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United States General Accounting Office  
Washington, DC 20548

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November 30, 2001

The Honorable Don Young  
Chairman, Committee on Transportation  
and Infrastructure  
House of Representatives

Subject: National Airspace System: Incomplete Transition Back to National Maintenance and Certification Standards in the Federal Aviation Administration's Alaskan Region

Dear Mr. Chairman:

In 1997, the Federal Aviation Administration (FAA) adopted a pilot program, known as the Corporate Maintenance Philosophy, that reduced the frequency of periodic maintenance and certification in FAA's Alaskan Region. Early in 2001, the Federal Labor Relations Authority ruled that FAA must revert back to the national maintenance and certification standards in the Alaskan Region because FAA had not negotiated an extension of the pilot program with their unions. In March 2001, FAA and two unions representing FAA employees, the Professional Airways Systems Specialists and the National Air Traffic Controllers Association, agreed to a deadline—October 1, 2001—regarding when officials at installations in the Alaskan Region would complete reinstating the national standards for equipment maintenance and certification. One aspect of this transition process involved entering national periodic maintenance and certification standards, specifically those pertaining to the frequency with which equipment should be serviced, into FAA's computerized maintenance management system (MMS).

You asked us to assess the progress of FAA's Alaskan Region in its shift back to national standards. As agreed with your office, we focused our work on the following questions:

- To what extent has FAA's Alaskan Region incorporated the national periodic maintenance and certification standards for National Airspace System (NAS) equipment into MMS?
- To what extent is FAA maintaining and certifying the equipment in Alaska in accordance with the national standards?

On September 12, 2001, we briefed you on the results of our work to date. This letter summarizes our findings and reflects FAA's comments on a draft provided to it.

## Summary

FAA's Alaskan Region has not fully returned to the national standards, but FAA officials believe that the transition will be completed by January 1, 2002. Seven of 12 locations had finished updating maintenance and certification information into MMS by the October 1, 2001, deadline. In several locations where MMS had been updated, however, the standards that had been incorporated were not subjected to quality control checks. We were unable to determine, therefore, whether periodic maintenance conducted in certain areas of the region has been performed with the frequency required by the national guidelines. FAA is hiring additional staff to perform maintenance and certifications and will appoint managers to check the accuracy of MMS data. The process of certifying equipment to ensure that it functions according to national standards had been more than 90-percent complete as of August 31, 2001, according to FAA officials.

## Background

A complex array of primarily ground-based navigation and communication equipment facilitates the safe and efficient movement of aircraft throughout NAS. Such equipment includes radar installations, signal beacons, and communications towers. One component of FAA, the Airway Facilities Service, is responsible for managing, maintaining, and operating NAS infrastructure. This responsibility includes ensuring that the system and its components are maintained according to prescribed standards. In turn, the Airway Facilities Service assigned responsibility for conducting on-site maintenance at the NAS facilities to the region-based Airway Facilities Division (AFD). Although the types of maintenance differ according to the piece of equipment, similar standards are used in FAA's nine administrative regions throughout the country. In addition to stipulating the checks that must be performed and the frequency of maintenance, the standards require that a qualified technician independently certify that each piece of equipment is functioning properly. Finally, a report on the maintenance conducted must be entered into a national computer database kept by FAA's MMS. This system schedules the type of maintenance that should be performed on equipment at any given time. Information stored in MMS directs technicians to specific tasks identified in equipment maintenance manuals. Without MMS and its reference to the maintenance manuals, technicians would be required to perform the more time-consuming task of finding and extracting pertinent information directly from the manuals.

In March 1997, FAA initiated a 3-year pilot program, called the Corporate Maintenance Philosophy (CMP), whose goal in part was to determine whether NAS equipment could be effectively maintained with less frequent servicing, thereby reducing costs. Under CMP, the intervals between servicing much of its equipment in the Alaskan Region, including some of its critical safety equipment, increased. At the end of the pilot period, FAA decided to continue CMP because, according to FAA officials, the program had met its objective. However, two FAA employee unions—the Professional Airways Systems Specialists and the National Air Traffic Controllers Association—objected to the continued use of CMP because the program's extension had not been negotiated with the unions. Furthermore, the unions alleged that the less frequent maintenance performed under CMP adversely affected the NAS

infrastructure in Alaska. They filed a complaint with the Federal Labor Relations Authority, which ruled early in 2001 that FAA should have negotiated the extension of the program with the unions and, therefore, the Alaskan Region must revert to current national periodic maintenance and certification standards. On March 8, 2001, FAA and the two unions signed a Memorandum of Understanding establishing a transition schedule for returning the Alaskan Region to the national standards. The agreement stipulated that the transition would be completed by October 1, 2001.

## **MMS Was Not Updated at All Locations, and Accuracy of Information Has Not Been Checked Everywhere**

FAA officials told us that they had completed updating the national standards into MMS in 7 of 12 locations by October 1, 2001. We found, however, that several locations throughout Alaska responsible for performing the maintenance and certification activities had not performed quality control checks to ensure that the information had been updated correctly. Of the 12 key locations in Alaska that use the standards to check equipment, 4 had completed quality control checks of the MMS information; 3 indicated that the checks might not be completed until October 2002; and 5 planned no quality control checks at all.

Additionally, the staff at those locations performing checks reported finding errors in the information entered into MMS, such as omissions of required maintenance steps for certain pieces of equipment. The presence of errors in MMS has potential safety ramifications. For example, if the system contains incomplete or incorrect information, maintenance technicians might not service critical safety equipment with the frequency it needs to remain at full functioning capacity. A lack of adequate quality control checks increases the possibility that such errors will remain unidentified and uncorrected. We discussed our findings with AFD officials, who told us that they would require quality control checks at all 12 locations. The revised date for completing the checks and making any necessary changes to MMS entries is January 1, 2002, according to these officials.

## **Progress on Maintenance Is Unclear; Most Certifications Were Conducted**

While we could not determine the percentage of periodic maintenance that has been conducted according to national standards, over 90 percent of certifications have been made, according to AFD managers.<sup>1</sup>

Because of problems with maintenance records in MMS, we could not comprehensively assess the progress that the Alaskan Region has made in maintaining NAS equipment according to national standards. Specifically, maintenance records in MMS had not been fully updated at the time of our review, and MMS contains some erroneous information about maintenance that should be

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<sup>1</sup> These two processes—maintenance and certification—are not always directly linked. Whereas periodic maintenance includes performance checks, inspections, and routine maintenance, a certification is the quality control method used by FAA to ensure that its facilities are providing their expected services. A piece of equipment that has not had all of its periodic maintenance done but is still performing at its normal capacity, therefore, can be certified.

performed. At all 12 locations, moreover, AFD officials said that they were behind schedule in their periodic maintenance activities, and they cited a shortage of staff as the primary reason for their delays. Hiring of additional staff is now under way. Regarding certifications, although AFD officials told us that over 90 percent of the required certifications had been completed by the end of August 2001, they stressed that they wanted to reach 100 percent as quickly as they could. Because certifications verify that equipment is performing as intended, their completion is a primary concern for AFD staff.

FAA officials told us that they would (1) give higher priority to ensuring that preventative maintenance and certification were being conducted in accordance with national standards and (2) appoint a database manager at each of the 12 locations to address problems with the accuracy of maintenance records in MMS. As agreed with your office, we will monitor and report early in 2002 on FAA's progress toward appointing these managers and whether they are checking MMS for accuracy. We will also provide an update of the status of periodic maintenance and certifications at that time.

## **Agency Comments**

We provided a draft of this letter to FAA for review and comment. The comments we received from the Director of the Airway Facilities Service, AAF-1, included information that had become available after we conducted our audit work. The Director informed us that as of October 1, 2001, the Alaskan Region had returned to the national periodic maintenance and certification standards at all facilities. Seven of 12 locations have completed entering periodic maintenance and certification data in MMS; for those locations where MMS had not been fully updated, technicians are identifying and extracting pertinent information from maintenance manuals to ensure compliance with national standards. Regarding the quality control reviews of MMS data, 7 of 12 locations have completed such reviews. The remaining locations are using manual methods to schedule and track required maintenance activities and will finish their quality checks of MMS data by January 1, 2002. Finally, this official said that all facilities in the Alaskan Region had been certified according to national standards by October 1, 2001.

## **Scope and Methodology**

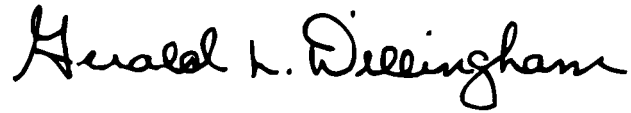
We performed most of our work at FAA facilities in Alaska. We analyzed documents and records, made field visits to installations, and conducted interviews with numerous FAA personnel in AFD. We also conducted work at FAA headquarters in Washington, D.C. We performed our work from June through September 2001 in accordance with generally accepted government auditing standards.

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We are sending copies of this letter to the Ranking Democratic Member, House Committee on Transportation and Infrastructure; Senators Ted Stevens and Frank H. Murkowski; the Secretary of Transportation; and the FAA Administrator.

If you have any questions about this letter or the earlier briefing, please contact Randy Williamson at (206) 287-4860 or me at (202) 512-2834. Other key contributors to this letter were Steve Calvo and Colin J. Fallon.

Sincerely yours,

A handwritten signature in black ink that reads "Gerald L. Dillingham". The signature is written in a cursive style with a large initial "G".

Gerald L. Dillingham, Ph.D.  
Director, Physical Infrastructure Issues