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Report to the Chairman, Subcommittee on Transportation and Related Agencies, Committee on Appropriations, House of Representatives

September 1994

AIR TRAFFIC CONTROL

Status of FAA's Plans to Close and Contract Out Low-Activity Towers

GAO/RCED-94-265

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-257854

September 12, 1994

The Honorable Bob Carr
Chairman, Subcommittee on
Transportation and Related
Agencies
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

The House and Senate Appropriations Committees' reports for the Department of Transportation and Related Agencies Appropriations Act for 1994 (P.L. 103-122) specify funding for the Federal Aviation Administration (FAA) to (1) close level 1 (low-activity) air traffic control towers that do not meet FAA's benefit-cost criteria and (2) contract out for the operations of level 1 towers.[1] The reports also specified funding to relocate, to other facilities, controllers affected by the contracting out and closures.

From fiscal year 1994 through fiscal year 1997, FAA plans to close low-activity towers that do not meet its benefit-cost criteria, contract out the operations of all remaining towers, and relocate controllers from towers that are closed or contracted out to other FAA facilities.[2] FAA does not believe that safety will be jeopardized by closing or contracting out level 1 towers. FAA's benefit-cost criteria include an assessment of safety, and FAA has not experienced safety problems with towers that are already operated by contractors. According to the Aircraft Owners and Pilots Association, which represents the major users of airports with level 1 towers, its members have not experienced safety problems with contracted out towers.

Because of congressional interest in ensuring aviation safety in a cost-effective manner, you asked us to (1) determine the reasonableness

[1]FAA delineates air traffic control towers into five levels depending on the traffic's density and the complexity of responsibilities. Level 1 towers are those with the lowest activity and are generally located in smaller cities that are served by commuter airlines rather than major carriers.

[2]FAA refers to low-activity towers that it operates as level 1 towers and those operated by a contractor as contract towers. For consistency, we refer to both FAA- and contractor-operated towers as level 1 towers in this report.

of FAA's plans to close level 1 towers[3] and contract out the operations of others, (2) assess the reasonableness of the potential savings that could result from such actions, (3) identify the factors that could impede FAA's plans to close and contract out towers, and (4) identify steps that FAA can take to enhance its strategy for reassigning controllers from closed or contracted out level 1 towers.

Results in Brief

FAA's plans to close or contract out all of its level 1 towers appear reasonable. Of the 151 level 1 towers, 36 do not meet FAA's benefit-cost criteria for continued operations. FAA is planning to permanently close 23 of these towers within the next 3 years—11 that have been temporarily closed since the air traffic controllers' strike in 1981 and 12 that are operated by FAA. FAA does not plan to close one temporarily closed tower because the agency estimates that the tower will soon meet the benefit-cost criteria. FAA estimates that it can save as much as $5 million annually by closing the 23 towers. FAA plans to close the remaining 12 towers in the future, thereby realizing additional savings of $3 million annually.

Of the remaining 127 towers, 32 are currently contracted out. FAA estimates that it could save as much as $120 million (in constant 1994 dollars) if it contracts out the operation of the remaining level 1 towers by fiscal year 1997.[4] FAA will not realize immediate savings primarily because of the short-term costs to relocate controllers to other facilities.

Several factors may affect FAA's efforts to close or contract out level 1 towers quickly. First, according to FAA program management officials, the agency is receiving mixed signals from the Congress regarding level 1 towers. On the one hand, various congressional committees have directed FAA to use benefit-cost criteria to establish and discontinue tower operations. On the other hand, FAA program management officials told us that individual Members of Congress have asked FAA to continue operating some towers that, in FAA's determination, do not meet the agency's benefit-cost criteria. Second, FAA cannot contract out towers until the Department of Labor completes its wage determinations for each tower

[3]If FAA closed a tower, federal funding would cease. A tower could remain open if a local airport authority or other entity funded the operation, as is the case with about 40 towers in the United States. Since FAA does not fund their operations, we did not consider these towers.

[4]Savings represent the present discounted value in 1994 dollars. FAA discounts costs over a 15-year period at the Office of Management and Budget's specified rate of 7 percent. FAA based its February 1994 estimate on contracting out 95 towers.

location.[5] FAA needs the wage determinations so that contractors can provide accurate bid estimates.

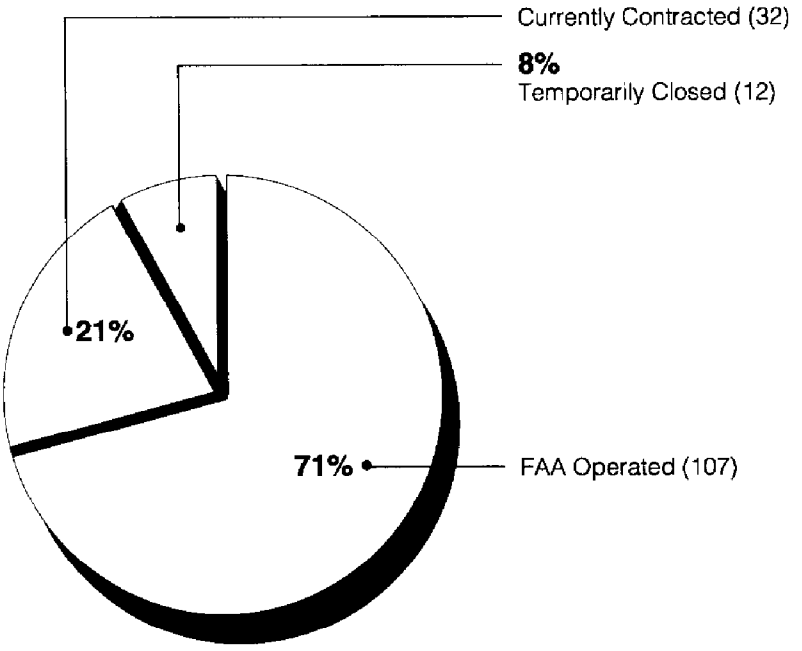
Currently, 142 air traffic control facilities other than level 1 towers are overstaffed, and 171 are understaffed. For the 25 towers to be contracted out in fiscal year 1994, FAA's agreement with the controllers union allows for the reassignment of controllers to overstaffed facilities. However, FAA does not have a strategy for reassigning controllers from towers to be closed or contracted out to higher-level facilities after fiscal year 1994. Also, a number of controllers at level 1 towers could not, in the past, perform required duties at other facilities. Therefore, FAA could incur significant costs in relocating controllers a second time if they do not succeed at higher-level facilities.

Background

FAA provides air traffic control services to the nation through a system of about 460 towers categorized at levels 1 through 5. Level 1 towers have the lowest activity and are the least complex. For example, the Charlottesville, Virginia, airport has a level 1 tower that controls about 63,000 operations a year. On the other hand, Chicago O'Hare International Airport has a level 5 tower that controls about 840,000 operations a year. As of June 1994, FAA had responsibility for 151 level 1 towers. Figure 1 shows the operational status of these towers.

[5]The Service Contract Act of 1965 requires the Department of Labor to perform wage determinations for service contracts to ensure that contractors' employees receive the prevailing wage for similar types of employees in the area, in this case, FAA controllers.

Figure 1: Operational Status of Level 1 Towers

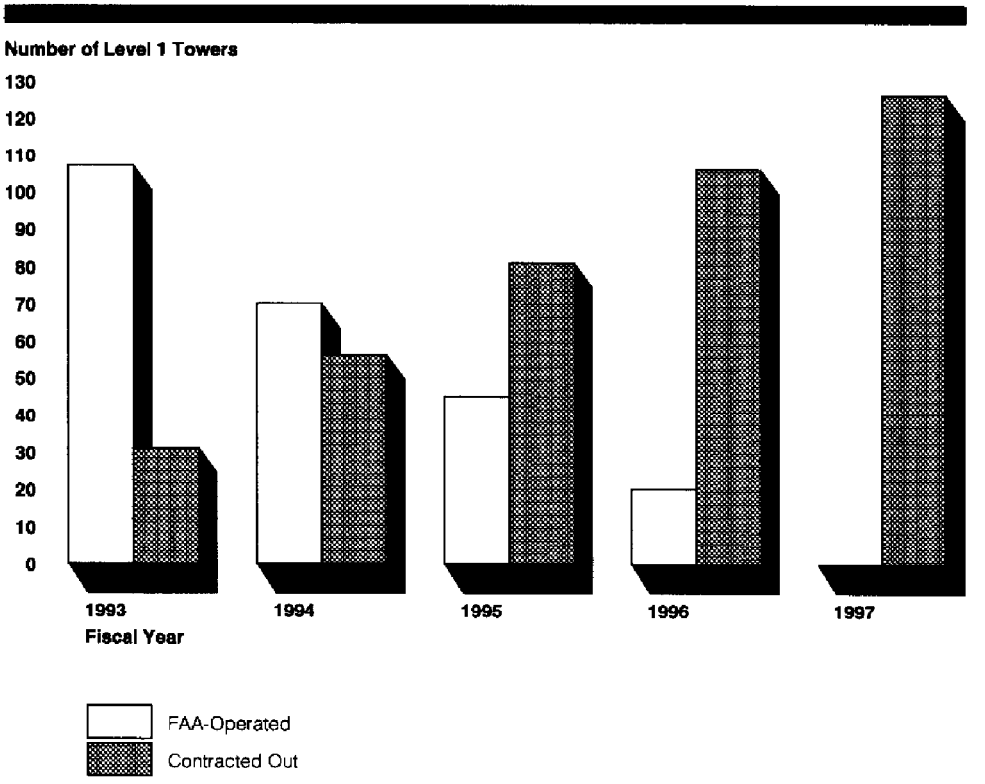


Note: Includes one temporarily closed tower that FAA does not plan to permanently close.

Source: FAA.

The House and Senate Appropriations Committees directed that FAA use $15.8 million to (1) close towers that do not meet its benefit-cost criteria and contract out the operations of 25 level 1 towers by the end of fiscal year 1994 ($7.3 million) and (2) relocate controllers to other facilities ($8.5 million). The Vice President's National Performance Review also recommended that FAA contract out level 1 tower operations because the Review believed that contractors can provide the same level of service at less cost to the government. If funding is available, FAA plans to contract out the operations of all level 1 towers at a rate of about 25 per year for fiscal years 1994 through 1997. FAA estimates that this could save about $120 million (in constant 1994 dollars) during fiscal years 1994-97. Figure 2 shows FAA's plans to contract out all level 1 towers through fiscal year 1997, including 32 that are now operated by contractors.

Figure 2: Planned Distribution of FAA-Operated and Contracted-Out Level 1 Towers, Fiscal Years 1993-97



Source: FAA.

FAA's Plans for Closing and Contracting Out Level 1 Towers

FAA's regulations establish benefit-cost criteria to determine when towers should be established or closed. To be established or to continue in operation as an FAA- or contractor-operated tower, the tower must have a benefit-cost ratio greater than 1—the point at which benefits equal costs. According to FAA's criteria, towers with a benefit-cost ratio below 1 should be closed. However, FAA's guidance allows for keeping towers open if unique requirements exist. Such factors include unique weather, topography, and operational conditions; potential use of the site to relieve capacity from and help in the training for a hub airport; potential significant changes in traffic activity; positive economic impacts for local commerce; and national security. FAA has determined that these impacts are subjective, controversial, not easily quantifiable, and negligible in comparison to safety and efficiency benefits and excludes them from its benefit-cost criteria. (App. I summarizes the criteria.)

FAA has determined that 36 level 1 towers do not meet its benefit-cost criteria and cannot be justified on the basis of other unique requirements. In a June 1993 study provided to the Subcommittee on Transportation and Related Agencies, House Committee on Appropriations, FAA recommended closing 23 of the 36 towers—11 that have been temporarily closed since the air traffic controllers' strike in 1981 and 12 that are operated by FAA. As noted earlier, FAA expects one temporarily closed tower to soon meet the benefit-cost criteria. FAA estimates that it can save as much as $5 million annually by closing the 23 towers. FAA expects to dismantle (decommission) the 11 temporarily closed towers by September 30, 1994. According to FAA program management officials, the 12 FAA-operated towers have never met FAA's benefit-cost criteria and are planned to be closed. (App. II lists the level 1 towers that do not meet FAA's criteria.)

In addition to the 23 level 1 towers that FAA recommended closing, 12 other towers do not meet FAA's benefit-cost criteria and could be closed. According to FAA officials, the agency plans to close these towers in the future, but because of the lack of funding and because of congressional interest in their continued operations, FAA did not recommend closing them immediately. FAA's closing of the 12 towers would save an additional $3 million annually.

FAA implemented a policy on July 18, 1994, that would allow towers that do not meet the benefit-cost criteria to operate for 2 full fiscal years with the expectation that if a tower again did not meet the criteria, FAA's funding would cease. According to FAA officials, the agency has not sent letters to airport officials informing them of its new policy but plans to do so in the near future.

FAA Has Not Entered Into New Contracts

FAA has yet to enter into contracts for the 25 level 1 towers that were directed by the House and Senate Appropriations Committees to be contracted out by the end of fiscal year 1994. However, FAA expects to award these contracts by the end of the fiscal year. (App. III lists the 25 towers selected.)[6] As a result, FAA will use only $2.1 million of the $7.3 million appropriated for contract start-up costs in fiscal year 1994. According to FAA officials, the agency has reprogrammed the balance ($5.2 million) for such other purposes as locality pay.

[6]On the basis of a survey sent to all level 1 tower employees, FAA, in cooperation with the National Air Traffic Controllers Association (an employee union), selected the first 25 towers to be contracted out.

FAA announced its contract plans on March 8, 1994. In accordance with federal procurement requirements, FAA had to allow 30 days for interested parties to respond to the announcement. According to FAA officials, about 90 companies or individuals expressed an interest in FAA's plans to contract out level 1 towers. FAA provided them with its "request for technical proposal" on April 12, 1994. FAA formed a committee to review the responses and select those that will be given an invitation to bid on the contracts. FAA expects to award the contracts by September 1994.

FAA Will Not Realize Immediate Savings From Changing Tower Operations

FAA estimates that it could save as much as $120 million in operating efficiencies (in constant 1994 dollars) without affecting safety if it contracts out the operation of all level 1 towers by fiscal year 1997. Greater savings could occur if additional towers were closed rather than contracted out. But FAA will not realize immediate savings because it has to pay the costs of relocating controllers to other FAA facilities.

FAA stated that the average annual operating cost for a contractor-operated level 1 tower is about $250,000, while the operating cost for an FAA-operated tower is $450,000. The differences in operating costs occur because contractors are not bound by Civil Service requirements and FAA and union work rules that result in higher staffing levels at FAA-operated towers. Savings result from the following:

- Contractors can perform level 1 tower functions with fewer staff than FAA. For example, the contractor for the level 1 tower in Bellingham, Washington, uses seven controllers and a manager, who typically controls traffic. If operated by FAA, the tower would be staffed by 13 controllers and 1 manager, who would not normally control traffic. (App. IV shows the staffing at contractor-operated level 1 towers compared with FAA's estimated staffing, which is based on FAA's standards.)
- Contractors have more flexibility: They can use split shifts and part-time and seasonal staffing, thereby reducing the number of staff needed.

According to an FAA official, Civil Service requirements and various agreements with the National Air Traffic Controllers Association prohibit FAA from requiring employees to work split shifts, although employees could volunteer for such a work assignment. In addition, in determining its staffing standards, FAA must consider annual and sick leave and have sufficient staff to cover such contingencies. Contractors, however, usually do not offer benefits that are comparable to those provided to federal employees. Furthermore, contractors realize further savings because they

generally hire experienced controllers and do not incur initial training or permanent change-of-station costs.[7]

However, FAA will not realize any savings from contracting out towers for 2 to 3 years primarily because the agency will incur costs to relocate level 1 controllers to other facilities. For example, FAA will incur about $8.5 million in the first year to move about 250 controllers, an average cost of about $34,000 per employee. Over the 4-year period that FAA plans to contract out level 1 towers, FAA estimates that the cost to relocate about 1,000 level 1 controllers will be about $34 million. After that, FAA will not have to relocate as many employees and will not have to hire and train controllers to replace the approximately 250 attrited controllers each year.

FAA Faces Challenges in Changing Tower Operations

Several factors may affect FAA's efforts to close or contract out level 1 towers. First, according to FAA program officials, the agency is receiving mixed signals from the Congress. On the one hand, various congressional committees have directed FAA to use benefit-cost criteria to establish and discontinue tower operations. On the other hand, individual Members of Congress have asked FAA to establish or continue operating towers that do not meet the criteria for continued operations. To be effective, FAA will have to follow through with its policy to discontinue funding towers that do not meet its criteria at the end of the 2-year grace period.

Second, FAA cannot award contracts for the operation of level 1 towers until the Department of Labor completes its wage determinations for each potential contractor-operated tower location. In March 1994, FAA requested that the Department of Labor provide wage determinations for all level 1 tower locations. On July 29, 1994, the Department provided wage determinations for the first 25 towers to be contracted out.

FAA Could Improve Its Level 1 Tower Program

FAA and the National Air Traffic Controllers Association entered into an agreement on how to assign controllers from the 25 towers to be contracted out in fiscal year 1994. However, this agreement does not provide a strategy for reassigning controllers from towers to be closed or contracted out after fiscal year 1994. Without such a strategy, overstaffing at some facilities could be exacerbated without resolving understaffing at others. Also, since a number of controllers at level 1 towers have not been able to perform required duties at other facilities, FAA could incur

[7]According to FAA officials, experienced controllers that contractors employ include former military and retired FAA controllers. In addition, contractors can employ controllers that were fired as a result of the 1981 strike, about 4,800 of which are interested in performing air traffic control duties again.

significant costs—averaging $34,000 for each employee—to relocate controllers a second time if they do not succeed at higher-level facilities.

FAA's and Labor Union's Agreement Provides Only Limited Guidance for Relocating Level 1 Controllers

As of May 1994, the workforce of about 17,590 controllers was over the level prescribed by FAA's staffing standards by about 250 staff.[8] According to FAA's staffing standards, 142 facilities (above level 1) were overstaffed by about 1,295 controllers, and 171 facilities (above level 1) were understaffed by about 810 controllers.[9]

According to the agreement between FAA and the labor union for the 25 towers to be contracted out in fiscal year 1994, if a facility is fully staffed or overstaffed, FAA will allow controllers to transfer there as long as they receive meaningful work and training opportunities. The agreement also states that if a facility cannot accept all applicants, FAA will give first priority to those with hardships. The agreement also states that consideration will be given to controllers whose move will result in no cost to the government. However, the agreement does not specify how much overstaffing will be allowed.

FAA's initial decision on relocating staff at level 1 towers was based on an employee placement application sent in May 1994 to about 170 controllers at the 25 towers selected to be contracted out in 1994. The application asked controllers to select four facilities, at least one of which must be within the region where they are assigned. According to FAA officials, the agency and union made reassignment decisions on the basis of the employees' responses. FAA expects to relocate the 170 controllers to about 95 higher-level facilities.

According to our analysis of the employees' application results, FAA will need to establish more definitive criteria to deal with existing and potential overstaffing at certain facilities. Of the 95 facilities where FAA plans to relocate controllers, 63 are overstaffed or will be overstaffed when the controllers report there. For example, the level 3 tower in Sarasota, Florida, has one controller more than the number suggested by FAA's staffing standard. Since FAA assigned three controllers to the Sarasota tower, that tower will have four controllers more than the number suggested by FAA's staffing standard. Furthermore, a survey sent by FAA in

[8]We previously testified that FAA had identified some problems with its staffing standards. (FAA Work Forces: Important Decisions Affecting Staff Use and Management, GAO/T-RCED-93-59, June 30, 1993).

[9]FAA develops staffing standards for trainees in the aggregate rather than by facility. As a result, these numbers do not include trainees.

November 1993 to all level 1 controllers showed that an additional seven controllers from the remaining towers to be contracted out also selected Sarasota as their first choice for relocation. If FAA also allows these controllers to transfer to Sarasota, the tower would be seriously overstaffed, and such action would not help to resolve understaffing at other facilities.

To ensure that relocated controllers are most effectively utilized, the House Committee on Appropriations recommended, for fiscal year 1995, that FAA transfer level 1 controllers only to facilities that are understaffed.[10] FAA's doing so, however, will depend on the reliability of its staffing standards. Although FAA officials believe that the standards accurately reflect current needs, the agency is reevaluating the assumptions and methodologies used to develop the standards. Also, according to FAA program management officials, the agency will be negotiating new agreements with the union for the towers to be contracted out after fiscal year 1994.

FAA Has Several Options for "Training Failures"

Another factor that FAA needs to consider is that many level 1 controllers have previously worked at higher-level facilities but were unable to perform the requisite duties. Although FAA could not provide us with data showing the number of level 1 controllers that fall into this category, union officials estimated that about 60 percent of the almost 1,000 level 1 controllers did not effectively perform at higher-level facilities and are considered by FAA to be "training failures." Labor union officials are concerned that reassigned controllers will not be able to perform the duties required at the new facilities. FAA officials said that they, in agreement with the union, plan to allow controllers a chance to perform at higher-level facilities. If they cannot, FAA, in accordance with its agreement with the union, will relocate them again if funding is available or allow them to relocate at their own expense.

FAA officials maintain that the training failure issue is mitigated because FAA's approach to training is much different than it was a few years ago and that the new "train to succeed" philosophy will enhance controllers' ability to perform at higher-level facilities. Under this philosophy, FAA focuses on identifying and developing specific skills that need to be enhanced. If the efforts to enhance specific skills do not succeed, FAA will determine if further training is needed or whether the employee should be

[10]H. Rep. No. 103-543, p. 45.

assigned to some other job function that does not involve separating aircraft.

Of the 13 controllers at two level 1 towers that we visited, 10 had transferred there because they could not perform the required duties at higher-level towers. The controllers expressed mixed views about relocating. Some feared failing again; others viewed this as an opportunity for advancement. Union officials were concerned that FAA will not have funds to relocate controllers a second time, which will cause the controllers to pay for their own moves.

Conclusions

We recognize that safety is paramount in deciding whether to close or contract out towers. According to FAA officials, safety will not be jeopardized by closing or contracting out tower operations. Although FAA can justify opening or closing towers on the basis of unique requirements that are not included in the benefit-cost criteria, the agency has been slow in closing towers when they do not meet unique circumstances or the benefit-cost criteria. As a result, FAA spends millions of dollars to operate towers whose continued operations have not been justified. Nevertheless, FAA's new policy to provide a 2-year grace period for towers to meet the benefit-cost criteria and to discontinue funding those towers that do not meet the criteria seems to be a reasonable approach.

Contracting out low-activity towers provides budgetary savings and provides FAA with a means to infuse controllers into other geographical areas where the need for them exists. But the infusion could cause overstaffing at some towers if it is not part of an integrated strategy that is compatible with FAA's priorities for its workforce. Furthermore, labor union officials are concerned that reassigned controllers will not be able to perform the duties required at the new facilities. Although FAA believes that controllers' success rate will be better under its new "train to succeed" philosophy, we believe that controllers' prior performance capability at higher-level facilities is a legitimate concern that could have a negative impact on FAA's strategy for reassigning controllers.

Recommendations

We recommend that the Secretary of Transportation direct the Administrator, FAA, to

- establish procedures to ensure that FAA's new policy to close towers that do not meet benefit-cost criteria for a 2-year period is effectively implemented and
- develop a strategy for reassigning controllers from contractor-operated towers to understaffed facilities and for minimizing overstaffing at other towers to be contracted out after fiscal year 1994.

Agency Comments and Our Evaluation

We discussed the report's findings and recommendations with the Manager and Acting Assistant Division Manager, System Plans and Programs Division, Air Traffic Plans and Requirements Service; Acting Manager, Resource Management Program, Office of Air Traffic Program Management; and other FAA officials. FAA officials generally agreed with the findings and recommendations contained in the report.

The officials said that FAA had identified towers that did not meet benefit-cost criteria in a staff study provided last year to the Subcommittee on Transportation and Related Agencies, House Committee on Appropriations. However, FAA did not recommend closing all of these towers because language in various committee reports directed that they be established or remain open. FAA implemented a policy on July 18, 1994, to provide a 2-year grace period before closing any towers. The officials said that all towers not meeting benefit-cost criteria will be included under FAA's new policy.

FAA officials also said that they were reevaluating the qualifications of those interested in submitting bids for performing tower operations under contract. However, FAA has not received wage determinations from the Department of Labor for all contract locations. As a result, contractors cannot develop precise bid estimates, and FAA cannot award contracts. The officials said that the Department of Labor provided wage determinations on July 29, 1994, for the 25 locations to be contracted out in fiscal year 1994 but as of August 1, 1994, had not yet provided estimates for the remainder. FAA officials said that getting estimates for the remaining locations will help them ensure that contracts are awarded by the end of fiscal year 1994.

FAA officials also said that the method used to reassign FAA controllers from the 25 level 1 towers to be contracted out in fiscal year 1994 to higher-level facilities was based on an agreement with the National Air Traffic Controllers Association. Regarding the issue of training failures, FAA officials said that the agreement stipulates that if funding is available,

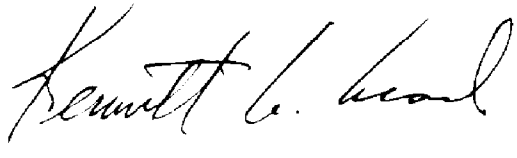
FAA will relocate the controllers. However, if funding is not available, the controllers will be allowed to relocate at their own expense. The officials said that FAA does not plan to terminate controllers who cannot perform duties at higher-level facilities and that FAA will be negotiating a new agreement with the union for towers to be contracted out after fiscal year 1994. As requested, we did not obtain written agency comments on a draft of this report.

We conducted our work between August 1993 and July 1994 in accordance with generally accepted government auditing standards. Our objectives, scope, and methodology are discussed in appendix V.

Unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after the date of this letter. At that time, we will send copies to the Secretary of Transportation; the Administrator, FAA; and the Director, Office of Management and Budget. We will make copies available to others upon request.

Please contact me at (202) 512-2834 if you or your staff have any questions. Major contributors to this report are listed in appendix VI.

Sincerely yours,



Kenneth M. Mead
Director, Transportation Issues

Contents

Letter		1
Appendix I FAA's Process for Determining When Towers Should Be Established or Closed		16
	Assessment of Benefits	16
	Assessment of Costs	17
	How FAA Applies the Benefit-Cost Criteria	17
Appendix II Level 1 Towers That Do Not Meet FAA's Benefit-Cost Criteria		19
Appendix III First 25 Level 1 Towers to Be Contracted Out		21
Appendix IV Actual Staffing Compared With FAA-Estimated Staffing for All Contractor-Operated Towers		22
Appendix V Objectives, Scope, and Methodology		23

Appendix VI
Major Contributors to This Report 25

Tables

Table II.1: Temporarily Closed Towers That Do Not Meet FAA's Criteria and Were Recommended for Closure by FAA 19
Table II.2: Operating Towers That Do Not Meet FAA's Criteria 20

Figures

Figure 1: Operational Status of Level 1 Towers 4
Figure 2: Planned Distribution of FAA-Operated and Contracted-out Level 1 Towers, Fiscal Years 1993-97 5

Abbreviations

FAA	Federal Aviation Administration
GAO	General Accounting Office

FAA's Process for Determining When Towers Should Be Established or Closed

The Federal Aviation Administration's (FAA) process for determining when to establish or close air traffic control towers is based on an economic analysis of the benefits and costs of operating a tower. A brief description of the benefit and cost factors that FAA uses in the analysis follows.

Assessment of Benefits

FAA assesses both the safety and efficiency benefits of towers. However, the primary emphasis is on safety; that is, preventing or reducing (1) collisions between aircraft (such as midair or air-to-ground collisions) and (2) other such accidents as wheels-up landings or collisions with field obstructions. Under this scenario, lives are saved and fewer aircraft become damaged. To determine the effectiveness of towers in reducing the risk of collisions between aircraft, FAA analyzes the National Transportation Safety Board's data and estimates the expected number and type of aircraft that would be involved in an accident. FAA then determines the number and type of aircraft that would use the tower; estimates benefits by determining the avoided fatalities, serious and minor injuries, and aircraft damage; and assigns explicit values to these avoided losses.

For example, the value for a fatality and a serious injury is $2.6 million and $673,000, respectively.[11] The values assigned to aircraft damage vary by severity depending on the aircraft's type and whether the aircraft was destroyed or sustained substantial or minor damage. FAA uses a similar analysis in determining the benefits derived from preventing other types of accidents. However, because of the differences between the physical and operational environments of airports, FAA limits the analysis to those types of accidents that a tower can prevent. This includes wheels-up landings, aircraft collisions with objects other than another aircraft, landing on the wrong runways, and overshooting or undershooting a runway during takeoff or landing.

Efficiency benefits derive primarily from reduced flying time. By reducing flying time, airlines save on the costs of operating aircraft and passengers save time when flight paths are shortened. Other nonquantifiable benefits may be associated with tower services. For example, tower controllers may save lost pilots or report bad weather conditions that will cause a pilot to cancel a flight that could have resulted in an accident.

[11]Placing a monetary value on injury and loss of life represents a standard practice in analyzing potential safety benefits. In adopting these values, a trade-off must be made between the cost of enhancing safety and the benefit that will be derived from that enhancement.

Assessment of Costs

An airport's tower costs fall into two categories—investment and annual costs. Investment costs are one-time expenditures for facilities, equipment, and operational start-up. Annual costs are those associated with staff, maintaining facilities and equipment, and procuring supplies and leased services.

On average, the primary investment cost in establishing a tower are the facilities and equipment costs and the one-time expense of relocating experienced controllers from various other facilities and training their replacements. The costs for one replacement controller include the cost of providing the basic course for controllers at the FAA Academy, associated travel costs, and the controller's salary during the training period.

In estimating annual costs for a level 1 tower, FAA uses the average number and salary grade level of staff required to operate the tower for 12 hours. FAA determined that the average level 1 tower consists of one Air Traffic Manager (GS-11, step 5) and five controllers (GS-10, step 5).[12] FAA calculates the costs of staff using annual salary data plus 29.65 percent to account for retirement, health, and other benefits as well as relocation costs. FAA's experience suggests that one controller relocates from a level 1 tower about once every 2 years. Therefore, relocation costs comprise one-half of the annual average. FAA uses annual fixed costs for any leased communications equipment. FAA determines the costs for supplies, rent, utilities, contracted services, and related administration by using an approximate percentage—for example, 3.7 percent—of controllers' salaries.

In deciding whether to close and dismantle (decommission) a tower, FAA considers the same annual operating costs as those for establishing a tower and the one-time cost of shutting it down. Shutdown costs include expenditures for relocating controllers and dismantling and moving equipment.

How FAA Applies the Benefit-Cost Criteria

The benefit-cost criteria compare the present value of a tower's benefits with costs over a 15-year period. In making the comparison, FAA uses a 7-percent discount rate as directed by the Office of Management and Budget. If the tower is a candidate for being contracted out, FAA will substitute the contractor's proposed costs in lieu of FAA's costs in the benefit-cost analysis computations. Regardless of whether the tower is to be operated by FAA or a contractor, FAA seeks to establish towers that have

[12]GS = general schedule pay rate for the federal government.

a benefit-cost ratio greater than or equal to 1 and close towers when the benefit-cost ratio is less than 1.

However, such unique factors as weather, topography, and operational conditions; potential use of the site to provide capacity and training relief for a hub airport; potential significant changes in traffic activity; and national security may override the results of FAA's benefit-cost analysis. For example, FAA's tower in American Samoa—with a .99 benefit-cost ratio—does not meet FAA's criteria, but the tower provides service to both international and national carriers (unique operational requirement). FAA acknowledges that other positive and negative economic impacts accrue to a community through the presence of a tower, such as benefits to local commerce and the potential increase in noise and aircraft engine emissions. However, FAA does not consider these factors in its benefit-cost analysis because it has determined that these impacts are subjective, controversial, not easily quantifiable, and negligible in comparison to safety and efficiency benefits.

Level 1 Towers That Do Not Meet FAA's Benefit-Cost Criteria

Table II.1: Temporarily Closed Towers That Do Not Meet FAA's Criteria and Were Recommended for Closure by FAA

City and state	Benefit-cost ratio
Ponce, P.R.	.08
Plainview, Tex.	.19
Pine Bluff, Ark.	.21
Merced, Calif.	.23
Mayaguez, P.R.	.30
Akron, Ohio	.31
Spartanburg, S.C.	.34
Hickory, N.C.	.34
Benton Harbor, Mich.	.36
New Bern, N.C.	.41
Hot Springs, Ark.	.48

Note: Benefit-cost ratios are as of June 1993. In addition, the temporarily closed tower in Knoxville, Tennessee, did not meet FAA's benefit-cost criteria, but FAA did not recommend that it be permanently closed because the agency estimates that the tower will soon meet the criteria.

Table II.2: Operating Towers That Do Not Meet FAA's Criteria

City and state	Benefit-cost ratio
Bloomington, Ind.	.34
Jackson, Tenn.[a]	.36
Cape Girardeau, Mo.[a]	.39
Marion, Ill.[a]	.39
Lewisburg, W.Va.[a]	.46
Hobbs, N.M.[a]	.47
Wheeling, W.Va.	.52
Williamsport, Pa.	.52
Pendleton, Oreg.[a]	.53
Valdosta, Ga.[a]	.57
Muncie, Ind.[a]	.62
Greenville, Miss.	.70
Walla Walla, Wash.	.70
Lake Tahoe, Calif.[a]	.71
Columbia, Mo.	.73
Grand Island, Nebr.	.74
Joplin, Mo.	.78
Olympia, Wash.	.86
Shreveport, La.	.86
Ardmore, Okla.[a]	.87
Gary, Ind.[a]	.88
Fayetteville, Ark.	.89
St. Joseph, Mo.	.92
Twin Falls City, Idaho[a]	.98

Note: As of June 23, 1994.

[a]Not recommended for immediate closure by FAA.

First 25 Level 1 Towers to Be Contracted Out

City and state
Charlottesville, Va.
Detroit City, Mich.
Westfield, Mass.
Hartford, Conn.
Lewiston, Idaho
San Juan (Isla Grande), P.R.
San Antonio (Stinson), Tex.
Alexandria, La.
Kaunakakai, Hawaii
Salina, Kans.
Palmdale, Calif.
Salinas, Calif.
Meridian, Miss.
Texarkana, Ark.
Cincinnati (Lunken), Ohio
Alton, Ill.
New Haven, Conn.
Tuscalusa, Ala.
Groton, Conn.
Salem, Oreg.
Greenville, S.C.
Panama City, Fla.
Brownsville, Tex.
Pocatello, Idaho
Hagerstown, Md.

Note: Towers are listed in the order in which FAA selected them to be contracted out in fiscal year 1994.

Actual Staffing Compared With FAA-Estimated Staffing for All Contractor-Operated Towers

Location of facility	Number of contractor staff	Number of FAA staff[a]
Ardmore, Okla.	3	6
Athens, Ga.	4	[b]
Bellingham, Wash.	8	14
Cape Girardau, Mo.	4	5
Cleveland (Cuyahoga County), Ohio	6	8
Eagle, Col.	4	[b]
Enid (Woodring), Okla.	4	7
Farmington, N.M.	4	9
Flagstaff, Ariz.	4	6
Gary, Ind.	5	[b]
Hailey, Idaho	4	7
Hobbs (Lea County), N.M.	3	7
Lakeland, Fla.	7	9
Laredo, Tex.	5	7
Lewisburg/Greenbrier, W.Va.	3	6
Marion (Williamson County), Ill.	5	6
Martha's Vineyard, Mass.	5	[b]
Mobile, Ala.	7	[b]
Mosinee, Wisc.	6	6
Nashua, N.H.	5	8
New Iberia, La.	4	8
Newburgh, N.Y.	7	[b]
Norman, Okla.	4	[b]
North Myrtle Beach, S.C.	7	8
Owensboro (Davies County), Ky.	5	7
Pacoima/Whiteman, Calif.	5	8
Paducah (Barkley), Ky.	5	8
Pendleton, Oreg.	4	7
Smyrna, Tenn.	4	8
Topeka (Phillip Ballard), Kan.	3	7
Valdosta, Ga.	6	6
Waukegan, Ill.	6	9

[a]FAA staff are those that would be assigned to the contractor locations on the basis of FAA's staffing standards.

[b]FAA could not provide staffing information for these towers either because activity data were not available to estimate staffing needs or the tower was established subsequent to our request for data.

Objectives, Scope, and Methodology

The Chairman, Subcommittee on Transportation and Related Agencies, House Committee on Appropriations, asked us to (1) determine the reasonableness of FAA's plans to close level 1 towers and contract out the operations of others, (2) assess the reasonableness of the potential savings that could result from such actions, (3) identify the factors that could impede FAA's plans to decommission and contract out towers, and (4) identify steps that FAA can take to enhance its strategy for reassigning controllers from contracted out level 1 towers.

We reviewed FAA's criteria for establishing, closing, and contracting out level 1 air traffic control towers and discussed them with FAA officials. However, we did not evaluate or verify the data that FAA uses in applying the benefit-cost criteria. We collected data from FAA showing the number of level 1 towers that do not meet these criteria and discussed reasons why FAA established or has not closed them. We also discussed with FAA officials their plans to relocate staff from towers that will be contracted out from fiscal year 1994 through fiscal year 1997 and discussed with FAA and National Air Traffic Controller's Association officials the process they used to select the 25 towers to be contracted out in fiscal year 1994. We obtained their views on the contracting out program and potential impact on the controller workforce.

We collected, reviewed, and analyzed FAA's survey instrument that included information on where controllers wanted to transfer when their tower was converted to contractor operations. We aggregated data from the survey showing the air traffic facilities where employees wanted to relocate and compared these data with locations that are close to becoming or are already overstaffed in accordance with FAA's staffing standards. We also reviewed, analyzed, and discussed with officials FAA's guidance on relocating controllers from their facility. We visited FAA-staffed level 1 towers in Charlottesville, Virginia, and Hagerstown, Maryland—two towers selected to be contracted out in fiscal year 1994. We discussed the impact of contracting out these facilities with the tower manager and available controllers. We also discussed relocation preferences and prior work experiences at other FAA facilities and why they previously left those facilities.

We also discussed with FAA program management and contracting officials the status of the contract for the level 1 towers and determined how the contract was developed. We discussed FAA's procedures for announcing the contract and developing the request for a technical proposal and determined reasons for any delay. We visited one tower in Smyrna,

Tennessee, that is currently operated by a contractor and discussed operational procedures and staffing with the tower manager and controllers. We also visited two contractors—Barton ATC, Inc., in Murfreesboro, Tennessee, and NYMA in Greenbelt, Maryland—and spoke with Aircraft Owners and Pilots Association officials to discuss their experience with level 1 tower operations. We also discussed with FAA officials their progress in obtaining wage determinations from the Department of Labor and how the Department's delay may affect awarding the contract before the end of fiscal year 1994 and discussed with a Department of Labor official the process used in making such determinations.

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