Office of Inspector General
Audit Report

Staffing: Reductions in the Number of Supervisors Will Require Enhancements to FAA's Controller-in-Charge Program

Federal Aviation Administration

Report Number: AV-1999-020
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Memorandum

Subject:	ACTION: Report on Staffing: Reductions in the Number of Supervisors Will Require Enhancements to FAA's Controller-in-Charge Program AV-1999-020	Date:	November 16, 1998

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for Aviation

Reply to
Attn of:

To: Federal Aviation Administrator

I.   INTRODUCTION

This report presents the results of our review of the agreement between the Federal Aviation Administration (FAA) and the National Air Traffic Controllers Association (NATCA) to reduce the number of air traffic control supervisors by about one-third. The agreement specified that FAA, through attrition, would move from the current air traffic controller to supervisor ratio of 7 to 1 toward a ratio of 10 to 1. FAA plans to replace supervisors, where necessary, with bargaining unit members acting as controllers-in-charge (CIC). FAA currently uses CICs to provide temporary coverage of air traffic operations during the absence of supervisors.

The Federal Managers Association's (FMA) FAA Conference, which represents the interests of managers and supervisors, expressed concerns to the Ranking Member, Committee on Transportation and Infrastructure, House of Representatives about FAA's decision to bargain with NATCA over supervisory staffing levels and the potential impact this decision will have on FAA operations. The Ranking Member requested the Office of Inspector General review FAA's decision and its potential impact on safety.

Results in Brief

We found that FAA's agreement to reduce the number of air traffic control supervisors will not have an adverse impact on the safety of air traffic operations, if FAA first identifies and implements the duties that CICs will assume from supervisors. This report identifies the actions that FAA should take before implementing the reduction. Although an FAA contractor concluded that a previous reduction in air traffic control supervisors beginning in 1992 led to an increase in operational errors, there is a major distinction between the 1992 plan and FAA's current plan for reducing the number of supervisors. FAA currently plans to increase the role of CICs, where necessary, to provide operational oversight in facilities that reduce air traffic control supervisors, whereas the 1992 plan made no such adjustments in the use of CICs. Interviews with air traffic managers and air traffic controllers confirmed that, as long as the supervisor's oversight functions were maintained in the operational environment, safety of air traffic operations would not be affected.

FAA recognized that some supervisory duties would have to transfer to CICs in order to reduce the number of supervisors. However, FAA entered into the agreement with NATCA before establishing the additional duties and responsibilities that a CIC would assume. The current role of CICs does not include many of the operational duties that supervisors now perform. For example, a CIC does not call a controller in for overtime, make on-the-spot corrections, or provide over-the-shoulder evaluations while overseeing operations. Before FAA begins reducing the number of supervisors, it must change the current CIC concept by (1) identifying job functions currently performed by supervisors that will be assumed by CICs, (2) giving CICs the same operational authority and responsibility a supervisor has in overseeing air traffic operations, (3) developing and providing CIC training courses encompassing the additional duties, authorities, and responsibilities that CICs will assume from supervisors, and (4) ensuring that management retains the right to select CICs. In addition, FAA must develop quality assurance procedures that will measure the impact of reductions on a facility-by-facility basis and make corrections when necessary.

As of November 5, 1998, an FAA task force was developing a national plan to address the issues raised in this report. The plan is to include a process to gradually reduce the number of supervisors, expand the role of CICs, and develop evaluation criteria for operational impact. However, before reducing the number of supervisors, FAA needs to identify a timeframe for

completing the national plan and ensure that the actions described in the above paragraph are implemented.

Background

FAA and NATCA officials signed a Principal Memorandum of Agreement on July 9, 1998, which became part of the overall collective bargaining agreement ratified on August 27, 1998. FAA and NATCA agreed to establish the number of bargaining unit controllers at 15,000 for 3 years, beginning in fiscal year (FY) 1999. As part of the agreement, FAA agreed to move toward a controller-to-supervisor ratio of 10 to 1. As of June 30, 1998, the controller-to-supervisor ratio was 7 to 1, based on 14,726 controllers and 2,097 supervisors. Consequently, FAA faces a reduction of approximately 600 supervisors through attrition.

There are several reasons why FAA agreed to move toward a controller-to-supervisor ratio of 10 to 1. Under the new collective bargaining agreement, FAA and NATCA agreed to provisions that will lead to increasing the duties of controllers. For example, FAA and NATCA agreed to identify additional quality assurance and training functions, formerly performed by managers and supervisors, that will be assumed by air traffic controllers. In addition, FAA stated that the move would place it in compliance with the National Performance Review goal to increase the employee-to-supervisor ratio. Lastly, FAA has identified the reduction in the number of supervisors as a productivity gain that will offset some of the $866 million estimated costs of the new compensation system for controllers over the next 5 years.

Objective, Scope and Methodology

The objective of our review was to determine whether the planned reduction in the number of supervisors would have an impact on the safety of air traffic operations. The review was conducted between July 27, 1998, and September 21, 1998, at FAA Headquarters and the Great Lakes Region. We visited 3 air traffic control facilities (Chicago Air Route Traffic Control Center, O'Hare International and Midway Air Traffic Control Towers) to gain firsthand knowledge of the duties performed by supervisors. We also obtained controllers' and supervisors' perspectives on the potential impact a reduction in the number of supervisors would have on the safety of operations.

We interviewed FAA and NATCA officials involved in the negotiation process, Air Traffic Services officials, and FMA representatives. We also reviewed a 1996 study by an FAA contractor entitled "Roles and Impact of

Supervisors in Air Traffic Control." The study analyzed the relationship between operational errors and staffing levels of supervisors. We also collected summary data on operational errors and staffing for FY 1996 through FY 1998. Our review was conducted in accordance with <u>Government Auditing Standards</u> prescribed by the Comptroller General of the United States.

II. RESULTS AND RECOMMENDATIONS

We found that the function of air traffic control supervisors is essential in providing successful air traffic operations. While this function will not be eliminated under FAA's plan, FAA agreed to reduce the number of supervisors before determining what additional roles a CIC would assume.

<u>Supervisory Functions in the Air Traffic Control System</u>

A supervisor is responsible for the management of the air traffic operation on a day-to-day and shift-by-shift basis. At the three sites we visited, supervisors and controllers agreed that the functions performed by the supervisor were essential to the successful operation of the air traffic control system. Supervisors provide the essential function of managing air traffic operations. This function is primarily accomplished in the control room, where the supervisor oversees groups of controllers directing air traffic operations. Supervisors also perform duties that are administrative in nature, such as providing performance ratings, overseeing training needs, or resolving complaints and grievances. These duties are not conducted in the control room and reduce the amount of time supervisors spend overseeing operations.

According to controllers and supervisors we interviewed, there are instances when a supervisor is temporarily called away from the operations environment, or when no supervisor is available for an entire shift (mostly midnight shifts). In these instances, a CIC is appointed to oversee operations[1].

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[1] Controllers acting as CICs receive a 10-percent premium pay.

However, as the following chart points out, a CIC is not responsible for all of the functions performed by a supervisor.

Duties Performed by Supervisors	Pre-Agreement Duties Performed by CICs
Determining whether shift is properly staffed	Yes
Calling a controller in for overtime	No
Making on-the-spot corrections while overseeing operations	No
Providing over-the-shoulder evaluations	No
Controlling the break schedule	Yes
Approving leave	No
Communicating with internal and external personnel	Yes
Investigating operational errors	No
Implementing emergency procedures	Yes
Providing performance ratings	No
Overseeing training needs	No
Resolving complaints and grievances	No
Certifying controller trainees	No
Combining or decombining positions	Yes
Changing take-off and landing configurations	Yes

Supervisory Role in Maintaining Safety in Air Traffic Operations

The presence of supervisors in the control room overseeing air traffic operations allows individual controllers to focus on their primary duty of directing the control and separation of aircraft. For example, at the Midway Tower, we observed a supervisor overseeing air traffic operations during the day shift. The supervisor explained that each controller was responsible for a different aspect of control and separation of aircraft. For instance, one controller was responsible for the coordination of landings and departures, and all vehicles on or between runways, while another controller worked directly with departing pilots answering questions on clearance times, routes, and runways. The supervisor's function was to coordinate the functions of these controllers and ensure that operations are carried out safely.

An important measure of safety in air traffic operations is the number of operational errors reported in each facility. Most operational errors are attributable to controllers and occur when the required separation between two aircraft or between an aircraft and terrain/obstacles is not maintained. The presence of supervisors in the control room overseeing air traffic

operations may influence the number of operational errors that occur. For example, a supervisor in the control room can provide on-the-spot corrections to controllers that may prevent an operational error from occurring.

FAA investigates all operational errors and generally attributes them to controllers (1) failing to properly read radar display data, (2) failing to make necessary computer entries, or (3) incorrectly interpreting flight information. Facility-specific factors, such as equipment problems, weather, staffing, and communications, are also weighed when determining the cause of an operational error. FAA does not identify whether the lack of a supervisor in the operations environment is a contributing factor in the occurrence of operational errors. However, an FAA-sponsored study did find a direct link between supervisory staffing levels and operational errors.

In 1995, FAA contracted with the CNA Corporation to analyze an upward trend in operational errors from 1992 through 1995. CNA conducted its analyses on all enroute centers and the major Terminal Radar Approach Control (TRACON) and Tower facilities. CNA relied on a variety of data sources such as supervisor surveys, monthly staffing reports, operational error data, and interviews.

In the resulting 1996 report, CNA stated that it performed a multiple regression analysis to remove a strong seasonal variation in the number of operational errors. CNA identified that a relationship between operational errors and supervisor staffing existed at the enroute centers. CNA estimated that an overall increase between 4 and 14 percent in operational errors from 1992 through 1995 could be attributed to the reduction in supervisor staffing. CNA also stated that, unlike the enroute centers, the TRACON and Tower facilities had not experienced the same degree of downsizing in supervisor ranks and the relationship between errors and supervisor staffing levels were less clear. CNA went on to state that when FAA began to increase the number of supervisors during 1994, the trend showed "some indication of reversing."

Although we did not validate CNA's assessment, we did discuss the report with Air Traffic Services management officials. They identified a distinction between the reduction of supervisors beginning in 1992 and FAA's current plan to reduce supervisors. *According to these officials, the role of CICs was not increased or enhanced in the 1992 reduction, while FAA's current plans are to increase the usage of CICs, where necessary, to perform the operational oversight functions of a supervisor. However, before FAA begins moving toward a controller-to-supervisor ratio of*

10 to 1, it must enhance and restructure the current roles and responsibilities of CICs to provide operational oversight.

Improvements Are Needed in FAA's CIC Concept Before Reducing the Number of Supervisors

Before FAA begins reducing the number of supervisors, it must first (1) determine future CIC job functions, authority, and responsibilities; (2) develop and provide additional CIC training; (3) ensure that facility managers retain the right to appoint air traffic controllers to the CIC position; and (4) develop quality assurance procedures that will allow FAA to monitor reductions in the number of supervisors on a facility-by-facility basis and make corrections where needed.

Job Functions. To maintain the supervisor's functions in the future despite reduced numbers of supervisors, FAA must reevaluate what CICs currently do, review the functions performed by supervisors, and identify additional functions for CICs to assume. Some supervisory functions cannot be delegated to CICs, such as writing performance appraisals and resolving grievances. However, FAA officials agree that as the number of supervisors is reduced, CICs must take on more functions, such as performing over-the-shoulder evaluations, making on-the-spot corrections to instructions issued by controllers, and overseeing the training needs of controller trainees. In conjunction with representatives from NATCA and FMA, FAA should identify the additional functions CICs will assume from supervisors.

Authority and Responsibility. For the CIC concept to function effectively in the face of reduced numbers of supervisors, CICs must be given more operational authority and responsibility than they currently have in overseeing air traffic operations and making on-the-spot corrections. According to supervisors we interviewed, current CICs are not held accountable for certain incidents that occur during their watch. For example, if an operational error occurs when a CIC is responsible for control room operation, the CIC currently is not responsible for reviewing the incident and gathering documentation that investigators will need to evaluate the error. These duties require supervisors to be called back to the control room. In our opinion, for the new CIC concept to be effective, CICs must have the authority and responsibility for overseeing air traffic operations during their watch.

Training. Currently, CICs are required to attend a training course for their type of service (terminal, enroute, or flight service station). However,

according to supervisors, current CICs, and FAA training specialists we interviewed, the current CIC training course is generic and inadequate. In our opinion, controllers who are designated as CICs must have the necessary skills to carry out their duties and should be provided with appropriate training and developmental programs similar to those offered to supervisors. Accordingly, FAA should develop and provide CIC training courses encompassing the additional duties, authorities, and responsibilities that CICs will assume from supervisors.

Management's Right to Designate. A major concern identified to us was how CICs would be selected. According to supervisors and controllers we interviewed, not all controllers have the experience or the capability to perform as a CIC. The new collective bargaining agreement between FAA and NATCA states that a panel of managers and union representatives will recommend controllers for CIC duties, but FAA retains the right to select CICs. However, in past audits, we found that air traffic facility managers entered into agreements with NATCA on changes in working conditions that conflicted with the National Agreement, were not cost-effective, or were not an efficient use of personnel. Therefore, FAA must emphasize to its field level managers that, while choosing CIC designates is a cooperative process, the final selection will remain a management right.

Quality Assurance Procedures to Monitor Reductions on a Facility-by-Facility Basis. In discussing the reduction in the number of supervisors with managers and controllers, we identified concerns over whether the move toward a controller-to-supervisor ratio of 10 to 1 would be implemented on a national or facility basis. In its report to FAA on the upward trends in operational errors, the CNA Corporation recommended that FAA not implement a standard supervisor staffing ratio nationwide, and instead base staffing decisions on local facility conditions. Personnel were concerned that implementing a 10-to-1 ratio at each facility would not address the uniqueness of each facility (air traffic volume, complexity of airspace, staffing levels, and runway configurations). The concern was that, if these characteristics are not taken into consideration, changes in supervisory levels might have a greater impact at some facilities.

To examine this concern, we reviewed operational errors reported for FY 1996 through FY 1998 on a facility-by-facility basis. We found that the total number of operational errors reported in FY 1998 exceeded the number reported in each of the previous 2 years by more than 15 percent. In FY 1998, FAA reported 884 operational errors while in FYs 1997 and

1996, FAA reported 746 and 761[2]. FAA believes that errors have remained fairly constant through the years in relationship to the yearly increase in air traffic operations. However, on a facility-by-facility basis, we found that certain facilities reported significant increases in operational errors in FY 1998 over FY 1997 numbers. This occurred even though the staffing ratio of controllers to supervisors remained constant during this time period.

For example, of the 170 terminal facilities that reported errors in either FY 1997 or FY 1998[3], 72 facilities reported an overall 200-percent increase in the number of errors from FY 1997 to FY 1998. We also found differences in errors reported by terminal facilities in each region. For example, 4 regions had an increase in errors of 20 percent, while 4 other regions had a decrease in errors of 22 percent. The ratio of supervisors to controllers during FY 1997 and FY 1998 for the 4 regions that increased errors remained at 1 to 6, while the ratio for the 4 regions that decreased errors during this time period also remained at 1 to 6.

Based on the errors reported and the uniqueness of each facility (air traffic volume, complexity of airspace, and staffing levels), it is evident that facilities need to be evaluated on an individual basis. To ensure that the safety of air traffic operations is not adversely affected when FAA reduces the number of supervisors and begins using CICs more extensively, FAA must develop quality assurance procedures that monitor reductions of supervisors on a facility-by-facility basis and make corrections where needed.

Management Comments

We discussed this report with the Acting Deputy Administrator and the Director of Air Traffic. They agreed with our results and recommendations. In September 1998, the Director of Air Traffic sent a letter to all Regional Air Traffic Division Managers stating that a task force was in the process of developing a national plan to address the issues raised in this report. Specifically, the task force would develop a process that would result in a gradual reduction in the number of supervisors. Also, the task force would develop a plan that includes enhancing information resource management, expanding the roles of CICs, and developing evaluation criteria for operational impact. However, as of November 5,

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[2] FAA officials recognized that the number of operational errors had increased in FY 1998 and on May 12, 1998, required that all certified controllers receive 2 hours of mandatory proficiency training.
[3] As of August 11, 1998.

1998, FAA had not established timeframes for the task force to develop the process or the plan.

Recommendations

We recommend that before reducing the number of supervisors, FAA complete a national plan with timeframes that includes the following actions:

1. Identify, in conjunction with representatives from NATCA and FMA, the additional functions CICs will assume from the supervisors, and provide CICs with the authority and responsibility to perform these functions while overseeing air traffic operations.

2. Develop and provide CIC training courses that encompass the additional functions, authority, and responsibility assumed from supervisors.

3. Ensure that facility managers retain the right to appoint CICs.

4. Develop quality assurance procedures that monitor reductions of supervisors on a facility-by-facility basis and make corrections where needed.

Action Required

In accordance with Department of Transportation Order 8000.1C, we would appreciate receiving your written comments within 30 days. If you concur with the findings and recommendations, please indicate for each recommendation the specific action taken or planned and the target dates for completions. If you do not concur, please provide your rationale. Furthermore, you may provide alternative courses of action that you believe would resolve the issues discussed and recommendations included in this report.

We appreciate the cooperation and assistance provided by you and your staff during the review. If you have questions or need further information, please contact me at x60500 or David Dobbs, Director, Aviation Operations Audits, at x61401.

MAJOR CONTRIBUTORS TO THIS REPORT

The following is a listing of the audit team members who participated on the review of FAA's Plan to Reduce Air Traffic Control Supervisors:

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