

STATEMENT OF MICHAEL P. HUERTA, ADMINISTRATOR, FEDERAL AVIATION ADMINISTRATION, BEFORE THE COMMITTEE ON SMALL BUSINESS, FAA'S 2020 NEXTGEN MANDATE: BENEFITS AND CHALLENGES FOR GENERAL AVIATION, JUNE 11, 2014.

Chairman Graves, Ranking Member Velazquez, Members of the Committee: Thank you for the opportunity to speak to you today about the Next Generation Air Transportation System (NextGen), the 2020 mandate, and the benefits and challenges of ADS-B equipage for general aviation.

Through NextGen, the FAA is changing the way the National Airspace System (NAS) operates to achieve greater efficiency and predictability in air travel. NextGen will improve safety and support environmental initiatives such as reducing congestion, noise, emissions and fuel consumption through increased efficiency. NextGen will allow the NAS to expand to meet future demand and support the economic viability of our country's aviation system. Through NextGen, the FAA is moving from ground-based surveillance and navigation to more dynamic and accurate airborne-based systems and procedures in order to enhance capacity, reduce delay, and improve environmental performance.

Automatic Dependent Surveillance–Broadcast (ADS–B) is a key component of NextGen, which will move air traffic control (ATC) from a radar-based system to a more precise satellite-derived aircraft location system. ADS-B equipment combines an aircraft's positioning source, aircraft avionics, and a ground infrastructure to create an accurate surveillance interface between aircraft and ATC. The baseline installation of ADS-B ground stations is now complete, so operators who equip now will see benefits now – there is no need to wait until 2020.

ADS-B has many benefits for users of the NAS, including the general aviation community. ADS–B provides air traffic controllers with more accurate information to help keep aircraft safely separated in the sky and on runways. With ADS-B, controllers get an update of

aircraft position almost continuously, compared to every five seconds or longer with radar. This improves the precision of our tracking, leads to enhanced safety and greater efficiency, and ultimately results in a smoother flow of air traffic.

Since ADS-B ground stations are easier to install and offer a greater distance of coverage than radar towers. We have also been able to expand access through ADS-B. We now have ADS-B coverage in remote areas where radar coverage was limited due to constraints on the surface or over bodies of water, such as in the Gulf of Mexico, mountainous regions in Colorado, and low altitude airspace in Alaska. Operators in those areas are seeing benefits, including increased flight hours by virtue of being able to operate in periods of low visibility.

The improved accuracy, integrity and reliability of satellite signals over radar means it will be possible to safely reduce the minimum separation distance between aircraft and increase capacity in the nation's skies. Increased equipage by the aviation community will allow the benefits of the ADS-B to be realized and benefit all users of the NAS.

Equipage and Benefits of ADS-B Technology

ADS-B consists of two different services: ADS-B Out and ADS-B In. ADS-B Out periodically broadcasts information about each aircraft operating within the NAS, such as identification, current position, altitude, and velocity, through an onboard transmitter. ADS-B Out provides air traffic controllers with real-time position information that is, in most cases, more accurate than the information available with current radar-based systems. With more accurate information, ATC will be able to position and separate aircraft with improved precision and timing.

All users operating in designated airspace must be equipped with ADS-B Out avionics by January 1, 2020. The rule does not preclude other navigation sources; it simply requires that aircraft flying in certain airspace be equipped with avionics that meet performance requirements. The designated airspace includes Class A, B, and C airspace, as well as Class E airspace areas at or above 10,000 feet mean sea level (MSL) over the 48 contiguous United States and the District of Columbia, excluding the airspace at and below 2,500 feet above the surface. This airspace is more complex, with relatively diverse users. The rule also requires that aircraft operating in the airspace within 30 nautical miles (NM) of the nation's busiest airports be equipped with ADS-B Out capabilities. This will enhance safety, efficiency, and performance around those airports.

If you never fly into ADS-B-designated airspace, there is no requirement to equip your aircraft with this technology. For the most part, the ADS-B Out requirement covers the same airspace where transponders are required; just as some aircraft are not required to be equipped with transponders, not all aircraft will need to be equipped with ADS-B Out. Users who never fly into designated airspace will not be impacted by the new requirements at all. In those cases, equipping with ADS-B technology is optional, but the benefits of ADS-B technology are available to any user who equips their aircraft.

ADS-B In technology allows pilots, including general aviation pilots, to see what air traffic controllers see: displays showing the location of aircraft in the sky around them. This creates an environment of shared situational awareness that allows for greater safety and efficiency. ADS-B In displays in the cockpit also pinpoint hazardous weather and terrain, and give pilots important flight information, such as temporary flight restrictions. Operators who have equipped with ADS-B In technology are already seeing these benefits in the cockpit.

Flight Information Service-Broadcast (FIS-B) and Traffic Information Service-Broadcast (TIS-B) are free services that are automatically transmitted to aircraft equipped to receive ADS-B In. FIS-B provides a broad range of textual/graphical weather products and other flight information to users, including the general aviation community; it includes the following:

- Aviation Routine Weather Reports (METARs)
- Non-Routine Aviation Weather Reports (SPECIs)
- Terminal Area Forecasts (TAFs) and their amendments
- NEXRAD (regional and CONUS) precipitation maps
- Notice to Airmen (NOTAM) Distant and Flight Data Center
- Airmen's Meteorological Conditions (AIRMET)
- Significant Meteorological Conditions (SIGMET) and Convective SIGMET
- Status of Special Use Airspace (SUA)
- Temporary Flight Restrictions (TFRs)
- Winds and Temperatures Aloft
- Pilot Reports (PIREPS)

TIS-B is an advisory service that increases pilots' situational awareness by providing traffic information on all transponder-based aircraft within the vicinity of the ADS-B In equipped aircraft receiving the data. The costs of these broadcast services are absorbed by the FAA, so NAS users do not pay any subscription or usage fees for traffic, weather, or aeronautical information services.

Nearly seventy-five percent (75%) of weather-related general aviation accidents are fatal. Free traffic and weather information automatically transmitted to the cockpit is something the general aviation community benefits from. General aviation pilots with proper equipage are already taking advantage of these nationwide services.

When displayed in the cockpit, this information also improves the pilot's situational awareness in aircraft not equipped with a traffic alert and collision avoidance system (TCAS)/airborne collision avoidance system (ACAS). Equipage for ADS-B In is not required

under FAA regulations, but users who are equipping with both ADS-B Out and In are seeing the wider range of functionality afforded by ADS-B than those only equipping with ADS-B Out.

Challenges and Solutions Moving Forward

We are confident that users of the NAS, including the general aviation community, will see the advantages to ADS-B as they continue to equip and begin using the technology it offers. But, we also realize that increased technology generally requires increased investment for the government, private industry, which includes both large and small businesses, and individual aircraft owners. The FAA has made a significant investment in infrastructure to enable the technology being delivered through NextGen, including ADS-B. We are now calling on users of the NAS to equip their aircraft in a way that allows us to maximize the benefits of NextGen in designated airspace.

We are doing everything we can to ameliorate the burden on operators and facilitate low-cost alternatives for the general aviation community. Users already have a wide range of options to meet the 2020 mandate, if it will impact them. A variety of manufacturers have rule-compliant technology in various different price ranges on the market today. We commend the industry for what they are doing to facilitate equipage, and we look forward to continuing to work with stakeholders in this important endeavor. As required by Section 221 of the FAA Modernization and Reform Act of 2012 (P.L. 112-95), FAA is evaluating financing options and considering loan guarantee programs, but we also encourage users to take advantage of the financing options already available on the private market and through their respective associations.

The FAA believes that ADS-B technology is a key component in achieving many of the goals set forth in the NextGen Implementation Plan. The ADS-B Out equipage requirement is a major step toward establishing an air traffic system that accommodates future requirements and responds to shifts in demand from users by leveraging enhanced surveillance capabilities to increase capacity and efficiency of airspace use. ADS-B technology not only assists in the transition to a system with less dependence on ground infrastructure and facilities, but also creates capabilities for precision and accuracy, which in turn will make the system more operationally and environmentally efficient.

Mr. Chairman, this concludes my statement. I would be happy to take questions at this time.