

March 1996

# TERRORISM AND DRUG TRAFFICKING

## Threats and Roles of Explosives and Narcotics Detection Technology







United States  
General Accounting Office  
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National Security and  
International Affairs Division

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March 27, 1996

The Honorable Benjamin A. Gilman  
Chairman  
The Honorable Lee H. Hamilton  
Ranking Minority Member  
Committee on International Relations  
House of Representatives

The Honorable Alfonse M. D'Amato  
United States Senate

The ability to detect explosives and narcotics is increasingly important to U.S. national security. In response to your request, we are providing information on the first phase of our review, which focused on (1) the threats of terrorist attacks to civil aviation and of narcotics trafficking in the United States, (2) strategies developed to meet these threats, and (3) planned detection technology deployments to combat terrorism and interrupt the shipment of narcotics. The second phase of our work will cover technology development and both domestic and overseas deployment. The third will cover impediments to more widespread deployment.

As you requested, we limited our efforts to ports of entry into the United States, including airports. On November 7, 1995, we briefed your staff on the results of this phase of our work. This report summarizes and updates the information presented in that briefing.

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## Background

The threats posed by terrorists' use of explosives and by narcotics trafficking differ in significant ways. The bombing of an aircraft is still a rare event, but the consequences are catastrophic. By contrast, narcotics trafficking is a frequent occurrence and a single shipment has far different consequences than an aircraft bombing. The Federal Aviation Administration (FAA) is responsible for defining the level of threat to civil aviation security, based upon assessments from law enforcement and intelligence agencies, and prescribing countermeasures, but airlines and airports are responsible for implementing those measures. Unlike aviation security, narcotics countermeasures are the responsibility of many agencies at all levels of government. The FAA is developing explosives detection technology to aid in countering threats to aviation. The U.S. Customs Service, the Department of Defense (DOD), and the Office of

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National Drug Control Policy (ONDCP), which coordinates counterdrug enforcement research and development within the government, are participating in developing nonintrusive detection technology to aid in countering narcotics trafficking.

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## Results in Brief

The intelligence community believes that the threat of terrorism within the United States has increased. Although no specific aviation threat is known, experts believe that aviation is likely to remain an attractive target for terrorists. According to the Federal Bureau of Investigation (FBI), terrorist attacks could come from groups that are difficult to infiltrate and control. Information was uncovered in January 1995 about plans by such a group for multiple attacks on specific U. S. flights in Asia. Narcotics trafficking is a continuing concern. While cocaine has been the primary threat since 1985, heroin is becoming more of a threat. The intelligence community believes traffickers are presently most active on the Southwest border of the United States and use vehicles such as cars, trucks, and tractor-trailers carrying containers to smuggle narcotics.

To counter these threats, the FAA and Customs have developed strategies that rely on intelligence information; various procedures, such as profiling and targeting high-risk shipments for examination; and technologies. The FAA relies on a strategy of “tailored response” to mandate security procedures commensurate with the level of threat at specific places and times. The terrorist threat overseas is higher, and therefore, the FAA mandated more stringent security measures for international flights, including use of conventional X-ray screening for checked baggage. Customs’ strategy includes disseminating intelligence on drug trafficking, targeting high-threat conveyances and cargoes, and using detection technologies; the current emphasis is on the Southwest border and particularly on trucks, private vehicles, and their contents.

Concealed explosives and narcotics are difficult to detect using technologies currently deployed in the United States. Tests of conventional X-ray screening conducted by the FAA in May 1994 showed that there is a low probability of detecting a moderately sophisticated explosive device. Since then, the FAA has certified an advanced automated explosive detection system, but has not required deployment of that system. The FAA’s preliminary estimates are that the cost of purchasing and installing the system at the 75 busiest domestic airports could range from \$400 million to \$2.2 billion, depending on the mix of technologies and procedures. Customs has one truck X-ray system at the Southwest border

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for detecting narcotics and plans to acquire others at a total cost of about \$38 million. Its plans for seaports and the use of mobile systems have not been clearly defined. Other countries, such as the United Kingdom and France, are already deploying advanced technologies intended for explosives or narcotics detection.

Briefing section I provides more details about threats to aviation and the role of detection technology to counter terrorism. Briefing section II deals with the drug trafficking and the technology to detect drugs.

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## Agency Comments

FAA, ONDCP, DOD, Customs, Central Intelligence Agency (CIA), Department of Justice, FBI, and Drug Enforcement Administration (DEA) reviewed the information in a draft of this report and provided oral comments. They generally agreed with the facts presented and their suggested technical corrections have been incorporated where appropriate.

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## Scope and Methodology

To obtain information for this report, we met with officials from 17 departments and agencies, including the FAA, Customs, and major agencies in the counterterrorism and counternarcotics communities. In order to identify the threats of terrorist attacks to civil aviation and of narcotics trafficking in the United States, we interviewed officials and obtained documentation primarily from the CIA; the FBI; the FAA; the ONDCP; Customs; and the DEA. As a part of this effort, we analyzed studies prepared by the FAA and DEA to identify the greatest vulnerabilities to both ensuring civil aviation safety and interdicting narcotics. We also reviewed strategies developed by the FAA and Customs and identified the mix of intelligence, procedures and technologies needed to defeat their respective threats. Finally, we met with FAA and Customs officials to discuss their plans to acquire detection technologies and reviewed their plans to acquire these technologies. Where possible, we made site visits and observed the detection technologies actually being used to detect explosives or narcotics.

We performed this first phase of work between May 1995 and February 1996 in accordance with generally accepted government auditing standards.

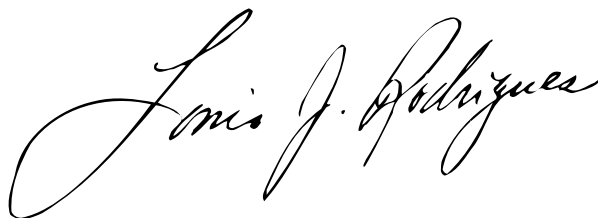
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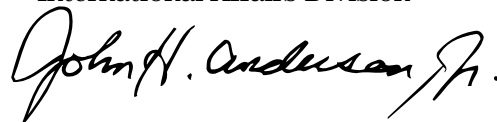
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issue date. At that time, we will send copies to the Chairmen, Senate and House Committees on Budget, on Appropriations, and on Transportation; Senate Armed Services Committee and House National Security Committee; and Senate Finance Committee and House Ways and Means Committee; the Secretary of Defense; the Administrators, FAA and Drug Enforcement Administration; the Commissioner, U.S. Customs Service; the Directors, ONDCP, CIA, and FBI; and the Attorney General, Department of Justice. Copies will also be made available to others upon request.

If you or your staffs have any questions concerning terrorism or drug trafficking issues, please contact Louis Rodrigues at (202) 512-4841. If you have specific questions regarding aviation security or FAA programs, please contact John Anderson, Jr., at (202) 512-2834. Major contributors to this report are listed in appendix I.



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Major Contributors to		
This Report		

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## Abbreviations

CIA	Central Intelligence Agency
DEA	Drug Enforcement Administration
DOD	Department of Defense
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
ONDCP	Office of National Drug Control Policy



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# Threat to Aviation and Role of Explosives Detection Technology in Countering Terrorism

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## GAO Explosives' Threat to Aviation

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- Intelligence community's role
  - Change in pattern of terrorism
  - Vulnerabilities
  - Aviation as a target; Asia threat as an example
- 

The Federal Aviation Administration (FAA) evaluates information collected and analyzed by the intelligence community to establish levels of terrorist threat and to determine appropriate countermeasures. Based on classified communications that the FAA received, it issued directives beginning in August 1995 to raise temporarily the level of domestic aviation security.

Unclassified reporting indicates changes in the pattern of terrorism. The terrorism threat within the United States is increasing. In 1994, the State

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**Briefing Section I  
Threat to Aviation and Role of Explosives  
Detection Technology in Countering  
Terrorism**

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Department reported that attacks by state-sponsored, secular terrorist groups declined, but attacks increased from radical fundamentalist groups, who operate more autonomously. The Federal Bureau of Investigation reported in 1994 that the most important development in international terrorism in the United States was the emergence of international radical terrorist groups with an infrastructure that can support terrorist activities. These groups are more difficult to infiltrate, and, consequently, it is also more difficult to predict and interdict their attacks.

Since 1991, the FAA has completed three studies to prioritize the specific methods that terrorists might adopt to attack aviation and to identify countermeasures. Although the studies are classified, the unclassified conclusion has been consistent: the greatest threat is explosives in all types of concealment. The FAA believes the greatest vulnerability is concealment of explosives in checked baggage. About 450 million passengers board domestic flights each year, and the volume of their checked bags is enormous. On domestic flights, controls over checked luggage are not as stringent as on international flights. The FAA is funding the development of technology to screen checked bags, passengers, carry-on luggage, cargo, and mail.

A recent threat in Asia indicates the potential extent of terrorists' motivation and capabilities. Information was accidentally uncovered in early January 1995 about plans for multiple attacks on specific U.S. flights in Asia. Existing extraordinary security procedures in place at international airports would not have countered the specific threat; consequently, the FAA further mandated additional security measures at specific locations overseas. Officials told us that they rarely have the advantage of a detailed, verifiable plot to target U.S. airlines and that the terrorists were aware both of airport vulnerabilities and how existing security measures could be defeated. Security was returned to December 1994 levels in most locations following the arrests of the plot leaders. The threat in Asia has caused the FAA to increase research and development funding for certain types of screening.

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## GAO Terrorism Counterthreat Strategy

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- "Tailored response"
  - Contingency plan
  - Heightened security
  - Raising the baseline
- 

The FAA's counterthreat strategy is to mandate security measures commensurate with, or tailored to, the level of threat at specific places and times. The threat overseas is higher than domestically. On all international flights, the FAA requires U.S. carriers to implement the International Civil Aviation Organization standards as a minimum, including the inspection of carry-on passenger baggage and passenger bag match. Bag matching is a procedure to ensure that a passenger who checks a bag also boards the flight; if not, the bag is removed. The FAA also requires additional, more

stringent measures—including passenger interviews and 100 percent checked baggage screening and supplementary carry-on baggage screening measures—at all airports in Europe and the Middle East, and many airports elsewhere. Further, the FAA requires, depending on the destination, various security controls for checked bags on all international departures by U.S. and foreign carriers from the United States.

For flights within the United States, baseline security measures include the use of walk-through metal detectors for passengers and X-ray screening of carry-on luggage augmented by procedures from a written contingency plan developed by the FAA in coordination with the aviation industry. The plan describes a wide range of procedures that can be invoked depending on the nature and degree of the threat. Among these procedures are passenger bag match and passenger profiling. Profiling is a method of identifying potentially threatening passengers, who are then subjected to additional security measures. Profiling reduces the number of passengers requiring additional security measures.

For domestic flights, the heightened security measures currently in effect are at their highest level since the Gulf War. They have included surveillance of airport operations, parking restrictions, and stricter control over baggage.

Senior FAA officials believe that some security measures that are now invoked only in higher threat conditions should be incorporated into the everyday baseline security for domestic flights. However, these officials told us the costs and impacts of these measures would be significant; for example, the FAA estimates that incorporating bag matching in everyday security measures could cost up to \$2 billion. They said that standard cost-benefit analyses would likely reject these measures, and consequently, they believe a consensus is needed among industry, Congress, and the executive branch, before they initiate rule-making procedures to require these measures. Further, they believe that without consensus the rule making would fail.

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GAO Planned Explosives Detection  
Technology Deployment

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- Congressional mandate
  - Status of explosives detection technologies
  - FAA's planned approach
  - Costs and impacts of new technology
- 

In the 1990 Aviation Security Improvement Act, Congress directed the FAA to (1) accelerate explosives detection research and development, which had been ongoing since 1977, and (2) certify explosive detection systems prior to mandating their deployment. Congress further set November 1993 as a goal for deploying new security technology and procedures to counter terrorism. In implementing its certification responsibilities under the act, the FAA published criteria for explosive detection technology in September 1993 after an extensive examination of the threat to aviation

and after coordination with other federal agencies and the scientific and academic communities. The criteria require that a system certified for use on checked baggage for international flights meet specific performance requirements, using testing protocols developed by the National Academy of Sciences, to automatically detect concealed explosives. The FAA believes that congressional direction to develop performance requirements and testing protocols in conjunction with the scientific community contributed to delaying the introduction of new technology.

Conventional X-ray devices, currently used domestically for international flights, have performance limitations and are dependent on a human operator's ability to interpret images for potential threats. These X-rays performed poorly in a special assessment that the FAA conducted in May 1994, with five U.S. carriers at four major domestic airports that were origination points for international flights. This assessment used moderately sophisticated, simulated explosive devices.

Subsequent to its special domestic assessment, the FAA certified one automated explosives detection system. The FAA does not plan to mandate the use of this system until two or more competing systems have been certified and airport demonstrations have been successfully completed. Once that happens, the FAA plans a phased-in deployment because of manufacturers' constraints on large-scale production and the difficulty of integrating explosives detection equipment and procedures into existing baggage handling systems. The FAA expects to mandate the deployment of certified explosives detection systems beginning no earlier than 1997. Some countries, such as the United Kingdom, Israel, and Belgium, are already deploying new advanced automated technologies.

The cost to acquire new technology is uncertain but could be substantial. The FAA is developing a model to estimate the systemwide costs of a variety of checked baggage screening methods, including deployment of certified technology at the busiest domestic airports. Preliminary FAA estimates are that one-time acquisition and installation costs of the certified system for the 75 busiest airports could range from \$400 million to \$2.2 billion, with continuing annual operating costs of 10 percent or less. We have not verified these estimates, which will be further refined through joint efforts between the FAA and the aviation industry. Final costs will depend upon several factors, including the extent to which passenger profiling is used. According to FAA officials, profiling reduces the number of bags screened by about 80 percent.

# Drug Trafficking and Narcotics Detection Technology

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## GAO Narcotics Threat

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- Counternarcotics community role
  - Changes in patterns of narcotics trafficking
  - Vulnerabilities
- 

Customs relies on intelligence collected and analyzed by the counternarcotics community as well as that gathered by its field agents, inspectors, and analysts from investigations and seizures to establish a general level of threat and to develop profiles for targeting suspected threats.

The intelligence community believes cocaine has been the primary narcotics threat since about 1985; however, heroin is becoming more of a



threat. Most of the heroin entering the United States comes from Southeast Asia, Colombia, and Mexico. Crack-cocaine users are increasingly using heroin to soften the impact of the “crash” that often follows a crack-cocaine binge. Heroin now comes in a smokable form that eliminates the perceived risk of AIDS from needles.<sup>1</sup>

According to the Commissioner, U.S. Customs Service, the locations and means of cocaine smuggling have changed over the years because traffickers have tremendous flexibility. Miami and south Florida had been the primary locations and aircraft and maritime vessels the means, until the government’s interdiction efforts caused an increase in trafficking at the Southwest border of the United States and use of trucks, tractor-trailers, containers and private vehicles. Intelligence agencies estimate that 70 percent of cocaine coming into this country enters via the Mexican border. This region is currently the primary focus of Customs narcotics strategy.

The job of interdicting narcotics at the Southwest border is enormous. The United States and Mexico share almost 2,000 miles of border. Customs operates 38 ports of entry on that border through which daily pass an average of about 240,000 trucks, cars, and other vehicles, and 640,000 pedestrians. The North American Free Trade Agreement is expected to increase the flow of trade between the United States and Mexico, thus increasing the workload for Customs along the Southwest border.

Customs and the Drug Enforcement Administration (DEA) view containerized commercial cargo transported by trucks and ships as posing a serious or substantial threat. Cargo inspection technologies are particularly important because of the millions of containers that enter the United States through hundreds of land and sea ports of entry. Customs currently inspects less than 5 percent of these containers. Currently, four people could be required for up to 8 hours to unload, search, and reload a single 40-foot container.

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<sup>1</sup>For additional information on the heroin threat, see our report, Drug Control: U. S. Heroin Program Encounters Many Obstacles in Southeast Asia (GAO/NSIAD-96-83, Mar. 1, 1996).

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## GAO Narcotics Counterthreat Response

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- Reducing production
  - Interdicting movement
  - Reducing demand
  - Preventing money laundering
- 

The U.S. response to the narcotics threat has generally focused on the cycle of drug trafficking from reducing the production of drugs, to disrupting their movement, to reducing demand, and to preventing money laundering. Until 1993, the government emphasized interdiction, but now the emphasis is more on production, demand reduction, and money laundering.

The emphasis on reduced production efforts include initiatives to eradicate crops in the source countries, dismantle cocaine cartels, interdict drug movements, and provide such things as intelligence and technical support to major source nations and transit countries. On November 3, 1993, the President signed a decision directive that announced a planned shift of emphasis from interdiction to the source countries. Within interdiction, the directive emphasized more selective and flexible interdiction programs in the transit zone and near the U.S. border.

The interdiction efforts include disrupting air routes within source countries and between transit countries, hardening the ports of entry in the Southwest, increasing use of technology by Customs, and building fences by the U.S. Border Patrol.

Demand reduction efforts include both drug treatment and prevention. Treatment efforts attempt to reduce the number of chronic, hardcore drug users by focusing on improving the effectiveness of drug treatment provided in communities, jails, and prisons. Prevention efforts attempt to reduce demand by keeping new users from entering the pipeline to chronic, hardcore drug use. These efforts include such things as advertising campaigns to deglamorize drugs and various community and school-based programs.

Finally, the government has significantly stepped up its efforts to prevent the narcotics traffickers from laundering their profits. Money laundering involves disguising the funds derived from narcotics sales and other crimes so that they can be used without detection of the illegal activity that produced them. In October 1995, the President announced that the executive branch would consider imposing sanctions against nations that assist with money laundering to prevent them from doing business in the United States.

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## GAO Customs Counterthreat Framework

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- Intelligence
- Targeting
- Technologies

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Customs' counterthreat framework along the Southwest border includes (1) disseminating intelligence on narcotics trafficking, (2) targeting commercial and private conveyances, and (3) using narcotics detection technologies.

Customs is receiving intelligence from such sources as the Department of Defense (DOD) and DEA on how drugs are smuggled into the United States from Mexico. Customs will also place interdisciplinary teams at field

locations to enhance the collection, exploitation, and dissemination of intelligence within the Customs intelligence system.

Since Customs cannot examine all shipments arriving in the United States, it targets high-risk shipments for examination. Customs has had experience with automated targeting systems and is now developing a prototype advanced targeting model to operate on a national basis. The model is being developed with Customs' own funding and a limited amount of funding from the Office of National Drug Control Policy (ONDCP).

Since 1991, DOD has spent over \$240 million to develop nonintrusive cargo inspection systems and counterdrug technologies for Customs, DEA, and other federal agencies. Recently, DOD funding provided Customs with an advanced, low energy X-ray system at Otay Mesa, California, to do nonintrusive inspection of empty cargo containers and trucks. Since 1975, Customs has developed and procured many smaller technology devices, including mobile X-ray vans for inspecting break-bulk cargo and hand-held range finders for detecting false walls in containers.

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GAO Planned Technology Deployment for  
Counternarcotics

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- Land ports of entry
  - Seaports
  - Mobile inspection systems
  - Systems trade-off study
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In June 1995, Customs provided several members of Congress with a long-term plan for procuring detection technologies that includes placing 12 fixed-site, truck X-ray systems costing about \$38 million along the Southwest border. Customs has one truck X-ray system operating at Otay Mesa, California, and is using fiscal year 1995 and fiscal year 1996 funds to acquire four more. The remaining seven systems may be procured in fiscal years 1997 and 1998. The conference report to the Fiscal Year 1996 National Defense Authorization Act (P.L. 104-106) urged the Secretary of

Defense, through normal reprogramming procedures, to use up to \$25 million of the funds for law enforcement agency support, to procure the X-ray systems. DOD is presently considering its options to use \$10 to \$15 million for the purchase of these X-ray systems.

In addition, Customs determined that there were 13 high-threat seaports at which some cargo container inspection technology is needed. However, Customs currently has not identified a suitable container inspection technology for seaports.

DOD is developing mobile inspection systems for Customs. Initially, these systems were intended for the Southwest border. Since Customs will now deploy fixed-site, low-energy X-ray systems there, a senior Customs official stated that the agency has to find new applications for these mobile systems. He believes possible applications are at airports where cargo and baggage containers could be inspected by these systems, or at northern ports of entry.

A contractor is conducting a congressionally mandated study for ONDCP, estimated to be completed in May 1996, on cost and benefit tradeoffs over life cycles of various narcotics detection technologies. Preliminary results indicate that the highest priority should be given to funding development of intelligent targeting software to identify high-risk shipments for examination. Additional results indicate (1) low-energy X-rays, such as those being proposed by Customs for the Southwest border, may be useful for empty trucks and possibly pallet-sized cargo; (2) some ports of entry may need high-energy X-ray systems like the one that had been tested at the now abandoned Tacoma, Washington, facility or the ones deployed in France, China, and Germany; and (3) nonintrusive inspection systems may have some benefits for trade compliance. We intend to evaluate the completed study as part of the second phase of our review, which will deal specifically with technology development and both domestic and overseas deployment.

# Major Contributors to This Report

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