U.S. Department
of Transportation

**Federal Aviation
Administration**

Office of the Administrator

800 Independence Ave., S.W.
Washington, D.C. 20591

June 19, 2014

The Honorable John D. Rockefeller, IV
Chairman, Committee on Commerce, Science,
and Transportation
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

As requested in the FAA Modernization and Reform Act of 2012, Section 604, I am pleased to provide you with a report outlining the Independent Front Line Manager Study. The Federal Aviation Administration (FAA) commissioned Grant Thornton's Public Sector practice to conduct the study. The final report on frontline manager staffing standards documents the factors that impact frontline manager staffing requirements and includes recommendations that should be considered in order to evolve staffing standards for FAA frontline managers.

Identical letters have been sent to Chairman Shuster, Senator Thune, and Congressman Rahall.

Sincerely,

Michael P. Huerta
Administrator

Enclosure

U.S. Department
of Transportation

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Office of the Administrator

800 Independence Ave., S.W.
Washington, D.C. 20591

June 19, 2014

The Honorable John Thune
Committee on Commerce, Science,
and Transportation
United States Senate
Washington, DC 20510

Dear Senator Thune:

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Identical letters have been sent to Chairmen Rockefeller and Shuster and Congressman Rahall.

Sincerely,

Michael P. Huerta
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Office of the Administrator

800 Independence Ave., S.W.
Washington, D.C. 20591

June 19, 2014

The Honorable Bill Shuster
Chairman, Committee on Transportation
and Infrastructure
House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

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Office of the Administrator

800 Independence Ave., S.W.
Washington, D.C. 20591

June 19, 2014

The Honorable Nick J. Rahall, II
Committee on Transportation and Infrastructure
House of Representatives
Washington, DC 20515

Dear Congressman Rahall:

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Identical letters have been sent to Chairmen Rockefeller and Shuster and Senator Thune.

Sincerely,

Michael P. Huerta
Administrator

Enclosure

Federal Aviation Administration

Frontline Manager Staffing Requirements Study

Final Report

May, 2014

Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

Acknowledgement

The Study Team acknowledges the valuable input and assistance provided by the many Frontline Managers, Operations Managers, Air Traffic Managers, and other FAA personnel who contributed to this study through their participation in on-site interviews, review of the work breakdown structure, and submission of online survey responses.

In addition, the executive oversight and support in gathering data and accessing FAA personnel which was provided by members of FAA's Resource Enterprise Directorate (AJG-R) and Staffing Standards Division - Labor Analysis Directorate (ALA-300) is greatly appreciated.

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Executive Summary

In accordance with Section 604 of the Federal Aviation Administration (FAA) Modernization and Reform Act of 2012, the FAA commissioned Grant Thornton LLP to conduct a review of its Frontline Manager Staffing Requirements. The results of the study are presented in this report.

This Executive Summary provides an overview of the study background and the approach used to conduct the analysis, the study findings, and the recommendations developed by Grant Thornton. The study includes:

- A review of the tasks expected to be performed by the frontline managers
- A review of the existing distribution of frontline managers and the ratios of frontline managers to direct reports at the Air Traffic Control (ATC) facilities
- The factors that impact frontline manager staffing requirements including the impact of training, performance metrics and a qualitative review of task complexity.

Study Background and Approach

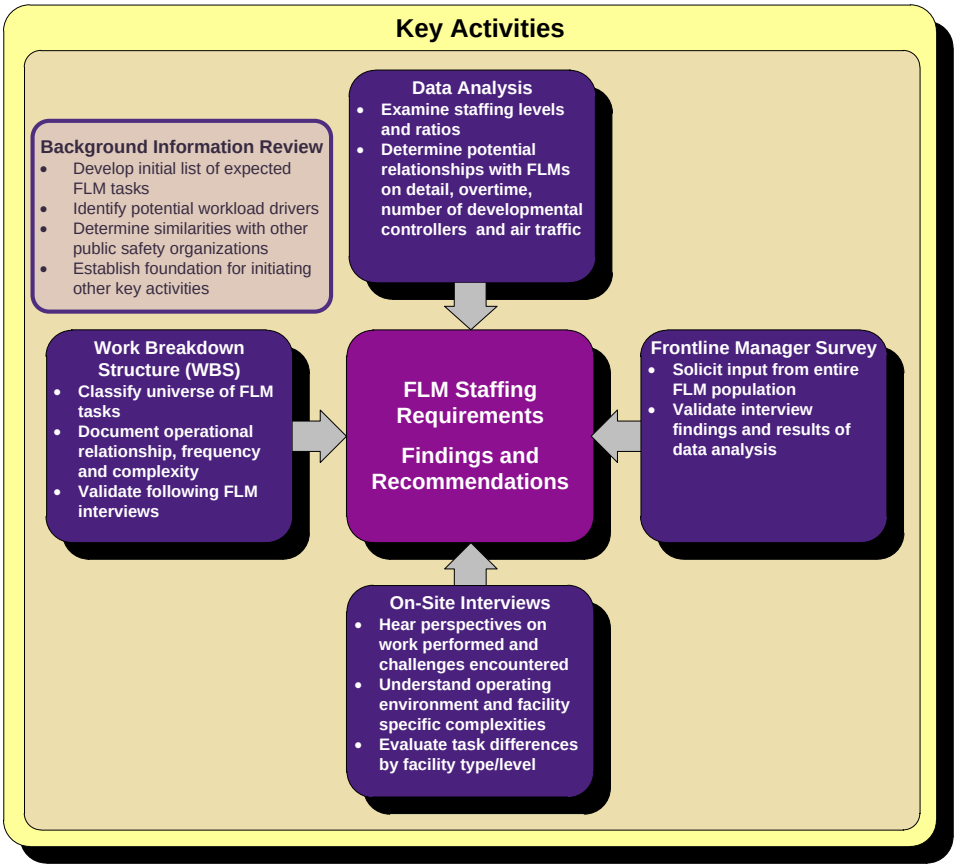
For purposes of this study, frontline managers are defined as the first level operational supervisors and managers who manage air traffic controllers on the operational floor in air traffic control facilities. The study **documents factors that could be considered** in order to develop staffing guidelines for FAA's frontline managers in the future. It is not intended to develop quantitative staffing guidelines or staffing ranges for frontline managers. The considerations outlined in the FAA Modernization and Reform Act of 2012 formed the basis for designing the five key activities included in the study:

- Background Information Review
- Data Analysis
- Work Breakdown Structure
- On-Site Interviews
- Frontline Manager Survey.

The **Background Information Review** provided initial information needed to complete other key activities. This included creating an initial list of the tasks performed by frontline managers and developing an initial list of questions to be used as part of the interview process and on the survey. The **Data Analysis** was performed using the most recent seven quarters of personnel and payroll data, starting with the first quarter of federal fiscal year 2011 (FY11 Q1) and ending with the third quarter of federal fiscal year 2012 (FY12 Q3). This data, which contains employee status, position, overtime hours and standard hours worked by pay period, was obtained from the Federal Personnel and Payroll System (FPPS). This information was used to develop current and historical staffing ratios (number of controllers per frontline manager). The personnel and payroll data was also reviewed in conjunction with air traffic volumes and authorized staffing levels in order to identify potential relationships between these data elements and the number of developmental controllers

and the use of frontline manager overtime. A **Work Breakdown Structure (WBS)** was used to document the tasks performed by FAA's frontline managers, and to capture input on the factors such as frequency and complexity that can drive frontline manager staffing requirements. This information in the WBS provides a better understanding of the multi-faceted Frontline Manager (FLM) position that requires technical competency, extensive knowledge of air traffic control procedures, and a range of managerial skills to plan and direct operations within delegated areas of responsibility. Subject Matter Experts (SMEs) from the national air traffic Supervisors Committee (SUPCOM) provided assistance in validating the accuracy of the WBS which contained 106 tasks. **On-Site Interviews** with frontline managers and ATC facility management were conducted in 13 facilities, and over 100 individuals participated in the interview process. To maximize the opportunity for participation, a web-based **Frontline Manager Survey** was offered to the entire population of FAA frontline managers, and a response rate of over 45% was achieved. Figure 1 provides additional details related to the five key activities.

Figure 1: Key Activities Performed During the Study



Summary of Findings

The primary expectations of a frontline manager are to monitor controllers and manage air traffic operations. These expectations were confirmed not only through the interviews and with responses to the survey questions, but also through conversations held with senior officials in the Air Traffic Operations (ATO) organization at FAA headquarters.

The Study Team notes that all FAA stakeholders interviewed during this study recognize the importance of the frontline manager role and its impact on the National Airspace System (NAS). The information gathered from the study indicates that in addition to their operational duties, frontline managers face a growing number of **administrative requirements**. The administrative tasks, which typically do not involve directly supervising or providing feedback to controllers on-position, may be performed away from the operational area. The administrative requirements are increasing as the collective experience level of controllers to be supervised is decreasing. This change in experience levels increases not only the need for operational engagement on the part of the frontline manager, but also their administrative workload. Frontline managers rely on various methods to remain engaged in operations while concurrently addressing their administrative workload. The frontline managers interviewed reported that they often stay on the operations floor for most, if not all, of their scheduled shift.

The findings from the study indicate that workload is impacted by the facility size, as well as internal and external **facility specific operational complexities.** Examples include airspace complexity and equipment (internal), and adverse weather, runway configuration and ongoing construction (external). **FAA initiatives** such as the En Route Automation Modernization (ERAM) and Metroplex also impact frontline manager staffing, specifically when current managers are required to serve on long term details and are not available to provide coverage on the operations floor. While frontline manager staffing is limited at some facilities, concerns were expressed about the lack of incentives for experienced members of the controller workforce to apply for open frontline manager positions. In addition, for those who are selected as new frontline managers, the timing of the training received, the materials used, and the training process can vary between facilities. Additional factors such as the expectations and priorities of the **facility management** team can also impact the workload of a frontline manager.

Summary of Recommendations

The Study Team developed a series of recommendations that, if implemented, will enable the FAA to address the findings resulting from this study. These **recommendations are intended to provide the FAA with a baseline** to leverage as the organization moves forward with its NextGen initiatives. The recommendations focus on addressing the growing administrative workload, conducting further analysis that will serve as a basis for quantifying frontline manager staffing requirements in the future, and gathering additional qualitative information on the role and perspectives of other staff members who support frontline managers. Some initiatives are already partially underway, while in other cases additional analysis will be required.

FAA leadership indicated that the primary role of a frontline manager is to remain operationally engaged while performing appropriate operationally-related administrative tasks. Leadership also realizes that a "one size fits all" approach may not be the best approach given differences in operations and administrative support at facilities of various sizes. In order to maintain a safe and efficient operating environment, the **frequently performed administrative tasks should be reviewed** in order to determine whether their performance is required, where and when they could be diverted to others, or improved in another way. Specifically, the FAA should:

- Review administrative tasks that are performed constantly or frequently and identify those that can be delegated from the frontline manager to others, or perhaps eliminated entirely.

- Identify and share "best practices" used by frontline managers to complete administrative work in order to determine applicability for use at other facilities.

- Explore ways to make the employee performance evaluation process more meaningful, timely, and proactive, while minimizing the potential for duplication of efforts.

- Review facility even flow metering process for the arrival of developmental controllers and identify opportunities to coordinate with facility workload distribution to minimize the impact on the workforce.

In addition to reviewing administrative tasks, identifying appropriate measures of administrative workload and devising ways to consistently capture that information will facilitate the ability to develop quantitative staffing guidelines for frontline managers. Conducting **further quantitative analysis to validate, quantify, and correlate data elements** such as the timing of training, frequency of task performance, air traffic volumes, and time on-position will complement the topics discussed during the interviews and captured in the FLM Survey. To accomplish these analytical tasks the FAA should:

- Examine "actual" frontline manager supervisory capacity by facility and identify metrics and best practices in this area. Currently, some frontline managers are on long-term internal detail assignments or may be unable to work on the operations floor as a frontline manager.

- Review current protocols for putting a Controller-in-Charge (CIC) in place, clarify requirements, document the prevalence of their current use, identify best practices and appropriate mechanisms for sharing them, and establish metrics that can be monitored over time.

- Develop quantitative staffing guidelines for frontline managers that incorporate full shift coverage and account for administrative tasks and other non-operational time such as training and leave time. Current information on the volume of administrative work is qualitative; conducting a study to quantify the magnitude of these tasks will provide additional insight into where staffing level adjustments should be considered.

Obtaining input from additional facility support staff members, current controllers, On-the-Job Training Instructors (OJTIs), and CICs will complement the recommended analytical work. **Gathering additional qualitative information** from individuals performing these functions will provide a more complete understanding on topics such as the working relationship with the frontline manager and the role each one plays in supporting the frontline manager. In addition, developing a better understanding of the current onboarding process for frontline managers, including the overall timing and staging of the process, content, and materials will facilitate the ability to consistently add and develop leaders in this role as NextGen initiatives become more

prominent in FAA's operating environment. To complete the additional qualitative work the FAA should:

- Review the scope and level of effort provided by administrative and support personnel in order to understand gaps and differences in the level of assistance provided. This effort would complement the work performed during this study and offer additional insight into the roles and perspectives of those who support the frontline manager in completing various administrative areas.

- Conduct a series of controller interviews (to include those that perform the roles of CIC OJTI) to determine why these individuals may pursue the frontline manager role in the future. Gathering the perspective of OJTIs and controllers will assist in understanding the frontline manager's training-related administrative workload. Capturing the perspective of CICs will assist in understanding the workload and challenges associated with the role.

- Review the current development path and training curriculum for frontline managers, evaluate the effectiveness of the current training process, and develop an inventory of training materials currently used. The evaluation would examine the uniformity of the initial off-site and on-the-job training that takes place for new frontline managers, the timing of training related to selection and placement, and training needs in relation to experience level both in the operation as well as in any previous management roles.

The FAA's universal acceptance that the frontline manager role is critical to managing the NAS and the agency's commitment to supporting the completion of this study are key steps in the process of further defining and streamlining the tasks associated with the role. Combining the qualitative information obtained in this study with additional quantitative analysis will position the FAA to develop staffing guidelines for frontline managers. These guidelines will augment the agency's ongoing efforts to maintain the appropriate complement of frontline managers at the facility level. A critical next step will require the FAA to **update the baseline established in order to account for the impact of NextGen on the role of the frontline manager** in the future.

1 Introduction

In accordance with Section 604 of the Federal Aviation Administration (FAA) Modernization and Reform Act of 2012, the FAA commissioned an independent study of Frontline Manager staffing requirements in air traffic control facilities. In response to this request the FAA commissioned Grant Thornton LLP to conduct the independent study and prepare the materials presented in this report. This document contains the results of the analyses conducted as part of the study and provides a series of recommendations for future consideration. **Section 1** of the report contains background information, the study's purpose and scope, and the structure of the team that completed the study. The remainder of the report consists of the following sections:

Section 2 - Details the methodology used to conduct the analyses performed.

Section 3 - Summarizes the findings from the study.

Section 4 - Provides a series of recommendations to be considered in moving forward.

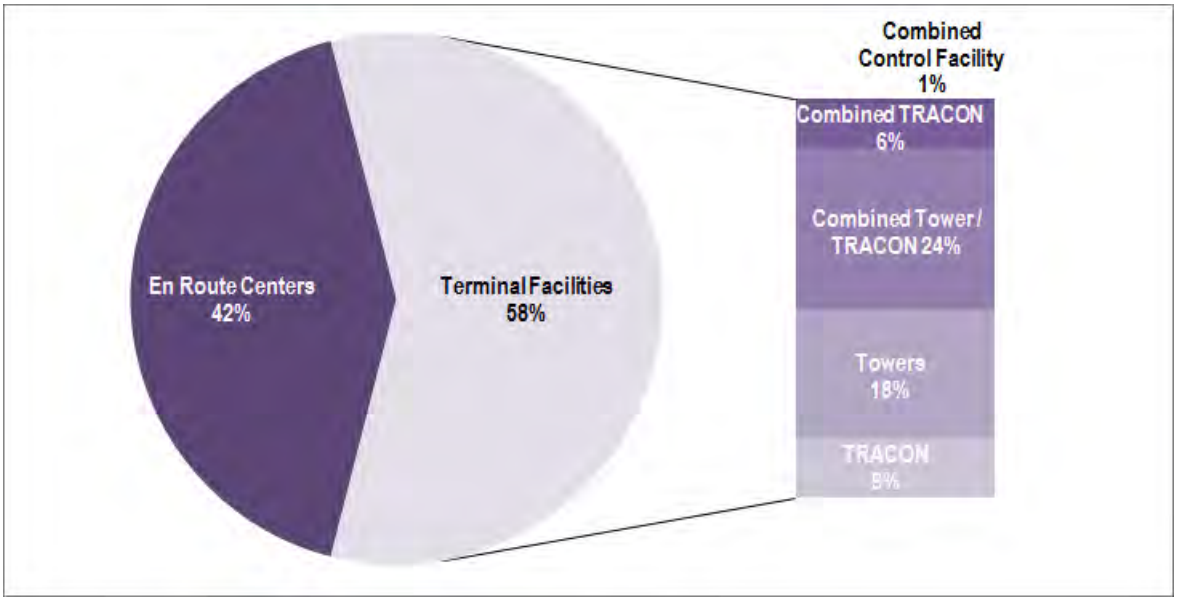
Appendices – Contains a list of acronyms, copies of the materials used to gather information, backup data, detailed exhibits of materials referenced throughout the report, and the team members who prepared this report.

1.1 Background

A critical element in supporting the FAA's mission to provide the safest, most efficient airspace system in the world is having the necessary complement of skilled air traffic controllers and supervisory professionals to manage traffic at the nation's airports and in its airspace. To this end, the FAA employs approximately 15,000 Air Traffic Controllers (ATCs) and 1,900 frontline managers distributed across 315 air traffic control facilities. These employees manage air traffic in Towers, Terminal Radar Approach Control (TRACON) facilities, or En Route Centers.

Figure 2 depicts the share of frontline managers in both the Terminal and En Route environments as of June 2012.

Figure 2: Frontline Managers by Facility Type (FY12 Q3)



Towers manage traffic within a radius of a few miles of the airport. ATCs in Towers instruct pilots during taxiing and take-off, and they grant clearance for aircraft to fly. They also ensure that aircraft maintain minimum separation distances between landing and departing aircraft, transfer control of aircraft to TRACON controllers when the aircraft leave their airspace, and gain control of aircraft on flights coming into their airspace.

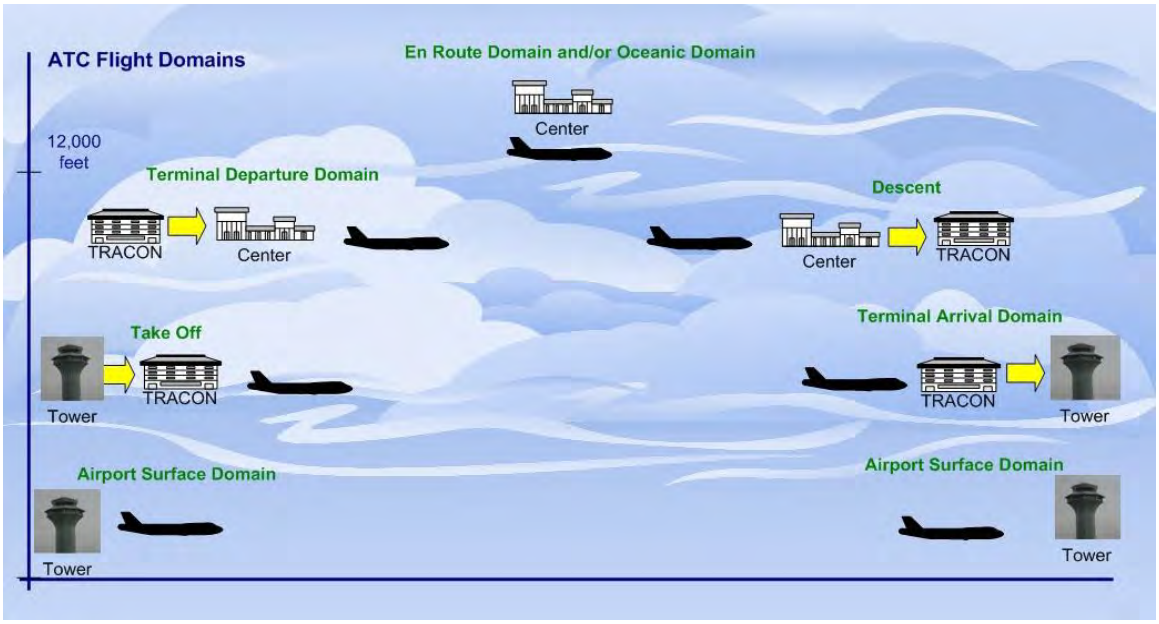
TRACONs typically manage traffic outside the radius managed by Towers – generally a 40-mile radius of the primary airport; though this radius can vary by facility. ATCs in TRACONs instruct departing and arriving flights, and they grant clearance for aircraft to fly over the TRACON's airspace. TRACON controllers ensure that aircraft maintain minimum separation distances between landing and departing aircraft, transfer control of aircraft to tower or En Route Center controllers when the aircraft leave their airspace, and receive control of aircraft on flights coming into their airspace. Together, Tower and TRACON facilities are considered part of the Terminal environment.

En Route Centers manage air traffic along defined routes in the extensive amount of airspace that exists between airports, including those crossing the ocean. Controllers in the Centers ensure that a safe distance is maintained between aircraft and provide weather and traffic-related advisories to the aircraft that they are controlling. En Route Centers coordinate with TRACONs to gain control of flights entering their airspace, and then transition flights leaving their airspace back to the TRACON as they prepare to land.

Figure 3 illustrates the responsibilities of each operating environment for a typical commercial flight. For departing flights, the responsibility of monitoring an aircraft in the NAS begins with the Tower and is transferred to the TRACON and then to the En Route center. As the aircraft approaches its destination, the En Route center hands responsibility back to the TRACON, which then turns it over to the Tower. In these facilities, a frontline manager's primary role is to monitor operations in

the tower cab or on the operations floor, supervise the ATCs on-position, and perform personnel management for ATCs assigned to their crews.

Figure 3: Summary of Flight Control



1.2 Study Purpose and Scope

Section 604 of the FAA Modernization and Reform Act of 2012 required an independent study of Frontline Manager staffing requirements in air traffic control facilities, with the submission of a final report to Congress by November 14, 2012. The text from Section 604 of the Act, which provided the Study Team with guidance in terms of the appropriate scope and approach to the study, is presented below:

a) STUDY.—Not later than 45 days after the date of enactment of this Act, the Administrator of the Federal Aviation Administration shall commission an independent study on frontline manager staffing requirements in air traffic control facilities.

(b) CONSIDERATIONS.—In conducting the study, the Administrator may take into consideration—

(1) the managerial tasks expected to be performed by frontline managers, including employee development, management, and counseling;

(2) the number of supervisory positions of operation requiring watch coverage in each air traffic control facility;

(3) coverage requirements in relation to traffic demand;

(4) facility type;

(5) complexity of traffic and managerial responsibilities;

(6) proficiency and training requirements; and

(7) such other factors as the Administrator considers appropriate.

(c) PARTICIPATION.—The Administrator shall ensure the participation of frontline managers who currently work in safety-related operational areas of the Administration.

(d) DETERMINATIONS.—The Administrator shall transmit any determinations made as a result of the study to the heads of the appropriate lines of business within the Administration, including the Chief Operating Officer of the Air Traffic Organization.

(e) REPORT.—Not later than 9 months after the date of enactment of this Act, the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report on the results of the study and a description of any determinations submitted to the Chief Operating Officer under subsection (d).

(f) DEFINITION.—In this section, the term "frontline manager" means first-level, operational supervisors and managers who work in safety-related operational areas of the Administration.

For the purposes of this study, frontline managers[1] are defined as the first level operational supervisors and managers who manage air traffic controllers on the operational floor in air traffic control facilities. This report documents the tasks performed by FAA frontline managers and the factors that drive staffing requirements for the position. The data used in the study was obtained from reviews of background information, FAA information technology systems, on-site interviews with frontline managers and ATC facility management, and a web-based survey offered to the entire population of FAA frontline managers. Other tasks performed as part of this study include:

- Reviewing the existing distribution of frontline managers and the ratios of frontline managers to direct reports at the ATC facilities.
- Reviewing the tasks expected to be performed by the frontline managers and categorizing them in a WBS. This review captured the relevance of various tasks to the frontline manager function at specific facilities, categorized tasks into similar groupings (Operational and Non-Operational), identified their attributes, such as frequency and complexity, and explored the reasons for changes in those attributes.
- Documenting the factors that impact frontline manager staffing requirements, including the impact of administrative work, developmental controllers, training, and a review of challenges.

1.3 Team Structure

The Global Public Sector Practice of Grant Thornton LLP conducted the study. Grant Thornton has conducted a range of staffing studies, process improvement reviews and business case analyses at organizations within the FAA. Specifically, over the past five years Grant Thornton visited over 80 FAA Tower and Terminal Radar Approach Control facilities and studied the FAA Air Traffic Control function to develop controller staffing standards. Grant Thornton has also assisted in the development of detailed action plans and timelines for implementing the NextGen satellite-based air traffic control system. The team used this knowledge of the functions and complexities associated with air traffic control to design and implement the Frontline Manager Study.

The FAA's Resource Enterprise Directorate (AJG-R) and the Staffing Standards Division - Labor Analysis Directorate (ALA-300) jointly sponsored the study. These offices provided executive oversight and logistical support to the Study Team to gather data and access FAA facilities and personnel. In addition, SUPCOM representatives possessing a combined total of over 50 years of air traffic control experience and 25 years of FAA supervisory experience contributed their time and expertise to improve the WBS and survey instrument developed by the Study Team. They also encouraged participation among frontline managers during the interview and survey completion processes.

1 Included under this definition are 2152s in MSS2 positions with a Stat Spec Code of K319 (Operational Supervisor – Terminal/En Route). For this study MSS3 positions are considered to be outside the scope of the review, however, activities that occur based on MSS2 interactions with MSS3 positions will be included in the study.

2 Study Approach

Section 604 of the Reauthorization Act lists a number of factors the FAA Administrator could consider in conducting this study. Those considerations formed the basis for designing the five key activities included in the study. Figure 4 maps the considerations from the Reauthorization Act to these key activities. The data collection and analysis process started with a review of documents containing background information on the frontline manager position. This review enabled the Study Team to develop the initial WBS and identify potential workload drivers. The review also provided information that was used to initiate and shape the focus of other key activities including working with the SUPCOM SMEs to refine the WBS, analyzing the FPPS data and air traffic volumes, developing interview questions and conducting on-site interviews, and creating an online survey that was distributed to the entire frontline manager population. As a result of the input received from the five key activities, the Study Team compiled the findings and recommendations found in Section 3 and Section 4 of this report.

Figure 4: Key Activities in Relation to Section 604 Considerations

Key Activity	Section 604 Considerations
Background Information Review	(1) the managerial tasks expected to be performed by frontline managers, including employee development, management, and counseling,
Work Breakdown Structure	(1) the managerial tasks expected to be performed by frontline managers, including employee development, management, and counseling,
Data Analysis	(2) the number of supervisory positions of operation requiring watch coverage in each air traffic control facility
On-Site Interviews	(3) coverage requirements in relation to traffic demand; (4) facility type; and (5) complexity of traffic and managerial responsibilities (6) proficiency and training requirements; (c) PARTICIPATION.—The Administrator shall ensure the participation of frontline managers who currently work in safety-related operational areas of the Administration,
FLM Survey	(3) coverage requirements in relation to traffic demand; (4) facility type; and (5) complexity of traffic and managerial responsibilities (6) proficiency and training requirements; (c) PARTICIPATION.—The Administrator shall ensure the participation of frontline managers who currently work in safety-related operational areas of the Administration

2.1 Background Information Review

As a first step in conducting the study, the Study Team performed a multi-purpose examination of reports on air traffic control operations. This review provided a deeper understanding of the role performed by the frontline managers who supervise controllers, and the workload drivers that could potentially be used in determining frontline manager staffing requirements in the future. It also provided some initial perspective on similar tasks performed by frontline managers in other public safety organizations in the areas of scheduling, leadership development, technical supervision, and administrative functions such as timekeeping, employee performance reviews, and training.

Additionally, the review provided some data regarding first line supervisor to employee staffing ratios (span of control) which is included in Appendix B – Background Information Review.

2.2 Work Breakdown Structure (WBS)

A WBS provides a hierarchical decomposition of the universe of work performed. It is used to organize, define, and display the attributes associated with a series of work steps or tasks. These tasks, or groupings of tasks, can be used as a basis for measuring the amount of work performed by members of a specific project or work group, or by those holding a specific position, such as a frontline manager. Section 604 of the FAA Modernization and Reform Act of 2012 requested that managerial tasks expected to be performed by frontline managers, including employee development, management, and counseling be considered as part of the scope of this study. To identify the range of managerial tasks expected to be performed by FAA frontline managers, the Study Team used a WBS to identify a comprehensive list of tasks performed, their relationship to air traffic control, as well as understanding the frequency and inherent complexity associated with these tasks. The WBS classifies the tasks under multiple roles performed by a frontline manager ranging from supervising controllers on the operations floor to developing training materials. Documenting this information provides a better understanding of the multi-faceted frontline manager position that requires technical competency, extensive knowledge of air traffic control procedures, and a range of managerial skills to plan and direct operations within delegated areas of responsibility. These duties must all be performed while also providing first line supervision to a team of developmental[2] and certified professional controllers. To assemble the WBS, the Study Team reviewed the official position description for a "Supervisory Air Traffic Control Specialist", online job postings, and various reference materials provided by the SUPCOM SMEs. Each of these documents outlined the duties and responsibilities expected of a frontline manager, but a compilation of the content was required because no single document covered all of the tasks associated with the frontline manager position.

The SUPCOM SMEs provided the Study Team with their knowledge of the position requirements to help validate a list of 102 tasks for frontline managers that the Study Team grouped under one of the seven high level task classifications found in Figure 5. The SUPCOM SMEs also rated each task in terms of its relationship to air traffic operations, level of complexity, and frequency.

Figure 5: Task Classification Definitions

Task Classification	Definition
Supervision	Tasks related to managing air traffic operations conducted by controllers such as assigning personnel to positions, and monitoring movement of personnel on and off the operations floor to avoid disruption to NAS. Monitoring of air traffic operations by controllers, includes ensuring controllers follow an approved checklist when exchanging information, understanding passed /

[2] For purposes of this study the term "developmental controllers" includes controllers who are not yet fully qualified and certified at their current facility. This includes those with a status of Academy Graduate (AG), D1, D2, or D3 (Developmental), or Certified Professional Controller – In Training (CPC-IT).

Task Classification	Definition
	received data, using appropriate communications methods and using prescribed phraseology. Tasks also include frontline managers monitoring controllers for Certified Professional Controller (CPC) eligibility and conducting air traffic operations to maintain on-position eligibility. May include the supervisory tasks of the Operations Manager (OM) or Air Traffic Managers (ATM) if frontline manager is covering these positions.
Training / Coaching / Guidance	Tasks related to administering on-the-job training, certifying controller skills, facilitating "team building," mentoring, managing / delivering technical training, and managing trainings for controllers.
Managerial Duties	Tasks related to managing employees, enforcing FAA or workplace specific policies and helping employees understand FAA directives in relation to work processes. Tasks include monitoring employee conduct, use of time, punctuality and reporting infractions of the law. Examples of communications tasks are reinforcing Equal Employment Opportunity (EEO) policies, conducting team briefings, referring employees in need to Employee Assistance Program (EAP), resolving employee grievances or directing them to a supervisor, and communicating how FAA initiatives will impact work processes.
Scheduling / Leave / Overtime	Tasks for developing controller schedules, including the analysis of alternative schedule arrangements / position assignments, overtime lists, and monitoring and approving use of employee leave.
Manage Facility Staffing Levels & Budget	Tasks expected of frontline managers for the planning, budgeting and use of Federal funds, time, property, equipment, materials, information and personnel (both Federal and contract). In addition, includes tasks for setting, forecasting or adjusting staffing levels and / or work procedures to apply correct resource levels to meet operational needs to maintain effective ATC service and / or to meet resource decisions made at higher levels. (This includes selections and transfers.)
Strategic Planning & Assessment of Organizational Performance	Tasks for developing goals for ATC facility and identifying performance measures (and data sources) for assessing performance against these goals. Tasks for conducting a series of FAA reviews at the organizational level: operations skills assessment (OSA), system service reviews (SSR), Traffic Management Review (TMR), Covered Events Review (CER), and systemic issue reviews (SYSIR).
Frontline Manager Training	Frontline manager's attendance at trainings at the service area office, the FAA Center for Management and Executive Leadership (CMEL), and training to enhance knowledge of directives or operational preparedness. This includes frontline managers taking online courses, such as the e-LMS.

The initial version of the WBS was presented to the frontline managers interviewed during the Study Team's facility visits. These frontline managers were asked to review the document and, where necessary, make modifications to the descriptions and/or attributes associated with each task in order to improve the accuracy of the WBS. Many frontline managers replied that they had no changes, indicating their concurrence with the contents of the WBS. The Study Team did receive comments from 11 frontline managers stationed at five different facilities. Most provided comments or suggested changes relating to the Complexity and Frequency attributes assigned to a task. In addition, four new tasks were submitted and included in the final WBS. A detailed explanation of the steps involved in creating the WBS, definitions of the various attributes, and a copy of the final version of the WBS are found in Appendix C – Work Breakdown Structure. A summary of the comments and suggested changes received from the frontline managers who reviewed the document is provided in Figure 15 of Appendix C.

2.3 Data Analysis

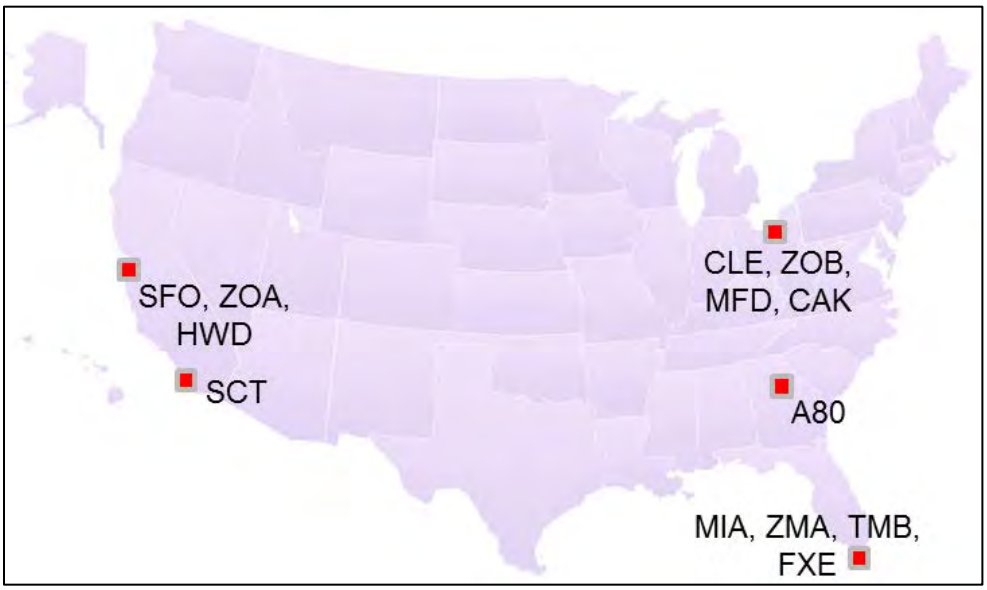
The Study Team received FPPS data for seven quarters beginning with the first quarter of federal fiscal year 2011 (FY11 Q1) and ending with the third quarter of federal fiscal year 2012 (FY12 Q3). FPPS contains data such as employee status and position type, as well as standard and overtime hours worked by pay period. The Study Team developed spreadsheets to examine current frontline manager staffing levels and the controller-to-frontline manager staffing ratios found at various types of facilities. Traffic volumes and authorized staffing levels for each facility were also examined and additional analysis was performed to determine potential relationships with the number of frontline managers on detail, the use of overtime, and the number of developmental controllers in each facility. Detailed information on the results of the analysis performed can be found in Appendix D – Data Analysis.

2.4 On-site Interviews

The Study Team visited 13 Terminal and En Route facilities to conduct on-site interviews with the frontline managers and facility leaders. Conducting these interviews enabled the Study Team to receive information directly from frontline managers regarding how they managed their crews and how they handled operational complexities associated with their specific environment. The interviews provided new perspectives on the frontline managers' wide range of responsibilities, and the factors that impact their workload. The visits also enabled the Study Team to evaluate the differences in the frontline manager position by facility type and level, and to validate responses to questions regarding workplace configuration and span of control.

The FAA provided an initial list of Terminal and En Route facilities for the Study Team to consider in planning their interviews. One of the suggested En Route Centers from each of the three FAA service areas was selected along with Terminal facilities of various types and levels that were located within driving distance of the En Route locations. As shown in Figure 6, this allowed the Study Team to maximize the range of facilities visited, while minimizing travel time and costs.

Figure 6: FAA Facilities Visited for Frontline Manager Interviews



Interviews were conducted over a four-week period (August 8, 2012 to August 31, 2012) by teams of interviewers ranging in size from two to five members at the selected facilities. The Study Team interviewed over 100 people including 79 frontline managers, 11 Operations Managers (OMs), eight Air Traffic Managers (ATMs), and 11 other members of facility leadership teams. These individuals provided their perspectives on the managerial and administrative tasks that frontline managers are expected to perform, as well as the unique challenges confronting them at their individual facilities. A summary of the findings from the interviews can be found in Appendix E – On-Site Interviews.

2.5 Frontline Manager Survey

The Study Team distributed an online survey to provide all frontline managers with an opportunity to participate and to supplement the information obtained from the interview process. The survey contained 17 questions that were grouped in the following categories:

- Staffing Levels and Monitoring ATC Operations
- Administrative Tasks
- Time Management
- Experience Level of Controllers
- Frontline Manager Training and Biggest Operational Challenges.

A total of 872 frontline managers responded to the survey yielding a response rate of over 45% based on the total workforce of 1,912 frontline managers listed in the FPPS data as of the FY12 Q3. As shown in Figure 7 the survey response rate was at least 45% for all of the facility types with the exception of Combined TRACONs. Figure 7 also shows that the distribution of the responses by facility type closely mirrors the actual distribution of frontline managers by facility type. Additional details regarding the content of the survey responses received are provided in Appendix E – On-Site Interviews and a copy of the survey can be found in Figure 36 of the same appendix.

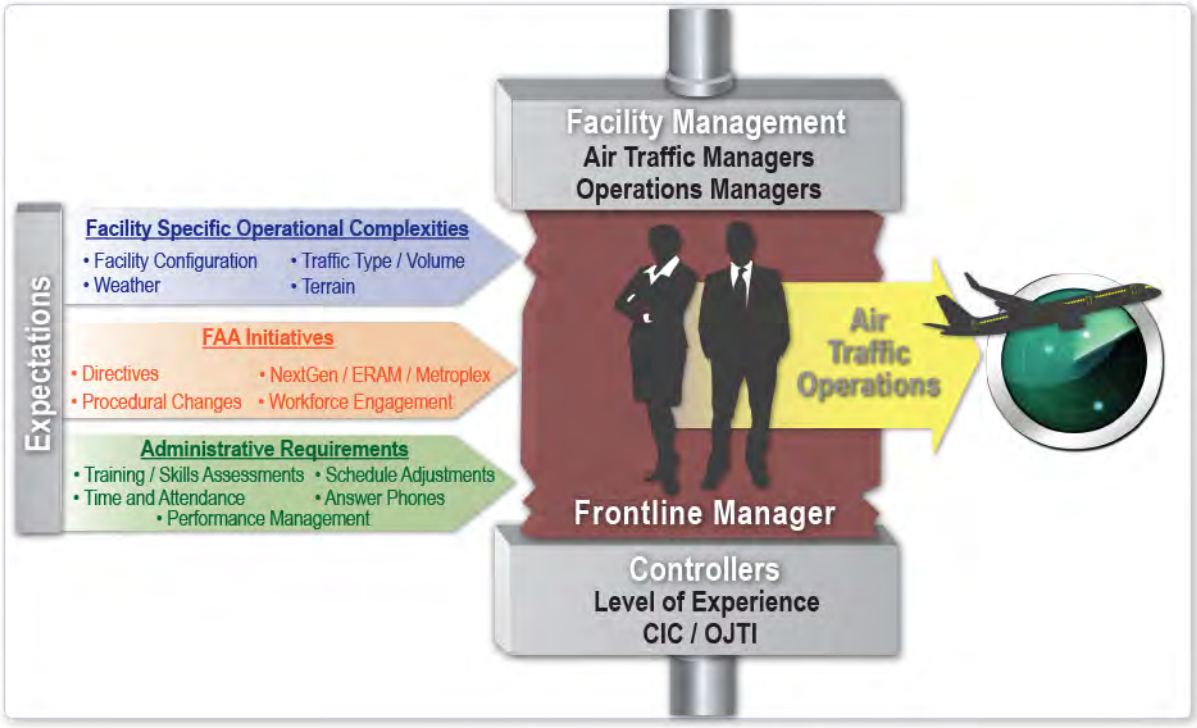
Figure 7: Survey Response Rate

Facility Type	Complete	Partial	Total	FLMs (FPPS Q3 2012)	Response Rate	Share of Responses	FLM Share
En Route Centers	336	42	378	804	47%	43%	42%
Combined Control Facility	6	0	6	11	55%	1%	1%
Combined TRACON	33	1	34	125	27%	4%	7%
Combined Tower / TRACON	188	20	208	451	46%	24%	24%
Towers	144	27	171	354	48%	20%	19%
TRACON	63	12	75	167	45%	9%	9%
All ATC Facilities	770	102	872	1,912	46%	100%	100%

3 Study Findings

Leaders at the facilities visited and senior members of the ATO at FAA headquarters concur that the primary expectation of the frontline manager involves monitoring controllers and managing air traffic operations. A summary of the findings gathered from the five key activities performed during this study indicates that several factors impact the workload of a frontline manager, and, consequently, the staffing required for the position. As shown in Figure 8 the study confirmed that workload is impacted by **facility specific operational complexities** as well as various **FAA initiatives**. Over time, additional **administrative requirements** have also been assigned to frontline managers, and these tasks have increased the amount of non-operational work performed during a shift. These increases in administrative responsibilities are occurring as workforce demographics are changing. This has resulted in frontline managers who are supervising teams comprised of **controllers with various levels of experience**, both newer controllers and those who are nearing retirement. This dynamic increases the need for operational engagement on the part of the frontline manager, as well as increasing their administrative workload. Additional factors such as the expectations and priorities of the **facility management** team can also impact the workload of a frontline manager.

Figure 8: Factors Impacting the Frontline Manager's Workload in the Air Traffic Control Environment



This section discusses the key findings from the study as they relate to factors noted above, using the following categories:

- Expectations of frontline managers
- Administrative tasks
- Methods for completing administrative tasks

- Staffing ratios
- Level of experience
- Operational complexities
- Frontline manager training
- Other factors impacting frontline manager workload.

Expectations of Frontline Managers

According to those interviewed, the primary responsibility of a frontline manager is to monitor controllers' actions on the operations floor to ensure that FAA procedures are followed to maintain a safe and expeditious flow of air traffic. This view was confirmed by facility leadership as well as senior executives in the ATO. Aside from their core function of monitoring operations, frontline managers advise controllers on performance and administrative matters and oversee completion of training, conduct skills checks, and evaluate controller performance. The findings on the expectations of frontline managers are viewed in terms of the actual **operational** [3] and **non-operational** tasks that they perform along with the performance expectations associated with the frontline manager position.

Frontline managers interviewed described their position as a complex combination of interrelated tasks requiring tactical knowledge of the airspace monitored, an understanding of the professional abilities and personalities of the controllers supervised, and an ability to complete a growing number and range of administrative tasks under tight deadlines.

The WBS lists 106 tasks that may be performed by a frontline manager. Attributes reflecting the complexity of each task and the frequency of performance were captured, and each task was also classified as "operational" or "non-operational" depending on where it was performed, and whether or not it impacted the National Airspace. The 25 tasks below generated constant workload while other tasks were considered to be sporadic or infrequent. The two tasks found at the bottom of the list were classified as "non-operational:"

1. Manage facility resources (i.e., personnel, funding) to meet operational needs
2. Review work processes of controllers
3. Analyze schedule alternatives
4. Develop overtime lists and contact employees
5. Monitor and respond to employee leave requests
6. Anticipate and resolve problems before they impact air traffic operations
7. Resolve problems impacting air traffic operations
8. Ensure proper communications
9. Ensure complete and timely coordination
10. Usage of equipment

[3] The Operational Nature attribute was used in the WBS to distinguish tasks that directly impacted the NAS from those that did not. Tasks were typically considered "operational" if the frontline manager performed them in the operational area when directly supervising or providing feedback to controllers on-position.

11. Ensure that controllers use good judgment while safely and effectively performing their duties
12. Ensure appropriate methods are used when performing assigned duties
13. Ensure operational safety
14. Assign personnel to positions
15. Break rotation
16. Ensure controllers return form break without disruption to air traffic operations
17. Record position in Cru-X/ART
18. Manage distractions
19. Observe controllers to ensure they serve as effective team member
20. Oversee training in the operational environment
21. Perform Performance Skills Check and certify controller (or suspend on-the-job-training [OJT])
22. Position certification
23. Deliver training assignments to controllers
24. Monitor internal and external communications (non-operational)
25. Evaluate trainee progress (non-operational).

Frontline manager performance evaluation is a topic where there was not universal agreement or awareness. Interview responses indicate an apparent gap, especially in articulating the criteria that facility management uses to evaluate the performance of their frontline managers. When asked to describe how performance was evaluated, the responses varied from one facility to another. At larger facilities in particular, there is a difference between frontline managers and operations managers on the topic of performance evaluation criteria. For example, frontline managers at one facility indicated that evaluations were neither comprehensive, nor adequate in terms of the feedback provided. However, at the same facility, an operations manager shared specific criteria he used to rate the performance of frontline managers.

The National SUPCOM SMEs provided the Study Team with two documents outlining the FAA's official outcomes and performance expectations of frontline managers in En Route Centers and Terminal facilities. The frontline managers interviewed did not mention either of these documents. Four of the six sets of outcomes and expectations detailed in the documents identify the "soft skills" required by a frontline manager:

- Managing controllers
- Fostering working relationships
- Evaluating performance and maintaining accountability among controllers
- Developing new controllers.

Expectations associated with the last two outcomes (ATO Managerial Responsibilities and Service Unit or Individual Managerial Expectations) focus on the frontline manager's performance in maintaining air traffic safety, operational soundness, and preparing controllers to handle air traffic control procedures.

The Study Team also obtained the FAA *FINAL Behavioral Indicators* document, which explains how the FAA expects frontline managers to perform tasks in a range of areas, all of which are in the outcomes and expectations used to officially rate their performance. Many of these outcomes and

expectations focus on "soft skills" such as problem solving, accountability and measurement, building teamwork and cooperation, and developing talent. ATMs, OMs, and frontline managers wrote the behavioral descriptions based on competencies from the FAA Leadership Competency Profile. This document is used as part of the Air Traffic Leadership Development Program (ATLDP) and ATLDP-2 programs, which assist employees who are interested in either moving from CPC to frontline manager, or frontline manager to OM. CPCs learn about the responsibilities, challenges and rewards of the frontline manager position to determine their readiness to commit to the ATLDP process. They work with their assigned frontline managers to assess their leadership capabilities, identify their strengths, and document areas requiring improvement in relation to acquiring leadership traits. This is followed by a workshop where CPCs apply relevant leadership concepts and behaviors, as well as other hands-on developmental activities.

Administrative Tasks

Frontline managers indicated that they are also expected to complete administrative tasks such as answering phone calls, adjusting controller schedules, and updating time and attendance data for controllers. These are tasks where they are spending an increasing amount of their time. The three administrative tasks noted above were identified by frontline managers as the most distracting tasks because they cannot anticipate the need for completing them ahead of time, and these tasks must often be completed while the frontline manager is simultaneously monitoring operations.

Other administrative tasks include documenting controller performance in the Comprehensive Electronic Data Analysis and Reporting (CEDAR) system, performing Operational Skills Assessments (OSAs) to enable controllers to remain certified, completing incident reports (Mandatory Occurrence Reports [MORs], Covered Event Reviews [CERs], System Service Reviews [SSRs], etc.), and answering phone calls related to operations or coordination with other facilities.

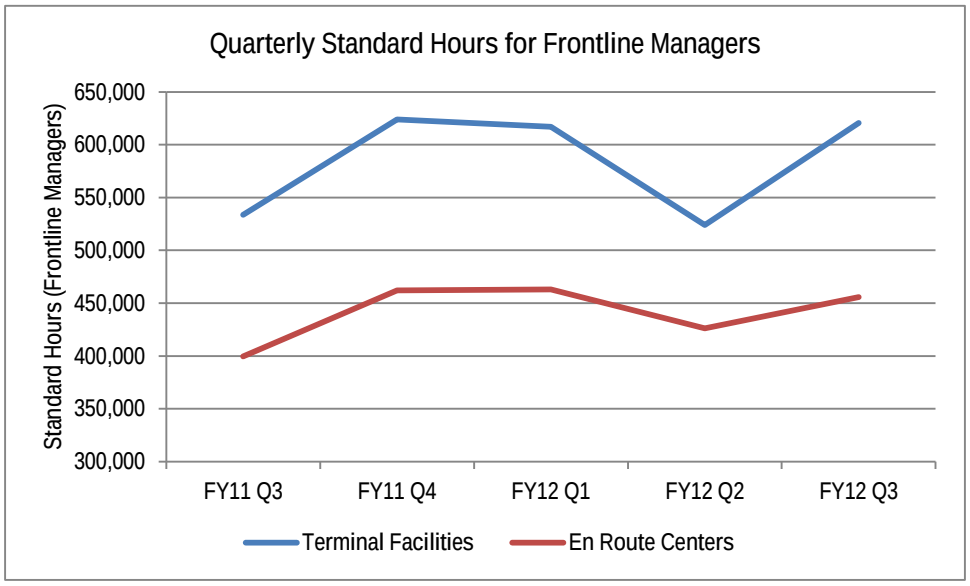
Responses to the frontline manager survey validated the perspectives provided during interviews. Over 90% of frontline managers responded that they were expected to perform administrative tasks related to arranging shifts for controllers and overseeing the use of leave or overtime, conducting or arranging controller training, documenting and completing follow up with employees regarding incidents or operational errors, and evaluating the controller performance.

Frontline managers noted that it was challenging to accomplish these administrative tasks while addressing the competing demands for their time during their scheduled shifts. During interviews frontline managers indicated that their administrative workload was increasing at a time when the collective experience level of the controller workforce was decreasing. FPPS data confirms that although there was one fewer frontline manager than in FY11 Q1, frontline managers worked 19% more standard hours and 37% more overtime hours in FY12 Q3. Data for thirty-two facilities showed that quarterly frontline manager overtime hours had increased, although no frontline managers were added, and these facilities continued operating below their authorized staffing levels. The FPPS data also shows that overtime hours in the last four quarters increased only for En Route Centers and Combined Control Facilities.

Responses to the FLM Survey support these figures, showing that a majority of the frontline managers felt their administrative workload had increased in the last year. Figure 9 provides a year-

to-year comparison of standard hours worked by frontline managers for the third quarter according to FPPS data. This view supports comments made during interviews that standard hours had increased for frontline managers during the past year. However, there was also a drop in hours during FY12 Q2 and subsequent rise in FY12 Q3 that may have impacted that perception.

Figure 9: Quarterly Standard Hours for Frontline Managers are Increasing (FY11 Q3 to FY12 Q3)



Many frontline managers indicated that their biggest operational challenge involved remaining focused and engaged in the operation while trying to complete all of the required administrative duties. For example, one survey comment listed "entertaining schedule changes, shift swaps, and leave requests in a timely manner, signing controllers in and out for duty, keeping Cru-X/ART up to date with position changes and other duty assignments" among the many administrative tasks that need to be completed while monitoring controllers. Although this frontline manager noted that monitoring operations was considered a higher priority, he also stated that there are times that full attention was needed to complete administrative tasks on time. Additional details on these tasks, performance management, and other delegated tasks are provided below.

- **Schedule Adjustments**: Many frontline managers mentioned the amount of time spent adjusting schedules due to unforeseen absences and requests to change shifts. Adjusting schedules was the only non-operations related administrative task on the survey that frontline managers across all facility types indicated had increased in terms of workload in the last year. It also was the second task in terms of top priorities when frontline managers were asked what administrative duty, if removed from their duties, would free up the most time to monitor operations.
- **Time and Attendance**: Frontline managers monitor their controllers' timekeeping records to ensure accuracy in reporting time on-position, on leave, and in training. FAA requires frontline managers to use the Cru-X/ART electronic logs to note the personnel designated responsibility at all operational positions. Frontline managers enter time and attendance information into the ATO Resource Tool (ART) system, approve it, and then maintain records if the need arises. They are responsible for producing a "relief briefing check list"

that includes the time and attendance status of employees, assignments classified as "Other Duties," requests and their approval for Time Outside Shift (TOS) requests and their approvals related to leave requests. Some frontline managers have experienced an increase in the number of administrative tasks due to responsibilities from other positions being delegated to them. The most prominent example is the requirement to update Cru-X/ART to reflect time spent on-position by controllers, and to sign controllers in and out of work. This used to be handled by the controllers but in recent years has become the responsibility of a frontline manager.

- **Performance Management**: Many frontline managers do not work the same shifts as the controllers on their team. This makes it difficult to align schedules for team briefings and performance reviews. Some survey respondents noted that it was difficult to perform quality performance reviews with their controllers due to a lack of available time. Another factor, according to comments provided in the survey, was that the new QC order requiring performance discussions take place off the operations floor had led to a decrease in the number of such discussions because the frontline managers had difficulty getting away from monitoring operations. Moreover, frontline managers stated that the new rule allowing controllers to self-report operational errors anonymously via Air Traffic Safety Action Program (ATSAP) made the job of evaluating controller performance more difficult because there was no way to attribute errors to individual controllers. Although not mentioned in the survey comments, those interviewed also stated that their administrative workload was becoming heavier due to redundancies in some requirements for entering controller performance information into slower technology systems. They also cited a lack of training on the systems, which made data entry more time-consuming, as a factor that added to their workload.

- **Other Delegated Tasks**: Tasks such as handling phone calls in the operating quarters have been passed to frontline managers unofficially in some cases because operations managers have their own increasing set of administrative tasks to complete. In other instances, support departments have delegated tasks to the frontline managers, especially in terms of preparing and reviewing safety incidents, such that frontline managers now must sit with controllers to review playbacks of audio feed instead of the safety or Quality Assurance/Quality Control (QA/QC) departments.

Methods for Completing Administrative Tasks

Nearly 40% of the survey respondents indicated that they receive no assistance in completing their administrative tasks. The other 60% indicated that they most commonly receive assistance from another frontline manager (25.5%), followed by the OM (11.2%), an administrative assistant or member of a support department (9.2%), a CIC (6.9%), the ATM (6.8%), or an OJTI (1.0%). Frontline managers at En Route, TRACON and Combined Tower/TRACON facilities are more likely to receive assistance from the OM and personnel in administrative or support departments because smaller facilities do not have these positions. Conversely, frontline managers in smaller tower facilities receive assistance from the ATM and the CICs because there is no OM level.

Frontline managers use many time management techniques to complete administrative tasks without sacrificing time required to monitor operations. According to interviews some frontline managers prioritize administrative tasks each day based on those with the closest deadlines. Some frontline managers completed administrative tasks while earning credit hours, by coming into the facility before their shift or staying afterwards, or by handling them at home. Nearly all of those interviewed stated that they had to complete their administrative tasks during breaks or their lunch period. The amount of time given to frontline managers to complete administrative work while monitoring operations and the constant need for focused time management were the most frequently cited operational challenges in the survey comments. Below are some methods used to complete challenges associated with administrative tasks:

- **Strategic use of CICs** is employed as frontline managers rely on them to supervise controllers because coverage cannot realistically be achieved with number of available frontline managers. Frontline managers use CICs at various times of the day or evening so that administrative tasks can be completed, or when no other frontline manager is on duty. Sixty-two percent of the survey respondents stated that they used CICs in order to provide time to complete administrative work. The percentage was even higher for smaller facilities (level of nine and below), specifically level five to seven Combined TRACON/Tower and level four to eight Tower facilities. Facilities that are open twenty-four hours a day, seven days a week cannot fully staff the number of available shifts with only three to four frontline managers. This becomes even more challenging when required frontline manager training and scheduled leave are taken into account. Facilities with reduced hours of operation typically have only two frontline managers, therefore they cannot fully cover the number of shifts available during the week without using CICs.

- **Alternate Work Schedules** are used at a limited number of facilities to build hours into the schedule that can be used for frontline managers to complete administrative tasks. According to the survey results, 2% of respondents said that they had a dedicated time to complete administrative work through an AWS program at their facility.

- **Administrative Days** are used at some facilities; although frontline managers at most of the FAA facilities visited indicated that they did not have a day that is fully dedicated to catch up on administrative tasks. Results from the FLM Survey confirm the interview comments. Only 17% of the survey respondents reported having an administrative day, and of this group, 41% reported receiving this dedicated time to complete administrative tasks once a month. Of those that said they did not have a dedicated day, 64% of them indicated that it would be "highly" useful.

Staffing Ratios

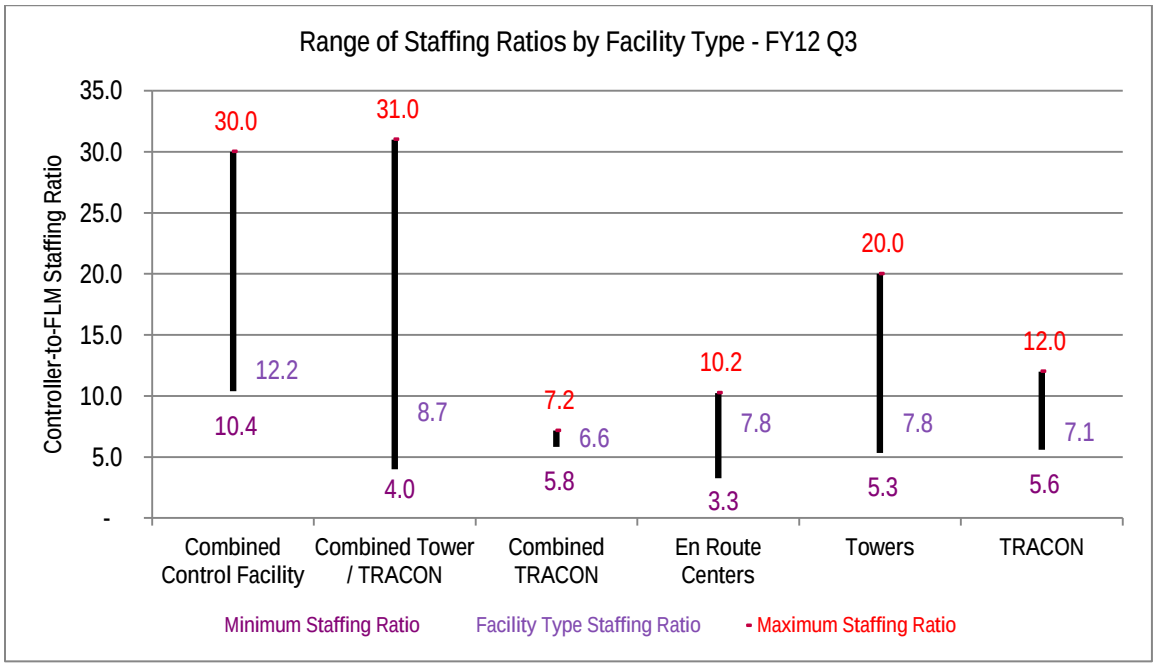
The term staffing ratio, or "span of control," refers to the number of subordinates who report to a manager, and the average span of control is the ratio of all employees to management staff. While there is some utility in comparing the FAA frontline manager span of control with those for first-line managers in other public safety agencies, there is no rule of thumb on the optimal manager-to-staff ratio for these organizations. Staffing depends on a number of factors, including:

- Mission of the organization

- Type of service monitored or provided
- Complexity and sensitivity of the work
- Management style of top executives
- Proximity of employees to each other and to their manager
- Legal requirements
- Consequences of error.

At the end of the third quarter of Federal Fiscal Year 2012, the FAA had a total controller workforce of 15,141 and a total of 1,912 frontline managers in the MSS2 position, or roughly eight controllers for every frontline manager. However, the controller-to-frontline manager ratio varied greatly from one facility to the next. The highest ratio existed at the Roanoke Tower, a Combined Tower / TRACON facility, with a ratio of 31:1. The lowest ratio, excluding facilities without a frontline manager on the roster, was found at the Guam En Route Center which had a ratio of 3.3:1 in FY12 Q3. Figure 10 shows the average Controller-to-Frontline Manager staffing ratio, as well as the highest and lowest staffing ratios for each facility type.

Figure 10: Range of Staffing Ratios by Facility Type – FY12 Q3



The roster numbers are obtained from FPPS and they may occasionally overstate the number of frontline managers at a facility who are available to monitor operations by counting those that are medically disqualified or on detail, either internally within the same facility or physically located in another facility. Survey responses and interviews with frontline managers confirmed that detail assignments, often for various FAA initiatives, and medical disqualifications impacted the workload for the remaining frontline managers at a facility. Additionally the number of frontline managers on the facility roster did not always reflect the actual number supervising air traffic controllers. In

reality, actual staffing levels of frontline managers in many facilities currently make it difficult to fully cover all shifts during a week without using a Controller-in-Charge[4] (CIC).

In many cases the frontline manager staffing at lower level facilities, particularly Towers, is at the minimum level possible to run these facilities. Despite operating seven days a week, many of these facilities have only two frontline managers on the roster; therefore, they cannot cover all shifts scheduled and must rely on CICs to supervise controllers in their absence. Frontline managers interviewed at smaller facilities indicated that they spend more of their time on administrative tasks than those at larger facilities because they typically do not have support departments to perform administrative functions. Frontline managers at facilities without administrative assistants indicated that they perform administrative tasks associated with running an office, such as ordering supplies. However, FAA data on authorized staffing levels for level four through eight Terminal facilities showed that 184 out of 229 (80%) of these facilities had their administrative assistant position filled.

Survey results support interview estimates that frontline managers at smaller facilities spend more time on administrative work regardless of facility type; the lower the level of the facility, the higher the estimated percentage of time spent performing administrative work. In particular, respondents from level four to six facilities estimated that they spend from 46.3% to 62.5% their time on *administrative work*. Frontline managers at the largest facilities estimated spending an average of 63.7% of their time *monitoring operations*, almost directly inverse to the figures reported in the smallest (level four) facilities.

Level of Experience

As more of the experienced controller workforce retires and newer controllers replace them, the supervisory role of a frontline manager becomes increasingly critical to maintaining safe operations. Frontline managers need to provide more oversight to controllers with less experience because these controllers do not have prior events to rely upon to make decisions in the fast-paced air traffic control environment.

A 2008 report from the Department of Transportation Office of the Inspector General (OIG) found that the maximum share of developmental controllers out of the total controller workforce at a site should be between 20% and 25% in order to permit enough time to monitor daily operations while carrying out effective controller training. [5] The facility types with the highest percentage of individual facilities having a share of developmental controllers in excess 25% of the controller workforce include: Combined Control Facilities (100%), Combined Tower / TRACONs (70%), and TRACONs (52%). The OIG report also indicated that facility managers at facilities such as the New

[4] Watch supervision may be performed by a controller-in-charge (CIC). The objectives and tasks of watch supervision must be specified in a facility directive, which is focused on operational requirements. The directive must specify, as a minimum, the required tasks for maintaining a safe and efficient operation. In the role of watch supervision, a CIC must perform these tasks in accordance with management direction, with the following exceptions: (a) evaluating and counseling employees on their performance, (b) recommending selections, promotions, awards, disciplinary actions, and separations, (c) site coordinator for drug or alcohol testing. On-the-spot corrections are not considered an evaluation of performance and are required as part of CIC duties. Source: FAA Order JO 7210.3X, effective 2/9/2012.

[5] OIG Report Number AV-2008-055, "Review of the Air Traffic Controller Facility Training Program," June 5, 2008.

York TRACON have requested the FAA to only assign controllers with prior air traffic control experience, such as CPC-ITs, instead of new hires, in order to reduce attrition rates.[6]

Controller experience levels impact the amount of support needed from frontline managers and others such as OJTIs. Many frontline managers interviewed stated that less-experienced controllers require more support from them and from other support positions. Developmental controllers in particular, increase the workload for frontline managers because they can only work positions for which they are certified.

Scheduling can be complicated as a result, especially if a substantial number of controllers at a facility are in the developmental stage since they cannot cover all positions and they can only work alongside a trainer in the interim. Coordinating training teams, conducting skill checks and documenting progression toward full certification are additional tasks that require frontline manager involvement. The FLM Survey confirmed interview findings that lower experience levels among the controllers impacted the workload for a frontline manager. Frontline managers responded that the presence of developmental controllers and CPC-IT's required more careful ordering of position assignments, more time spent conducting training sessions, debriefing controllers and documenting training session outcomes.

Operational Complexities

Frontline managers deal with several forms of operational complexity including weather, terrain, internal and external facility configuration, military operations, as well as other operational considerations. For example, interviews with frontline managers supervising oceanic sectors in En Route facilities indicated that communicating with foreign pilots and air traffic controllers, and the need to work with different types of technology present unique challenges. These complexities increase the level of attention that a frontline manager must dedicate to the operations and can limit the time available to address non-operational tasks. To the extent that such scenarios are temporary during a shift, the frontline manager may find is possible to take breaks or attend to non-operational tasks. However, during periods of sustained complexity a frontline manager may need to be on the floor at all times during a shift, and they may spend the entire shift on the floor. Some of the main factors that contribute to complexity are described in further detail below.

Weather, terrain, facility configuration, military operations, and other operational considerations can present challenges to maintaining the flow of air traffic.

Weather can be a challenge for frontline managers at any facility. For example, the location and timing of thunderstorms can be challenging for some facilities during the summer months, while winter storms and ice can present challenges at other facilities during the wintertime. Fog can require facilities in the San Francisco Bay area to delay flights and order flights into holding patterns. In such situations, frontline managers increase the amount of coordination with the traffic management unit to reach a consensus on how to keep traffic moving in and out of their facility, or on track for arrival at other destinations. Very little administrative work is attempted on days when frontline managers are dealing with extreme weather situations.

[6] Enhanced Oversight of Staffing and Training at FAA's Critical Facilities is Needed to Maintain Continuity of Operations. Office of Inspector General. Report Number: AV-2012-039. U.S. Department of Transportation, 2012.

Facility configuration and terrain can be categorized under external considerations while **facility layout** is considered an internal consideration. Frontline managers mentioned the mountainous terrain surrounding a facility, the layout of the runways, ongoing construction on runways and taxiways, and diversity in the operational capabilities of the aircraft arriving and departing as operational factors that impacted their workload. One frontline manager indicated that the layout of the operational area inside his facility took him away from the operations floor to complete some administrative tasks and limited his ability to monitor operations due to his proximity to the controllers working air traffic. However, he also indicated that this configuration promoted communication with adjacent work areas. Frontline managers assigned to **oceanic sectors and areas** in En Route facilities must possess a broader knowledge of operating procedures and the ability to work with different types of technology, including technology deemed outdated in the United States but still used in other countries. This dependence on equipment located in other countries or in the ocean means that frontline managers must be prepared to work "off radar" and with satellite based equipment if there are equipment failures. Moreover, equipment located in the open ocean may be out for longer periods of time because of the difficulty of reaching it to make repairs; therefore, frontline managers in oceanic sectors may need to work under these conditions longer than those who monitor airspace over the mainland. Frontline managers in one facility indicated that their oceanic area should be split into two in order to reduce the number of positions that are potentially required to be monitored by one frontline at a given time. The frontline managers working the oceanic area in another facility shared their view that one frontline manager should be on-position in each of their two oceanic areas.

Military and VIP traffic can require an increase in communications with frontline managers for last minute coordination and priority clearances as airspace is restricted. One of the tasks expected of frontline managers is to understand and support the military operations specialist (MOS) function. Frontline managers estimated that active military traffic increased the number of phone calls by as much as 10 times the normal level of calls. At several of the facilities visited, the frontline managers noted that special coordination is also required for Very Important Person (VIP) movements, especially during a presidential election year.

Nighttime cargo operations can increase the number of peak traffic hours at a facility and frontline managers handle busy shifts during both the day and the late evening hours. A frontline manager in a facility with this type of traffic provided unsolicited input to the Study Team indicating that the staffing challenge was having enough frontline managers and controllers to have a full crew during the midnight shifts when nighttime cargo operations occurred four nights per week. This is in addition to having the resources to supervise controllers on weekdays, weekday evenings and weekends when commercial aviation traffic was higher. He noted the difficulty in staffing both the Tower and the TRACON simultaneously, especially during the midnight shifts, with only five frontline managers. Coverage is achieved by using CICs in the Tower while the frontline manager on duty handles TRACON operations. He also indicated that using CICs presents challenges because they cannot conduct skill checks or rate controllers during the time they are assigned CIC duties. Moreover, since the frontline managers cannot observe controllers in both the TRACON and the Tower equally, it is difficult to provide mentorship, on-the-spot corrections, and appreciation for doing a good job. Three of the four facilities with nighttime cargo operations had above average shares of overtime per frontline manager, shares of developmental controllers on staff, and/or shares of frontline managers hours charged to overtime for their facility type. As an example, the six

frontline managers at one facility with nighttime cargo operations worked 15.3 hours of overtime per frontline manager in FY2012 Q3 (higher than the average for this facility type); and nearly one-third of the workforce was comprised of developmental controllers.

Other operational considerations, including the use of employee leave, can make scheduling the right number of controllers to match fluctuations in traffic levels a challenging task. Unexpected spikes in air traffic volume, various categories of employee leave, and controller training requirements can all impact the frontline manager's ability to have the appropriate staffing level available to match these demands. When setting schedules, frontline managers must consider work rules and the protocols governing the length of controllers' shifts and work week for safety reasons and to comply with the collective bargaining agreements. Tactically, during a shift, frontline managers must also consider when, and if, to schedule breaks in order to maintain appropriate coverage based on the traffic volume and complexity impacting the facility. When it comes to setting shift schedules, the frontline managers interviewed also mentioned that seniority rules related to selecting shifts led to the least experienced frontline managers managing the least experienced controllers on Friday and during the weekend, which are days that typically experience higher traffic volumes. This was confirmed by several survey comments.

Frontline Manager Training

In interviews, frontline managers suggested that the ability to attend training, and the availability of training materials varied from facility to facility. Specifically, the Frontline Managers Courses (FMC) and the Operational Supervisors Workshop (OSW) were cited as two courses that not all frontline managers are able to attend early in their tenure as a frontline manager. This was attributed to budgetary and scheduling constraints. Responses to the FLM Survey indicated that many frontline managers had taken the OSW, eLearning Management System (eLMS) courses, and FMC- Phase 1 training. OSW training was rated the highest in terms of its applicability to the needs of the frontline manager position, which confirmed opinions expressed during interviews. Although the FAA offers these training sessions, many new frontline managers stated that they had to learn the non-operational aspects of their job (effectively managing employees, conducting training and skill checks, completing performance evaluations) while on the job.

Variations exist in the training and the materials used as part of the current frontline manager onboarding process. For example, one facility required new frontline managers to shadow an experienced manager for 40 hours as part of an informal on-the-job training session. Several suggestions concerning the creation of an orientation package were offered by those interviewed. Providing examples of completed forms and a schedule of due dates for recurring tasks were mentioned as items that would benefit new frontline managers.

Other Factors Impacting Frontline Manager Workload

Responses during interviews and to the survey indicated that the recent change in pay bands and the corresponding prospect of a loss in seniority deterred experienced controllers from applying for open frontline manager positions. While this impacts the potential size of the frontline manager workforce in the future, current limitations on frontline manager staffing not only impact the amount of time that can be dedicated to completing operational tasks, but can also impact the

effectiveness of timeliness of administrative work. At smaller facilities in particular, frontline managers handle a wider range of administrative responsibilities, and on average they spend more time on their administrative tasks than their counterparts at larger facilities. Larger facilities have their own set of factors that impact frontline manager staffing, including the requirement to take on the role of Operations Manager in Charge (OMIC) during the midnight shift.

- **Lack of incentives** was cited by current frontline managers as a factor that limited experienced controllers from applying for open frontline manager positions. Experienced controllers are reluctant to apply for open frontline manager positions due to recent changes in pay bands and the prospect of losing seniority. The increase in responsibility does not have a commensurate increase in pay due to the pay band structure implemented in February 2012. Furthermore, moving to a frontline manager position led to a potential loss of seniority. The FAA does not have uniform seniority rules for management positions, so the rules vary from facility to facility.

- **Limited frontline manager staffing** was mentioned by many of the frontline managers as something that impacted their workload. Many of those interviewed stated that having an additional supervisor would provide them the time to give more meaningful feedback to their controllers, allow them to complete administrative tasks in a timelier manner, and provide adequate coverage during mid-shifts. Some frontline managers also indicated that having an additional frontline manager would enable them to dedicate time away from the operation to completing administrative tasks with their undivided attention rather than completing them at their desks while simultaneously monitoring operations. Due to current frontline manager staffing levels, many frontline managers reported that they remain in the operation, work through their official lunch break, and do not take breaks that are allotted to them.

- **Frontline managers at smaller facilities perform a wider range of administrative tasks.** Frontline managers at smaller facilities also tend to spend more time on administrative tasks than those at larger facilities because often there is no other frontline manager on duty to assist them. Also, smaller facilities typically do not have support functions, such as Quality Assurance/Quality Control or training departments, and may not even have an administrative assistant to cover common office functions. Frontline managers at the smaller facilities indicated that the amount of support they receive from their ATMs on administrative tasks varied, but that overall they had seen an increase in administrative workload.

- **Frontline managers at some larger facilities perform as the OM during the midnight shift.** During this shift, which usually runs from 10 p.m. to 6 a.m., the frontline manager is in charge of the watch desk, weather monitoring, and traffic management, in addition to their regular duties as a frontline manager. Their responsibilities during this shift include:

    - Monitoring all operational areas
    - Closing out facility records and daily reports

- Certifying all shifts
- Making Domestic Events Network (DEN) notifications
- Checking the watch schedule
- Building the overtime call in sheet for the next day
- Working directly with Tech Ops
- Completing any coordination and paperwork associated with air traffic incidents.

They can assume this workload because there is typically less air traffic and most areas have only one sector open during this shift, but there usually is no backup for the frontline manager on this shift should something catastrophic occur. Furthermore, the scope of their work includes tasks that they do not perform on a day to day basis due to an OM being in place from 6 a.m. to 10 p.m.

Summary

A synthesis of the information gathered from the study indicates that in addition to their operational duties, frontline managers are performing an increasing range of administrative tasks that can take their focus away from air traffic operations. The number and variety of tasks required may be impacted by one or more factors including experience levels in the controller workforce during a given shift, the size of the facility, the role performed by a frontline manager during a specific shift, or operational complexities at the facility where the frontline manager works. Frontline managers rely on various methods to remain engaged in operations while concurrently addressing their administrative workload. As indicated by those interviewed, they often stay on the operations floor for most, if not all, of their scheduled shift. While frontline manager staffing is limited at some facilities, concerns were expressed about the lack of incentives for experienced members of the controller workforce to apply for open frontline manager positions. In addition, for those who are selected as new frontline managers, the timing of the training received, the materials used, and the training process can vary between facilities.

4 Recommendations

Using the construct of the Reauthorization Act and the results of the analysis performed, the Study Team developed a series of recommendations that, if implemented, will enable the FAA to address the findings generated by this study. The Study Team notes that all FAA stakeholders interviewed during this study recognize the importance of the frontline manager role and its impact on the NAS. As the FAA continues NextGen initiatives the specific tasks associated with the frontline manager role will likely evolve. The WBS and the findings developed as part of this study provide the FAA with a baseline from which further analysis can be conducted to streamline and improve current frontline manager tasks and make informed decisions on the specific changes that will result from future initiatives. In some cases initiatives are already underway, while in other cases the suggestions involve conducting further analysis and generating best practices that can be shared within the organization immediately, with a goal of continuing to monitor and improve those practices as NextGen initiatives are implemented.

In reviewing these recommendations the following considerations should be kept in mind:

- Ultimately the specific tasks that a frontline manager performs may differ by facility type and level.

- Gaps in the frontline manager pipeline, availability of qualified personnel, and impact on the controller workforce may impact the timeline within which the FAA can implement some recommendations.

- Implementation of the scheduling tool may mitigate some of the shift scheduling tasks that contribute to the administrative workload imposed on frontline managers.

- There may be a time lag before results can be determined and there may also be a gap in obtaining updated quantitative data that supports any future decisions regarding the status of the proposed recommendations.

Managerial Tasks Expected to be Performed by Frontline Managers and Other Factors

Many of the administrative tasks identified in the WBS fall between purely administrative and operations-related. Operations-related administrative tasks require an understanding of the principles of air traffic control and tactical knowledge of the facility's controller workforce, while purely administrative tasks do not. Using this information as a starting point, along with the role of the frontline manager (super controller vs. manager) ultimately defined by FAA leadership, **a review of the administrative tasks that are performed constantly or frequently by frontline managers should be conducted** in order to determine what can be delegated to other positions. Based on results of the interviews and the FLM Survey, it appears that certain general administrative tasks that are currently the responsibility of frontline managers could be partially delegated to support personnel or a frontline manager largely dedicated to completing administrative tasks, or perhaps eliminated entirely. For instance, the preparation and management of shift schedules will become more automated as the FAA continues its implementation of a new scheduling tool. Scheduling tasks could be started by dedicated staff members with an understanding of air traffic operations and

shift scheduling, and then corrected and approved by the frontline manager who possesses the requisite knowledge of the controllers' capabilities in relation to position assignments to sign off on pre-populated forms. This could reduce the overall time frontline managers spend completing the tasks, as dedicated personnel improve productivity by repeatedly working on such tasks and frontline managers begin to spend more time evaluating and approving decisions rather than completing forms and schedules.

In addition to examining the appropriate mix of administrative tasks, a **review of current best practices for handling administrative work should be conducted in order to determine applicability for use at other facilities**. Potential areas to review include work area configuration and the use of tools and technology to enable productivity. While keeping in mind that some facilities are not fully staffed in the frontline manager position, the best practices related to the implementation and use of administrative days and AWS should be documented and shared throughout the organization. This would include conducting a "lessons learned" review regarding the use of these practices at the Atlanta TRACON and the Miami Tower/TRACON. Miami is currently implementing AWS on a probationary basis with the thought that dedicated hours will facilitate the completion of administrative tasks in a timelier manner. The ATM indicated the AWS will continue if frontline managers can demonstrate that they are using the dedicated hours to complete administrative tasks.

The performance review process is currently complicated by the structure of work teams where, in many cases, direct reports are scheduled to work separate shift schedules from the frontline manager, and performance management becomes less timely and interactive as a result. The FAA should **explore ways to make the employee performance evaluation process more meaningful, timely, and proactive, while minimizing the potential for duplication of efforts**. This would include clearly and succinctly communicating the expectations of a frontline manager, especially as they relate to evaluating controller performance. In addition, identifying steps in the evaluation process where efforts are duplicated would assist in streamlining the process. Measuring the time required to complete evaluations and the volume completed would also assist in streamlining the process. Diverting or eliminating some of the current administrative workload should also provide opportunities to make the process more meaningful, timely, and proactive. Identifying opportunities to improve the ATSAP process (facilitating the ability to provide timely, meaningful feedback) should also be considered.

To the extent practical, the **facility even flow metering process should be coordinated with other workload distribution at the facility** to minimize the impact on the workforce. One of the frontline managers interviewed described the arrival of developmentals at his facility as "feast or famine." Others had little indication of an exact start date until right before the new employee reported for work, and still others asked the headquarters personnel that participated in the facility interviews to look into the possibility of delaying new placements at their facility until later in the year. Developmentals generate workload due to need for frontline managers to coordinate training and need for current CPCs to function as OJTIs. It is also important for new controllers to have the ability to work traffic during busy times to gain proficiency and confidence in their abilities. Initially implementing this initiative at a targeted group of facilities will enable the FAA to gather data in order to determine potential reductions in the administrative burden encountered by frontline

managers and OJTIs, examine the opportunities developmentals have for exposure to busier traffic periods, and monitor the initiative to determine whether it reduces actual controller training time.

Number of Supervisory Positions, Coverage in Relation to Traffic Demand, and Complexity of Traffic and Managerial Responsibilities

The FAA should **examine "actual" supervisory capacity by facility and identify metrics and best practices in this area.** This is important since some frontline managers are on long-term internal details to programs such as En Route Automation Modernization (ERAM) and Metroplex, or may have limited ability to work on the operations floor as a frontline manager (due to medical disqualification, for example). The actual number of frontline managers available at a facility to fulfill its required frontline manager shifts may conflict with changes in the authorized staffing numbers that occurred with recent facility downgrades. However, opportunities to provide at least one supervisor per shift (day and evening), or full shift coverage on a 24-hour basis at facilities with unique operating characteristics (nighttime cargo operations, for example) should be identified, and a focused effort should be made to keep the staffing ratio lower at facilities with higher traffic volumes and those with higher percentages (or planned percentages) of developmental controllers.

In conjunction with examining "actual" supervisory capacity, the FAA should **review current protocols for putting CICs in place, clarify requirements, document the prevalence of their current use, identify best practices and mechanisms for sharing them, and establish metrics**. If additional frontline managers cannot be utilized CICs will play an important role in monitoring operations. Interviews and survey responses indicated that the use of CICs is discouraged at some facilities due to traffic volumes and level of operational complexity, while it is vital at other facilities due to reduced numbers of frontline managers. Using CICs can pose a challenge for some frontline managers when they return from being out of the operational area. Clear, consistent guidelines and expectations need to be provided.

Develop quantitative staffing guidelines that incorporate full shift coverage and account for timer required to complete administrative tasks and other non-operational time such as attending training, details, annual leave, and sick leave. Some frontline managers mentioned that the dynamic nature of air traffic operations makes it difficult to come up with a single staffing ratio that would be appropriate for all situations, time periods, or seasons. Several of the individuals interviewed expressed concern over relying too heavily on a staffing ratio because this could serve as a pre-requisite for establishing staffing formulas, a method that they felt did not take into account the increase in workload that frontline managers have experienced due to the additional administrative tasks expected of them in conjunction with monitoring air traffic operations. Current information on the volume of administrative work is qualitative; conducting a study to quantify the magnitude of this issue will provide additional insight and visibility by measuring how much of a frontline manager's time can actually be saved, and where adjustments to staffing levels should be considered.

Facility Type

Data from the interviews and surveys indicate that the range of duties and the percentage of time a frontline manager spends performing them can vary based on the facility type. In conjunction with reviewing the administrative tasks that are performed constantly or frequently, and identifying best

practices for handling administrative work, the FAA should **determine the scope and level of effort provided by administrative and support personnel by reviewing their current utilization in order to understand gaps and differences in the level of assistance provided** (for example, sharing use of training resources in major metropolitan areas versus the ability to schedule these resources). Completing this effort would complement the work performed during this study and provide additional insight into the roles and perspectives of those who support the frontline manager in completing various administrative tasks.

To complement the review of support personnel and to gain insights into the controllers' perspective on some of the findings from this study, **conduct a series of controller interviews (to include those that perform the roles of CIC and OJTI).** This effort will provide additional insight into the perspectives of those who may become frontline managers in the future, and to deliver indications on why they may, or may not, choose to pursue the role. In addition, this will provide an opportunity to better understand the controller perspective on the current performance evaluation process, the CIC viewpoint on the challenges they face, and the OJTI perspective on the training process. Capturing the perspective of CICs who are often placed in charge of monitoring operations will assist in understanding the consistencies and challenges associated with this particular role.

Proficiency and Training Requirements

The current **development path and training curriculum for frontline managers should be reviewed, the effectiveness of the current frontline manager training process should be evaluated further, and an inventory of training materials currently in use should be created**. Because persons with less overall controller experience are filling managerial positions, among the topics to consider as part of the evaluation would be the uniformity of the initial off-site and on-the-job trainings that take place for new frontline managers, the timing of training related to new frontline manager selection and placement, and training needs in relation to experience level both in the operation as well as in any previous management roles. Some frontline managers interviewed indicated that they desired additional conduct and discipline training, and more courses centered on managing employees and fostering leadership. As part of the inventory, identifying facility specific requirements (for example in smaller facilities where additional administrative duties currently are performed), and cataloging both formal and informal training materials (user manuals, guides, cheat sheets, presentations) that would benefit from being standardized should be considered.

Summary

FAA leadership indicated that the primary role of a frontline manager is to remain operationally engaged while performing appropriate operationally-related administrative tasks. Leadership also realizes that a "one size fits all" approach may not be the best approach given differences in operations and administrative support at facilities of various sizes. In order to maintain a safe and efficient operating environment, it will be important to closely examine some of the frequently performed administrative tasks and determine whether they should be performed, diverted where and when possible, and improved if the opportunity exists.

In addition to reviewing administrative tasks, identifying appropriate measures of administrative workload and devising ways to consistently capture that information will facilitate the ability to

develop quantitative staffing guidelines for frontline managers. Conducting further quantitative data analysis to validate, quantify, and correlate elements such as the timing of training, frequency of task performance, air traffic volumes, and time on-position will complement the topics discussed during the interviews and captured in the FLM Survey. Additional analysis of the survey results may yield more insights into the multifaceted information that has already been captured.

Developing a better understanding of the current onboarding process for frontline managers, including the overall timing and staging of the process, content, and materials will facilitate the ability to consistently add and develop leaders in this role as NextGen initiatives become more prominent in FAA's operating environment. Having additional conversations with support staff, current controllers, OJTIs, and CICs is anticipated to provide additional qualitative information on topics such as the working relationship of the frontline manager and the role each one plays in supporting the frontline manager.

The FAA's universal acceptance that the frontline manager role is critical to managing the NAS and the agency's commitment to supporting the completion of this study are key steps in the process to further define and streamline the tasks associated with the role. Combining the qualitative information obtained in this study with a quantitative analysis of key findings will position the FAA to develop staffing guidelines for frontline managers that will contribute to the agency's ongoing efforts to maintain the appropriate complement of frontline managers at the facility level. Implementing these recommendations will enable the FAA to establish a baseline that will enable the organization to account for the impact of NextGen initiatives on the role of the frontline manager in the future.

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Appendices

Appendix A – Acronyms

ARTCC	Air Route Traffic Control Center
ATC	Air Traffic Control
ATCS	Air Traffic Control Specialist
ATLDP	Air Traffic Leadership Development Program
ATM	Air Traffic Manager
ATSAP	Air Traffic Safety Action Program
CBI	Computer Based Instruction
CEDAR	Comprehensive Electronic Data Analysis and Reporting
CER	Covered Event Review
CIC	Controller in Charge
CMEL	Center for Management and Executive Leadership
CPC	Certified Professional Controller
CPC-IT	Certified Professional Controller In-Training
DEN	Domestic Events Network
DTRB	Digital Terminal Resource Book
EI	Emphasis Items
EAP	Employee Assistance Program
EDCT	Exact Departure Clearance Times
EEO……	Equal Employment Opportunity
eLMS	Electronic Learning Management System
EOSH	Environmental, Occupational, Safety and Health
ERAM	En Route Automation Modernization
FAA	Federal Aviation Administration
FLM	Frontline Manager
FMC	Frontline Managers Course
FPPS	Federal Personnel and Payroll System
GS	Ground Speed
LMR	Labor Management Relations
MMAC	Mike Moroney Aeronautical Center

MIT	Miles in Trail
MOR	Mandatory Occurrence Report
MOS	Military Operations Specialist
MOU	Memorandum of Understanding
NAS	National Airspace System
NATCA	National Air Traffic Controllers Association
OIG	Office of the Inspector General
OJTI	On-the-Job Training Instructor
OM	Operations Manager
OMIC	Operations Manager in Charge
OSA	Operational Skills Assessment
OSW	Operations Supervisor Workshop
PD	Position Description
QA/QC	Quality Assurance / Quality Control
QC	Quality Control
SME	Subject Matter Expert
SOP	Standard Operating Procedures
SSR	System Service Review
SYSIR	Systemic Issue Reviews
STMC	Supervisory Traffic Management Coordinator
SUPCOM	Supervisors Committee
TMC	Traffic Management Coordinator
TMR	Traffic Management Review
TMU	Traffic Management Unit
TOS	Time Outside Shift
TRACON	Terminal Radar Approach Control
VFR	Visual Flight Rules
VIP	Very Important Person
WBS	Work Breakdown Structure

Appendix B – Background Information Review

As a first step in conducting this study, the Study Team conducted a multi-purpose examination of reports on air traffic control operations to gain a deeper understanding of the responsibilities of frontline managers in supervising controllers and the factors used today to determine frontline manager staffing requirements. The objectives of the review included:

- Identifying potential measures for carrying out typical tasks (e.g., supervision, conducting employee reviews, scheduling).

- Highlighting issues that the FAA should examine more closely when considering the implementation of frontline manager staffing guidelines including, but not limited to, the number of supervisory positions requiring watch coverage of operations, coverage requirements in relation to traffic demand, complexity of traffic and managerial responsibilities, and proficiency and training requirements.

The background information review also shed light on the role of frontline managers in public safety organizations in the areas of scheduling, leadership development, technical supervision and administrative functions such as timekeeping, employee performance reviews, and controller training. In addition, the review examined the "span of control" (i.e., staffing ratio) at the "direct supervisor-to-line employee" level in other organizations including police departments, fire departments, and emergency medical services (EMS) organizations. Based on reports available, the average span of control for these public safety and law enforcement organizations was:

- Fire departments (4.2 employees per direct supervisor)[7]

- Police departments (5.6 to 9.1 employees per direct supervisor)[8]

- Public safety communications (4.75 employees per direct supervisor)[9]

- Emergency management services organizations (10 employees per direct supervisor).[10]

The review found that experience levels of personnel, the nature of the operations and crew size (firemen per emergency response vehicle for example) impacted the ratios in these organizations. Some of the factors that drive staffing ratios are relevant to those found in the FAA environment, for example, experience levels (with an increasing number of retirements and new hires at the FAA) and crew sizes required for shifts with various start times. The staffing ratios at each of the public

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[7] *Ratio of Staff to Managers in City Government*. Office of the City Auditor. City Government of Seattle, Washington. 2002. <http://www.seattle.gov/audit/report_files/9602-Staff-MgrsRatio.pdf>

[8] *Table A1-3 Comparative Supervisor to Staff Ratios for Field Operations Personnel*. Appendix 1. Management Staffing and Supervision of Sworn Personnel, Board of Supervisors, City and County of San Francisco. http://www.sfbos.org/index.aspx?page=3887

[9] *Dispatch.* Escondido Police Department. http://police.escondido.org/dispatch.aspx

[10] *Paramedic Field Supervisor (policy reference 2052).* San Francisco Emergency Medical Services Agency. San Francisco, CA. August 2008. http://sfdem.org/Modules/ShowDocument.aspx?documentid=786

safety and law enforcement organizations benchmarked can also be tied to fluctuations in workload. Similar to the FAA, the optimum span of control for these organizations depends on the amount of time the manager spends directly providing services to the public, fulfilling administrative duties, supervising their subordinates and reviewing their performance. This is consistent with conditions at the FAA where staffing ratios may be driven by factors such as the time that frontline managers spend directly supervising controllers on the operational floor compared to the time they spend performing administrative tasks.

Appendix C – Work Breakdown Structure

To identify the managerial tasks expected to be performed by frontline managers, including employee development, management, and counseling, the Study Team identified the universe of tasks performed by frontline managers, documented how frequently frontline managers perform each task, and captured the inherent complexity associated with each task. This information was captured in the form of a Work Breakdown Structure (WBS) that documents each task and its relationship to air traffic control, along with its required frequency, and level of complexity. The WBS also highlights the multiple roles performed by a frontline manager that range from supervising controllers on the operations floor to developing training materials. Documenting this information provided a clearer understanding of the multi-faceted frontline manager position that requires technical competency, extensive knowledge of air traffic control procedures, and a range of managerial skills to supervise the controller workforce, maintain operational engagement, and complete administrative work on time.

Development of the WBS

To assemble the list of expected frontline manager duties, the Study Team first reviewed the official frontline manager position description, "Supervisory Air Traffic Control Specialist (AT-2152)," which describes the position's basic duties: "planning and directing operations within delegated areas of responsibility, while providing first line supervision to a team of developmental and certified professional controllers." The position description document also states that the frontline manager reports to the Operations Manager and that performance is evaluated on the effectiveness with which assigned program objectives are achieved. Specifically, this document outlines these responsibilities for frontline managers:

- Plans and assigns work to be accomplished by subordinate employees
- Sets work priorities and schedules
- Approves (use of) leave
- Gives advice, counsel, and instruction to employees on both work and administrative matters
- Evaluates performance of employees and recommends performance ratings
- Hears and resolves complaints from employees and refers group grievances and more serious unresolved complaints to a higher level manager
- Identifies and arranges for developmental and other training needs of employees
- Finds ways to improve production or increase the quality of the work directed
- Adjusts staffing levels and work procedures to accommodate resource decisions made at higher levels
- Recommends goals and objectives for the area and tracks accomplishments
- Communicates and reinforces diversity and EEO policies and programs in all areas of responsibilities, including selection, training, and transfers
- Supports and participates in the labor management partnership process, and fosters a work environment where all employees are treated in a fair and equitable manner.

In addition to the official FAA position description, the Study Team reviewed several listings from the *federalgovernmentjobs.us/jobs* and the *USAJOBS.gov* websites for the "Supervisory Air Traffic Control Specialist" position to gain an additional understanding of the functions and tasks associated

with the frontline manager position. The Study Team compared the responsibilities in the online job announcements with those in the official position description to determine how closely the listed responsibilities aligned, and whether site specific duties were included in the online listings.

Job postings for positions at En Route Centers used the wording from the position description and included all of the duties, but did not list any site specific tasks. Announcements for Terminal facilities generally provided only the responsibilities for planning and assigning work to controllers, advising, counseling and instructing controllers on air traffic procedures and administrative matters, administering employee training, and improving production/organizational performance. One posting for a lower level Terminal facility included the additional task of "effects disciplinary actions."

The SUPCOM SMEs provided FAA orders, which outlined specific protocols related to supervisory duties and the oversight of training for controllers by frontline managers, along with additional documentation related to frontline manager performance expectations. These documents outlined duties and responsibilities of an Air Traffic Operations Supervisor (frontline manager) and the FAA criteria for thorough completion of expected tasks and behaviors. Because no single document covered all of the tasks associated with the frontline manager role nationwide, the Study Team compiled the preliminary WBS using the documents listed below:

- *CLET15J Supervisor Air Traffic Control Specialist (Operations Supervisor)* - official position description for the *Supervisory Air Traffic Control Specialist (i.e., frontline manager)*
- *Duties and Responsibilities for air traffic operations supervisor* - list of expected duties of a frontline manager compiled by personnel at an En Route Center
- *ER4.1.doc* – document outlining the responsibilities of FAA employees, and frontline managers specifically, with respect to conduct, safeguarding FAA resources, instituting and enforcing FAA policies while managing their employees
- *FLM Behavioral Indicators - Terminal Services.* Leadership Development & Change Management group
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After completing the preliminary WBS, the Study Team sent the document to the SUPCOM SMEs to validate. The SUPCOM representatives provided their expertise and based on their input, the Study Team finalized a list of 102 frontline manager tasks with each task grouped under one of the seven high level task classifications which are found in Figure 11. The SUPCOM representatives also applied their knowledge of the position requirements to rate each task in terms of its relationship to air traffic operations, level of complexity, and frequency. (The final version of the WBS is found in Figure 12.)

Figure 11: Task Classification Definitions

Task Classification	Definition
Supervision	Tasks related to managing air traffic operations conducted by controllers such as assigning personnel to positions, and monitoring movement of personnel on and off the operations floor to avoid disruption to NAS. Monitoring of air traffic operations by controllers, includes ensuring controllers follow an approved checklist when exchanging information, understanding passed / received data, using appropriate communications methods and using prescribed phraseology. Tasks also include frontline manager monitoring controllers for Certified Professional Controller (CPC) eligibility and conducting air traffic operations to maintain on-position eligibility. May include the supervisory tasks of the Operations Manager (OM) or Air Traffic Managers (ATM) if frontline manager is covering these positions.
Training / Coaching / Guidance	Tasks related to administering on-the-job training, certifying controller skills, "team building," mentoring, managing / delivering technical training, and managing trainings for controllers.
Managerial Duties	Tasks related to managing employees, enforcing FAA or workplace specific policies and helping employees understand FAA directives in relation to work processes. Tasks include monitoring employee conduct, use of time, punctuality and reporting infractions of the law. Examples of communications tasks are reinforcing Equal Employment Opportunity (EEO) policies, conducting team briefings, referring employees in need to Employee Assistance Program (EAP), resolving employee grievances or directing them to a supervisor, and communicating how FAA initiatives will impact work processes.
Scheduling / Leave / Overtime	Tasks for developing controller schedules, including the analysis of alternative schedule arrangements / position assignments, overtime lists, and monitoring and approving use of employee leave.
Manage Facility Staffing Levels & Budget	Tasks expected of frontline managers for the planning, budgeting and use of Federal funds, time, property, equipment, materials, information and personnel (both Federal and contract). In addition, includes tasks for setting, forecasting or adjusting staffing levels and / or work procedures to apply correct resource levels to meet operational needs to maintain effective ATC service and / or to meet resource decisions made at higher levels. (This includes selections and transfers.)
Strategic Planning & Assessment of Organizational Performance	Tasks for developing goals for ATC facility and identifying performance measures (and data sources) for assessing performance against these goals. Tasks for conducting a series of FAA reviews at the organizational level: operations skills assessment (OSA), system service reviews (SSR), Traffic Management Review (TMR), Covered Events Review (CER), and systemic issue reviews (SYSIR).
Frontline Manager Training	Frontline Managers attendance at trainings at the service area office, the FAA Center for Management and Executive Leadership, and training to enhance knowledge of directives or operational preparedness. This includes frontline managers taking online courses, such as the e-LMS.

WBS Details

The WBS presents information for each task in a logical sequence from left to right as presented in Figure 12 below. For readability purposes, the complete WBS is broken into two sections for this report. The first section provides information regarding how the task was classified and a detailed description of each task. The task number appears first followed by the task classification and the task sub-classification where it is grouped with other tasks similar in nature and purpose. Grouping

tasks provides the ability to review major facets of the frontline manager position, such as monitoring operations, performing employee evaluations or monitoring training. The task name and a more detailed description of the associated work are provided as well.

Each task classification had one or more sub-classifications under which tasks could be further decomposed based on their purpose. For example, tasks under Supervision were further split into 16 sub-classifications that included aspects of frontline manager responsibilities such "Currency," "Shift Management" and "Watch Coverage." Each of these sub-classifications contained two or more tasks. In addition, characteristics relating to the operational nature of the task, its level of complexity, and how frequently frontline managers perform the task were captured.

Task Number - unique identification number assigned to a task in the list of expected tasks for the frontline manager position.

Task Classification – highest level at which expected tasks for the frontline manager position are classified in the Work Breakdown Structure, which consists of these seven categories: Manage Facility Staffing Levels & Budget, Managerial duties, Scheduling / Leave / Overtime, Strategic Planning & Assessment of Organizational Performance, Supervision, Frontline Manager Training, Training / Coaching / Guidance.

Task Sub-classification - first level of decomposition below the Task Classification.

Task Name - unique name describing the nature of the task and distinguishes it from others in the WBS. This is the lowest level of decomposition.

Task Description - detailed description of the work done in carrying out the task, including considerations for accomplishing the task.

Figure 12: Work Breakdown Structure for the FAA Frontline Manager Position (excluding task attributes)

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
1	Frontline Manager Training	Attend training at the service area office	Operations Supervisor Workshop	Attend Operations Supervisor Workshop (OSW) once every 3-years.
2	Frontline Manager Training	Attend trainings for frontline managers at FAA Center for Management and Executive Leadership	CMEL	Attend Frontline Manager Course-Phase 2: Managing for Results and Frontline Manager Course-Phase 3: Managing for High Performance.
3	Frontline Manager Training	Enhance knowledge of directives	Retain knowledge of orders	The frontline manager must remain current and knowledgeable of agency and facility orders, procedures, National Collective Bargaining Unit Agreement, and MOUs.
4	Frontline Manager Training	Undergo operational training	Complete personal training	Complete all required training. (Read and Initial Binders, CEDAR, CBIs, eLMS, classroom, and others as assigned.)
5	Manage Facility Staffing Levels & Budget	Manage agency funds	Assure appropriate use of Federal resources	Conserve, protect and assure appropriate use of Federal funds, time, property, equipment, materials, information and personnel (both Federal and contract).
6	Manage Facility Staffing Levels & Budget	Manage staffing levels	Adjust staffing levels and work procedures to FAA decisions	Adjust staffing levels and work procedures to accommodate resource decisions made at higher levels.
7	Manage Facility Staffing Levels & Budget	Manage staffing levels	Manage support resources to meet operational needs	Integrate resources and requirements with operational needs to maintain safe and efficient ATC services.
8	Manage Facility Staffing Levels & Budget	Manage staffing levels	Recommend selections and transfers	Recommend selections and transfers.
9	Managerial duties	Advise on completing administrative requirements	Advise controllers on administrative requirements	Give advice on administrative matters to controllers.
10	Managerial duties	Delegated duties	Area Focals	Work as a focal (training, schedules, safety, equipment, others as needed) frontline manager for assigned area, as delegated by the OM.

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
11	Managerial duties	EEO policy promotion and enforcement	Communicate and reinforce diversity and EEO policies and programs	Foster a work environment where all employees are treated in a fair and equitable manner. Communicate and reinforce diversity and EEO policies and programs in all areas of responsibilities, including selection, training, and transfers. Treat employees with dignity, respect and in a fair and equitable manner in conformance with the FAA Model EEO Program. In addition, communicate to staff that discrimination, or the appearance of discrimination, on the part of any employee will not be tolerated or condoned.
12	Managerial duties	Formulate workforce policies	Formulate and support local policies and goals	Collaborate with other managers to develop a shared approach on local policies (e.g., training, breaks), and consistently follow through on the implementation of the shared agreement.
13	Managerial duties	Handle employee complaints	Resolve employee concerns or refer to upper management	Listen to concerns or complaints from employees supervised, document them and / or resolve them. Refer group grievances and more serious, unresolved complaints to a higher level manager. These may include informal (verbal) or a more formal grievance.
14	Managerial duties	Manage classified information properly	Safeguard sensitive information	Safeguard and handle appropriately all classified information and unclassified information which should not be given general circulation in accordance with agency directives.
15	Managerial duties	Manage employee conduct	Enforce timeliness and employee readiness	Ensure employees arrive on-time, ready for work. Document employee(s) tardiness.
16	Managerial duties	Manage employee conduct - CBA 52	Conduct - Professional Standards	If a conduct issue has been identified, the frontline manager must determine the appropriate course of action to resolve the behavior issue. The path of Professional Standards (NATCA CBA Article 52) may be considered prior to formal discipline being necessary.
17	Managerial duties	Manage employee conduct - HRPM 3.1	Conduct - Disciplinary Action	Open, investigate, take appropriate action, and close any report of an employee's incidents of misconduct. Conduct investigative meetings and effect disciplinary actions if warranted, in accordance with the CBA and agency directives. Communicate and respond to questions from higher management officials.
18	Managerial duties	Monitor employee leave	Monitor employee leave usage	Audit records for employee's appropriate leave usage. Take appropriate action in accordance with agency directives, when conditions warrant.

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
19	Managerial duties	Participate in labor relations	Participate in the labor management partnership process	Communicate with labor representatives concerning workforce issues. Support and participate in the labor management partnership process.
20	Managerial duties	Payroll documentation	Employee Sign-in and out	Ensure employee shift sign-on and off entries are made in Cru-X/ART.
21	Managerial duties	Performance Management	IPM Process	To ensure employees receive beneficial feedback, frontline manager should discuss performance with the employee in a timely manner and document in accordance with agency directives. (1) General Observation: Frontline Managers are expected to observe employee performance on a daily basis under general supervision. Conduct meaningful discussions about the methods and techniques used in the delivery of air traffic services. (2) IPM Operational Skills Assessment (OSA): Conduct OSA via direct or remote monitoring When able include a replay and/or voice recording of the session. (3) Training: Determine if the employee requires training as a result of ongoing assessment of performance in accordance with agency directives.
22	Managerial duties	Performance Management	Coordination with peers	Ensure that observed conduct and performance issues are communicated to the employee's direct frontline manager.
23	Managerial duties	Performance Management	Document performance	Accurately capture and document key aspects of performance (i.e., PMS elements) throughout the year to provide targeted timely feedback and guidance. This information is reviewed during planned performance meetings (i.e., six-month, yearend).
24	Managerial duties	Performance Management	Open, investigate and close MORs / Communicate with O/M or ATM	Open, investigate and close any performance issue that has been identified. Report and investigate incidents in accordance with agency directives. Communicate and respond to questions from higher management officials. These issues may be identified from various directions (peer, manager, adjacent facility, pilot, MOR, SSR, etc.)
25	Managerial duties	Performance Management	Performance or Conduct	Frontline manager must determine if non-compliance of a procedure or directive is a performance or conduct issue. This will determine the path of correction, IPM or HRPM 3.1.

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
26	Managerial duties	Performance Management	Prepare and deliver controller performance reviews	Review the FAA performance criteria to conduct equitable and objective performance evaluations. Evaluate employee performance against established FAA criteria. Prepare periodic employee performance reviews. Conduct initial, mid-term, and final performance discussions with the individual controllers. Successfully communicate OSI/SCI intent, goals and purpose to employees.
27	Managerial duties	Performance Management	Provide on-the-spot correction	Provide on-the-spot corrections (e.g., phraseology, noncompliance with procedures) to controller and later follow up to review the scenario and discuss appropriate performance. Document in CEDAR as appropriate.
28	Managerial duties	Performance Management	Recommend awards	Recognize performance that deserves recognition, determine the appropriate reward (e.g., verbal recognition, TOA, OSI, SCI), and acknowledge the contribution in the proper forum. Write up award(s) for employees. Recommend awards to be approved by superiors.
29	Managerial duties	Performance Management	Review of services	Plan, lead, conduct or participate in audits to measure and determine compliance with established FAA orders, rules, procedures and policies for the purpose of promoting continued operational safety. Some examples are: Internal Compliance Verification, Special Emphasis Items, Bi-Annual Skills Evaluations, etc. Note: for En Route, participate maybe, but the planning, leading, and conducting an audit would be completed by a support office and staff.
30	Managerial duties	Performance Management	Review work processes of controllers (adjust if necessary)	Continuously review work processes of controllers supervised to ensure that they support the FAA's mission, strategic goals, and address customers' needs (i.e., pilots). Review work processes to ensure they are carried out efficiently and economically while promoting safe air traffic operations. Effectively address individual and unit or organizational performance issues; adjust the way work is performed to meet changing conditions and demands.
31	Managerial duties	Report known or suspected violations of laws, regulations or policies	Report known or suspected violations through appropriate channels	Report known or suspected violations of law, regulations or policy through appropriate channels and fully participate in inquiries. Promptly notify the appropriate management official.
32	Managerial duties	Support Office coverage	Perform other managerial assignments (support staff)	Cover the duties of Support Staff when needed. (Airspace, Training, Quality Assurance, Quality Control, etc.)

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
33	Managerial duties	Team Communication	Communicate new agency initiatives	Communicate, support, and implement new initiatives with crew members.
34	Managerial duties	Team Communication	Communicate organizational decisions	Engage individuals in discussion, explain the rationale behind organizational decisions (e.g., financial, safety, customer service), and illustrate how the new direction can positively impact the operation.
35	Managerial duties	Team Communication	Conduct team briefings	Conduct team briefings to review operational items (e.g., OEs, upcoming special operations, new air traffic procedures) and facilitate a constructive discussion around relevant issues.
36	Managerial duties	Team Communication	Develop, deliver or attend facility briefings on current topics/issues.	Develop, deliver or attend facility briefings on current topics/issues.
37	Managerial duties	Team Communication	Monitor internal and external communications	Monitor, share, and/or respond to information obtained via electronic email, hardcopy mailbox, and verbal.
38	Managerial duties	Watch Coverage	TM Duties	Assume Traffic Management duties during normal operations or when covering mid-shift operations.
39	Scheduling / Leave / Overtime	Create / manage schedules	Analyze schedule alternatives	Evaluate multiple scheduling alternatives, while anticipating the impact and consequences of each alternative, and select based on optimization of outcomes for the organization (e.g., overtime usage, scheduled outages). Assess whether impact and other factors, such as changes in flight patterns or aircraft type that could increase controller workload or impact their ability to carry out safe, efficient air traffic operations.
40	Scheduling / Leave / Overtime	Create / manage schedules	Develop overtime lists and contact employees	Assess need for overtime. Follow agency/facility directives when making assignments. Make the required entries into the electronic schedule program.
41	Scheduling / Leave / Overtime	Create / manage schedules	Monitor and respond to employee leave requests.	Monitor and approve (or deny) employee requests for leave.
42	Scheduling / Leave / Overtime	Create / manage schedules	Prepare controller schedules	Develop schedules for controllers, according to coverage eligibility for positions, FAA work rules and employee availability, to help organizational unit achieve work plans and priorities effectively. Build watch schedules. Make CIC assignments and remedy them if necessary. Make adjustments to the facilities attendance records via approved manual or automated

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
				method.
43	Strategic Planning & Assessment of Organizational Performance	Air Traffic Organization (ATO) Quality Control	Conduct employee interviews for System Service Review (SSR)	Interview employees to gain an understanding about what occurred during the time period under review. Obtain multiple perspectives about what occurred during the period of the SSR. Employee participation is mandatory; however, interviews with any employee must be conducted in an atmosphere of shared concern that is designed to gain a better understanding about the operational environment. Any information obtained during such interviews should be used within the SSR process to aid in identifying risk that may require mitigation.
44	Strategic Planning & Assessment of Organizational Performance	Air Traffic Organization (ATO) Quality Control	Conduct System Service Review (SSR)	Determine the time period and position(s) to be reviewed based on known circumstances. Review as much data as needed to develop an understanding of what occurred during the timeframe in question. Use available tools (Traffic Flow Management System (TFMS), replay, voice, discussions, etc.) as appropriate to support this process.
45	Strategic Planning & Assessment of Organizational Performance	Air Traffic Organization (ATO) Quality Control	Conduct Systemic Issue Review (SYSIR)	Identify areas that have potential system impact, whether at the SDP, service area, or service unit level, after assessing all available information of each OSA, SSR, or CER conducted, looking for possible underlying issues beyond those that are operationally immediate. Document as required in CEDAR and with agency directives.
46	Strategic Planning & Assessment of Organizational Performance	Air Traffic Organization (ATO) Quality Control	Identify Emphasis Items (EI) and enter in CEDAR	QC may identify areas to be observed, documented, and tracked as a quality control area of emphasis. Frontline manager may participate in assessing identified issues. Document assessments in accordance with facility directives.
47	Strategic Planning & Assessment of Organizational Performance	Air Traffic Organization (ATO) Quality Control	Perform Covered Events Review (CER)	Conduct CER to supplement other reviews of air traffic services required during or following an aircraft accident. Review of all aspects of service (individual performance, equipment issues, weather, etc.) and identify any issues that cannot be ruled out as potentially contributing to the accident. Recognize exemplary actions as well. The CER may serve to identify systemic risk as well as to improve air traffic services following an aircraft accident. Filing an ATSAP report does not preclude an SDP from conducting a CER
48	Strategic Planning & Assessment of Organizational	Air Traffic Organization (ATO) Quality Control	Perform quality control Operational Skills Assessment (OSA)	Assist with collecting data to produce a valid quality control sample to assess the technical performance demonstrated by operational personnel as outlined by QC. Frontline manager expected to identify potential

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
	Performance			systemic issues associated with training, efficiency, airspace, procedures, directives, and equipment, which are then addressed through the systemic issue review (SYSIR) process. Select the applicable systemic issue option in OSA and enter a brief summary. This form of quality control OSA must not be used as the basis of, or to support, Individual Performance Management (IPM).
49	Strategic Planning & Assessment of Organizational Performance	Air Traffic Organization (ATO) Quality Control	Perform Traffic Management Review (TMR)	Evaluate SDP TM operations with a focus on identifying issues that may impact system efficiency. This should include items that need correcting as well as identification and recognition of best practices.
50	Strategic Planning & Assessment of Organizational Performance	Air Traffic Organization (ATO) Quality Control	Write up SSR in CEDAR	Document all identified issues and actions taken in the SSR "question tree" in CEDAR for analysis and SSR closure. (Only address those areas in the question tree that are applicable to the SSR.) If potential systemic issues are identified, select the applicable systemic issue option and enter a brief synopsis. If CEDAR is unavailable, retain the results, and enter them in CEDAR as soon as it becomes available. Once all issues have been identified and mitigated or forwarded to the SYSIR process and all documentation is completed, close the SSR in CEDAR by selecting the "Close SSR" option.
51	Strategic Planning & Assessment of Organizational Performance	Assess organizational performance	Develop goals for ATC facility, areas and track performance using them	Serve as a member of the management team to improve organizational performance and to meet strategic goals. Collaborate with members of the management team to develop plans of improving performance and meeting FAA and facility specific strategic goals.
52	Strategic Planning & Assessment of Organizational Performance	Assess organizational performance	Identify performance measures and related data sources	Identify performance measures to be used to track and verify individual and / or unit performance in relation to organizational performance.
53	Strategic Planning & Assessment of Organizational Performance	Manage air traffic operations	Maintain on going collaboration with TechOps / System Ops	Collaborate with TechOps/SysOps and maintain an ongoing discussion regarding the best way to satisfy requirements in the context of the operation, making adjustments as circumstances change (e.g., weather, traffic demand).
54	Supervision	Coordination	Coordinate with adjacent facilities on impacts to air traffic operations	Coordinate with adjacent facilities regarding any matter that will or could impact air traffic operations.

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
55	Supervision	Currency	CPC Currency	Ensure that all employees conduct air traffic operations in accordance with established FAA requirements to maintain on-position eligibility. This includes the requirement for time on each operational position as well as a current medical.
56	Supervision	Currency	Frontline Manager Currency	Conduct air traffic operations in accordance with established FAA requirements to maintain on-position eligibility. (Current requirement is 8 hours of on-position time and current medical.)
57	Supervision	Emergencies	Resolve equipment failures and aircraft emergencies.	Complete the necessary coordination to assist in the rapid recovery from equipment failures and emergencies. This requires a vast knowledge of which business unit can assist (Tech Ops, Sys Ops, Terminal, En Route, Flight Service, etc.). For aircraft emergencies, you must also coordinate with the appropriate public office for assistance (law enforcement, rescue agencies, airport management). Communicate with the O/M or ATM on situation. Situations concerning national security must also be reported via Domestic Events Network (DEN).
58	Supervision	General	Anticipate and resolve problems prior to them impacting air traffic operations	Detect challenges in the operating environment and anticipate potential problems before they pose a risk to operational efficiency / safety.
59	Supervision	General	Resolve problems impacting air traffic operations	Resolve problems or disruptions to air traffic operations presented by controllers or detected by frontline manager. Consult all relevant sources of information (e.g., weather radar, TSD) to determine the root cause of the problem. Leverage an understanding of operational interdependencies (e.g., TechOps/SysOps) and FAA procedures for particular situations to make a timely operational decision(s) to avoid impacts to air traffic operations, while considering cost, safety, and operational efficiency. Collaborate with Sys Ops re: wx, wx reroutes, volume, outages, etc. to make operational decision(s) on, for example, route of flight, runway changes or arrival rates. Anticipate consequences of decisions and make operational adjustments in response to changing information in real-time.
60	Supervision	Monitor Communication	Ensure proper communications	Ensure controllers use proper communications, which includes the following: a. Communications clear and concise b. Proper phraseology c. Only necessary transmissions d. Use of appropriate communication method

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
61	Supervision	Monitor Coordination	Ensure complete and timely coordination	Ensure employees complete all coordination in accordance with agency directives, including: a. Observe and verify that controllers perform handoffs/pointouts correctly, and at the appropriate time/position. b. Verify that controllers relay all information that is pertinent to the situation. c. Ensure controllers clearly understand all passed or received data. d. Verify that controllers have completed accurate relief briefings as well as completed duty familiarization and transfer of position responsibility accurately in accordance with agency directives.
62	Supervision	Monitor Emergencies	Monitor controller handling and recovery from equipment failures and nonstandard/emergency situations	Make sure that controllers rapidly recover from emergencies and that they are handled calmly and correctly.
63	Supervision	Monitor Equipment	Equipment Usage	Ensure controllers understand and use equipment to the fullest capability, including: a. Make sure that controllers rapidly recover from equipment failures and that they handle equipment failures calmly and correctly. b. Ensure controllers maintain equipment status information and retain knowledge of it. c. Ensure that all equipment problems are relayed to the FLMIC in a timely manner.
64	Supervision	Monitor Judgment	Ensure that controllers use good judgment while safely and effectively performing their duties	Ensure that operational personnel use good judgment on their assigned operational position, including: a. Observe controllers to ensure they maintain effective traffic flow, take into account aircraft characteristics and their effect on traffic control. b. Maintain "positive control" by observing present traffic, and consider forecasted traffic, to predict if an overload may occur, and take appropriate action to mitigate any risks in the operation. c. Issue correct control instructions or restrictions providing a safe, expeditious traffic flow. d. Ensure that controllers are properly prioritizing actions according to their significance in the overall traffic situation.
65	Supervision	Monitor Methods and Procedures	Ensure appropriate methods are used when performing assigned duties	Ensure controller uses appropriate methods and procedures, including: a. Ensure control instructions/duties are in compliance with handbooks, facility procedures, and directives. b. Verify that controllers post all required information on strips.

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
				c. Ensure all requirements outlined in facility and agency directives for sharing known weather information and providing necessary navigational assistance are completed. d. Ensure they maintain an effective working speed. e. Ensure they maintain aircrafts' identity. f. Ensure controllers stay focused and maintain situational awareness. g. Ensure controllers deliver clearances clearly, correctly, and in a timely manner.
66	Supervision	Monitor Safety	Ensure operational safety	Ensure controllers ensure a safe operation, including: a. Make sure controllers issue safety alerts and that they recognize that safety alerts are a first-priority duty along with separation of aircraft, and that they remain constantly alert for unsafe proximity situations. b. Monitor controllers to ensure that they provide control instructions or restrictions to ensure separation standards are maintained at all times.
67	Supervision	Other assignments	Other assignments	Cover other areas of jurisdiction when staffing necessitates and assigned by OM.
68	Supervision	Shift Management	Assign personnel to positions	Assign controllers to positions based on individual abilities, leveraging strong performers during critical periods, and looking for opportunities to develop individuals during periods of moderate traffic.
69	Supervision	Shift Management	Break rotation	Ensure that the area is staffed appropriately for the operational requirements needed at the time. The frontline manager must balance CBA requirements for employee relief breaks and the needs of the operation (sector staffing, training, special projects, training debriefings, etc.)
70	Supervision	Shift Management	Ensure controllers return form break without disruption to air traffic operations	Manage breaks for controllers. Ensure controllers return on-time from break without any disruption to the continuation of air traffic control operations.
71	Supervision	Shift Management	Record position in Cru-X/ART	Comply with agency directives to make the required entries in Cru-X/ART.
72	Supervision	Shift Management	Relieve controller and conduct air traffic operations	Be prepared to relieve or provide assistance for a controller on duty if they request it, due to lacking technical expertise, or if deemed necessary.

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
73	Supervision	Situational Awareness	Manage distractions	Take appropriate action to mitigate system risk due to unnecessary environmental distractions.
74	Supervision	Teamwork	Observe controllers to ensure they serve as effective team member	Observe controllers to ensure they serve as effective radar/tower team member. Controllers should accept equal responsibility for the safe and efficient operation of the position.
75	Supervision	Watch coverage	National Security	Monitor the Domestic Events Network (DEN) - this activity is required at most larger facilities and ARTCCs and sometimes assigned to a frontline manager.
76	Supervision	Watch coverage	Perform other managerial assignments (OM or ATM)	Cover the Watch Desk in O/M absence and /or cover facility manager duties in ATM absence.
77	Training / Coaching / Guidance	Developmental training	Assign trainee to positions	Assign trainee to particular positions to expose them to increasing challenges (e.g., increased traffic, different configuration, weather) as they progress.
78	Training / Coaching / Guidance	Developmental training	Develop and document OJT training plans	Ensure the training plan is developed and documented in writing before beginning OJT in accordance with agency and facility directives.
79	Training / Coaching / Guidance	Developmental training	Establish training team for supervised employee(s) and serve as leader	Establish and lead a training team for assigned employee(s). The training team must facilitate the training of the developmental/ CPC-IT /TMCIT by continuously assessing training progress, providing feedback, and making necessary adjustments.
80	Training / Coaching / Guidance	Developmental training	Evaluate trainee progress	Actively observes, evaluates, and thoroughly documents trainee progress relative to training plan, takes appropriate, timely actions (e.g., skill checks, skill enhancement training, training team meetings, suspend training), and provides timely feedback to the training team.
81	Training / Coaching / Guidance	Developmental training	Oversee training in the operational environment	Oversee training in the ops environment. Act as training team lead, hold regular meetings with training team.
82	Training / Coaching / Guidance	Developmental training	Perform Performance Skills Check and certify controller (or suspend OJT)	Directly monitor developmental controller on operational position(s)/sector(s). Maintain familiarity or currency on the operational position(s)/sector(s) evaluated to conduct the Certification Skills Check. Certify the individual or suspend OJT. Documentation information including a description of performance and a recommendation for one of the

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
				following; certification, continuation of OJT, skill enhancement training or suspension of OJT.
83	Training / Coaching / Guidance	Developmental training	Position certification	Ensure OJTI qualifications are met and no other duties to perform during training sessions. Maintain currency and/or familiarization on-positions where certifications are conducted. Conduct Performance and Certification Skill checks. Ensure OJT is conducted and documented completely. Serve as the training team lead. Make the final determination to amend that individual's training plan. Make the final determination regarding certification for that individual. Make the determination regarding suspension of OJT for that individual.
84	Training / Coaching / Guidance	Developmental training	Recommend targeted trainings	Plan developmental training progression to expose trainees to increased complexity (e.g., increased traffic, seasonal weather, metering). Provide targeted training recommendations or make duty assignments (e.g., CBIs, eLMS, phraseology audits) based on employees' need for development.
85	Training / Coaching / Guidance	Developmental training	Review boards	Participate and/or provide information during training review boards.
86	Training / Coaching / Guidance	Developmental training	Schedule sessions for developmental controllers to receive technical training	Identify and arrange for trainings for developmental controllers and other technical training needs of supervised employees. Activities may include scheduling times and dates, reserving room or accommodations, or communicating with training facilitator(s).
87	Training / Coaching / Guidance	Manage employee conduct	Brief employees/enforce discipline on FAA regulations, policies and programs	Brief employees on conduct and discipline issues. Support compliance with DOT and FAA regulations, policies and programs, and take necessary corrective action when employees commit violations.
88	Training / Coaching / Guidance	Mentoring	CIC Nomination and Training	Recommend, certify, and evaluate controllers at the CPC/FPL level as a Controller-in-charge. Monitor and hold CICs responsible for ensuring that assigned duties are completed and they understand the responsibilities of the position.
89	Training / Coaching / Guidance	Mentoring	Coach / mentor employees	Creates opportunities to coach/mentor employees to improve skills and to develop them along their career goals.
90	Training / Coaching / Guidance	Mentoring	Controller development	Recommend future development for interested members of your team. This can include Individual Development Plan (IDP) and/or recommended training courses (eLMS, ATLPD, Program for Emerging Leaders (PEL), etc.)

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
91	Training / Coaching / Guidance	Mentoring	Employee benefits and entitlements	Be familiar with, refer, and/or provide information on employee benefits and entitlements (FLMA, EAP).
92	Training / Coaching / Guidance	Mentoring	Nominate, supervise and certify OJTI	Recommend, certify, and evaluate controllers at the CPC/FPL level as an on-the-job instructor (OJTI). Monitor and hold OJTI responsible for ensuring that assigned trainees meet identified training goals and providing required documentation. Observe OJTI's performance during his or her first OJT session.
93	Training / Coaching / Guidance	Mentoring	Safety transformation	Discuss All Points Safety initiatives, i.e. Partnership for Safety, Safety Culture, intent of major QA/QC changes, ATSAP.
94	Training / Coaching / Guidance	Team Training	Assign remedial training	Assign Enhancement Training in accordance with agency directives, including specific area(s) to be covered and the reasons.
95	Training / Coaching / Guidance	Team Training	Coach or facilitate team building exercises to improve unit performance	Coach entire team of controllers or facilitate "team building" exercises amongst controllers supervised throughout area(s) of responsibilities. Coach controllers collectively on how to improve performance as a unit.
96	Training / Coaching / Guidance	Team Training	Deliver training assignments to controllers	Set and deliver training assignments to developmental controllers and / or CPCs. Read and Initial binders, Computer Based Instruction, eLMS, FAMs, verbal crew briefings, etc.
97	Training / Coaching / Guidance	Team Training	Develop and assign Skill Enhancement Training (SET) for CPC/FPL; Developmentals, CPC-ITs, and TMC-Its	Collaborate as necessary with ERC in accordance with agency directives. Assign SET in writing to include the specific skills and requirements necessary to accomplish this training in accordance with agency directives. Develop training to be administered to the specialist, tailored to meet the individual's needs.
98	Training / Coaching / Guidance	Team Training	Develop return to duty plan	Develop and deliver return to duty plan if decertification is necessary.
99	Training / Coaching / Guidance	Team Training	Document remedial training	Ensure that enhancement training is documented in accordance with agency and facility directives.
100	Training / Coaching / Guidance	Team Training	Document Weather Observer Recertification	Document personnel proficiency demonstrated before them (the frontline manager) to recertify as a weather observer. Personnel who have not taken an observation within 60 days must demonstrate proficiency to a frontline manager or a frontline manager's designee.

Task No.	Task Classification	Task Sub-Classification	Task Name	Task Description
101	Training / Coaching / Guidance	Team Training	Identify, develop and assign Proficiency Training (on-the-job training)	Identify, develop and assign Proficiency Training as needed.
102	Training / Coaching / Guidance	Team Training	Integrate FAA directives in operational environment	Integrate FAA directives into the ongoing operational environment (e.g., EDCT, MIT, GS) to form controllers' understanding of their impact on and value to the NAS.
103	Managerial duties	Veteran GI Bill	Process Veteran's paperwork GI Bill	Fill out and submit paperwork for trainees who qualify under the GI Bill for compensation - reports due monthly
104	Scheduling / Leave / Overtime	Time and Attendance Records	Approve Time and Attendance Records	Approve Time and Attendance records
105	Scheduling / Leave / Overtime	Voluntary Leave Transfer Program (VLTP)	Assist with processing documents for the Voluntary Leave Transfer Program	Assist employees who have need for the VLTP - paperwork
106	Manage Facility Staffing Levels & Budget	Inventory	Perform Inventory Duties	Assist Admn. Officer with inventory duties

WBS Task Attributes

The remaining columns characterize the task in relation to air traffic operations, the type of facility where it is performed, its level of complexity and the frequency with which it is performed. As part of their review, the SUPCOM SMEs, who work as frontline managers themselves, pre-populated the columns corresponding to six of the eight attributes.

The **Frontline Manager Task at Facility** column enabled the frontline managers reviewing the WBS to indicate whether the task was performed by frontline managers at their specific facility. The default assumption used was that all of the tasks in the WBS were expected duties of frontline managers at all facilities.

- A "Yes" response indicated that the task was expected to be performed by frontline managers, or a task that *may* be assigned to the frontline managers. Therefore, even tasks normally completed by personnel in other positions, but that could be delegated to frontline managers, were given a "Yes" response.
- A "No" response was defined as a task that was not performed by frontline managers at a given facility. These tasks were *always* either assigned to another managerial position or handled by personnel in the support departments. Therefore, these tasks would be excluded from possible frontline manager duties because there was no expectation that the task would be assigned to them. During their review, frontline managers were asked to change the response to a "No" status if they were never expected to perform the duty at their facility.

The **Facility Type** column indicated the type of facility where the frontline manager could be expected to carry out the task. The default selection was set to "All ATC Facilities" to reflect that all frontline managers were expected to carry out the duty irrespective of the type of facility where they worked. The frontline managers reviewing the WBS were asked to change the default selection to:

- "Terminal Facilities", if the task was done in both Towers and TRACONs
- "Tower only," "TRACON only," or "En Route only" if the task was only expected to be performed in one of those facility types.

The **Operational Nature** attribute was used to distinguish tasks that directly impacted the NAS from those that did not. Tasks were typically considered "Operational" if the frontline manager performed them in the operational area when directly supervising or providing feedback to controllers on-position.

Complexity ratings of "Routine," "Complex," or "Challenging" were terms used to distinguish the level of complexity faced by the frontline manager to complete the task. The rating depended on whether the frontline managers needed to focus exclusively on the task to perform it, how easily they could return to executing the task if interrupted, and whether they required assistance from another supervisor to complete the task. As an example, a task was labeled "Routine" if it could be simultaneously performed with other tasks and the frontline manager could return to performing it without difficulty after being interrupted.

Shift in Task Complexity provided the ability to indicate whether a task might become more complex, easier, or remain the same for a frontline manager. The "**Factors**" column to the right of

the Shift in Task Complexity column in the WBS was used during the frontline manager review to enter reasons why task complexity could shift if it was indicated as a possibility.

Frequency ratings of "Constant," "Frequent," or "Seldom" were used to mark how frequently a frontline manager could be expected to perform a task. Tasks labeled as "Constant" were those that could potentially be performed by a frontline manager at any time during the shift and those that were not scheduled to occur at a specific time. "Frequent" tasks were expected to be performed several times during a defined period of time (daily/weekly) and included those tasks that could be scheduled at certain times. Tasks labeled as "Seldom" were required infrequently and often on an unpredictable basis, such as attending the Operations Supervisor Workshop.

Figure 13: Work Breakdown Structure for the FAA Frontline Manager Position (task attributes only)

Task No.	Task Name	FLM Task at Your Facility (Yes / No)	Facility Type	Operational vs. Non-Operational	Task Complexity	Shift in Task Complexity	Factors in Shift in Task Complexity	Required Frequency
1	Operations Supervisor Workshop	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
2	CMEL	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
3	Retain knowledge of orders	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Frequent
4	Complete personal training	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Frequent
5	Assure appropriate use of Federal resources	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
6	Adjust staffing levels and work procedures to FAA decisions	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Frequent
7	Manage support resources to meet operational needs	Yes	All ATC Facilities	Operational	Complex	Remains Complex		Constant
8	Recommend selections and transfers.	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
9	Advise controllers on administrative requirements	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
10	Area Focals	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Frequent

Task No.	Task Name	FLM Task at Your Facility (Yes / No)	Facility Type	Operational vs. Non-Operational	Task Complexity	Shift in Task Complexity	Factors in Shift in Task Complexity	Required Frequency
11	Communicate and reinforce diversity and EEO policies and programs	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
12	Formulate and support local policies and goals	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Frequent
13	Resolve employee concerns or refer to upper management	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Frequent
14	Safeguard sensitive information	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Frequent
15	Enforce timeliness and employee readiness	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
16	Conduct - Professional Standards	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Seldom
17	Conduct - Disciplinary Action	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Seldom
18	Monitor employee leave usage	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
19	Participate in the labor management partnership process	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
20	Employee Sign-in and out	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
21	IPM Process	Yes	All ATC Facilities	Operational	Complex	Remains Complex		Frequent

Task No.	Task Name	FLM Task at Your Facility (Yes / No)	Facility Type	Operational vs. Non-Operational	Task Complexity	Shift in Task Complexity	Factors in Shift in Task Complexity	Required Frequency
22	Coordination with peers	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
23	Document performance	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
24	Open, investigate and close MORs / Communicate with O/M or ATM	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
25	Performance or Conduct	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Seldom
26	Prepare and deliver controller performance reviews	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
27	Provide on-the-spot correction	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Frequent
28	Recommend awards	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
29	Review of services	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
30	Review work processes of controllers (adjust if necessary)	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
31	Report known or suspected violations through appropriate channels	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
32	Perform other managerial assignments (support staff)	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Seldom

Task No.	Task Name	FLM Task at Your Facility (Yes / No)	Facility Type	Operational vs. Non-Operational	Task Complexity	Shift in Task Complexity	Factors in Shift in Task Complexity	Required Frequency
33	Communicate new agency initiatives	Yes	All ATC Facilities	Non-Operational	Challenging	Remains Challenging		Frequent
34	Communicate organizational decisions	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Frequent
35	Conduct team briefings	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
36	Develop, deliver or attend facility briefings on current topics/issues.	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
37	Monitor internal and external communications	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Constant
38	TM Duties	Yes	All ATC Facilities	Operational	Complex	Remains Complex		Seldom
39	Analyze schedule alternatives	Yes	All ATC Facilities	Operational	Complex	Remains Complex		Constant
40	Develop overtime lists and contact employees	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
41	Monitor and respond to employee leave requests.	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
42	Prepare controller schedules	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
43	Conduct employee interviews for System Service Review (SSR)	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom

Task No.	Task Name	FLM Task at Your Facility (Yes / No)	Facility Type	Operational vs. Non-Operational	Task Complexity	Shift in Task Complexity	Factors in Shift in Task Complexity	Required Frequency
44	Conduct System Service Review (SSR)	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
45	Conduct Systemic Issue Review (SYSIR)	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
46	Identify Emphasis Items (EI) and enter in CEDAR	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
47	Perform Covered Events Review (CER)	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
48	Perform quality control Operational Skills Assessment (OSA)	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
49	Perform Traffic Management Review (TMR)	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Frequent
50	Write up SSR in CEDAR	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
51	Develop goals for ATC facility, areas and track performance using them	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
52	Identify performance measures and related data sources	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
53	Maintain on going collaboration with TechOps / System Ops	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Frequent
54	Coordinate with adjacent facilities on impacts to air traffic operations	Yes	All ATC Facilities	Operational	Complex	Remains Complex		Frequent

Task No.	Task Name	FLM Task at Your Facility (Yes / No)	Facility Type	Operational vs. Non-Operational	Task Complexity	Shift in Task Complexity	Factors in Shift in Task Complexity	Required Frequency
55	CPC Currency	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Frequent
56	Frontline Manager Currency	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Frequent
57	Resolve equipment failures and aircraft emergencies.	Yes	All ATC Facilities	Operational	Complex	Remains Complex		Frequent
58	Anticipate and resolve problems prior to them impacting air traffic operations	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
59	Resolve problems impacting air traffic operations	Yes	All ATC Facilities	Operational	Complex	Remains Complex		Constant
60	Ensure proper communications	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
61	Ensure complete and timely coordination	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
62	Monitor controller handling and recovery from equipment failures and nonstandard/emergency situations	Yes	All ATC Facilities	Operational	Complex	Remains Complex		Frequent
63	Equipment Usage	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
64	Ensure that controllers use good judgment while safely and effectively performing their duties	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant

Task No.	Task Name	FLM Task at Your Facility (Yes / No)	Facility Type	Operational vs. Non-Operational	Task Complexity	Shift in Task Complexity	Factors in Shift in Task Complexity	Required Frequency
65	Ensure appropriate methods are used when performing assigned duties	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
66	Ensure operational safety	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
67	Other assignments	Yes	All ATC Facilities	Operational	Complex	Remains Complex		Seldom
68	Assign personnel to positions	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
69	Break rotation	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
70	Ensure controllers return form break without disruption to air traffic operations	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
71	Record position in Cru-X/ART	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
72	Relieve controller and conduct air traffic operations	Yes	All ATC Facilities	Operational	Complex	Remains Complex		Seldom
73	Manage distractions	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
74	Observe controllers to ensure they serve as effective team member	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
75	National Security	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Seldom

Task No.	Task Name	FLM Task at Your Facility (Yes / No)	Facility Type	Operational vs. Non-Operational	Task Complexity	Shift in Task Complexity	Factors in Shift in Task Complexity	Required Frequency
76	Perform other managerial assignments (OM or ATM)	Yes	All ATC Facilities	Operational	Complex	Remains Complex		Frequent
77	Assign trainee to positions	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Frequent
78	Develop and document OJT training plans	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
79	Establish training team for supervised employee(s) and serve as leader	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
80	Evaluate trainee progress	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Constant
81	Oversee training in the operational environment	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
82	Perform Performance Skills Check and certify controller (or suspend OJT)	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
83	Position certification	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
84	Recommend targeted trainings	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Frequent
85	Review boards	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Seldom
86	Schedule sessions for developmental controllers to receive technical training	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Frequent

Task No.	Task Name	FLM Task at Your Facility (Yes / No)	Facility Type	Operational vs. Non-Operational	Task Complexity	Shift in Task Complexity	Factors in Shift in Task Complexity	Required Frequency
87	Brief employees/enforce discipline on FAA regulations, policies and programs	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
88	CIC Nomination and Training	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
89	Coach / mentor employees	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
90	Controller development	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Seldom
91	Employee benefits and entitlements	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
92	Nominate, supervise and certify OJTI	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
93	Safety transformation	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
94	Assign remedial training	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
95	Coach or facilitate team building exercises to improve unit performance	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
96	Deliver training assignments to controllers	Yes	All ATC Facilities	Operational	Routine	Remains Routine		Constant
97	Develop and assign Skill Enhancement Training (SET) for CPC/FPL; Developmentals, CPC-ITs, and TMC-ITs	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom

Task No.	Task Name	FLM Task at Your Facility (Yes / No)	Facility Type	Operational vs. Non-Operational	Task Complexity	Shift in Task Complexity	Factors in Shift in Task Complexity	Required Frequency
98	Develop return to duty plan	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
99	Document remedial training	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
100	Document Weather Observer Recertification	Yes	Terminal Facilities	Non-Operational	Routine	Remains Routine		Seldom
101	Identify, develop and assign Proficiency Training (on-the-job training)	Yes	All ATC Facilities	Non-Operational	Complex	Remains Complex		Seldom
102	Integrate FAA directives in operational environment	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
103	Process Veteran's paperwork GI Bill	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
104	Approve Time and Attendance Records	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Frequent
105	Assist with processing documents for the Voluntary Leave Transfer Program	Yes	All ATC Facilities	Non-Operational	Routine	Remains Routine		Seldom
106	Perform Inventory Duties	Yes	Terminal Facilities	Non-Operational	Routine	Remains Routine		Seldom

Figure 14 shows the total number of tasks under each Task Classification as well as the split between tasks considered "Operational" and "Non-Operational." A majority of the tasks were classified under Managerial Duties, Training/Coaching/Guidance, and Supervision. The tasks under the Supervision classification captured almost exclusively the monitoring of controllers while they performed air traffic control duties (Operational tasks). Conversely, Managerial Duties encompassed many of the administrative (Non-operational) tasks performed by frontline managers.

Figure 14: Initial Distribution of Frontline Manager Tasks by Task Classification

Task Classification	Operational	Non-Operational	Number of Tasks
Supervision	23	0	23
Training / Coaching / Guidance	7	19	26
Managerial Duties	5	25	30
Scheduling / Leave / Overtime	3	1	4
Manage Facility Staffing Levels & Budget	1	3	4
Strategic Planning & Assessment of Organizational Performance	1	10	11
Frontline Manager Training	0	4	4
Total Tasks	40	62	102

Frontline Manager Review of the WBS

The WBS was presented to the frontline managers interviewed during the Study Team's visits to facilities. After orienting the frontline managers to the document's contents, the frontline managers were provided with instructions on how to review the contents and edit the task descriptions, classifications, and attributes in the initial version of the WBS.

Comments and suggested edits were received from 11 frontline managers stationed at five different facilities. Those responding made one or more edits to 59 of the 102 tasks. Most changes and comments related to the ratings in the Complexity and Frequency attributes assigned to a task. The changes and comments are provided in Figure 15. In addition, four new tasks were submitted and included in the final list, bringing the final number of tasks to 106. The new tasks included:

- Process Veteran's paperwork/GI Bill
- Approve Time and Attendance Records
- Assist with processing documents for the Voluntary Leave Transfer Program
- Perform Inventory Duties.

Figure 15: Summary of WBS Changes and Comments from Frontline Manager Review

Task No.	Task Description	Frontline Manager Comment or Reason for Change
1	Operations Supervisor Workshop	Required every 3 years, but does not occur as stated.
2	Attend Frontline Manager Course-Phase 2:	This training is very random after the first 3 years on the job. There

Task No.	Task Description	Frontline Manager Comment or Reason for Change
	Managing for Results and Frontline Manager Course-Phase 3: Managing for High Performance.	are many classes both at CMEL and at MMAC that can be taken over ones career to enhance your knowledge.
3	The frontline manager must remain current and knowledgeable of agency and facility orders, procedures, National Collective Bargaining Unit Agreement, and MOUs.	Rating describing the task's level of complexity changed because of the numerous changes anticipated with the NextGen system. Complexity: **Routine** → Complex
4	Complete all required training. (Read and Initial Binders, CEDAR, CBIs, eLMS, classroom, and others as assigned.)	Rating describing the task's level of complexity changed because of the challenges to completing it in the Terminal environment. Complexity: **Routine** → Complex
5	Conserve, protect and assure appropriate use of Federal funds, time, property, equipment, materials, information and personnel (both Federal and contract).	Rating describing how frequently the frontline manager is expected to perform the task changed because frontline managers need to be fiscally responsible with overtime. Frequency: **Seldom** → **Frequent**
6	Adjust staffing levels and work procedures to accommodate resource decisions made at higher levels.	Rating describing how frequently the frontline manager is expected to perform the task changed because it was described as a daily task due to due to staffing levels and ERAM/Airspace changes. Other reasons cited were recurrent training, Metroplex, ERAM. Frequency: **Seldom** → **Frequent**
9	Give advice on administrative matters to controllers.	Rating describing how frequently the frontline manager is expected to perform the task changed because the task was identified as part of weekly team briefings between the supervisor and their crew. Frequency: **Seldom** → **Frequent**
10	Work as a focal (training, schedules, safety, equipment, others as needed) frontline manager for assigned area, as delegated by the OM.	Very little time given to complete this task.
13	Handle employee complaints	Employee complaints are bypassed to OM levels or higher on most occasions.
17	Conduct - Disciplinary Action	Task is complex mainly due to infrequency of use in this area.
18	Audit records for employee's appropriate leave usage. Take appropriate action in accordance with agency directives, when conditions warrant.	Rating describing how frequently the frontline manager is expected to perform the task changed because it is performed monthly. Frequency: **Seldom** → **Frequent**
19	Communicate with labor representatives concerning workforce issues. Support and participate in the labor management partnership process.	Rating describing how frequently the frontline manager is expected to perform the task changed because it is performed daily. Frequency: **Seldom** → **Frequent**
21	To ensure employees receive beneficial feedback, frontline manager should discuss performance with the employee in a timely manner and document in accordance with agency directives.	Rating describing the task's level of complexity changed because, in the ATSAP environment, Performance Management is very difficult to accomplish. Also, the task can be difficult to accomplish due to numerous other administrative tasks. Complexity: **Routine** → Complex
23	Document performance	Can be difficult to accomplish effectively due to numerous administrative tasks.
24	Open, investigate and close MORs / Communicate with O/M or ATM	May shift from Routine to Complex depending on the complexity of event.
33	Communicate, support, and implement new initiatives with crew members.	Rating describing the task's level of complexity changed but no reason was provided by frontline managers for change the rating.

Task No.	Task Description	Frontline Manager Comment or Reason for Change
		Complexity: **Complex** → Challenging
35	Conduct team briefings	May shift from Routine to Complex; if staffing is low, it may be difficult to have meetings.
37	Monitor internal and external communications	Very time consuming.
38	Assume Traffic Management duties during normal operations or when covering mid-shift operations.	Rating describing how frequently the frontline manager is expected to perform the task changed because frontline managers take on TM duties during mid-shifts only at En Route Centers and VFR Towers do not face TM duties often. Frequency: **Frequent** → **Seldom**
40	Develop overtime lists and contact employees	OT list developed by Web Scheduler.
42	Prepare controller schedules	Basic schedule input made by scheduling department; preparing controllers' schedules remains a complex task at Towers.
46	Identify Emphasis Items (EI) and enter in CEDAR	Current areas require frequent assessments.
49	Perform Traffic Management Review (TMR)	Only applies to STMC positions.
66	Ensure operational safety	Requires more attention than time available to perform this task.
75	Monitor the Domestic Events Network (DEN) - this activity is required at most larger facilities and ARTCCs and sometimes assigned to a frontline manager.	Rating describing how frequently the frontline manager is expected to perform the task changed because the task is only necessary when providing coverage at the Operations Manager Watch desk. Frequency: **Frequent** → **Seldom**
100	Document Weather Observer Recertification.	Task labeled as only performed at Terminal Facilities. Facility: **ATC Facilities** → **Termina**l Facilities
102	Integrate FAA directives into the ongoing operational environment (e.g., EDCT, MIT, and GS) to form controllers' understanding of their impact on and value to the NAS.	Rating describing how frequently the frontline manager is expected to perform the task changed because frontline managers described it as a daily task. Frequency: **Seldom** → **Frequent**
103	Process Veteran's paperwork GI Bill	Task added by frontline managers reviewing WBS. Rating describing how frequently the frontline manager is expected to perform changed. Complexity: Routine Frequency: **Frequent** → **Seldom**
104	Approve Time and Attendance Records	Task added by frontline managers reviewing WBS. Rating describing how frequently the frontline manager is expected to perform the task changed because it was described as a daily function. Complexity: Routine Frequency: **Seldom** → **Frequent**
105	Assist with processing documents for the Voluntary Leave Transfer Program	Task added by frontline managers reviewing WBS. Complexity: Routine Frequency: Seldom

Task No.	Task Description	Frontline Manager Comment or Reason for Change
106	Perform Inventory Duties	Task added by frontline managers reviewing WBS. Task labeled as only performed at Terminal Facilities. Complexity: Routine Frequency: Seldom

Appendix D – Data Analysis

To address the number of supervisory positions of operation requiring watch coverage in each air traffic control facility, the Study Team obtained FPPS data for the seven quarters beginning in the first quarter of federal fiscal year 2011 (FY11 Q1) and running through the third quarter of federal fiscal year 2012 (FY12 Q3). FPPS contains data related to personnel and payroll, including employee status and position type, as well as hours worked by pay period.

The objective of this analysis was to provide some initial insight into the controller-to-frontline manager ratios found at various types of facilities, as well as to gather information regarding the number of frontline managers on detail, their use of overtime, and the number of developmental controllers in each facility.[11] (Frontline managers on "detail" are working on special assignments or extracurricular projects that take them off the control room floor.) The Study Team examined current staffing levels for frontline managers and the average number of controllers they supervised. The Study Team also measured the magnitude of change in staffing levels, staffing ratios, overtime hours, and shares of developmental controllers by comparing data from FY11 Q1 and subsequent quarterly time periods through FY12 Q3.

The ratio of controllers to frontline manager (staffing ratio) measures the number of controllers per frontline manager at individual ATC facilities, as well as the average staffing ratio for types of facilities, and the FAA overall. To assess staffing levels from different perspectives, the data was grouped in three different ways:

- Total number of controllers and frontline managers within the ATC system (the ratio encompassing all 315 individual facilities in all U.S. states and territories)
- Total number of controllers and frontline managers assigned to each facility type (the ratio representing all controllers and frontline managers in that facility type)
- The number of controllers and frontline managers assigned to each of the 315 individual ATC facilities.

The staffing ratio expressed in these three ways shows the variation between individual facilities and facility types, and enabled the Study Team to identify individual facilities with noticeably lower or higher ratios. These staffing ratios provide a *typical* span of control for a frontline manager based on a roster, but do not consider the experience level of personnel, the authorized staffing level at a facility, the size of the work teams, or the number of controllers supervised at a time based on shift schedules at a facility.

[11] For purposes of this study the term "developmental controllers" includes controllers who are not yet fully qualified and certified at their current facility. This includes those with a status of Academy Graduate (AG), D1, D2, or D3 (Developmental), or Certified Professional Controller – In Training (CPC-IT).

The Study Team also examined staffing ratios using other data elements available in the FPPS data, including standard and overtime hours worked by frontline managers, the share of developmental controllers within the controller workforce, authorized staffing levels, and air traffic volumes. This was done in order to detect potential changes in the size of the workforce or workload of frontline managers by facility type or at individual facilities. The additional data show how the operational environment is changing for frontline managers and provides additional insights into facilities with staffing ratios are outside the average range for their facility type. Generally, a facility was noted if its proportion of overtime hours worked by frontline managers was higher or lower for facilities of similar type and level and had a high percentage of developmental controllers within its controller workforce.

Facility Type Definitions

Each air traffic control facility has a specific facility type. Figure 16 contains a description for each facility type and the number of facilities of that type that existed when the Controller Workforce Plan (CWP) was published for October 2011. The figure also references several combinations that were made as part of this analysis in order to streamline the groupings for presentation purposes.

Figure 16: Facility Types and Combinations Used for Analytical Purposes

FLM Study Classification	FAA Facility Type	Number of Facilities	Description	Analytical Combination
Towers	Tower without Radar	1	An airport traffic control terminal that provides service using direct observation primarily to aircraft operating under visual flight rules (VFR). This terminal is located at airports where the principal user category is low-performance aircraft.	Added (LAF) to Towers
Towers	Tower with Radar	130	An airport traffic control terminal that provides traffic advisories, spacing, sequencing and separation services to VFR and IFR aircraft operating in the vicinity of the airport, using a combination of radar and direct observations.	N/A
TRACON	Terminal Radar Approach Control (TRACON)	23	An air traffic control terminal that provides radar-control service to aircraft arriving or departing the primary airport and adjacent airports, and to aircraft transiting the terminal's airspace.	N/A
Combined Tower / TRACON	Combination Non-Radar Approach Control and Tower without Radar	2	An air traffic control terminal that provides air traffic control services for the airport at which the tower is located and without the use of radar, approach and departure control services to aircraft operating under Instrument Flight Rules (IFR) to and from one or more adjacent airports.	Added (HLN and TWF) to Combined Tower / TRACON

FLM Study Classification	FAA Facility Type	Number of Facilities	Description	Analytical Combination
Combined Tower / TRACON	Combination Radar Approach Control and Tower with Radar	130	An air traffic control terminal that provides radar-control service to aircraft arriving or departing the primary airport and adjacent airports, and to aircraft transiting the terminal's airspace. This terminal is divided into two functional areas: radar approach control positions and tower positions. These two areas are located within the same facility, or in close proximity to one another, and controllers rotate between both areas.	N/A
Combined Control Facility	Combined Control Facility	2	An air traffic control facility that provides approach control services for one or more airports as well as en route air traffic control (center control) for a large area of airspace. Some may provide tower services along with approach control and en route services.	Only 2 facilities appear in this grouping according to the DTRB source file (E10 and HCF). Others assumed under ARTCC.
En Route Centers	Air Route Traffic Control Center (ARTCC)	23	An air traffic control facility that provides air traffic control service to aircraft operating on IFR flight plans within controlled airspace and principally during the en route phase of flight. When equipment capabilities and controller workload permit, certain advisory/assistance services may be provided to VFR aircraft.	N/A
Combined TRACON	Combined TRACON Facility	4	An air traffic control terminal that provides radar approach control services for two or more large hub airports, as well as other satellite airports, where no single airport accounts for more than 60% of the total Combined TRACON facility's air traffic count. This terminal requires such a large number of radar control positions that it precludes the rotation of controllers through all positions.	N/A
N/A	Air Traffic Control System Command Center	1	The Air Traffic Control System Command Center is responsible for the strategic aspects of the NAS. The Command Center modifies traffic flow and rates when congestion, weather, equipment outages, runway closures or other operational conditions affect the NAS.	Not included in analysis.

Results of Personnel and Payroll Data Analysis

The analysis of the FPPS data produced the following insights regarding staffing ratios, staffing levels, share of frontline managers on detail assignments, and share of developmental controllers:

- The quarterly staffing ratio based on all frontline managers and controllers in the 315 FAA facilities ranged between 7.7 and 8.0 in each of the last seven quarters (7.9 at the end of FY 12 Q3).
- The quarterly staffing ratio based on all frontline managers and controllers in En Route facilities ranged from 7.6 to 8.2 during the last seven quarters (7.8 at the end of FY12 Q3); the staffing ratio ranged from 7.9 to 8.1 in the last seven quarters (8.0 at the end of FY12 Q3) for all Terminal facilities.
- According to the FPPS data most facilities (226) did not have any frontline managers on detail. Only 9.5% of the frontline manager workforce was on detail at the end of Q3 FY12.
- As shown in Figure 17, Tower facilities had the highest share of frontline managers on detail (14%), followed by TRACONs (13%) - whose share rose nearly doubled from 7.1% in Q1 FY11 – and En Route Centers (9.6%).
- Across all facilities, the share of developmental controllers was 22% at the end of Q3 FY12, decreasing 3% from Q1 FY11.
- Overtime hours increased 37% for frontline managers (no change in total staffing) and 69% for controllers (246 fewer positions) compared to Q1 FY11.
- The FAA had authority for 108 additional frontline manager positions in FY 12 Q3 based its 2,020 authorized positions in all 315 FAA facilities – representing a 5% hiring capacity.

Figure 17: FY11 Q1 to FY12 Q3 Comparison of Share of Frontline Managers on Detail

Facility Type	FY11 Q1	FY12 Q3	% FLMs on Detail FY11 Q1	% FLMs on Detail FY12 Q3	Change over Analysis Period
En Route Centers	63	77	7.9%	9.6%	22.2%
Combined Control Facility	0	1	0.0%	9.1%	100%
Combined TRACON	10	10	7.9%	8.0%	0.0%
Combined Tower / TRACON	30	20	6.5%	4.4%	-33.3%
Towers	51	51	14.8%	14.4%	0.0%
TRACON	12	22	7.1%	13.2%	83.3%
Terminal Facilities	103	104	9.3%	9.4%	1.0%
Total FLMs on Detail	166	181	8.7%	9.5%	9.0%

Staffing Ratios

At the end of the third quarter of Federal Fiscal Year 2012, the FAA had a total controller workforce of 15,141 and a total of 1,912 frontline managers in the MSS2 position, or roughly eight controllers for every frontline manager. However, the Controller-to-Frontline Manager ratio varied greatly from one facility to the next. The highest ratio existed at the Roanoke Tower, a Combined Tower / TRACON facility, with a ratio of 31:1. The lowest ratio, excluding facilities without a frontline manager on the roster, was found at the Guam En Route Center which had a ratio of 3.3:1 in FY12 Q3.

Over the seven-quarter analysis period the total number of controllers decreased slightly, while the number of frontline managers stayed relatively consistent. The decrease of 246 controller positions left 15,141 controllers in 315 ATC facilities at the end of FY12 Q3. During this same period of analysis, the frontline manager workforce grew slightly before dropping in the last two quarters to reach 1,912 positions, one less position then where it started in the FY11 Q1.[12] As a result, the overall staffing ratio for the ATC system fell from 8.0 to 7.9 Controllers-per-Frontline Manager. Figure 18 illustrates quarterly changes in staffing levels and the staffing ratios over the analysis period and Figure 19 shows the supporting data.

Figure 18: Quarterly Staffing Ratio for Entire ATC Workforce (FY11 Q1 to FY12 Q3)

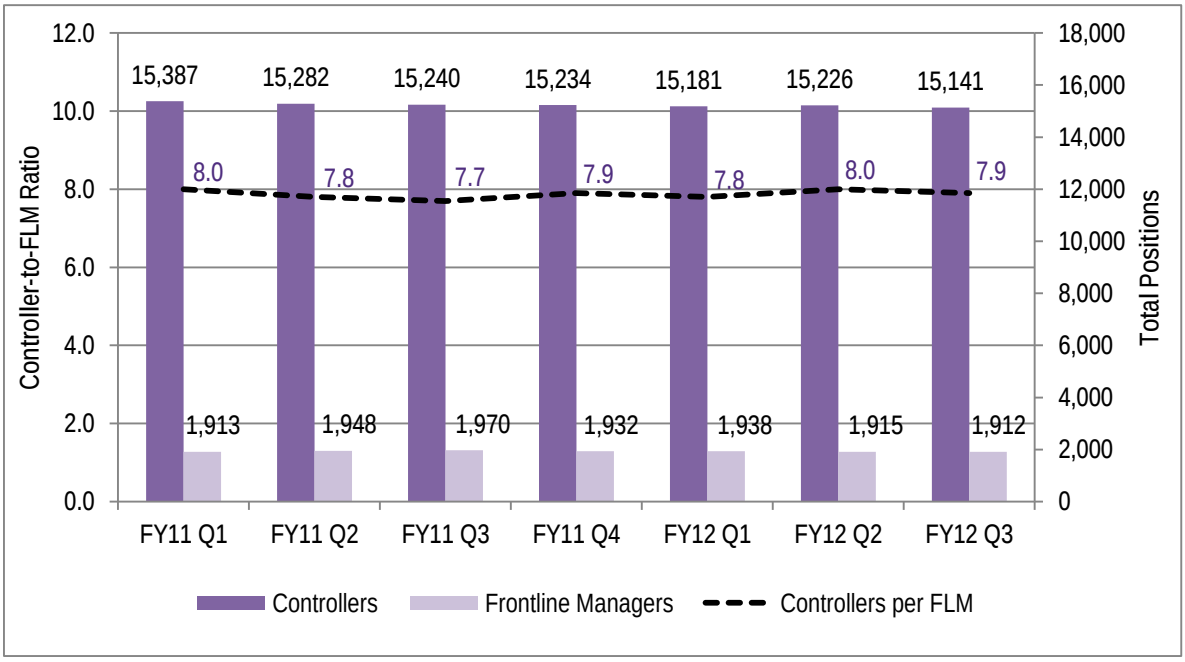


Figure 19: Quarterly Staffing Ratio by Facility Type

Facility Type	FY11 Q1	FY11 Q2	FY11 Q3	FY11 Q4	FY12 Q1	FY12 Q2	FY12 Q3	Total Variance
En Route Centers	8.2	7.7	7.6	7.8	7.6	7.7	7.8	(0.40)
Combined Control Facility	10.3	9.7	9.7	9.7	10.5	10.7	12.2	1.90
Combined TRACON	7.0	6.9	6.6	6.6	6.9	6.7	6.6	(0.40)
Combined Tower / TRACON	8.5	8.4	8.5	8.6	8.6	8.7	8.7	0.20
Towers	7.7	7.8	7.6	7.8	8.0	8.0	7.8	0.10
TRACON	7.4	7.7	7.5	7.3	7.3	7.5	7.1	(0.30)
Terminal Facilities	8.0	7.9	7.9	8.0	8.0	8.1	8.0	0.02

[12] While data for FY12 Q4 was not included as part of the analysis due to the compressed timeframe, the Study Team understands that some hiring and promotion decisions impacting the Other than Controller Workforce (OTCWF), which includes frontline managers, were made in FY12 Q4.

Facility Type	FY11 Q1	FY11 Q2	FY11 Q3	FY11 Q4	FY12 Q1	FY12 Q2	FY12 Q3	Total Variance
All ATC Facilities	8.0	7.8	7.7	7.9	7.8	8.0	7.9	(0.10)

The distribution of FAA controllers and frontline managers shows that they are concentrated in four facility types. Approximately 42% of controllers and frontline managers are assigned to Air Route Traffic Control Centers (ARTCC), also referred to as En Route Centers or Centers. This facility type had a staffing ratio (7.8 Controllers-per-Frontline Manager) close to the system wide average. Combined TRACON Tower facilities contain the second largest number of controllers and frontline managers, accounting for close to a quarter of the respective workforces. However, its staffing ratio of 8.7 for FY12 Q3 was higher than the system wide ratio, due to the requirement to staff both the TRACON and the Tower portion of the facility. Tower facilities had just under a fifth of the controller and frontline manager workforces, respectively, and a staffing ratio close to the average system ratio, while stand-alone TRACONs had an average of just over seven controllers per frontline manager.[13]

It is important to focus on the staffing ratios for these four facility types because over 90% of frontline managers and controllers work in these types of facilities. Calculating the staffing ratio using just these four facility types provides an aggregate staffing ratio of 7.9 Controllers per Frontline Manager for FY12 Q3, which is equal to the system wide staffing ratio, underscoring these facility types' influence on system wide ratios. Figure 20 shows major facility types by staffing ratio and share of the controller and frontline manager workforce for Q3 FY 2012.

Figure 20: FY12 Q3 Staffing Ratio and Levels by Facility Type

Major Facility Types	Staffing Ratio	Number of Facilities	Controllers	Share of Controllers	FLMs	Share of Frontline Managers
En Route Centers	7.8	23	6,299	42%	804	42%
Combined Tower / TRACON	8.7	132	3,928	26%	451	24%
Towers	7.8	131	2,767	18%	354	19%
TRACON	7.1	23	1,194	8%	167	9%
Major Facility Type Subtotals	7.9	309	14,188	94%	1,776	93%
Other Facility Types	7.0	6	953	6%	136	7%
ATC Facilities	7.9	315	15,141	100%	1,912	100%

[13] The Tower facility type includes towers with radar, towers without radar and combined non-radar approach towers.

Facilities by Staffing Ratios, Developmental Controllers, Frontline Manager Overtime and Traffic

Staffing ratios for the 23 En Route Centers ranged from 3.3 to 10.2 controllers per frontline manager. However, ratios for 17 individual facilities fell in the range of seven to nine controllers per frontline manager, which indicated a relatively even spread of frontline managers and controllers across this facility type. Of the eight facilities with higher than the average staffing ratios (for the facility type), three of them also had higher shares of developmental controllers and two had more than the average proportion of frontline manager hours charged to overtime. Only the New York Center was higher than average in both categories, but its high level of overtime may be explained by the fact that its staffing level is currently nine frontline managers under its authorized level. A survey respondent from the New York En Route Center mentioned a low staffing level for frontline managers and an influx of developmental controllers as the primary challenges at the facility. In this group, only the Atlanta En Route Center had a higher number of frontline managers (51) than the authorized level (49), although Washington Center also had more frontline managers (51) than the authorized level (42).

Frontline managers charged less than 2% of their total work hours to overtime at En Route Centers. Nearly 1.6% of all hours worked by frontline managers at these facilities in Q3 FY12 were classified as overtime. Of these facilities, only the Atlanta and New York ARTCCs had higher than average staffing ratios, indicating that having higher staffing ratios does not equate to requiring more overtime hours.

Of the facilities with higher staffing ratios, only New York Center had both a high share of developmental controllers and overtime hours than the group averages, as shown in Figure 21. This corresponds with the FLM Survey responses from frontline managers at this facility. Frontline managers at the other facilities listed in the figure below indicated in the survey that the experience level of the controllers they supervise created one of their biggest operational challenges.

Figure 21: Authorized Staffing, Overtime and Developmental Controllers for En Route Centers with above Average Staffing Ratios

Level	LOCID	Facility	Ratio	FLMs	Authorized FLMs	Controllers	Dev. Controllers	% Dev. Controllers	FLM Overtime	% FLM Overtime
12	ZNY	New York	10.2	33	42	338	91	27%	1,139	5.8%
10	ZLC	Salt Lake	9.6	22	28	212	17	8%	29	0.2%
11	ZBW	Boston	8.8	32	35	280	35	13%	67	0.4%
12	ZTL	Atlanta	8.6	51	49	440	66	15%	1,561	5.3%
12	ZAU	Chicago	8.6	46	56	396	54	14%	8	0%
12	ZFW	Fort Worth	8.5	38	42	324	54	17%	144	0.7%
11	ZJX	Jacksonville	8.3	40	42	333	72	22%	111	0.5%
10	ZDV	Denver	8.3	38	42	317	66	21%	49	0.2%

Avg. ratio (7.8); % developmental controllers (16.75%); % FLM Hours charged to overtime (1.64%);

Staffing ratios for the 132 Combined Tower / TRACON facilities ranged from 4.0 to 31.0 Controllers per frontline manager. Sixty-nine of the 132 facilities had a staffing ratio higher than average of 8.7 for the facility type and 45 of these facilities had two or fewer frontline managers on

their rosters, suggesting that the higher than average staffing ratios were due to few frontline managers supervising relatively large controller workforces at this type of facility.

Developmental controllers comprised approximately 30% of the 3,928 controllers stationed at Combined Tower / TRACON facilities. The share of developmental controllers at the 132 facilities ranged from 4% to 64%. Of the 69 facilities with higher-than-average staffing ratios, 34 of them also had a higher than average percentage of developmental controllers.

Frontline Managers at Combined Tower / TRACON facilities did not have a significant amount of overtime. Frontline managers had 3,411 hours out of 255,163 total hours to overtime (1.3% of the total hours in Q3 FY12). Twenty-six facilities had more overtime hours than the collective average for the facility type. Of these facilities, 11 had a higher staffing ratio than the average for the facility type. Frontline managers at the Milwaukee, Eugene, and Santa Barbara facilities charged 6%, 4% and 4%, respectively, of their total hours as overtime. These facilities' staffing levels were one, two and zero positions below their respective authorized levels for frontline managers.

The majority of Combined Tower / TRACON facilities that exceeded the average traffic volumes had lower than average staffing ratios, indicating that frontline managers staffing at the busiest facilities was more closely aligned to traffic volumes. Only five facilities had notably high staffing ratios and high shares of developmental controllers, overtime hours, and high traffic volumes, as shown in Figure 22.

Figure 22: FY12 Q3 Combined Tower / TRACON Facilities – High Staffing Ratios, Developmental Controllers, Overtime, and Air Traffic

Level	LOCID	Facility	FLMs	Authorized FLMs	Ratio	% Dev. Controllers	% FLM Overtime	TRACON	Tower
8	IND	Indianapolis	6	6	10.3	32%	3%	60,461	41,163
7	ABE	Allentown	3	4	10.0	43%	2%	31,044	24,393
9	MKE	Milwaukee	6	7	9.8	36%	6%	56,495	35,926
8	OKC	Oklahoma City	4	5	9.3	32%	2%	53,753	32,908
7	SBA	Santa Barbara	4	4	8.8	37%	4%	33,887	25,743

Avg. staffing ratio (8.7); % developmental controllers (29.6%); % FLM Hours charged to overtime (1.34%); TRACON traffic (32,441), Tower traffic (22,082)

Staffing ratios at the 131 Tower facilities ranged from 5.3 to 20.0 Controllers per Frontline Manager. Seventy-one facilities had staffing ratios greater than the average of 7.8 controllers per frontline manager for this facility type. The high staffing ratios resulted from having fewer frontline managers on staff and a relatively large controller workforce to supervise given frontline manager staffing levels. Sixty-seven of the 71 facilities with above average staffing ratios had three or fewer frontline managers on their rosters, and these facilities tend to handle lower traffic volumes than those with lower staffing ratios. This confirmed that facilities with higher traffic volumes had lower staffing ratios.

The share of developmental controllers for Tower facilities type was 21.4% with 592 out of 2,767 controllers having the Academy Graduate (AG), Developmental or Certified Professional Controller

– In Training (CPC-IT) status. The share of developmental controllers at individual facilities ranged from 2% to 54%, while seven facilities reported having no developmental controllers. Respondents to the FLM Survey from Towers stated that on average 30% of the controllers that they directly supervised were either developmental controllers or CPC-ITs.

Frontline managers did not charge a significant amount of overtime at Tower facilities. Frontline managers charged 2,963 out of 199,781 total hours to overtime, or 1.5% of total hours. Frontline managers at 26 facilities charged a higher proportion of their hours to overtime, of these facilities, 12 had a higher staffing ratio than the average of 7.8 controllers per frontline manager. Most notably, frontline managers at the Prescott, Livermore, and Las Vegas towers charged between 5% and 13% of their hours to overtime. Prescott Tower had both its authorized frontline manager positions filled, while the other three facilities had half to three quarters of their authorized positions for frontline managers staffed.[14]

Only a few Tower facilities had high staffing ratios, high shares of developmental controllers and high traffic volumes. Figure 23 illustrates these facilities with higher than average staffing ratios for the facility type, a high share of developmental controllers, a high level of overtime hours and air traffic operations. Frontline Managers from three of these facilities indicated in the frontline manager survey having to directly supervise a high number of developmental controllers at once during a typical shift. Moreover, several written responses in the FLM Survey from these sites indicated that frontline manager shortages and controller inexperience was a factor in their workload.

Figure 23: FY12 Q3 Tower Facilities – High Staffing Ratios, Developmental Controllers, Overtime, and Air Traffic

Level	LOCID	Facility	FLMs	Authorized FLMs	Ratio	% Dev. Controllers	% FLM Overtime	Tower
11	LAS	Las Vegas	5	7	9.6	35%	5%	134,203
7	PRC	Prescott	2	2	9.5	53%	13%	58,913
7	TEB	Teterboro	3	3	9.0	48%	2%	55,050
7	HPN	Westchester	3	2	8.7	54%	4%	49,115
8	SNA	John Wayne	4	3	8.3	24%	2%	60,939

Avg. ratio (7.8); % developmental controllers (21.4%); % FLM Hours charged to overtime (1.5%); Tower traffic (48,451)

Staffing ratios for the 23 TRACON facilities ranged from 5.6 to 12.0 Controllers per Frontline Manager. Eleven of the 23 TRACON facilities had staffing ratios higher than the average of 7.1 controllers per frontline manager. However, unlike other facility types, the higher staffing ratios were not the result of smaller workforces. Nineteen of 23 TRACONs had four or more frontline managers on staff, and of those with above average staffing ratios seven facilities with four or more frontline managers. Only five TRACON facilities had a lower number of

[14] Livermore Tower had one of two frontline manager positions filled; Hobby Tower filled three of four frontline manager positions authorized; Las Vegas Tower filled five of seven frontline manager positions authorized and Prescott Tower filled its two authorized frontline manager positions.

frontline managers than their authorized level while five other facilities had more frontline managers than the authorized number of positions.

Less than 26% of controllers at TRACONs were developmentals. Out of 1,194 controllers 310 had a status of AG, Developmental, or CPC-IT. The share of developmental controllers at individual facilities ranged from as low as 6% to as high as 48%, indicating a wide range in the presence of developmental controllers at TRACON facilities. Of the 11 facilities with higher staffing ratios, the Pensacola-P31 (35%), Portland-P80 (33%) and Anchorage-A11 (33%), Denver-D01 (27%) and Tucson-U90 (26%) TRACONs had noticeably higher shares of developmental controllers.

Frontline managers charged 3,356 out of 93,360 total hours to overtime, equaling 3.6% of their total hours at TRACON facilities. Frontline managers at six facilities charged a higher proportion of their hours to overtime than the collective TRACON average with only the Denver TRACON having a higher than average staffing ratio. Frontline managers there charged 8% of their hours to overtime.

As is the case with other facility types, TRACONs with *lower* staffing ratios tended to handle *higher* traffic volumes. However, these facilities were staffed with more frontline managers relative to the size of the overall controller workforce. Only Denver TRACON (10.0) had a staffing ratio over the 7.15 controllers per frontline manager average for TRACONs. Only the Denver TRACON exhibited a high staffing ratio, large share of developmental controllers, higher share of overtime hours, and higher than average air traffic. The Las Vegas and Central Florida TRACONs had higher shares of developmental controllers, frontline manager overtime hours, and high traffic volumes, although their staffing ratios were below the average for TRACONs. Figure 24 illustrates facilities that have higher than average figures for three out of the following four criteria: higher than average staffing ratios for the facility type, a high share of developmental controllers, overtime hours or air traffic operations.

Figure 24: FY12 Q3 TRACON Facilities – High Staffing Ratios, Developmental Controllers, Overtime, and Air Traffic

Level	Facility Code	Facility Title	FLMs	Authorized FLMs	Ratio	% Dev. Controllers	% FLM Overtime	TRACON
12	D01	Denver TRACON	7	8	10.0	27%	8%	206,590
11	L30	Las Vegas TRACON	9	8	7.0	48%	8%	146,516
11	F11	Central Florida TRACON	8	8	6.8	28%	9%	155,347

Avg. ratio (7.15); % developmental controllers (25.96%); % FLM Hours charged to overtime (3.6%); TRACON traffic (130,147)

Share of Developmental Controllers

The number of developmental controllers in the total ATC controller workforce has declined from 25 % to 22% during the period analyzed. In absolute terms, there were 520 fewer developmental controllers, a 13.5% decrease from the FY11 Q1 level of 3,846 developmental controllers. During FY12 Q3, the share of developmental controllers by facility type ranged from 17% to 33%, with Combined Control Facilities and Combined TRACON Towers having the highest shares. Figure 25 highlights the largest decreases in the share of developmental controllers, as well as the 1% increase that occurred at Tower facilities, and the overall downward trend in the

share of developmental controllers in the controller workforce. In particular, Combined TRACON (-12%) and TRACON (-6%) facilities experienced drops in their share of developmental controllers.

Figure 25: Share of Developmental Controllers by Facility Type

Facility Type	FY11 Q1	FY11 Q2	FY11 Q3	FY11 Q4	FY12 Q1	FY12 Q2	FY12 Q3	Total Variance
En Route Centers	20%	19%	18%	18%	16%	16%	17%	-3%
Combined Control Facilities	34%	31%	31%	31%	29%	30%	33%	-1%
Combined TRACON	32%	30%	27%	26%	26%	24%	20%	-12%
Combined Tower / TRACON	32%	32%	32%	31%	31%	31%	30%	-3%
Towers	20%	21%	23%	23%	23%	22%	21%	1%
TRACON	32%	32%	31%	30%	29%	28%	26%	-6%
Terminal Facilities	29%	29%	28%	28%	28%	27%	26%	-3%
ATC Facilities	25%	25%	24%	24%	23%	22%	22%	-3%

Frontline Manager Hours

Both standard and overtime hours for frontline managers increased during the period analyzed, but overtime hours escalated proportionally more than standard hours. Comparing levels from the first and last quarters, overtime hours worked by frontline managers rose 37% from 14,341 to 19,637 hours, while standard hours jumped 19% from 912,342 to 1,082,076.

The increase in overtime hours appears to be caused by frontline managers working more as opposed to changes in staffing levels or facilities having fewer frontline managers than authorized. Of the 315 facilities, 108 (34%) had a higher level of quarterly overtime charged by frontline managers in FY12 Q3 than at the start of the analysis period. Thirty-two facilities increased their overtime hours, but did not increase their staffing levels, which remained under their authorized number of frontline managers. The increase in overtime hours is attributable to frontline managers working more hours and not due to more frontline managers leading to more overtime hours. Moreover, the overall number of frontline managers in the FAA decreased by one position to 1,912 positions between Q1 FY11 and Q3 FY12. The increase in hours worked supports the fact that close to 85% of frontline managers indicated on the FLM Survey that they believed their workload had increased in the last year for their administrative tasks.

Frontline managers in En Route facilities generated a majority of the increase of 5,296 hours charged as overtime by frontline managers between Q1 FY11 and Q3 FY12. Overtime increased by 5,247 hours (238%) and standard hours increased 73,065 hours (19%) while only four frontline managers were added to these facilities. Nearly 80% of respondents to the FLM Survey respondents from En Route Centers indicated that their workload had increased in the last year. However, the staffing levels in FPPS do not reveal how many frontline managers are medically disqualified from monitoring air traffic operations, which means that the number of frontline managers actually monitoring controllers could be lower, which could account for some of the increase in overtime hours.

Several facility types had few frontline managers but showed an increase in reported standard and overtime hours. In total, TRACONs had three fewer frontline managers (-2%), but there was an increase of 13,793 standard hours (17%) and 117 overtime hours (4%). Combined TRACONs had two fewer frontline managers in FY12 Q3, but increased overtime hours by 16% and standard hours by 17%, respectively. Figure 26 shows the quarterly level in overtime hours charged by frontline managers at different types of facilities.

Figure 26: Quarterly Frontline Manager Overtime Hours

Facility Type	FY11 Q1	FY11 Q2	FY11 Q3	FY11 Q4	FY12 Q1	FY12 Q2	FY12 Q3	Total Variance
En Route Centers	2,206	2,704	2,765	4,817	5,069	5,832	7,454	5,247
Combined Control Facility.	150	142	62	183	194	285	236	86
Combined TRACON	1,913	2,544	2,538	3,447	2,918	2,609	2,217	305
Combined Tower / TRACON	4,364	3,952	4,340	5,824	3,771	3,927	3,411	-954
Towers	2,468	2,533	3,076	3,705	3,079	3,423	2,963	495
TRACON	3,240	3,408	3,548	4,386	3,778	3,903	3,356	117
Terminal Facilities	12,135	12,580	13,566	17,544	13,739	14,146	12,184	49
All ATC Facilities	14,341	15,284	16,331	22,361	18,808	19,978	19,637	5,296

Per capita measures of hours worked during a defined period of time gives a better indication of the change in the workload for frontline managers than an absolute change in hours, or the relative size of that change, because of the difference in sizes of the workforces from one quarter to the next. Assuming that each quarter spanned 13 weeks, the estimated number of hours worked weekly by a frontline manager increased by 6.8 hours to 43.5 hours by the end of the period from 36.7 hours in FY11 Q1. Frontline managers at Combined Control facilities increased average weekly hours by 10.6 to 49.5 hours. All other facility types increased the average number of weekly hours for a frontline manager by six to seven hours, starting at less than 40 hours in FY11 Q1 and finishing between 44 and 45 hours in FY12 Q3. Figure 27 demonstrates the increase in average weekly hours for frontline managers during the period analyzed.

Figure 27: Average Weekly Hours per Frontline Manager

Facility Type	FY11 Q1	FY11 Q2	FY11 Q3	FY11 Q4	FY12 Q1	FY12 Q2	FY12 Q3	Total Variance
En Route Centers	37.0	42.5	36.8	44.1	43.4	40.8	44.3	7.3
Combined Control Facility	38.9	41.1	38.2	43.9	42.4	38.5	49.5	10.6
Combined TRACON	38.1	43.7	38.1	45.7	45.9	39.1	45.2	7.1
Combined Tower / TRACON	37.5	43.3	37.4	44.7	43.6	37.9	44.1	6.6
Towers	37.1	43.2	37.4	44.0	44.1	37.4	44.1	6.9
TRACON	37.5	45.4	38.7	44.7	44.6	38.5	44.5	7.1
Terminal Facilities	37.5	43.6	37.7	44.6	44.1	38.0	44.3	6.9
All ATC Facilities	36.7	42.5	36.6	43.5	43.1	38.4	43.5	6.8

Figure 28 shows the top three facilities per facility type in terms of overtime hours per frontline manager in FY12 Q3. For instance, Prescott Tower had 82 overtime hours per frontline manager when the average for the facility type for the same quarter was 10.1 hours. Eight of the 17 facilities listed had fewer frontline managers on board in FY12 Q3 than their authorized number of positions, which could contribute to the high rate of overtime hours per capita.

Figure 28: Q3 FY 12 - Overtime Hours Charged by Frontline Managers on Per Capita Basis

Facility		Level	FLMs Authorized	FLMs Onboard	Overtime	Overtime Hours per FLM
En Route Centers						
	Oakland	11	35	29	1,009	34.8
	New York	12	42	33	1,139	34.5
	Atlanta	12	49	51	1,561	30.6
Combined Control Facility						
	Honolulu Control Facility	11	12	10	23	23.5
	High Desert TRACON	8	3	1	1.4	1.4
Combined TRACON						
	New York TRACON	12	33	26	1533	59.0
	Southern California TRACON	12	34	43	529	12.3
	Potomac TRACON	11	30	29	103	3.6
Combined Tower / TRACON						
	Monroe Tower	5	2	2	119	59.5
	Jacksonville Tower	9	7	7	405	57.9
	Midland Tower	7	3	4	191	47.8
Towers						
	Prescott Tower	7	2	2	164	82.0
	Orlando Tower	9	5	3	187	62.3
	Atlanta Tower	12	8	8	327	40.9
TRACON						
	Central Florida TRACON	11	8	8	422	52.8
	Denver TRACON	12	8	7	353	50.4
	Las Vegas TRACON	11	8	9	446	49.6

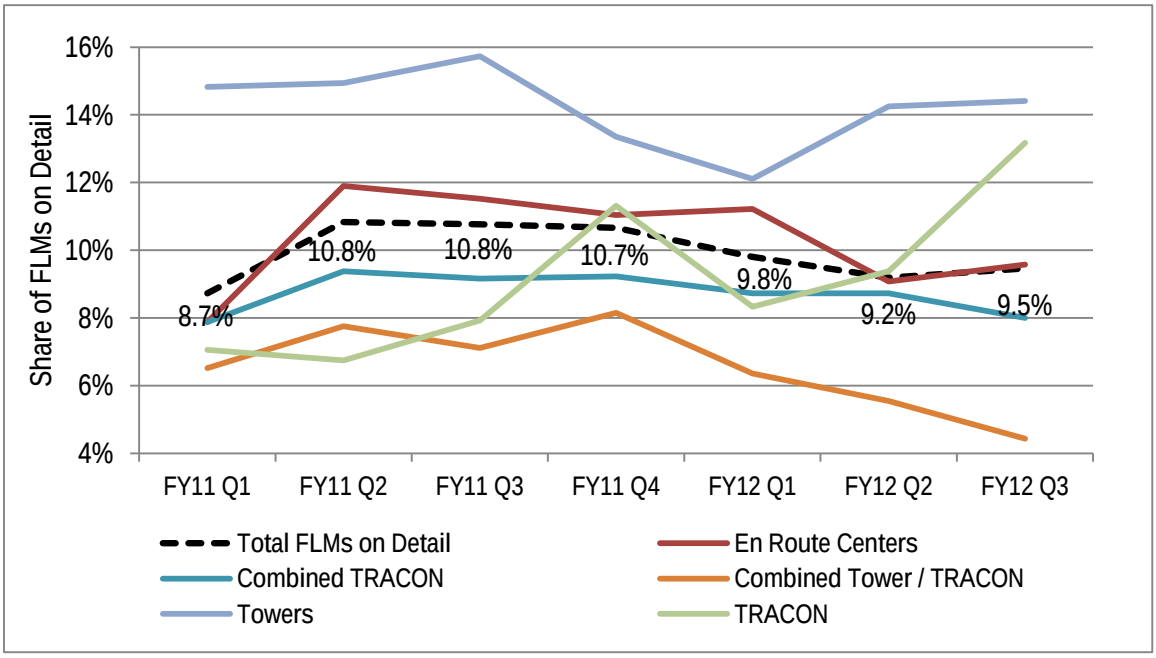
Detail Assignments for Frontline Managers

At the end of Q3 FY12, 181 out of 1,912 frontline managers (9.5%) were on detail according to the FPPS data. The share of frontline managers on detail ranged across the facility types from 14% of total frontline managers in Tower facilities to 4.4% of all frontline managers at Combined TRACON Tower facilities.

Of the 181 frontline managers on detail, 131 frontline managers worked in level 10 to 12 facilities, and 77 of those individuals were listed on the rosters for ARTCCs. The remainder of frontline managers on detail at level 10 to 12 facilities included 20 individuals at TRACONs, 19 at Tower

facilities, 10 at Combined TRACON facilities, four at Combined TRACON Tower facilities and a single frontline manager at a Combined Control facility. Of the remaining 50 frontline managers on detail from level four to nine facilities, 32 were from Tower facilities, 16 in Combined TRACON Tower facilities, and two in TRACONs. Figure 29 illustrates the trend in the share of frontline managers on detail by facility type.

Figure 29: Share of Frontline Managers on Detail by Facility Type



There is a moderate relationship between having a high share of frontline managers on detail and charging hours to overtime for facilities at certain levels. For example, Figure 30 shows that the five highlighted facilities are among the six level 12 facilities with the highest share of frontline managers on detail, and these facilities also had above average shares of overtime hours when compared to the average for all level 12 facilities. A similar relationship existed between the share of frontline managers on detail and use of overtime for frontline managers at level 11, 9, 8, and 6 facilities as well.

Figure 30: Share of Frontline Managers on Detail and Use of Overtime for Level 12 FAA Facilities

LOCID	Level	Facility Title	Classification	% FLM Overtime	OT / FLM	% FLMs on Detail
ZNY	12	New York	En Route Centers	5.8%	34.5	30.3%
A80	12	Atlanta TRACON	TRACON	6.6%	39.3	28.6%
ZDC	12	Washington	En Route Centers	4.3%	25.1	25.5%
DFW	12	DFW Tower	Towers	3.0%	17.4	25.0%
ORD	12	Chicago O'Hare Tower	Towers	4.7%	28.6	23.1%
I90	12	Houston TRACON	TRACON	5.5%	30.6	21.4%
D10	12	Dallas - Ft Worth TRACON	TRACON	1.8%	10.6	20.0%
MIA	12	Miami Tower	Combined Tower / TRACON	1.8%	9.9	20.0%
SCT	12	Southern California TRACON	Combined TRACON	2.2%	12.3	16.3%

LOCID	Level	Facility Title	Classification	% FLM Overtime	OT / FLM	% FLMs on Detail
DEN	12	Denver Tower	Towers	1.8%	10.1	14.3%
			Average for Level 12 Facilities	3.6%	21.4	12.2%

Summary

Analysis of the FPPS data for the last seven quarters revealed several trends in staffing levels for frontline managers and the controllers they supervise. The number of controllers decreased slightly while the number of frontline managers remained the same, which led to a very small decrease in the overall Controller-to-Frontline Manager staffing ratio for the FAA. This staffing ratio has remained stable, between seven and eight controllers per frontline manager, for the four primary facility types that comprise over 90% of total number of controllers and frontline managers.

Presently, just over 20% of the controllers in the workforce have not yet been fully qualified and certified at their current facility; however, the share can reach over 30% in the case of the Combined Control facilities and Combined TRACON Tower facilities.

The majority of overtime hours were charged by frontline managers in En Route Centers, with most overtime hours coming from the facilities in Atlanta, Los Angeles, Oakland, Washington and New York. Figure 31 highlights these five facilities as the primary generators of the increase in overtime hours in En Route Centers, and the FAA overall. It also shows that Atlanta and Washington had more frontline managers on staff than their authorized number of positions while the others were all below their authorized staffing levels. Weekly hours worked per frontline manager increased across all facility types by six to seven hours from FY11 Q1 to FY12 Q3.

Figure 31: Change in Overtime Hours for En Route Centers

LOCID	Level	Facility Title	FY12 Q3 FLMs	FY12 Q3 Authorized FLMs	Variance	FY11 Q1 Overtime Hrs	FY12 Q3 Overtime Hrs	Variance	% Var
ZAB	10	ALBUQUERQUE	35	35	0	39	263	224	574%
ZAN	10	ANCHORAGE	19	21	-2	64	41	-23	-36%
ZAU	12	CHICAGO	46	56	-10	10	8	-2	-20%
ZBW	11	BOSTON	32	35	-3	30	67	37	123%
ZDC	12	WASHINGTON	51	42	9	476	1,281	805	169%
ZDV	10	DENVER	38	42	-4	176	49	-127	-72%
ZFW	12	FORT WORTH	38	42	-4	42	144	102	243%
ZHU	11	HOUSTON	38	42	-4	91	58	-33	-36%
ZID	12	ZID INDIANAPOLIS	47	49	-2	36	72	36	100%
ZJX	11	JACKSONVILLE	40	42	-2	-39	111	150	-385%
ZKC	11	KANSAS CITY	39	42	-3	36	16	-20	-56%
ZLA	12	LOS ANGELES	40	42	-2	225	1,131	906	403%
ZLC	10	SALT LAKE	22	28	-6	102	29	-73	-72%
ZMA	11	MIAMI	40	42	-2	54	79	25	46%
ZME	12	MEMPHIS	39	42	-3	129	134	5	4%
ZMP	11	MINNEAPOLIS	39	42	-3	16	70	54	338%

LOCID	Level	Facility Title	FY12 Q3 FLMs	FY12 Q3 Authorized FLMs	Variance	FY11 Q1 Overtime Hrs	FY12 Q3 Overtime Hrs	Variance	% Var
ZNY	12	NEW YORK	33	42	-9	360	1,139	779	216%
ZOA	11	OAKLAND	29	35	-6	105	1,009	904	861%
ZOB	12	CLEVELAND	51	56	-5	20	45	25	125%
ZSE	10	SEATTLE	23	28	-5	49	41	-8	-16%
ZSU	9	SAN JUAN	10	14	-4	0	58	58	100%
ZTL	12	ATLANTA	51	49	2	185	1,561	1,376	744%
ZUA	8	GUAM	4	5	-1	0	47	47	100%
		Totals	804	873	-69	2,206	7,453	5,247	238%

According to the FPPS data, nearly 10% of frontline managers were on detail as of FY12 Q3. The share of frontline managers on detail is higher than at the start of the analysis period, but has receded from the peak of 10.78% in FY11 Q2.

Appendix E – On-Site Interviews

This appendix outlines the process undertaken by the Study Team to select FAA facilities to visit and discusses information obtained from on-site interviews with over 100 frontline managers and other facility personnel. These interviews revealed that the FAA's frontline managers are working in an environment where they face competing and increasing demands for their time. They are required to remain engaged in air traffic operations where they provide direct supervision to controllers while addressing a growing list of administrative tasks, and they are required to coordinate controller training, and conduct timely performance reviews during their shifts.

Overview

The Study Team visited 13 Terminal and En Route facilities to conduct on-site interviews with the frontline managers and facility leaders. Conducting these interviews enabled the Study Team to receive information directly from frontline managers regarding how they managed their crews and how they handled operational complexities associated with their specific environment. The interviews provided new perspectives on the frontline managers' wide range of responsibilities, and the factors that impact their workload. The visits also enabled the Study Team to evaluate the differences in the frontline manager position by facility type and level, and to validate responses to questions regarding workplace configuration and span of control. The interviews covered a range of topics including:

- Expectations of frontline managers
- Administrative tasks and collateral duties
- Methods used to complete administrative tasks
- Staffing ratios (current and ideal)
- Level of experience
- Operational complexities
- Frontline manager training
- Other factors impacting frontline manager workload.

Because Air Traffic Managers and Operations Managers at a facility also have a wealth of insight into the challenges and complexities associated with performing the duties of a frontline manager, those who were available at the time of the Study Team's visits were invited to attend a separate interview that covered a similar range of topics. While on-site, the Study Team also visited the operations floor which allowed them to gain insight into the work performed, tools available, processes used, and the physical layout of the facility.

Site Selection

While the interview logistics were being planned, the FAA provided an initial list of both Terminal and En Route facilities for the Study Team to consider visiting. Several factors were taken into account when selecting the facilities to visit. These factors included visiting at least one facility in

each of the three FAA service areas, the proximity of other facilities in the service areas that would allow for broad coverage by facility type and level, and the time constraints for completing the study.

A final decision was made to focus the facility visits around three of the suggested En Route facilities based on their geographic location and unique facility configurations, and to include Terminal facilities of various types and levels that were located within driving distance of the selected En Route Centers to maximize the time spent in one geographic area while minimizing travel. The resulting list of facilities was diverse in terms of type (En Route vs. Terminal Facilities), level (reflecting air traffic volume), and geographic location. The facilities selected included three En Route Centers (ZOA, ZOB, ZMA), four Combined TRACON Towers (CLE, CAK, MFD, MIA), four Towers (SFO, HWD, FXE, TMB), a stand-alone TRACON (A80), and a Combined TRACON (SCT). Figure 32 illustrates the facilities where interviews were conducted.

Figure 32: FAA Facilities Visited for Frontline Manager Interviews

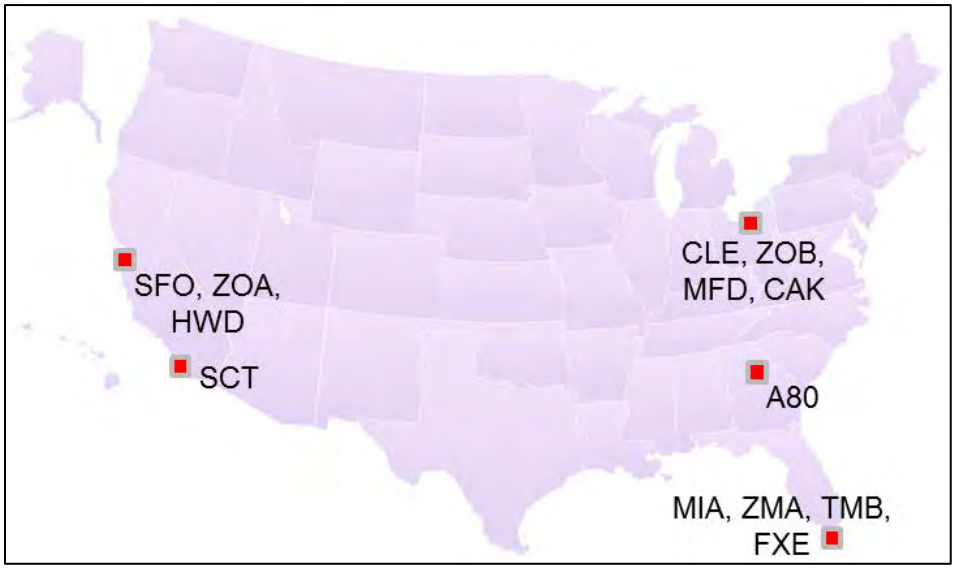


Figure 33 contains a list of the facilities visited with the location identification (LOCID), facility level, facility type, and the city and state where each facility is located. The facilities appear in the order in which they were visited during the study. The data source for the information is an extract from the Digital Terminal Resource Book (DTRB) as of August 2012, which was provided to the Study Team by the FAA. During the time of the study some facilities experienced a change in their facility level that reflected current operating conditions. Cleveland Tower fell into this category and the updated level was used for the analysis.

Figure 33: Facilities Visited

LOCID	Facility Level	Facility Type	City	State
A80	12	TRACON	PEACHTREE CITY	GA
MIA	12	Combined Tower / TRACON	MIAMI	FL
ZMA	11	En Route Center	MIAMI	FL
TMB	7	Tower	MIAMI	FL
FXE	6	Tower	FT. LAUDERDALE	FL
CLE	9	Combined Tower / TRACON	CLEVELAND	OH
ZOB	12	En Route Center	OBERLIN	OH
MFD	5	Combined Tower / TRACON	MANSFIELD	OH
CAK	7	Combined Tower / TRACON	AKRON/CANTON	OH
SFO	10	Tower	SAN FRANCISCO	CA
ZOA	11	En Route Center	OAKLAND	CA
HWD	6	Tower	HEYWARD	CA
SCT	12	Combined TRACON	SAN DIEGO	CA

Prior to visiting the facilities, members of the Study Team held teleconference calls with facility leadership to confirm travel dates and logistics for the on-site interviews, gather a preliminary list of frontline managers to interview, and determine operational complexities and busy times of the day. The facility interviews were conducted over a four-week period (August 8, 2012 to August 31, 2012) with teams ranging in size from two to five members visiting the selected facilities. The Study Team interviewed 79 frontline managers, 11 OMs, 8 Air Traffic Managers, and 11 other members of facility leadership teams to obtain their perspectives on the managerial and administrative tasks frontline managers are expected to perform, as well as the unique challenges confronting them at their individual facilities. Frontline managers were asked a standard set of questions during the interviews, and were provided an opportunity to discuss any topic at length. Results of the interviews are summarized in the following categories:

- Expectations of frontline managers
- Administrative tasks and collateral duties
- Methods for completing administrative tasks
- Operational complexities
- Frontline manager training
- Level of experience
- Other factors impacting frontline manager workload.

Expectations of Frontline Managers

According to those interviewed, **the primary duty of a frontline manager is to monitor controllers' actions on the operations floor to ensure that a safe and expeditious air traffic flow is maintained**. This view was confirmed with others in leadership positions at the facilities

visited by the Study Team, as well as senior members of the ATO management team at FAA headquarters. At times frontline managers overrule controllers' decisions, correct phraseology, or are relied upon to make strategic decisions during challenging operational situations. In addition to monitoring controllers, frontline managers mentor them, oversee their completion of trainings, conduct skills checks and performance evaluations, and help those they supervise complete certifications and maintain currency[15]. They are also responsible for administrative tasks involving their controllers (scheduling leave), and their workplace (answering the telephones).

Frontline managers, facility management and FAA leadership agree that the primary role of the frontline manager is to be operationally engaged in order to ensure that controller actions result in the safe and expeditious flow of air traffic.

Supervisory duties include ensuring controllers communicate clearly and concisely with pilots and recognize developing challenges in the operating environment before they pose a risk to operational safety or efficiency. Frontline managers monitor controllers to ensure that they use good judgment, comply with FAA procedures, and recognize that safety alerts and maintaining aircraft separation are top priorities.

The frontline managers interviewed described their position as a combination of complementary tasks. The position requires tactical knowledge of the airspace being monitored, an understanding of the professional abilities and personalities of the controllers they supervise, and an ability to complete a growing number and range of administrative tasks under tight deadlines. Frontline managers are also expected to implement new procedures and support various FAA initiatives that impact the controllers who work alongside them.

The FAA has a national standard for evaluating the performance of its frontline managers; however, the evaluation criteria applied to rate their performance seem to differ between the facilities. Management teams and frontline managers at the facilities visited did not mention the national standard for reviewing frontline manager performance and frontline managers at various facilities stated that different performance criteria were emphasized. Frontline managers at one facility stated that their performance was rated based on their timeliness in completing assigned duties and their willingness to volunteer for collateral duties. While the frontline managers indicated that evaluations were not comprehensive, an OM interviewed at the same facility shared the criteria used to rate the performance of a frontline manager, which included:

While many of the frontline managers interviewed could easily describe their expected duties, they could not state the criteria used to evaluate their performance.

- Working relationship with others – interaction with subordinates, peers and managers
- Maintenance documentation

[15] To maintain currency, personnel must rotate through all positions on which they are certified each calendar month. Additionally, they must meet the minimum time requirements on control positions or operational positions, as appropriate, each calendar month:

- Performance management
- Compliance with skills checks, meeting with teams
- Performing collateral duties
- Participation in meetings
- Visual observations by OMs when they are on the floor.

A frontline manager at another facility stated that the performance criteria used to evaluate the frontline managers included maintaining safe operations, providing good service to customers (pilots) and receiving no complaints, utilizing training time and opportunities for interacting with controllers, setting and maintaining standards, solving problems, and completing tasks in a timely manner while meeting training and external goals and motivating employees. In contrast, one of the frontline managers interviewed at an En Route facility could not easily describe the specific performance management criteria used. He mentioned that the evaluation was weighted between operational, management and collateral duties.

Despite the fact that the performance criteria reported in several interviews differed, there is a national standard for evaluating the performance of frontline managers. The SUPCOM representatives provided the Study Team with documents outlining six outcomes and corresponding expectations by which frontline managers in En Route Centers and Terminal facilities are evaluated. The six sets of paired outcomes and expectations, illustrated in Figure 34, show that four expected outcomes and expectations center on "soft skills", such as managing controllers, fostering working relationships, evaluating performance, maintaining accountability among controllers, and developing new controllers. However, expectations associated with the last two outcomes, *ATO Managerial Responsibilities* and *Service Unit or Individual Managerial Expectations*, focus on the operational aspect of the frontline manager's performance with an emphasis on monitoring operations, evaluating traffic flows, recommending and initiating facility procedures to achieve effective traffic management, leading safety initiatives, and documenting air traffic control incidents. For example, expectation 6.3.1 states that a frontline manager:

> *"Leads/directs facility operations. Ensures the operation of the facility is consistent with organizational goals and meets the needs of the stakeholder. Identifies issues/problems and solutions, which may impact facility operations, the agency, and/or aviation community."*

Figure 34: Performance Outcomes and Expectations of a Frontline Manager

Outcome	Achieving Results	Leading People	Building Relationships	Leading Change	ATO Managerial Responsibilities	Individual Responsibilities
Expectation 1	Managing Organizational Performance	Building Teamwork and Cooperation	Communication	Vision	Safety Culture	General Expectations (various expectations)
Expectation 2	Accountability and Measurement	Building a Model EEO Program	Building Alliances	Strategy Formulation	Decision Making	Administrative Expectations (various expectations)
Expectation 3	Problem Solving	Developing Talent	Interpersonal Relations and Influence	Agility	Safety Management System	Operational Expectations (various expectations)
Expectation 4	Business		Integrity and	Innovation	Environmental,	

Outcome	Achieving Results	Leading People	Building Relationships	Leading Change	ATO Managerial Responsibilities	Individual Responsibilities
	Acumen		Honesty		Occupational, Safety and Health (EOSH)	
Expectation 5	Customer Focus			Organizational Efficiency	Next Generation Air Transportation System (NextGen)	
Expectation 6					System Efficiency	
Expectation 7					Environmentally Responsible NAS	
Expectation 8					ATO Focus Items for FY13	

Administrative Tasks and Collateral Duties

In addition to their operational duties, **frontline managers are required to perform a number of administrative tasks**, such as updating and certifying time and attendance data, adjusting shift schedules, documenting controller performance, completing incident reports, and performing operational skills assessments (OSAs) during their shifts. They may perform one or more collateral duties at their facility, either individually or as a member of a team, completing assignments such as developing schedules or participating on the traffic management advisory, airspace reconfiguration, or workforce engagement teams. These administrative tasks are complicated by the amount of time that frontline managers can devote to completing them during their assigned shifts, despite the fact that they are expected to complete them before deadlines. Administrative tasks that are more directly related to air traffic operations or developing controllers include performing OSAs to certify controller eligibility to work positions, assigning training to controllers, and documenting controller performance in the Comprehensive Electronic Data Analysis and Reporting (CEDAR) system. Generally, the frequency of performing operations-related administrative tasks corresponds with the experience level of the crew being supervised. Frontline managers employ several methods to complete administrative tasks including working during scheduled breaks, using management-approved administrative days or Alternative Work Schedules (AWS), deploying CICs to monitor operations, coming into the facility before their shift or staying afterwards, completing administrative tasks from home, and using credit hours.

> The biggest challenge frontline managers face is finding the time to complete an increasing volume of administrative work without sacrificing the quality of the oversight they provide.

The majority of frontline managers stated that their biggest challenge was addressing the competing demands for their time during their scheduled shift. Frontline managers face multiple demands for their limited time because the frequency and volume of administrative tasks expected of them is growing. This growth comes at a time when the experience level of the controllers has been reduced, which requires frontline managers to spend more time monitoring operations. Given the priority placed on ensuring flight safety, the greatest test for many frontline managers becomes finding time to complete the administrative tasks expected of them.

Some frontline managers have experienced an increase in the number of administrative tasks they are expected to perform due to the delegation of responsibilities from within their facilities. For example, OMs at one facility were unable to remain in the operating environment to handle phone calls for any consistent period of time due to their own growing administrative demands; therefore, frontline managers were tasked with spending additional time fielding phone calls. Conversely, at other facilities the OMs remained in the control room most of the day and took an active role in handling phone calls so that frontline managers could focus on operations.

Some administrative tasks cannot be anticipated ahead of time and must often be completed while stationed on the operations floor. Frontline managers are required to update the Cru-X/ART time and attendance system that keeps track of when controllers sign on and off positions. Some controllers update Cru-X/ART themselves, but this task was delegated to frontline managers as part of the most recent agreement with the National Air Traffic Controllers Union (NATCA). Many of the frontline managers interviewed see this task as one that is time consuming, and one that could potentially impact their ability to monitor operations because it must be performed while on the operations floor. In addition, inaccurate entries that occur as a result of frontline managers being engaged in other tasks and not being immediately available to make changes as controllers sign on or off position can impact the quality of the data used to support decision making elsewhere in the FAA.

Some required administrative tasks such as updating Cru-X/ART can interfere with the ability of the frontline manager to remain focused on air traffic, and may lead to the capture of inaccurate data.

Frontline managers interviewed indicated that a significant amount of time is spent adjusting schedules due to requests to change shifts and unforeseen absences. One frontline manager said that he could spend a quarter of the day modifying or coordinating requests for changes to the shift schedule after it had been created six weeks in advance. Another frontline manager stated that the biggest challenge for him was receiving leave requests and sick calls from controllers when he arrived for work. Because he could not predict these requests, he immediately spent time assessing whether there would be sufficient personnel to work positions throughout his shift and spent significant time adjusting assignments. Some frontline managers suggested there was a need for defined guidelines and a written policy on how to fill schedule gaps before they occur.

Redundancies in the requirements for entering similar information into multiple systems, training on the systems used for performance documentation, and the performance of the systems themselves, can increase the time required to complete administrative tasks. The technology intended to assist frontline managers has in some cases made it more challenging for frontline managers to complete tasks because they are required to document information related to training, skills checks, controller feedback sessions, and incidents in a number of separate electronic information technology systems. For example, frontline managers are required to have at least one entry in CEDAR for each employee every two months as a record of conversation between frontline manager and controllers on their team. They must also enter periodic updates in a "performance management system" every three months and conduct a sit down meeting every six months with each employee, which also requires documentation in CEDAR. Those interviewed indicated that many of the information technology systems are slow, and that they do not receive a sufficient amount of training on these tools so they must learn them on the job, which increases the time that it takes to make entries. Frontline managers characterized the situation as having to spend too much "heads down time" on the operations floor because they are spending so much time learning how to

enter information into the required systems. Since some entries have to be made in real time on the operations floor, the additional time spent making entries can divert the frontline managers attention away from the operations.

Methods for Completing Administrative Tasks

Because finding the time to complete administrative tasks during shifts can be a challenge, the frontline managers interviewed have employed several different strategies in order to complete the administrative tasks. These include working during scheduled breaks, using administrative days or Alternative Work Schedules, deploying CICs, coming into the facility before their shift or staying afterwards, completing administrative tasks from home, and using credit hours. Responses in the FLM Survey indicated others come into the facility on their day off, complete administrative work while assigned the Operations Manager in Charge (OMIC) position, work off the clock and any time staffing levels are high and air traffic levels are low, or coordinate with other frontline managers to find free time during shift overlaps.

Nearly all of the frontline managers interviewed stated that they had to complete their administrative tasks during breaks or their lunch period. **Some facilities employ Alternative Work Schedules (AWS) to build hours into the schedule that can be used for frontline managers to complete administrative tasks.** The Miami Tower/TRACON facility is implementing an AWS on a probationary basis after frontline managers made the case to the facility's leadership that dedicated hours would enable them to complete administrative tasks in a timelier manner, without compromising their ability to monitor operations. Beginning in September 2012, frontline managers will have time built into their schedules to complete administrative tasks rather than trying to fit them in during the rare lull in operations. According to the ATM, the AWS will remain in place if frontline managers can demonstrate that they have taken advantage of the additional dedicated hours to complete administrative tasks. These hours are funded by redirecting leave spots for frontline managers. At the Atlanta TRACON, frontline managers were granted a monthly administrative day to complete administrative tasks such as conducting face-to-face meetings with their controllers. In addition, they had one frontline manager who handled many of the collateral duties that are shared among the frontline managers at other facilities.

Frontline managers rely on CICs because hours of operation exceed what can be staffed by the number of available frontline managers.

Frontline managers rely on CICs to supervise controllers because hours of operation exceed what can realistically be covered with the number of available frontline managers. Facilities that are open twenty-four hours a day, seven days a week cannot fully staff the number of available shifts with only three to four frontline managers. This becomes even more challenging when required frontline manager training and scheduled leave are taken into account. At facilities with reduced hours of operation, two frontline managers cannot fully cover the number of shifts available during the week. Interviews found that administrative duties are completed when their shifts overlap, permitting one person to remain on-position while the other completes administrative work. In both scenarios frontline managers use controllers-in-charge (CICs) at various times of the day or evening so that administrative tasks can be completed, or when no other frontline manager is on duty. Generally, the frontline managers interviewed reported a reluctance to use a Controllers-in-Charge (CIC) because the frontline manager is responsible if an operational error occurred while the CIC is in charge.

Some frontline managers prioritize administrative tasks according to those with the closest deadlines. Frontline managers manage rolling deadlines for annual (performance evaluations), monthly (skill checks, training – eLMS), and weekly (monitor use of employee leave) tasks. The approach for prioritizing competing tasks was described as "handling what is on fire at the moment," with priority being given to the tasks with the most pressure to have completed today. In addition, some frontline managers reported that with their volume of administrative work, it can be difficult to find the eight hours per month that they need to be on-position to maintain currency.

Frontline managers think creatively to complete administrative tasks when they have a limited support staff. Frontline managers at a Terminal facility used a medically disqualified, but experienced, controller to deliver controller training. This individual had served as an OJTI prior to being medically disqualified and continued to deliver training and give debriefs to trainees. This enabled the frontline managers to focus on monitoring operations while not falling behind on mandated training requirements. Frontline managers at an En Route Center suggested bringing back retired members of the OJTI team on a part-time basis to help reduce the backlog of training sessions required for developmental controllers.

Operational Complexities

Airline passenger travel is expected to nearly double in the next 20 years[16]. A longtime frontline manager sensed that the renewed emphasis on air traffic safety had shifted the emphasis in the continual balancing act that frontline managers must perform between keeping flights moving to maintain timeliness, and slowing down their movement to maintain prescribed distances of separation. He stated that there was a renewed focus on ensuring flight safety.

Weather, terrain, facility configuration, military operations, and other operational considerations can present challenges to the flow of air traffic.

Frontline managers deal with several forms of operational complexity including weather, facility configuration, and other operational considerations. **Weather** can be a challenge at any facility. For example, the location and timing of thunderstorms can be challenging for some facilities during the summer months, while winter storms and ice can present challenges at other facilities during the wintertime. Fog can require facilities in the San Francisco Bay area to delay flights and order flights into holding patterns. In such situations frontline managers coordinate even more with the traffic management unit to reach a consensus on how to keep traffic moving in and out of their facility, or on track for arrival at other destinations. Very little administrative work is attempted on days when frontline managers are dealing with extreme weather situations.

Facility configuration can be categorized under both external and internal considerations. Frontline managers mentioned the mountainous terrain surrounding a facility, the layout of the runways, ongoing construction on runways and taxiways, and diversity in the operational capabilities of the aircraft arriving and departing as operational factors that impacted their workload. One frontline manager indicated that the layout of the operational area inside his facility took him away from the operations floor to complete some administrative tasks and limited his ability to monitor operations due to his proximity to the controllers working air traffic. However, he also indicated that

[16] "FAA Forecast Predicts Air Travel to Double in Two Decades" (Press Release). Federal Aviation Administration. February 15, 2011. Retrieved 2012-10-18. <<http://www.faa.gov/news/press_releases/news_story.cfm?newsId=12439>>

this configuration promoted communication with adjacent work areas. Frontline managers assigned to **oceanic sectors and areas** in En Route facilities must possess a broader knowledge of operating procedures and the ability to work with different types of technology, including technology deemed outdated in the United States but still used in other countries. In addition, because they rely on equipment located in other countries or in the ocean, these frontline managers must be prepared to work "off radar", in addition working with satellite based equipment if there are equipment failures. Moreover, equipment located in the open ocean may be out for longer periods of time because of the difficulty of reaching it to make repairs; therefore, frontline managers in oceanic sectors may need to work under these conditions longer than those who monitor airspace over the mainland. Frontline managers in one facility indicated that the oceanic area should be split into two to reduce the number of positions that are potentially required to be monitored at one time. The frontline managers working the oceanic area in another facility shared their view that one frontline manager should be on-position in each of their two oceanic areas.

Military and VIP traffic can require an increase in communications with frontline managers for last minute coordination and priority clearances as airspace is restricted, and can impact the goal of keeping other air traffic sufficiently separated and moving efficiently. One of the tasks expected of frontline managers is to understand and support the military operations specialist (MOS) function. Frontline managers estimated that active military traffic increased the number of phone calls by as much as 10 times the normal level of calls. At several of the facilities visited, the frontline managers noted that special coordination is also required for Very Important Person (VIP) movements, especially during a presidential election year.

In facilities with **nighttime cargo operations**, frontline managers handle busy shifts during both the day and the late evening hours. A frontline manager in a facility with this type of traffic provided unsolicited input to the Study Team indicating that the staffing challenge involved having enough frontline managers and controllers to have a full crew during the midnight shifts when nighttime cargo operations occurred four nights per week, in addition to having the resources to supervise controllers on weekdays, weekday evenings and weekends when commercial aviation traffic was higher. He noted the difficulty in staffing both the Tower and the TRACON simultaneously, especially during the midnight shifts, with only five frontline managers. Coverage is achieved by using CICs in the Tower while the frontline manager on duty handles TRACON operations. He also indicated that using CICs presents challenges because they are not qualified to conduct skill checks on trainees or rate controllers during the time they are assigned CIC duties. Moreover, since the frontline managers cannot observe controllers in both the TRACON and the Tower equally, it is difficult to provide mentorship, on-the-spot corrections, and appreciation for doing a good job.

Frontline Manager Training

The content and timing of frontline manager training received varied across the facilities visited.

Training practices, materials, and opportunities for frontline managers to attend FAA training sessions varied by facility. Those interviewed indicated that there was no consistent documentation or "user manual" to use as a reference, and that the availability of training courses varied because some new frontline managers were able to attend immediately, while others had to wait for several years. Some frontline managers indicated that the expectation at their facility was that they needed the self-initiative to identify and register for training courses. Although the FAA offers training sessions for its frontline managers, many of the new frontline managers indicated that they had to learn how to

effectively manage employees, conduct training and skill checks, complete performance evaluations, fill out forms, and other administrative duties while on the job. Some new frontline managers shadowed more experienced frontline managers as part of the initial orientation. In general, training for a brand new frontline manager ranged from completing initial online training, to shadowing a current frontline manager, to receiving advice from a seasoned frontline manager.

Senior management at one of the En Route Centers stated that the quality of its training for new frontline managers had improved for those promoted within the last two to three years, but that they had not done as well in preparing those promoted four to six years ago. At that time an increasing number of retirements led to promoting controllers to frontline managers when they did not have experience outside of working a radar position, and the training provided did not make up for the level of experience.

Training for new frontline managers varies; some indicated that they had not received adequate, timely training in areas ranging from administrative tasks to leadership skills.

On-the-job-training for frontline managers is not currently standardized across the facilities visited. For example, at one of the larger facilities new frontline managers are required to shadow an experienced manager for 40 hours. At a smaller facility a new frontline manager relied on advice and guidance from an experienced colleague as he learned the job, while frontline managers at other facilities relied on the eLearning Management System (eLMS). Several members of the latter group noted that there was a gap in the training for "soft skills" such as managing people. They indicated that the eLMS courses were informative but that the online medium made it difficult to apply the course content to the job. Suggestions were made for more practical courses on eLMS, including how to write and compile reports, and how to set up controller training, which can be time consuming tasks according to the frontline managers interviewed. Others suggested that there should be a two to three month period of shadowing an experienced ATM or frontline manager who might be moving to another facility or retiring so that the replacement could get up to speed on the intricacies of the facility and its staff. However, they noted the difficulty in doing this due to the gaps in timing of selections and retirements.

Frontline managers provided several suggestions for improving training. Some frontline managers indicated that a dedicated training manual was needed for the position and suggested that SUPCOM should have a role in creating this resource. Several of those interviewed stated that the FAA should review the content of many of the training courses to ensure that it is relevant to supervising operations and managing controllers to reflect the daily realities of the frontline manager position, and that the content can be applied to improve performance. The OSW course was typically mentioned as the most useful training course for frontline managers from the standpoint of the applicability of its content to issues facing frontline managers and the networking amongst peers where many offer advice on how to overcome challenges they have faced in the position of frontline manager. Some felt this course should be required every two years, instead of the current three-year period between courses. The frontline managers at another facility believed that new supervisors should complete the FMC Phase 2, FMC Phase 3 courses and the Labor Management Relations (LMR) training before beginning to monitor controllers on the operations floor. In contrast, a frontline manager at a smaller facility stated that FMC Phase 1, 2, and 3 courses provided training on many issues that a frontline manager would not see until much later in their career, therefore, they should not be prerequisites for monitoring controllers. Several frontline managers interviewed recommended implementing more conduct and discipline training for newly hired frontline

managers, while others indicated that additional management and leadership training was needed for newer frontline managers.

Level of Experience

The retirement of experienced controllers and frontline managers has caused a decline in the collective experience levels at many facilities, which impacts the workload for frontline managers in numerous ways. As a consequence, the supervisory role of frontline managers has become more critical, particularly during shifts when the controllers on-position have less work experience. Frontline managers affirmed in interviews that the level of intensity that they needed to apply to monitoring operations was tied to the level of experience of the controllers they were monitoring. Having controllers with less experience typically generated more administrative work for frontline managers, and required more coordination, both from the frontline manager and other support positions, to perform air traffic control duties or become a CPC in the case of trainees. The frontline manager workload is increased by trainees due to the need to coordinate with members of their training teams and perform skills checks, which in turn increases the amount of documentation that the frontline manager must complete. At facilities with more trainees, the frontline managers must also monitor their on-the-job training instructors (OJTI) for signs of "burn out" as they are almost continually involved in training. In addition, seniority rules at facilities for selecting shifts led to less experienced members of the controller workforce being assigned to the same shifts with less experienced frontline managers when traffic is heaviest.

The supervisory role of frontline managers is more critical during shifts when the collective experience level of the controllers on-position is lower. A frontline manager remarked that his facility had experienced a surge in controller retirements in the last ten years. Whereas it was not uncommon for controller teams to have 100 years of combined experience between its members in the past, he believed that the current level of combined experience in some crews of controllers on-position at his facility was five to six years total. Likewise, another frontline manager stated that the average tenure for a CPC at his facility was only four to five years.

Controllers with fewer years of experience increase the concentration that a frontline manager must maintain while supervising operations and the amount of administrative work they must complete. In general, the less experience the controllers possessed, the more closely a frontline manager reported needing to monitor them on the operations floor. Those interviewed believed that more intensive monitoring of controllers took time away from other duties, which subsequently increased their workload. In addition, the task of staffing positions and creating schedules was made more complex because frontline managers had to know whether individual controllers possessed sufficient experience, tactical knowledge, and instinct to meet the challenges of a potential position assignment. Some frontline managers stated that less experienced CPCs limited their staffing strategy because they needed to provide additional oversight and possibly assistance on-position, and because sectors could not be combined. Consequently, more personnel were dedicated to covering those positions.

The role of seniority in establishing shift schedules can lead to the least experienced frontline managers supervising the least experienced controllers during the busiest periods of traffic.

The workload for frontline managers is also impacted by scheduling preferences that are granted based on seniority for both controllers and frontline managers. Accordingly, there is a concentration of less experienced controllers working the busiest, but least desirable, days of the

week while being supervised by frontline managers with less experience themselves. At one En Route Center, a relatively new frontline manager stated that due to scheduling preferences being granted based on seniority, the experience level of personnel dropped off during the busiest shifts, generally during weekday evenings or on weekends.

Controllers in the work teams managed by a frontline manager do not always work the same shifts, rendering the frontline manager's task of evaluating the controllers' performance more difficult. Although they evaluate the controllers on their team, frontline managers indicated that they may not regularly work the same shift with them, making it difficult to interact with members of their team. For example, a frontline manager at a smaller facility stated that he was unable to spend much time on controller performance management due to the difficulty in aligning schedules for team meetings. Shift schedules can also hinder the frontline manager's ability to provide meaningful progress reviews for trainees due to the challenge of trying to get the entire training team (two OJTIs, the frontline manager, and the trainee) together.

Staffing levels for developmental controllers can fluctuate greatly. One of the frontline managers interviewed described the arrival of developmentals at his facility as "feast or famine." His facility receives a number of developmentals, then has no new candidates for a two-year period, and then experiences another influx. He stated that having six developmental controllers at once was too much relative to the size of his training staff and that OJTIs were also impacted when there was an influx of controllers.

The number of developmental controllers at a facility can fluctuate greatly, this in turn, can increase the workload for frontline managers as well as the OJTIs they supervise.

Developmental controllers increase the frontline manager's workload due to the need to coordinate the training team and conduct skills checks, which in turn increase the amount of administrative documentation required. The need to set up and monitor training teams, perform skills checks and the general increase in oversight required to supervise developmental controllers are all prominent reasons why the frontline managers workload can increase according to those interviewed. They also indicated that their OJTIs must be monitored to prevent them from "burning out" after conducting the amount of training required as a result of having more trainees. Frontline managers are required to process the skills check sheets for all of their controllers, but many frontline managers indicated that they did not have enough time to thoroughly review the results with their controllers due to other competing interests.

Other Factors that Impact Frontline Manager Workload

The Study Team identified several other factors that impact the workload of frontline managers. These factors range from the reluctance of experienced controllers to apply for open frontline manager positions to the relationship with the facility management team and the organizational structure at various facilities.

Experienced controllers are reluctant to apply for open frontline manager positions due to recent changes in pay bands and the prospect of losing seniority. Leadership at one En Route Center suggested that experienced controllers do not apply for open frontline manager positions because the increase in responsibility does not have a commensurate increase in pay due to pay band structure implemented in February 2012.

Recent changes limiting pay for frontline managers, and the possible loss of seniority deters experienced controllers from applying for open frontline manager positions.

Furthermore, moving to a frontline manager position led to a potential loss of seniority (as a new frontline manager) resulting in less preferable options for selecting days off. The FAA does not have uniform seniority rules for management positions, so the rules vary from facility to facility. For example, a frontline manager with 16 years of experience declined the opportunity to move from a temporary OM position to a permanent one because making that change, per her facility's rules, would have placed her at the bottom of the list for purposes of receiving preferential shifts. One comment on the FLM Survey indicated that the current system only makes it advantageous for newer CPCs (due to their lower pay level) to make the transition to a frontline manager.

Smaller facilities have fewer frontline managers and more administrative duties to perform, further complicating their ability to complete administrative work.

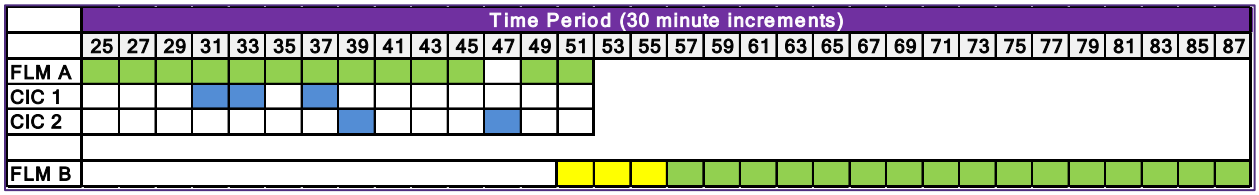
Frontline manager staffing is limited at smaller facilities, which impacts the amount of time that can be dedicated to completing operational tasks. Frontline managers at smaller facilities tend to spend more time on administrative tasks than those at larger facilities because often there is no other frontline manager on duty to assist them. Also, smaller facilities typically do not have support functions, such as Quality Assurance/Quality Control or training departments, and may not even have an administrative assistant to cover common office functions. Frontline managers at several of the smaller facilities visited indicated that they did not receive much support on administrative tasks from their ATMs, and that this had increased their administrative workload in areas such as maintaining office supplies and serving as equipment custodian. According to frontline managers interviewed at smaller facilities, they may spend up to 50% of their day completing administrative tasks. This includes administrative tasks that are conducted as part of the operations (conducting controller training), as well as administrative tasks (contacting maintenance companies to receive estimates for repairs) that an administrative assistant could potentially handle. Frontline managers at one small facility estimated that they can spend up to 90% of their time on administrative duties, and they provided the Study Team with a list of administrative tasks that they had identified as part of a separate assessment.

Many of the **frontline managers stated that having an additional supervisor would provide them the time to give more meaningful feedback to their controllers, allow them to complete administrative tasks in a timelier manner, and provide adequate coverage during mid-shifts**. Some frontline managers also indicated that having an additional frontline manager would enable them to dedicate time away from the operation to completing administrative tasks with their undivided attention rather than completing them at their desks while simultaneously monitoring operations. Due to current frontline manager staffing levels, many frontline managers reported that they remain in the operation, work through their official lunch break, and do not take breaks that are allotted to them. Figure 35 depicts such a situation using actual Cru-X/ART data.[17] Frontline manager A (FLM A) starts their day at time period 25. At time periods 31 and 37 FLM A is supported by CIC 1, and at time periods 39 and 47 they are supported by CIC 2. During time period 47 FLM A is out of the operational area and CIC 2 is in charge of the operations until FLM A returns at time period 49. In contrast, FLM B starts their day at period 51, overlapping for a period of time with FLM A. FLM B is on overtime (yellow highlight) until time period 57 when they start

[17] Time periods in Cru-X/ART are split into 15 minute increments. In this representation the 15-minute details are consolidated into 30 minute increments.

their shift charging standard hours. FLM B stays on-position without leaving the operation until the conclusion of their shift at period 87 (a total of 9 hours without a break).

Figure 35: Frontline Manager Time On-Position



The relationship between the ATMs, OMs, and the frontline managers at a facility can impact workload. Frontline managers at one En Route Center indicated that they had a poor working relationship with the OMs at their facility. They mentioned that OMs did not provide frontline managers with clear performance expectations. However, the OMs interviewed at this facility stated that the frontline managers were difficult to speak with and that a lot of issues that the frontline managers should deal with were instead being passed to the OMs. Frontline managers at another facility stated that their workload was impacted by which OM was on duty and that the OMs were not consistent in terms of the amount of work passed on to the frontline managers. The acting ATM was noted for having a positive impact on the frontline managers at one of the smaller facilities visited.

Frontline managers at the En Route Centers **take on the duties of the OM during the midnight shift**. During this shift, which usually runs from 10 p.m. to 6 a.m., the frontline manager is in charge of the watch desk, weather monitoring, and traffic management, in addition to their regular duties as a frontline manager. Their responsibilities during this shift include:

- Monitoring all operational areas
- Closing out facility records and daily reports
- Certifying all shifts
- Making Domestic Events Network (DEN) notifications
- Checking the watch schedule
- Building the overtime call in sheet for the next day
- Working directly with Tech Ops
- Completing any coordination and paperwork associated with air traffic incidents.

They can assume this workload because there is typically less air traffic and most areas have only one sector open during this shift, but there usually is no backup for the frontline manager on this shift should something catastrophic occur. Several frontline managers indicated that they felt "tied to the desk" during the mid-shift where they must remain to answer the phone. Several of the frontline managers indicated that having a second frontline manager on duty during the midnight shift would enable them to spend more time in the operational areas. One frontline manager expressed that having a single frontline manager on the midnight shift was usually adequate, but that at least once a week there was enough activity during the shift that a second frontline manager would be valuable.

Another frontline manager noted that having two frontline managers on duty during the midnight shift would be challenging given current staffing levels and the way shifts rotate at his facility.

The workload for new frontline managers in En Route Centers can depend on the area where they are assigned when they start the position. The opinion of frontline managers and upper management relating to how new frontline managers should be assigned generally differed at the En Route Centers visited. Frontline managers indicated that new frontline managers could, and should, supervise controllers in the same area(s) from which they had been promoted. They noted that the overall familiarity and experience with the specific airspace being managed should be considered, and that remaining in the same area made it easier to transition because they already knew the "trouble spots" and challenging times of the day for that area. One longtime frontline manager stated that the goal for a new frontline manager is to become an expert in their assigned area so that they can instinctively rely on their situational awareness to resolve challenges as they arise. This ability to troubleshoot, and not having to learn a completely new area, allows new frontline managers to concentrate on improving management skills, while also providing time to complete the volume of new administrative work that is required of them. Another advantage to supervising controllers in the area where they previously worked as a controller was that frontline managers were more likely to already be checked out on all positions in the area, making it easier for them to maintain currency.

While the aforementioned benefits to new frontline managers being assigned to work in areas that they had worked as ATCs are significant, the benefits need to be considered along with the interpersonal dynamics that could result from former supervising colleagues. Members of upper management at En Route Centers preferred to avoid any potential conflict of interest that could arise from supervising former peers in the same area, so they assigned recently promoted frontline managers to new areas as part of local facility policy. In the end, the decision is dependent on the perspective of upper management at a given facility.

Appendix F – Frontline Manager Survey

To validate interview responses and to maximize the opportunity for participation, an online survey was made available to all frontline managers. This provided the entire population of frontline managers with an opportunity to identify the tasks expected of them, and to explain how they overcome challenges to completing them. This survey, shown in Figure 36 below, consisted of the following sections:

- Staffing Levels and Monitoring ATC Operations
- Administrative Tasks
- Time Management
- Experience Level of Controllers
- Frontline Manager Training and Biggest Operational Challenges.

Additional information regarding the survey structure, overall response rate, and responses to individual questions are also provided below.

Survey Structure

The **Staffing Levels and Monitoring ATC Operations** section of the survey contained five questions that captured basic information about survey respondents including their facility, years of experience in the frontline manager role, the number of controllers directly supervised (direct reports as opposed to the number of controllers supervised on the floor at one time), the number of developmentals and CPC-ITs within the group of controllers supervised, and the number of frontline managers assigned to their area or facility. In addition, respondents were asked to provide a range indicating the maximum number of controllers they would supervise at one time in order to gauge their heaviest supervisory workload. Information was also requested regarding the number of positions the frontline manager was required to be checked out on in their area or facility. Respondents were also asked to identify the administrative tasks expected of them from a pre-populated list and indicate whether they received assistance from other personnel in performing selected tasks. The final question in the first section of the survey asked whether the FAA's new emphasis on promoting a safety culture had changed how the frontline managers monitored operations at their facility.

The **Administrative Tasks** section asked four questions about expected administrative tasks, including those that were focused on operations, in order to gauge whether the administrative workload had increased, decreased or remained the same in the last year. The other questions sought to identify the two most time consuming administrative tasks for frontline managers by asking which task, if removed from their current list of duties, would free up the most time for the respondents to instead devote to monitoring controllers handling air traffic.

The **Time Management** section of the survey asked three questions related to the percentage of time spent on operational versus administrative tasks, the use of dedicated administrative days, and other current practices used to complete administrative tasks. The purpose of these questions was to validate the percentages provided during facility visits and to identify the scope of practices currently in use.

The **Experience Level of Controllers** section contained three questions asking how the experience level of controllers was related to the workload experienced by frontline managers. The first question asked whether frontline managers sensed that the collective experience level of controllers

at their facility had declined in the last year. The next question asked how developmental controllers and CPC-ITs impacted frontline managers in terms of requiring extra steps or changes in their approach to monitoring operations. The final question asked whether having more controllers to supervise at once, or the same number of controllers to supervise - but with less collective experience - had more of an impact on their workload.

The final section of the survey covered **FLM Training** and presented an open-ended question regarding the survey taker's biggest **operational challenges**. The FLM Training section asked frontline managers to indicate what training courses they had completed for their position and to rate how applicable the courses were to their frontline manager duties. The final question of the survey asked frontline managers to identity the "biggest operational challenges" they face at their facility. This question was designed to obtain an open-ended response about any topics that may not have been covered elsewhere in the survey.

Figure 36: Frontline Manager Survey

Intro - Staffing Levels and Monitoring ATC Operations

Federal Aviation Administration
Frontline Managers Survey

Please complete the survey as fully as possible. Your input is very valuable. Please note that to save any input on this page, you must complete any required items, click the "Next" button at the bottom of the page, then click the "Save and continue later" link at the top of the next page. Thank you for your time.

* *Denotes required items*

1) Demographic Information:

Facility:*

Years of FLM Experience:*: _____

Controllers Supervised:*

Current number of controllers you directly supervise: _____

Of this total, how many are developmentals?: _____

How many are Certified Professional Controllers in Training (CPC-IT)?:

_____

How many FLMs are currently assigned to your area (ARTCC, Type 9 TRACONs) or facility (Tower/TRACON)?*

_____

2) Which range best represents the *maximum* number of on-position controllers that you would directly supervise during a shift (excluding midshift)?

( ) 2 to 5

( ) 5 to 8

( ) 8 to 10

( ) 10 or more

( ) Other Range: _____

3) How many of the positions that you oversee in your facility are you required to be checked out on?*

positions out of: _____total positions: _____

4) Please indicate the administrative tasks you are expected to perform (first column) and any other positions that assist you in completing them so that you can continue to monitor operations.

	Expected Administrative Task?		Do not receive assistance	ATM	OM	CIC	OJTI	Admin Staff or Support Departments	Peer FLM	Other Position:
	Yes	No	·	·	·	·	·	·	·	
Assign positions to controllers	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___
Document controller performance in CEDAR	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___
Assign controller training (i.e., eLMS, CBI)	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___
Perform Operational Skills Assessments (OSA)	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___
Fill incident reports (MORs, CERs, SSRs, etc.)	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___
Answering phone calls related to operations and coordinating with other facilities	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___
Answering phone calls not related to operations and coordinating with other facilities	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___
Update and/or certify Cru-X/ART time and attendance data	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___
Develop shift schedules for controllers	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___
Adjust shift schedules in response to controllers' requests for shift changes or	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___

	Expected Administrative Task?		Do not receive assistance	ATM	OM	CIC	OJTI	Admin Staff or Support Departments	Peer FLM	Other Position:
	Yes	No	·	·	·	·	·	·	·	
leave requests										
Assign overtime hours to controllers	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___
Develop schedules for FLMs	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___
Document and follow up with employee discipline	( )	( )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	___

Describe other administrative task(s) expected of you and whether you receive assistance with them from another position or FLM.

5) Has the FAA's new emphasis on promoting a safety culture changed the way that FLMs at your facility monitor operations?*

( ) Yes

( ) No

Please describe how it has changed the monitoring of operations:*

Administrative Tasks

Federal Aviation Administration
Frontline Managers Survey

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* *Denotes required items*

6) What general administrative tasks are expected of you and how has the workload required to complete them changed in the last year?

	Expected FLM Task?		Workload Level		
	Yes	No	Increased	Same	Decreased
Update and/or certify Cru-X/ART time and attendance data	( )	( )	( )	( )	( )
Develop shift schedules for controllers	( )	( )	( )	( )	( )
Adjust shift schedules in response to controllers' requests for shift changes or leave requests	( )	( )	( )	( )	( )
Assign overtime hours to controllers	( )	( )	( )	( )	( )
Develop schedules for FLMs	( )	( )	( )	( )	( )
Document and follow up with employee discipline	( )	( )	( )	( )	( )
Office management / coordinate building maintenance & equipment repairs	( )	( )	( )	( )	( )
Answer calls not related to operations	( )	( )	( )	( )	( )

Describe any other general administrative tasks expected of you and whether the workload has increased, remained the same or decreased in the last year.

7) What operations-related administrative tasks are expected of you and how has the workload required to complete them changed in the last year?

	Expected FLM Task?		Workload Level		
	Yes	No	Increased	Same	Decreased
Assign positions to controllers	( )	( )	( )	( )	( )
Document controller performance in CEDAR	( )	( )	( )	( )	( )
Assign controller training (i.e., eLMS, CBI)	( )	( )	( )	( )	( )
Perform Operational Skills Assessments (OSA)	( )	( )	( )	( )	( )
Complete incident reports (MORs, CERs, SSRs, etc.)	( )	( )	( )	( )	( )
Answer phone calls related to operations and coordinating with facilities	( )	( )	( )	( )	( )

Describe any other operations-related administrative tasks expected of you and whether the workload has increased, remained the same, or decreased in the last year.

8) What one general administrative task, if removed from your duties, would free up the most time for you to monitor operations?*

( ) Update and/or certify Cru-X/ART time and attendance data

( ) Scheduling: Developing shift schedules for controllers and / or adjust them in response to requested shift changes, leave request and assign overtime

( ) Developing schedules for FLMs

( ) Documenting and following up with employee discipline

( ) Office management / coordinating building maintenance & equipment repairs

( ) Answering calls not related to operations

( ) Other task (please describe): _____

9) What one operational administrative task, if removed from your duties, would free up the most time for you to monitor operations?*

( ) Assigning positions to controllers

( ) Documenting controller performance in CEDAR

( ) Assigning controller training (i.e., eLMS, CBI)

( ) Performing Operational Skills Assessments (OSA)

( ) Completing incident reports (MORs, CERs, SSRs, etc.)

( ) Answering operations related calls and coordinating with other facilities

( ) Other task (please describe): _____

Time Management

Federal Aviation Administration
Frontline Managers Survey

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* *Denotes required items*

10) What percentage represents the share of your time spent monitoring operations versus completing administrative tasks during a typical day?*

_____Time spent monitoring operations

_____Time spent completing administrative tasks

11) Do you have a dedicated day to perform administrative duties at your facility?*

( ) Yes

( ) No

If yes, how often do you have the dedicated day?*

( ) Weekly

( ) Bi-weekly

( ) Monthly

( ) Quarterly

( ) Semi-annually

If no, how would rate the usefulness of having a dedicated administrative day?*

( ) Low

( ) Medium

( ) High

12) How do you find time to complete administrative tasks? (select all that apply)

[ ] Complete tasks during lunch breaks

[ ] Receive comp time/credit hours

[ ] Complete during mid-shift

[ ] Complete on day/evening shifts when traffic is slow

[ ] On an Alternate Work Schedule (AWS)

[ ] Come into facility early (or remain late)

[ ] Complete them at home off the clock

[ ] Wait for shift to overlap with another FLM

[ ] Put a Controller-In-Charge (CIC)

[ ] Other (please describe)

Experience Level of Controllers

Federal Aviation Administration
Frontline Managers Survey

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To avoid errors, please use the "Back" button at the bottom of this page, NOT the "Back" button on your browser menu, if you need to review a previous page.

* ***Denotes required items***

13) Has the collective experience level of controllers dropped at your facility in the last year?*

( ) Yes

( ) No

14) How does the presence of developmental and CPC-IT controllers impact your workload?

[ ] Need to shuffle position assignments due to eligibility restrictions

[ ] Air traffic efficiency is reduced because experienced controllers have to monitor developmental/CPC-IT controllers

[ ] Cannot complete an administrative task while out on the operations floor

[ ] Reluctant to leave operations floor

[ ] Monitor more closely for use of proper phraseology and SOP compliance

[ ] Need to fit in Operational Skills Assessment (OSA) and other forms of mandated training

[ ] More employees required to conduct training, de-brief and document training sessions

[ ] Other task (please describe):

15) Which factor increases your workload more?*

( ) More controllers to supervise at once

( ) Same number of controllers to supervise, but with less collective experience

( ) Other (please describe): _____

Please explain your selection:

FLM Training

Federal Aviation Administration
Frontline Managers Survey

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* *Denotes required items*

16) What training(s) have you completed for the FLM position? Rate how applicable each one was to your position.

	Completed	Applicable to FLM Duties		
	·	Low	Medium	High

Operations Supervisor Workshop (OSW)	[ ]	( )	( )	( )
eLearning Management System (eLMS) training or skillsoft enhancement training	[ ]	( )	( )	( )
Labor Management Relations (LMR)	[ ]	( )	( )	( )
Traffic Management Unit	[ ]	( )	( )	( )
FMC - Phase 1	[ ]	( )	( )	( )
FMC - Phase 2	[ ]	( )	( )	( )
FMC - Phase 3	[ ]	( )	( )	( )

Describe other training(s) that you have completed for the FLM position and rate how applicable they were to the position.

17) What are the biggest operational challenges that you face as an FLM at your facility?

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Federal Aviation Administration
Frontline Managers Survey

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Otherwise, please click the "Submit" button when ready to reach 100% completion.

Thank You!

Federal Aviation Administration
Frontline Managers Survey

Thank you! Your responses have been submitted successfully.

Response Rate

The Study Team received 872 survey responses from frontline managers for a response rate of 46% based on the 1,912 frontline managers listed in the FPPS data as of the third quarter of FY 2012. Seventy-one facilities had a response rate equal to or higher than 75%, including the Denver and Salt Lake En Route Centers, the Philadelphia Tower and the Boston TRACON. No responses were received from 77 facilities with a combined 213 frontline managers on their rosters, including the Houston En Route Center. The remaining non-responding facilities were Towers, TRACONs and Combined TRACON Tower facilities with an average of two to four frontline managers on their rosters.

The survey achieved a response rate of at least 45% for all of the facility types with the exception of Combined TRACONs, which was due to low response rates from the New York and Southern California facilities. Figure 37 provides a breakout of responses by facility type and level.

Figure 37: FLM Survey Responses by Facility Type and Level

Facility Type	ATC Level	Facilities	Response Rate	FLMs (FPPS Q3 2012)	Responses	Complete	Partial
En Route Centers	8	1	75%	4	3	3	0
	9	1	50%	10	5	4	1
	10	5	64%	137	88	75	13
	11	7	42%	257	108	97	11
	12	9	44%	396	174	157	17
Combined Control Facility	8	1	100%	1	1	1	0
	11	1	50%	10	5	5	0
Combined TRACON	11	1	41%	29	12	12	0
	12	3	23%	96	22	21	1
Combined Tower/TRACON	5	24	51%	39	20	18	2
	6	37	54%	85	46	39	7
	7	36	45%	113	51	49	2
	8	16	40%	73	29	26	3
	9	15	45%	95	43	40	3
	10	1	44%	9	4	4	0
	12	3	41%	37	15	12	3
Towers	4	6	86%	7	6	3	3
	5	37	47%	59	28	25	3
	6	29	56%	50	28	26	2
	7	22	49%	49	24	22	2
	8	15	40%	52	21	16	5
	9	3	47%	15	7	4	3
	10	9	38%	48	18	14	4
	11	5	58%	31	18	13	5
	12	5	49%	43	21	21	0
TRACON	7	1	200%	1	2	2	0

Facility Type	ATC Level	Facilities	Response Rate	FLMs (FPPS Q3 2012)	Responses	Complete	Partial
	8	5	50%	16	8	8	0
	9	3	14%	14	2	2	0
	10	3	43%	21	9	5	4
	11	6	53%	51	27	24	3
	12	5	42%	64	27	22	5
Grand Total		315	46%	1,912	872	770	102

Staffing Levels and Monitoring ATC Operations – Demographic Information (Question 1)

Experience levels ranged for frontline managers from a few months to nearly 30 years in the position, with an **average of 5.2 years of experience** based on all responding frontline managers. This average differed based on the facility type as shown in Figure 38. Frontline managers in Tower facilities had the lowest average tenure at 4.0 years while those in Combined Control facilities had spent the most time in the position.

The average number of controllers directly supervised by a frontline manager deviated between facility types from seven in Combined TRACONs to as many as 17 in Combined Control facilities. Frontline managers in En Route Centers and Tower facilities usually supervise nine controllers directly, close to the average of ten controllers based on all responses.

Frontline managers reported directly supervising a relatively high number of controllers who were not yet CPCs. Based on averaging all survey responses, the average crew would have two developmental controllers and two CPC-ITs. In the typical pool of controllers directly supervised by a frontline manager, the average share of controllers who had not reached CPC status ranged from 22% at Towers to as high as 47% at Combined Control facilities. The average number relative to the pool of total controllers supervised was higher in the following facility types/levels: En Route Centers (level 9), Combined Control Facility (level 8), Combined Tower / TRACON (level 10, 12) and TRACONs (level 9).

The average of eight frontline managers per area or facility based on all responses was likely skewed upwards by the greater number of responses from larger facility types and levels, such as En Route Centers. Conversely, a frontline manager at a smaller facility (levels 5-8) typically had one to four peer frontline managers on the roster.

Figure 38: Demographics of Survey Respondents

Facility Type	Years of FLM Experience	Controllers Supervised	Developmental controllers	CPC-ITs	FLMs assigned to area / facility
En Route Centers	5.5	9.0	1.0	2.0	10.0
Combined Control Facility	7.2	17.0	4.0	4.0	8.0
Combined TRACON	4.5	7.0	1.0	2.0	9.0
Combined Tower / TRACON	5.3	11.0	3.0	2.0	5.0
Towers	4.0	9.0	1.0	1.0	4.0

Facility Type	Years of FLM Experience	Controllers Supervised	Developmental controllers	CPC-ITs	FLMs assigned to area / facility
TRACON	5.7	8.0	1.0	2.0	11.0
All ATC Facilities	5.2	10.0	2.0	2.0	8.0

Staffing Levels and Monitoring ATC Operations - Maximum Supervisory Workload (Question 2)

Approximately 40% of respondents stated they could expect to supervise a maximum of 10 or more controllers as direct reports at once, as shown in Figure 39. This high supervisory workload reflected the fact that most responses came from frontline managers working in facilities with large workforces. There appeared to be a gap in the size of the maximum number of controllers supervised at any one time between large facilities and small facilities. For instance, most respondents at En Route Centers, Combined Control Facilities and TRACONs indicated that they could expect to supervise 10 or more controllers at any one time whereas those in Combined TRACON and Combined TRACON Tower facilities presumed they would be expected to supervise no more than five to eight controllers at once. No facility type had a majority of responding frontline managers state that they would supervise a maximum of eight to ten controllers concurrently.

Figure 39: Maximum Number of Controllers Supervised

Facility Type	2 to 5	5 to 8	8 to 10	10 or more	Other
En Route Centers	7%	14%	17%	58%	4%
Combined Control Facility	0%	17%	17%	67%	0%
Combined TRACON	9%	44%	26%	18%	3%
Combined Tower / TRACON	27%	36%	13%	23%	1%
Towers	40%	32%	18%	9%	1%
TRACON	11%	21%	19%	43%	7%
Total Responses	19%	25%	17%	37%	3%

Staffing Levels and Monitoring ATC Operations - Position Certification Requirements (Question 3)

Responses to the FLM Survey confirm that frontline managers in facility types with larger workforces are required to be checked out on fewer positions relative to the total number of positions in their area or their facility than their counterparts in smaller facilities. The difference is shown in Figure 40 where responses from frontline managers at En Route Centers averaged to being checked out on three out of 11 positions in their area as compared to those in Tower facilities where they were checked out on all positions. As discussed in Section 1 of the report, the operating environments, volume of air traffic, and associated level of complexity differ by facility type. As verified with the SUPCOM SMEs, these differences also play a role in the number of positions on which frontline managers are required to be checked out and maintain currency. If traffic volume and complexity at a facility allows positions to be combined, the frontline manager needs to be certified on those positions in order to supplement staffing and/or provide training. At the present time, the currency order does not state how many positions are required, only the number of hours spent working on-position. The currency order does not state how many positions are required, or

place limits on their number at this time, it only indicates the minimum amount of time required to work them to maintain currency. In January 2013, a new currency order will be in place that restricts the number of positions for which a frontline manager must maintain currency to a minimum of two and a maximum of eight. This new order may place a greater burden on smaller facilities that need the frontline manager to work multiple positions or to conduct training.

Figure 40: Average Number of Positions where Frontline Manager is Certified (by Facility Type)

Facility Type	Pos. Requiring Check Out	Total Positions	Share of Positions Required
En Route Centers	3	11	27%
Combined Control Facility	11	17	65%
Combined TRACON	6	9	67%
Combined Tower / TRACON	10	10	100%
Towers	6	6	100%
TRACON	11	15	73%
All ATC Facilities	6	10	60%

Administrative Tasks (Questions 4 -5 and 6– 9)

The survey results confirmed that the provided list of administrative tasks, developed from the Study Team's initial facility interviews, reflected the typical administrative tasks expected of frontline managers. Over 90% of the frontline managers who responded indicated that they were expected to perform the following tasks at their facilities:

- Answering phone calls related to operations and coordinating with other facilities
- Adjust shift schedules in response to controllers' requests
- Document and follow up with employee discipline
- Assign positions to controllers
- Assign overtime hours to controllers
- Update and/or certify Cru-X/ART time and attendance data
- Assign controller training (i.e., eLMS, CBI)
- Answering phone calls not related to operations and coordinating with other facilities
- Perform Operational Skills Assessments (OSA)
- Document controller performance in CEDAR.

Eighty-five percent of respondents were expected to fill incident reports (MORs, CERs, SSRs, etc.), while only 48% had to develop schedules for controllers, and 35% developed schedules for frontline managers. Less than 75% of frontline managers at En Route Centers (levels 10, 12) and Combined TRACONs (levels 11, 12) reported filling incident reports as an expected task.

Nearly 40% of the survey respondents indicated that they receive no assistance in completing their administrative tasks. The other 60% indicated that they most commonly receive assistance from another frontline manager (25.5%), followed by the OM (11.2%), an administrative assistant or member of a support department (9.2%), a CIC (6.9%), the ATM (6.8%), or an OJTI (1.0%). Frontline managers at En Route, TRACON and Combined Tower/TRACON facilities are more likely to receive assistance from the OM and personnel in administrative or support departments because smaller facilities do not have these positions. Conversely, frontline managers in smaller tower facilities receive assistance from the ATM and the CICs because there is no OM level. Figure 41 shows the share of assistance received by the frontline manager from another position (or another frontline manager) by administrative task.

Figure 41: Assistance on Administrative Tasks by Position

Administrative Task	No Assistance	ATM	OM	CIC	OJTI	Admin Staff or Support Departments	Peer FLM
Develop shift schedules for controllers	32%	6%	18%	11%	1%	13%	19%
Adjust shift schedules in response to controllers' requests for shift changes or leave requests	45%	5%	6%	11%	1%	6%	26%
Document controller performance in CEDAR	42%	10%	6%	9%	1%	14%	19%
Assign controller training (i.e., eLMS, CBI)	42%	5%	18%	4%	1%	8%	23%
Fill incident reports (MORs, CERs, SSRs, etc.)	24%	8%	14%	12%	1%	18%	23%
Answering phone calls related to operations and coordinating with other facilities	43%	5%	11%	7%	1%	11%	22%
Answering phone calls not related to operations and coordinating with other facilities	40%	8%	8%	8%	2%	12%	23%
Update and/or certify Cru-X/ART time and attendance data	48%	5%	8%	6%	2%	6%	25%
Assign overtime hours to controllers	36%	6%	16%	5%	0%	5%	32%
Develop schedules for FLMs	31%	5%	8%	4%	1%	5%	47%
Document and follow-up with employee discipline	39%	11%	9%	5%	1%	4%	30%
Assign positions to controllers	54%	5%	8%	1%	0%	2%	30%
Perform Operational Skills Assessments (OSA)	40%	10%	16%	2%	0%	7%	25%

Sixty-four percent of frontline managers responded that the new emphasis on promoting safety culture from the FAA had not impacted how they monitor operations at their facilities.

A majority of frontline managers reported no increase in the workload for certain general administrative tasks, defined as tasks not directly impacting or relating to air traffic control operations. Figure 42 highlights general administrative tasks where over 40% of frontline managers from a facility type reported an increase in workload during the last year.

Figure 42: Share of Frontline Managers Indicating an Increase in Workload for General Administrative Tasks

Administrative Task	En Route Centers	Combined Control Facility	Combined TRACON	Combined Tower / TRACON	Towers	TRACON
Update and/or certify Cru-X/ART time and attendance data	47%	40%	65%	29%	22%	23%

Administrative Task	En Route Centers	Combined Control Facility	Combined TRACON	Combined Tower / TRACON	Towers	TRACON
Develop shift schedules for controllers	38%	0%	32%	30%	25%	20%
Adjust shift schedules in response to controllers' requests for shift changes or leave requests	55%	50%	56%	45%	41%	33%
Assign overtime hours to controllers	54%	17%	45%	33%	26%	28%
Develop schedules for FLMs	22%	0%	0%	13%	8%	18%
Document and follow up with employee discipline	24%	0%	28%	27%	27%	23%
Office management / coordinate building maintenance & equipment repairs	16%	33%	14%	38%	29%	12%
Answer calls not related to operations	27%	17%	23%	28%	28%	31%

Similarly, a large majority of the respondents identified the operations-related administrative tasks presented to them as expected tasks. Frontline managers reported that their workload for four of these tasks in particular had increased in the last year, as shown in Figure 43.

Figure 43: Share of Frontline Managers Indicating an Increase in Workload for Operations-Related Administrative Tasks

Administrative Task	En Route Centers	Combined Control Facility	Combined TRACON	Combined Tower / TRACON	Towers	TRACON
Assign positions to controllers	19%	33%	10%	18%	17%	15%
Document controller performance in CEDAR	63%	100%	74%	72%	69%	68%
Perform Operational Skills Assessments (OSA)	64%	50%	72%	61%	50%	52%
Complete incident reports (MORs, CERs, SSRs, etc.)	45%	20%	52%	70%	64%	60%
Answer phone calls related to operations and coordinating with facilities	54%	67%	64%	68%	67%	65%
Assign controller training (i.e., eLMS, CBI)	27%	0%	25%	29%	28%	32%

Frontline managers responded that removing these tasks from their duties would free up the maximum amount of time for them to monitor operations.

General Administrative Tasks

- 29% - Update and/or certify Cru-X/ART time and attendance data
- 26 % - Scheduling: Developing shift schedules for controllers and / or adjust them in response to requested shift changes, leave request and assign overtime
- 16% - Answering calls not related to operations

Operations-Related Administrative Tasks

- 19% - Completing incident reports (MORs, CERs, SSRs, etc.)
- 18% - Performing Operational Skills Assessments (OSA)
- 16% - Documenting controller performance in CEDAR.

Time Management (Questions 10 – 12)

Frontline managers estimated to spend **63%** of their time monitoring operations versus **37%** of it devoted to completing administrative tasks based on all responses. This division of time spent was consistent across facility types, but it ranged between the levels within a given facility types. The average proportion of time spent monitoring operations versus attending to administrative tasks reversed itself for frontline managers in the lowest and highest level facilities. This is illustrated in Figure 44.

Figure 44: Share of Time Spent Monitoring Operations and Completing Administrative Tasks

Level	Responses	Operations	Administration
4	4	37.5%	62.5%
5	43	53.7%	46.3%
6	68	52.2%	47.8%
7	73	65.2%	34.8%
8	55	66.5%	33.5%
9	52	63.9%	36.1%
10	100	68.6%	31.4%
11	153	65.3%	34.7%
12	240	63.7%	36.3%

As shown in Figure 45, frontline managers indicated that they mainly found time to complete their administrative tasks during their lunch breaks, periods of slow traffic or while on comp time/credit hours. Very few reported completing them during the mid-shift period or off the clock at home. Most frontline managers do not have a dedicated day to complete their administrative tasks, however many rated it as a highly useful alternative. Approximately one-fifth of frontline managers stated that they had a day reserved, typically granted on a monthly basis.

Figure 45: Time Management Methods for Completing Administrative Tasks

Method	Rate of Response
Complete tasks during lunch breaks	81%
Complete on day/evening shifts when traffic is slow	73%
Receive comp time/credit hours	70%
Wait for shift to overlap with another FLM	65%
Come into facility early (or remain late)	65%

Method	Rate of Response
Put a Controller-In-Charge (CIC)	62%
Complete them at home off the clock	34%
Complete during mid-shift	34%
Other	8%
On an Alternate Work Schedule (AWS)	2%

Experience Level of Controllers (Questions 13 - 15)

Frontline managers responded that the presence of developmental controllers and CPC-ITs impacted their workload in four primary ways.

- It required them to move controllers between position assignments because newer controllers do not have the certification required to work certain positions.
- More of their experienced employees had to spend time conducting training sessions, debriefings and documenting the outcomes of training sessions.
- They were more reluctant to leave the operations floor.
- They reported that they had to monitor inexperienced controllers more closely for use of proper phraseology and SOP compliance.

Over three-fourths of frontline managers said that having the same number of controllers to supervise, but with less experience, would increase their workload more than having to supervise more controllers with the same level of experience. This suggested that frontline managers consider level of experience as an important workload driver.

FLM Training and Biggest Operational Challenges (Questions 16 and 17)

Frontline managers were asked to indicate whether they had taken specific training courses related to their position and to rate the applicability of the courses attended to their duties as a frontline manager. Based on the survey responses, the online eLMS training, the OSW, the FMC-Phase 1, and FMC-Phase 3 trainings were those attended most frequently.

Frontline managers rated the OSW training highest in terms of being the most applicable one to their position, which confirmed opinions expressed in interviews during site visits. The Traffic Management Unit (TMU) training also received a "High" rating for usefulness from at least half of those responding to the question. Most other types of training received a "medium" rating for applicability to the frontline manager position. Figure 46 shows the total number of responses and the ratings for each training course.

Figure 46: Ratings for Frontline Manager Trainings

Training	Course Taken	Ratings	Low	Medium	High
Operations Supervisor Workshop (OSW)	552	519	7%	28%	66%
eLearning Management Systems (eLMS)	634	600	47%	44%	9%
Frontline Managers Course-Phase 1*	558	606	28%	44%	28%
Frontline Managers Course-Phase 2*	478	547	16%	45%	39%
Frontline Managers Course-Phase 3*	524	442	28%	45%	27%
Labor Management Relations (LMR)	412	351	12%	42%	46%
Traffic Management Unit (TMU)	296	245	20%	31%	49%

Frontline managers were asked to identify the biggest operational challenges that they faced at their facility. The most common challenge for frontline managers was **time management**, which had to do with accomplishing a heavy workload in a limited amount of hours and the difficulty of prioritizing tasks to achieve them in the order of most to least critical. Another major challenge was **managing a workforce with varying levels of experience**, which frontline managers described as "difficult" because newer controllers do not have the "situational awareness" from not having conducted air traffic operations in a challenging environment as frequently as experienced controllers, many of whom were retiring. This resulted in the newer controllers having a more limited knowledge base of operational procedures to utilize. Another frequent comment related to the increasing **volume of administrative work** which did not provide a commensurate amount of time to complete it while off the operations floor. The biggest operational challenges by share of responses are shown in Figure 47.

Figure 47: Operational Challenges

Category	Criteria	Responses	Share
Administrative Duties	Any mention of new administrative duties or increases in the workload for existing ones as a challenge.	140	14%
Management	Any issue dealing with direct managers (OM), upper management, or FAA management in general. Also, includes mention of policies or decisions made by any of management noted that the frontline manager has no influence or decision in but must enforce or accomplish on a day-to-day basis.	109	11%
Workload /Time Management	Anything in the realm of too high of a workload, not enough time to complete work, needing to apply time management, having to determine priorities on which tasks need to be completed first.	177	17%
Inexperienced Workforce	Any mention of the lack of experience at any level in the workforce or the need for more training. This pertained mainly to controllers but could apply to any level of the work force, including controllers (CPCs), frontline managers, OMs, or upper management.	143	14%
Scheduling	Any mention of the task of scheduling the workforce (controllers and/or frontline managers), rescheduling, sick leave, over time. The need to find how to fit the right people in the right positions (because of inexperienced workforce).	35	3%
Developmentals / Trainings	Any mention of developmental controllers or trainees and the additional time that they take to supervise. Also, includes the scheduling of training for these individuals, and working them into the schedule so that they get the appropriate level of traffic for their training.	86	8%
Frontline Manager	Reference to the need for more or improved training for frontline managers. Any	32	3%

Category	Criteria	Responses	Share
Training / Certification Requirements	mention of the difficulty in maintaining currency on positions.		
Union Environment	Any mention of rules in the collective bargaining agreement between the FAA and NATCA that impacts frontline managers' ability to discipline controllers or general supervision.	36	3%
General & Supervision Duties	Challenges related to time in the operation, time supervising, or time meeting with their workforce. Also, issues concerning time mentoring, working to keep morale up, and working to apply new policies or fundamental changes in the work environment. Also, includes challenges to keeping certification on all positions and other general duties.	147	14%
Staffing Levels	Any mention of the amount of CPCs and/or frontline managers or the need for more. Also, the need for more support.	132	13%

Appendix G – Members of the Study Team

Figure 48: Grant Thornton Personnel

GRANT THORNTON PERSONNEL	TITLE
Naval Aggerwal	Partner
Kevin Brathwaite	Project Director
Vic Kinnunen	Project Manager
Adrian Merceron	Technical Analyst
Erin Mahony	Technical Analyst
Shannon Solis	Technical Analyst
Bryce Gordon	Technical Analyst