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BEFORE THE SENATE COMMITTEE ON COMMERCE, SCIENCE, &
TRANSPORTATION, SUBCOMMITTEE ON AVIATION SAFETY,
OPERATIONS AND INNOVATION

ON
U.S. AIR TRAFFIC CONTROL SYSTEMS, PERSONNEL AND SAFETY

DECEMBER 12, 2024

Chair Duckworth, Ranking Member Moran and members of the subcommittee, thank you for inviting me to testify on behalf of the Professional Aviation Safety Specialists, AFL-CIO (PASS).

PASS represents approximately 11,000 Federal Aviation Administration (FAA) and Department of Defense employees throughout the United States and abroad. PASS-represented employees in the FAA install, maintain, support and certify air traffic control and national defense equipment, inspect and oversee the commercial and general aviation industries, develop flight procedures, and perform quality analyses of complex aviation systems used in air traffic control and national defense in the United States and overseas. PASS members work to ensure the safety and efficiency of the aviation system that transports over 2.9 million airline passengers across more than 29 million square miles of airspace (domestic and U.S. airspace over oceans) at 65,728 facilities every day. The diversity of the PASS-represented workforce provides insight into the safety of the system they maintain and the industry they oversee. PASS members are tasked with ensuring that the U.S. air traffic control system remains the gold standard of aviation safety. In fact, there has not been a major aircraft accident in the U.S. since the Colgan Air crash in 2009. That is a record for the FAA and its employees should be proud of this accomplishment.

The work PASS members do every day is essential to the safe and efficient operation of this country's aviation system. Unfortunately, challenges unrelated to employee talent and professionalism are limiting the agency's efficiency and effectiveness. These obstacles include the aging air traffic systems and facilities essential to air traffic control operations as well as related impacts on the technical workforce represented by PASS.

PASS appreciates the opportunity to share information and recommendations regarding air traffic control systems, personnel and safety.

AIR TRAFFIC ORGANIZATION AND IMPACT OF AGING SYSTEMS

The largest PASS bargaining unit at the FAA is the Air Traffic Organization (ATO) Technical Operations unit, consisting of technical employees who install, maintain, repair and certify the radar, navigation, communication and power equipment that comprises the U.S. National Airspace System (NAS).

Within Technical Operations, PASS represents FAA airway transportation systems specialists, more commonly referred to as technicians. Technicians ensure the functionality of communications, computers, navigational aids and power systems vital to safe air travel and the mission of pilots and air traffic controllers. Technicians maintain aging systems while simultaneously interfacing with highly technical, state of the art cloud-based solutions, and this is often overlooked. PASS-represented employees in Flight Program Operations (AJF), Mission Support Services (AJV) and Air Traffic (AJT) also provide critical support to the system by conducting flight inspections, developing instrument flight procedures, handling administrative tasks and other important work.

There are approximately 4,000 FAA technicians responsible for installing, operating, maintaining and repairing more than 74,000 radar, communications, automation, navigational

aids, airport lighting, backup power, heating, ventilation and air conditioning (HVAC) at FAA facilities.[1]

Technician Input Regarding Aging Systems

In February, PASS was granted the opportunity to provide the Government Accountability Office (GAO) with information regarding 135 FAA programs and services. In order to provide the GAO with the most accurate and current information, PASS shared the list of programs and services with Technical Operations employees throughout the country and asked them to complete a survey. In addition to providing information on systems not on the GAO's list, the results of the survey indicate top concerns are related to aging equipment, cumbersome procedures, parts that are unreliable or unavailable, system complexity, and staffing and training of the workforce. At the rapid pace with which technology changes, the FAA is getting further behind in replacing aging systems.

However, the most significant result of the survey was the clear indication that FAA employees are capable and willing to perform the work to ensure successful implementation of new systems and equipment while also maintaining the aging system as efficiently as possible. The biggest challenge is a lack of vision on behalf of the agency.

The length of time it takes the FAA to implement new systems is directly related to the fact that current NAS systems and equipment are becoming obsolete. As stated by the GAO, "During fiscal year 2023, FAA determined that of its 138 ATC systems, 51 (37 percent) were unsustainable and 54 (39 percent) were potentially unsustainable."[2] According to PASS members who were surveyed, a key reason for ATC system sustainment issues is the inability to implement new systems quickly enough.

For instance, many facilities are still relying on an aging communications technology known as Time Division Multiplexing (TDM). TDM is a method of combining multiple data streams into a single communication channel by allocating specific time slots for each data stream. Use of this antiquated technology is not only inefficient, but it is unnecessarily costly. Telecommunication companies now use carrier ethernet and are not required by the Federal Communications Commission to support TDM technology. The FAA was aware of the change and that PASS-represented employees could assist in the transition. Unfortunately, the FAA is still relying on TDM and is being charged a premium by communications companies that no longer regularly use the technology. The agency has been informed by a communications company that maintaining the current technology is going to cost $85 million a year. According to the FAA, it was an unanticipated expense that will come from operational funds. This will most certainly delay the implementation of the FAA Enterprise Network Services program (FENS) since the

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[1] Federal Aviation Administration, Airway Transportation Systems Specialists, updated October 6, 2022. Accessed December 10, 2024: https://www.faa.gov/jobs/career_fields/aviation_careers/atss_join. This number does not reflect the number of technicians that are fully certified.

[2] U.S. Government Accountability Office, *Air Traffic Control: FAA Actions Are Urgently Needed to Modernize Aging Systems*, GAO-24-107001, September 23, 2024, p. 15.

agency cannot progress on FENS until TDM is phased out and other infrastructure is upgraded as well.[3]

Another member who was surveyed cited key concerns with the High Intensity Approach Lighting System with Sequenced Flashing Lights (ALSF-2). The ALSF-2 is an approach lighting system (ALS), which provides the basic means to transition from instrument flight to visual flight for landing. This provides visual information on runway alignment, height perception, roll guidance and horizontal references for Category II/III instrument approaches.

ALSF is critical for an airport in low visibility weather situations. If it is not working, the airport is downgraded, which means some aircraft cannot land. An ALSF system failure would constitute significant delays to an airport and the NAS overall in instrument flight rules (IFR) conditions. However, due to the age of this system, light rebuild kits for ALSF are not reliable. Lighted navigational aids require regular parts replacement and fail often. If an outdated replacement part is either unreliable or unavailable, the impact on the system could be far-reaching.

PASS is also concerned with the FAA's Fiber Optic Transmission System (FOTS) and the associated complications with the system due to its age. FOTS is an electronics architecture for using fiber optic telecommunications equipment and systems at major airports. According to a PASS-represented employee at one of those airports, the system faces several challenges due to aging parts, which are not readily available. When a failure occurs, an airport loses access to the system until technicians can travel to the sites and correct the issue. This is not something that will be resolved by the eventual implementation of FENS as it is considered 'inside the fence' (within the actual airport fence). Furthermore, due to the age of FOTS, no FAA training exists for the related equipment. The number of technicians who were trained are retired or approaching retirement.

Technical Operations Staffing and Training

It is impossible to discuss any issue related to the technician workforce at the FAA without highlighting the importance of staffing and training.

Insufficient technician staffing can result in increased restoration times and more air traffic delays during an outage. It can also make it difficult to ensure adequate shift coverage by technicians, another scenario that increases the risk of major air traffic issues. PASS has long called attention to not only the need for sufficient technical staffing but also the lack of a reliable staffing model on which to base staffing decisions and placement.

However, hiring and training new technicians is not a quick or easy process. FAA technicians must be skilled and proficient on multiple systems. It can take up to three years to fully train an FAA technician to perform all necessary duties related to the position. In addition, the FAA is still playing catch up after its training academy in Oklahoma City was shuttered during the

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[3] Federal Aviation Administration, "FAA Enterprise Network Services Program," updated July 25, 2023. Accessed December 10, 2024: https://www.faa.gov/air_traffic/technology/cinp/fens.

COVID-19 pandemic. According to the Department of Transportation Inspector General (IG), "Most FAA systems require specific training and certification, and FAA does not typically train maintenance technicians on every equipment type. Therefore, individual maintenance technicians cannot work on all equipment, increasing the complexity of the technician workforce planning effort."[4] In addition, the FAA does not hire new technicians before experienced technicians retire. That training and expertise walks out the door without mentoring the next generation of employees. In 2023, 34% of the technicians PASS represents were age 55 or older.

The FAA has been developing the Technical Operations staffing model (TSM) for over a decade and is aware that the workforce is short at least 800 technicians.[5] While PASS does not agree that the TSM is factoring in all the necessary data to determine the optimum number of technicians, it nonetheless reveals an understaffed workforce. PASS stands ready to assist the FAA with a staffing plan that will take into consideration all the elements of the position, including the responsibility of ensuring the safe and efficient operation of aging and new systems and equipment.

RECOMMENDATIONS

PASS is extremely proud of the work our members do every day in Technical Operations. These dedicated public servants go above and beyond the usual call of duty to ensure the safety of the American flying public and should not be hampered by challenges because of outdated or aging systems and equipment.

Expediting new systems into the NAS is the obvious solution to the issue at hand. This has been the solution for years. Using resources outside the agency to upgrade aging systems has been neither efficient nor cost effective. By utilizing the workforce it already has, the FAA could repurpose funds being spent on costly contractors and bring the work in-house. Unfortunately, the FAA has lacked the motivation to do so.

PASS strongly emphasizes that the FAA technical workforce could be ready to assist the agency with updating and/or replacing its aging systems and equipment if the workforce was properly staffed around the country for such a task. They are uniquely qualified and have the expertise to accomplish this work if the workforce was augmented.

PASS thanks lawmakers for including language in the 2024 FAA reauthorization bill directing the agency to install 15 taxpayer-purchased instrument landing systems (ILS) that are in storage in Independence, Missouri. The technicians PASS represents are ready and capable of completing this task.[6] This is a prime example of the FAA taking steps toward identifying a

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[4] Department of Transportation Inspector General, *Opportunities Exist for FAA To Strengthen Its Workforce Planning and Training Processes for Maintenance Technicians*, Report No. AV2023027, May 2, 2023, p. 6.
[5] *See* Addendum A: Professional Aviation Safety Specialists, "FAA Technical Operations Workforce," updated December 2024.
[6] MCO NAV, "ORL Glideslope Shelter Replacement," July 12, 2021. Accessed December 10, 2024: https://www.youtube.com/watch?v=UKP1o5Pl__w.

solution but then failing to complete the work to implement it. While the language in the reauthorization law directs the FAA to install the ILS within 18 months of the law's passage (May 2024), PASS's attempts to coordinate with the agency to begin the project have gone unreturned. As far as PASS knows, the equipment—paid for by the taxpayer—is still not in service.

PASS has additional concerns related to the agency's procurement processes, some of which go back decades. However, pinpointing the FAA's procurement and decommissioning strategy is not the responsibility of PASS. The union believes that the agency must conduct a full safety review and analysis before making any major changes to the operation of the NAS. As part of that process, the FAA should meet with PASS and other impacted labor unions.

Furthermore, the Airport and Airway Trust Fund is underutilized. Given projections by the Congressional Budget Office, the Fund is likely to triple over the next 10 years and have a balance of over $17 billion that should be utilized for the modernization of the NAS.[7]

PASS-represented employees are the solution to the issues surrounding FAA aging systems and equipment. FAA technicians are the only individuals with the skill and knowledge to ensure the safe and efficient operation of this country's air traffic control system. These employees are also able to assist the agency in updating the current system and addressing any challenges with aging systems and equipment if the workforce is properly staffed.

Quite simply, the FAA is not effectively using a key resource to address some of these challenges. The agency is ignoring the skill level and potential of more than 4,000 employees stationed across the country. The resources for the FAA to be more effective are there; the FAA is not taking advantage of the opportunity.

CONCLUSION

The FAA must address aging systems and equipment throughout the NAS based on careful analysis combined with efficient and effective action. Given the pace of technology, many systems and equipment are on the path to becoming outdated every day. The technician workforce can be instrumental in assisting the agency in ensuring successful implementation and updates throughout the NAS.

Congress must give FAA access to the Airport and Airway Trust Fund in order to fund the critical upgrades necessary to maintain the gold standard of the U.S. air traffic control system.

PASS thanks the subcommittee for holding this important hearing. As always, the union stands ready to assist lawmakers and the agency every step of the way to serve the needs and safety of the American flying public.

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[7] Congressional Budget Office, Airport and Airway Trust Fund Baseline Projections, June 2024.
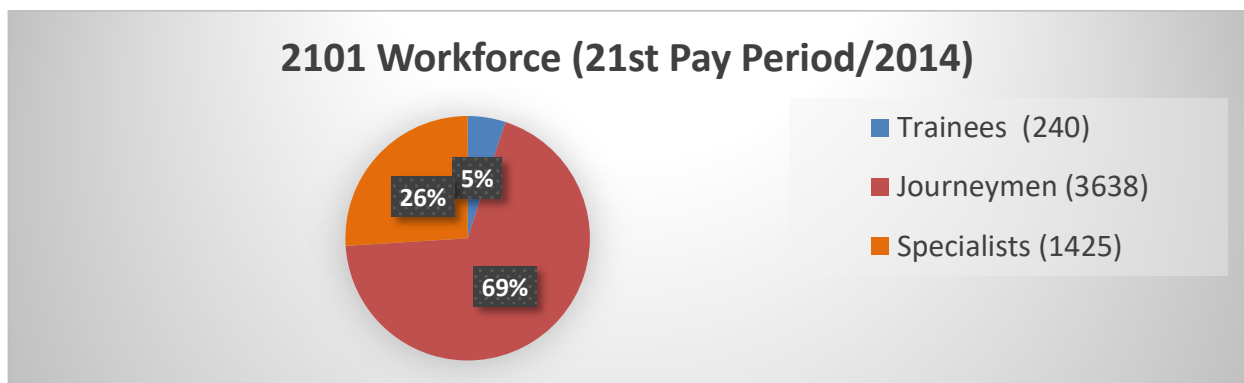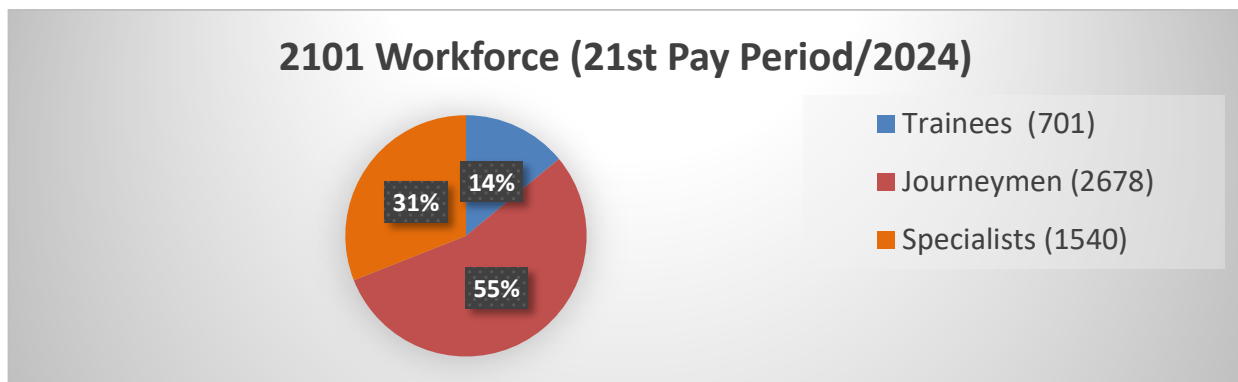
The Technical Operations workforce at the Federal Aviation Administration (FAA) has diminished to a level that may lead to crises regarding the maintenance, repair, and certification of the National Airspace System (NAS). According to the FAA, in October 2014, there were approximately 5,810[8] technical employees (consisting of occupational series 2101, 856, and 802). Since then, the numbers have steadily declined, to approximately 5,360,[9] the COVID-19 pandemic slowed training for these highly skilled employees. The 2101 occupational series makes up the bulk of the Technical Operations workforce.

The current staffing of 2101 employees (21st pay period of 2024 sent to PASS from the agency) is as follows:

2101 Workforce (21st Pay Period/2024)

- Trainees (701)
- Journeymen (2678)
- Specialists (1540)

14%
31%
55%

2101 Workforce (21st Pay Period/2014)

- Trainees (240)
- Journeymen (3638)
- Specialists (1425)

5%
26%
69%

The workforce can be broadly defined in three categories. Apprentices, also known as trainees, or developmental employees are auxiliary to the workforce because they are still officially in developmental training. Journeymen have been recently certified but will continue years of "on-the-job training" to then specialize in skills and do the bulk of certification and restoration work on the NAS. However, there is no clear definition of progression for a journeyman. Lastly, specialists have been working in their field for a significant time and are experts in their given skill or subject area.

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[8] FAA collective bargaining contract data, 21st pay period of 2014.
[9] FAA collective bargaining contract data, 21st pay period of 2024.

The data suggests that the journeymen portion of the workforce has decreased substantially, by 960 employees, and represents the bulk of attrition of the 2101 tripled. Alternatively, the percentage of apprentices has almost tripled since 2014. These trainees should be certified at a higher rate and join the workforce as journeymen in a much timelier manner.

This potential crisis is exacerbated by the fact that training has slowed considerably due to the pandemic. As a result, the percentage of trainees has increased to a level that is unacceptable. Journeymen are left to handle the bulk of the work. This has led to a workforce that is understaffed, under-trained and overburdened.
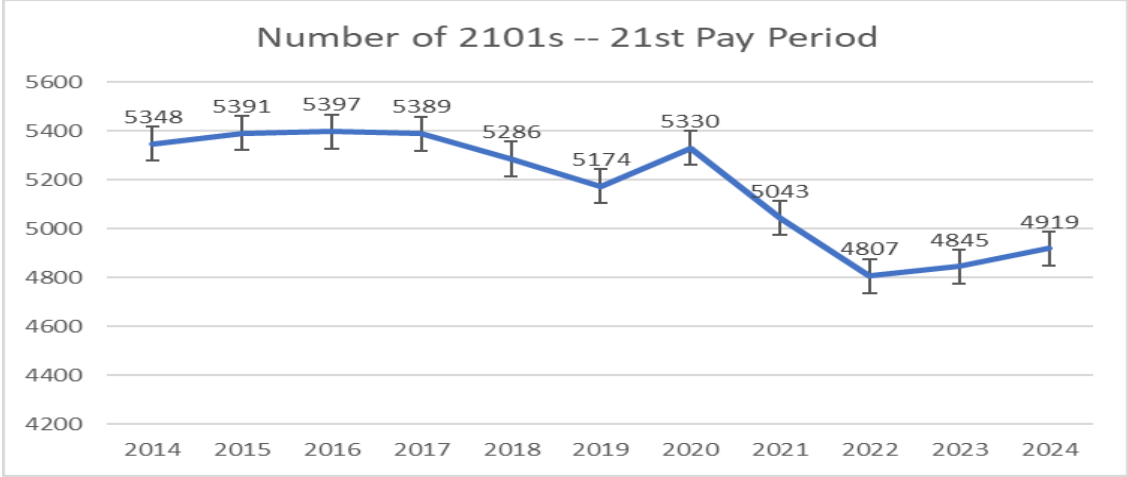
The FAA needs to engage with PASS to create long-term staffing goals through a Workforce Plan. Simply developing a Technical Operations staffing model based on the current workforce does not take into consideration the growth of the NAS through Next Generation Air Transportation Systems (NextGen) technologies nor does it take advantage of the skills and abilities of this highly technical group of employees.

2101 Workforce				
AGE	➢ 55	➢ 60	➢ 62	➢ 65
NUMBER	1642	903	596	264
%	33%	18%	12%	5%

Recommendation: The FAA needs to engage with PASS to create long-term staffing goals through a Workforce Plan as it has for controller and safety inspectors. Simply developing a Technical Operations staffing model based on the current workforce does not take into consideration retirements or the growth of the NAS through Next Generation Air Transportation Systems (NextGen) technologies nor does it take advantage of the skills and abilities of this highly technical group of employees.