



U.S. House of Representatives
Committee on Transportation and Infrastructure

Washington, DC 20515

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SUMMARY OF SUBJECT MATTER

TO: Members of the Subcommittee on Aviation

FROM: Committee on Transportation and Infrastructure, Oversight and Investigations Staff

SUBJECT: Hearing on "The Transition from FAA to Contractor-Operated Flight Service Stations: Lessons Learned."

PURPOSE OF THE HEARING

On Wednesday, October 10, 2007 at 10:00 a.m. in 2167 Rayburn House Office Building, the Subcommittee on Aviation will meet in an oversight hearing to examine the history and current status of the Federal Aviation Administration's (FAA) transition to contractor-operated Flight Service Stations (FSS). The Oversight and Investigations (O&I) staff has conducted an in-depth investigation of FSS performance since the transition from a FAA-operated system to a private contractor, Lockheed Martin. The purpose of this hearing is to examine the transition to a modernized, contractor-operated FSS system and identify potential lessons learned that may be applicable to future FAA modernization efforts.

BACKGROUND

On February 1, 2005, the FAA awarded Lockheed Martin a five-year, fixed-price contract (with 5 additional option years) to operate and modernize the Flight Service Station (FSS) system that provides weather information and flight plan filing services to pilots on the ground and in the air. The contract is worth about \$1.8 billion and represents one of the largest non-defense outsourcing of services in the Federal Government. FAA originally anticipated that by contracting out FSS, it will save \$2.2 billion over the ten-year life of the agreement, although that estimate has been subsequently reduced to \$1.7 billion, largely due to when the start time is calculated.¹

¹ "Controls over the Federal Aviation Administration's Conversion of Flight Service Stations to Contract Operations," Department of Transportation, Office of Inspector General, Report Number: AV-2007-048, May 18, 2007.

Prior to the modernization effort, the FAA FSS system consisted of 61 automated flight service stations located throughout the United States and staffed by 2,300 personnel. Additional special facilities were located in Alaska. Pilots could telephone, and in some cases visit, a flight service station in their area to receive weather information for their region and along their planned route of flight, file a flight plan, and learn about flight restrictions and hazards along their route and at their destination airports. During a flight, pilots could also radio the nearest flight service station to receive updated weather and hazard information, and receive emergency services, as conditions changed. The FSS system, which relied on 1970s-era computer technology, served as the only official source for aviation weather for general aviation pilots, who are required to receive a weather briefing prior to each flight.

Maintaining and operating this legacy system became increasingly difficult and expensive. In 2001, the Department of Transportation Inspector General (IG) published a report that was critical of the existing FSS program. These reports outlined the escalating cost to maintain the FSS program, the FAA's difficulty in attempting to modernize the FSS computer system, and widespread inefficiencies in the FSS program. The OIG also recommended consolidation of FSS locations, citing significant cost savings that would accrue.²

The FAA legacy FSS system cost approximately \$550-\$600 million to operate annually, which equated to \$15-\$20 per pilot contact. In addition, the technological obsolescence of the legacy FAA technology made the system increasingly difficult and expensive to maintain. The FAA's internal attempt to modernize and implement a new computer operating system, the Operational and Supportability Implementation System (OASIS), fell five years behind schedule and millions of dollars over budget, and it did not offer many new services, such as Internet access and real-time information about airspace restrictions. In short, OASIS was also obsolete before it was even deployed.

FAA's anticipated savings in contracting-out FSS were based upon the difference between the agency's projected costs of operating FSS versus the 10-year cost of the Lockheed Martin contract. The savings were expected to be achieved through a combination of consolidation and modernized facilities and equipment. The main changes include:

- Consolidating the 58 previous FAA FSS facilities into 3 new hub facilities and 15 refurbished stand-alone facilities;
- Deploying a new FSS operating system (FS21) at the 3 hub and 15 continuing facilities. This new system is to connect all facilities through a single, nationwide operating system that is designed to allow FSS employees to file flight plans, access aeronautical and weather information, and provide other information to pilots for any airport in the country; and
- Reduce the number of FSS specialists from 1900 to about 1000 as a result of the modernization and consolidation discussed above.³

² "Automated Flight Service Stations: Significant Benefits Could be Realized by Consolidating AFSS Sites in Conjunction with the Deployment of OASIS," Department of Transportation, Office of Inspector General, Report Number: AV-2002-064, December 7, 2001.

³ Ibid.

Lockheed Martin took over operations of 58 FAA FSS locations on October 4, 2005. Initially, the contractor operated the FAA legacy FSS system as a turnkey operation, which ensured continued and uninterrupted service to pilots. The implementation of a the new consolidated and modernized FSS system began in January 2007 and was initially scheduled to be completed by July 2007.

LOCKHEED MARTIN'S FSS MODERNIZATION PLAN

Lockheed Martin's modernized FSS system, called "Flight Services 21" (FS21) was designed to provide a fully-integrated, nationwide network that gives all flight service specialists and pilots access to flight plan information from a single, common database. As part of the modernization process, Lockheed Martin is consolidating 58 flight service stations into 3 network hubs and 15 satellite locations. Because of the unique nature of aviation in Alaska, services in that state are not affected by this consolidation. To date, sites have been consolidated to 20 facilities; two additional sites remain to be closed.

The three hub facilities, located in Leesburg, Virginia; Fort Worth, Texas; and Prescott, Arizona, serve as central data processing points for the system. The additional 15 satellite locations provide FSS specialists at sites across the country. The new call system allows incoming calls to be sent with priority to the closest geographical region to the caller.

The FSS modernization plan is dependent on the new FS21 computer system designed by Lockheed Martin. The FS21 system is designed to tie all facilities together into a single network. By sharing a common database, all FSS specialists will have access to all information.

For users, key elements of the plan include the continued availability of briefings by telephone or in-flight by radio, the ability to file pilot and aircraft profiles that allow specialists to tailor information to the pilot's experience level and aircraft capabilities, e-mail and PDA alerts advising pilots of significant changes in weather following a briefing, and assurances that FSS specialists will be trained in weather patterns specific to given geographic areas, giving pilots access to specialized knowledge of local weather conditions. In addition, an Internet portal is supposed to launch in the near future, which is intended to give pilots all of the same features as the call-in system.

In addition, the contract includes numerous performance targets and measures. The contractor can earn bonus payments by meeting agreed-upon performance objectives. These include:

- Customer satisfaction rating
- Information conformity index score
- Number of operational errors
- Number of operational deviations
- Number of validated customer complaints
- Percentage of calls answered within 20 seconds
- Percentage of dropped calls per hour exceeding 20 seconds
- Percentage of radio contacts acknowledged within 5 seconds
- Percentage of error-free flight plans filed

- Percentage of flight plans filed within 3 minutes of request
- Percentage of urgent pilot reports processed within 15-30 seconds of receipt
- Percentage of domestic notices to airmen (NOTAMs) accepted
- Percentage of calls receiving a busy signal

LOCKHEED MARTIN'S ROLL-OUT OF THE CONSOLIDATED, MODERNIZED SYSTEM

The first phase of the transition to Lockheed Martin management of the FSS system on October 1, 2005 ran smoothly, with pilots reporting that they experienced shorter delays and fewer dropped calls during the first 18 months after the FAA turned over operations to Lockheed Martin. According to many FSS customers, service quality actually improved under the management of Lockheed Martin. In a survey conducted in August 2006 by the largest association representing general aviation pilots, the Aircraft Owners and Pilots Association (AOPA), the majority of pilots said that service was "good" or "very good."⁴

Despite the perception by pilot groups that the service at the FAA legacy sites was good, and Lockheed Martin earned \$6 million in bonuses for meeting contractual performance measures, it did not achieve acceptable performance for 5 of the 21 measures, resulting in \$8.9 million in financial penalties.⁵

In late April 2007, Lockheed Martin launched an aggressive FS21 implementation plan, declaring its three hub locations operational and consolidating other FSS locations at a rate of three per week. Within days, it became apparent to pilots that the FS21 launch was not going smoothly. Service to pilots deteriorated dramatically. In the 10-month period between June 2006 and April 2007, AOPA logged 27 FSS-related complaints. As soon as FS21 went online, in the two and a half month period from April 1, 2007 to June 16, 2007, AOPA logged 467 complaints.⁶

As a result of the large volume of complaints, the FAA established a toll-free "hotline" on June 23, 2007. In the period from June 23 through September 6, 2007, FAA logged 867 calls with a total of 1587 complaints filed.⁷ AOPA logged only a fraction of this number, but the publicity surrounding the establishment of the hotline no doubt contributed to this larger volume of complaints.

It is important to recognize, that comparable metrics are not available to compare FAA's performance in the years prior to the Lockheed Martin takeover. Thus, controlled comparisons between FAA FSS performance and contractor performance are not possible. However, AOPA reports it rarely logged complaints prior to the start-up of the FS21 system as part of the national modernization and consolidation beginning in April 2007.

The most common types of complaints are summarized below:

- **Extended Call Hold Times:** At times, there were complete computer system outages, leaving specialists and pilots without access to the weather information necessary for safe flight and

⁴ June 19, 2007 AOPA briefing to O&I staff.

⁵ Data provided by FAA to O&I staff.

⁶ Data provided by AOPA to O&I staff.

⁷ Data provided by FAA in the "Audio Feedback Summary Report," September 6, 2007.

unable to file flight plans. In some cases these outages lasted more than an hour, bringing many aspects of general aviation to a halt. Because of the call backlogs created by the outages, pilots encountered long hold times when calling for a specialist even after the system was brought back online, often waiting 30 minutes or more to be connected to a specialist or being disconnected before ever having the opportunity to speak with a specialist. As a result, some pilots conducted flights without receiving a FSS briefing. Staffing shortages were also partly responsible for long hold times experienced during the summer months. The FAA estimates that the appropriate staffing level is somewhere between 900-1,000 specialists. Lockheed Martin currently employs roughly 850 specialists, but is working to increase that number to roughly 1,000. According to Lockheed Martin, many more FSS specialists retired or left than had been anticipated.⁸

- **Missing or Dropped Flight Plans:** Lockheed Martin's FS21 system utilized commercial, off-the-shelf (COTS) hardware and software in the FS21 computer system. The plan was to establish reliable interfaces between FS21 and FAA legacy systems. Lockheed Martin contends that it had difficulty acquiring documentation for FAA legacy systems, and that it had made the assumption that such documentation would be available to establish the system interfaces. In any event, because the FS21 computer system did not interface effectively with the FAA's computer system, many pilots found that flight plans they had filed by telephone with a specialist had been lost or never entered into the system, forcing them to delay or cancel flights. This is a clear safety of flight issue.
- **Inadequate Local Knowledge by FSS Specialists:** Many pilots who did get through to a specialist complained that some lacked basic local knowledge, did not have information related to local conditions and hazards along the planned route of flight, and were unable to provide a sufficient weather briefing to meet the pilot's basic safety requirements. In fact, pilots complained that too few specialists had been trained and certified to understand weather conditions in specific areas, leaving them without the knowledge sought by pilots flying in unfamiliar terrain. In addition, problems with the FS21 system meant that it contained significant gaps in information, forcing specialists to use a combination of the FAA's legacy computer system and the new FS21 system to provide a complete briefing.
- **Problems with the Issuance of NOTAMs:** Airport managers reported that they could not file notices to airmen (NOTAMs) to alert pilots to runway closures or lighting outages. This is a problem with significant flight safety implications.

A survey of pilots conducted by the AOPA in May 2007 found a precipitous drop in satisfaction with FSS. More than two-thirds of respondents said that service had deteriorated in the preceding 30 days and nearly 50% said that they were "dissatisfied" or "very dissatisfied" with the preflight briefing they received. In addition, 66% said that calls, which are supposed to be answered within 20 seconds, were never or seldom answered within one minute. Respondents reported that specialists were professional and courteous but lacked local geographic and meteorological knowledge.⁹

In the ensuing months, improvements have been made, but many of the same problems have continued. In a June 2007 follow-up AOPA survey, 24% said FSS service had improved in the

⁸ September 12, 2007 Lockheed Martin briefing to O&I staff.

⁹ July 10, 2007 AOPA memo describing survey results.

preceding 30 days, but 35% said it had become worse. Overall, pilots reported that the rapid decline in service had leveled off, but that weather specialists still lacked needed local knowledge. Nearly 50% of respondents rated specialist meteorological knowledge as "poor" or "very poor." The survey also found that 38% of pilots were dissatisfied with the process for filing flight plans through specialists; 38% said their calls are still not being answered within a minute and some reported hold times in excess of 10 minutes; and 24% of pilots continued to report dropped calls when they attempt to contact FSS.

Problems with the FSS system can create safety-of-flight issues for pilots who necessarily rely on FSS for accurate and timely weather and hazard information, flight plan filing, and other safety-related services when on the ground and in the air. This is especially true in the offshore Gulf of Mexico environment, where hostile weather systems can quickly cause problems for off-shore oil platform operators. The Helicopter Association International (HAI) reported serious concerns among commercial operators servicing off-shore oil platforms in the Gulf of Mexico.¹⁰ With the closure of the Deridder, LA and Conroe, TX FSS facilities, Lockheed Martin initiated special Gulf of Mexico operations in our Fort Worth FSS facility. The purpose of these special operations is to service helicopter pilots operating in the gulf environment. Following complaints, in July 2007, Lockheed Martin FSS personnel met with representative of the Gulf of Mexico Helicopter Association to ensure flight service met their operational requirements. On August 6, 2007, Lockheed Martin activated an exclusive 1-800 telephone number (877-654-7449) for the gulf pilots to contact flight services in order to file flight plans and receive weather briefings. These phone calls also receive priority status when received at the flight service station in Fort Worth. Since this procedure was put in place, call wait times have averaged less than 30 seconds while meeting pilot service requests.

Through the 3rd quarter of FY 2007, Lockheed Martin has not met the performance standards for 13 of the 21 performance measures, either for a quarter or for the year. Of particular concern are the increasing number of operational errors and deviations. The number of operational errors has doubled, from 3 in FY 2006 to 6 through August of FY 2007. Operational deviations have increased fourfold from 3 in FY 2006 to 14 through August of 2007. Most of the errors were the result of specialists not briefing pilots regarding airport closures. Most of the deviations were caused by specialists not briefing pilots on the Washington Air Defense Identification Zone (ADIZ) and temporary Presidential flight restricted zones.¹¹

CURRENT STATUS

By August 2007, Lockheed Martin, in conjunction with the FAA, had begun to fix many of the problems plaguing the FSS system. Lockheed instituted a number of software updates designed to address the most urgent problems, including lost flight plans and the inability to access the data needed to provide a complete and correct briefing. The most significant of these updates corrects an interface with the FAA's computer system that processes flight plans.

Initially, these FAA computers, based at 21 TRACON locations around the United States, only recognized flight plans originating from FSS locations within a defined geographic area around the TRACON. This meant that flight plans with origination points outside of that area were not

¹⁰ July 17, 2007 briefing by HAI to O&I staff.

¹¹ Data provided by DOT OIG to O&I staff on September 21, 2007.

recognized and entered into the system. With the software updates, each TRACON can accept flight plans from any FSS location, regardless of proximity.

However, just when the system seemed to be working more smoothly, a major system outage occurred on August 9, 2007. An attempted software update took down the entire FSS system nationwide, compromising safety and leaving pilots with no ability to get weather briefings and file flight plans for about a four-hour period of time. Lockheed Martin was able to slowly bring the system up, but the resulting backlog meant that many pilots were unable to get through to FSS for weather briefings and to file flight plans for most of the day. By August 10, 2007 the system appeared to be functioning normally.

Lockheed Martin has also turned its attention to resolving some of the problems experienced by callers. Changes to the call routing system have resolved many problems with calls being disconnected. In addition, Lockheed has set up a national toll-free clearance delivery line so pilots can quickly activate or close their flight plans.

The FAA acted on an AOPA recommendation that the agency create a telephone hotline to report complaints about FSS service. Pilots are urged to call as soon as possible to report any problems. They are also asked to provide details, such as date, location, and aircraft identification to allow the FAA to identify the specific flight involved. The FAA is reviewing all complaints and passing the information to Lockheed Martin for review and resolution within 15 days. Since its inception on June 23, 2007, the FAA FSS hotline has received almost 900 individual phone calls from pilots who registered over 1500 specific complaints.

Training for FSS specialists has also seen steady progress and is near completion. As of August 31, 2007 almost 100% of all specialists were fully trained and certified to operate the FS21 computer briefing system. Training is being handled at a Lockheed Martin training facility, which has graduated more than 75 new FSS specialists since its first class graduated in March 2006.

Consolidation of FSS legacy facilities into three hub and 15 satellite locations and the installation of FS21 computer systems at all locations was scheduled for completion by the end of 2007. The facilities still awaiting transition are: Islip, NY, scheduled for November 5, 2007; and San Juan, PR, scheduled for December 17, 2007.

As of October 1, 2007, the system appears that it is continuing to improve, based on AOPA's September survey of approximately 1,300 FSS users. It found that 64% of its respondents were either "somewhat satisfied" to "completely satisfied" with FSS service. Moreover, almost 70% were "somewhat" to "completely" satisfied with the briefer's knowledge during calls in that month. Though 48% said there was virtually no change in the level of service from August, 38% said that service had improved "slightly" to "significantly". Wait times also improved, with only 6% reporting that wait times were unacceptably long. One discouraging statistic demonstrates that flight plans continue to be lost in the system – 27% of respondents who filed flight plans during September experienced at least one lost flight plan.

CAUSES OF SYSTEM FAILURES

A number of factors combined to cause the system problems with implementation of the new FSS system. These include: problems with the FS21 computer system; an overly aggressive

consolidation schedule; and poor timing of the FS21 launch to coincide with the start of the busiest season for flying.

Questions have also been raised about how closely FAA was monitoring the contractor's deployment of the FS21 system and consolidation plan in the early phases of the roll-out. However, on May 21, 2007, the FAA sent a letter notifying the contractor of its concern and requesting a corrective action plan no later than May 29, 2007:

The FAA is concerned with the significant increase in the number of operational performance issues and complaints on Lockheed Martin's flight services since the implementation of Flight Service 21 (FS21). The number of complaints received since the first implementation of FS21 on February 22 is more than 10 times [emphasis added] the number received during the entire transition leading up to implementation. These issues have adversely affected customer service and the user's confidence in the services being provided by Lockheed Martin. Most importantly the FAA is concerned with the degradation of or, in some instances, absence of services required for safe flight.¹²

Lockheed Martin made the decision to launch the FS21 computer system despite numerous problems. The company was aware of more than 90 known problems with the system software at the time FS21 was launched and worked with specialists to devise temporary solutions, which complicated service delivery. Lockheed Martin contends that FAA insisted on adhering to a particular timetable, and that they would have preferred to delay deployment.¹³ In any event, FS21 implementation with known system anomalies placed specialists, many of whom were newly hired, in the position of trying to learn their jobs while simultaneously trying to resolve a variety of equipment and software problems that left them without the information and tools they needed to provide information to pilots.

The decision to launch the FS21 system and to accelerate the FSS consolidation in April (the start of the spring and summer flying season in many parts of the country) ensured that the new system would experience very high call volume and customer demand. The contractor states that it would have rather scheduled the FS21 roll-out and FSS consolidation so that it did not occur during the peak period of demand for services to the general aviation community (usually April to October).¹⁴

It is unclear why Lockheed Martin opted to launch the FS21 computer system while it had so many serious, known problems. It is also unclear why Lockheed Martin took such an aggressive approach to closing existing FSS stations during a period of significant service disruption associated with the implementation of the FS21 system.

While modernization of FSS is certainly needed, and FS21 has the potential to live up to its promised high levels of performance, progress has been slow. Future FAA outsourcing projects merit closer oversight at all levels to ensure that the safety of pilots and passengers, as well as overall performance, is not compromised.

¹² May 21, 2007 letter from FAA Contracting Officer, Glenn A. Wilson, to Lockheed Martin.

¹³ June 21, 2007 meeting between Lockheed Martin and O&I Staff at Ashburn, VA FSS Hub.

¹⁴ Ibid.

SUMMARY

It appears, as of this writing, that Lockheed Martin is making steady progress toward correcting the implementation problems that plagued the FSS modernization effort. Some of the major performance metrics, such as call hold times, and the filing of NOTAMs and flight plans have improved dramatically as the software problems with FS21 have been largely corrected. The contractor is bringing more and more skilled FSS specialists on board, and the staffing issues have subsided. As the busy summer flying season ends, the demand on FSS services will subside to a large degree, and the contractor will have a good opportunity to resolve remaining issues.

Somewhat paradoxically, even though the performance measures are improving, complaints from FSS customers still run at a relatively high level. Some of this may be explained by hold-over perceptions created by the problems of this past summer. Some of the dissatisfaction may also be explained by a perceived loss of "the personal touch" they received when FAA operated a large number of regional facilities. In those FAA-operated facilities, many pilots developed familiarity and relationships with particular specialists, which likely contributed significantly to perceptions of "very good service." Since the changes are still new, it may take time for pilot perceptions of FSS service to improve even as the service levels improve and new features are added.

WITNESSES

PANEL I

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