



Highlights of [GAO-04-890](#), a report to congressional requesters.

Why GAO Did This Study

Conducting research and development (R&D) on technologies for detecting, preventing, and mitigating terrorist threats is vital to enhancing the security of the nation's transportation system. Following the September 11, 2001, terrorist attacks, Congress enacted legislation to strengthen homeland security, in part by enhancing R&D. The Transportation Security Administration (TSA) and the Department of Homeland Security (DHS) are the two federal agencies with primary responsibility for transportation security.

GAO was asked to assess the transportation security R&D projects that TSA, DHS, and other agencies have funded and assess how TSA and DHS are managing their transportation security R&D programs according to applicable laws and best practices.

What GAO Recommends

GAO is recommending that TSA and DHS improve their transportation security R&D management by conducting some basic research, completing their strategic planning and risk assessment efforts, developing a management information system, and better coordinating with other federal agencies and reaching out to the transportation industry. DHS, TSA, and DOT generally agreed with the report's findings and recommendations.

www.gao.gov/cgi-bin/getrpt?GAO-04-890.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Kate Siggerud at (202) 512-2834 or siggerudk@gao.gov.

TRANSPORTATION SECURITY R&D

TSA and DHS Are Researching and Developing Technologies, but Need to Improve R&D Management

What GAO Found

For fiscal years 2003 and 2004, TSA and DHS funded over 200 R&D projects designed to develop technologies for enhancing security in most modes of transportation. In fiscal year 2003, TSA spent 81 percent of its \$21 million transportation security R&D budget for aviation projects, and DHS spent about half of its \$26 million for projects related to more than one mode of transportation. In fiscal year 2004, TSA continued to budget most of its \$159 million for aviation, and DHS also budgeted most of its \$88 million for aviation, as shown in the table below. According to the National Research Council, federal R&D programs should include some basic research, but TSA and DHS do not appear to be funding any basic research for transportation security. TSA and DHS have not estimated deployment dates for the vast majority of their R&D projects. Other federal agencies, such as the Department of Transportation (DOT) and the National Aeronautics and Space Administration, also funded some transportation security R&D projects. Several members of an expert panel on transportation security and technology that GAO convened believed the distribution of R&D projects by transportation mode was reasonable, while others believed that aviation has been overemphasized at the expense of maritime and land modes.

TSA's and DHS's Transportation Security R&D Funding by Mode, Fiscal Years 2003 and 2004

Transportation mode	TSA		DHS	
	Fiscal year 2003	Fiscal year 2004	Fiscal year 2003	Fiscal year 2004
	(obligated)/(%)	(budgeted)/(%)	(obligated)/(%)	(budgeted)/(%)
Aviation	\$17,101 (81.1)	\$126,487 (79.5)	\$3,709 (14.3)	\$63,240 (71.9)
Highway	0 (0.0)	0 (0.0)	1,052 (4.1)	3,000 (3.4)
Maritime	0 (0.0)	9,350 (5.9)	3,474 (13.4)	1,626 (1.8)
Multimodal	3,819 (18.1)	22,242 (14.0)	12,630 (48.8)	20,117 (22.9)
Pipeline	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Rail	169 (0.8)	1,096 (0.7)	0 (0.0)	0 (0.0)
Transit	0 (0.0)	0 (0.0)	5,000 (19.3)	0 (0.0)
Total	\$21,089 (100.0)	\$159,175 (100.0)	\$25,865 (100.0)	\$87,983 (100.0)

Source: GAO analysis of TSA and DHS data.

TSA and DHS have made some progress in managing their transportation security R&D programs according to applicable laws and R&D best practices, but neither agency has fully complied with the laws or implemented the best practices. For example, neither agency has prepared a strategic plan for R&D that contains measurable objectives. In addition, although TSA has completed threat assessments for all modes, it has not completed vulnerability and criticality assessments. DHS also has not completed risk assessments of the infrastructure sectors. Furthermore, both TSA and DHS lack complete, consolidated data for managing their R&D projects. Finally, although TSA and DHS have made some efforts to coordinate R&D with other federal agencies, their outreach to consider the concerns of the transportation industry has been limited.