

**U.S. House of Representatives
Committee on Science & Technology
Subcommittee on Investigations & Oversight**

HEARING CHARTER

*Providing Aviation Weather Services to the
Federal Aviation Administration*

Thursday, July 16, 2009
10:00 a.m. – 12:00 p.m.
2318 Rayburn House Office Building

Witnesses

- **Mr. David Powner**, Director, Information Technology Management Issues, Government Accountability Office
- **Mr. John L. (Jack) Hayes**, Assistant Administrator for National Weather Service, National Oceanic and Atmospheric Administration
- **Mr. Richard Day**, Senior Vice President for Operations, Air Traffic Organization, Federal Aviation Administration

Introduction: Aviation Weather Service Consolidation

The Subcommittee on Investigations and Oversight meets on July 16, 2009 to examine the Federal Aviation Administration (FAA)'s efforts to reorganize the aviation weather services provided by the National Weather Service (NWS). The Federal Aviation Administration has been pushing the National Weather Service to reorganize its aviation weather services by consolidating from the twenty-one regional centers, called Central Service Weather Units (CWSUs), down to one national center. The ostensible reasons for this request were a desire to reduce the costs to FAA, which reimbursed NWS for their aviation services, and to improve and make more consistent the weather products provided by NWS forecasters. However, no proposal from NWS to consolidate services has shown significant savings and the lack of metrics on the performance of the CWSUs or the quality of services from CWSUs as perceived by FAA makes it impossible to demonstrate reliably whether the proposed alternative organization would provide better forecast services or enhance air traffic management. Finally, any reorganization carries real risks to air traffic flow and public safety. In light of these risks, the lack of clear baseline metrics of the current systems' performance and assurance that the proposed reorganization will offer benefits in terms of safety, traffic management or costs, the decisions to reorganize the current system and to consider only one option for that reorganization are not well justified or supported.

The Current System for Providing Aviation Weather Services

The FAA and NWS have operated an aviation weather system in which NWS forecasters are co-located with air traffic controllers at the twenty-one Air Route Traffic Control Centers (ARTCC) around the country. Weather conditions have a significant impact on air transport. Many flight delays and disruptions to air traffic flow are attributable to unfavorable weather conditions and weather has been a factor in a number of accidents. The current system evolved out of recommendations from the National Transportation Safety Board (NTSB) that such regional distribution of forecasters would enable them to work directly with air traffic controllers to deal with severe or rapidly changing weather conditions and emergencies. This distributed approach to services was endorsed in a 1995 National Academy of Science report as well.

The ARTCCs handle planes as they traverse the country. Planes are managed by airport traffic control towers for take-offs and landings and then are passed to the Terminal Radar Approach Towers for the Departure and Approach phases of a flight. Aircraft en route between airports are managed by the ARTCCs. Each ARTCC has an NWS Center Weather Service Unit (CWSU) housed in the same building with four forecasters assigned to each of the 21 ARTCCs. The forecasters typically provide services 16 hours a day, 7 days a week—which is the peak time for commercial and general aviation.

Aviation weather forecasts out of the CWSUs are not the sole source of weather information for the national air space. Weather Forecasting Offices (WFO) around the country provide continuous weather updates twenty-four hours a day and support local airports. However, aviation forecasting is a specialized application because of the specific needs of aviation. Winds and weather at different altitudes can make an enormous difference in aviation, but may be purely academic from the perspective of forecasting whether the local community will get showers or just clouds. Weather patterns vary enormously from region-to-region and from season-to-season. Aviation weather forecasters develop very specific local knowledge to help support the work of the air traffic controllers and the aviation community. The large airlines typically have their own weather service that they get under contract with private providers. These private providers use NWS data, but run the data through their own models designed to meet the specific needs of the commercial carrier.

The Subcommittee has reviewed more than a dozen documented cases of air traffic controllers seeking emergency help from weather service forecasters to get a plane safely back on the ground. Frequently, those stories do not involve severe weather, but simple common occurrences such as a private aircraft losing instrumentation and finding itself stranded above endless cloud cover. Forecasters who can find the break in the clouds, work with the air traffic controller to get the heading right and work to bring the plane to the ground before it runs out of fuel make the difference between a safe return and potential tragedy.

The annual costs for running this distributed system are in the range of \$12 million. This covers both the technology acquired for the CWSUs as well as the 84 weather forecasting positions assigned across the network.

FAA Pushes to Change this System and the NWS Responds

In 2005, FAA asked NWS to propose a consolidation of weather services down to one center with the goal of saving \$2 million a year in aviation weather forecasting costs. NWS provided a proposal that would move the aviation weather forecasters back to local Weather Forecast Offices and would meet the \$2 million savings goal. FAA rejected that proposal as well as a subsequent proposal that would have brought some consolidation, but not down to one center. As of July 2009, NWS has now submitted their third proposal to the FAA. FAA intends to respond to that proposal by early August.

The new NWS proposal would consolidate the CWSU's down to two centers (this is similar to their last, rejected proposal)—one in Kansas City to handle the Southern Tier of the U.S. and one in Silver Spring, Maryland to handle the Northern Tier. Staffing would be reduced from 84 forecasters to just 50 forecasters and managers split between the two centers as well as the one remaining ARTCC in Anchorage, Alaska. Coverage would be 24 hours a day, seven days a week.

FAA argues that consolidating to one center will provide a “single authoritative source” for aviation weather forecasts and eliminate variation in the quality of service and products that have been found across the current, distributed system. In the mid-2000s, FAA argued that some CWSU's were not as good as others and that the variation in products from one center to the next led to confusion. NWS took these criticisms to heart and has been working to improve and standardize the services provided by CWSUs across the country. However, according to the National Air Traffic Controllers Organization, air traffic controllers at the ARTCCs – the men and women who rely on the CWSUs - are very strong advocates for keeping the forecasters on site and available to them to deal with emergencies. Their view is that consolidation would negatively impact their ability to do their jobs of keeping the national airspace safe.

FAA also argues that such a consolidation should produce savings. However, the NWS proposal suggests that it will take a decade or more to realize any savings. The annual costs reimbursed to the NWS by FAA run on the order of \$12 million. Under the new proposal, the annual costs of a consolidated system will be in the \$11 million range. Transition costs for setting up two new centers, acquiring new technologies, running a demonstration test, and relocating staff will run \$12 million. It would take a decade to earn back the costs of the transition.

The NWS proposes to set up a center to run a side-by-side test of the performance of a consolidated center for comparison with the performance of the 21 regional centers. They would ask the National Academy of Sciences to monitor and evaluate the outcome of the test. However, there are problems with the proposed test and challenges in designing any reliable test, especially within the time period currently allotted. The Government Accounting Office (GAO) highlights these challenges in their testimony.

Degraded Service and Safety Questions

One lost asset that would come from consolidation is the specialized local knowledge that currently informs aviation weather forecaster's work. The experts who currently work in the 21 regions have developed very precise knowledge of how weather patterns tend to emerge in each area. FAA hopes (as does NWS) that these experienced forecasters will be willing to relocate to the new centers. However, NWS admits that because of the turmoil and uncertainty surrounding the future of the existing 21 centers, the centers have been having trouble retaining staff in the last few years. Between projected retirements of more than 20 percent of the workforce and the uncertain fate of the CWSUs that has led many forecasters to seek other opportunities, the amount of local knowledge in the centers has been declining. These factors are making it more unlikely that the Kansas City and Silver Spring centers will be able to attract experienced aviation weather forecasters with a diverse mix of specialized, local information. One might argue that the national airspace has been made less safe simply because of the protracted efforts by FAA to force a consolidation of the CWSUs on the NWS.

GAO finds that neither FAA nor the NWS have established meaningful metrics for performance for the current 21 CWSUs. Further, GAO finds that FAA requirements for the weather service are in flux and not fully articulated. This makes it difficult, if not impossible, to run any meaningful test. If performance cannot be measured, one cannot accurately judge whether a new organizational approach is better or worse. Further, to staff up the center, NWS is proposing to take some of the most senior people out of the 21 CWSUs. This would leave CWSUs weaker and concentrate expertise in the consolidated center, leaving doubts about the fairness of the test results, especially if many of these senior staff are the same experienced people that the NWS projects to retire if they downsize from 84 forecasters to 50 staff.

Finally, there is a valid question about whether 50 staff would be sufficient to provide safe services. Each of the two centers will have 5 senior forecasters and 13 forecasters. Each center will operate 24 hours a day 7 days a week for a total of 21 shifts. Projecting a morning and evening shift of 6 forecasters each and 1 forecaster on the midnight shift, the two centers together would have 12 forecasters for the entire lower-48 states on the morning shift as the national airspace swings into full flight. That compares to at least 20 forecasters on duty on any given morning shift right now. It is hard to see how the nation's aviation system will be safer or how air traffic will be improved by cutting the people in weather forecasting by 40 percent. On a day where you have brush fires over L.A., fog in San Francisco, ash plumes over the Northwest, and thunder storms and tornadoes developing from the east face of the Rockies to the Great Lakes and the Gulf, that reduction in staffing could become a matter of life and death.

To his credit, the head of the National Weather Service is adamant that no change to the organization of the CWSUs will occur unless it can be clearly demonstrated that safety is not degraded. Given the lack of meaningful performance metrics, and the obvious decline in staffing that comes with the consolidation proposal, it appears on its face that this approach to aviation weather services will be impossible to convincingly demonstrate as being as safe or responsive to the needs of the Air Traffic Controllers and the aviation community. In light of the inevitable risks of moving from a proven system to an unproven system, the continued pressure from FAA for consolidation of NWS services is difficult to fathom.