421 Aviation Way
Frederick, Maryland 21701

T. 301-695-2000
F. 301-695-2375

www.aopa.org

December 3, 2014

Mr. Frederick Matos
National Telecommunication and Information Administration
US Department of Commerce
1401 Constitution Avenue NW Room 4898
Attn: Arctic NOI
Washington DC 20230

Re: Telecommunications Assessment of the Arctic Region Docket No. 140925800-4800-01

Dear Mr. Matos:

The Aircraft Owners and Pilots Association (AOPA) is a membership organization representing almost 400,000 pilots and aircraft owners in the United States. In addition to the 3,500 members who live in Alaska, many of our members from other parts of the country fly to and within the Arctic either for business or pleasure. On their behalf, we wish to offer comments to the Notice of Inquiry regarding the Telecommunications Assessment of the Arctic Region.

Background

The Arctic within Alaska, extending from the Arctic Circle, through of the Brooks Range and northern foothills to the arctic coastal plain and the waters beyond, is a vast and sparsely populated region. Aviation plays a major role in providing year-around transportation to and among the communities in the region, as well as remote areas on land, and offshore. A single all-season 414 mile highway is the sole road that connects this region with the rest of the state. Only seasonal ship traffic provides heavy lift and resupply missions due to the short summer navigation season. Consequently, aviation is the main year-around form of access to transport people, deliver mail and supplies, fuel and other essentials needed to survive in this climate. The lack of surface transportation, particularly during the summer season, also makes aviation a major platform used to conduct wildlife surveys on land, marine mammal surveys offshore, perform mapping, air sampling and related data collection activities, as well as conduct search and rescue missions. Aircraft also transport the technicians that install and maintain the limited infrastructure found in the Arctic regions today. While this form of transportation is essential to operations in the Arctic, the infrastructure supporting aviation is minimal, which makes it an even more challenging environment to safely and efficiently operate.

Lack of Communication Services

Communications is a vital component of the infrastructure needed to support aviation. Starting with the collection of basic weather information, the Alaskan segment of the Arctic has few aviation weather reporting stations. The largest segment of the network is a less than a dozen stations, mostly distributed along the north and west coast of Alaska. Only one station operates in the central Brooks Range. An aircraft making the 436 nautical mile flight from Fairbanks to Point Barrow has only two reporting stations to evaluate conditions along this route that crosses a major mountain range and transects several weather patterns. While this may be adequate for transport category aircraft flying in the flight levels under Instrument Flight Rules (IFR), it is significantly lacking for smaller aircraft operating under Visual Flight Rules (VFR) which are used for many of the aviation missions in the Arctic. Reestablishment of an aviation weather station at Umiat, in the middle of the North Slope, would be a benefit not only to pilots, but to forecasters whose products pilots rely on for flight planning and operational decision making. The Umiat airport also provides an alternate landing site, in the event that an aircraft encounters unforecast conditions, mechanical difficulties or any other emergency situation, yet no weather information is available to aid an aircraft in distress. While Umiat provides a striking example, other interior weather stations are needed to provide improved weather forecasts and reporting for aviation safety across this foothills region, which is neither coastal nor mountainous in nature.

Other infrastructure is also in very short supply. The ability for pilots to communicate with Flight Service Stations is another need for the Arctic. Today a very limited network of Remote Communication Outlets (RCOs) is available for pilots to obtain weather information, file pilot reports, file flight plans. There are only seven NexRAD weather radars in Alaska, none of which provide coverage north of the Arctic Circle. Without this tool, pilots and weather forecasters are forced to rely on polar orbiting satellite imagery for synoptic information on weather patterns. While satellite imagery is an important tool, when high cloud layers move in, they tend to mask the activity in the lower levels of the atmosphere, leaving little more than the handful of surface weather stations to forecast and evaluate aviation weather conditions.

Future Systems

The FAA is in the process of implementing the infrastructure for Automatic Dependent Surveillance-Broadcast (ADS-B). This component of the FAA's NextGen Program allows Air Traffic Control (ATC) to monitor air traffic, while at the same time providing a communications channel to uplink weather and other data to equipped aircraft. Current plans call for four stations to be installed along the north coast of Alaska, however there are no plans to provide coverage in the central and eastern Brooks Range or providing coverage to communities such as Bettles, Fort Yukon, Arctic Village, etc. The aviation community in Alaska has requested that the FAA add additional stations to provide a "minimum operational network" for the state, which would support operations in the Arctic, and in areas that aircraft have to transit to get to and from arctic regions. Attachment A is a briefing from an industry presentation addressing this topic at a US Senate General Aviation Caucus hearing held in Alaska in May, 2014.

Need for Inter Agency Cooperation

With the lack of existing infrastructure in the Arctic and tight budgets, it is essential that the government agencies make a coordinated effort to implement creative and cost effective solutions to fill some of the gaps for communications and weather reporting systems. Two opportunities to consider:

Non-standard aviation weather stations

The National Weather Service (NWS) has identified a lower cost alternative to the standard Automated Weather Observing System (AWOS) used by the FAA at airports with instrument approaches. This system, called a Modular Automated Weather Station (MAWS), has the primary sensors included in an AWOS, but is not certified by the FAA specifically as an AWOS. The units are attractive for locations that don't have IFR approaches as they are about half the cost to procure, and appear to be significantly less costly to operate and maintain. Currently, NWS is operating three of these stations in Alaska today, however due to the certification issue the data is not distributed via normal FAA weather channels. We have requested that the FAA and NWS find a mechanism to define and distribute this data through normal channels to the aviation community. For mountain passes, VFR-only airports, or other "choke points" along VFR routes, these weather data are invaluable to pilots and weather forecasters alike.

Partnership opportunities to expand infrastructure

In addition to the small number of weather reporting stations on land, Alaska suffers from a lack of offshore stations. Observations in these areas would not only provide additional data for aviation and marine traffic in the immediate vicinity, but would provide forecasters with information about conditions before a weather pattern reaches the mainland. With increased industry activity in offshore areas, it may be possible to place stations in areas previously not accessible. In the Gulf of Mexico, the FAA partnered with the oil industry and helicopter operators to improve their situation. The FAA provided both ADS-B and AWOS units, and pays for the maintenance of these facilities. The helicopter operators provide transportation to the offshore facilities, and oil companies provide space on their offshore structures to locate the equipment. Similar arrangements could be beneficial as industry expands their activities in the Arctic. The government should maintain the flexibility to implement creative partnership solutions to expand weather reporting, ADS-B and possibly other infrastructure.

Search and Rescue

As shipping, oil exploration or other resource development activities increase in the Arctic, search and rescue support is needed. In addition to staging suitable rescue aircraft at key locations across the Arctic, the timely reception of distress signals is critical to launching a rescue effort. There are still significant occasions where an Emergency Locator Transmitter (ELT) fails to activate, or the antenna is damaged, and no distress signal is received.

In January, 2013, the FAA's Alaska Flight Service Program launched a new service, Enhanced Special Reporting Service (eSRS) which utilizes commercial satellite tracking devices, and links them to FAA Flight Plans. The specifics of the service vary with the tracking device selected by the aircraft operator, but basically distress signals are forwarded to Flight Service, matched to a Flight Plan and the combined location and flight plan information provided to the Rescue Coordination Center for a response. While not yet a replacement for an ELT, certain models of satellite tracking devices appear to offer a more positive means of alerting search and rescue officials in an emergency situation. Attachment B contains additional background and details on this service.

R&D for Weather Cameras

The FAA has developed a system of web cameras, located at airports and other key locations, which provide supplemental weather to the aviation community. These have proved invaluable to overcome some of the limitations of automated weather sensors. In other places, a stand-alone webcam array may provide the only weather information available. There are currently about twenty of these sites in Alaska north of the Arctic Circle, and while tremendously valuable during summer months with 24 hour daylight, at other times of the year observations are very limited. New low-light cameras or infrared sensors used at night may eventually allow this network to provide valuable information around the clock. A significant research effort is required to evaluate sensors, and to consider human factors on how other sensor imagery is presented and interpreted for weather analysis.

We have touched on some of the areas where telecommunications and related infrastructure is in need of improvement, as activities in the Arctic increase. Additional documents are provided with this letter including Attachment C, *Alaska is a 'weather poor' state*, and Attachment D, a white paper published by the Alaska Airmen's Association addressing weather reporting issues. There are many challenges to operating in the Arctic, and we look forward to working on these and related issues as activities in the Arctic expand.

Sincerely,

Tom George, Alaska Regional Manager

Attachments:

Attachment A: ADS-B Minimum Operational Network Briefing
Attachment B: eSRS satellite tracking
Attachment C: Alaska Weather Poor State
Attachment D: Alaska Aviation Weather Concerns