

**STATEMENT OF
BILLY NOLEN, ACTING ADMINISTRATOR
FEDERAL AVIATION ADMINISTRATION
HEARING BEFORE THE UNITED STATES SENATE
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION
NOTICE TO AIR MISSIONS SYSTEM
FEBRUARY 15, 2023**

Chair Cantwell, Ranking Member Cruz, and members of the Committee, thank you for the opportunity to provide clarity on the Federal Aviation Administration's (FAA) management of the Notice to Air Missions (NOTAM) system, share details on recent events, and explain our efforts to modernize the NOTAM system.

Today is also an opportunity to discuss the modernization needs of the national airspace system (NAS) overall, some of the challenges we face, and some of the opportunities on the horizon.

We are experiencing the safest period in aviation history, but we do not take that for granted. Recent events remind us that we cannot become complacent and that we must continually invest in our aviation system.

NAS Modernization

2023 will be a big year for aviation. Our current authorization expires on September 30th, and there is sustained energy from both industry and government around the development of ideas and proposals to modernize the NAS and the FAA's approach to managing it. As we delve into that reauthorization process, there are several important points we would like to highlight for the Committee. Right now, the FAA is managing three airspace systems to serve the diverse users of the NAS. The first is the classic or legacy system that many users of the NAS still count on. The second is the system that relies on the next generation of technology for improved communication, navigation, and surveillance. The FAA has operationalized the foundational

pieces of this system, and we continue to deploy additional services as operator equipage and federal resources allow. The third is the future—a future that has already arrived. It is the system that must accommodate new entrants in all their forms, including drones, advanced air mobility aircraft, commercial spacecraft, and other new aircraft yet to be imagined. It will involve autonomous aircraft, data exchanges, and a dynamic airspace. For us to sustain, implement, and plan for all of these systems, we have a lot of work ahead. We look forward to partnering with the Committee to ensure that the FAA’s oversight and regulation of the NAS continue to deliver the level of aviation safety and efficiency expected by the American public, as new entrants come into service.

On our end, we must work with stakeholders and make strategic investments, and create an agile regulatory structure that maintains safety, ensures efficiency, and facilitates access for new entrants. We are committed to this work and need Congress to be a supportive partner both in terms of enacting a long-term reauthorization measure, and funding our modernization needs. We look forward to working with you on these challenges and assure you that safety will always guide our actions no matter the challenge.

The NOTAM System

A NOTAM contains essential information for airspace users providing safety information about particular aspects of the NAS that are not operating under normal status. FAA’s NOTAM system is a dynamic system that captures recent changes to conditions in the NAS. For example, NOTAMs frequently provide pilots and operators with information about an anomaly with a particular navigational aid, airport runway, or taxiway, or about an air space closure or a temporary flight restriction.

The FAA's overall NOTAM system consists of two systems—an older U.S. NOTAM System (legacy system) and a newer Federal NOTAM System. The older portion of the NOTAM system relies on 30-year-old software and architecture. This portion collates NOTAM data from all sources and distributes it to some airspace users. The Federal NOTAM System portion is newer and serves as part of the foundation for the FAA's ongoing NOTAM modernization effort.

NOTAM information comes from a variety of places: an airport or air traffic control tower that observes local changes, an FAA technician planning to work on a system, or an air service provider, to name a few. Airspace users enter and access the information from applications sitting on both portions of the FAA's NOTAM system. Most airlines download NOTAMs from the FAA into their internal databases for dispatching aircraft. Users can also get NOTAMs from third party providers who get it from the FAA, or they can go to the primary source for specific NOTAM information, by calling a flight service station, air traffic control tower, or airport, for example.

NOTAM Service Interruption and Response

Late on January 10, 2023, NOTAM applications and services became unreliable. Technical experts attempted to address the issue by, among other things, switching to a backup database. There are three NOTAM backup databases—one in Oklahoma City and two in Atlantic City. While technical experts worked through the night, the FAA activated a hotline to provide real-time status updates to system users. During this time, there were no reports of operational impacts. In the early morning hours of January 11, 2023, the system appeared to have been restored, but formatting issues persisted. To resolve this, FAA's air traffic leadership directed the rebuild of the databases.

As the morning air traffic rush approached, and work on the system continued, I ordered a ground stop at approximately 7:15 a.m. EST, pausing all departures in the United States in order to maintain safety and preserve predictability. I did so after consulting with the airlines and safety experts. Once resiliency testing on the system was conducted, I lifted the ground stop at 9:07 a.m. EST on January 11, 2023.

The FAA's preliminary findings are that contract personnel unintentionally deleted files while working to correct synchronization between the live primary database and a backup database. We have found no evidence of a cyber-attack or other malicious intent. After the incident, we implemented a synchronization delay to ensure that bad data from a database cannot affect a backup database. Additionally, we have implemented a new protocol that requires more than one individual to be present and engaged in oversight when work on the database occurs. As our review of the root causes of this incident continue, please know that the FAA will keep the Committee apprised of our findings.

NOTAM Modernization

Beginning in 2012 with the Pilot's Bill of Rights (Public Law 112-153) and continuing in 2018 with the FAA Reauthorization Act of 2018 (Public Law 115-254), which further amended the Pilot's Bill of Rights, Congress directed the FAA to continue developing and modernizing the NOTAM repository, in a public central location, in a manner that is Internet-accessible, machine-readable, and searchable. Since those enactments, the FAA has made progress modernizing the NOTAM system. This progress includes improvements not only to the NOTAM content and presentation/publication, but also to the information technology architecture that supports and delivers this vital safety information. The nearly decade-long modernization work includes transitioning away from the legacy portion of the system mentioned earlier. We expect

that a significant portion of the modernization work will be complete by mid-2025. We continue to assess the feasibility of accelerating the current schedule.

The goal of the FAA's NOTAM modernization effort is to provide NOTAMs that are complete, accurate, timely, and relevant to safe flight operations. The FAA has made great progress in fulfilling the congressional mandates for modernization, including close coordination with industry and the adoption of recommendations from industry stakeholders that use NOTAMs. Specifically, the FAA is working in coordination with the Aeronautical Information Services Reform Coalition (coalition), whose members include representatives from, among others, air carriers, aircraft owners, pilots, airport executives, labor interests of air carriers, general and business aviation, and international operators. Our continued work with the coalition is one of the many examples where a government-industry partnership has helped to significantly inform and improve the direction and quality of our work.

We are working to face the challenges in maintaining our systems while keeping pace with new and emerging technologies and entrants. However, we are committed to improving and securing our systems, finding new ways to be agile in order to face these challenges, and continuing to achieve the highest levels of safety and efficiency. We look forward to working with the Committee and this Congress in developing a long-term FAA reauthorization bill that accelerates the next era of aviation—one that is safe, efficient, sustainable, and open to all.

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