

## Why GAO Did This Study

Explosives represent a continuing threat to aviation security. The Transportation Security Administration (TSA), within the Department of Homeland Security (DHS), seeks to ensure through the Electronic Baggage Screening Program (EBSP) that checked-baggage-screening technology is capable of detecting explosives. Generally, the explosives detection system (EDS) is used in conjunction with explosives trace detection (ETD) machines to identify and resolve threats in checked baggage. As requested, GAO assessed the extent to which: (1) TSA revised explosives detection requirements and deployed technology to meet those requirements, and (2) TSA's approach to the current EDS acquisition meets best practices for schedules and cost estimates and includes plans for potential upgrades of deployed EDSs. GAO analyzed EDS requirements, compared the EDS acquisition schedule against GAO best practices, and interviewed DHS officials. This is a public version of a sensitive report that GAO issued in May 2011.

## What GAO Recommends

GAO recommends that TSA, among other things, develop a plan to ensure that new machines, as well as those machines currently deployed in airports, will be operated at the levels in established requirements, collect explosives data before initiating new procurements, and develop a reliable schedule for the EBSP. DHS concurred with all of GAO's recommendations and has initiated actions to implement them.

## AVIATION SECURITY

### TSA Has Enhanced Its Explosives Detection Requirements for Checked Baggage, but Additional Screening Actions Are Needed

## What GAO Found

TSA revised EDS explosives detection requirements in January 2010 to better address current threats and plans to implement these requirements in a phased approach. The first phase, which includes implementation of the previous 2005 requirements, is to take years to fully implement. However, deploying EDSs that meet 2010 requirements could prove difficult given that TSA did not begin deployment of EDSs meeting 2005 requirements until 4 years later in 2009. As of January 2011, some number of the EDSs in TSA's fleet are detecting explosives at the level established in 2005. The remaining EDSs in the fleet are configured to meet the 1998 requirements because TSA either has not activated the included software or has not installed the needed hardware and software to allow these EDS to meet the 2005 requirements. Developing a plan to deploy and operate EDSs to meet the most recent requirements could help ensure EDSs are operating most effectively and should improve checked-baggage screening. However, TSA has faced challenges in procuring the first 260 EDSs to meet 2010 requirements. For example, due to the danger associated with some explosives, TSA and DHS encountered challenges in developing simulants and collecting data on the explosives' physical and chemical properties needed by vendors and agencies to develop detection software and test EDSs prior to the current acquisition. Also, TSA's decision to pursue EDS procurement during data collection complicated both efforts and resulted in a delay of over 7 months for the current acquisition. Completing data collection for each phase of the 2010 requirements prior to pursuing EDS procurements that meet those requirements could help TSA avoid additional schedule delays.

TSA has established a schedule for the current EDS acquisition, but it does not fully comply with best practices, and TSA has not developed a plan to upgrade its EDS fleet. For example, the schedule is not reliable because it does not reflect all planned program activities and does not include a timeline to deploy EDSs or plans to procure EDSs to meet subsequent phases of the 2010 requirements. Developing a reliable schedule would help TSA better monitor and oversee the progress of the EDS acquisition. TSA officials stated that to meet the 2010 requirements, TSA will likely upgrade many of the current fleet of EDSs as well as the first 260 EDS machines to be purchased under the current acquisition. However, TSA has no plan in place outlining how it will approach these upgrades. Because TSA is implementing the 2010 requirements in a phased approach, the same EDS machines may need to be upgraded multiple times. TSA officials stated that they were confident the upgrades could be completed on deployed machines. However, without a plan, it will be difficult for TSA to provide reasonable assurance that the upgrades will be feasible or cost-effective.