

FINDINGS

Major findings fall into four general categories: inadequate direction; data deficiencies; coordination problems; and technological limitations. These categories are described below.

Inadequate Direction

The Nation drug interdiction efforts suffer from a lack of clear direction.

Such direction is necessary for assuring that available resources are devoted to the highest priority problems. It is also necessary if the various agencies are to design and carry out effective, coordinated interdiction strategies.

Individual enforcement agencies have generally chosen those interdiction goals that they are best organized and equipped to accomplish. For example, route denial is a goal of the Coast Guard, but no attempt is made to evaluate the ease or difficulty of a smuggler changing routes or modes if one of many is closed. More attention to priorities is essential when faced with a situation where the problems are much greater than the resources available.

A goal of interdiction is a reduction in illegal traffic—i.e., the total quantity of illegal drugs that are imported. While this goal appears simple, it is considered, by most, impossible to measure accurately. Which actions would best lead toward that goal is also a matter of considerable debate. Some believe that since international narcotics traffickers are immensely wealthy and powerful criminal organizations, the law enforcement effort should be focused on apprehending the leaders, breaking up the groups, and seizing their assets. In this way, a sizable reduction in smuggling would logically result. Others believe that seizing drugs would be more effective since this would force prices up and reduce demand. This debate about cause and effect has left individual agencies to sometimes stress individual goals. This highlights the need for more central direction.

Measures of effectiveness for interdiction are difficult, if not impossible, to quantify. One commonly stated interdiction measurement has been total drug seizures or seizure rates. While seizure quantities can be easily collected, they are difficult to interpret. No seizures may indicate great success—that



Photo credit: U.S. Coast Guard



Photo credit: Border Patrol

drugs are no longer being smuggled through a particular location. Or, a lack of seizures may indicate that smugglers are circumventing interdiction efforts. In fact, the limited seizure and trafficking data available indicate seizures increasing as smuggling increases, Agencies have not attempted to rou-

tinely collect or analyze information that would help to evaluate interdiction strategies or technologies.

Data Deficiencies

Data on drug smuggling, the trafficking system, and interdiction programs are inadequate to make informed selection of best strategies, optimum allocation of enforcement resources, and technical design and management decisions for the future.

Trafficking Data

Present estimates of the quantity of drugs coming into the United States and their means of transport are based on conflicting data. Prior year estimates of total quantities being smuggled are made annually by the National Narcotics Intelligence Consumers Committee (NNICC) and are derived from estimates of source country production, analyses of data on seizures accumulated on a year-by-year basis, and analyses of drug consumption indicators. The U.S. Customs Service makes 1-year projections of the drug smuggling threat. The estimates from NNICC (which consists of 11 Federal agencies) and the Customs estimate rarely agree and they do not attempt to make year-to-year or retrospective analyses.

Seizure Data

Data on drug seizures are collected and compiled in a variety of ways by each agency involved. The El Paso Intelligence Center (EPIC) is the repository of seizure data from all sources but, because of agency differences over credit for seizures, EPIC never identifies the agency responsible for seizures. OTA was unable to resolve a number of conflicts and contradictions between seizure data provided by various agencies. Some of the reasons for contradictory data appear to be double-counting and differing standards of estimating. The double-counting problem may have been eliminated by a new system initiated in October 1986. However the data available cannot be reliably attributed to specific interdiction efforts by individual programs or agencies.

Price Data

Data on drug prices are collected by the Drug Enforcement Administration (DEA) and appear to

be consistent and reliable. OTA could not find any agency making analytical use of price data to provide indicators of the effect of law enforcement efforts. In the past, price/purity data were used as goals and measurement of success. While such a measurement is vague, it has at least as much value as seizures.

Sampling Techniques

Neither Coast Guard nor Customs Service has made systematic use of statistical sampling techniques to project the levels of drug trafficking and evaluate the effectiveness of interdiction technologies and strategies. No data are collected with that end use in mind.

Data Collection

Reliable and consistent data can contribute both to effective resource allocation and to the agencies' operational interdiction strategies. To be most useful, the appropriate information must be collected in a form consistent across agencies and time, and subjected to consistent, continuing analysis. One example of the data problem can be found at ports where customs inspectors report drug seizures on a common form. At present, this information has little use except totalling the number and quantity of seizures. The forms do not include accessible information on why or how the inspection leading to seizure occurred. Possible reasons include: prior intelligence, the courier or cargo fit a suspect profile, or the inspection was random. Analysis of such information could indicate areas of high payoff.

Coordination Problems

Fragmented command, control, and jurisdictional responsibilities characterize the Federal drug interdiction enterprise and are a major impediment to the adoption of existing and new technologies for drug interdiction.

Headquarters Coordination

Problems with interagency coordination and cooperation exist at every level. At the Washington level, coordination is facilitated by such groups as the Drug Enforcement Policy Board chaired by the Attorney General and the National Narcotics Border Interdiction System (NNBIS) chaired by the

Vice President. Coordination and cooperation occur through meetings and the development of consensus. Decisionmaking, however, is usually slow. Very little comprehensive planning is done—e.g., setting priorities among agencies or development of strategies needed for total interdiction system designs.

Regional Coordination

Regional NNBIS groups have been established in seven locations. They include representatives of the regional offices of drug enforcement agencies. The degree of cooperation and coordination through NNBIS is good in some regions and poor in others.

Operational Coordination

At the operational level there are a diversity of mechanisms used to facilitate cooperation and coordination among drug enforcement agencies. Successful cooperation and coordination generally rests on specific arrangements made by the officials in charge of regional enforcement units. Impediments to cooperation and coordination at the regional level are several. Each agency has its own structure, goals, operating style, and communication system. For example, the Coast Guard and the Marine Branch of the Customs Service use different communication frequencies, so operational units cannot communicate directly with each other. Even in the case of the marine operational system, the Blue Lightning Operations Center in Miami, conceptually a joint Customs-Coast Guard command and control center, there is not yet a capacity to communicate directly with Coast Guard vessels.

Multi-Mission Agencies

The multiple and sometimes conflicting operational goals of agencies impede cooperation and coordination. The agencies responsible for interdiction have other important responsibilities. The Drug Enforcement Administration emphasizes eradication, investigation, arrest, and conviction of key drug smugglers. DEA also has a major role in providing intelligence for interdiction.

Shared Jurisdiction

Because both Coast Guard and Customs share responsibility for marine interdiction within the 12-

mile zone, very close cooperation is necessary for efficient operation. When this cooperation and coordination is lacking, present interdiction efforts suffer.

Technology Operations

With the introduction of new long-range surveillance systems that are capable of locating both air and sea potential targets, opportunities exist to centralize the operation of these systems in one agency and the need for much improved coordination and cooperation becomes even greater.

Technological Limitations

No single existing or potential technology has been identified that would, by its simple addition, solve the Nation overall drug interdiction problem. Many opportunities exist for technologies to make incremental contributions to the Nation interdiction program. These opportunities range from improvement in technical performance, to procurement of increased numbers of existing technologies, to more effective use of technologies, to development of new, advanced systems.

Whenever technological improvements result in more effective interdiction, the drug traffickers will take rapid and, based on their record, effective actions to neutralize that effectiveness. These actions can range from changing smuggling routes and/or modes of transport to the use of countermeasures.

The contribution to drug interdiction from all existing and proposed technologies is limited by three factors: 1) inherent technical limitations (e.g. range, discrimination, speed); 2) the personnel, training, and financial resources to utilize and maintain the technologies in an optimal way; and 3) the strategies and operational procedures which govern the use of the technology.

No Single Technology Solution

Single technologies may be very effective in stopping smuggler's from using one mode of transport for a particular drug, but smugglers will likely respond by shifting to another transport mode. For example, a nuclear magnetic resonance (NMR) device developed by Customs can detect certain drugs within small packages directly. It may be used to

search all letter mail for smuggling cocaine and heroin. But there remain many ways to smuggle these drugs that are not easily detected with current or emerging technologies. As another example, installing an “acoustic fence” at marine choke points could help prevent the use of such routes by marijuana smugglers, but without other measures to place pressure on other routes or modes of transport, the availability of imported marijuana is not likely to change over the long term. Some individual technologies may be useful in sorting potential smuggling targets, but may have a high false alarm rate. Use of additional sensors in a multiple screening system could potentially help reduce the false alarms to a manageable level.

Limited R&D

None of the drug interdiction agencies has significant financial, organizational, or personnel resources devoted specifically to developing drug interdiction technologies. Without a comprehensive development, test, and evaluation program for major technologies, future performance will be questionable and resources may be wasted.

Needed Test and Evaluation

Many recently acquired technologies devoted to border interdiction by the drug law enforcement agencies are not yet deployed operationally and have not been integrated into an effective, comprehensive system designed to counter the formidable threat posed by international narcotics traffickers. These new technologies require considerable operational evaluations, operator training, and an overall system design before their potential can be realized. Most new systems have not had sufficient field testing to make judgments about their effectiveness. Lacking a uniform and comprehensive approach for the total Federal effort, each new sensor, platform, or other technology will have only limited future impact.

Limited Technologies to Date

Most of the field operators of the agencies involved in drug interdiction to date have had limited technologies beyond basic vehicles, sensors, and simple inspection tools for carrying out the very labor-intensive tasks required. Success in drug in-

terdiction in recent years has usually resulted from hard work rather than technological advances.

Many Technologies Available for Enhancing Specific Capabilities

There are a number of technologies and technological systems that are not now in routine/general use and have the potential of enhancing Federal drug interdiction efforts. Among these are: modern airborne radar systems for both air and sea surveillance (e. g., APS-137, APS-138); tethered Aerostat (balloon) borne radars, both land- and ship-based for both air and surface surveillance; integrated airborne sensor systems such as Coast Guard’s AIREYE—including radar, infrared and laser enhanced TV; over-the-horizon radar systems that could provide thousands of miles of coverage from one land-based station; remotely piloted vehicles with advanced infrared and optical sensors for surveillance; acoustic sensing systems for ship detection; long-line, land border, intrusion sensors using seismic or other techniques under development; high-performance vehicles (air, land, and sea) for tracking and apprehension of suspected smugglers; improved X-ray and other nondestructive devices for inspection of cargo and baggage at ports; and *advanced* vapor analysis systems for finding drugs carried by persons or in baggage and cargo.

The list of specific technological improvements is so long and so interconnected that no single or even small group of equipment can be adopted effectively without a total system design. For a surveillance and detection technology to be effective, both a command and control network strategy for apprehension is needed first. For a baggage inspection device to be effective a system for selecting and handling the huge flow of goods to be inspected is needed. A fixed system directed at one aspect of the drug trafficking threat will not be effective for very long when the smuggler has the option of rapidly switching tactics. Federal decisions on basic strategies and comprehensive system designs have not been made to the extent necessary for a cost-effective and appropriate selection of new technologies for future drug wars.

Opportunities for Enhanced Surveillance

When considering the problem of smuggling across borders outside of official ports of entry, the

greatest opportunity for enhanced technological capabilities is in the area of surveillance of aircraft, vessels and other vehicles.

- Radar coverage of the Nation's Southern border that is capable of detecting aircraft used for smuggling is very limited. First, most general surveillance radar are not capable of detecting aircraft flying at low altitudes and slow speeds. Smugglers fly at low altitudes and slow speeds precisely to take advantage of this limited radar coverage. Second, some areas of the Southern border have no radar coverage. Third, in those limited areas where appropriate radar capabilities exist, surveillance is not continuous. Intermittent surveillance results from: limited personnel to operate ground-based radar, the relatively short endurance of aircraft with surveillance radar, and the fact that fixed aerostat-mounted radars can be easily seen and avoided by smuggler aircraft.
- Desired air and surface surveillance capabilities would have: 1) broad area coverage, 2) long-distance detection (maximize lead time for mobilizing pursuit and capture forces), 3) maximum capability for discrimination among aircraft or vessels (size, speed, etc.), and 4) enhanced short-range sensors for inspection of vessels.
- Among the currently available surveillance systems, aerostat-mounted radar is particularly attractive for filling low-altitude gaps at borders and for extending sea surveillance coverage offshore. Advanced airborne radars are attractive for providing long-range coverage and flexibility of deployment. Over the longer term, comprehensive surveillance coverage of the Nation's Southern border may be available from over-the-horizon radar and a zone defense approach to the network design.
- Surveillance capability provided by Air Force and Navy airplanes and Navy vessels has the potential for contributing to the effectiveness of drug interdiction. However, military equipment and operators are not always suited to the drug enforcement mission; equipment modifications and personnel training is often necessary. DOD surveillance of potential smugglers is necessarily at a much lower priority than is national security.

Pursuit and Capture Technologies

Effective pursuit and capture of suspected drug smugglers, whether in aircraft or vessels, is significantly improved with good intelligence, identification, and target selection information. Pursuit and capture is always a time-constrained activity. Early information, which allows for longer periods to mobilize pursuit and capture forces, and good information on the routes and, ideally, the destination of smuggling aircraft and vessels, is invaluable to effective pursuit and capture. Technologies are presently available that meet most of the requirements each of the interdiction agencies have identified as necessary to carry out pursuit and capture functions. The primary technological constraint on pursuit and capture effectiveness is associated with the limited number of available platforms or vehicles with appropriate capabilities.

- The Customs Service has defined the desired pursuit aircraft as one with an endurance of 8 hours, detection equipment (radar and infrared sensors) that allows smuggling aircraft to be pursued without being aware of it, and sufficient capacity to carry a bust team. Customs has found the Black Hawk helicopter to be very suitable for most capture missions.
- The Customs' Marine Branch generally relies on pursuit and capture technologies that involve minimally two boats: one with radar capabilities that are used to direct the other—a high-speed interceptor—to the target. The Customs' Marine Branch has sizable numbers of these vessels only in south Florida and even here is severely hampered by a lack of trained operators.
- Coast Guard technologies are designed to support that organization's multiple missions. The primary limitation of Coast Guard technical capabilities for pursuit and capture is available vessels. The vessels used for pursuit and capture are mostly the same vessels used for surveillance. The Navy (especially the hydrofoil fleet) has provided significant support to the Coast Guard's pursuit and capture mission. New Coast Guard patrol boats with advanced capabilities are just now entering the fleet.

Command and Control

Command and control capabilities and the technologies that support those capabilities are to a greater or lesser extent a problem for all enforcement agencies. Command and control technologies that provide a capability for coordinated drug interdiction activities among the various agencies are seriously deficient and most believe that they need to be improved before the potential for either surveillance or pursuit and capture technologies can be realized.

- Some continuing deficiencies pervade the area of command and control. First, all enforcement agencies are deficient in secure voice communication systems and the agencies have yet to devise an adequate system using compatible frequencies. Second, no single command strategy has been devised that would make a comprehensive system design practical. Third, the centers that are in use are deficient in sensor capability and have yet to evaluate their operational effectiveness to determine changes needed for optimum future designs.

Technological Needs at Ports-of-Entry

The technology used to support drug interdiction at ports of entry is limited in its availability and, in some categories, its capability. Port detection technologies divide into two categories: 1) those that provide capability for managing data; and 2) those that support detection of drugs on persons, in baggage, in cargo, in mail, or concealed in carriers (i. e., land vehicles, aircraft, or vessels).

- Data management and analysis technologies are in limited use at ports of entry. These technologies have the capability of providing information on both individuals and cargo useful to drug interdiction. Customs is making increasing use of data management and analysis technologies. Resources are the primary limitation.
- Most of the technologies both in use and being investigated to support the direct detection of drugs have serious technical limitations. One category identifies anomalies where drugs may be hidden. Another category detects either by sensing chemicals associated with drugs or directly sensing the drugs. Many technol-

ogies are considered unsatisfactory because they have high false alarm rates. Limited personnel resources cause Customs to reject technologies with false alarm rates that are higher than the ability of the inspectors to conduct detailed manual searches without disrupting movement of port traffic.

- Resources available to Customs are insufficient to allow systematic investigation of the potential for technical aids to enhance port inspection. Major deficiencies include:
 - Basic information on the physical and chemical characteristics of drugs is not available to permit the evaluation of detection technologies used for other substances.
 - Inspection resources are often not available for a comprehensive evaluation of new detection technology effectiveness.
 - Efforts have not addressed multiple sensor systems to minimize false alarms. They have focused primarily on the development of single technologies.
 - Limited training of inspectors has resulted in some available equipment not being utilized. Newly developed sophisticated inspection equipment must be designed to be user-friendly.
- Technology for detection of drugs at ports of entry could probably be advanced with a consistent and long-range R&D program. Such a program would need to include adequate staff; continuing programs to characterize fundamental properties of drugs, technology transfer, and equipment loans; mechanisms for getting information on how drugs are smuggled through ports of entry, stimulating fresh ideas or R&D approaches; and adequate facilities and resources to test and refine new systems.

Land Border Technologies

A range of technologies are in use and being investigated by the Border Patrol to support the identification of illegal intrusions across the Mexican border. Drug interdiction is made enormously more difficult because of the large numbers of illegal aliens continuously crossing the border. The sensors in use generally perform well but apprehension of suspects is very labor-intensive and no tech-

nologies will alleviate the basic need for more personnel to pursue and capture.

- There are currently available technologies for land border interdiction that could increase

agency capabilities. Technologies and systems of interest include ground radar, remotely piloted vehicles (RPVS), aerostats and airships, buried line sensors, and infrared improvements.