

Written Testimony of  
Paul M. Rinaldi  
President  
National Air Traffic Controllers Association, AFL-CIO (NATCA)

February 13, 2019

Before the  
Subcommittee on Aviation  
Committee on Transportation and Infrastructure  
United States House of Representatives

**“Putting U.S. Aviation at Risk: The Impact of the Shutdown”**



Thank you for the opportunity to testify on behalf of the National Air Traffic Controllers Association, AFL-CIO (NATCA) about “Putting U.S. Aviation at Risk: The Impact of the Shutdown.” NATCA is the exclusive representative for nearly 20,000 employees, including the Federal Aviation Administration’s (FAA) air traffic controllers, traffic management coordinators and specialists, flight service station air traffic controllers, staff support specialists, engineers and architects, and other aviation safety professionals, as well as Department of Defense (DOD) and Federal Contract Tower (FCT) air traffic controllers.

## **I. General Overview**

On Friday, January 25, the longest federal government shutdown in U.S. history ended after 35 days. However, no one should be under the illusion that it was business as usual for aviation during the shutdown. Every day, 71,500 flights and over 2 million passengers move through the National Airspace System (NAS). Although it is the safest and most efficient system in the world, during the shutdown, many activities and processes that proactively reduce risk and increase safety were suspended. Even though the NAS is safer now than it was during the shutdown, it is less safe today than it was before the shutdown began.

The NAS and the FAA did not revert to normalcy when the shutdown ended. It may take weeks, months, or even years for some aspects of the system to return to normal order. That also is assuming that the three-week continuing resolution (CR) that ended the shutdown leads to a longer-term appropriations bill that averts another shutdown on February 15.

Over 3,000 aviation safety professionals represented by NATCA were furloughed, along with hundreds of thousands of other federal employees. Another 15,000 NATCA-represented controllers and aviation safety professionals continued to work for more than a month without pay, and without the necessary support staff who provide a critical layer of safety in operating and overseeing the safest, most complex, most efficient airspace system in the world. All of these air traffic controllers and aviation safety professionals were used as pawns in a political fight that had nothing to do with aviation. This is wrong and must not be allowed to happen again.

The safety of the NAS is vital and should never be used as a bargaining tool. Our work needs to be 100 percent right, 100 percent of the time. Air traffic control is an inherently stressful profession and it is wrong that the men and women who operate and oversee the system were forced to worry about how they would feed their families or pay their rent or mortgage while performing their work without pay.

Moreover, nearly 20 percent of all certified professional controllers (CPC) are currently eligible to retire. We know from anecdotal evidence that the shutdown led some controllers to decide to retire earlier than they had planned. We also know that other controllers who were not yet eligible to retire, as well as a few students at the FAA Academy, chose to resign in order to find another way to pay their rent and feed their families. The NAS cannot sustain greater-than-anticipated controller attrition without resulting in reduced capacity – meaning more flight delays for the flying public.

The reality that no one wants to hear is that the NAS was less safe during the shutdown than before it began. The system began to experience decreased efficiency and capacity as a result of the shutdown and was on the verge of unraveling. NATCA sounded the alarm. Our leadership was receiving messages from controllers with decades of experience who had aircraft under their control climbing directly into the path of another aircraft because they were stressed and distracted with the uncertainty

on when the shutdown would end, thinking about their mortgage and car payments, medical bills, and feeding their families, rather than their jobs.

On the day the shutdown ended, January 25, travelers experienced a number of flight delays due to decreased capacity. Because the NAS is an extremely complex and interconnected system, when delays occur at one major facility there is a ripple effect across the adjoining airspace and sometimes throughout the entire system. NATCA did not coordinate these controller absences. NATCA does not condone or endorse any federal employees participating in or advocating for a coordinated activity that negatively affects the capacity of the NAS or other activities that undermine the professional image and reputation of the men and women we represent.

On that day, a small number of controllers from critically staffed areas in two air traffic control facilities individually determined that they were not fit for duty. This was a result of illnesses, the stress of working for over a month without being paid, and not knowing when the shutdown would end and normalcy would return.

Given the unprecedented nature and length of the shutdown, there is no question that it has damaged and will continue to harm the system, which supports 12 million aviation-related jobs and contributes over \$1.5 trillion annually to the U.S. economy. Every time the government is shut down, or brought to the brink of a shutdown due to political disagreements that have nothing to do with aviation, it has real consequences for real people. Unfortunately, shutdowns and threats of shutdowns have become a common occurrence.

Since the start of Fiscal Year 2018, the FAA has experienced three shutdowns and 11 additional threatened shutdowns either due to a lapse in appropriations or a lapse in FAA authorization. Below is a timeline of this stop-and-go funding cycle since the beginning of FY 2018:

- Sept. 30, 2017 – Threatened Lapse in both Appropriations and FAA Authorization (CR through 12/8; and FAA Extension through 3/31)
- Dec. 8, 2017 – Threatened Lapse in Appropriations (CR through 12/22)
- Dec. 22, 2017 – Threatened Lapse in Appropriations (CR through 1/19)
- Jan. 20, 2018 – THREE-DAY SHUTDOWN (CR through 2/9)
- Feb. 9, 2018 – MULTI-HOUR SHUTDOWN (CR through 3/23)
- March 23, 2018 – Threatened Lapse in Appropriations (CR through 9/30)
- March 31, 2018 – Threatened Lapse in FAA Authorization; (Extension through 9/30)
- Oct. 1, 2018 – Threatened Lapse in both Appropriations and FAA Authorization (received CR through 12/7; and FAA Extension through 10/7)
- Oct. 7, 2018 – Threatened Lapse in FAA Authorization (5-year FAA Reauthorization)
- Dec. 7, 2018 – Threatened Lapse in Appropriations (CR through 12/22)
- Dec. 22, 2018 – 35-DAY SHUTDOWN (CR through 2/15)
- Feb. 15, 2019 – Threatened Lapse in Appropriations (TBD)

## **II. Critical Safety Concerns**

The shutdown was tremendously harmful because it eroded the layers of critical elements necessary to support and maintain the safety of the NAS. Many safety activities that proactively reduce risk and increase the safety of the NAS were suspended as a result of the shutdown. For instance, the FAA Air Traffic Organization's (ATO) Top 5 Hazards in the NAS were not being addressed, which include

risks associated with Pilot Weather Reports (PIREPS), Wrong Surface Landings, Safety Alerts, Altitude Compliance, and Operational Risk Management (ORM).

Specifically, safety enhancements that prevent wrong surface landings were suspended because of the shutdown. Each year, there are more than 200 events in which an aircraft lands, or attempts to land, on the wrong runway, on a taxiway, or at the wrong airport entirely. The aviation industry, NATCA, and the FAA are working on the implementation and additional development of new technologies that would provide air traffic controllers with an early warning system designed to mitigate the risk of aircraft landing on the incorrect surface (i.e. runway, a taxiway, or at the wrong airport). Development was significantly delayed because of the shutdown.

Just last week, at Philadelphia International Airport (PHL), a flight was cleared to land on Runway 35, but aligned itself on Taxiway E, parallel to the intended runway. A runway safety enhancement in Airport Surface Detection System – Model X (ASDE-X) called ASDE-X Taxiway Arrival Prediction (ATAP) Alerting System alerted the local controller who immediately instructed the pilot to execute a go-around. The pilot overflew two commercial airplanes on the taxiway by 600 and 700 feet respectively on the go-around.

The ATAP system is currently enabled at five airports in addition to PHL: Hartsfield–Jackson Atlanta International Airport (ATL), Bradley International Airport (BDL), Charlotte Douglas International Airport (CLT), Dallas/Fort Worth International Airport (DFW), and Seattle–Tacoma International Airport (SEA). Prior to the shutdown, the FAA scheduled ATAP to be enabled on March 31, 2019, at 13 additional major airports. However, due to the shutdown, that implementation is now delayed until June 30, 2019 at eight airports: Baltimore/Washington International Thurgood Marshall Airport (BWI), Newark Liberty International Airport (EWR), Honolulu Control Facility (HCF), McCarran International Airport (LAS), Chicago Midway International Airport (MDW), Memphis International Airport (MEM), Chicago O’Hare International Airport (ORD), and Salt Lake City International Airport (SLC).

Voluntary safety reporting programs, such as the Air Traffic Safety Action Program (ATSAP), also were negatively affected. Critical communication between the ATSAP review teams and furloughed staff was deferred, resulting in an inability to properly identify and mitigate safety and training deficiencies. The voluntary safety reporting program for NATCA-represented engineers and service area support staff also was not operating, while all work on existing reported safety issues and associated mitigation activities was suspended.

In addition, some of the critical safety equipment and technology that controllers use every day is decades old and at risk of malfunctioning. Even before the shutdown, the FAA had moved to a “fix-on-fail” maintenance philosophy and had stopped stockpiling critical parts for essential operational equipment. However, because of the shutdown, critical maintenance and repair projects have been delayed even more. There now is a backlog of maintenance projects at facilities around the country. An additional government shutdown would make this situation worse.

### **III. The Negative Effects on the Workforce and The Controller Staffing Crisis**

The partial government shutdown was a disaster for the FAA workforce, including air traffic controllers, traffic management coordinators, and other aviation safety professionals who worked without pay for more than a month. Many of them still have not been made whole financially. It also was disastrous for over 3,000 NATCA-represented FAA employees who were furloughed without pay

during the shutdown. Their critical safety work wasn't being performed at all and piled up awaiting their return to duty.

#### A. Shutdown Exacerbated Controller Fatigue Problem

In a voluntary survey of NATCA members, we found that many of them started working second jobs because their chosen profession was not paying them. Air traffic controllers are subject to very strict fatigue rules that are intended to ensure that they receive appropriate rest and sleep between shifts. However, in order to make ends meet during the shutdown, many controllers were not resting or sleeping as much between shifts. Instead, they were working second jobs so that they could pay their rent and feed their families. This was a significant problem, because during their non-working time air traffic controllers need to be resting, relaxing, and sleeping in order to counteract the unique stress and fatigue that comes with the job.

FAA Order 7210.3AA prescribes the specific fatigue rules and shift limitations based upon fatigue science studies for controllers, including the 10-hour maximum per shift for all radar facilities and air traffic control towers. It also mandates the duration and frequency of rest periods between shifts. Specifically, that order provides:

Air traffic control specialists whose primary duties are those directly related to the control and separation of aircraft must meet the following criteria:

1. Do not work more than 10 operational hours in a shift.
2. Hours worked before a shift, whether operational or not, will count as operational hours.
3. All work beyond 10 hours must be nonoperational.
4. Have at least an 8-hour break from the time work ends to the start of any shift, except as follows:
  - (a) Employees are required to have a minimum of 9 consecutive hours off duty preceding the start of a day shift. For purposes of this paragraph only, a day shift is generally defined as a shift where the majority of hours fall between 7:00 a.m. and 4:00 p.m.
  - (b) This requirement applies to all shift changes, swaps, and overtime to include scheduled, call-in, and holdover assignments.
5. Have an off-duty period of at least 12 hours following a midnight shift. (A midnight shift is defined as a shift in which the majority of hours are worked between 10:30 p.m. and 6:30 a.m.)
6. If an employee is assigned more than two (2) consecutive ten (10) hour midnight shifts, all of the consecutive ten (10) hour midnight shifts require a 2100L (Non flex) start time.
7. Ten (10) hour midnight shifts are limited to no more than four (4) in any six (6) day period.
8. No day shift may immediately precede a ten (10) hour midnight shift.
9. Eight (8) hour midnight shifts may be extended by no more than one (1) hour per single shift.
10. A 0530L start time or later is required when working an eight (8) hour day shift prior to an eight (8) hour midnight shift. Employees may not flex to an earlier start time than 0530L.
11. Do not work more than six shifts without taking a regular day off.

12. Authorized leave, compensatory time used, and credit hours used are considered hours of work.

13. These criteria apply to shift adjustments, including the exchange of shifts and/or days off and the change of shifts and/or days off.

Even under normal circumstances, extended workdays and workweeks can lead to significant fatigue concerns for the workforce. Just last week, the National Transportation Safety Board once again identified fatigue on its list of 10 most wanted transportation safety improvements. Although NATCA and FAA, along with other stakeholders, have worked collaboratively to develop a fatigue awareness and education campaign called “Fully Charged,” which is part of the collaborative Foundations of Professionalism program, the only long-term solution is sufficient staffing.

NATCA has worked very closely with the FAA in recent years to develop and implement new fatigue risk management tools and to educate the workforce on the need for rest and sleep during non-work time. This shutdown undermined all this essential work. A tired workforce will make more mistakes. A tired and distracted workforce will make even more. The shutdown injected significant risk into a system that is designed to eliminate risk.

#### B. Hiring Freeze and FAA Academy Closure

The FAA Training Academy in Oklahoma City was closed during the shutdown and just began classes again last week. The FAA also suspended hiring and training for all new hires and controller advanced skills classes were canceled throughout the shutdown.

In late December 2018, the FAA gave notices to approximately 440 students at the FAA Academy placing them on furlough or returning them to their facilities where they are partially certified. FAA also gave a stop work order to Science Applications International Corporation (SAIC), the contractor that performs training functions at the Academy. The FAA canceled a month of Air Traffic Basics courses and advised over 100 students not to show up for their scheduled class start dates. The FAA canceled additional classes through February 11. Now that classes have started again, all future students will have to be rescheduled into appropriate classes to begin training later than what would have otherwise occurred.

Prior to the shutdown, the FAA’s hiring target for FY 2019 was 1,431 and now we are concerned that the goal will not be attainable. This is unacceptable. Further staffing reductions could have an immediate and detrimental effect on capacity, meaning fewer aircraft in the sky and greater potential for delays.

#### C. No Staffing for Integrating New Users & Implementing NextGen Technology

If this staffing crisis continues, the FAA will be hard-pressed to maintain current capacity, let alone modernize the system and expand it for new users, such as commercial space operations, Unmanned Aircraft Systems (UAS), and supersonic jets. Understaffing at air traffic facilities hinders the deployment and training of NextGen programs, procedures, and equipment. Moreover, integrating new users into the NAS was put on hold during the shutdown, and those delays will negatively affect private sector innovation – both big and small companies alike.

#### D. Air Traffic Controller Staffing Crisis Background

Air traffic controller staffing has been a concern for many years. It reached a crisis level in 2015 and despite some recent progress within the FAA's hiring, training, and transfer processes, it remains a challenge, one that has been exacerbated by the shutdown.

Since 2015, NATCA has been raising concern and awareness about the staffing issue because of the disastrous effects that further staffing reductions could have on system capacity. On December 8, 2015, NATCA addressed the controller staffing crisis at a Congressional Roundtable policy discussion held by this Subcommittee. On June 15, 2016, NATCA testified about the controller staffing crisis before this Subcommittee at a hearing titled "A Review of the Federal Aviation's Air Traffic Controller Hiring, Staffing and Training Plans." Then, on May 17, 2017, NATCA again testified about the controller staffing crisis, as part of the justification for needing ATC reform, before the full Committee on Transportation and Infrastructure, at a hearing titled "The Need to Reform FAA and Air Traffic Control to Build a 21<sup>st</sup> Century Aviation System for America."

The FAA's CPC workforce has reached a 30-year low. Controller staffing has fallen 10 percent since 2011, and a significant percentage of the certified controller workforce remains eligible to retire (18 percent). Stop-and-go funding for the FAA has made this problem worse. Sequestration forced the FAA to institute a hiring freeze and shutter the FAA Academy between March and December 2013. The hiring freeze compounded an already tenuous staffing situation in which the FAA had barely been able to replace retiring controllers. The FAA never made up for the sequester-related hiring freeze in 2013.

New hires who are admitted into the FAA Academy today will require two to five years of training before they become fully trained and capable of separating air traffic on their own. Moreover, of those who are admitted, currently only 64 percent of students in either the Tower/Terminal or En Route options will successfully complete their Academy training and screening before moving on to train at their facility. There is additional attrition once Academy graduates begin on-the-job training at their facilities.

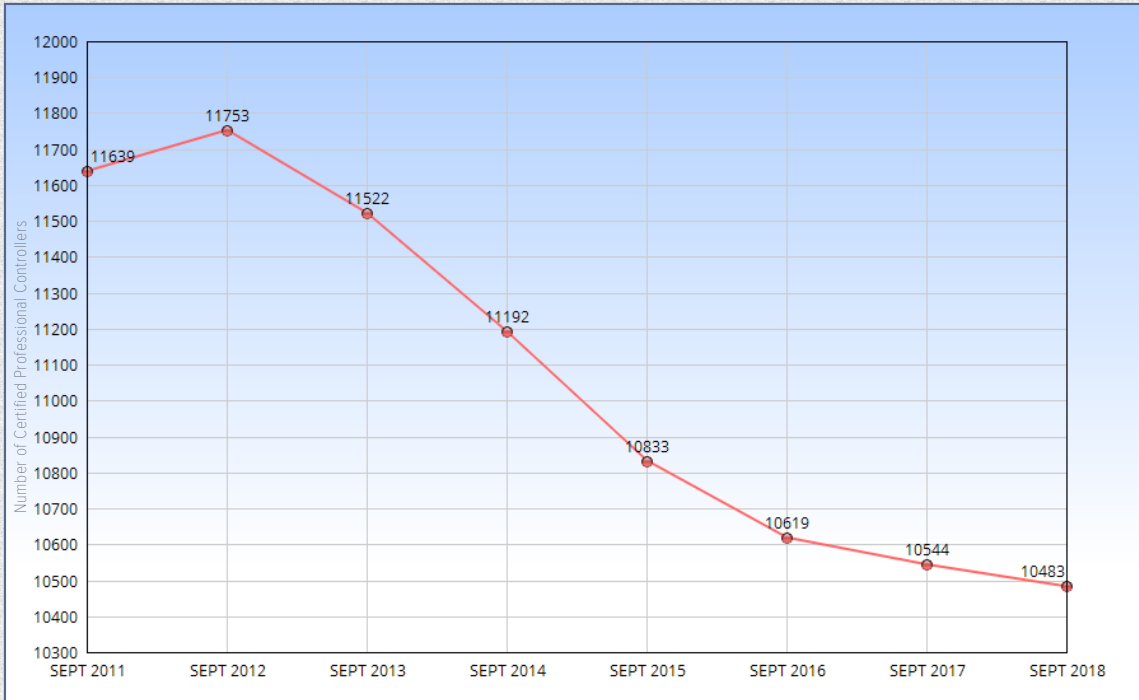
Even increased hiring by the FAA in 2015, 2016, and 2017 did not make up for the attrition experienced from 2013 through 2017. Although the FAA has exceeded its hiring targets each of the past three years, CPC staffing levels continued to go down by 3.2 percent over that period. One potential solution, as part of a comprehensive hiring and training program, is to utilize the Academy's maximum throughput capacity (approx. 2,000 students per year).

Facilities that are at critical staffing levels (defined as requiring mandatory overtime and a six-day work week to fully staff all positions) are facing a dire situation, as retirement-eligible controllers continue to retire at a high rate, and those left on the job begin the time-intensive process of training controllers transferring from less complex/busy facilities and/or Academy graduates.

The shutdown caused a ripple effect further delaying Academy training courses throughout 2019. There is no question that this shutdown has and will continue to exacerbate the existing air traffic controller staffing crisis.



## AIR TRAFFIC CONTROLLER STAFFING: 2011-2018



	2011	2012	2013	2014	2015	2016	2017	2018
<b>ON-BOARD</b>	15,236	15,063	14,461	14,059	14,010	14,050	14,009	14,285
<b>CPC</b>	11,639	11,753	11,522	11,192	10,833	10,619	10,544	10,483
<b>CPC-IT</b>	965	1,143	1,187	1,200	1,218	1,259	1,205	1,320
<b>DEV (INCLUDING AG)</b>	2,632	2,167	1,741	1,667	1,959	2,172	2,260	2,482
<b>AG</b>	676	671	440	665	936	878	883	980
<b>RETIREMENT ELIGIBLE</b>	3,064	3,224	3,077	2,982	3,355	2,915	2,410	1,842
<b>FAA PLANNED TO HIRE</b>	829	981	1,315	1,286	1,772	1,619	1,781	1,701
<b>FAA ACTUALLY HIRED</b>	824	925	554	1,112	1,345	1,680	1,880	1,787

Source: FAA Finance Staffing Data Snapshot, FAA Controller Workforce Plan

**CPC:** Certified Professional Controller

**CPC-IT:** Certified Professional Controller in Training (fully certified elsewhere, transferred to a new facility and began training there)

**DEV:** Developmental (trainee)

**AG:** Graduate of the FAA Initial Classroom Training Academy in Oklahoma City, newly hired, and started at their first facility as a trainee



#### **IV. Operational Consequences**

Air traffic control is a complex, high consequence profession requiring multiple layers of safety processes and procedures (e.g. safety reporting, quality control, quality assurance, training) to ensure that we deliver the highest level of safety to the flying public. Just as you would not ask a surgeon to perform a surgery without their surgical team, you should not require controllers to perform their work without their support team of approximately 3,000 NATCA-represented aviation safety professionals, many of whom remained furloughed throughout the shutdown.

For example, staff support specialists who work at air traffic control facilities to provide tactical, strategic, and administrative support of training; quality assurance/quality control of air traffic control and traffic management; manage and redesign airspace and air traffic control procedures; support operational automation, military operations, and air traffic safety management systems. They were furloughed during the shutdown. Aircraft certification engineers assist in design, production approvals, and airworthiness certification of aircraft and their components. They were furloughed during the shutdown. Other NATCA-represented engineers design and construct critical infrastructure necessary for safe flight operations including air traffic control towers, radar maintenance and installation, navigational aids, and communications systems. Many of them also were furloughed during the shutdown. FAA's flight test pilots were furloughed during the shutdown.

#### **V. Wasted Taxpayer Money and Resources – Delays to Modernization and the Integration of New Users**

As a result of the shutdown, all FAA modernization work and new user integration was stopped. The shutdown has and will continue to cause significant delays to these projects, wasting critical resources and federal taxpayer money. Even now, delays to the timelines for each project will have a cascading effect on each project as the FAA scrambles to restart work and deconflict waterfall timelines. For instance, we know that the shutdown cost taxpayers up to \$8M in order to repeat training for controllers related to the implementation and deployment of Enroute Controller Pilot Data Link Communications (CPDLC), most often referred to as DataComm. This system is the next generation of communication between pilots and controllers.

In addition, work on integrating new users such as Unmanned Aircraft Systems (UAS), commercial space launches, and supersonic aircraft into the NAS was put on hold, which will negatively affect private sector innovation. Critical construction to the physical infrastructure also stopped at airports and radar facilities across the country.

##### **A. Delays to Programs that Benefit General Aviation**

General aviation also felt the effects of the shutdown as many related programs continue to experience significant delays. Below are some examples of these delayed programs:

- Northeast Corridor quick climb out procedures out of Teterboro and Westchester County.
- Multiple Airport Route Separation (MARS) safety case – The MARS concept will procedurally deconflict departure and arrival flows between multiple adjacent airports, with air traffic control providing radar monitoring instead of radar separation and vectoring.

- Decoupling of approach procedures in LaGuardia (LGA), Newark (EWR), and Teterboro (TEB) to reduce delays.
- Noise reducing departure procedures out of Teterboro.
- Atlantic Coast Routings that will eventually improve flow and throughput along the Atlantic seaboard.
- Use of Performance Based Navigation (PBN) procedures to leverage aircraft avionics and ground infrastructure to maximize safety and efficiency between airports and in congested airspace.
- Las Vegas and South Florida Metroplex projects, which are developing procedures for satellite airports like Henderson Executive Airport (HND), Southwest Florida International Airport in Fort Myers (RSW), Palm Beach International Airport (PBI), and Orlando Executive Airport (ORL).

#### B. Delays to VOR Network Modernization Program (VORMON)

The NAS is in the process of transitioning away from a standalone VOR network (i.e. Very High Frequency (VHF) Omni-Directional Range radio ground-based navigational aide) to the more-efficient Performance Based Navigation (PBN) system. Very High Frequency Omni-directional Range Minimum Operational Network (VORMON) will eliminate redundant coverage and will provide more efficient routings in congested metropolitan areas. Conventional airways (SIDS, STARS, IAP, etc.) that were previously supported by VOR may be replaced with PBN procedures.

Typically, it takes between 24 to 36 months to design and implement a PBN procedure to replace a conventional VOR procedure. In 2018, 22 VORs were removed. In 2019 and 2020, the FAA was scheduled to remove 27 and 48 VORs, respectively. This schedule is now in serious jeopardy due to the shutdown.

#### C. Delays to Performance Based Navigation (PBN) Procedures

The modernization of the U.S. satellite-based network of PBN flight paths will help air traffic conduct Trajectory Based Operations (TBO). PBN services are laying the foundation for the NAS of the future by enabling many NextGen operational improvements, capabilities, and initiatives. Through these programs, the FAA is beginning to monitor an aircraft's trajectory including its time at points along a 3-D path so that we can anticipate the timing of arrivals at major airports. Ultimately, PBN procedures and routes save time and fuel while reducing emissions.

The FAA has already published more than 9,300 PBN procedures and routes. Before the shutdown, there were over 1,000 procedures that were being developed in collaboration with pilots, air traffic controllers, and airports. This has been significantly delayed and, even now that the shutdown is over, it may take 24 to 36 months to continue the design and implementation process for many of these procedures. For instance, multiple large and small PBN projects will be delayed including projects in South Florida, Las Vegas, Detroit, Cleveland, Denver, the Northeast Corridor initiative, and airspace modernization efforts at Louisville International Airport (SDF).

#### D. Time Based Flow Management (TBFM) & Traffic Flow Management System (TFMS) Further Deployment Delayed

TBFM and TFMS will enhance NAS efficiency by using the capabilities of a decision-support tool, which is already deployed at numerous air traffic control facilities. TBFM and TFMS maximize aircraft throughput and capacity within the system in order to maintain a high-level of efficiency and predictability by reducing delays, travel time, and fuel expenses. These programs also help reduce the effects on the environment including noise, emissions, and other environmental issues in the implementation and operation of the aviation system.

Improvements in TBFM/TFMS core Time Based Metering capability and its trajectory modeler – an expansion of its departure capabilities to additional locations – and enhancements to departure capabilities, will enhance efficiency and optimize demand and capacity. Moreover, capabilities in this portfolio will be leveraged to enable aircraft to maintain a spacing interval behind a preceding aircraft, further improving capacity and flight efficiency. Improvements also will enable controllers to more accurately deliver aircraft to the Terminal Radar Approach Control (TRACON) facilities while providing the opportunity for aircraft to fly optimized descents.

Approximately 93 FAA facilities currently have TBFM: 20 Air Route Traffic Control Centers (ARTCCs), 28 TRACONs, and 45 Air Traffic Control Towers. However, enhancements and updates that will enable future capabilities will be significantly delayed due to the shutdown.

#### E. Delays to Terminal Flight Data Manager (TFDM) Deployment

TFDM is the surface management solution for NextGen. With growing congestion on the airport surface due to the increase in commercial air traffic nationwide, the need for efficient aircraft traffic planning on the airport ground is critical. This program has been delayed due to the shutdown.

Over the life of the system, TFDM is expected to provide 313 million gallons in fuel savings, while reducing over 3 million metric tons of carbon emissions. The flying public also will experience fewer delays, more reliable flight schedules, improved passenger satisfaction, and improved predictability. Airlines and other flight operators will experience improved schedule predictability and crew utilization, less taxi time and fuel burn, increased reliability of connection, and reduced departure lines on the taxiway. Airport operators expect to reduce their CO<sub>2</sub> footprint, reduce engine noise, and experience a more balanced use of airport resources.

Air traffic services expect to benefit through automatically updated flight plans and electronic flight strips, easier rescheduling cancelled and delayed flights, fewer aircraft in the movement area and departure queue, and improved surface situational awareness at the TRACON, ARTCC, and Command Center. Most importantly, TFDM will improve safety, as controllers will experience less “heads down” time.

#### F. Trajectory Based Operations (TBO) Deployment

TBO is an Air Traffic Management (ATM) method for strategically planning, managing, and optimizing flights throughout the NAS by using time-based management, information exchange between air and ground systems, and the aircraft’s ability to fly precise paths (PBN) in time and space. TBO deployment at the first three sites – Northeast Corridor, Denver, and Atlanta – has been significantly delayed due to the shutdown.

Once fully deployed, TBO will leverage improvements in navigation accuracy, communications, surveillance, and automation to decrease the uncertainty of an aircraft's path in four dimensions – lateral (latitude and longitude), vertical (altitude) and time – which will result in significant improvements in strategic planning. However, TBO requires every participant and system to be operating on the same plan. That plan is expressed and shared through the agreed trajectory, which is used as a reference for the flight and contains estimates for arrival times at key points along the flight.

The time-based parameter provides a common planning reference across all phases of flight, including pre-departure. This facilitates planning integration across ATC domains, enables the FAA to plan against the schedule objectives of users (i.e. departure and arrival times), and allows for more dynamic planning through a constrained area such as a major weather event, metering adjustments across merge points for the convergence of major flows, or for individual aircraft being integrated into congested flows.

#### G. FAA Will Struggle to Meet 2020 Mandate for Automatic Dependent Surveillance - Broadcast (ADS-B)

ADS-B is a new type of surveillance dependent on a global navigation satellite system (GNSS), typically GPS, where the position of the aircraft is derived in its avionics and broadcast to a network of ground based radio stations. ADS-B positions are typically more accurate than traditional radar and broadcast much faster, about once per second. ADS-B reports also include more information than simply an aircraft's position.

The FAA has mandated that all aircraft must be equipped with “ADS-B Out” technology (equipment installed on the aircraft that transmits position information to the ADS-B system) by January 1, 2020. Prior to the shutdown, ADS-B was scheduled to be deployed at the last FAA facility by September 2019. The FAA now will be hard-pressed to meet that target date and full ADS-B deployment is likely to be delayed.

#### H. Enterprise Information Display System (E-IDS) Development and Testing Delayed

Development and deployment of E-IDS will allow controllers to access vital information while working an operational position such as approach plates, letters of agreement, weather, airport configurations, standard operating procedures, and Notices to Airmen (NOTAMs). E-IDS is currently in the development phase and, once completed, will combine the five existing information display systems into one. Several of these existing systems are well-beyond their lifecycle and are constantly at risk of failing. This program could be significantly delayed due to the shutdown.

#### I. Consolidated Wake Recategorization (CWT)

CWT enables controllers to use more efficient aircraft separation standards (flying planes closer together) without compromising safety, which means that more planes can take off and land throughout the system. Currently, CWT is deployed at seven terminal facilities, with 18 more to come. Further deployment of this program has been delayed due to the shutdown.

## J. NextGen Weather Program (NWP)

NWP is a critical part of NextGen because it helps reduce the negative effects of weather on aviation, resulting in safer, more efficient, and more predictable day-to-day NAS operations. NWP will be able to provide tailored aviation weather products within the NAS, helping controllers and operators develop reliable flight plans, make better decisions, and improve on-time performance. This program has been delayed due to the shutdown.

## **VI. Conclusion**

There can be no doubt that the status quo is broken and has been for some time. The 35-day shutdown was just the latest of many instances in which FAA funding, its workforce, and the aviation industry have been held hostage by a political disagreement that has nothing to do with aviation. A second shutdown would be much more disastrous for the system if the three-week CR does not lead to a longer-term appropriations bill on or before February 15.

This shutdown emphasized that a stop-and-go funding stream is unsustainable. Stop-and-go funding crises wreak havoc on the NAS, delay critical modernization and infrastructure projects, and exacerbate the current controller staffing crisis, which has resulted in a 30-year low of CPCs. Every time the NAS is forced to endure another shutdown or a threatened lapse in appropriations or FAA authorization, the United States is at risk of losing its status as the safest, most efficient airspace system in the world. We must not let this happen again and NATCA will continue to fight for a solution to this problem.

As a result, NATCA's position on air traffic control reform remains consistent. We do not support any one particular reform model and we will meticulously review the details of any proposal before deciding whether to support or oppose it. In order to receive NATCA's consideration for support, a reform proposal must improve upon the status quo, without adopting a for-profit air traffic control model, and – at minimum – meet NATCA's Four Core Principles for Reform:

1. Any reform model must ensure that the frontline workforce is fully protected in its employment relationship. It is crucial to maintain NATCA members' pay and benefits, including retirement and health care, along with our negotiated agreements for their work rules, and indemnification for our members for acts within the scope of their employment.
2. Safety and efficiency must remain the top priorities within the system. We cannot allow maintenance to lag or a reduction in staffing to save money. The NAS must be fully staffed to ensure both safety and efficiency, and to maintain capacity.
3. A stable, predictable funding stream must adequately support air traffic control services, staffing, hiring and training, long-term modernization projects, preventative maintenance, and ongoing modernization to the physical infrastructure. Stop-and-go funding crises slow the hiring and training process, which exacerbate the current controller staffing crisis. The lack of a stable funding stream also prevents timely implementation of NextGen modernization projects.
4. Any reform model must maintain a dynamic aviation system that continues to provide services to all segments of the aviation community, from commercial passenger carriers and cargo haulers to business jets and to general aviation, from the major airports to those in small communities and rural America. We cannot emphasize enough how important it is that our

system continues to provide services to the diverse users of the NAS. The United States has a vibrant general aviation community that relies on us, while the economic success of rural America also is connected to access to the NAS through serving even the most remote areas.

NATCA thanks Chairman DeFazio and Chairman Larsen for introducing the Aviation Funding Stability Act of 2019 (H.R. 1108). We are urging everyone in Congress to support it. NATCA has thoroughly reviewed the Aviation Funding Stability Act of 2019. It would provide a stable, predictable funding stream for the NAS by preventing government shutdowns from affecting the FAA. NATCA strongly supports this legislation.

Thank you for the opportunity to offer testimony on this critical issue.