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**BEFORE
THE HOUSE COMMITTEE ON TRANSPORTATION AND
INFRASTRUCTURE SUBCOMMITTEE ON AVIATION**

**ON THE FAA'S
STANDARD TERMINAL AUTOMATION REPLACEMENT
SYSTEM (STARS)**

MARCH 14, 2001

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to appear before you today to present our views on the Standard Terminal Automation Replacement System (STARS) at the Federal Aviation Administration (FAA). As the union that certifies aviation safety, we have in-depth knowledge of the National Airspace System (NAS) and understand the components that must be in place to achieve *true* NAS modernization and to maintain adequate aviation safety levels. PASS provides exclusive representation for more than 11,000 of the FAA's Systems Specialists, Flight Inspection Pilots, Aviation Safety Inspectors and safety support staff. These are the people who maintain the integrity of the NAS. They certify, install and maintain the systems that comprise the NAS; conduct aviation and flight inspections throughout the industry; and provide procedures and flight checks necessary to assure the NAS meets the needs of an ever growing and more complex aviation system.

STARS — a joint acquisition between the FAA and Department of Defense (DoD) that Raytheon Corp. is developing — began in the mid-1990's to upgrade and modernize the automation systems and controller displays for the nation's air traffic control towers and terminal radar control facilities (TRACON's). Some 173 FAA and 102 DoD facilities are scheduled to receive STARS. The new system will replace the out-dated Automated Radar Tracking System (ARTS) and provide the software and hardware platform necessary to support future air traffic control enhancements. Although five years behind schedule and nearly 50 percent over budget, the once out-of-control program is finally headed in the right direction, due in large part to PASS' participation that began nearly four years ago. After congressional intervention, PASS was invited by the FAA to become involved with STARS through a human factors study that identified 52 individual issues — valid issues that have withstood the test of time and have since been incorporated into the design of the final version, STARS-Full Service Level (FSL). Since pushing for involvement in STARS, PASS has also been instrumental in developing the training courses necessary for the program, including UNIX, networking and security training. Recently, the FAA accepted PASS' training plan that will enable Administrator Garvey's 2008 timeframe for full deployment without the need to hire additional personnel. The FAA's original plan would have taken 30 years and required 500 additional employees, including 180 AF field specialists and 32 academy instructors. Estimates indicate PASS' plan will save the agency \$30 million just in the delivery of basic network UNIX training, not to mention the tremendous savings that will be realized by not hiring additional FTE's.

While the program has come a long way, its development is still at a point where it could fail, as easily as succeed. A concerted effort is needed at this crucial point in the development/implementation phase to assure that STARS-FSL will, in fact, be fully capable of meeting the functionality requirements to modernize terminal automation.

Modernizing the Infrastructure

Many have said, and will continue to say, a 5-year implementation schedule is far too ambitious to expect the FAA to accomplish. However, PASS would like to remind those who have a stake in a successful outcome of the overriding goal — namely, to upgrade the air traffic control automation infrastructure at 173 of the nation's air traffic control towers and TRACON's. STARS-FSL has not met the delivery expectations of 5 years ago, but that is not to say that the goal is not being achieved. Actually, quite the opposite is true.

PASS is proud of the technical expertise its members have been providing to the FAA in meeting the goal. By May 2000, the upgrading of 131 ARTS IIE facilities had been completed, resulting in a single software baseline for all of these facilities. Just a few short years ago, the technical

workforce dealt with a myriad of hardware configurations and software versions. The movement to this single configuration, which is the Lockheed-Martin “Common ARTS” system, has facilitated the FAA’s ability to provide the logistic support and training necessary to assure that its technical workforce remains highly qualified and fully capable of supporting terminal automation.

In 1999, the ARTS IIIE platform was upgraded at five of the nation’s most complex facilities, which are the Denver TRACON, completed in August, 1998; New York TRACON, September, 1998; Southern California TRACON, October, 1998; and Chicago and Dallas/Ft. Worth TRACON’s, March, 1999. Likewise, five additional locations — St. Louis TRACON, Minneapolis/St. Paul TRACON, and the new TRACON’s for Atlanta, Potomac and Northern California—are on schedule to receive the enhanced ARTS IIIE platform in the next year.

Finally, another factor in terminal automation has been the replacement of aging controller displays. In the past six months, ARTS Color Displays (ACD’s) have been deployed at New York, Dallas/Ft. Worth and Reagan National airports, with the new Atlanta, Potomac and Northern California TRACON’s scheduled for ACD’s in the next year.

In spite of these successes, however, major challenges still must be overcome. A growing need exists to replace the aging ARTS IIIA automation system, including displays at 54 locations. The ARTS IIIA is virtually on its last leg and well past the ability to be retrofitted. These locations cannot support further growth in air traffic nor handle any improvements to functionality, such as weather enhancements. Notwithstanding the upgrades already conducted at other locations while waiting for STARS development, ARTS IIIA sites cannot stand any further delays in the STARS program. At PASS’ insistence, these locations have now been moved to the front of the STARS waterfall schedule with hardware delivery scheduled to begin in 2003. For these locations to continue meeting today’s demands, much less tomorrow’s, replacement of their automation systems is now critical.

STARS is currently operating at El Paso, Texas, and Syracuse, N.Y. However, this is not the STARS-FSL system, but rather the EDC (Early Display Capability) system. EDC has not replaced the backroom ARTS equipment — only the controller displays using an interface adapter. EDC will eventually become the emergency back-up system to STARS by providing only target and beacon code information to controller displays. While EDC is operational at these smaller facilities, STARS has not proven it can handle the air traffic volume of larger, more congested areas.

Contingency Plan

With all the aforementioned considerations, a “Plan B” must be devised in the event the STARS-FSL system does not meet expectations and cannot begin deployment in *just* 2 years. PASS asks this subcommittee to insist the FAA develop a contingency plan and include us in the planning process. Besides Lockheed Martin’s Common ARTS system, the BDM system has been operational at the High Desert TRACON facility at Edwards Air Force Base for nearly a decade. Each has already proven the capability to deliver a measure of functionality superior to what STARS currently provides. These systems should be seriously considered in the formulation of a contingency plan should “success” under the STARS system not be attainable.

Implementation Schedule

Within the past two weeks, the STARS waterfall schedule has begun to take final form. Until now, the schedule, although ambitious, was not practical. Locations were slated for STARS without having a digital radar capability, which is needed to feed the system, while others were identified for deployment just prior to a scheduled tower renovation or replacement. However, the current waterfall schedule does indicate much better foresight and, in PASS' opinion, with the proper coordination, support and oversight, is actually attainable. The plan calls for 18 locations to begin STARS-FSL installation in 2003, followed by as many as 35 others in each of the following four years. PASS' training plan will deliver the pre-requisite training, STARS-specific training, on-the-job training, performance exams and certifications to each site's terminal automation specialists prior to that site's commissioning. Additionally, this on-site, just-in-time training can be accomplished without adversely impacting the field's ability to support the existing NAS systems during installation and testing.

In order to provide necessary training without adversely impacting NAS support, PASS and the FAA need to plan from a stable schedule. PASS asks this subcommittee to insist the FAA maintain a waterfall schedule that makes sense and provide further assistance, by "protecting" this schedule from outside influences. In the past, there have been specific locations identified by various Members of Congress for replacing and improving air traffic control towers. Recognizing that these improvements are needed, they need to be incorporated with the STARS waterfall schedule. STARS deployment includes upgrading the facility itself and any uncoordinated efforts will only inhibit the ability to meet the STARS planning schedule.

Terminal Business Service

As typically seen in organizations with bureaucratic management, one of the FAA's reactions to the STARS program being over budget and behind schedule has been to restructure. The agency is currently in the process of creating a Terminal Business Service (ATB), which, as presented to PASS, will house requirements, acquisitions and some operations under one roof. The intent is to combine responsibility with accountability and, therefore, improve future terminal modernization efforts. Many speculate a similar initiative will occur for en-route and oceanic modernization. Supposedly, the new unit will house each organization crucial to STARS deployment. Unfortunately, ATB will not incorporate logistics, training or first-level maintenance — essential functions requiring coordination and cooperation for the FAA to correctly acquire major new systems. PASS asks this subcommittee to have FAA address these concerns before beginning to restructure.

Training

As mentioned earlier, PASS has provided the agency with a training plan that will actually make the deployment schedule possible. Training is set to begin in May for the instructor pool that will provide the local instruction. In-depth local training will then be offered in two phases and will be completed at each location by commissioning. The first phase will include two weeks of system theory and 28 hours of hands-on training. The second phase will be three weeks in length, entirely "hands-on", and include administering the necessary performance and certification exams.

Unfortunately, this common sense approach to training did not come without a price. Early in the STARS program, the agency wasted millions of dollars because of its aversion to cooperation,

especially in the training area. STARS-FSL is a network comprised of UNIX-based platforms interconnected with some of the latest LAN technology. In the beginning, the agency spent nearly \$50 million to create a Graphical User Interface (GUI), to avoid PASS' suggestion to provide UNIX training to the workforce. After spending the money, the GUI's interface had to be reconstructed by an Airway Facilities team to reflect actual logical system design, prompting the agency to finally make the decision to offer UNIX training.

Another example pertains to STARS security. In order to ensure the proper security exists for a networked system, PASS has continually insisted on the use of passwords, login screens, aural alarms and the capability to load the software on-site. The agency has only recently recognized the need for security training and Raytheon is currently developing it. In the meantime, much time and money has been lost and the workforce is left with interim, off-the-shelf security training that, at the moment, does not offer proper preparation to run STARS.

Conclusion

PASS wants to thank Chairman Mica, Congressman Lipinski and the Members of the Subcommittee for recognizing the importance of modernizing terminal automation and holding this hearing. If a viable contingency plan is developed, PASS believes a real possibility exists to upgrade the nation's air traffic control towers and TRACON's, which is absolutely critical to ensure proper handling of future aviation system capacity increases and provide air traffic controllers with much-needed functionality improvements.