12,500 feet will already have a system installed that meets the diversity requirement is false. It is only aircraft that have TCAS II installed that would meet the diversity requirement, and only aircraft with 30 passengers or more are required to have TCAS II installed. As well, Class B airspace covers Terminal control areas below 12,500 feet. Therefore, even more GA aircraft are affected.
 - c. ADS-B equipment meeting the diversity requirement is limited.
 - d. As there are no current STC's or modifications from the OEM's for systems with diversity, the approval of the required ADS-B system (with diversity) will take significant resources by the industry and TCCA. With many aircraft having the ADS-B systems installed to meet the FAA requirements, TCCA still has not published any guidance to simplify the process. The cost and time impact of this design certification issue has not been properly addressed by Nav Canada.
 - e. With the 28,000 aircraft and approximately 100 shops in Canada able to install this type of equipment, it will take several years to properly equip the fleet. Conservatively, it would take about 4 years to equip the Canadian fleet.
2. TCCA has stated in the teleconference that they have accepted the Nav Canada proposal but will not be making regulatory changes in any way to require this. This is not in harmonization with other authorities. With most Canadian owners being fully aware of the FAA mandate, this has provided significant confusion to them. Additionally, in the last two years, TCCA has communicated in several forums that a Canadian ADS-B mandate was not to be implemented in the near future. The Canadian PBN State Plan itself identifies that between 2023 and 2027 is when any mandate would be developed and implemented.

Due to the costs associated with equipping the Canadian fleet, it seems appropriate that ADS-B equipment would be mandated under the Canadian Aviation regulations as other safety-enhancing equipment have been mandated in the past (see CAR 605 for example).

Implementing the mandate in this manner requires several reviews and impact analysis that are completed independently. We believe that completing such impact analysis in the regulatory context will lead to a different outcome.

3. The ability for Nav Canada to put into place systems that would require aircraft owners to equip their aircraft without regulatory change is not well understood by most. Several conversations with TCCA have indicated that Nav Canada cannot, in fact, mandate the use of specific equipment.
4. Nav Canada has proposed a solution that is biased to their own goals. Nav Canada is the largest stakeholder in Aireon, the provider of the space-based ADS-B solution. This is a serious conflict of interest and as such any requirement that is implemented in the Canadian Civil Aviation environment should be completed through the CARAC process and industry consultations with TCCA.
5. The information provided by Nav Canada and TCCA has not been clear on the specifics of the airspace requirements. While it seems clear at this point that TCCA has no plans to implement an equipage mandate, it is not clear if the Nav Canada proposal is an airspace requirement. This needs to be made clear as it affects this implementation in a different manner depending on this being an airspace requirement. What will those people do who do not equip? Can they fly in Class B airspace?

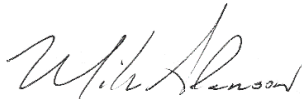
While it is understood that a space-based system has significant safety benefits to trans-oceanic flights and the vast Canadian airspace in the north (where installing ground-based stations becomes very expensive), the Nav Canada solution should only be part of the way ADS-B is mandated in Canada. We believe that there needs to be a combination of solutions, including ground stations.

We also believe that further consultation is required and that the industry voice is heard directly by TCCA. The Nav Canada report does not properly reflect the input provided by the GA industry. The time frame under which this is mandated also needs to be extended.

We request that TCCA consider delaying any ADS-B requirement to allow for a thorough review of the proposal including an unedited record of consultations made by Nav Canada to the industry. We also request that any ADS-B requirement be published through the CARAC process in the Canadian Aviation regulations.

As always, the AEA is available and willing to assist in any regulatory development.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Adamson".

Mike Adamson
President / CEO

Cc: Mr. Robert Sincennes, Director, Standards Branch, Transport Canada
Mr. Pierre Ruel, Chief, Flight Standards, Transport Canada
Mr. Ric Peri, AEA Vice President, Government and Industry Affairs
Mr. Kevin Bruce, AEA Canada Regulatory Consultant