



# FAA

Report AV2023035  
June 21, 2023

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## FAA Faces Controller Staffing Challenges as Air Traffic Operations Return to Pre-Pandemic Levels at Critical Facilities



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*Self-Initiated*

Federal Aviation Administration | AV2023035 | June 21, 2023

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### What We Looked At

Ensuring adequate staffing and training for air traffic controllers—an essential part of maintaining the safety and efficiency of the National Airspace System (NAS)—has been a challenge for the Federal Aviation Administration (FAA), especially at the Nation’s most critical facilities. In addition, the COVID-19 pandemic has impacted the Agency’s ability to maintain the required number of controllers at these facilities. Given the importance of minimizing the risks to the continuity of air traffic operations, as well as the potential impact of COVID-19 on staffing and training, we initiated this audit. Our objectives were to (1) assess FAA’s efforts to ensure that critical air traffic control facilities have an adequate number of controllers and (2) identify the impact of the COVID-19 pandemic on FAA’s controller training program.

### What We Found

FAA has made limited efforts to ensure adequate controller staffing at critical air traffic control facilities. The Agency also has yet to implement a standardized scheduling tool to optimize controller scheduling practices at these facilities, and FAA officials disagree on how to account for trainees when determining staffing numbers. As a result, FAA continues to face staffing challenges and lacks a plan to address them, which in turn poses a risk to the continuity of air traffic operations. For example, we determined that 20 of 26 (77 percent) critical facilities are staffed below the Agency’s 85-percent threshold, with New York Terminal Radar Approach Control (TRACON) and Miami Tower at 54 percent and 66 percent, respectively. Additionally, COVID-19 led to training pauses over a period of nearly 2 years—significantly increasing controller certification times. FAA will not know the full impact of the training suspension on certification times for several years because training outcomes vary widely, and it can take more than 3 years to train a controller. Due to these uncertain training outcomes, FAA cannot ensure it will successfully train enough controllers in the short term.

### Our Recommendations

FAA concurred with our two recommendations to improve its ability to ensure adequate staffing at its critical facilities. We consider both recommendations as resolved but open pending completion of the planned actions.

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## Memorandum

Date: June 21, 2023

Subject: ACTION: FAA Faces Controller Staffing Challenges as Air Traffic Operations Return to Pre-Pandemic Levels at Critical Facilities | Report No. AV2023035

From: Nelda Z. Smith  
Assistant Inspector General for Aviation Audits 

To: Federal Aviation Administrator

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Ensuring adequate staffing and training for controllers is essential to maintain the efficiency of the National Airspace System (NAS), especially at the Nation's critical facilities—i.e., those that are the busiest, most complex, and critical to NAS operations based on the number of airlines and flights they serve, such as New York, Chicago, or Atlanta.

The Federal Aviation Administration (FAA) employs about 13,300 air traffic controllers in more than 300 facilities across the United States. Currently, almost 10,600 are certified professional controllers (CPCs);<sup>1</sup> the rest, about 26 percent, are trainees—newly hired controllers and certified professional controllers-in-training (CPC-IT).<sup>2</sup> The breakdown of the 26 critical facilities is similar as there are 2,814 CPCs with 27 percent in training. Air traffic control facilities are using CPCs to train new hires, which reduces the resources available for continuity of air traffic operations. According to the National Air Traffic Controllers Association (NATCA) officials, prior to the COVID-19 pandemic, the controller workforce was at a 30-year low.

While addressing the challenges of training and maintaining its controller workforce, FAA also had to respond to the COVID-19 pandemic and its lingering effects. During the pandemic, controllers at air traffic control facilities tested positive for the virus, leading to partial shutdowns of towers and radar control facilities, which affected controller staffing and training. Moreover, with veteran

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<sup>1</sup> CPCs have achieved full certification on all positions within their assigned areas. They also act as on-the-job training instructors for all trainees.

<sup>2</sup> CPC-ITs have already completed facility training at one location. When they transfer to more complex facilities, they must learn the airspace and procedures at the new facility before they can control live traffic unassisted.

controllers leaving for various reasons, including retirements, FAA faces the challenge of ensuring critical facilities have the required number of controllers.

We initiated this audit given the importance of minimizing the risks to the continuity of air traffic operations, as well as the potential impact of the COVID-19 pandemic on the staffing and training of air traffic controllers. Our audit objectives were to (1) assess FAA's efforts to ensure that critical air traffic control facilities have an adequate number of controllers and (2) identify the impact of the COVID-19 pandemic on FAA's controller training program.

We appreciate the courtesies and cooperation of Department of Transportation (DOT) representatives during this audit. If you have any questions concerning this report, please contact me or Marshall Jackson, Program Director.

cc:     The Secretary  
          DOT Audit Liaison, M-1  
          FAA Audit Liaison, AAE-100

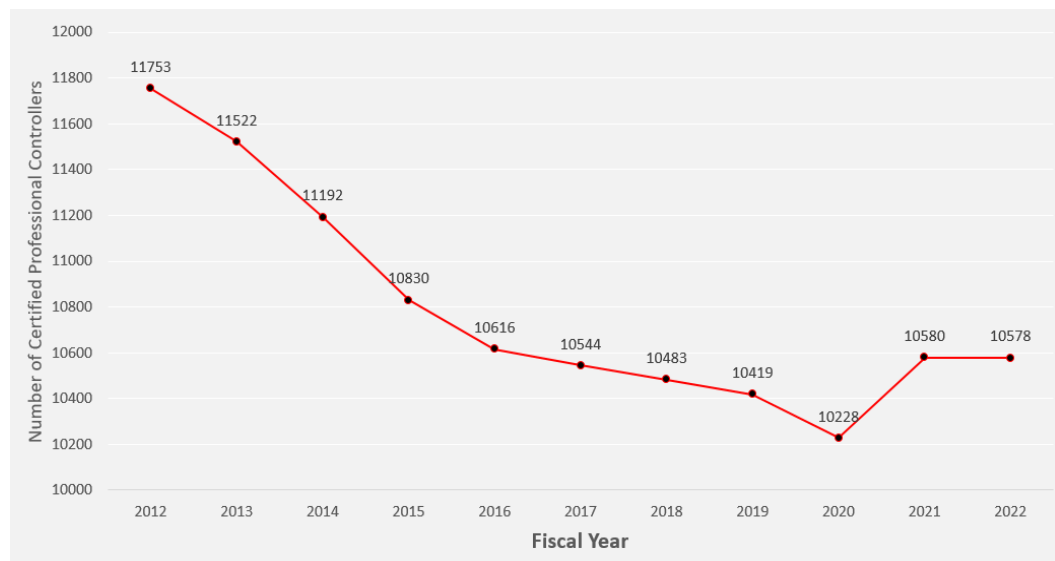
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## Background

In 2012, FAA and NATCA established a Collaborative Resource Workgroup (CRWG)<sup>3</sup> to review, revise, or improve data-based, operational models for the distribution of air traffic controllers among air traffic control facilities. As the workgroup began to analyze the distribution of controller staffing, they determined a more comprehensive review was required and the resulting changes would require a long timeframe for completion. In 2014, FAA's Air Traffic Organization and NATCA developed interim CRWG CPC staffing levels to prioritize the placement of controllers at air traffic control facilities. According to FAA, the CRWG CPC staffing levels are based on facility surveys and various other factors, such as a facility's hours of operation, historical time-on-position, staffing levels, and overtime usage. As shown in figure 1, FAA's CPC workforce has declined by 10 percent over the last decade.

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Figure 1. Certified Professional Controller Staffing: Fiscal Years 2012–2022



Source: OIG analysis of FAA data

Each year, FAA establishes staffing ranges for its air traffic controllers in its Controller Workforce Plan (CWP), an annual report to Congress on the state of

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<sup>3</sup> The workgroup developed interim CPC staffing levels for air traffic control facilities.

the controller workforce developed by the Agency's Office of Labor Analysis.<sup>4</sup> The CWP is FAA's primary plan for ensuring it employs enough air traffic controllers to maintain continuity of operations. FAA uses four inputs to calculate staffing ranges: (1) staffing standards, which are based on mathematical models, (2) the facility's past productivity, (3) productivity at similar facilities, and (4) the number of controllers requested by field management to staff the facility.

In 2016,<sup>5</sup> we reviewed controller staffing levels at critical facilities and found that FAA's practices were generally consistent with the Agency's CWP. However, we noted concerns about the validity of the staffing plan and concluded that many critical facilities had a clear shortage of fully trained controllers, and that FAA lacked the data and effective models needed to determine the number of controllers. Further, FAA could continue to face challenges with controller staffing at its critical facilities, as more controllers retire.

Increasing controller staffing requires hiring additional controllers in excess of retirement rates. Newly hired controllers must complete a demanding training program at the FAA Academy, which includes learning the basic concepts of air traffic control, followed by extensive facility training at their assigned location. Facility training is conducted in stages and consists of a combination of classroom, simulation, and on-the-job training (OJT). After controllers complete classroom and simulation training, they begin OJT, which is conducted by a CPC who observes and instructs trainee controllers as they work the control position.

FAA took actions in response to the COVID-19 pandemic which affected controller staffing. At the onset of the pandemic, FAA eliminated, reduced, or suspended certain activities, including controller training in an effort to reduce the spread of the virus. Nonetheless, controllers, technicians, and other employees still tested positive for COVID-19, resulting in partial or full shutdowns of some facilities. For example, from March 2020 to December 2022, there were 5,232 probable or confirmed COVID-19 cases at the 26 critical facilities. In response, FAA's Air Traffic Organization created COVID-19-related guidelines based on CDC recommendations for managers at air traffic control facilities. Anytime there was a probable or confirmed COVID-19 case, managers had to conduct contact tracing and place exposed controllers on leave for 10 to 14 days, depending on their vaccination status. This created significant staffing challenges for facilities. For example, according to one manager, when their facility identified 2 COVID-19 cases and performed contact tracing as recommended by the CDC,

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<sup>4</sup> While CWP staffing numbers are used for overall controller staffing, the CRWG CPC staffing levels are used for prioritizing the placement of controllers throughout air traffic control facilities.

<sup>5</sup> *FAA Continues To Face Challenges In Ensuring Enough Fully Trained Controllers At Critical Facilities* (OIG Report No. AV-2016-014), January 11, 2016. OIG reports are available on our website at <https://www.oig.dot.gov>.



13 controllers (half the workforce) had to self-isolate, leaving the facility severely understaffed.

Although all air traffic control facilities are important to the operation of the NAS, we focused our review on controller staffing and training for 26 critical facilities (see exhibit D). FAA agreed that the facilities on our list were critical, but this list is not all inclusive. We acknowledge that other facilities may also be important for supporting the NAS.

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## Results in Brief

### **FAA has made limited efforts to ensure adequate controller staffing as critical air traffic control facilities continue to face staffing challenges.**

For more than 8 years, FAA has not revised the CRWG CPC staffing levels to ensure its critical air traffic control facilities have an adequate number of controllers in place. In October 2014, FAA and NATCA collaboratively developed interim CPC staffing levels for use until the comprehensive model for air traffic control facilities could be completed. Although FAA did not conduct a comprehensive review at any of its critical facilities, in 2022, the Agency did revise interim CPC staffing levels at one critical facility, the Jacksonville Center<sup>6</sup> in response to a significant controller staffing shortage there. According to FAA officials, the workgroup did not complete the comprehensive model review as planned because the Office of Labor Analysis, Air Traffic Organization, and NATCA did not agree on the “availability factors”<sup>7</sup> associated with the staffing model. Overall, based on FAA’s process for prioritizing placement of controllers throughout the NAS, we determined that 20 of 26 (77 percent) critical facilities are staffed below the Agency’s 85-percent<sup>8</sup> threshold, with New York Terminal Radar Approach Control (TRACON)<sup>9</sup> and Miami Tower at 54 percent and 66 percent, respectively. In addition, staffing challenges at facilities have led to reduced air traffic operations in some circumstances. For example, Jacksonville Center has experienced over 300 staffing triggers,<sup>10</sup> and New York TRACON has

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<sup>6</sup> Revised CPC targets from 241 to 275.

<sup>7</sup> Availability factor is an adjustment used to ensure that FAA has sufficient staffing to allow for personnel to (1) accomplish on-position duties, (2) allow for breaks and a meal, (3) accomplish other duties, (4) account for time not worked, and (5) support NAS staffing.

<sup>8</sup> FAA officials stated when an air traffic control facility’s CPC staffing level falls below an 85-percent threshold, the Agency prioritizes the placement of controllers at that facility.

<sup>9</sup> TRACONs guide aircraft as they approach or leave airspace near a primary airport.

<sup>10</sup> An action taken by FAA management when staffing constraints lead to a need to reduce the amount of air traffic in affected airspace.



had 170. To date, however, FAA has made minimal progress implementing a standardized controller scheduling tool to optimize controller scheduling, although we previously made two recommendations to FAA to do so. Years later, these recommendations remain open. Furthermore, most critical facilities are facing controller staffing challenges, and facility managers expressed concerns about the shortage of operational supervisors<sup>11</sup> and traffic management coordinators (TMC) at their respective facilities. We found that the number of operational supervisors at 25 of 26 (96 percent) critical facilities were below the authorized levels. Similarly, TMCs at 19 of 26 (73 percent) critical facilities were staffed below authorized levels. As a result, FAA continues to face staffing challenges without a plan to address them, which in turn poses a risk to the continuity of air traffic operations.

### **COVID-19 led to training pauses at FAA's Academy and air traffic control facilities, increasing certification times.**

In late March 2020, FAA suspended training at the FAA Academy for 4 months in response to COVID-19. The Agency also paused training at critical air traffic control facilities for periods ranging from 7 months to nearly 2 years. According to FAA officials, the Agency took these actions to protect its controller workforce from the COVID-19 pandemic. In a June 2020 memorandum to FAA Headquarters, the Academy asked FAA to restart the air traffic controller training program as "further delay of training classes would result in an elevated risk to the NAS." Based on this request, the Academy resumed training in July 2020, establishing a phased process for the trainees' return. The Academy also reduced class sizes by as much as 50 percent to accommodate the Centers for Disease Control and Prevention's (CDC) social distancing guidelines. In addition, FAA and NATCA collaboratively developed criteria to help each facility develop its own training resumption plan<sup>12</sup>—with guidelines on training within the coronavirus environment and actions to take when COVID-19 cases were identified. NATCA officials told us that FAA must declare training a mission-critical priority to end the training delays. However, as COVID-19 levels spiked, FAA paused training at critical facilities several times over a period of nearly 2 years. Moreover, a Collective Bargaining Agreement (CBA) signed by FAA and NATCA in 2016 required training pauses to be followed by refresher training to return trainees to their previous levels of proficiency. As a result, controller certification times have significantly increased. Notably, FAA will not know the impact of increases for several years and cannot be certain it will successfully train enough controllers in the short term due to uncertain training outcomes.

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<sup>11</sup> Provide direct supervision of air traffic controllers on the operations room floor.

<sup>12</sup> This outlines how an air traffic facility will help a trainee become fully certified during the pandemic.

We are making two recommendations to improve FAA's ability to ensure adequate controller staffing at its critical air traffic control facilities.

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## FAA Has Made Limited Efforts To Ensure Adequate Controller Staffing as Critical Air Traffic Control Facilities Continue to Face Staffing Challenges

Most FAA critical facilities are facing controller staffing challenges, which have increased as operations return to pre-pandemic levels. FAA also has yet to implement a standardized scheduling tool to optimize controller scheduling practices at air traffic control facilities. Moreover, FAA officials disagree on how to account for trainees when determining staffing numbers, even as critical facilities face a shortage of operational supervisors and traffic management coordinators.

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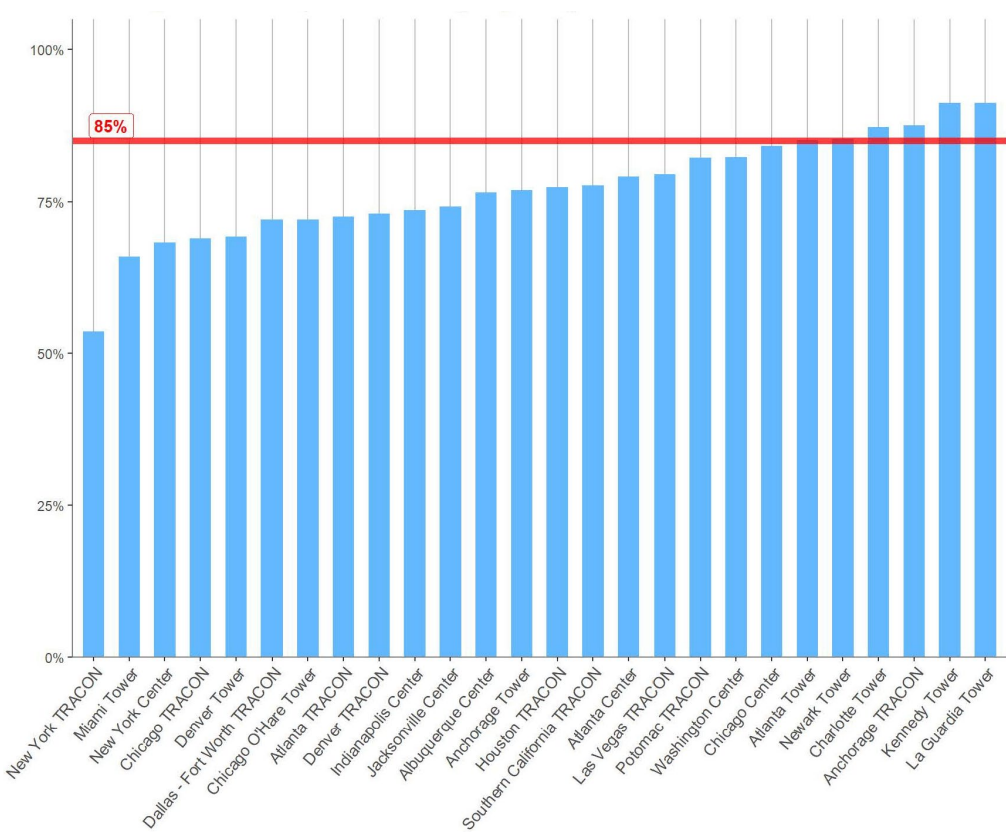
### FAA Faces Controller Staffing Challenges at Critical Air Traffic Control Facilities

In October 2014, the CRWG developed interim CPC staffing levels to be used until the comprehensive review was completed. However, after more than 8 years, the Agency has not conducted a comprehensive review of the CPC staffing levels for any air traffic control facilities. According to FAA officials, the workgroup did not complete the comprehensive model review as planned because the Office of Labor Analysis, Air Traffic Organization, and NATCA did not agree on the "availability factors" associated with the staffing model. However, FAA did revise the levels at Jacksonville Center from 241 to 275 CPCs due to controller staffing shortages there in 2022.<sup>13</sup> Additionally, according to FAA officials, the Agency and NATCA developed an 85-percent threshold to prioritize placement of controllers at air traffic control facilities. We determined that 20 of 26 (77 percent) critical facilities were staffed below this threshold, with the New York TRACON and Miami Tower at 54 and 66 percent, respectively (see figure 2).

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<sup>13</sup> We used the revised controller staffing numbers for the Jacksonville Center in figure 2.

Figure 2. Actual Number of CPCs Compared to CPC Staffing Levels as of March 2022



Source: OIG analysis of FAA data

Managers we interviewed at 16 of the 17 facilities likewise told us their facilities were not adequately staffed. For example, at several facilities, controllers were working mandatory overtime and 6-day work weeks to cover staff shortages. The overtime cost for Jacksonville Center in fiscal year 2022 exceeded the pre-pandemic overtime cost by 27 percent. Additionally, many facilities reported increased numbers of staffing triggers. For example, Jacksonville Center and New York TRACON reported over 300 and 170 staffing triggers, respectively. According to officials at Jacksonville Center, FAA is implementing an online system that facilities can use to request staffing triggers, which will allow the Agency to approve them more quickly if justified.

FAA may occasionally overstate the number of controllers who are available to conduct air traffic operations because it includes those that are absent for administrative reasons such as medical disqualifications (DQs), paid parental leave (PPL), or on detail to another assignment. During our site visits, a number of

managers expressed concerns about the difficulty of staffing positions due to administrative reasons. The table below shows the difference between the number of CPCs assigned to a facility and those available for scheduling.

Table. Comparison of Controller Availability at FAA Facilities

Facility Name	Date of Site Visits	CPCs Assigned to the Facility	CPCs Available for Scheduling	Loss of CPCs due to Medical DQs, PPL, & Details
Jacksonville Center	July 2022	203	189	14
Washington Center	June 2022	257	243	14
Denver Tower	May 2022	30	25	5
Southern California TRACON	April 2022	174	168	6

Source: OIG analysis of FAA data

There are differences within FAA on what is considered an appropriate level of staffing for air traffic control facilities. Specifically, FAA's Office of Labor Analysis develops the Agency's annual CWP, which includes the staffing ranges for all air traffic control facilities. Yet, as we noted in our 2016 report, Headquarters staff and air traffic managers disagree on staffing numbers—particularly on how to account for the contributions of trainees. As of March 2022, with the exclusion of trainees, 22 of 26 (85 percent) critical air traffic control facilities were below the CWP staffing minimum. While trainees can complement staffing at air traffic control facilities, they are not fully certified and are not able to work all positions. New controllers achieve certification on each position as they move through facility training. Furthermore, as of August 2022, based on FAA data across all air traffic control facilities, on average, a non-CPC spends less than half (41 percent) of the time on position. In short, there is still considerable debate about how to account for the contributions of trainees and the appropriate level of staffing for air traffic control facilities.

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## FAA's Process for Transferring Controllers Limited Its Ability to Address Staffing Challenges at High-Level Terminal Facilities

In May 2019, FAA developed standard operating procedures for the National Centralized Employee Requested Reassignment (ERR) Process Team (NCEPT).<sup>14</sup> This is the sole process for evaluation and approval/disapproval of ERRs from bargaining unit employees desiring placement in positions covered by the CBA. The goal is to facilitate timely releases of controllers requesting transfers and improve the distribution of the workforce. During the pandemic, NCEPT limited the movement of controllers between critical facilities—particularly when a transfer would cause a facility to fall below the national CPC average.

According to FAA officials, most high-level terminal facilities<sup>15</sup> are staffed by a pipeline of CPC-ITs who transfer from another facility. Before and during the pandemic, however, the NCEPT limitation contributed to staffing challenges at high-level terminal facilities. The Atlanta TRACON manager told us that, while 40 controllers arrived at the facility in 2018, 27 controllers in total arrived during the 3-year period between 2019 and 2021, an average of 9 controllers per year. As such, Atlanta TRACON could not keep pace with attrition. Furthermore, depending on the staffing level of a facility, it can take 3 months to a year for a controller to transfer to another facility. Some managers stated their facilities and other high-level terminal facilities should receive a priority release memorandum<sup>16</sup> to expedite such transfers. This is because some of these high-level facilities are hard to staff and have higher training failure rates. Any impact on air traffic at these locations can have a ripple effect throughout the NAS.

According to FAA officials, the Agency's National Release Policy outlines the release times for the movement of controllers throughout facilities. The only exceptions are Chicago TRACON and New York TRACON, which have been given a priority release if they select a CPC-IT to move to their facilities. A transfer action may require two training cycle events—one for the previously qualified controller at the new facility and one for the replacement controller at the previous facility. With a quick recovery of air traffic levels, controllers at several facilities have been working mandatory overtime to meet air traffic demand. As figure 3 shows, air traffic operations at 13 of 26 (50 percent) critical facilities had

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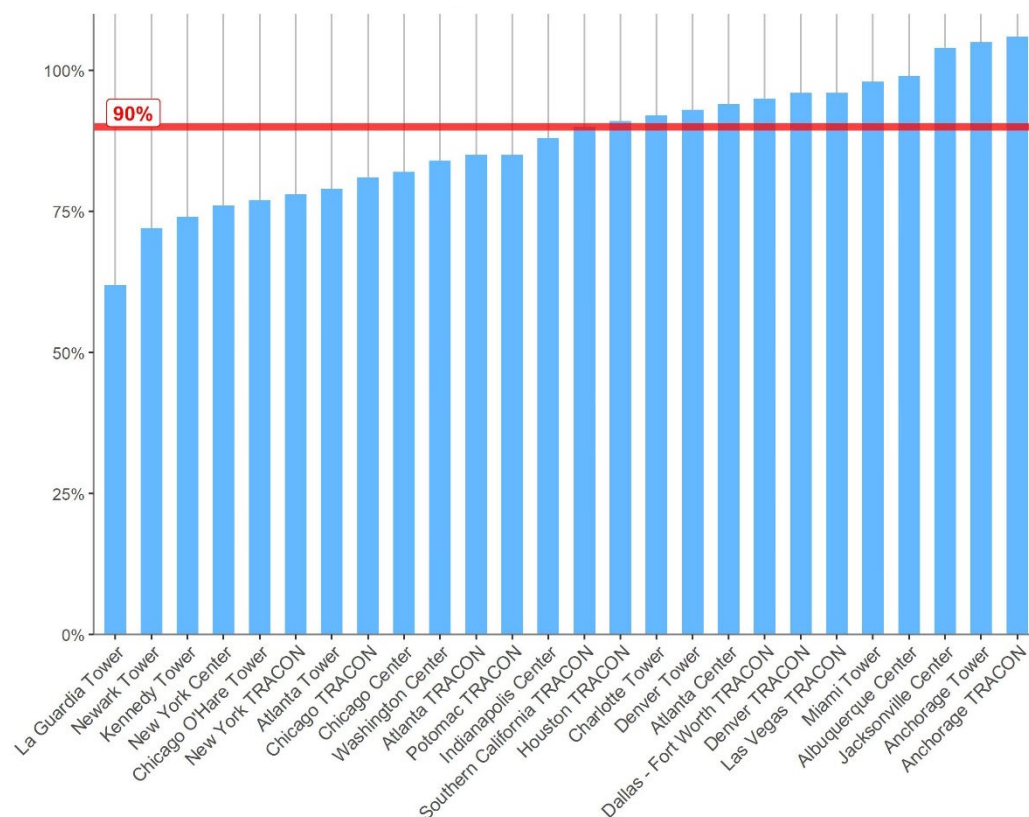
<sup>14</sup> The NCEPT is comprised of representatives from FAA and NATCA.

<sup>15</sup> FAA assigns a numerical level to each facility based on its volume, complexity, and sustainability of air traffic. Terminal facility levels vary from low (levels 4–6) to medium (levels 7–9) to high (levels 10–12).

<sup>16</sup> An agreement between FAA and NATCA allowing a faster release of employees transferring to a facility.

returned to 90 percent of the pre-pandemic levels by March, 2022; three of these facilities have exceeded pre-pandemic levels. Overall, the average across all 26 facilities is 88 percent of the pre-pandemic level of air traffic operations.

Figure 3. Air Traffic Control Facilities With Operations Above, Below, or at 90 Percent of the Pre-Pandemic Level as of March 2022



Source: OIG analysis of FAA data

## FAA Has Yet To Implement a Standardized Scheduling Tool To Optimize Controller Scheduling Practices

In July 2016, FAA and NATCA agreed to implement the Operational Planning and Scheduling tool to optimize controller scheduling practices. Some of the benefits of a standardized scheduling tool include efficient schedules and a consistent

basis for establishing work schedules that minimize controller fatigue. In 2018,<sup>17</sup> we found that FAA made minimal progress implementing a scheduling tool and faced significant challenges before it could realize any benefits. At that time, we made two recommendations to help FAA implement a standardized scheduling tool, and the Agency concurred with both of them, but they remain open. Today, the Agency is no closer to implementation than it was in 2018.

FAA uses a labor distribution system called Cru-X/ART to record the amount of time controllers spend on position—i.e., the hours they spend monitoring air traffic on the ground and in the air. Identifying how much time controllers spend on position and how much time they perform other duties—such as recurrent training, administrative tasks, and participation in workgroups—can help FAA determine how many controllers it needs. However, our previous work<sup>18</sup> found that data control and entry weaknesses may limit the effectiveness and reliability of Cru-X/ART data.

Currently, FAA's air traffic control facilities do not have access to a standardized tool to assist in developing efficient schedules and use a variety of nonstandard methods to develop controller schedules. For example, most air traffic control facilities use a web scheduler tool which lacks any schedule optimization capability to assign controllers to shifts. According to facility managers, the web scheduler and Cru-X/ART do not communicate well with each other. According to FAA, the Agency is designing a new system to replace Cru-X/ART with features such as timekeeping, overtime and Controller-in-Charge tracking, and real-time leave balances. However, FAA has not set an implementation date for this system.

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## Critical Facilities Face a Shortage of Operational Supervisors and Traffic Management Coordinators

Adequate staffing starts at the CPC level and supports operational supervisor and TMC numbers, both locally and within the NAS. Many of the managers we interviewed emphasized the need for adequate operational supervisors and TMC staff. According to FAA, the primary responsibility of the operational supervisor is to monitor controllers' actions on the operations floor and ensure that they are following FAA procedures for maintaining a safe and expeditious flow of air traffic. Operational supervisors review the controller work process, anticipate, and

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<sup>17</sup> *FAA Remains Several Years Away From a Standardized Controller Scheduling Tool* (OIG Report No. AV-2019-013), November 27, 2018.

<sup>18</sup> *FAA Continues To Face Challenges In Ensuring Enough Fully Trained Controllers At Critical Facilities* (OIG Report No. AV-2016-014), January 11, 2016.



resolve problems before they impact air traffic operations, analyze schedule alternatives, and ensure proper communications. TMCs develop and implement traffic management initiatives to regulate and balance traffic flow between facilities and monitor weather conditions. Together, these positions play a critical role in managing and ensuring safe air traffic operations. As of August 2022, the number of operational supervisors in 25 of 26 critical facilities (see exhibit D) and TMCs in 19 of 26 critical facilities (see exhibit E) were below authorized levels. For example, the New York TRACON is authorized to have 30 operational supervisors and 13 TMCs but only has 8 operational supervisors and 3 TMCs. In addition, when a facility selects a controller from another facility for promotion, the manager has to obtain a release date from the controller's current manager as there is no release policy for operational supervisors. After selection and release, the controller has to train to become a supervisor at their new facility. According to FAA officials, with increased training and certifications, the Agency will be able to fill operational supervisor and TMC positions.

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## COVID-19 Led to Training Pauses at FAA's Academy and Air Traffic Control Facilities, Increasing Certification Times

FAA suspended controller training programs at the Academy and air traffic control facilities for several months during the pandemic. As a result, FAA faces increased controller certification times, and the Agency will not know the full impact of the training suspension on certification times<sup>19</sup> for several years because training outcomes vary widely, and it can take more than 3 years to train a controller. FAA is ramping up its training efforts. However, due to uncertain training outcomes, it cannot ensure it will successfully train enough controllers in the short term.

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## Although the Academy Suspended New Hire Training Due to COVID-19, Classes Are Returning to Normal Levels

FAA suspended its new hire training program in March 2020 to protect its workforce from COVID-19. In June 2020, the Academy asked the Agency to deem training as mission critical, stating that further delay of training classes would

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<sup>19</sup> The amount of time it takes for a trainee to become a CPC at an air traffic control facility.

elevate the risks to the NAS. FAA approved new hire training to restart in July 2020, and the Academy implemented a virtual onboarding and training program for Air Traffic Basic training.<sup>20</sup> The Academy proactively requested FAA's Civil Aerospace Medical Institute (CAMI) conduct a study to determine the efficacy of the virtual online training. While CAMI found<sup>21</sup> no statistically significant differences in the pass rates between the online and in-person formats, there were statistically significant differences in test scores. According to the study, "whether such differences reflect a practical difference in content mastery is highly doubtful." Furthermore, CAMI identified areas for improvement, such as increased trainee-to-trainee interactions and the number of devices, such as tablets, needed for training.

After taking the initial training online, new hires reported to the Academy, a process that took 3 months due to the limited number of classes as compared to two weeks pre-COVID-19. The Academy reduced class sizes by as much as 50 percent to accommodate CDC social-distancing guidelines. This had a negative impact on the throughput of new hires passing through the Academy. For example, in 2019, 466 students attended en route training; in 2021, those numbers dropped to 209 students. According to Academy officials, new hire training is returning to normal. As of February 2022, classes were at 80 percent of capacity and were expected to reach normal capacity later in the fiscal year.

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## **After Pausing Classes for Several Months, FAA Has Resumed Training at All Air Traffic Control Facilities**

In response to the pandemic, the Agency also paused training at critical air traffic control facilities for periods of time that ranged between 7 months to nearly 2 years. According to FAA officials, the Agency took these actions to protect its controller workforce from the COVID-19 pandemic. Furthermore, in August 2020, FAA and NATCA collaboratively established criteria to help each facility develop its own onsite training resumption plan. The plan includes guidelines on training within the COVID-19 environment and the actions to be taken when cases are identified within a facility.

FAA used location-based metrics from the Harvard Global Health Institute to determine the COVID-19 risk level for each air traffic control facility. The Harvard

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<sup>20</sup> Air Traffic Basics is a key course in the Air Traffic Training program that provides trainees with foundational air traffic knowledge.

<sup>21</sup> FAA, *An Evaluation of Virtual Basics for Air Traffic Control: Trainee Perceptions and Course Outcomes*, Civil Aerospace Medical Institute, May 2022. The report is available on FAA's website at <https://www.faa.gov>.

experts calculated COVID-19 risk levels based on the daily cases per 100,000 population on a 7-day rolling average, defining those risk levels as:

- **Red:** 25 or more cases per 100,000 people
- **Orange:** 10–24 cases per 100,000 people
- **Yellow:** 1–9 cases per 100,000 people
- **Green:** less than 1 case per 100,000 people

FAA used this color-coding process to identify COVID-19 threat levels at air traffic control facilities based on county-level pandemic data. Training did not occur in facilities coded red (*very high threat level*) or orange (*high threat level*). Once a facility was coded yellow (*moderate threat level*) or green (*low threat level*) for two consecutive weeks, FAA continued onsite training under the resumption plan established by each facility. Every facility was coded green by the end of summer 2021, and FAA resumed training at all facilities.

As the COVID-19 levels spiked at critical facilities, FAA paused training between one and four times from March 2020 to December 2021. For example, Albuquerque Center and Newark Tower each paused training at least four times for periods of more than 30 days. Article 67 of the 2016 CBA states that “if an employee’s developmental training is interrupted for thirty (30) days or more, the employee shall be granted sufficient training time to attain the level of proficiency he/she had at the time of interruption.” According to some facility managers, they established Training Review Boards to determine whether a trainee made progress after this refresher training or should be dismissed.

Overall, training pauses led to an increase in certification times for trainees. We interviewed managers at 17 critical facilities, and 16 of them agreed that controller certification times have increased due to COVID-19-related training delays. For example, at Albuquerque Center, the average certification time was 2 years and 5 months in 2019; that increased to 3 years and 2 months in 2021.

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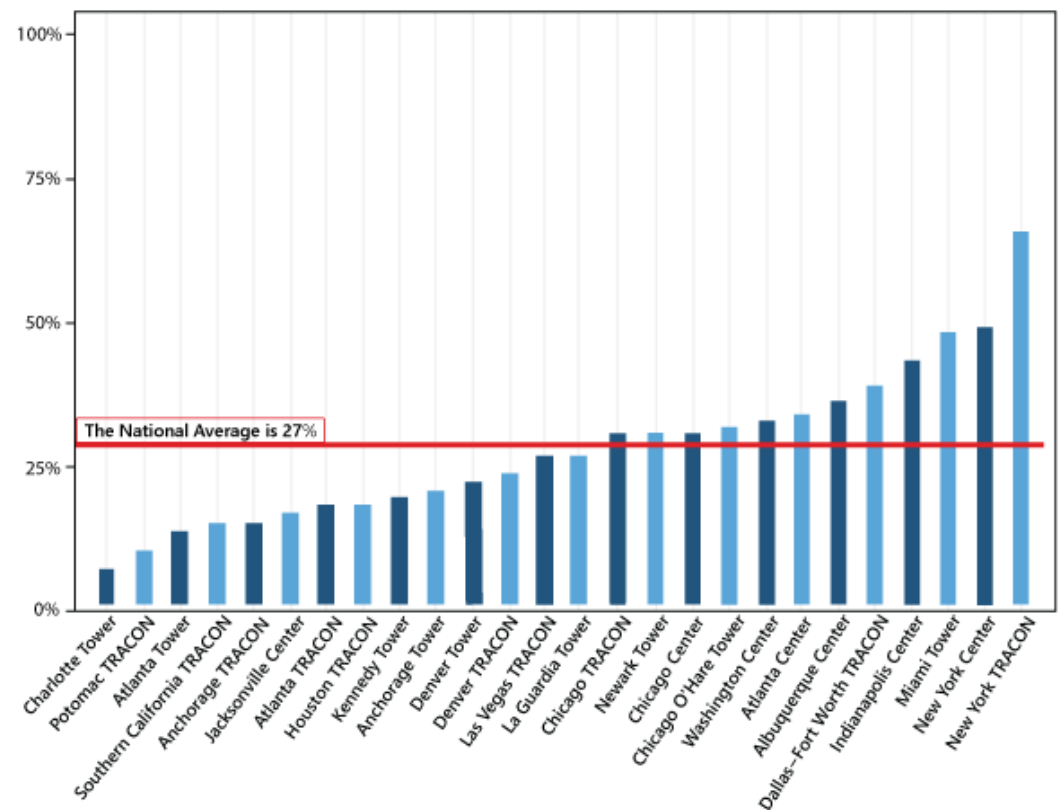
## FAA Cannot Ensure It Will Train Enough Controllers in the Short Term Due to Uncertain Training Outcomes at Critical Facilities

FAA currently faces an immense challenge to ensure it can train enough controllers to replace those who leave. Due to the training pauses caused by the pandemic, the percentage of controllers in training at critical facilities has increased. However, training outcomes vary widely, and it can be challenging to

predict whether a specific individual will successfully complete training and how long that will take. While this is a concern at facilities nationwide, training challenges are most pronounced at FAA's critical facilities.

Many critical facilities have a higher percentage of trainees than the national average (see figure 4). Specifically, in March 2022, 12 of 26 critical facilities had a higher percentage of controllers in training than the national average of 27 percent. As figure 4 shows, New York TRACON had the highest percentage of the controller workforce in training (64 percent), and New York Center and Miami Tower were almost at 50 percent. During our site visits, which took place between March 2022 and July 2022, some critical facilities were still experiencing training delays due in part to challenges with staffing training instructors during the pandemic. Science Applications International Corporation (SAIC), FAA's controller training contractor, provides classroom, simulation, and specialized training services to develop the next generation of air traffic controllers. SAIC hires retired FAA controllers to provide training at the facilities. During our site visits, several managers stated that when the pandemic started, many instructors left the positions due to the high risk of being exposed to COVID-19. The managers stated the limited availability of instructors has made it hard to certify trainees in a timely manner. According to most of the managers we interviewed, to achieve effective controller training while maintaining daily operations, FAA should limit the maximum percentage of trainees to no more than 30 percent of a facility's controller workforce. FAA could prioritize facilities like Atlanta TRACON and Southern California TRACON—where the percentage of controllers in training is well below 27 percent—to receive more trainees.

Figure 4. Percentage of Controllers in Training at Critical Facilities as of March 2022



Source: OIG analysis of FAA data

Increasing controller resources at an understaffed facility requires FAA to set sufficient lead times for onboarding and training new hires (including personnel from other facilities). For both new and transferring employees, training time varies widely, based on an individual's level of experience. For example, at Atlanta Center, one new hire took 5.3 years to complete training, while another new hire with a similar background took about 2.3 years.

In 2019, FAA implemented a National Training Initiative (NTI) requiring trainees have a minimum number of on-the-job training hours per week to increase the number of trainees certified as CPCs. Most of the managers we interviewed agreed the NTI helped facilities decrease training certification times. However, beginning in March 2020, FAA suspended NTI for more than 18 months and, as a result, controller certification times have increased. Additionally, the average training success rate at critical facilities is below the national average. In 2022, the average training success rate for critical facilities was 72 percent, below the national average of 82 percent. One reason for this low success rate is that FAA has placed inexperienced controllers at these facilities. Facility managers at TRACONs and towers stated that most CPC-IT transfers are from level 4 and level

6 facilities and require more training resources than a CPC-IT from a level 7 or level 9 facility with a higher success rate. Due to these uncertain training outcomes, the Agency cannot be certain it will successfully train a sufficient number of controllers in the short term.

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## Conclusion

While the United States has one of the safest air traffic systems in the world, the lack of fully certified controllers, operational supervisors, and traffic management coordinators pose a potential risk to air traffic operations. FAA has developed a process for allocating controller staff but has not revised its CPC staffing levels. As air traffic operations return to pre-pandemic levels, a consistent staffing approach and oversight of training will place the Agency in the best position to prevent disruptions to air traffic operations throughout the NAS.

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## Recommendations

To improve FAA's ability to ensure adequate staffing at its critical facilities, we recommend that the Federal Aviation Administrator:

1. Complete a comprehensive review of the model for distribution of certified professional controllers (CPC) for air traffic control facilities and update interim CPC staffing levels as necessary.
  2. Implement a new labor distribution system that includes features such as timekeeping, overtime and Controller-in-Charge tracking, and real-time leave balances.
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## Agency Comments and OIG Response

We provided FAA with our draft report on April 25, 2023, and received its official response on June 2, 2023, which is included as an appendix to this report. FAA concurred with both of our recommendations and proposed appropriate actions and completion dates. Accordingly, we consider all recommendations as resolved but open pending completion of the planned actions.

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## Actions Required

We consider recommendations 1 and 2 resolved but open pending completion of the planned actions.



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## Exhibit A. Scope and Methodology

This performance audit was conducted between November 2021 and April 2023. We conducted this audit in accordance with generally accepted Government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Our audit objectives were to assess FAA's efforts to ensure that critical air traffic control facilities had an adequate number of controllers and identify the impact of the COVID-19 pandemic on FAA's controller training program. We obtained and analyzed documents from and conducted interviews of officials from the Agency's Office of Air Traffic Services and the Office of Labor Analysis. Furthermore, we reviewed and compared the CRWG developed CPC staffing levels with actual CPCs working at critical air traffic control facilities. We reviewed and analyzed the NCEPT Standard Operating Procedure, FAA Orders on technical training, and operational contingency plans. We reviewed the 2016 CBA and National Release Policy, which guides the transfer of controllers to other facilities. We met with FAA's Safety and Technical Training team to discuss their roles and responsibilities with regard to controller training during the pandemic. We also interviewed officials from FAA's Academy to determine the impact of COVID-19 on the controller training program and obtained and analyzed information about training pauses for new hires.

We verified the list of 24 critical air traffic control facilities with FAA and later added two more facilities based on our conversation with facility managers and NATCA officials. We collected and reviewed staffing data from these facilities, including current headcounts and staffing levels. Furthermore, we collected and reviewed air traffic operations data to determine which facilities had returned to pre-pandemic levels of air traffic. We randomly selected our visits to 17 critical facilities, which was considered sufficient for audit purposes, and interviewed air traffic managers, and NATCA facility representatives about controller staffing issues and the impact of training pauses on the controller workforce.

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## **Exhibit B. Organizations Visited or Contacted**

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### **FAA Headquarters**

Office of Air Traffic Services  
Office of Labor Analysis  
Office of Safety and Technical Training  
Office of Resource Management Group  
Office of Human Resource Management  
Office of Aerospace Medicine

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### **FAA Field Offices**

FAA Academy  
Civil Aerospace Medical Institute

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### **FAA Air Traffic Control Facilities**

Atlanta Center (ZTL)  
New York Center (ZNY)  
Washington Center (ZDC)  
Chicago Center (ZAU)  
Charlotte Tower (CLT)  
Albuquerque Center (ZAB)  
Southern California TRACON (SCT)  
New York TRACON (N90)  
Potomac Consolidated TRACON (PCT)  
Chicago TRACON (C90)  
Dallas-Fort Worth TRACON (D10)

Houston TRACON (I90)  
Denver TRACON (D01)  
Las Vegas TRACON (L30)  
Atlanta TRACON (A80)  
Atlanta Tower (ATL)  
Chicago O'Hare Tower (ORD)  
Denver Tower (DEN)  
John F. Kennedy Tower (JFK)  
La Guardia Tower (LGA)  
Miami Tower (MIA)  
Anchorage Tower (ANC)  
Anchorage TRACON (A11)  
Indianapolis Center (ZID)  
Jacksonville Center (ZJX)

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## Other Organizations

National Air Traffic Controllers Association

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## Exhibit C. List of Acronyms

CAMI	Civil Aerospace Medical Institute
CBA	Collective Bargaining Agreement
CDC	Centers for Disease Control and Prevention
CPC	Certified Professional Controller
CPC-IT	Certified Professional Controller In-Training
CRWG	Collaborative Resource Workgroup
CWP	Controller Workforce Plan
DQ	Disqualification
ERR	Employee Requested Reassignment
FAA	Federal Aviation Administration
NAS	National Airspace System
NATCA	National Air Traffic Controller Association
NCEPT	National Centralized Employees Requested Reassignment Process Team
NTI	National Training Initiative
OIG	Office of Inspector General
OJT	On-the-Job Training
PPL	Paid Parental Leave
SAIC	Science Applications International Corporation
TMC	Traffic Management Coordinator
TRACON	Terminal Radar Approach Control Facilities

## Exhibit D. Authorized Versus Actual Number of Operational Supervisors

No.	Facility	Authorized Number of Operational Supervisors	Actual Number of Operational Supervisors	Percentage of Authorized to Actual Operational Supervisors
1	New York TRACON	30	8	27%
2	New York Center	36	12	33%
3	Anchorage Tower	4	2	50%
4	Chicago TRACON	14	8	57%
5	Southern California TRACON	36	23	64%
6	Albuquerque Center	30	20	67%
7	Atlanta TRACON	12	8	67%
8	La Guardia Tower	6	4	67%
9	Chicago Center	46	31	67%
10	Chicago O'Hare Tower	13	9	69%
11	Jacksonville Center	36	25	69%
12	Washington Center	36	25	69%
13	Anchorage TRACON	4	3	75%
14	Indianapolis Center	42	32	76%
15	Atlanta Center	42	33	79%
16	Potomac TRACON	30	24	80%
17	Dallas-Fort Worth TRACON	12	10	83%
18	Denver TRACON	12	10	83%
19	Kennedy Tower	6	5	83%
20	Las Vegas TRACON	6	5	83%
21	Newark Tower	6	5	83%
22	Denver Tower	7	6	86%
23	Charlotte Tower	12	11	92%
24	Houston TRACON	12	11	92%
25	Miami Tower	12	11	92%
26	Atlanta Tower	9	9	100%

Source: OIG analysis of FAA data as of August 2022

## Exhibit E. Authorized Versus Actual Number of Traffic Management Coordinators

No.	Facility Name	Authorized Number of Traffic Manager Coordinators (TMC)	Actual Number of TMCs	Percentage of Authorized to Actual TMCs
1	New York TRACON	13	3	23%
2	Atlanta TRACON	6	2	33%
3	Newark Tower	3	1	33%
4	Chicago O'Hare Tower	5	2	40%
5	Chicago TRACON	6	3	50%
6	Miami Tower	5	3	60%
7	Albuquerque Center	15	9	60%
8	Washington Center	21	13	62%
9	Dallas-Fort Worth TRACON	6	4	67%
10	New York Center	22	15	68%
11	Chicago Center	20	14	70%
12	Southern California TRACON	11	8	73%
13	Atlanta Center	23	17	74%
14	Denver Tower	4	3	75%
15	Indianapolis Center	20	16	80%
16	Atlanta Tower	5	4	80%
17	Denver TRACON	6	5	83%
18	Houston TRACON	6	5	83%
19	Jacksonville Center	18	15	83%
20	Anchorage Tower	0	0	100%
21	Anchorage TRACON	0	0	100%
22	Las Vegas TRACON	4	4	100%
23	Potomac TRACON	11	11	100%
24	Charlotte Tower	7	7	100%
25	Kennedy Tower	3	3	100%
26	La Guardia Tower	3	3	100%

Source: OIG analysis of FAA data as of August 2022

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## Exhibit F. Major Contributors to This Report

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SENIOR COUNSEL

SUPERVISORY MATHEMATICAL  
STATISTICIAN

STATISTICIAN



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## Appendix. Agency Comments



## Federal Aviation Administration

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### Memorandum

To: Nelda Z. Smith, Assistant Inspector General for Aviation Audits

From: Erika Vincent, Acting Director, Office of Audit and Evaluation, AAE-1

Subject: Federal Aviation Administration's (FAA) Response to Office of Inspector General (OIG) Draft Report: FAA Faces Controller Staffing Challenges as Air Traffic Operations Return to Pre-Pandemic Levels at Critical Facilities

Pierre  
McLeod for  
Erika Vincent  
Digitally signed by  
Pierre McLeod for  
Erika Vincent  
Date: 2023.06.02  
14:18:06 -0400

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The FAA fully understands that adequate staffing at its critical facilities helps ensure the safety and efficiency of the National Airspace System and is committed to getting to adequate staffing levels. We have recently completed a comprehensive review of the distribution of controllers, which was included in the Controller Workforce Plan submitted to Congress on May 5, 2023. Additionally, we are implementing the Air Traffic Operations Management System (ATOMS), a comprehensive system that will track controller timekeeping and various work assignments.

Implementation of ATOMS kicked off on May 15, 2023, with key site training for Richmond and Roanoke, VA, towers. Key site testing will occur over the summer of 2023 with the expectation that these two facilities will go live using ATOMS by August 2023. A waterfall schedule for widespread training and implementation of ATOMS is currently being collaborated on by the agency and the National Air Traffic Controllers Association. Additional sites will receive training starting in September 2023, and it will take approximately one year to deploy the system to all Air Traffic facilities, the Command Center, and all Flight Service Stations. We plan to have all facilities transitioned from Cru-X to ATOMS by the end of 2024.

Upon review of the OIG's draft report, the FAA concurs with both recommendations as written. We plan to complete both recommendations by September 30, 2023.

We appreciate this opportunity to offer additional perspective on the OIG draft report. Please contact Erika Vincent at [erika.vincent@faa.gov](mailto:erika.vincent@faa.gov) if you have any questions or require additional information about these comments.

U.S. Department of Transportation  
Office of Inspector General

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