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October 22, 2018

Mr. Andrew Hollie
Specialist, Air Traffic Certification Branch
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Re: Aeronautical Study No. 2018-AEA-10702-OE

Mr. Hollie:

The Aircraft Owners and Pilots Association (AOPA), the world's largest aviation membership association, submits the following comments in response to the Federal Aviation Administration's (FAA) Aeronautical Study No. 2018-AEA-10702-OE. We are concerned the FAA is not considering the impact of the proposed structure on the Automatic Dependent Surveillance – Broadcast (ADS-B) Ground Based Transceivers (GBT) located in close proximity to the Ronald Reagan Washington National (DCA) radar system. In a review of several years of obstruction evaluations, AOPA could not find any public notice identifying a proposed structure's impact on an ADS-B GBT. We could also not find any reference to ADS-B GBTs in FAA obstacle evaluation guidance. We therefore conclude the FAA has failed to consider a core NextGen air traffic surveillance system in their obstruction evaluation policy, possibly resulting in a degradation of this system's long-term effectiveness. We oppose and object to this project until the FAA adequately evaluates the proposed structure's impact on the adjacent ADS-B GBTs and issues a revised public notice for comment.

The FAA is failing to evaluate the impact of obstructions on a key NextGen system

Similar to radar, ADS-B GBTs, which can also be called "radio" or "ground stations," rely on line-of-sight in order to perform their surveillance function. A new obstruction located in proximity to a GBT could have a negative effect. The FAA considers ADS-B a core NextGen technology that facilitates the transition from ground-based surveillance to a highly accurate satellite and aircraft-based system. ADS-B is the primary surveillance source in most FAA air traffic facilities today.

General aviation aircraft owners and operators have invested substantial amounts of money to equip tens of thousands of aircraft with ADS-B systems in order to meet an FAA imposed 2020 equipage mandate. The agency has invested billions of taxpayer dollars to install over 650 GBTs across the NAS, many at general aviation airports, and to implement new automation systems that integrate ADS-B information on to controller radar scopes in nearly two-hundred air traffic facilities. ADS-B is a core technology for safe and efficient operations and this system, and the public's investment, must be protected.

In the last year, AOPA has noted the circularization of numerous public notices that detail adverse impacts to the line-of-sight of air traffic radar systems due to proposed structures. These impacts can have a negative effect on a variety of airspace and air traffic control functions. Efficient radar vectoring, quality of radar returns, the number of air traffic throughputs, and other safety critical services can be negatively

impacted. These negative impacts can be magnified the further away from the airport an aircraft is located. Combined these impacts have a significant impact on the safety and efficiency of airports in the affected area. These same effects of shielding on radar by an obstruction are equally relevant for an ADS-B GBT.

FAA obstruction evaluation policy must be updated

As we noted above, the FAA already utilizes ADS-B as a primary surveillance source in the provision of air traffic services. The FAA's definition of "surveillance" includes ADS-B and would therefore be covered within the scope of 14 CFR § 77.29(a)(6):

> **§77.29 Evaluating aeronautical effect.**
>
> (a) The FAA conducts an aeronautical study to determine the impact of a proposed structure, an existing structure that has not yet been studied by the FAA, or an alteration of an existing structure on aeronautical operations, procedures, and the safety of flight. These studies include evaluating:
>
> > (6) The potential effect on *ATC radar*, direction finders, ATC tower line-of-sight visibility, and physical or electromagnetic effects on air navigation, communication facilities, and other *surveillance systems*;

This regulation clearly states the FAA has the authority and the obligation to identify adverse impacts to ADS-B GBTs by proposed structures and to protect navigable airspace from hazardous obstructions.

The FAA's policy guidance governing obstacle evaluation, *Procedures for Handling Airspace Matters*, JO 7400.2, mentions "radar" several times. We believe the use of "radar" in this context makes it synonymous with surveillance, same with the use of the phrase "control systems facilities." Paragraph 6-3-2 discusses the scope of obstacle evaluations and states a structure that exceeds one of the listed standards is presumed to be a hazard to air navigation, unless the aeronautical study determines otherwise. The study shall include the effect the structure would have on the "physical, electromagnetic, or line−of−sight interference on existing or proposed air navigation, communications, *radar*, and *control systems facilities*."

The use of the word "radar" and the phrase "control systems facilities" can be considered to encompass ADS-B GBTs. However, as we have yet to see any circular discussing impacts to ADS-B GBTs, despite this system being implemented and operational for several years, we do not believe the FAA is in any way considering the impact of proposed structures on this surveillance system despite their ability and obligation to. The FAA must ensure there is clear guidance and procedures in place to ensure these obstacle evaluations are taking place.

Unknown impact to DCA ADS-B GBTs

In the case of this aeronautical study for a proposed structure in Arlington, VA, there would be an adverse impact on the DCA radar's line-of-sight, creating a radar line-of-sight vertical shielding of 2.0 degrees between 309.09 to 311.08 degrees (relative to DCA radar antenna). Building the structure as proposed would degrade the utility of this radar system and air traffic control's ability to provide safe and efficient services for transient aircraft and those flying to and from nearby airports. Limiting the structure's height is a mitigation to this issue. Without mitigation, we believe the FAA must issue a finding of hazard to air navigation for this proposed structure.

Additionally, there are at least two ADS-B GBTs located in close proximity to the DCA radar system that would likely also have line-of-sight impacts:

DCA, Washington, VA; 38.84, -77.05 17
DCAA, Washington, VA; 38.85, -77.05 17

It appears the FAA did not sufficiently evaluate the proposed structure's impact on these and other nearby ADS-B GBTs. We find this public notice is unsatisfactory in fully providing the public an opportunity to comment on the adverse effects. For this reason, we believe the FAA must recirculate this proposal with a revised public notice following a thorough analysis of the structure's effect on ADS-B GBTs.

Conclusion

We appreciate the opportunity to submit comments on this proposed obstruction and we urge the FAA to urgently review their obstruction evaluation policy and ensure it fully accounts for the impact an obstruction would have on an ADS-B GBT. AOPA believes the FAA must issue a finding of hazard to air navigation based on the impacts to the safety and efficiency of operations in the Washington area given the impacts to the DCA radar system and the presumed impacts to the DCA ADS-B GBTs. The FAA should recirculate this proposal with a revised public notice following a thorough analysis of the structure's effect on ADS-B GBTs. Furthermore, we believe all circularization of public notices should cease until there is a procedure in place to evaluate the impact of a proposed structure on on-airport and off-airport ADS-B GBTs.

Thank you for reviewing our comment on this important issue. Please feel free to contact me at 202-509-9515 if you have any questions.

Sincerely,

Rune Duke
Senior Director, Airspace and Air Traffic

The Aircraft Owners and Pilots Association (AOPA) is a not-for-profit individual membership organization of General Aviation Pilots and Aircraft Owners. AOPA's mission is to effectively serve the interests of its members and establish, maintain and articulate positions of leadership to promote the economy, safety, utility, and popularity of flight in General Aviation aircraft. Representing two-thirds of all pilots in the United States, AOPA is the largest civil aviation organization in the world.