

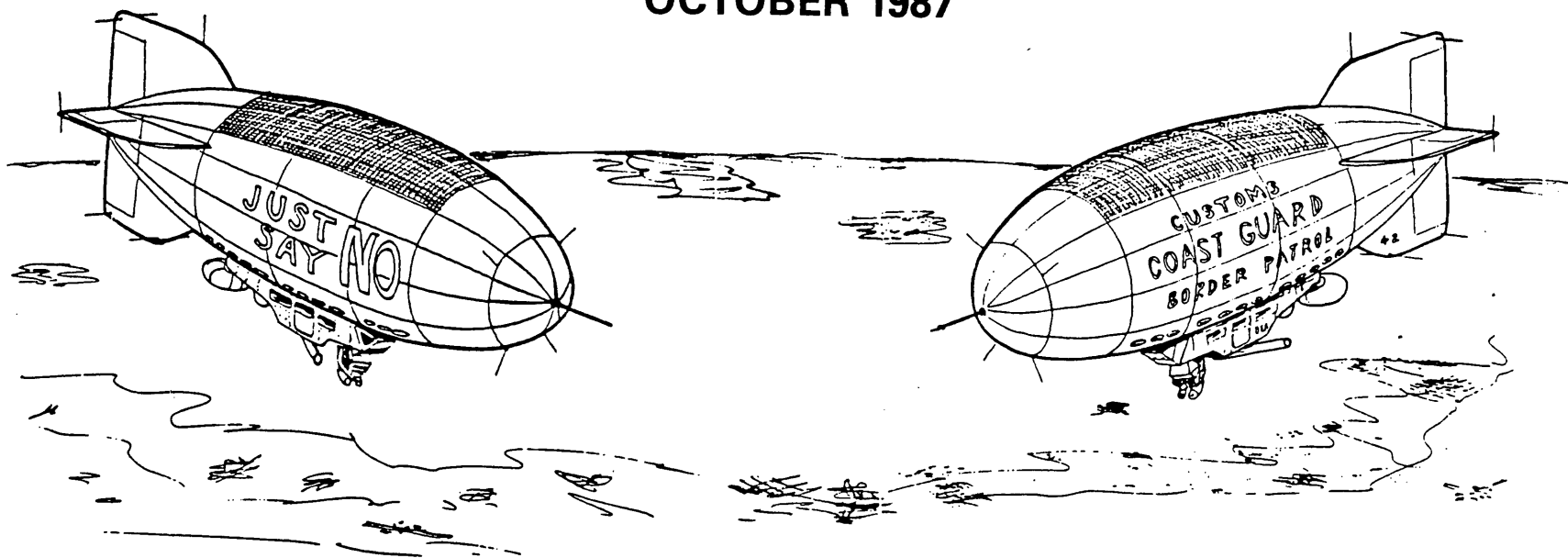
DSB

— DSB SUMMER STUDY, 1987 —

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DETECTION & NEUTRALIZATION OF
ILLEGAL DRUGS & TERRORIST DEVICES

OCTOBER 1987



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OFFICE OF THE SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-3140

13 OCT 1987

DEFENSE SCIENCE
BOARD

MEMORANDUM FOR SECRETARY OF DEFENSE
THROUGH: UNDER SECRETARY OF DEFENSE (ACQUISITION)

SUBJECT: Report of the Defense Science Board (DSB) Summer Study
on Detection and Neutralization of Illegal Drugs and
Terrorist Devices

I am pleased to submit herewith the report of the subject
DSB Task Force, chaired by Mr. Leonard Sullivan, Jr., and
responding to USD(A) tasking of March 16, 1987.

The task force, which made extensive use of the skills and
talents of many other Federal agencies involved in these
problems, concludes that several steps should be taken to enhance
our national capabilities to reduce the threats from drugs,
terrorism, and other forms of international crime as well. These
involve: a) better focused RDT&E and acquisition efforts on a
national basis; b) more robust long-term funding for the law
enforcement agencies; and, c) some continuing efforts to
streamline laws, statutes, and regulations which do not yet fully
support the President's stated priorities in these areas.

The task force concludes that the direct DoD role in these
efforts can probably be enhanced somewhat, but that the major
actions should flow from the National Drug Policy Board (NDPB),
of which you are a member. The task force therefore recommends
that you forward this study to the Chairman of the NDPB,
proposing a series of actions and procedures that would
eventually strengthen national capabilities to combat these
crimes and thereby improve national security.

The rationale for the proposed NDPB actions is contained in
the attached letter from you to Attorney General Meese. The
details of implementation would be left to the NDPB staff. I
recommend that you read the Executive Summary, sign the letter to
the Chairman of the NDPB, and offer the briefing to him and the
NDPB.

Charles A. Fowler
Charles A. Fowler
Chairman

Attachment

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DEFENSE SCIENCE
BOARD

OFFICE OF THE SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-3140

13 OCT 1987

MEMORANDUM FOR CHAIRMAN, DEFENSE SCIENCE BOARD

SUBJECT: Report of the Defense Science Board (DSB) Summer Study
on Detection and Neutralization of Illegal Drugs and
Terrorist Devices

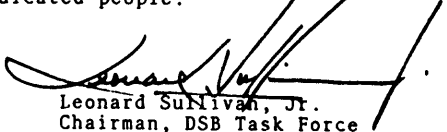
On behalf of my task force members, I am pleased to forward herewith the final report of our summer study on the use of innovative technologies for the Detection and Neutralization of Illegal Drugs and Terrorist Devices. It has been a rewarding experience to work with our law enforcement agencies (LEAs) who are, in fact, seriously at war against crime.

We have concluded that the wars against drugs and terrorism are, in fact, "big league" operations for which the LEAs are at best marginally manned and equipped--and funded. There is a challenging, if not discouraging, "technology race" underway between the LEAs and some very highly skilled criminal elements who clearly have virtually unlimited budgets to thwart enforcement efforts. There are many technological similarities in the wars against drugs and terror--and considerable overlap with DoD needs for low intensity conflict and urban warfare.

The LEAs are quite familiar with available and emerging Defense technologies, and are quite properly skeptical of many of them. In fact, the task force concluded that the more pressing need may be to apply some existing technologies in operational "systems" such as "people portals" and automated cargo ports. In fact, we draw parallels between FAA's air traffic control system and the need for some equivalent drug traffic control systems!

Our recommendations fall in three areas. First, we suggest more emphasis within the LEAs on acquisition--including technology--applying several techniques currently used within DoD. Second, we suggest a major five-year expansion in LEA budgets, including several major hardware investment programs, some involving a DoD-like systems approach. Finally, we suggest a variety of changes to laws and statutes that would: a) reflect the President's increased concerns for the impact of terrorism and drug trafficking on national security, and b) remove some of the inhibitions which stifle both acquisition and operating procedures within the LEAs.

I am indebted to my 12 task force members; to 22 advisors who tolerated and dispelled our initial ignorance while faithfully representing the views of 12 other Government agencies and several diverse parts of the DoD; and, to a supporting "cast of hundreds" most ably led by Mr. Rick Menz, my Executive Secretary from the USDA's Office of Munitions. He, in turn, received valuable contract support from Dr. Patrick McDermott of B-K Dynamics, Inc. I am proud to have had the opportunity to work with these capable and dedicated people.



Leonard Sullivan, Jr.
Chairman, DSB Task Force
Detection & Neutralization
of Illegal Drugs & Terrorist
Devices

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EXECUTIVE SUMMARY (U)

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EXECUTIVE SUMMARY

(U) OUTLINE OF THE BRIEFING

(U) This Defense Science Board Summer Study was convened to "examine the use of innovative technologies for the detection and neutralization of illegal drugs and terrorist weapons." After exploring this subject at some length, a series of recommendations are made not only for the application of technologies, but also for the overall development of significantly more capable Law Enforcement Agencies (LEAs).

(U) The results of the study are presented as a logical progression from gaining an understanding of the problem to estimating the impact of the resulting recommendations. The study begins by delineating some of the limitations in study scope. Some questions such as "Which is more important, stopping drugs or terrorism?" were simply not addressed beyond the assertion of biases. Others were avoided because of their higher level of classification and/or sensitivity.

(U) The overall magnitude of the problems to the U. S. from these threats is estimated crudely. Precise figures are simply not available, but the "ballpark" estimates and trends are appalling. The Task Force then went to considerable lengths to outline "taxonomies" for the "cradle to grave" flow of materials and functions that might be detectable in the development and execution of each crime. These formed the basis for evaluating potentially applicable technologies. The roles of the several LEAs are explained, and the extensive legal "rules of engagement" for law enforcement are summarized.

(U) The problems of finding small quantities of people or things in a vast sea of civil activities are pointed out as a challenge to the technological community. Estimates made of the likely future trends in both terrorism and drug trafficking indicate that the problems will almost surely get worse. With money as no object for the criminal element, there is a very substantial "technology race" underway which the sparingly funded LEAs will have difficulty matching.

(U) The formulation of the case is then completed with a survey of potentially applicable technologies, relating them to the relevant phases of the crime. Special attention is placed on developing the unique roles of dogs; people--both "good guys" and "bad guys"; the huge sums of money which underwrite the operations; and finally on the vast law enforcement data bases which are available help solve the crimes.

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EXECUTIVE SUMMARY
OUTLINE OF BRIEFING REPORT

- o **STUDY SCOPE AND LIMITATIONS**
- o **MAGNITUDE OF DRUG AND TERROR PROBLEMS**
- o **TAXONOMIES OF DRUG AND TERROR PROBLEMS**
- o **AGENCIES AND "RULES OF ENGAGEMENT"**
- o **THE QUEST FOR NEEDLES IN HAYSTACKS**
- o **FUTURE THREAT DEVELOPMENT**
- o **SENSORS AND TECHNIQUES**
 - **The Technology/Taxonomy Matrix**
 - **The Role of Dogs**
 - **The Role of People (Bad and Good)**
 - **The Role of Money**
 - **The Role of Information Processing & Analysis**
- o **LAW ENFORCEMENT AGENCY ACQUISITION PROBLEMS**
- o **STUDY CONCLUSIONS**
- o **PRIORITIES IN ACQUISITION FOCUS**
- o **RECOMMENDATIONS**
- o **ESTIMATED COSTS AND IMPACTS**

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EXECUTIVE SUMMARY

(U) GENERAL CONCLUSIONS

(U) The Task Force has generated a substantial number of conclusions which are pertinent to the problems at hand. In some cases, they doubtless bear the mark of "initial shock" associated with exploring a new area. But the fact is clear, the LEAs are "at war" with major, dedicated, organized criminals who are dead set on pursuing their objectives. Coupled with the magnitude of the problems and the difficulty of solving them, the Task Force agrees with the President (NSDD 221) that both the "drug war" and the "war on terrorism" are vital to the national security of this country.

(U) It is also important to understand, however, that drug and terrorism problems are only a "subset" of the broader spectrum of domestic and international crimes that must be controlled. Espionage, high-tech transfers, bank fraud, and organized crime are but a few of the other issues facing the same law enforcement officials. Customs officials at the San Ysidro border crossing from Mexico, for instance, are given 30 seconds to check if each transitting car and its passengers are violating any one of 400 laws monitored by 40 separate agencies!

(U) Furthermore, the ability of these "high-tech" criminal organizations to adjust to changing IEA efforts is extraordinary. While each of the several hundred organizations may perceive different paths of lower resistance, each can change its transport, communications, and money laundering procedures within weeks to avoid, say, a new aerostat in the Bahamas, a new law in Panama, or a new kind of passport in Italy.

(U) There do appear to be some distinct differences in the two "wars" being addressed: the problems of countering terrorism will rely more on outstanding intelligence and penetration of the terrorist gangs, while the drug war will involve a broader spectrum of attacks on the source crops and factories, on the total transportation system, and on the prosecution of the criminals through due civil process.

(U) The Task Force is in full agreement, however, that neither "war" can be won by technology and hardware alone. While not exhaustively addressed in this limited scope/time effort, it is abundantly clear that there must be major demand-reduction efforts to in some way "deter" the users of both drugs and terrorist tactics. The drug war may well fail without successful, major, sustained demand-reduction efforts. This fact is reiterated throughout this report.

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EXECUTIVE SUMMARY

GENERAL CONCLUSIONS

- o THE LAW ENFORCEMENT AGENCIES ARE AT WAR AGAINST CRIME
- o NATIONAL SECURITY IS THREATENED BY TERRORISM AND DRUGS
- o TERROR/DRUG ISSUES ARE PART OF BROADER CRIME PROBLEMS
- o CRIMINALS SHIFT RAPIDLY TO PATHS OF LOWER PERCEIVED RESISTANCE
- o WAR ON TERROR RELIES MORE ON INTELLIGENCE & PENETRATION
- o DRUG WAR RELIES MORE ON SOURCE DENIAL, INTERDICTION & PROSECUTION
- o NEITHER WAR CAN BE "WON" WITH TECHNOLOGY & HARDWARE ALONE:
....THERE MUST BE DEMAND-REDUCTION BY "DETECTING THE USER"

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EXECUTIVE SUMMARY

(U) MORE GENERAL CONCLUSIONS

(U) The report goes to some length to indicate the extent to which detecting these criminals, their "wares", and their organizations is like looking for a needle in a haystack. For instance, U.S. annual consumption of imported cocaine is on the order of 100 tons. The total U.S. cargo imports per year are about two billion tons. In another extreme case, we note that there are "only" about 1,000 active terrorists dedicated to targeting U.S. people and resources, while over 300 million people now enter the U.S. each year.

(U) It becomes evident that the infrastructure that supports terrorism and drug trafficking goes well beyond the criminal instruments themselves. The Task Force concludes that the reverse money flow may be more detectable in some cases (the money even weighs more than the cocaine it procures). Furthermore, at some nodes in the taxonomy, the people may be the critical element (couriers, pilots, kingpins, etc.). In other cases, the paper trail left by legitimate transactions is often anathema to the criminal. Bills of lading, passports, money transaction reports can all offer clues to legitimacy, if the vast quantity of it can be speedily and accurately sifted for the "needles"--in some cases using expert systems and artificial intelligence techniques to establish the sorting rules, and the suitable comparison techniques for related files.

(U) In many areas, the problems of countering terrorists and traffickers appear most similar at the R&D level, where detectors and trackers and "taggants" and physical surveillance devices and intelligence gatherers may play a prominent role in apprehending --and prosecuting--both. On the other hand, the extent of the physical infrastructure associated with growing, processing, shipping, storing, distributing and selling drugs seems to offer a far broader spectrum of detection and attack opportunities. In the case of the terrorist, for instance, since guns and explosives are so available in the U.S., he would be foolish to bring them into the country. The trafficker, on the other hand, can hardly avoid an enormously elaborate "transportation system."

(U) As mentioned earlier, however, these are "high-tech" crimes in which money is virtually no object, and the "technology race" is even more evident than it was amongst the "rum runners" in the days of Prohibition. Fortunately, all the costs of these counter systems need not be paid for from appropriated funds. As in the case of the X-ray machines and magnetometers at airports, some costs can be defrayed by trust funds, user fees, and even seized assets. Regardless of the funding however, these "wars" represent long-term, Big League problems that will not be solved "on the cheap" with hand-held devices, with Little League budgets--or with "bootleg" funds from DoD, for that matter.

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**EXECUTIVE SUMMARY
MORE GENERAL CONCLUSIONS**

-
- o LAW ENFORCEMENT MEANS FINDING NEEDLES IN BIG HAYSTACKS
 - o MONEY, PEOPLE, AND PAPER TRAILS ARE MAJOR DETECTION TARGETS
 - o IMPROVED DATA PROCESSING MAY UNRAVEL SOME MAJOR CONNECTIONS
 - o DRUG & TERROR NEEDS SEEM MOST ALIKE AT RDT&E LEVEL
 - o DRUG WAR SEEMS TO NEED MORE NEW TECHNOLOGIES THAN TERRORISM
 - o TRAFFICKERS & TERRORISTS ARE FORCING A "TECHNOLOGY RACE"
 - o SEIZED ASSETS AND USER FEES CAN PARTLY DEFRAY COSTS
 - o INTERNATIONAL CRIME IS A LONG-TERM BIG LEAGUE PROBLEM

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EXECUTIVE SUMMARY

(U) STILL MORE CONCLUSIONS

(U) The Task Force was somewhat surprised to find that the LEAs are generally very well informed about the Defense technological state-of-the-art. In fact, DoD is already helping the LEAs in these "wars" on many fronts, from buying major items (like aerostats) to providing land and shared facilities on military bases (March AFB).

(U) On the other hand, there are some other technologies which DoD itself has not pursued very far that may be very useful in this context. The greater use of "sniffer" dogs--as well as learning how they sniff, and how they might sniff better--may offer an interesting partial solution to several detection problems. Those noses still remain superior in sensitivity to any other sensor against many substances and materials.

(U) There are some additional technologies (many in the biological area) which may offer additional benefits. In the main, however, the overall drug problem appears to need several larger "systems," running the gamut from long-range, wide-area surveillance systems, to a new international standard for authenticatable passports. The small agencies, with very limited procurement funds and virtually no R&D funds, however, are not going to be able to pursue either avenue alone. This is true even though many of these large "systems" can be integrated from existing technologies with substantial "growth potential." The parallel to the International Air Traffic Control System operating under ICAO agreements among nations is not farfetched.

(U) It is also clear that the LEAs, awash in problems of day-to-day business and an extraordinary set of "real-world" problems, have not spent enough effort analyzing their own problems and the "big picture." The Task Force found itself unable to make any very specific recommendations, or worthwhile impact assessments, in the absence of such analysis. It is also quite evident that the current labyrinth of statutes and regulations seriously complicates law enforcement efforts. Defense experts have difficulty accepting the thought of consuming one to three years in "target acquisition" (to get to indictment), followed by another year or two for "target kill" (i.e., successful prosecution).

(U) This report does not dwell on the many and extensive current areas of productive cooperation between DoD and the LEAs, particularly in the sharing of assets and facilities. Nevertheless, it is clear that DoD could--and really should--adopt a more vigorous, if only supportive, role in these "wars against crime," and that it can itself benefit from the fruits of these efforts, both technologically and national securitywise.

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EXECUTIVE SUMMARY

STILL MORE GENERAL CONCLUSIONS

-
- o **NON-DoD AGENCIES GENERALLY FAMILIAR WITH DoD TECHNOLOGIES**
 - o **DOGS, THOUGH CONTROVERSIAL, ARE STILL SUPERIOR IN SENSITIVITY TO OTHER SENSORS**
 - o **SOME NEWER TECHNOLOGIES CAN BE "FORCED", BUT...**
 - o **LARGER "SYSTEMS" NEEDED NOW TO MAKE MAJOR INROADS ON DRUGS**
 - o **SMALLER AGENCIES CANNOT SUPPORT HI-TECH R&D OR LARGE SYSTEMS**
 - o **SOME LARGE SYSTEMS CAN BE BUILT AROUND EXISTING TECHNOLOGIES**
 - o **DYNAMICS OF DRUG PROBLEM NEED EXTENSIVE ANALYSIS**
 - o **"RULES OF ENGAGEMENT" SIGNIFICANTLY COMPLICATE EFFORTS**
 - o **DoD NEEDS TO ADOPT A MORE VIGOROUS, IF ONLY SUPPORTIVE, ROLE**

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EXECUTIVE SUMMARY

(U) SUMMARY OF RECOMMENDATIONS

(U) The Task Force wrestled with the issues of priorities in resource allocation, in the applicability of various programs, and in the ranking of the effectiveness sought. Unlike SDI, and many other defense programs, the results are not clearly a technologist's dream. Given their choices, the agency would add resources first to hardware, second to operating funds, thirdly to manpower, and only lastly to RDT&E. This is not because they underestimate the role of new technology, but because they do not underestimate the importance of current operations.

(U) Against this backdrop, we offer three basic recommendations. The first deals with increasing emphasis on technology and acquisition. The second deals with a "Big League" LEA modernization program, and the last deals generally with the need to remove some of the excessive impediments implicit in current laws and statutes—including the DoD's own internal Guidance and Directives which do not yet fully reflect NSDD 221.

(U) With regard to increased emphasis on acquisition, we propose that "Technology Advisors" with some stature be assigned within each LEA, and that a permanent "Research and Technology Group" be added within the National Drug Policy Board (NDPB). This Group would have assigned to it an Advisory Board along the lines of our own DSB. Several (up to eight) existing Government RDT&E centers (in and outside DoD) would be redesignated as National Technology Development Centers to serve DoD/LEA combined needs. A national Center for Law Enforcement Analysis would be formed within—and spawned from—a current DoD FCRC (such as Rand or IDA), and the LEAs would be encouraged to use DoD-type Systems Engineering Centers much in the way that MITRE has provided services to the development and modernization of the FAA's air traffic control system.

(U) The Task Force also believes that the Federal Government must come to understand that these "wars" against drugs and terrorists are Big League operations, requiring suitably appropriated Big League budgets. To make this point, we suggest a purely hypothetical \$10 billion program (spent out over five years) comprised 15 percent of RDT&E, 35 percent hardware acquisition, and 50 percent operating and manpower funding increases. This \$10 billion could represent a 100 percent increase for the relevant parts of these LEAs, but would equate to only one percent of the estimated societal change done by drug traffic alone. It would also amount to less than two-thirds of one percent relative to Federal expenditures for national security. The composition of a hypothetical procurement budget illustrates the range of major and minor procurements that could help the LEAs. Some share of those procurements might be underwritten by DoD itself and could provide some major improvements in C³I capabilities for CINCSOUTH. However, the Task Force does not presume to establish funding priorities or sources: the NDPB should do this.

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EXECUTIVE SUMMARY

SUMMARY OF RECOMMENDATIONS

- o **GREATER GOVERNMENT EMPHASIS ON TECHNOLOGY AND ACQUISITION**
 - "Technology Advisors" for Law Enforcement Agencies
 - Research & Technology Group under National Drug Policy Board
 - RT&A Advisory Board to Research & Technology Group (e.g. DSB)
 - Designate National Technology Development Centers (e.g. NVL)
 - Form National Center for Law Enforcement Analysis (e.g. IDA/DoD)
 - Use Major Systems Engineering Centers (e.g. MITRE/FAA)

- o **ACCEPT NEED FOR "BIG LEAGUE" LEA MODERNIZATION PROGRAM**
 - \$10 Billion Program over Five Years

- o **PURSUE SUBSTANTIAL EFFORT TO IMPROVE LAWS & REGULATIONS**
 - Limited to Revisions to Current Statutes & Regulations

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EXECUTIVE SUMMARY

(U) POTENTIAL IMPACT OF RECOMMENDATIONS

(U) This is, of course, the crucial question: What results could we expect to achieve if we adopt these recommendations and spend these increased funds? There are no good numbers on current drug consumption, current production, or even on current seizures. The criminal organizations were not represented on this Task Force, and probably do not know the answers themselves. Yet the question is little different than those who ask what the nation got for a trillion dollars in Defense spending.

(U) Possibly the most important impact would be to achieve a very substantially more visible and credible deterrent by which to demonstrate to our own people—including our own children—that the country has the will to try to stop drugs and terrorists because they threaten our national security. That message would not be lost on the countries that support drug and terrorist activities. Anyone who has observed the pathetic inadequacies of the Southwest illegal alien control effort (now mixed with drug trafficking) can only conclude that we, the U.S., are not serious about the problem.

(U) Secondly, there is virtually no question that the risks and costs to the bulk smuggler can be raised substantially. We can surely increase the chances of apprehension (with the subsequent seizure of all related organization assets). Current seizure rates are at best in the "ballpark" of 10-20 percent of that entering our country. We can cause a several fold increase (2x-4x) in the total drugs and assets seized. Nevertheless, there is no guarantee that there would be any significant reduction in drug availability on the street—or increase in their price. Production may already be high enough to tolerate these increases, and the current surpluses are beginning to infect Europe and Japan. The impact of a 50 percent "attrition" on the smugglers themselves is impossible to assess.

(U) Next we should surely achieve more secure borders against the full range of criminal activities. Terrorists appear particularly vulnerable when crossing borders, and many have been apprehended in this process. Furthermore, this proposed expenditure is probably sufficient to guarantee that the entire haystack knows we are looking for the needles—because they are threats to the security and societal fabric of our nation.

(U) Finally, the U.S. has an indisputable world leadership role in the real everyday war against all aspects of international crime, including these. For better or for worse, the U.S. sets the standards for the countries of the civilized world. If we change our passports, they will change theirs. If we install "screening portals" so will they. This produces a "multiplier" that will work against terrorists and traffickers worldwide.

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EXECUTIVE SUMMARY

POTENTIAL IMPACT OF RECOMMENDATIONS

- o **SUBSTANTIALLY MORE VISIBLE/CREDIBLE DETERRENT**
 - Evident Demonstration of Will Against Crime
- o **SUBSTANTIALLY INCREASED COST/RISK TO BULK SMUGGLER**
 - Much Higher Chances of Apprehension
 - Substantial Increase in Drugs & Assets Seized
- o **SIGNIFICANTLY MORE SECURE NATIONAL BORDERS**
 - Against Criminals, Contraband, Illicit Fund Flow
- o **MODEST, INDIRECT, REDUCTION IN DEMAND FOR DRUGS**
 - Much Higher Visibility to U.S. Population
- o **ESTABLISH U.S. LEADERSHIP IN ROLE AGAINST INTERNATIONAL CRIME**
 - Set International Standards for "Border Control" etc.

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EXECUTIVE SUMMARY

(U) GAINS FOR DEFENSE DEPARTMENT

(U) Provision of the technical assistance and technology herein recommended is a major contribution by DoD to the national war on drugs and terrorism that will benefit DoD in tangible ways as well as in the public and political perceptions.

(U) Military training exercises to support LEA needs can be conducted in a real environment rather than simulated or practice; results can be tangible and meaningful. Experience has shown personnel to be better motivated and training to be more rewarding under such conditions. This does not in any way imply infringement on the quite proper limitations of the Posse Comitatus Act.

(U) LEA evaluation and operational deployment of new detectors and sensors will provide extensive data on their performance and reliability. LEA requirements also will lead to the development of new technology with military application.

(U) Much of this technology and the experience gained from its deployment can increase the physical security of military bases, embassies, and other facilities; improve the capability of all commands for low intensity conflict and urban warfare; and especially improve the intelligence/surveillance capabilities of the Southern Command.

(U) Addition of DoD technology to LEA resources will improve the security of our national borders against terrorism, the exportation of critical technology, and other threats to national and DoD security.

(U) Increased drug enforcement and any decrease in drug use also will improve off-base living conditions for military personnel and dependents, as well as work-place conditions with civilian and non-DoD personnel.

(U) Finally, the increased quantities of tested detection and interdiction technology and persons experienced in its use can provide ready-to-deploy equipment and personnel in the event of mobilization. The very diverse aspects of national security are in fact related and can ultimately reinforce one another if and when stressed.

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EXECUTIVE SUMMARY

GAINS FOR DEFENSE DEPARTMENT

- o MAJOR OPPORTUNITY TO CONTRIBUTE TO WARS ON DRUGS & TERRORISM
- o SOME OPPORTUNITIES TO "TRAIN" IN REAL ENVIRONMENT
- o POTENTIAL FOR INCREASED EMBASSY & MILITARY BASE SECURITY
- o IMPROVED NATIONAL SECURITY OF BORDERS
- o IMPROVED LOW INTENSITY CONFLICT CAPABILITIES
- o IMPROVED URBAN WARFARE CAPABILITIES
- o VERY USEFUL MOBILIZATION ASSETS -- AND PERSONNEL
- o IMPROVED MILITARY DETECTOR/SENSOR TECHNOLOGIES
- o IMPROVED DRUG-FREE ENVIRONMENT AT HOME AND WORK

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DEFENSE SCIENCE BOARD SUMMER STUDY, 1987

(U) DETECTION & NEUTRALIZATION OF
ILLEGAL DRUGS & TERRORIST DEVICES

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(U) TASK FORCE CHARTER AND MEMBERSHIP

(U) The Task Force charter, as signed by the Under Secretary of Defense for Acquisition on March 14, 1987, is reproduced here. Highlights are provided on the facing page. The membership of the Task Force and its Advisory Group are provided on the following two pages. All contributed greatly to the content of this summer study.



THE UNDER SECRETARY OF DEFENSE
WASHINGTON, DC 20301

16 MAR 1987

MEMORANDUM FOR CHAIRMAN, DEFENSE SCIENCE BOARD

SUBJECT: Defense Science Board Summer Study on Detection and Neutralization of Illegal Drugs and Terrorist Devices

You are requested to form a DSB Task Force to examine innovative technologies that will improve the detection and neutralization of illegal drugs, and terrorist explosives and weapons.

The Department of Defense is becoming increasingly involved in helping the US Government stem the flow of illegal drugs from abroad. DoD also has a substantial role in countering terrorism against US and allied nations and property. Furthermore, terrorists often use the drug trade to bankroll their activities. Neither deterrence nor interdiction have been effective to date.

It is becoming a "high-tech" contest as both traffickers and law enforcers use sophisticated transport, communications, eavesdropping devices, sensors and night vision devices, deception schemes, etc. It is a dynamic contest with each side adjusting its tactics and equipment to thwart the other's initiatives. It is highly appropriate for the scientific communities of the US and its friends and allies to focus their talents on these problems to see if any opportunities for countering these threats are being overlooked.

Accordingly, the DSB Task Force on Detection and Neutralization of Illegal Drugs and Terrorists Devices is requested to conduct a thorough assessment, with regard to illegal drugs, explosives, and weapons, of the current and potential technological opportunities to improve or facilitate:

- o the detection, localization, and/or neutralization of the root sources;
- o the detection and localization of the "factories" associated with their refinement and/or production;
- o the "tagging" of the base materials or their shipping containers for later detection and tracking, or identification as to source/ownership;
- o the detection, surveillance, tracking, and/or neutralization of the items in transit;

- o the detection, surveillance, tracking, and/or neutralization of ancillary devices and/or equipment (ammunition, initiators, etc.)--or even large amounts of money;

- o the physiological identification of personnel possibly involved in illegal and/or high risk behavior;

- o likely synergism in the detection and neutralization of drugs and explosives.

It is important to recognize that these technologies must be fully compatible with the specialized requirements of law enforcement--not just military "targeting".

The Task Force is also encouraged to render an assessment of the adequacy of the government-wide management of, and encouragement for, these technological endeavors--including the level and coordination of DoD support.

Although the Task Force will need to become generally familiar with the changing patterns of transport and interdiction, it is not charged with assessing current operational techniques or force employments as ends in themselves. For this Study, nuclear and biological weapons will be excluded.

I will sponsor this Task Force with Mr. Leonard Sullivan, Jr. serving as Chairman. Mr. Rick L. Menz will be the Executive Secretary and LtCol Herbert R. Vadney will be the DSB staff representative to the Task Force. It is considered that the subject matter of this study does not involve "particular matters" within the meaning of Section 208 of Title 18, US Code.

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CHARTER

"YOU ARE REQUESTED ... TO EXAMINE INNOVATIVE TECHNOLOGIES THAT WILL IMPROVE THE DETECTION AND NEUTRALIZATION OF ILLEGAL DRUGS AND TERRORIST EXPLOSIVES AND WEAPONS"

- o **ASSESS TECHNOLOGICAL OPPORTUNITIES TO IMPROVE:**
 - **Detection/Neutralization/Surveillance of Root Sources/Processing Labs/Materials/Money/Equipment/Ammunition**
 - **Tagging of Materials/Shipping Containers for Tracking/Detection/Identification**
 - **Physiological I.D. of Personnel Involved in Illegal Activities**
 - **Synergism in Detection/Neutralization of Drugs/Explosives**
- o **RECOMMENDATIONS COMPATIBLE WITH LEGAL REQUIREMENTS**
- o **ASSESSMENT OF GOVERNMENT-WIDE MANAGEMENT--ADEQUACIES & OPPORTUNITIES FOR DOD SUPPORT**
- o **EXCLUDE ASSESSMENT OF OPERATIONAL TECHNIQUES, FORCE EMPLOYMENT, AND NUCLEAR & BIOLOGICAL WEAPONS**
- o **USD(A) INCLUSIONS**

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MEMBERS

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*Dr. Richard D. DELAUER

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(U) STUDY SCOPE AND LIMITATIONS

(U) It was initially intended that the scope of the study would consider all aspects of the use of technology and other DoD support to counter the flow of illegal drugs and terrorism. However, to ensure that this report could be read and discussed in the most appropriate arenas, highly classified programs dealing with intelligence, communications, special operations and other sensitive areas were not included.

(U) Furthermore, the interagency Intelligence Research and Development Council's (IR&DC) study on Drug Law Enforcement Technology, and the Special Operations Forces/Terrorist Quick Response Capabilities Technology Study are contemporary interagency efforts which did not require revisiting. Their conclusions are generally reinforced and supported by the recommendations from this study.

(U) Considerations of terrorism focused on the terrorist, his explosive devices and his firearms. Terrorist threats imposed by nuclear, chemical, and biological weapons were not addressed in order to keep the task manageable in the timeframe allotted. In the drug domain, the study concentrates upon the cocaine problem and other drugs are less thoroughly treated.

(U) The net result of these limitations is that the principal focus is on the technology and technical aspects most important to the national law enforcement needs, and less on the needs of the intelligence communities (many of which involve higher classification). Stopping drugs and countering terrorism involve many common technological requirements and solutions. By virtue of these limitations, the study appears to have focused on the illegal drugs more than the terrorist problem. This was not by design, however, and both are recognized as exceedingly important national issues.

(U) It should be noted however, that a few advisors remain disturbed by an "undercurrent of bias for counternarcotics work....that manifests itself in this report." Unimpressed by the rationale given above, one Task Force member withdrew because he concluded that the emphasis on terrorism was wholly inadequate. In any event, there is unquestionably room for further study and analysis of both subjects in the future. This Task Force has no illusions that it has produced the "final word" on deterring international crimes of any variety.

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STUDY SCOPE & LIMITATIONS

- o AVOIDS HIGHLY CLASSIFIED PROGRAMS:
 - Intelligence/Communications/Special Operations
- o REINFORCES RECENT SIMILAR INTER-AGENCY TECHNOLOGY STUDIES
 - IR&DC Studies
 - SOF/Terrorist Quick Reaction Programs
- o IGNORES MAJOR TERRORIST THREATS:
 - Nuclear, Chemical, and Biological Weapons
- o CONCENTRATES ON COCAINE
 - Over Other Drugs
- o FOCUSES PRIMARILY ON...
 - ...THE TECHNICAL ASPECTS OF NATIONAL LAW ENFORCEMENT NEEDS
(and appears to favor the drug problem over terrorism)

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(U) ISSUES NOT ADDRESSED

(U) A number of other basic issues remain unanswered despite considerable Task Force discussion. Among those not definitively addressed are the following:

(U) The relative threat to the nation from drugs versus terrorism is difficult to appraise. Currently it is estimated that drugs have a greater impact on the nation. However, potential expansion of terrorist activities inside the U.S. can be envisioned which could have an enormous impact on the U.S. -- though such actions would doubtless turn U.S. opinion against the terrorists' goals.

(U) Comparing the two threats, drugs and terrorism, is difficult. A single terrorist incident, of sufficient magnitude and well-timed and placed, can be the direct cause of either a limited or a general war. The risk of miscalculation in the responses by either superpower are a serious cause for concern. Drugs, on the other hand, continuously, directly and adversely affect tens of millions of lives in the U.S. alone.

(U) The demand side of the drug equation is not part of the Task Force mandate; however, enforcement in the broadest sense is clearly addressed. Yet there is a direct correlation: an increase in the visible presence of drug law enforcement -- uniformed patrol in user areas, media coverage of counter-trafficking activity -- is believed to have an impact on illicit use and on criminality. How can such impact be measured? How does one predict the efficiency of increase in deterrence, by different modalities, on crime and abuse? In any event, the Task Force strongly supports more demand-reduction efforts.

(U) Legalization of drugs is often considered as a means of reducing the profit motive, and drug-attendant violence. Can this be balanced against perpetration of the increasingly-demonstrated individual and societal harm that is also drug-attendant?

(U) With three drug categories clearly linked to foreign sources (of cannabis, coca, and opium), and Congressional mandates linking drug-control cooperation with the United States to continuation of our foreign aid, at what cost to wider issues of national security should the drug-issue linkage be imposed?

(U) Lastly, with the demonstrated need for intelligence on all aspects of supply reduction, how and where should which priorities be applied?

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ISSUES NOT ADDRESSED

- o THE RELATIVE NATIONAL THREAT FROM DRUGS AND TERRORISM:
 - Can Either Destroy the Fabric of America or the West?

- o THE BASIC PROBLEMS OF DEMAND-REDUCTION (i.e. USER DETERRENCE):
 - How Much Enforcement vs How Much Deterrence?

- o LEGALIZATION AND COST CONTROL FOR ILLEGAL DRUGS:
 - Should We Treat Drugs Like Alcohol?

- o POLITICAL/ECONOMIC LEVERAGE ON WORST OFFENDER COUNTRIES:
 - How Much Can Really be Done Through Crop Eradication?
 - When Should We Declare Military or Economic War?

- o THE MANY OVERLAPPING ROLES OF "INTELLIGENCE":
 - strategic
 - operational
 - estimates
 - infrastructure
 - interdiction
 - prosecution

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(U) RELATED STUDIES AND REPORTS

(U) Because of the increasing concern over the problems of terrorism and drugs, we were able to benefit from the reports of a number of organizations. Many of their objectives have paralleled our study. The Intelligence Research and Development Council (IR&DC) is an interdepartmental organization of senior R&D officials who report to the Director of Central Intelligence and is chaired by a senior DoD intelligence official. The group determines investment opportunities based on their view of the technology base and some shortfalls that exist in intelligence-oriented R&D. Our study benefits from the results of these determinations. Important related areas of interest are: low intensity conflict, counter-terrorism, drug interdiction and counter drug initiatives.

(U) The Technical Support Working Group (TSWG) of the Interdepartmental Group on Terrorism (IGT) also plays an important role based on funding high payoff projects.

(U) A March 1987 study entitled The Border War on Drugs by the Office of Technology Assessment was produced for the Senate Appropriation Committee. A superb source, it characterizes the problem and describes technologies already in use and under development.

(U) The Report of the Vice President's Task Force on Combatting Terrorism reviewed U.S. programs to combat terrorism, to reassess priorities and policies, to ensure current programs make the best use of available assets, and to determine if the U.S. program is properly coordinated to achieve the optimum results.

(U) The NNICC Report for 1985 and 1986 is the ninth estimate prepared by the National Narcotics Intelligence Consumers Committee (NNICC). This document is probably the most comprehensive assessment prepared for the Government on the worldwide illicit drug situation in 1985 and 1986.

(U) The National Drug Enforcement Policy Board's report, National and International Drug Law Enforcement Strategy contains five major components: intelligence; international drug control; interdiction and border control; investigation and prosecution; and diversion and controlled substance analog regulation.

(U) Finally a 1986 DSB Report on Conflict Environment: Third World Urban Involvement, and 1985 report on Urban Warfare addressed related technologies and problem areas.

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RELATED STUDIES AND REPORTS

- o INTELLIGENCE RESEARCH AND DEVELOPMENT COUNCIL (IR&DC) COUNTER NARCOTICS INTELLIGENCE R&D
- o IR&DC COUNTER TERRORISM
- o TECHNICAL SUPPORT WORKING GROUP (TSWG) - R&D PLANS
- o OFFICE OF TECHNOLOGY ASSESSMENT: "THE BORDER WAR ON DRUGS," MARCH 1987
- o "REPORT OF THE VICE PRESIDENT'S TASK FORCE ON COMBATING TERRORISM," FEB 1986
- o "THE NNICC REPORT 1985-1986," NATIONAL NARCOTICS INTELLIGENCE CONSUMERS COMM. JUNE 1987
- o "NATIONAL AND INTERNATIONAL DRUG LAW ENFORCEMENT STRATEGY," NDPB JAN 1987
- o DSB - CONFLICT ENVIRONMENT: THIRD WORLD URBAN INVOLVEMENT
- o DSB - URBAN WARFARE

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(U) CONSTRAINING RULES OF ENGAGEMENT

(U) There are a host of laws, regulations, judicial findings, international constraints, and congressional and public pressures that constrain the members of Law Enforcement Agencies in the performance of their duties. Some of these are enumerated here, and some may contain correctable limitations on legal authority:

U.S. Law

U.S. Constitution—Bill of Rights
USCON: 3rd Amdmt—Right to Bear Arms
USCON: 4th Amdmt—Search & Seizure
Competition & Contracting Act 1984
Freedom of Information Act
Privacy Act
Right to Financial Privacy Act
Omnibus Crime Control Act
Foreign Intelligence Surveillance Act
Posse Comitatus Act
Federal Rules of Criminal Procedures
U.S. Code Title 14 (Maritime Law Enf)
U.S. Code Title 18 (Drugs & Terrorism)
U.S. Code Title 21 (Drug Violations)
U.S. Code Title 31 (Financial)
3500 Brady Ruling: Disclosure
Search & Seizure Laws
Title III: Electronic Surveillance
Immigration & Nationality Act 1952
Miranda Court Decision
224SC 2291 Mansfield Amendment
Prohibiting Arrest in Foreign Country
Comprehensive Criminal Control Act of 1984
Chemical Diversion and Trafficking Act
RICO
Sarantino Decision of 11th Circuit Court
Law of the Sea
Limits of Action in Foreign Countries
Sovereign & Diplomatic Immunity
Flag of State Jurisdiction on High Seas
Piracy and Slave Trade
Aviation Trust Fund Restraints
Cannot Automate Gun Owner Data
Cannot Automate Gun Purchase Data
Controlled Substance Act

Executive Directives

EO 12333 (Drugs & Terrorism)
NSDD 179 (Terrorism)
NSDD 208 (Terrorism)
NSDD 221 (Drugs & Terrorism)
NSDD 277 (Low Intensity Conflict)
Attorney General Guidelines
FBI Admin Rules & Procedures
Defense Guidance
DoDD 5525.5 DoD Support to LEAs
Department Regulations

International Constraints

Host Country Laws & Sensitivities
Special Arrangements for Boarding
Institutionalized Corruption
Cultural Differences

Congressional Pressures

Do not impede flow of people & commerce
at the nations borders
Special interest lobbies

International Law

Rights of Innocent Passage

(U) While many of the above have complicated the tasks of law enforcement personnel, some recent changes to laws and regulations have moved to make LEA efforts more effective. For example, the Comprehensive Criminal Control Act of 1984 significantly increased the penalties for drug and arms trafficking offenses and introduced penalties for activities associated with or in support of these criminal activities.

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CONSTRAINING RULES OF ENGAGEMENT

- o **LAW ENFORCEMENT AGENCIES OPERATE UNDER COMPLEX LEGAL AND REGULATORY CONSTRAINTS**
- o **MUST BE LEGALLY & PROCEDURALLY CORRECT AS WELL AS TACTICALLY & STRATEGICALLY SOUND TO ACCOMPLISH THEIR MISSIONS**
- o **SOME CONSTRAINTS FAVOR THE DRUG TRAFFICKER AND ARMS SMUGGLER**
- o **"TARGET ACQUISITION" CAN TAKE 1-3 YEARS OF PREPARATION**
- o **"TARGET KILL" CAN TAKE 1-2 YEARS TO PROSECUTE**

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(U) MAGNITUDE OF THE U.S. DRUG PROBLEM

(U) The serious problem of illicit drug use in the United States continues. The last survey (1985) resulted in admittedly conservative estimates: 23 million Americans used marijuana, cocaine, or other dangerous drugs in the month prior to being surveyed. In the year prior to the survey, the number jumps to 37 million.

(U) Current users of marijuana (18 million) consumed an estimated 4,700 metric tons (tonnes). The primary foreign suppliers were traffickers based in Mexico and Colombia, although an estimated fifth of the quantities consumed were grown domestically.

(U) Heroin consumed by America's half-million addicts also can be measured in multi-ton quantities. Injuries and deaths attributable to heroin continue to increase. The major source areas for heroin consumed in the United States are Southwest Asia (Afghanistan, Iran, and Pakistan) and Mexico. About one-fifth comes from Southeast Asia (Burma, Laos, and Thailand).

(U) An estimated six million U.S. cocaine users consume almost 75 metric tons, about one-quarter of the worldwide production of that drug. Users get about 20 million snorts per metric ton. The increased smoking of cocaine base (crack), a more potent and addictive form than the powdered cocaine hydrochloride, is evidenced in a significant rise in injuries and deaths attributed to this drug. The foreign sources of this drug are illicit producers in Bolivia, Colombia, and Peru.

(U) Over 3 billion dosage units of substances classed as dangerous drugs are consumed annually. These include drugs produced in clandestine laboratories (PCP, methamphetamine, LSD, etc.) as well as drugs diverted (tranquilizers, analgesics, etc.) from legitimate sources. (The Task Force largely ignored this category).

(U) Estimates of the economic scope of the overall U.S. illicit drug market vary from \$90 billion to \$200 billion. The actual figure is likely to be closer to the upper end than the lower, but detailed statistics are simply not available, since organized crime is not obliged to cooperate -- and since surprisingly little analysis has been performed on which agreement can be reached within the LEAs.

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MAGNITUDE OF THE U.S DRUG PROBLEM

- o 4700 METRIC TONS OF MARIJUANA CONSUMED IN 1985
 - From Mexico, Colombia, United States, Jamaica, Belize, etc.
 - Current Domestic Users: 18 Million Americans
- o ONE-HALF MILLION ADDICTS USING HEROIN
 - From Southwest Asia, Mexico, Southeast Asia
- o ALMOST 75 METRIC TONS OF COCAINE CONSUMED IN 1985
 - Sources of Cocaine: Colombia, Bolivia, Peru, etc.
 - Current Domestic Users: Almost Six Million Americans
- o OVER 3 BILLION DOSAGE UNITS OF "DANGEROUS DRUGS" USED ANNUALLY
 - PCP, Methamphetamine, LSD, etc. from Domestic Clandestine Labs
 - Diverted Pharmaceuticals include Tranquilizers, Analgesics, etc.
- o ESTIMATE OF ECONOMIC SCOPE OF ILLICIT MARKET
 - Includes All Four Drug Categories Above
 - Varies from \$90 Billion to \$200 Billion

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(U) ECONOMIC COST OF DRUGS TO U.S. SOCIETY

(U) Quantification of the cost of drugs to any society is difficult. The latest data available from USG-sponsored research covers 1983. The researchers discussed at length the paucity of proper data and the gaps in both their methodology and the array of factors employed. Examples: the estimative variations on drug-related crime; the differing impact of different drugs as economic indicators; and the difficulties of linking reduced productivity to drug-causal factors. Critics of the study, moreover, point to the omission of several other factors, as well as to invalid weighting in the computation. Nonetheless, the study put forth an estimate: the drug-related costs to the U.S. totalled \$60 billion in that year.

(U) Another study, sponsored by a non-profit research institute, examined only one drug-related cost increase: insurance. "Even by the most conservative estimates," the study notes, "we found that substance abuse adds \$3.7 billion to the cost of life insurance, \$4 billion to workers compensation, \$27 billion to health insurance, \$11.7 billion to auto insurance, and \$4.3 billion to the other types of insurance combined." The total of these increases in annual insurance costs in the United States: \$50 billion.

(U) The insurance study was published in 1986, the same year in which the results were released of a long-term survey of cocaine abusers who had sought help through the Cocaine Hotline, a nationally available service. The findings shed new light on a great appreciation for the extent of drug-related societal damage: increased absenteeism of employees, leading to job loss; adverse impacts on quality of products and services, across the board; increased drug-caused indebtedness, bankruptcy, and divorce; and a marked increase in general criminality and violence.

(U) Although the next update of the 1983 data (covering 1984-1986) will not be available until 1988, one can apply conservative extrapolation. One applicable factor might be comparisons of domestic cocaine consumption, based on available data: an increase, between 1982 and 1985, of 132 percent -- a more-than-doubling within four years.

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ECONOMIC COST OF DRUGS TO U.S. SOCIETY

- o LATEST USG-SPONSORED SURVEY: 1983
 - Conservative Estimate: \$60 Billion
 - Numerous Factors Not or Insufficiently Calculated or Non-Measurable
 - variance of different estimates of drug-related crime
 - different socio-economic impacts of different drugs
 - reduced productivity difficult to link to drug-causal factors
- o MORE RECENT STUDY (1986): DRUG-RELATED INSURANCE-COST INCREASE
 - Insurance Categories: Life, Worker Comp., Health, Auto, etc.
 - Total U.S. Increase Calculated as Drug-Causal: \$50 Billion
- o SURVEY OF CALLERS TO COCAINE HOTLINE (1986)
 - New Appreciation of Extent of Drug-Related Societal Damage
 - increased absenteeism, job losses
 - adverse effects of quality of products and services
 - increased indebtedness, bankruptcy, divorce
 - increased criminality and violence

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(U) TASK FORCE ESTIMATE OF DRUG RELATED DEATHS AND INCARCERATIONS

(U) As mentioned earlier, the LEAs spend little effort trying to quantify the magnitude of the problems with which they are dealing daily. At the insistence of the Task Force chairman, however, some crude estimates were made in two specific areas. These involve the possible range of current drug-related deaths and drug-related prison populations in the United States.

(U) Task Force members were provided the statistics on the total numbers of deaths in certain categories and of federal and local incarcerations. They were asked to consider what percent of each subtotal they believed to be drug related based on their own background experience and/or information gained from other sources such as drug hotlines and medical facilities. Relatively good data exist for federal prisons and for the victims of AIDS.

(U) Of 138,500 deaths in 1985 due to "unnatural" causes, the Task Force estimates that some 13 percent to 20 percent are probably drug-related: between 18,000 and 28,000. The number of permanently injured or incapacitated in such crimes and accidents is normally several fold larger, and over the long run far more expensive to society.

(U) Based on conversations with prison officials, somewhere between 50 percent and 60 percent of all prisoners have committed drug-related crimes. At a per capita cost of about \$13,000, the direct government costs of the drug related incarcerations alone thus reach \$3-4 billion annually. As will be shown later, this cost is almost certainly higher than the total spent annually for federal drug-related law enforcement efforts. More important, of course, is the loss to society -- and our economy -- of a quarter of a million persons, in addition to those (almost certainly over a million) directly incapacitated by drug usage. Statistics like these make comparisons between the actual losses due to drugs and the potential losses due to terrorism even more difficult to compare.

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TASK FORCE ESTIMATE OF:
DRUG RELATED DEATHS AND INCARCERATIONS



DEATHS		POSSIBLY DRUG-RELATED		
CAUSE	TOTAL	PERCENT	TOTAL	
Use of Drugs	3,500	100%	3,500	
Violent Crime	20,000	5-10%	1,000	- 2,000
Auto Accidents	45,000	10-20%	4,500	- 9,000
Home/Work Accidents	48,000	0-5%	0	- 2,400
AIDS	22,000	40-50%	8,800	- 11,000
		TOTAL:	17,800	- 27,900

INCARCERATIONS		POSSIBLY DRUG-RELATED		
INSTITUTION	TOTAL	PERCENT	TOTAL	
Federal	44,000	40-50%	17,600	- 22,000
State & Local	480,000	50-60%	240,000	- 288,000
		TOTAL:	257,600	- 310,000

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(U) TRAFFICKERS CURRENT USE OF TECHNOLOGY

(U) As the technology of transportation, communications and security advance for society as a whole, the same technologies are being used by criminals, the drug traffickers. Today traffickers have become exposed to law enforcement techniques used against them through legal proceedings, the media and the movie industry. They have resorted to the use of countermeasures such as: tape recorder detectors, RF scanners, metal detectors and radar detectors. Electronic alarm systems have been used to protect traffickers and their stash pads from court ordered intercepts as well as from rival groups. Law enforcement tactical communications frequencies are being monitored through the use of scanners. On a regular basis, scanners tuned to DEA, FBI, Customs, Coast Guard as well as state and local law enforcement agencies' frequencies are seized during interdiction operations.

(U) The traffickers have also used both short range and long range radio communication to carry out their activities. With the advent of cellular telephones, the traffickers were quick to seek the security of their multiple frequency and site handoff capabilities to frustrate law enforcement's ability to intercept these communications. The development of digital signal processing has led to the use of paging systems and electronic mail systems to send and receive messages on shipments and deliveries. Personal computers are being used for accounting and record keeping and to send data through modems. One electronic notebook, which sold for approximately \$70.00, had such a complex method of encryption that it could not be broken by a number of federal agencies.

(U) Night vision equipment has been utilized along the borders and will probably increase. Remotely piloted vessels have been used along the coast of Florida. They are controlled from a mother ship and are used to deliver shipments of marijuana. The use of technology by the traffickers will increase in the future and will tend to become more sophisticated as new technologies come on the market. Regardless of cost, traffickers will immediately test them against law enforcement agencies.

(U) Without question, there is a dynamic and very responsive "technology race" underway between the drug traffickers--as well as other criminal elements--and the law enforcement agencies. It is by no means clear which side is better funded--or better equipped.

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TRAFFICKERS CURRENT USE OF TECHNOLOGY

- o TAPE RECORDER DETECTORS
- o RF SCANNING
- o METAL AND RADAR DETECTORS
- o ELECTRONIC ALARM SYSTEMS
- o COMMUNICATION EQUIPMENT WITH AND WITHOUT PRIVACY
- o COMMUNICATION TECHNOLOGY
- o CELLULAR TELEPHONE
- o USE OF PAGING SYSTEMS
- o ELECTRONIC MAIL SYSTEMS
- o PERSONAL COMPUTERS
- o ELECTRONIC NOTE BOOKS WITH ENCRYPTION
- o NIGHT VISION DEVICES
- o REMOTELY PILOTED VESSELS

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(U) NATURE OF WORLDWIDE TERRORISM

(U) Terrorism is a highly dynamic phenomenon. Its political dimensions are constantly changing, and national or regional boundaries are often meaningless. Within terrorism, there are three operationally relevant types: organizational, insurgent, and state. Each is very distinct, but often related, and each poses unique collection, analytical and intelligence challenges.

(U) Organizational terrorists are generally small groups, that by virtue of their inability to develop broad and popular support, resort to terrorism. These groups have no agenda to institute a new order, but rather use violence to shock, disrupt, or intimidate. Most have virtually no means to capitalize on the disruption they cause. Consequently, the impact of their violence is felt chiefly by individuals rather than by governments.

(U) Insurgent terrorists include organizational terrorists whose membership grows and political agendas mature. Many believe that the publicity derived from terrorism draws public awareness to their grievances and increases membership and support. They principally direct their operations against opposing government forces and institutions, to establish credibility by undermining a government's control and its support.

(U) State-sponsored terrorism poses the greatest challenge. When it is sponsored or abetted by a sovereign state, it can become a matter of international conflict. Certain states have found that terrorism complements foreign policy and accomplishes both specific and strategic political objectives that could not be accomplished through conventional political or military means. The sponsoring state need not, and usually does not, seek credit for its acts of terror.

(U) Terrorism can often be a transnational, collaborative effort, among different groups. This is not to suggest, however, that a formal "International Terrorist Network" exists. What is meant is that terrorist groups are often attracted to each other for vastly different reasons. They may share common resources in such areas as weapons procurement, intelligence, training, finances, legal assistance, and logistical support. Apart from these operational factors, some groups may be drawn together or assist each other, for much broader reasons.

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NATURE OF WORLDWIDE TERRORISM

o TYPES

- Organizational Terrorism
 - national groups
 - transnational collaborating groups
- Insurgent Terrorism
 - national-based forces
 - augmentation of guerilla warfare
- State-Sponsored Terrorism
 - implementation of state policy
 - surrogates of official state forces

o RESOURCES

- Active Anti-American Terrorists \approx 1000 persons
- Annual Terrorist Budget \approx \$200M

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(U) MAGNITUDE OF WORLDWIDE TERRORISM

(U) Acts of international terrorism have risen from approximately 500 in 1981 to 768 in 1986. The attacks were directed against targets that included: business, diplomats, governments, military and others. There has been over a 100 percent increase in Middle Eastern terrorist incidents in Europe alone from 1981 to 1985. These attacks have also become more lethal as evidenced by an increase in deaths from 20 in 1968 to 569 in 1985. Of the 768 attacks, 421 were bombings, 136 were armed attacks and 110 were arson for a total of 75 percent of all incidents. Approximately 25 percent of these incidents were directed against the United States of which 90 percent were bombings, armed attacks, or arson.

(U) States support terrorism either as a matter of ideological conviction, to build political or military alliances, or as a way to establish credentials with revolutionary movements worldwide. In practice, they overtly conduct conventional diplomacy while, at the same time, covertly sponsor subversion. They embrace this policy in order to maintain respectability and legitimacy.

(U) The second level of state involvement in terrorism is at the logistical level. These states actually provide the weapons, explosives, and training that facilitate terrorism. They are not involved in actual terrorist operations, but provide the general means, equipment, and training that make the operations possible or successful.

(U) The third level involves those states which directly engage in terrorism in pursuit of their own national goals. Libya is clearly the best example of a state actually engaged in terrorism at this level.

(U) Today, when one thinks of the terrorism threat, attention immediately turns to the Middle East. The root causes of Middle Eastern terrorism are complex and longstanding: a Palestinian homeland, Israel's existence and policies, Arab states jockeying for regional power, sectarian strife and religious extremism. The rise and steady growth of Middle Eastern terrorism has come from state support. While independent, organizational-type terrorist groups do continue to exist in the Middle East, it is state support that has served to multiply the number and magnify the effect of their actions.

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MAGNITUDE OF WORLDWIDE TERRORISM

- o **ATTACKS ARE INCREASING**
 - 500 in 1981, to 768 in 1986

- o **ATTACKS ARE BECOMING MORE LETHAL**
 - 20 Deaths in 1968, to 569 in 1986

- o **UNITED STATES IS A PRINCIPAL TARGET**
 - 200 Attacks Against U.S. Targets in 1986

- o **STATE SPONSORSHIP**
 - Libya, Iran, Syria Responsible for 110 Incidents

- o **MIDDLE EAST LOCUS**
 - Proliferation of Groups and Subsidiaries

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(U) CURRENT IMPACTS OF TERRORISM

(U) Unlike the anarchist group or the insurgent organization, state supporters of terrorism are more vulnerable to sanctions, diplomatic isolation, and, if necessary, military attack as illustrated by U.S. policy toward and actions against Libya.

(U) Disharmony between populations of different states or of population within one state is evidenced by the struggle between the Irish Republican Army in Northern Ireland and England as well as the religious strife between Catholics and Protestants.

(U) In Latin America, terrorism occurs most frequently as a tactic, rather than a strategy. Terrorism is usually an indicator of the initial phase of a fledgling insurgent movement which has as its eventual goal the development of full-scale guerrilla warfare. Latin American revolutionary groups tend to be highly nationalistic, having as their primary motivation the assumption of power in their country through the overthrow of their national governments. Finally, the issue of illegal drug trade has increased the interaction between drug traffickers and insurgents in recent years.

(U) Increased U.S. emphasis on international drug trafficking as a national security concern is generating a growing terrorist threat from the drug traffickers. In certain cases, in particular in Colombia where a marriage of convenience between traffickers and revolutionaries has produced some common objectives, assassination-for-hire arrangements have occurred between narcotics dealers and leftist terrorists.

(U) The threat to officials in Colombia is likely to further increase as U.S. involvement in drug interdiction and eradication efforts increases. This increase has already produced threats to American officials and the assassination of Colombian officials who support the anti-terrorist efforts.

(U) Incidents in 1985 demonstrated that terrorism is increasingly directed against the Western democracies. The June 1985 hijacking of TWA Flight 847, the hijacking of the Achille Lauro and the bombing of a restaurant on the outskirts of Madrid frequented by American servicemen demonstrate Americans are being specifically targeted.

(U) The growth in frequency and violence of terrorist acts has increased physical and personal security costs, and changed lifestyles and work habits. This growth also has the indirect impact of decreasing American tourism in Europe following terrorist acts.

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CURRENT IMPACTS OF TERRORISM

- o DISHARMONY BETWEEN STATES
 - U.S. and Libya
- o DISHARMONY AMONG POPULATIONS
 - IRA Influence in Ireland and England
- o INSTABILITY WITHIN STATES
 - Sendero Luminoso in Peru
- o INFLUENCE ON STATE POLICY
 - M-19 and FARC in Colombia
- o IMPACTS ON ECONOMY
 - TWA Incident on European Tourism

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(U) TERRORIST CURRENT USE OF TECHNOLOGY

(U) Looking at technologies terrorists have contemplated and discarded or tried and failed gives us some idea of the breadth of their imagination. Most of the tactics and operations they have considered are essentially "more of the same." These include: the letter bomb (actually an invention of the 1940s for which Jewish extremists in Palestine get credit), the car bomb, the radio-controlled car bomb, the radio-controlled boat bomb, and the suicide vehicle bomb. There also have been innovations in fuzing and detonating devices: the barometric pressure fuze invented by the Palestinians to blow up airliners in flight, the long term delay mechanism used by the IRA in the attempt on Prime Minister Thatcher's life, the manufacture of homemade mortars. Terrorists have added several dimensions to hostage-taking: hijacking airliners to make political demands; seizing embassies; kidnapping diplomats to gain the release of prisoners; kidnapping corporate executives to finance terrorist operations.

(U) These innovations could all be categorized as enhancements and variations. The basic tactics have changed little over the years. Indeed, the relative percentage of the various tactics has remained stable for a long time, except for a decline in embassy takeovers. Terrorists might respond to the new security measures that have been taken to protect embassies against car bombs by attempting aerial suicide attacks, which are technically and physically more demanding. Or they might resort to standoff attacks, using remotely-fired rockets or mortars, to respond to strong defenses. Or they might choose to engage less heavily defended targets such as American schools abroad.

(U) Among the factors cited for the increases in both the number and sensational nature of incidents is the terrorists' success in achieving wider publicity and influencing a much broader audience. Terrorists see the media's role in conveying their messages worldwide as essential to achieving their goals. If the violence is spectacular, wide media coverage is usually assured. Terrorist acts are newsworthy, and the media see coverage as a professional, competitive responsibility. Some in the media have claimed that intense coverage helps to preserve the key factors in an incident, and that putting the hostages on television may actually save their lives. Others contend that information released by the media can interfere with resolution of an incident, foreclose options for dealing with it, or unwittingly provide intelligence information to terrorists.

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TERRORIST CURRENT USE OF TECHNOLOGY

- o LETTER BOMBS
- o AUTOMOBILE BOMBS
- o BAROMETRIC PRESSURE TRIGGERING OF BOMBS
- o COMMAND-DETONATED BOMBS
- o REMOTELY-CONTROLLED EXPLOSIVE-FILLED BOATS
- o HOMEMADE MORTARS
- o AERIAL SUICIDE AND STANDOFF ATTACKS
- o REMOTELY-FIRED ROCKETS
- o USE OF MEDIA

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(U) OUTLINE OF TAXONOMIES

(U) The term taxonomies has been borrowed from the world of biology where it means the classification of animals and plants according to their natural relationships. Taxonomies of drugs and terrorism show relationships of people and materials in structured patterns. By knowing these relationships we can get clues for observables and detectables; from the patterns we can view the process as a mosaic with missing pieces and thus get indicators of where to look for the unknown.

(U) The flow of drugs is composed of five major steps. Production consists of growth and preparation for first shipment. Processing of cocaine and heroin is done in crude laboratories which make the final product. Transportation is accomplished by any means available including general aviation and private boats. This step usually involves entry into the United States. Distribution is accomplished by wholesalers and selling is done by retailers and pushers.

(U) There is also a five step process in terrorism but the details are not at all the same. The first two steps in terrorism - motivating then training and equipping are usually done in a "safe" country. Transport usually includes crossing of one or more international boundaries. The execution phase includes the detailed preparation and positioning as well as the attack itself. And there is almost always some preparation for escape.

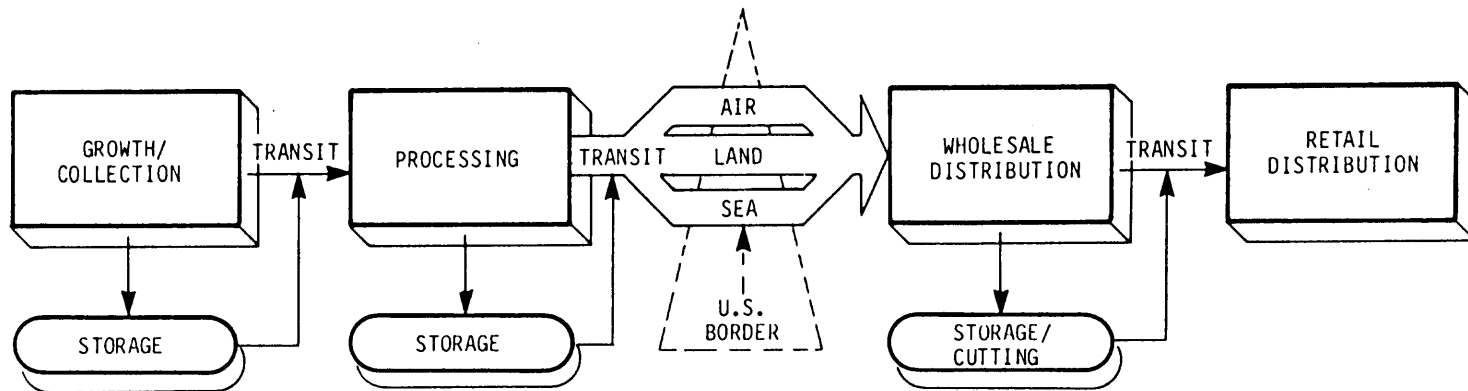
(U) The flow diagrams and taxonomies in this section follow this general pattern, expanded as necessary to show details and interactions.

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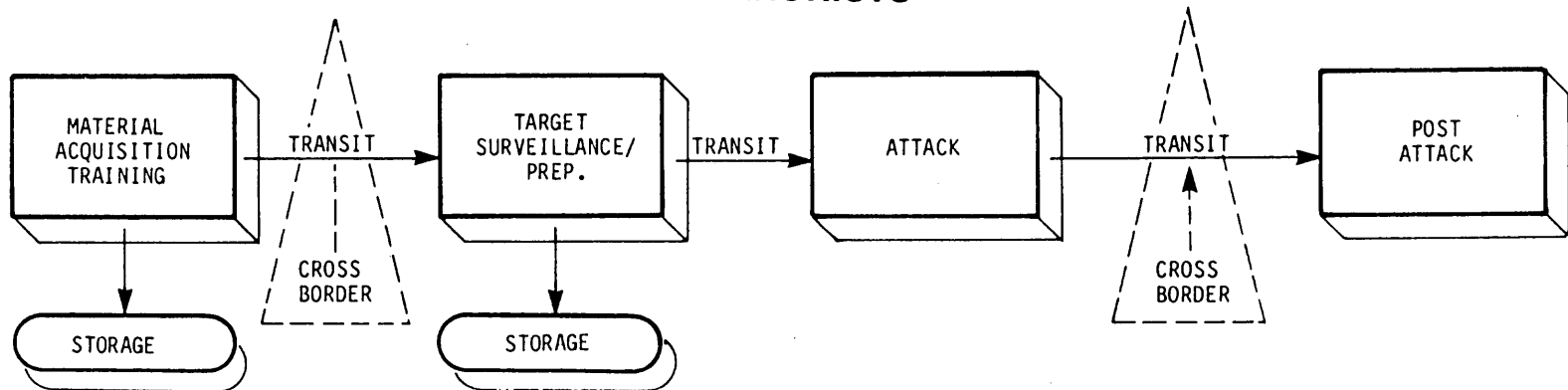


UNCLASSIFIED OUTLINE OF TAXONOMIES

DRUGS



TERRORISTS



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(U) TERRORIST FLOW

(U) According to Webster's dictionary, terrorism is the "use of terror and violence to intimidate, subjugate, etc., especially as a political weapon or policy." Terrorist attacks may range from isolated incidents perpetrated by individuals to coordinated attacks by larger terrorist groups that have financial and logistical support from governments sympathetic with their cause. It is this latter type that poses the most serious threat to the U.S. and its allies.

(U) It is estimated that about twenty-five significant terrorist groups are in existence. Active terrorists probably number about 1,000 worldwide and are supported by large segments of disaffected populations sympathetic with their goals. In some cases, terrorist groups may hire surrogates (criminals) to carry out their attacks. The total annual "operating costs" for all these organizations may not exceed \$200 million.

(U) Most organized terrorist offensive actions are comprised of planning, equipping, transitting to the target area, casing, attack and escape. Hostage taking can be either a planned or an unplanned expediency due to circumstances of the attack.

(U) In planning, terrorist organizations select a target appropriate to the goal of the group, e.g., country, type of target, type of attack, media coverage potential, etc. Arrangements are made for obtaining false documentation for travel, appropriate weapons, money and manpower.

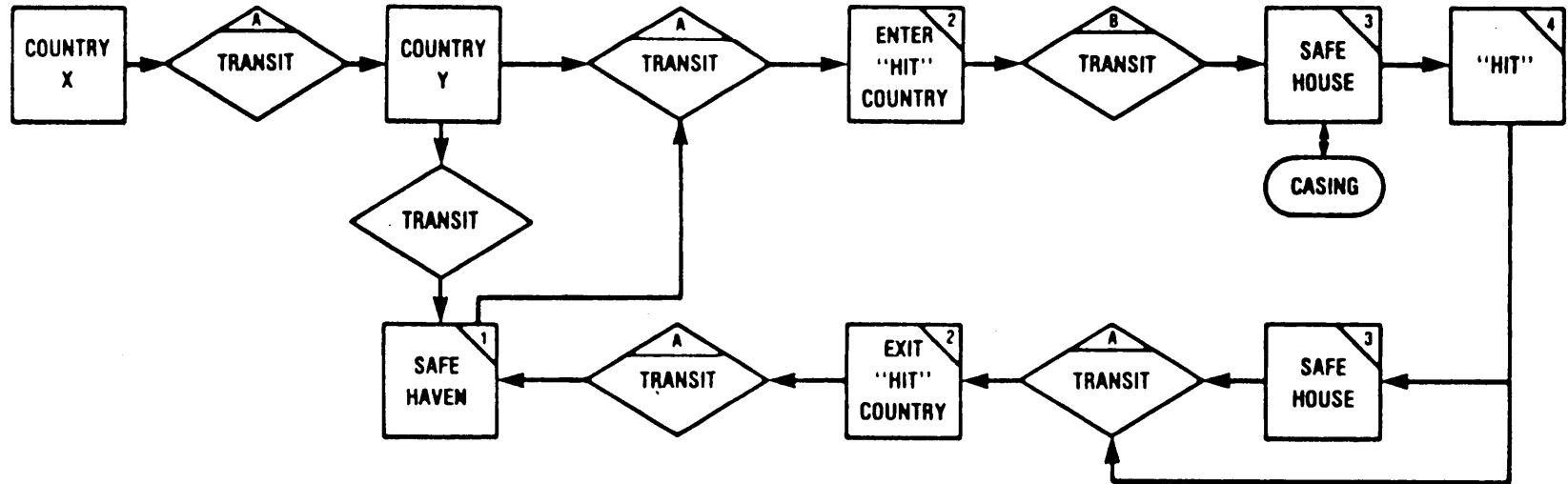
(U) After basic plans are formulated, a terrorist will travel to a second country under false documents to obtain weapons, vehicles, and communications gear and collect information on the target and the political situation as it pertains to their planned attack. Upon completion of this phase of the operation, the terrorists, without their equipment, will proceed to the target country. The local terrorist infrastructure will have arranged for a safe location and the delivery of the weapons, explosives, vehicles and other attack related equipment. Final detailed casing of the target, providing security forces, and planning escape routes are done during this stage. When the optimum time arrives, the terrorist will attack, escape and/or take hostages.

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TERRORIST FLOW



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(U) COCAINE FLOW TO USA

(U) Most of the illicit coca bush is grown by farmers in Peru, Bolivia and Colombia. These farmers grow the coca bush along with other crops or as the sole crop. Typically the coca bush is cultivated in plots varying from approximately 1 to 5 acres. An acre will produce approximately 0.5 to 1.0 metric tons of coca leaves annually. As they are harvested, the leaves are dried (in the sun) in a location close to the plots. As a result of the drying process the leaves lose 40 percent of their weight. The leaves are then stored in a dry, cool place (sheds, tents, etc.) until they are sold licitly or to the producers of the coca paste. Processing of the paste takes place close to the "farms" and requires readily available solvents. The process is relatively simple, it does not require a chemist. One kilo of paste (sulfate) requires 100-200 kilos of dried leaves with three to five days to process. The cost of the dried leaves, solvents, labor etc. vary from country to country with the major cost attributed to the growth of the leaves.

(U) The paste from Peru and Bolivia is typically sold to "runners" who are on assignment from a "local boss." These runners collect 50-100 kilos of paste which are delivered and flown to Colombia in small aircraft where it is further refined. Some fraction of this paste remains "in-country" for conversion to cocaine base or hydrochloride (HCl).

(U) The production of cocaine in its cocaine base or HCl form is more sophisticated than paste production and requires chemicals such as acetone, ether, hydrochloric acid, a considerable amount of water and a chemist for quality control. The process takes some 5 to 10 days and requires 2.5 kilos of paste per kilo of cocaine base or HCl. It is believed that cocaine base/HCl is stored to meet changing market demands. Three quarters of the cocaine base/HCl production takes place in Colombia in both small (tens of kilos) to large (thousands of kilos) labs. The cost to the exporter of cocaine HCl varies from country to country, however it is at this point in the process where the "profits" start to become enormous since this is under the control of the cartels or drug organizations.

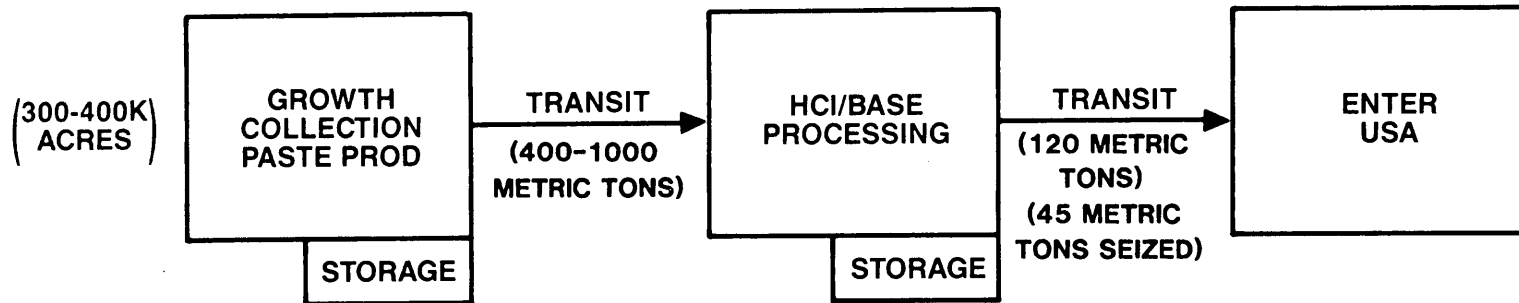
(U) The cocaine base/HCl is sent to the wholesalers in the U.S. either directly or through another country such as Mexico. Drug trafficking takes place mostly throughout most of the U.S. eastern and southern borders, either through Ports of Entry or not. A high percentage of the cocaine comes through Florida and the surrounding areas. All forms of transport are used, challenging every means to interdict the traffic.

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Cocaine Flow to USA

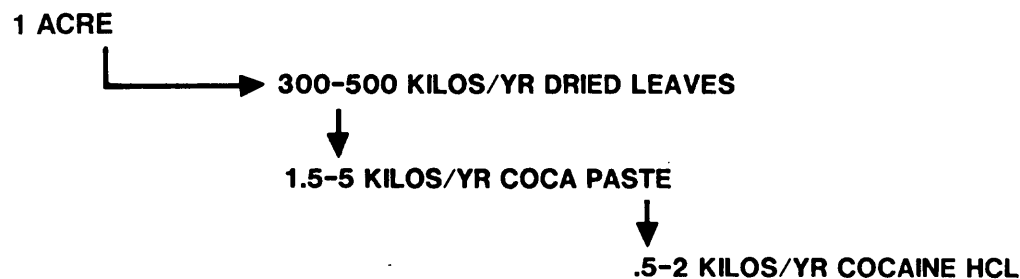


- COUNTRIES**
- PERU (10-20%)
 - BOLIVIA
 - COLOMBIA
 - EQUADOR
 - BRAZIL

- HARVEST**
- MARCH
 - JUNE
 - SEP

- COUNTRIES**
- COLOMBIA (75%)
 - BOLIVIA (15%)
 - PERU (5%)

- MODES**
- GENL AVIATION
 - NON-COMMERCIAL VESSELS
 - COMMERCIAL AIR & VESSEL
 - LAND



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(U) COCAINE FLOW IN USA

(U) Once the cocaine HCl has been successfully exported to the U.S. wholesaler, the wholesaler then sells it to various regional distributors throughout the country. It is estimated that there are hundreds of wholesalers who are directly associated with the drug cartel and who purchase the contraband for 3 to 4 times the cost to the exporter (~\$20,000 per kilo). The wholesaler then marks up the cost by a factor of two when selling in smaller package sizes to the regional distributors. When the wholesaler purchases cocaine base, as opposed to cocaine HCl, it will be processed into cocaine HCl and sold to regional distributors. It is not known how much of the cocaine HCl is stored, but it is believed that the wholesaler must maintain a few-week inventory as a normal business practice.

(U) The regional distributors sell the cocaine HCl to the drug retailers in the 1/2 to 1 kilo range. Typical street sales are packaged in gram units of about 50 percent cocaine mixed with various other substances and sold at about \$100/gram. It is estimated that 150,000,000 of these "street grams" are consumed in the U.S. each year by about 6 million users. The user cost of \$100 per "street gram" drops to \$20 for wholesalers and to about 10 cents to the farmer. Everyone makes some "profit" but the major beneficiaries are a relatively small number of organizations that purchase, transport and wholesale the drugs. These organizations take the entrepreneurial risk of buying in future markets and the legal risks of being caught transiting the border or storing it within the U.S.

(U) In recent years, the retailers and street dealers have been converting cocaine HCl into crack, a free base form of cocaine (which can be smoked) by using baking soda or ammonia. Crack is typically sold for approximately \$10 for a one-tenth gram dosage which is approximately 95 percent pure base.

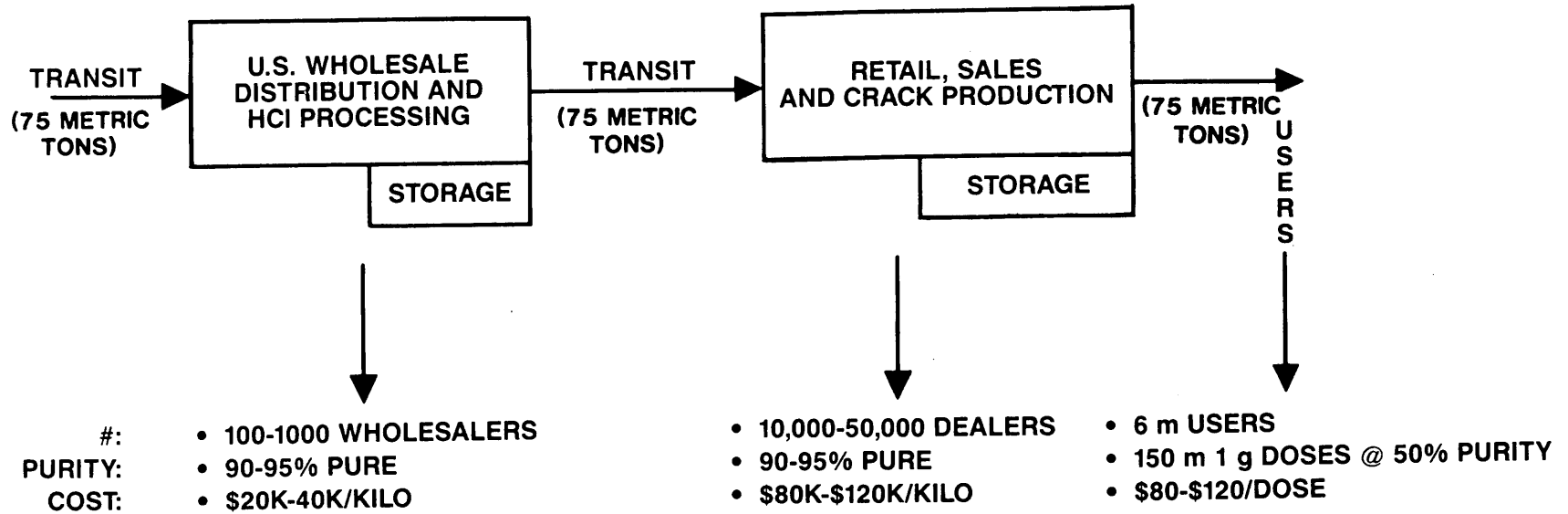
(U) Based on approximately 75 metric tons being consumed in the U.S. per year, on the order of 150,000,000 one gram, single-usage doses of 50 percent pure cocaine HCl are purchased and consumed (if all the cocaine HCl were converted). At a per dose cost of approximately \$100 the average daily purchase calculates to be 4,000,000 or around 5 doses per second. If all of the 75 metric tons were converted to crack, then some 650,000,000 one-tenth gram vials at 95 percent purity could be produced at a street value of approximately \$10 per vial. From this, one can estimate that some \$10-15 billion dollars are expended on the purchase of cocaine each year.

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Cocaine Flow in USA



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(U) GROWTH, COLLECTION AND PASTE PRODUCTS

(U) Coca is the source of the world's supply of cocaine. It is a perennial shrub with a normal life of 15 to 20 years.

(U) Coca is cultivated in most countries in the tropical parts of South American with a majority originating from Peru (~ 60 percent), Bolivia (~ 20 percent) and Colombia (~ 10 percent). It is illegal to grow the shrub in all countries except Bolivia and in parts of Peru, where historically the leaf is grown by the native indians who rely on coca to sustain strength. Although the coca shrub can be harvested year round, there are usually three crops harvested each year. One acre of coca shrubs produces 500 to 1,000 kilos per year depending on the location of the plot. Approximately 1 to 2 man years is required to cultivate, harvest, dry and package the coca leaves from a typical plot of 3 to 20 acres. Hence the 100,000 - 200,000 farms within which coca bushes are cultivated require some several hundred thousand man years. In return these farmers receive \$300 to \$500 million annually selling the dried leaves for paste production.

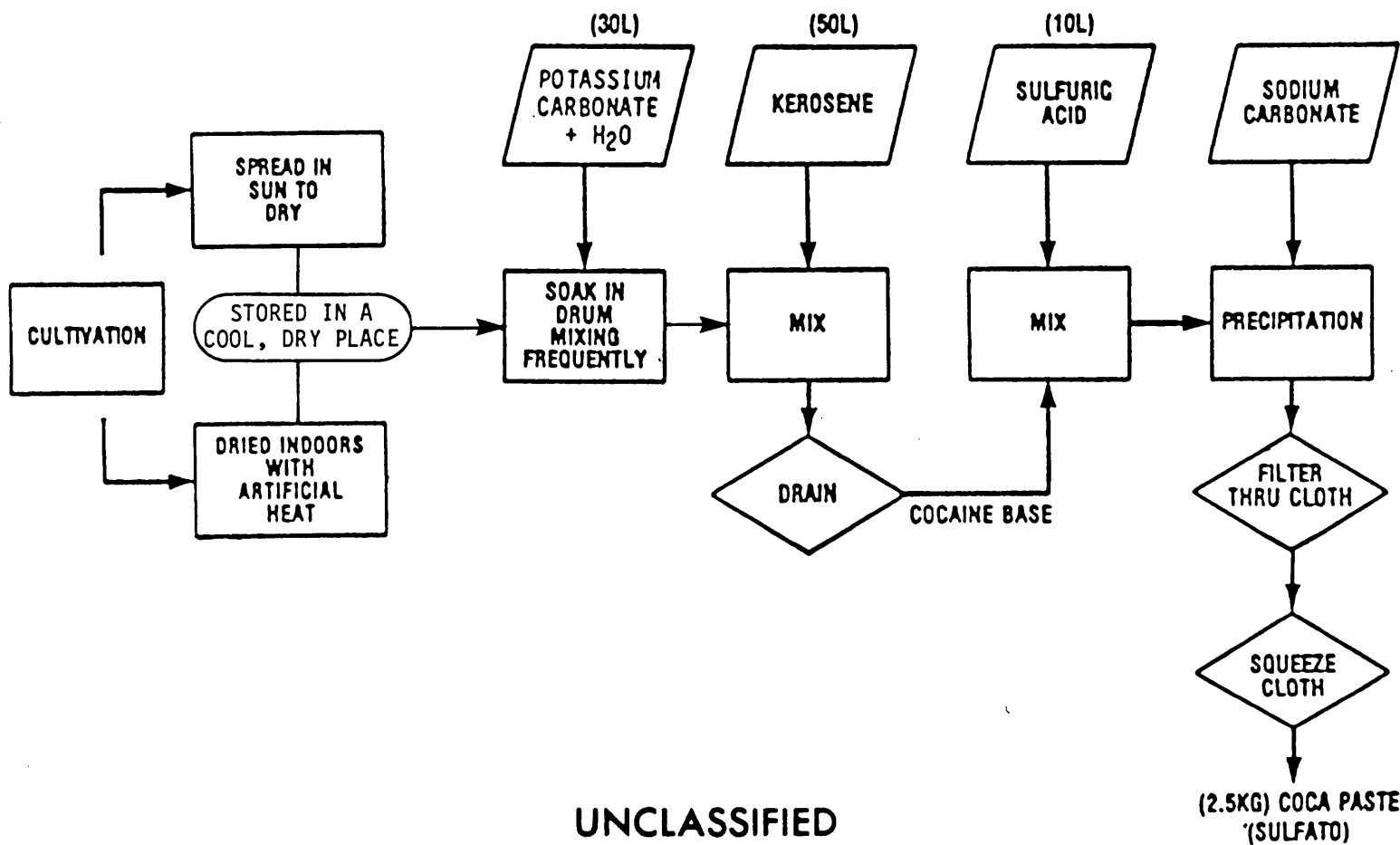
(U) The dried coca leaves are converted to coca paste through a process that requires kerosene and sulfuric acid among the readily available chemicals. The conversion of coca leaves to paste requires 100 to 200 kilos of leaves for every 1 kilo of coca paste. If all of the estimated 400,000 acres of coca shrubs were converted to paste, approximately 1700 metric tons of paste would be available for the production of cocaine base or HCl. How much paste is produced is not known, however the amount of paste required to provide the estimated 75 metric tons of cocaine consumed in the U.S. is only 300 metric tons. Production (supply) appears to substantially exceed demand.

(U) The conversion process of leaves to paste does not require elaborate equipment, much materials or highly skilled personnel. The process takes place close to the farms, and the amounts produced are relatively small (a typical 3 acre plot will produce approximately 5-6 kilos of paste annually) or around 2 kilos per major harvesting). As a result, it would appear to be difficult to detect, locate and destroy the paste.

(U) The major cost associated with the production of paste is that of the leaves. The costs of chemicals and labor are small. Although, little is known about cost at this point in the production of cocaine, recent estimates show the price of the coca paste varies widely, from \$9 to \$225/kilo depending on country, time of year, etc.

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GROWTH, COLLECTION, AND PASTE PRODUCTS

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(U) PRODUCTION OF COCAINE HCl OR BASE

(U) Typically the coca paste is sold to a contracted buyer (called runners) shortly after manufacture. The production of cocaine base or HCl requires a laboratory consisting of more sophisticated equipment and chemicals than those required in the production of paste. The process requires a considerable amount of water, chemicals (such as Potassium Permanganate, ether, acetone and sulfuric acid), energy sources (such as electricity and heat), and personnel. For security reasons, most of the labs are believed to be in remote areas of the country, not necessarily close to the farm or paste production areas. Hence the paste must be purchased and transported to the labs. This is done by land when the lab is in-country and by air if out-of-country (for example paste from Peru to Colombia). Most of the labs are believed to be under the control of the so called drug cartels.

(U) As a result of the production of cocaine HCl or base, numerous opportunities are available to detect the lab. Of significance is the fact that these labs require frequent replacements of their consumables (such as paste, chemicals, food, etc.) and need to "fill" their orders for the product on demand. Hence, money is required as well as communications to effectively operate. The replenishment of consumables and pick up of the products is usually done by air (and possibly water). Hence the lab must be located near an airway and a waterway. It has been observed that the "typical" labs in Colombia (which currently produce about 75 percent of the cocaine HCl/base) can produce 500 kilos of cocaine HCl or base per week, using about 50 laborers, one chemist requiring 1,200-1,300 kilos of paste, 5,000 liters of ether and acetone, 5 metric tons of Potassium Permanganate and at least 10,000 gallons of water (the only local product) to support the production. The waste products may possibly provide more opportunities to locate the labs.

(U) The major cost of cocaine HCl/base production is attributed to the cost of the paste as opposed to the chemicals and labor. The paste cost to support one week's production in the above lab (using Bolivian paste) would be about \$250,000 to \$500,000. At a cost of \$4,500 per kilo (cocaine HCl in Colombia), the value of the weekly product is about \$2M, thus realizing a significant potential profit. If the entire estimated coca crop were converted to cocaine HCl, then some 300-600 metric tons of cocaine could be produced and sold to exporters, at a cost to the exporters of some \$2 billion.

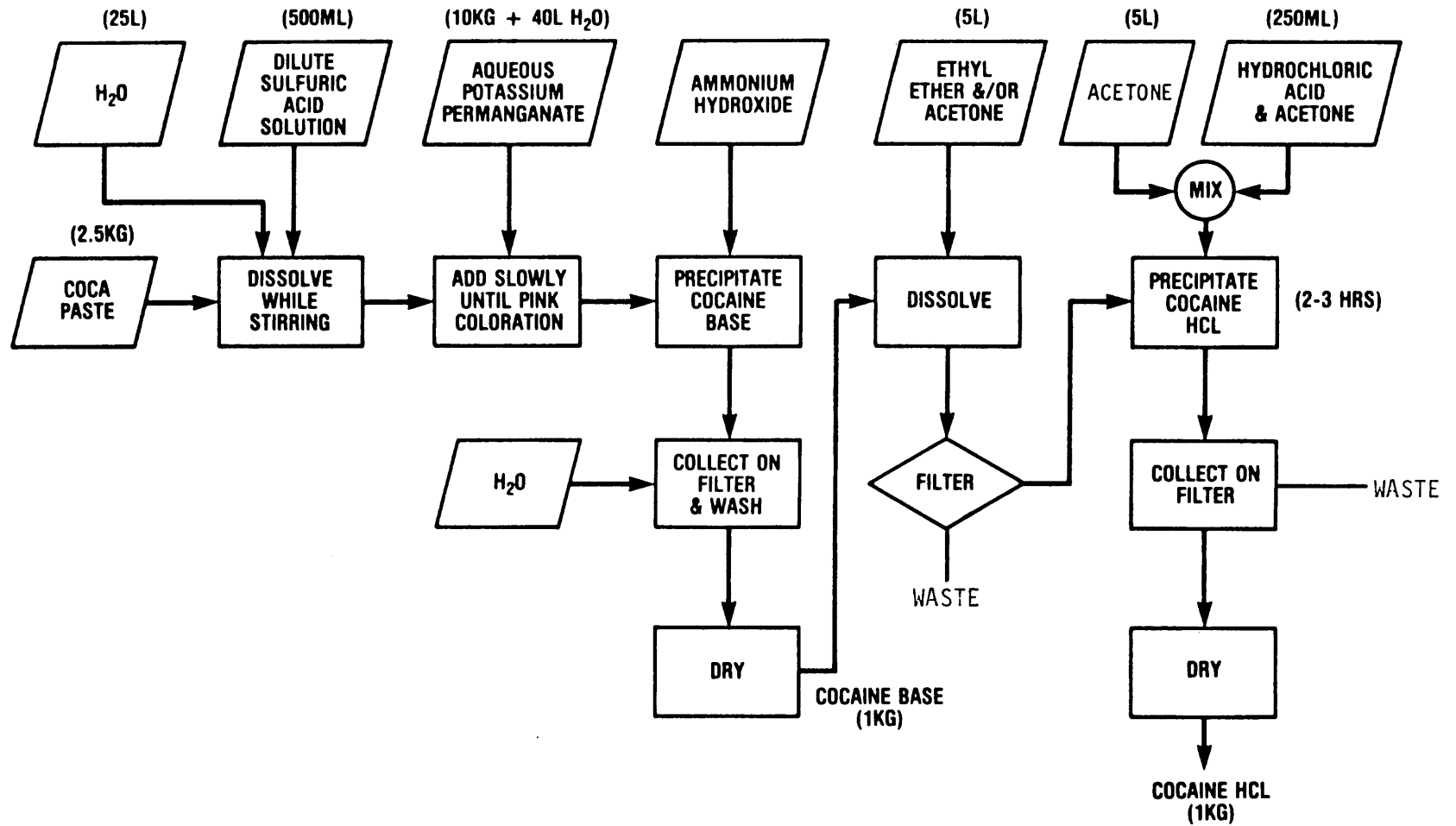
(U) The next two pages illustrate all the "detectables" from the beginning to the end of the cocaine taxonomy. Such analysis can underwrite a rigorous technological search for potentially applicable detectors.

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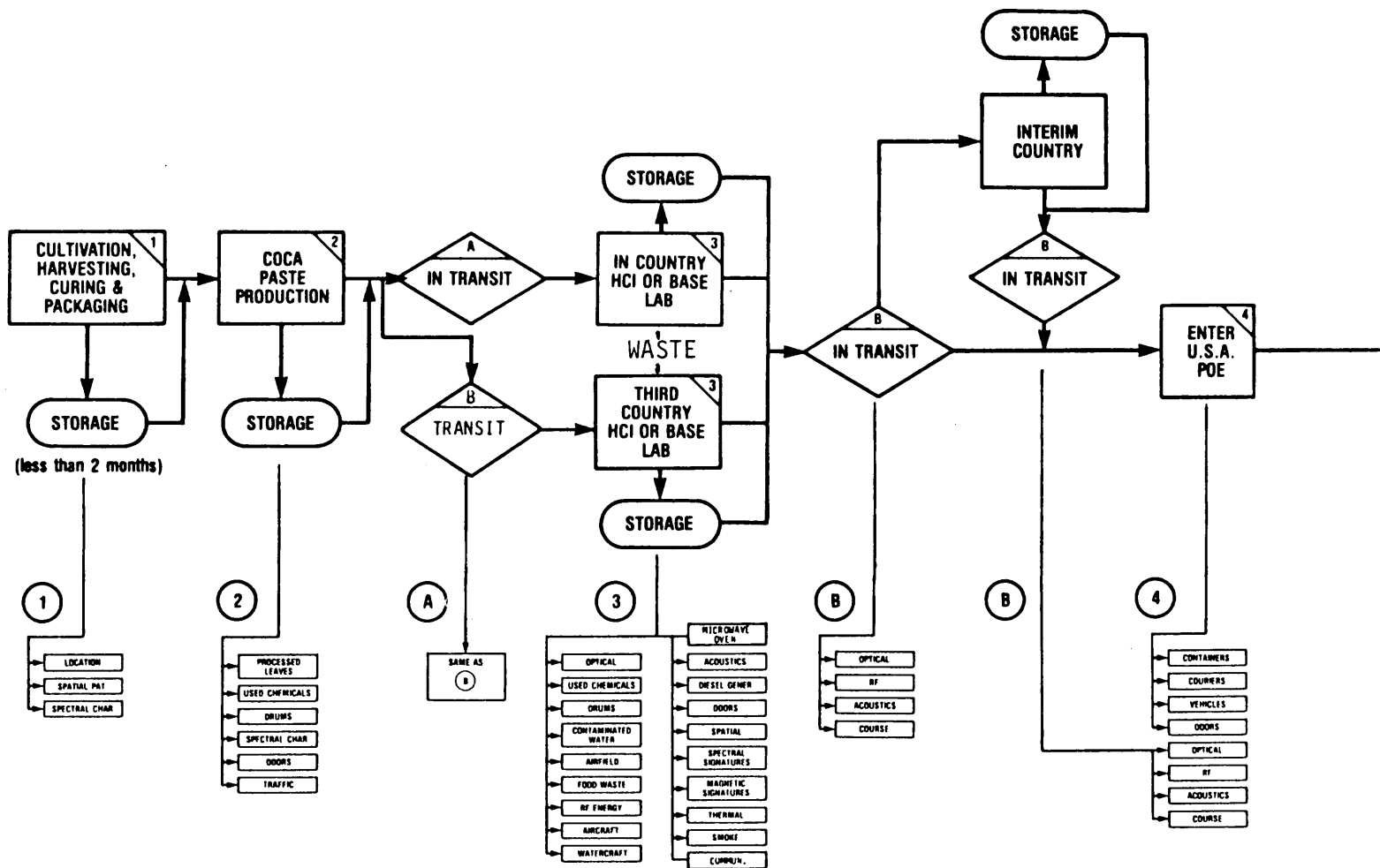
PRODUCTION OF COCAINE HCL OR BASE



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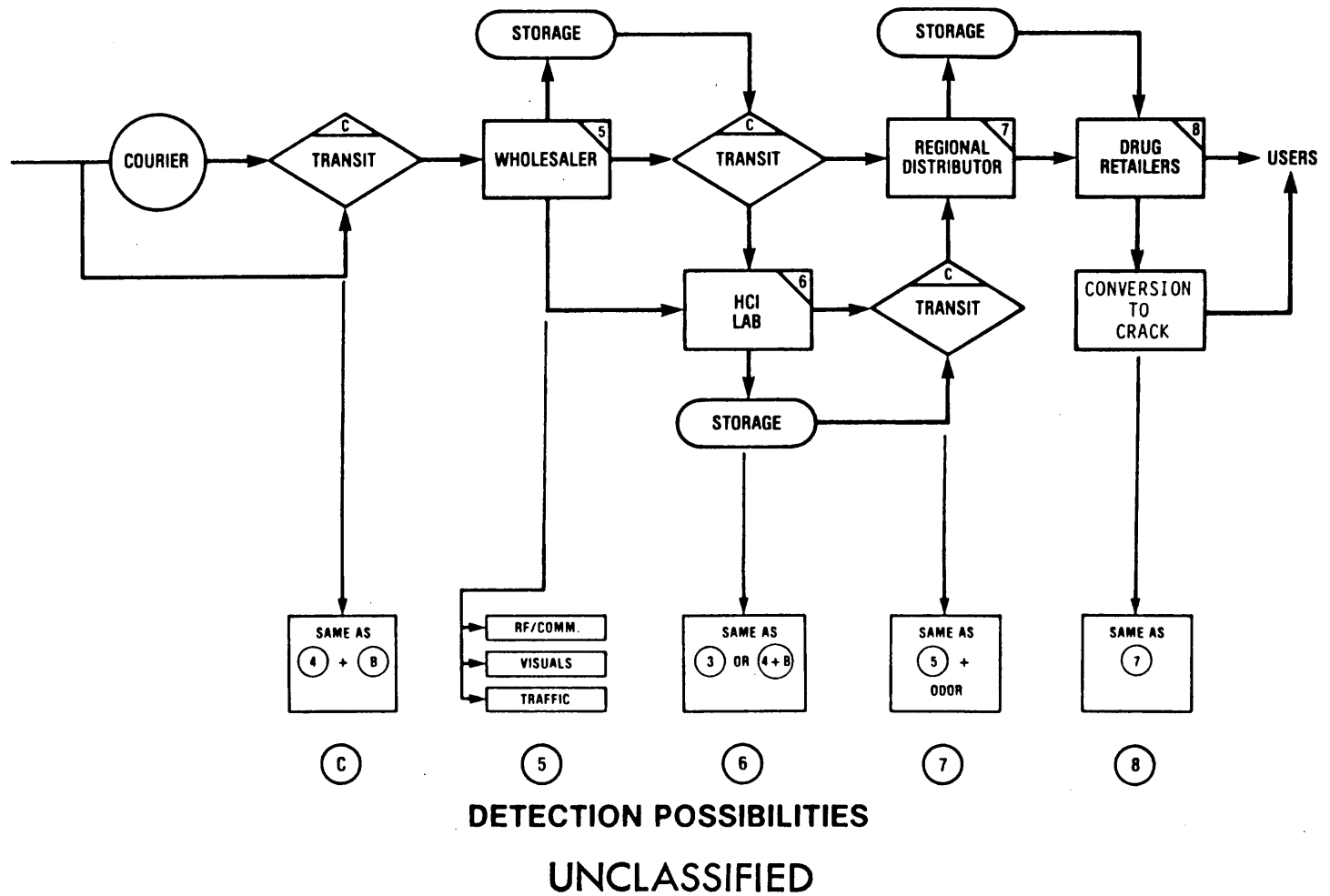
UNCLASSIFIED COCAINE FLOW TO U.S.A.



**DETECTION POSSIBILITIES
UNCLASSIFIED**



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COCAINE FLOW IN U.S.A.



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(U) COCAINE SMUGGLING INTO THE U.S.

(U) The primary exporter of cocaine to the U.S. is Colombia. As can be seen from the map, smuggling operations occur on all three coast lines as well as across the Mexican border. The primary import area has been Florida with a heavy concentration around the Miami area. But when the smugglers' lines of communication are threatened or closed, other lines take over. As a result of the U.S. programs to interdict the drugs coming directly from Colombia, Bolivia and Peru, and as area surveillance of the Eastern Caribbean and Bahamas has improved, the air routes have shifted to the West. Some smugglers have shifted their air routes over Mexico. Others now appear to be using Mexicans to walk the cocaine across the border. The next move might well be towards the greater use of small pleasure craft along the Pacific Coast. It is clear that a "balanced" interdiction program must be ready to accommodate all alternatives.

(U) Private aircraft and vessels are used to smuggle a high percentage of the cocaine, usually bypassing the ports of entry. If 125 metric tons of cocaine were smuggled in by private aircraft carrying 250 kilos/flight, some 500 flights would be required over a year (or 10 flights/week), a modest number considering the value of the cargo and the relatively short duration required to make the trip. In 1986, some 44 metric tons of cocaine were seized with 21 metric tons from general aviation, 12 metric tons from non-commercial vessels, and 5-6 metric tons from both commercial air and vessels. The estimated direct money flow for 1986 is \$15B for cocaine, \$12B for marijuana, and \$10B for heroin -- \$37B in all.

(U) It is clearly necessary to establish surveillance and tracking of suspect traffic over its entire route from source to legal or illegal entry into the United States. This must include knowledge of movements across other countries who may be either implicitly or explicitly involved in the trafficking, as well as coastal and off-shore shipping. This may require both satellites and OTH radars. There is then a concurrent need to be able to "pass" these tracks to surveillance, warning and control systems that can monitor the arrivals and landings in the U.S., and "pounce" on the smugglers "in the act."

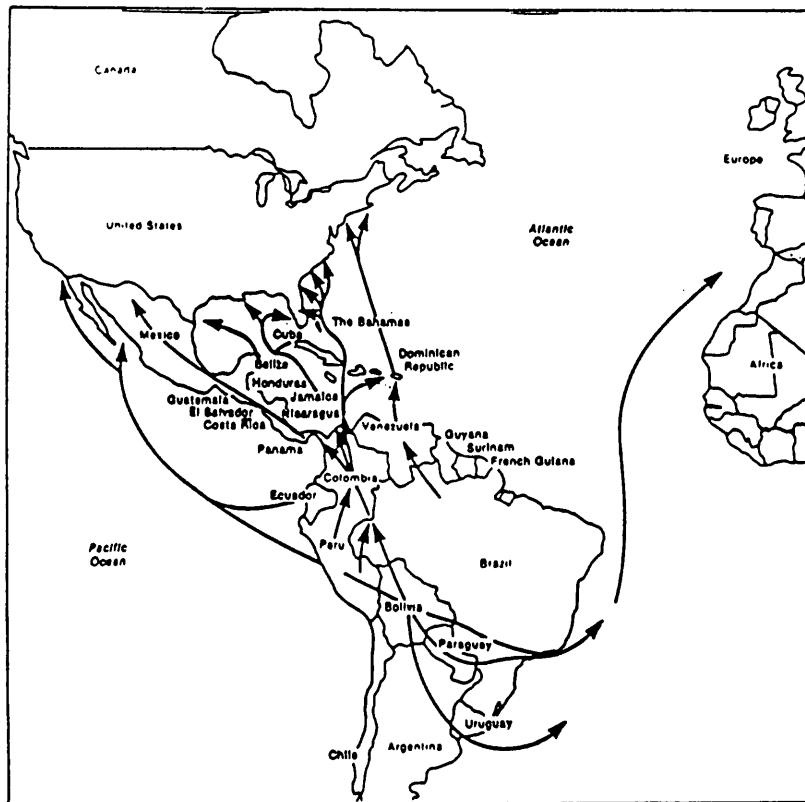
(U) Cocaine production capacity is estimated to be about 5 to 6 times the U.S. consumption, or the equivalent of 700 million "street grams." Some of this output is used for legitimate purposes and in medicines in countries where it is not illegal. A fairly large fraction is exported illegitimately to other user countries. About 13 percent is destroyed or confiscated or otherwise lost and roughly 20 percent is shipped to the U.S. This high production capacity relative to the U.S. market indicates the difficulty in reducing the flow by interdiction or the usage by trying to raise the price.

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COCAINE SMUGGLING INTO THE US



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(U) CANNABIS FLOW

(U) The diagram describing the flow of the marijuana from the cultivation to the user is similar to the cocaine flow with the exception that (a) some of the marijuana sources are from the U.S., the Mideast, Southeast Asia and Central America, as well as the South American countries and (b) marijuana does not require processing.

(U) The marijuana plant is an annual plant grown from seed and harvested twice a year. It is purchased from the farmers, packaged for shipment to the U.S. or within the U.S. Most marijuana smuggled from Colombia, Jamaica and Belize is coming in by non-commercial vessels in multi-ton quantities and to lesser degrees in general aviation. Marijuana from Mexico enters from ground transportation and general aviation aircraft modes.

(U) Domestically cultivated marijuana is available from all 50 states, with a trend toward indoor growing facilities and smaller plots. Local trafficking organizations usually control the interstate distribution.

(U) Best estimates indicate that of the 10,000 to 13,000 metric tons available for use in the U.S. (after in-country eradication), 3,000-4,000 metric tons were seized in transit or lost, which resulted in 7,000 to 9,000 metric tons available in 1986. The estimated consumption in 1985 was about half of this or 4,700 metric tons.

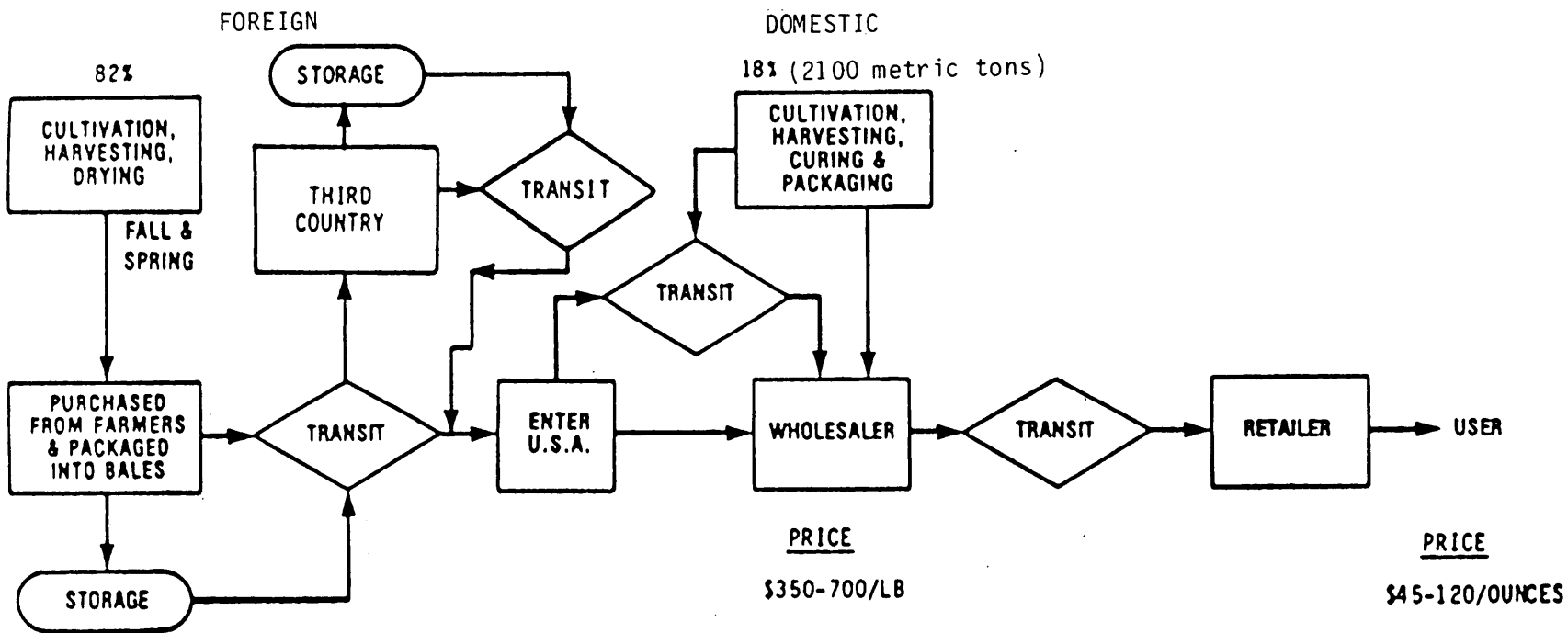
(U) Of the marijuana seized, over 80 percent was from non-commercial vessels and a majority of the rest from land transport (from Mexico). Commercial grade marijuana is sold to the wholesalers at \$350 to \$700 per lb who in turn will sell smaller quantities to the retailers at a 100 percent markup. The retailer will sell it on the street for up to \$120 per ounce. At \$120/ounce the street value of 4,700 metric tons of commercial grade marijuana is approximately \$20 billion.

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CANNABIS FLOW



U.S. CONSUMPTION 1985
SEIZED FROM FOREIGN SOURCES 1986

4,700 metric tons
3-4,000 metric tons

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(U) HEROIN FLOW TO U.S.

(U) The heroin supply and distribution system can be thought of in terms of the cultivation and opium production, international distribution including conversion of opium to heroin and domestic distribution of the heroin.

(U) The opium poppy is cultivated in three source areas: Southwest Asia, Mexico and Southeast Asia. Although poppies are grown legally in some countries (for the production of licit drugs) a significant amount of poppies are grown illicitly. The poppy is an annual plant which requires much care and attention during its growth having many natural enemies. It is harvested by hand, extracting the raw opium gum from the seed capsules of the plants. The gum is sold to traffickers who convert it to a morphine base reducing its weight by a factor of 10. The base is transported to clandestine heroin labs where it undergoes chemical processing, mainly acetylation (which produces the heroin) at a one-to-one conversion rate. The heroin is then packaged and smuggled into the market country.

(U) The heroin flows from the U.S. importer through a series of middlemen to the street user. It is believed that the wholesaler stocks heroin to ensure adequate quantities to meet fluctuating supplies (resulting from weather, interdiction, etc.). The distributors and vendors cut the material (with quinine, lactose, etc.), package it for resale, and sell it to the next echelon.

(U) It is believed that the importer deals with 100+ kilo quantities of pure heroin. They, in turn, sell 2-5 kilos to distributors; these distributors cut and sell to kilo customers; they cut and sell to fractional kilo customers (several ounces); who finally cut to street purity, package and sell 100 mg adulterated heroin of 3-8 percent. These are sold to street dealers to sell to the users.

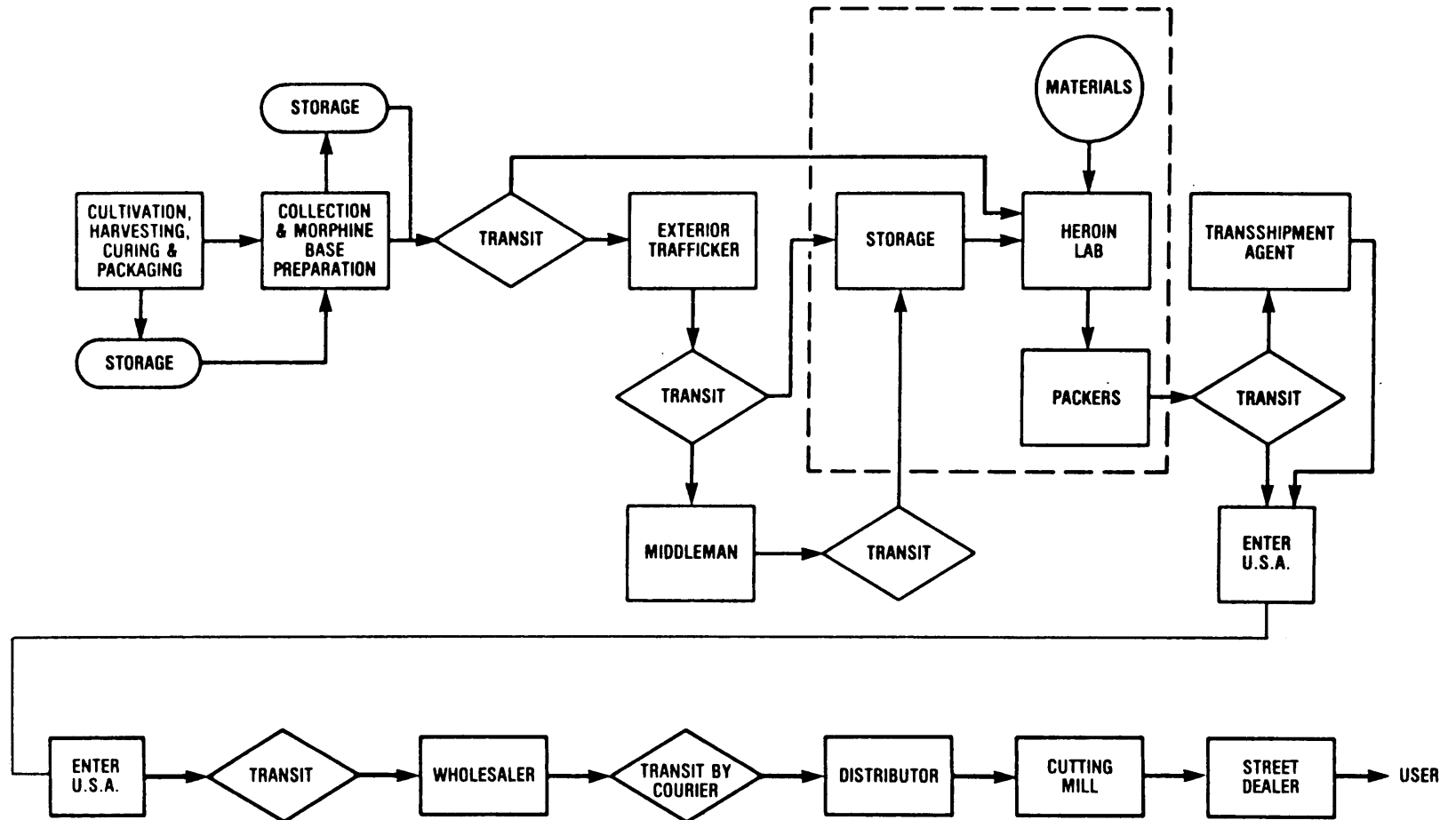
(U) During the first half of 1986 retail purity was reported at 6.1 percent with a market price of \$2.12. For these, two-fifths of the heroin originated from each of Southwest Asia and Mexico, with the remaining one-fifth from Southeast Asia. Of the 360 kg of heroin seized at U.S. ports of entry 313 kg was from commercial air passengers with New York City the center of trafficking.

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HEROIN FLOW WITHIN U.S.A.



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(U) CRIMINAL ASSET FLOW TAXONOMY

(U) The enormous cash proceeds generated by the sale of illegal drugs has created a new service industry; the money launderer. "Money laundering" is defined as the process used to conceal or disguise the source, origin, location or ownership of illegally obtained funds. The initial goal of the money launderer is to transport the proceeds, either physically, electronically, or by accounting entry into a foreign bank haven account where the trafficking organization can access the funds, pay operating expenses, and make investment decisions on the profits. The purpose for making this transfer is to circumvent the reporting requirements of the Bank Secrecy Act (BSA).

(U) The BSA requires that financial institutions file a Federal Currency Transaction Report (CTR) on deposits, withdrawals, or exchanges of currency in excess of \$10,000. The Act also requires that individuals file a currency or monetary instruments report (CMIR) on movements of cash or monetary instruments greater than \$10,000 into or out of the United States. Cash is physically smuggled out of the country, without the filing of a CMIR, by courier, in personal baggage, in cargo on commercial carriers, and by general aviation and pleasure craft.

(U) Further, the CTR filing requirements are circumvented through the techniques of "smurfing" and "structuring." Smurfing is the multiple purchase of non-cash monetary instruments below the reporting threshold of \$10,000. The monetary instruments can then be deposited into an account without triggering a CTR, and an electronic fund transfer can be made to a foreign bank. The monetary instruments are also physically transported out of the country, again, without the required filing of a CMIR. Cash deposits into a U.S. financial institution can also be structured to defeat the reporting threshold by using multiple accounts in multiple financial institutions over multiple days. The funds can then be electronically transferred out of the country.

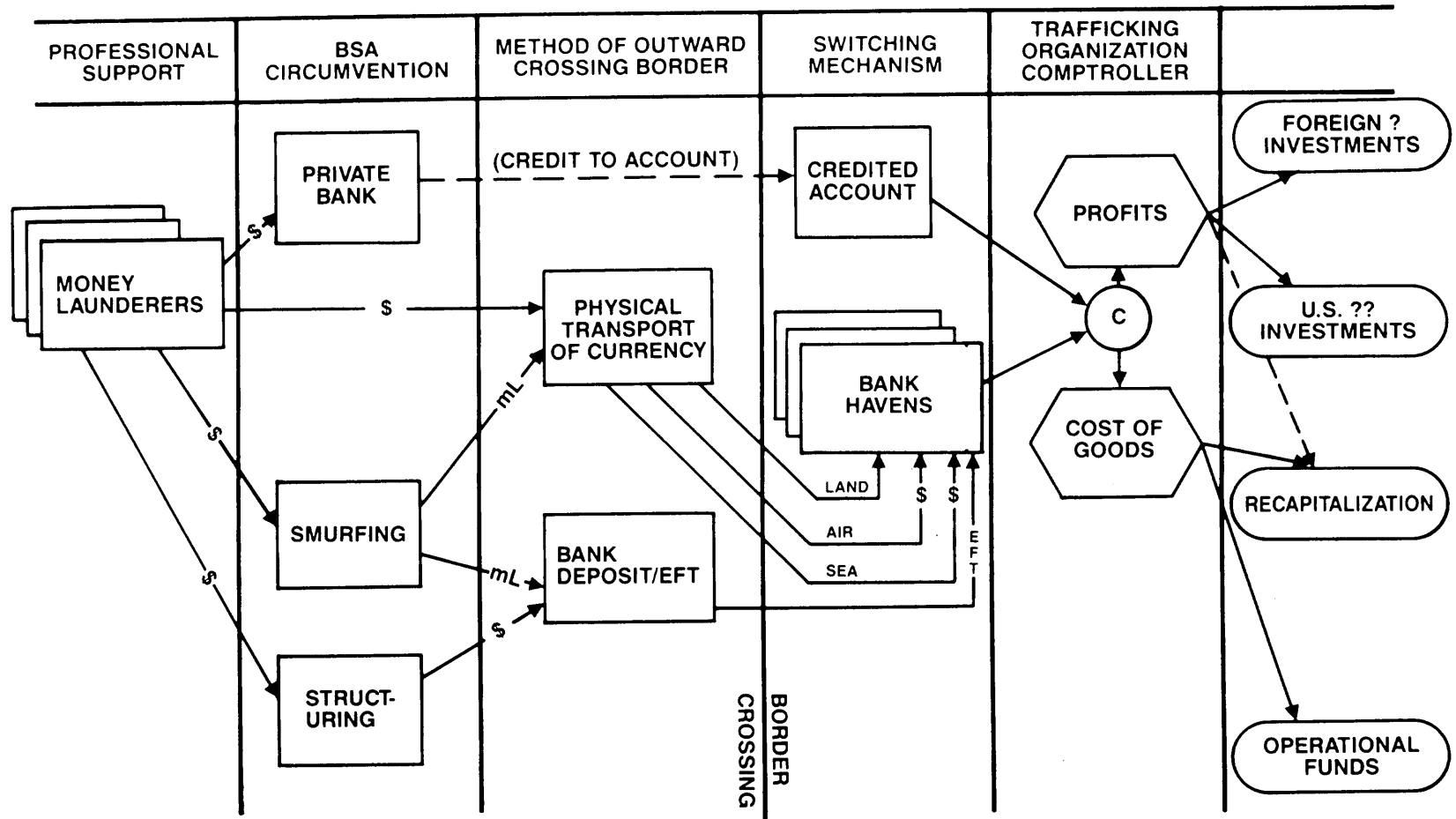
(U) The private bank or chit system is also used by the money launderer. Cash is deposited with the domestic "branch" and credited to the foreign "branch." Funds are then accessed by chit. The proceeds, once transferred and laundered through multiple accounts in names of shell companies, are used to pay operating expenses and to recapitalize the drug venture. Where the profits are invested is a matter of pure speculation, but the early assumption of substantial U.S. reinvestment is subject to question.

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Criminal Asset Flow Taxonomy



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(U) OBSERVATIONS ON TAXONOMIES

(U) The taxonomies led us to observations in four major areas: contraband transportation, criminal organization, law enforcement organization and breadth of potential applications.

(U) As the criminal works the product through the system into the U.S. four of the five major discriminants are more susceptible to detection and interdiction in the transborder area. Mass and bulk of the substance while smaller than the unprocessed raw material is still packaged in much larger shipments at the border than it is for domestic movement.

(U) Of the major seven determining characteristics of the criminal organization two are very important: profitability and number of people involved. In transborder operations high profitability combined with the low number of people involved is the "profit engine" which generates the willingness to take risks and the ability to pay the very high cost of transportation. In addition the other five characteristics indicate that the process is most deterrable in transborder activity.

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OBSERVATIONS ON TAXONOMIES

	INTER- NATIONAL	TRANS- BORDER	DOMESTIC
o CONTRABAND TRANSPORTATION:			
-- Mass & Bulk	High	Medium	Low
-- Value	Low	High	Medium
-- Cost of Transporters	Low	Very High	Low
-- Visibility of Transporters	Poor	Fair	Poor
-- Skills of Transporters	Low	Moderate	Low
o CRIMINAL ORGANIZATION			
-- Organizational Control	Diffuse	Tight	Diffuse
-- Number of Key Personnel	Medium	Low	High
-- Visibility of Paper Trail	None	Fair	Fair
-- Size of Fund Transactions	Small	Large	Small
-- Profitability	Low	High	Medium
-- Visibility of Communications	Very Poor	Poor	Poor
-- Importance of Communications	Moderate	High	Moderate

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(U) MORE OBSERVATIONS ON TAXONOMIES

(U) Turning to the Law Enforcement organizations, the opportunities to find the organizations, people, and substances, though not high, are still best at the transborder area. Constitutional acceptance and political support are also strongest there.

(U) Looking at the potential application of devices and techniques developed to deter criminal action, new systems oriented toward transborder use are more indifferent to the crime or substance involved and more applicable for use internationally and by DoD components outside of the U.S.

(U) In summary, while we continue to believe that balanced programs -- international, transborder and domestic -- are necessary, the potential strengths of the law enforcement agencies at the border and the vulnerabilities of the criminal organizations in transborder activity indicate that technology developed for that area could well have high leverage and wide application for other purposes domestically, in foreign countries and by the Department of Defense.

(U) One or two of the advisors take exception to this characterization of the relative advantages of focusing too strongly on "interdiction." The DEA in particular feels that it is necessary to keep a substantial effort on crop (and factory) detection and eradication in foreign countries. This preference seems to derive in part from the belief that the drug flow must be stemmed at its source, but also in part from skepticism that "interdiction" beyond or near our long open borders can be successful.



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MORE OBSERVATIONS ON TAXONOMIES

	INTER- NATIONAL	TRANS- BORDER	DOMESTIC
o LAW ENFORCEMENT ORGANIZATION			
-- Enforcement Potential	Poor	High	Fair
-- Inspection/Detection Opps	Poor	Good	Poor
-- Constitutional Acceptance	None	Good	Fair
-- Political Acceptance	Poor	Good	Fair
-- Foreign Dependence	High	Low	None
o BREADTH OF POTENTIAL APPLICATION			
-- Indifference to Crime	Poor	Good	Fair
-- Indifference to Substance	Poor	Good	Fair
-- International Applicability	Fair	Good	Fair

*** DOES NOT REDUCE NEED TO ATTACK ALL PHASES ***

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(U) DRUG JURISDICTION/ROLES

(U) The following agencies have roles and jurisdictions in the war on drugs:

(U) NATIONAL DRUG ENFORCEMENT POLICY BOARD (NDPB) oversees policy development and resource allocation for all federal drug control efforts (supply and demand). Chaired by the Attorney General, the NDPB membership represents the interests of the executive branch and all appropriate federal departments and agencies.

(U) NATIONAL NARCOTICS BORDER INTERDICTION SYSTEM (NNBIS) is a nationwide management system established by the President, under direction of the Vice President, to enhance interagency coordination by increasing the availability of existing national assets for regional, national and international drug interdiction efforts.

(U) DEPARTMENT OF DEFENSE supports international drug supply reduction efforts and agencies by equipment loans, intelligence, surveillance, communications, and training. The National Intelligence Community provides intelligence to agencies involved in executing the National Drug Strategy and offers advice on intelligence techniques and processes.

(U) DEPARTMENT OF JUSTICE - Drug Enforcement Administration (DEA) is the primary federal agency devoted to full time drug enforcement. Its activities range from intelligence gathering to investigation and apprehension of major traffickers. FBI focuses on organized crime groups involved in drugs. Immigration and Naturalization Service's Border Patrol is responsible for controlling illegal entry of persons including drug traffickers across U.S. borders.

(U) DEPARTMENT OF STATE - Bureau of International Narcotics Matters (INM) has overall responsibility for international drug policy development, program management and diplomatic initiatives including eradication and narcotic control agreements.

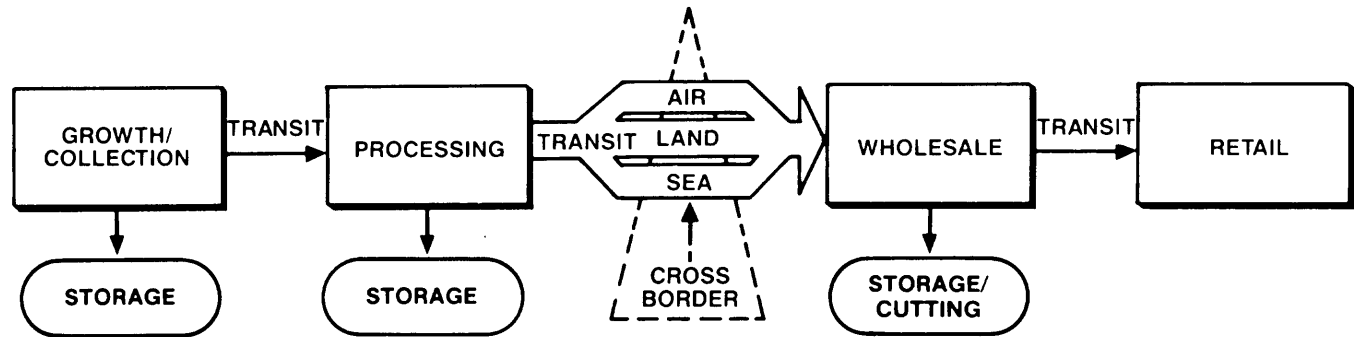
(U) DEPARTMENT OF TRANSPORTATION - U.S. Coast Guard has primary responsibilities in marine interdiction; also has a role in air interdiction. Federal Aviation Administration (FAA) helps identify airborne drug smugglers by radar tracking and posting aircraft lookouts.

(U) DEPARTMENT OF TREASURY - U.S. Customs Service is the primary federal agency for detecting/intercepting drugs at land borders, shares air interdiction with the Coast Guard, and is involved in marine interdiction. It investigates the illegal movement of money. Internal Revenue Service (IRS) is responsible for tax/financial aspects of illegal drugs. Bureau of Alcohol, Tobacco and Firearms (ATF) has primary responsibility for enforcing federal explosives and firearms laws in drug cases.

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UNCLASSIFIED DRUG JURISDICTION/ROLES



NDPB

[Redacted]

NNBIS

[Redacted]

DoD

[Redacted]

DEA

[Redacted]

FBI

[Redacted]

INS/BORDER PATROL

[Redacted]

STATE (INM)

[Redacted]

COAST GUARD

[Redacted]

FAA

[Redacted]

CUSTOMS

[Redacted]

IRS, ATF

[Redacted]

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(U) TERRORISM JURISDICTION/ROLES

(U) The following organizations have primary jurisdiction and roles in combatting terrorism directed against U.S. persons and assets worldwide:

(U) National Security Council advises the President on national security matters including terrorism, and in the event of a terrorist incident serves as liaison between the White House and the responsible lead agencies.

(U) National Intelligence Community (NIC) provides analysis and crucial coordination in making critical intelligence available to lead agencies and assists in flow of information between U.S. and other countries.

(U) Department of Defense maintains worldwide technical collection systems and data on terrorist groups; contributes intelligence analysis and operational support.

(U) Department of Justice - FBI discharges its lead agency responsibilities within the U.S., i.e., prevention and investigation of criminal activities of terrorist groups in U.S.; investigates terrorist incidents and hostage taking of U.S. citizens overseas; collects intelligence on terrorists; provides computer-assisted research and analytical capability; executes joint investigations with domestic and foreign law enforcement agencies; manages bomb data center; and heads the national hostage rescue team. INS determines eligibility for entry into U.S.

(U) Department of State discharges its lead agency responsibilities outside the U.S., i.e., maintains security of U.S. diplomatic/consular facilities, conducts research and analysis; provides security for Secretary of State and foreign diplomats in U.S.; and trains civilian security forces of friendly governments.

(U) Department of Transportation - FAA discharges its lead agency responsibilities for the prevention of the hijacking of aircraft through onboard security and setting security standards for airports. Coast Guard provides security of U.S. ports, waterways and related shore facilities.

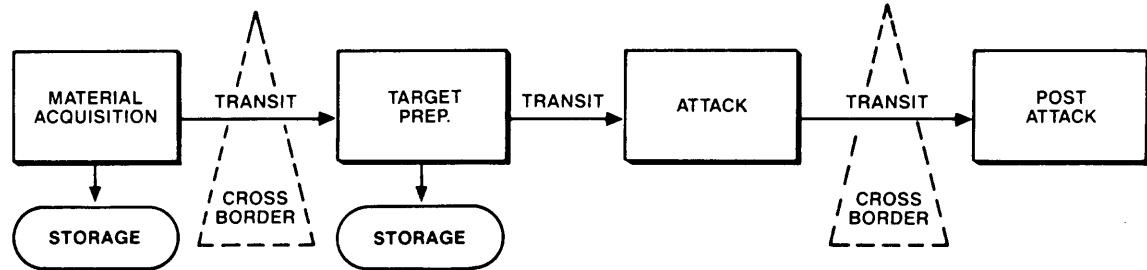
(U) Department of Treasury - Secret Service protects the President; ATF regulates the firearms and explosives industry and investigates the criminal misuse of same; Customs regulates arms export and controls entry of all commodities into U.S.; and IRS investigates money flow.

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TERRORISM JURISDICTION/ROLES



NSC

[Redacted]

NAT INTEL COMM

[Redacted]

DoD

[Redacted]

FBI

[Redacted]

INS

[Redacted]

[Redacted]

STATE DEPT

[Redacted]

FAA, COAST GUARD

[Redacted]

[Redacted]

SECRET SERVICE

[Redacted]

ATF, IRS

[Redacted]

CUSTOMS

[Redacted]

[Redacted]

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(U) DRUG LEGAL ENVIRONMENT

(U) The drug legal environment can be classified into three distinct areas based on geography: international, U.S. border and domestic U.S.

(U) U.S. law enforcement activities in the international area varies greatly, depending on the status of the country, as a drug source or transit country. Legal constraints and cultural restrictions, political stability and degree of corruption plus U.S. restrictions such as the Mansfield Amendment are also major factors affecting the in-country mission. Bilateral agreements, extradition treaties and crop eradication programs aid U.S. efforts.

(U) International waters and U.S. border areas allow for the greatest degree of enforcement flexibility, due to relatively fewer legal restraints, potential for tactical intelligence, and the concentration of agencies with drug enforcement authority in border locations. Cross designation of authority between enforcement agencies at critical locations has increased effectiveness.

(U) Within the U.S., the legal environment becomes much more restrictive, based upon constitutional safeguards and various acts of Congress, i.e., Freedom of Information Act, Privacy Act, Posse Comitatus Act. These restrictions are somewhat compensated for by the greater number of law enforcement agencies/personnel, including state and local, and the existence of asset forfeiture and conspiracy laws, money laundering and tax evasion investigations. Relevant intelligence collected by the National Intelligence Community is sometimes of limited utility because of its extreme sensitivity and the need to protect the sources and methods involved in its acquisition.

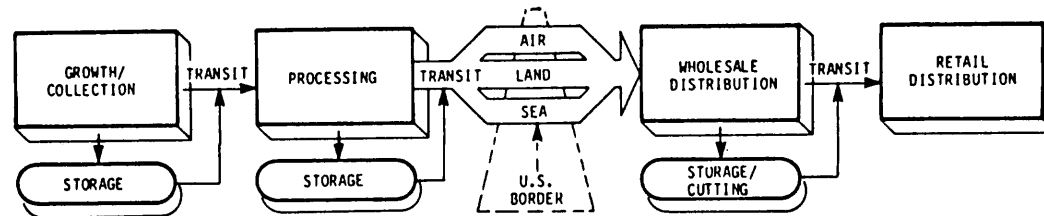
(U) Granting Title 19 and Title 21 authority to the Border Patrol at critical locations has increased drug seizures. A recent Memorandum of Understanding between INS and Customs gives certain Border Patrol officers along the Southwest border the authority to conduct Customs searches under Title 19 of the U.S. Code. Furthermore, Customs Service personnel along the Southwest border have been designated with authority to perform domestic drug investigations under Title 21 of the U.S. Code.

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DRUG LEGAL ENVIRONMENT



o **INTERNATIONAL**

- **Host Country Laws/Policies Limit Efforts**
- **Bilateral Agreements Enhance Capabilities**
- **NIC Shared Intelligence Aids Interdiction & International Programs**

o **BORDER**

- **Fewer Legal Restraints/Broad Search Authority Adds Flexibility**
- **Tactical Intelligence More Effectively Applied**
- **High Concentration of Enforcement Authority Exists**
- **DoD May Not Be Involved Operationally**

o **DOMESTIC**

- **U.S. Laws/Policies Restrict and Aid Enforcement Efforts**
- **DoD May Not Be Involved Operationally**
- **Large Number of State and Local Enforcement Agencies Involved**
- **NIC Intelligence Sharing Limited by Law and Source/Method Protection**

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(U) TERRORISM LEGAL ENVIRONMENT

(U) The legal environment under which U.S. law enforcement and intelligence agencies operate differs significantly in each of three distinct geographical areas, i.e., in foreign countries, at our border areas and in-country.

(U) The cooperation of host countries is essential. We are dependent upon them to provide principal security for U.S. citizens/facilities abroad, monitor and control terrorist activities, assist in collection and sharing of intelligence. Where extra-territorial agreements exist or are otherwise reached, the FBI may exercise authorities granted under Hostage-Taking or other criminal statutes.

(U) The most favorable environment for law enforcement is at U.S. border areas. Customs, Coast Guard and Border Patrol have broad authority to board conveyances, make searches, detain travelers and even damage/destroy cargo if necessary in pursuit of a search. Such authority provides opportunity for the placement of surveillance devices.

(U) The most restrictive environment for law enforcement is within the U.S. Laws restrict surveillance, search and seizure and create a ready source for firearms and explosives.

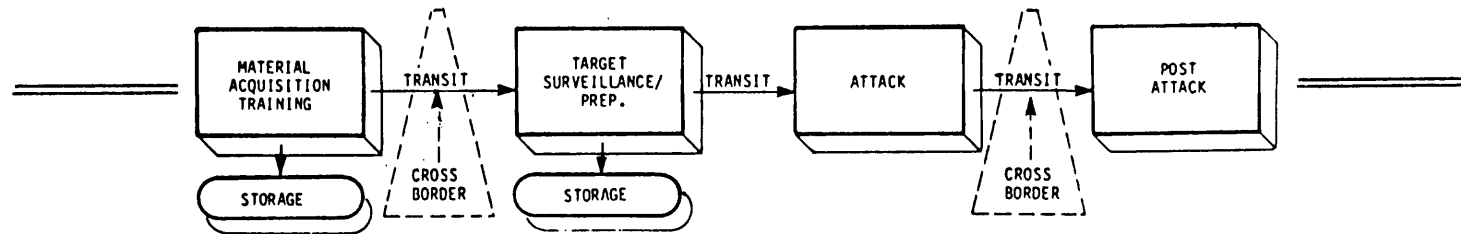
(U) On the other hand, the Foreign Intelligence Security Act (FISA) can be used to protect sensitive intelligence sources when matters of national security are at stake: in this respect, counterterrorist activities benefit because terrorism is designated as a threat to national security rather than a "criminal act", as has been the case of drug trafficking. That sharp discrimination between the two may well not be appropriate.

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TERRORISM LEGAL ENVIRONMENT



o INTERNATIONAL

- Host Country Laws/Policies Limit Efforts
- Extraterritorial Agreements Enhance Capabilities
- NIC Shared Intelligence Aids Efforts

o BORDER

- Authority to Detain/Identify Travelers Enhances Apprehensions
- Broad Law Enforcement Authority Exists to Board/Search
- Authority Exists to Damage the Inspected Cargo/Conveyance
- More Opportunities Exist for Use of Surveillance Devices

o DOMESTIC

- U.S. Laws Facilitate Easy Acquisition of Firearms/Explosives
- National Security Aspects Reduce Legal Restrictions

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(U) DoD COOPERATION WITH CIVILIAN LAW ENFORCEMENT (JANUARY 15, 1986)

(U) DoD Directive 5525.5 deals with "DoD Cooperation with Civilian Law Enforcement Officials." The directive establishes DoD policy and implementation responsibilities to facilitate assistance to Federal, State, and local civilian law enforcement efforts. Also identified are rules imposed by laws and other directives. Allowed use of and restrictions on military equipment and facilities, information collected during military operations, personnel and funds are described.

(U) The policy encourages cooperation consistent with effect on national security and military preparedness, maintains historic tradition of limiting direct military involvement in civilian law enforcement activities, and complies with the requirements of applicable law. Military Departments and Defense Agencies are instructed to review training and operational programs to determine how and where assistance can best be provided to civilian law enforcement officials.

(U) Some of the laws most frequently cited include Posse Comitatus (18 USC), The Economy Act (31 USC), the Intergovernmental Cooperation Act, and the Federal Property and Administrative Services Act. The directive references 38 laws and other directives which impact on providing assistance. As stated previously, however, nothing in this Task Force report is intended to suggest that the Posse Comitatus Act should be significantly changed.

(U) Responsibilities under DoD Directive 5525.5 are clearly defined for: the Assist. Sec. of Defense (FM&P), the Inspector General of DoD, Assist. Sec. of Defense (RA), the Secretaries of the Military Departments and the Directors of the Defense Agencies, the Director of the National Security Agency and the Joint Chiefs of Staff.

(U) Potential responsibilities of the Under Secretary of Defense for Acquisition are, in fact, not mentioned at all from the standpoints of either RDT&E or procurement.

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DoD COOPERATION WITH CIVILIAN LAW ENFORCEMENT (JANUARY 15, 1986)

- o POLICY EXPRESSED IN DoD DIRECTIVE 5525.5
 - "To Extent Practical"
 - Consistent With National Security Needs and Military Preparedness
 - Historic Limitations on Direct Military Involvement
 - Requirements of Applicable Laws

- o MILITARY DEPARTMENTS ENCOURAGED TO ASSIST
 - "Within Policy Constraints"

- o DoD FUNDING AND LOANS CONSISTENT WITH
 - Posse Comitatus - 18 USC
 - Economy Act - 31 USC
 - Intergovernmental Cooperation Act
 - Federal Property and Administrative Services Act
 - References & 38 Laws & Directives -- Does Not Include NSDD 221 (4/86)

- o DOES NOT SPECIFY ROLE FOR USD (ACQUISITION)

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(U) MAJOR EXPRESSED NEEDS

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(U) NEEDLES IN THE HAYSTACK - DRUGS

(U) Illicit opium poppy cultivation in the seven major producing countries--Afghanistan, Burma, Iran, Laos, Mexico, Pakistan, and Thailand--is estimated at 2,023 square miles. These countries have a total of 894,242 square miles of arable land which could be used. Therefore, any eradication program must first find the one acre of poppies in each 442 acres of other crops and wild growth in these countries.

(U) Cannabis will and does grow almost anywhere. The four major producing countries--Belize, Colombia, Jamaica and Mexico--need only an estimated 137 square miles to grow all their export marijuana. With a total land area of 1,214,446 square miles, any eradication program must search 8,865 acres to find each acre of cannabis plants.

(U) The four major coca producing countries--Bolivia, Colombia, Ecuador and Peru--have a land area of 1,469,603 square miles. In 1986, the estimated area under coca cultivation was 684 square miles. Thus an eradication program must find the 1 acre in 2,150 where coca is being grown.

(U) Cocaine laboratories can be, and have been, found anywhere from city buildings to remote jungles. The major known South America processing activity is in six countries--Argentina, Bolivia, Brazil, Colombia, Ecuador and Peru--which have a combined land area of 5,824,425 square miles. The number is, of course, unknown but it is well over 1,000.

(U) The smuggler may enter the United States by sea, land or air illegally between ports of entry.

(U) The Atlantic coastline is over 2,000 miles long; Gulf of Mexico's is over 1,600; and the Pacific's (excluding Alaska) is approximately 2,000 miles. There are over 10 million United States vessels; the three border states of Florida, Texas and California each have over 600,000 vessels.

(U) The land border with Mexico is over 2,000 miles long with less than 50 ports of entry. In 1986, over 1.8 million illegal aliens, who crossed this border between ports of entry, were apprehended.

(U) The air smuggler may fly over any of about 5,000 miles of southern border and land his plane on almost any field, road or desert. There are 295,000 U.S. aircraft. Finding the drugs and their traffickers is indeed like finding a needle in a haystack.

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NEEDLES IN THE HAYSTACK - DRUGS

- o **CULTIVATION**
 - Opium - Find 1 Acre Out of 442
 - Marijuana - Find 1 Acre Out of 8,865
 - Coca - Find 1 Acre Out of 2,150
- o **PROCESSING**
 - Find More Than 1000 Cocaine Labs in 5,824,425 Square-Mile Production Area
- o **MARITIME SMUGGLING**
 - Continental U.S. Coastline is 5600 Miles
 - 10,000,000 U.S. Vessels
- o **OVERLAND SMUGGLING**
 - U.S./Mexican Border is 2,000 Miles
 - more than 1.8 million illegal entry apprehensions
- o **AIR SMUGGLING**
 - 5,000 Miles of Southern Border
 - 295,000 U.S. Aircraft

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(U) NEEDLES IN THE HAYSTACK - COCAINE AND MONEY

(U) The smuggler may also enter the United States through a port of entry. Using average-sized seizures as examples, only;

- o 250 of the 150,000 private aircraft flights, each carrying 300 kilos, or
- o 375 of the 131,000 non-commercial vessel voyages, each carrying 200 kilos, or
- o 1,103 of the 415,000 cargo aircraft arrivals, each carrying 68 kilos, or
- o 30,000 of the 34,000,000 airline passengers, each carrying 2.5 kilos either on themselves or in their baggage, or
- o 122 of the 3,000,000 ship cargo containers, each carrying 122 kilos, or
- o 2,185 of the 88,600,000 cars and trucks, each carrying 1.85 kilos,

would be required to smuggle the entire 75 metric tons of cocaine consumed into the United States by that mode alone. From a different perspective, the 75 metric tons of cocaine could be smuggled as a part of the two billion tons a year of cargo handled in U.S. seaports.

(U) Perhaps the most difficult of these to detect, track, and search are the large cargo containers in which the majority of all imports are now shipped. Unlike railroad cars, for instance, there is at present no accepted means for rapidly -- or automatically-- identifying the owner, the shipper, or the origin of container. There is also no adequate means for scanning the contents or even identifying inner compartments. Systems for identifying, tagging, monitoring, and content sampling are badly needed.

(U) The flow of illegal funds is just as hard to discern. Drug money could leave the country as one dollar in every \$2,500 among the \$1 trillion of international wire transfers every business day.

(U) Means for sorting these illicit needles from these legitimate haystacks -- without interrupting the essential flow of commerce -- presents a major challenge for the technological community.

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NEEDLES IN THE HAYSTACK - COCAINE & MONEY

o COCAINE SMUGGLING

- All 75 Metric Tons Could Be Distributed Among:
 - 1 of every 600 private aircraft arrivals; or
 - 1 of every 350 non-commercial vessels; or
 - 1 of every 376 cargo aircraft; or
 - 1 of every 1,136 air passengers; or
 - 1 of every 24,590 ship containers; or
 - 1 of every 2,185 cars and trucks;
- Concealed Within:
 - 2 Billion Tons of Cargo Through U.S. Seaports each year.

o DRUG MONEY

- Electronic Funds Transfer
 - \$1 trillion every day
 - \$1 of \$2,500 drug-related

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(U) TERRORIST NEEDLE IN A HAYSTACK

(U) The terrorist needles in the U. S. haystack are even more rare than the traffickers and their drugs, as indicated below:

(U) Among the many international terrorist organizations, there are twelve (with a total of approximately 1,000 activist members) that are directed primarily against the United States. Were all 1,000 of these activists to converge on domestic targets, they could merge with the 300 million people who legally enter the country each year giving one terrorist per 300,000 legal entrants.

(U) Once in the United States, an international terrorist (or drug suspect) must be followed by law enforcement personnel. As an example of the magnitude of this task, one need only ask: how do you track one terrorist among the 3.6 million daily riders on the New York subway system?

(U) These foreign terrorists would not have to bring weapons or explosives with them. These devices could be purchased from any of the 250,000 weapons or over 10,000 explosive dealers licensed in the United States. Thus, each of the thousand potentially available terrorists could have a unique list of 260,000 domestic suppliers.

(U) Foreign or native terrorists could choose from a supply of 250 million legal weapons and 500,000 machine guns -- not including military weapons -- in the United States. As an alternative, they could formulate their explosives from any of a large number of readily-available materials. New guns are being sold in the U.S. at the rate of five million annually.

(U) In picking their targets for maximum political impact, terrorists could choose any of the 20,000 domestic or 45,000 world-wide daily airline flights. As an alternative, they could target any of the vast quantity of utility systems or government facilities located throughout the country.

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NEEDLES IN THE HAYSTACK - TERRORISM

- o 1000 ACTIVE TERRORISTS IN 12 MAJOR GROUPS WORLDWIDE
 - Over 300 Million People Enter U.S. Legally Each Year
 - 1 Terrorist out of 300,000 maximum
- o FOLLOW SINGLE IDENTIFIED TERRORIST
 - 1 Terrorist out of 3.6 Million On NY Subway
- o TERRORIST DEVICES NEED NOT BE IMPORTED. U.S. HAS:
 - 250,000 Licensed Arms Dealers
 - 10,000 + Licensed Explosive Dealers
 - 250,000,000 Legal Weapons (Non-Military)
 - 500,000 Fully Automatic Weapons
- o UNLIMITED NUMBER OF TARGETS
 - 20,000 Domestic Airline Flights/Day
 - 45,000 Worldwide Airline Flights/Day
 - Utility Systems
 - Government Facilities

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(U) OUTLOOK FOR THE DRUG PROBLEM

(U) In response to increased enforcement pressure abroad, more dispersal of both cultivation and laboratory sites is expected. Greater diversity of smuggling methods can also be anticipated, although containerized freight will probably continue as a much-used option. Location of cocaine laboratories in the United States should increase in response to precursor control programs applied in foreign areas. Some of these labs would be expected to produce crack, the smokable form of cocaine, attracting new users. Crack distribution networks will form in response to increased demand, replacing the current cottage-industry mode of distribution.

(U) Of serious concern would be the continuing production of narcotic analogues, commonly referred to as "designer drugs." These substances consist of variations of the parent compounds fentanyl and meperidine (pethidine). Some of the clandestinely-produced analogues of fentanyl are as much as 1,000 times more potent than morphine. They have been associated with more than 100 overdose deaths. Fentanyl can be considered a synthetic replacement for heroin; attempts at synthesizing cocaine, technically feasible, have also been noted.

(U) These new applications of more sophisticated chemistry are based on linkages between chemists and traffickers, and the increased diffusion of the requisite knowledge. This latter factor also applies to advanced agricultural techniques, which have been more effectively applied to the growing of cannabis. A potent strain, capable of more rapid growth is increasingly being encountered in the Far East. Marijuana from these plants can either be smuggled over the long supply routes to the U.S. or the seeds from such strains can be planted closer to or within the United States.

(U) There seems to be little question but that high technology is being applied to the "business development" aspects of the drug market. Moreover, many of these future products may be more difficult to detect and easier to transport than the current varieties.

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OUTLOOK FOR THE DRUG PROBLEM

- o MORE DISPERSAL OF CULTIVATION AND LABORATORY SITES
- o SHIFT OF COCAINE LABORATORY OPERATIONS TO UNITED STATES
- o INCREASED USE OF MORE POTENT CRACK COCAINE
- o MORE ORGANIZED CONTROL OF CRACK DISTRIBUTION
- o EXPANDED CONTROLLED-SUBSTANCE-ANALOGUE MANUFACTURE
- o INCREASED TRAFFICKING OF SYNTHETICS
- o IMPROVEMENT OF AGRICULTURAL TECHNIQUES APPLIED TO ILLICIT CROPS
- o DEVELOPMENT OF MORE RAPID-GROWING, POTENT STRAINS OF CANNABIS

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(U) THE FUTURE HIGH TECH TRAFFICKER

(U) As technology is developed and law enforcement agencies acquire better methods of utilizing high tech, traffickers uninhibited by economic, regulatory or legal constraints will continue to modernize their arsenals of high tech weapons. Already those engaged in enforcement efforts against traffickers have encountered satellite burst communications. This trend is expected to continue, and the use of commercial systems, such as Inmarsat, with access to telephone systems through satellites will become routine. With the trend in security to thwart industrial spying, commercial encryption of these systems and cellular telephones, it is only a matter of time before it is available to the public. U.S. cellular communication systems are spreading at a rapid rate and are expected to cover most of the U.S. Now the cellular industry is turning toward a world wide market and looking at rural undeveloped areas in South America. These in turn will be linked by satellite to the U.S. telecommunications system.

(U) Personal computers are being utilized by many traffickers. Traffickers are utilizing PCs for record keeping and to send messages through various bulletin board systems. If not already, it's only a matter of time before various organizations begin to utilize the same networking principals applied by large businesses and banks. Data encryption devices are used in communicating with other members of the drug organization, some of which use telephone lines or radios.

(U) Presently traffickers are content to monitor law enforcement communication systems, but, as agencies turn to voice privacy systems, the trafficker may resort to jamming of law enforcement frequencies in an area where they are conducting illegal activities.

(U) Traffickers are showing interest in the use of RPV's to deliver their cargo over the borders. The ability of ultra lights to be quickly set up and transported gives the trafficker a method to go over blocked crossings easily.

(U) Cost, regulation or legality are of no concern to the trafficker. The only restraint on his use of technology is therefore his imagination. There seems to be no question but that the current "technology race" will continue.

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THE FUTURE HIGH TECH TRAFFICKER

- o ENCRYPTION OF CELLULAR TELEPHONES
- o LONG RANGE SATELLITE COMMUNICATIONS
- o NETWORKING OF PCs
- o DATA ENCRYPTION
- o RF JAMMING
- o ULTRA LIGHTS & RPVs

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(U) OUTLOOK FOR TERRORISM

(U) Terrorism allows a sponsoring state to engage covertly on multiple fronts, at low costs, and with little fear of reprisal. State sponsorship has given terrorist groups added resources enabling them to carry out more complex and sophisticated operations. The states in turn are provided an effective instrument of foreign and military policy extending their reach at low cost.

(U) The Middle East is the region where the most spectacular terrorist acts have taken place. There is a spillover, however, into Western Europe where U.S. citizens are more numerous and have been consistently targeted. The most serious transnational terrorist threat in Western Europe actually comes from various Middle Eastern-based groups. Most Western European terrorist groups are the organizational type, often referred to as "urban terrorists," like the Red Army Faction in Germany. In France, the widespread bombings which took place last year could resume quickly. In Greece, indigenous terrorists and transnationals continue to threaten U.S. interests. In Cyprus, Middle Eastern terrorists, who have targeted Americans, continue to have relatively free access.

(U) Since the U.S. airstrikes, Qadhafi has only altered slightly his terrorist policies. He has turned almost exclusively to surrogates for attacks against western targets. Syrian-supported terrorism also makes extensive use of agents and surrogates.

(U) The motivations of those who engage in terrorism are many and varied, with activities spanning industrial societies to underdeveloped regions. Fully 60 percent of the Third World population is under 20 years of age; half are 15 or less. Many terrorists have a deep belief in the justice of their cause.

(U) Terrorists see what they do now as sufficient, but will alter their tactics in an incremental way to solve specific problems created by security measures. Terrorists might respond to the new security measures implemented to protect embassies against bombs by resorting to aerial suicide attacks or to standoff weapons. With increased embassy protection, terrorists may select other softer targets such as schools and residences.

(U) The fact of the matter is that terrorists are latently capable of wreaking enormous damage to modern vulnerable societies -- if they should decide it is in their best interests to do so. Most observers doubt that it is.

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OUTLOOK FOR TERRORISM

- **STATE-SPONSORSHIP TO CONTINUE**
 - Terrorism Still a Low Cost Instrument of Foreign/Military Policy
- **COORDINATION AND COOPERATION AMONG SPONSORS**
 - More Groups/Geographically Distributed
- **WESTERN EUROPE PRIMARY TRANSNATIONAL TARGET**
 - Economic System - Industry, Tourism, Utilities, Banks, Transportation
 - Symbols of State
- **FREQUENT USE OF PALESTINIANS AS SURROGATES**
 - Good At What They Do
- **CONTINUATION OF TODAY'S TRENDS**
 - High on Dedication
 - Low on Competence
 - Attacks on undefended targets
 - Bigger Bombs, Standoff Delivery
- **HAS LATENT POTENTIAL FOR ENORMOUS DISRUPTION**

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(U) THE FUTURE HIGH TECH TERRORIST

(U) Terrorists have blown up computers and set fires in data processing centers, but not tried to disrupt or destroy data in a sophisticated fashion.

(U) New countermeasures might provoke more radical tactics. Innovations might not come from those currently identified as "terrorists" but instead from "outsiders": computer hackers who turn malevolent or ordinary criminal extortionists who turn political. For the most part, the traditional tactics will predominate.

(U) Guerrillas in Latin America have frequently attacked electrical power grids as a means of waging economic warfare against governments. Less concerned with economic warfare, urban terrorists occasionally have attacked electrical energy systems to get attention, to protest government or corporate policies, or to indirectly disable nuclear power plants.

(U) Terrorists probably will use more sophisticated explosives, in larger quantities, and standoff weapons to overcome security measures. In a recent survey of law enforcement officials and authorities on terrorism, 55 percent thought it "very likely" and another 29 percent thought it "somewhat likely" that by the year 2000, terrorists will employ shoulder-fired, precision-guided, surface-to-air missiles to shoot down civilian planes.

(U) Product contamination is a crime clearly on the rise. Criminal extortionists, malevolent pranksters and mentally unbalanced persons have poisoned, or have threatened to poison food, pharmaceutical products, or water supplies. Seldom have they been labeled terrorists. One exception was the 1979 poisoning of Israeli oranges by Palestinian extremists. No one was harmed by the mercury-injected oranges, but fear sent sales of Israeli oranges in Europe plummeting.

(U) Larger scale terrorist chemical or biological warfare is considered to be unlikely-- though not impossible -- in the near-term future. However, we must anticipate the possibility of more limited product contamination scenarios involving political demands.

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THE FUTURE HIGH TECH TERRORIST

- o PENETRATE COMPUTERS TO DESTROY DATA
- o DISABLE POWER GRIDS TO DISRUPT TELECOMMUNICATIONS AND TRANSPORTATION
- o USE NON-METALLIC WEAPONS
- o USE MORE POWERFUL EXPLOSIVES
- o USE STANDOFF WEAPONS
- o USE MAN-PORTABLE PRECISION GUIDED MUNITIONS
- o USE ULTRA-LIGHTS, RPVs, HOVERCRAFT AND SUBMERSIBLES
- o USE CHEMICAL AND BIOLOGICAL CONTAMINANTS

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(U) SENSORS/TECHNIQUES
TECHNOLOGY/TAXONOMY MATRIX

(U) Within the structures of drug businesses and terrorist operations, there are a large number of places and situations where technology can aid law enforcement efforts. The variety of sensors and other technical devices that can be applied in these areas is also very large. The chart on the facing page attempts to group potential technological thrusts into distinct categories, matching them with particular phases or points of activity in the drug and terrorism processes. Each (Δ) in the chart indicates an area wherein the designated technique can aid in detection or interdiction. The symbol (▲) denotes intersections in which the potential payoff is judged to be high.

(U) As is evident in the chart, certain activities in the drug production/smuggling and terrorism processes are more vulnerable to technical exploitation than others. Similarly, some technologies are more broadly applicable than others across the range of observation opportunities. For example, terrorists and their tools and traffickers and their substances are all especially vulnerable to technically-based detection during transit through border control points.

(U) On the other hand, technologies that apply across the entire spectrum of activities for both traffickers and terrorists include taggants and beacons and transponders. The ability to and desirability of "tracing and tracking" contraband and its purveyors are far greater for law enforcement agencies than for their military counterparts. The painstaking and protracted efforts of the LEAs to develop legal "target acquisition" of the criminal have no widespread military analog.

(U) The assignment of triangles should not be taken as a measure of the value of a technology to the overall problem. For example, radar for tracking moving targets shows only one high-payoff intersection. However, if a truly effective radar screen across the southwest border and the Caribbean were deployed, there can be little doubt that its impact on cocaine and marijuana trafficking would be very substantial.

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Sensors/Technology/Taxonomy Matrix

SENSOR/ TECHNIQUE	DRUG TAXONOMY						TERRORISM TAXONOMY						
	GROWTH	PROCESSING	TRANSPORT	ENTRY	DIST.	MONEY FLOW	ACQ & TRAINING	TRANSIT	SURV. & PREP.	TRANSIT	ATTACK	TRANSIT	POST ATTACK
RADAR		△	▲							△			
INSPECTOR TOOLS				▲		▲		△		△		△	
RF INTERCEPT		△	▲		▲	▲	△		△		▲		△
IMAGING (IR & VIS)	▲	▲	▲	▲			△						
SEISMIC/ACOUSTIC		△	△	▲	△								
TAGGANTS		▲	△	▲	△	▲	▲	▲	▲	▲	▲	▲	▲
VAPOR DETECTION		▲	△	▲	△	△		▲		▲			
BULK SUBSTANCE DETECTION			△	▲	△	△		▲		▲			
AUDIO SURVEILLANCE					▲	▲	▲		▲				△
TELEPHONE INTERCEPT	△	△			▲	▲	△		▲			△	△
SCREENING BOOTH				▲		▲		▲		▲		▲	▲
BEACONS/TRANSPONDERS	△	▲	▲	▲	△	▲	▲	▲	▲	▲	▲	▲	△
DOCUMENT AUTOMATION		△	▲	▲	△	▲	△	△		▲		▲	△
HIGH SECURITY DOCUMENTS				▲		▲		▲		▲		▲	

△ OPPORTUNITY
▲ POTENTIAL HIGH PAYOFF

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(U) CURRENT STATE OF SENSOR TECHNOLOGY

(U) Sensors and other technical aids can be applied to the entire spectrum of law enforcement, defense and intelligence needs. They can be particularly useful in coping with drug trafficking and the terrorist threat by providing surveillance of vehicles, material, documents, people and geographic areas. The need for greater capabilities to sort the illicit from the legitimate is a natural outgrowth of intents by traffickers and terrorists to escape detection by blending into or becoming lost amid the vastness of human activities and movements. Throughout the ranges of these illicit activities, from growth of the raw material through distribution of drugs to the street and in every phase of terrorist endeavors, there are opportunities to use technology to distinguish these activities from the normal and to acquire insight into their makeup and organization.

(U) Borders provide an especially fruitful area for monitoring through technical means. The natural channeling of people and conveyances into border control facilities makes it economically feasible to consider even quite costly screening technologies. Furthermore, existing laws and regulations permit greater flexibility for applying screening methods there than at any other access points in the illicit operations.

(U) By and large, most of the requirements for surveillance technology are already well understood. A considerable array of night vision devices (NVDs), forward-looking infrared imagers (FLIRs), radars, beacons and transponders, and intrusion sensors exist as "off-the-shelf" technologies which can meet many of these requirements. For requirements that cannot now be met, a program of both near-term development to address today's critical deficiencies and long-term R&D to stay ahead of future threats is needed. Because of the similarity between the problem of law enforcement border control and military perimeter control, developing state-of-the-art surveillance techniques and field testing them would be of great benefit to both communities. Currently, law enforcement agencies lack funding for such developments.

(U) A systems approach will also be needed in these developments to assure that the efforts expended are properly coordinated and will produce the payoff intended.

(U) It is apparent that law enforcement agencies are in a "technology race" with traffickers and terrorists. Failure to greatly step up LEA development activities will concede the race to the criminals.

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CURRENT STATE OF SENSOR TECHNOLOGY

- o MANY TECHNOLOGIES HAVE BROAD APPLICABILITY
- o BORDERS PROVIDE NATURAL CONTROL OPPORTUNITIES
- o BASIC SYSTEM REQUIREMENTS WELL UNDERSTOOD
 - But System Development Lacks Resources
- o MUCH WORK DONE FOR RELATED PROGRAMS
 - DoD/DOE/Intelligence Community
 - Many Missions Similar (Border Control)
- o MANY CAPABILITIES "OFF THE SHELF"
 - NVD, FLIR, Radars, Beacons, etc.
- o WORK NEEDED TO DEVELOP/MODIFY TECHNOLOGY
 - Both Short & Long Term R&D needed
 - Major Problems - Efficient, Inexpensive, Acceptable
 - technology may be expensive for LEA's
- o INCREASED TECHNOLOGY APPLICATION NEEDS SYSTEMS APPROACH

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(U) MAJOR SENSOR AREA R&D NEEDS/OPPORTUNITIES

(U) Six major areas have been identified where sensor technology can make a significant contribution to combatting drug smuggling and terrorism. Many of the points of opportunity for identification and interdiction in the respective taxonomies are addressed. The time and resources required to field practical devices or systems vary greatly, but the payoff on the investment can be large.

(U) An important area is substance detection. Needs range from low technology tools for assisting in physical search to automated detectors for mass screening at entry points. Capabilities to sample and collect over long periods of time and to detect at distances ranging from inches to miles are desired. Long term research and development will be required. Another sensor area is surveillance of large, geographical areas for purposes of identification and interdiction of aircraft and ships. A number of different types of radars, other sensors, and platforms already exist, but will require some modification. However, implementation of a surveillance system will have major start up costs and require substantial resources to maintain.

(U) A third area of opportunity involves beacon and transponders using improved antenna systems, lower RF signatures, and a longer operating life. Needed capabilities include devices that operate continuously or intermittently, as queried, and are able to be tracked and identified worldwide. Another area of great potential is the use of taggants for tracking or identification of people, objects, and vehicles. While there are many candidate techniques, investigation of appropriate taggants for the various applications and development of sensor systems to detect the taggants will be required.

(U) Screening portals offer an opportunity to minimize the "needle in the haystack" problem by funneling people into an isolated location for individual processing. Portals could consist of multiple sensors operating in parallel to, for instance, validate documentation, screen for substances, evaluate physiological indicators associated with abnormal behavior, or even measure the person's "aura." Deterrence value of portals could be substantial, as well. (**Dr. Bobrow dissents from this view, and believes the report overstates the practicality and usefulness of screening portals.**)

(U) Finally, there is an opportunity to rapidly scan, validate, collate and compare documents ranging from passports to shipping manifests. Current automation systems can be applied, but as the current, paper-based system of documentation changes, some development will be required. These "paper trails" can often be used to discern illegal activities.

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MAJOR SENSOR AREA R&D NEEDS/OPPORTUNITIES

- o **SUBSTANCE DETECTION**
 - At Ranges from Very Close to High Flying Aircraft
 - Bulk and Vapor
 - Integrating Vapor Exposure from Seconds to Hours
- o **LARGE AREA SURVEILLANCE**
 - Cost Key Issue Among Many Available Approaches
- o **BEACONS AND RELATED TRACKING AIDS**
 - At Ranges from Very Close to Orbiting Satellite
 - Current Repertoire is Inadequate
- o **TAGGANTS**
 - Relatively Untried But Quite Promising
- o **SCREENING PORTALS**
 - Minimize Needle in Haystack Problem
 - Allow New Capabilities to be Added
- o **AUTOMATED DOCUMENT SCANNING**

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(U) SUBSTANCE DETECTION

(U) The current system of screening people, vehicles, and cargo for illicit substances is labor intensive and slow. New detection devices may dramatically improve effectiveness and efficiency by allowing screeners to focus on fewer, but "better" targets. Detection methods can be categorized as bulk or vapor. In bulk detection, a probing field interrogates and identifies substances via elemental or structural properties. Present bulk methods are short range, have a limited volume inspection capability, and are less susceptible to countermeasure. In vapor detection, effluents emitted are probed in situ by light or are collected and identified. Vapor methods can be short or long range and are well suited for screening people and large objects.

(U) Currently, there are a limited number of sensors to assist in the detection of drugs and explosives. X-ray imaging, widely used in routine screening, highlights anomalies, but does not identify substances. A handheld, gamma backscatter device senses density anomalies. Explosive vapor detectors based on several distinct technologies are used, but do not readily identify all common explosives.

(U) Research and development on explosives detection has been well funded and coordinated among Federal agencies. Investigations are underway on X-ray, neutron, and radio frequency resonance technologies in bulk detection, and on mass spectrometry, ion mobility, chemiluminescence, antigen-antibody, optical, and preconcentration technologies in vapor detection. There have been substantive advances in sensitivity and selectivity; several prototype detectors are under evaluation and prospects for operationally viable detectors in the near term appear excellent. However, new developments in explosives and an increase in terrorist sophistication may require additional capabilities.

(U) Research and development support for drug detection has been far below that for explosive detection. Efforts have often focused on the adaptation of explosive detection technologies and so, with the exception of remote solvent detection, technologies under investigation in these areas are virtually identical. The applications for drug sensors are apparent, but their development will require an intensive, well funded program.

(U) It should be noted that the "simple," obvious methods of substance detection have been previously tried and found unsatisfactory. In the near term, detection systems for illicit substances will be based on "difficult" technologies and will be complex and costly.

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SUBSTANCE DETECTION

- o RAPID SCREENING OF OBJECTS, PEOPLE
 - Manpower/Time Reduction
 - Needle in Haystack Solution
- o DETECTION OF SUBSTANCES THEMSELVES
 - Bulk: Elements and Structure
 - Vapor: Effluents
- o ADDRESSES MANY OPERATIONAL REQUIREMENTS
 - Standoff/Proximity - Objects/People
 - Overt/Covert - Drugs/Explosives
- o CURRENT TECHNOLOGICAL MATURITY
 - Moderate Capabilities for Explosives Today
 - Extensive RD Underway
 - Drug and Explosive Capabilities by '90
- o DETECTOR DEPLOYMENT IN NEAR TERM COSTLY

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(U) WIDE AREA SURVEILLANCE AND COMMUNICATIONS

(U) To address the narcotics flow across the Caribbean, it would be extremely helpful if aircraft, ships, and vehicles could be tracked continuously from the drug sources to the borders of the U.S. A number of candidate wide area surveillance/tracking options have been tabulated on the facing page together with rough estimates of their capabilities and costs. These systems have either been developed by the Department of Defense or are in the research and/or development phase.

(U) OTH high frequency radar is now being deployed by the Air Force. It offers large area coverage at reasonable cost but does not have very good resolution or ability to track ships. Two OTH radars would cover the Caribbean. Aerostat based radars are currently in operation and can provide good coverage of modest areas, including ships. They are probably best suited to border and coastal surveillance. Aircraft based systems like the E2-C and E3-A offer extensive area coverage of aircraft and potentially of ships and vehicles. Drone based systems are currently in development. They can potentially offer higher altitude and longer endurance operation than the manned aircraft systems. With either drones or manned aircraft, several would be acquired on station to cover the Caribbean. Approximately three times that number would be required in total because of the need for maintenance and transit time.

(U) The airship based radar system appears somewhat less attractive principally because of the limited coverage which leads to the need for large numbers. Such systems are probably much better suited to border and coastal surveillance. Finally the satellite based radar system offers a very attractive possibility although it will not be available for at least a decade. Caribbean coverage would require only a fraction (say 50 percent) of one satellite out of the ten required for continuous coverage. Civil agencies could get data from this DoD operated system at appropriate ground read-out terminals.

(U) The cost estimates involve annual capital costs including the availability factor, manpower at \$100K per year, annual spare parts and fuel costs. Although the costs estimates are necessarily very rough, they do indicate that OTH, drones, satellites and aerostats all offer the potential for reasonable cost wide area coverage. All of these systems also offer the possibility of beacon tracking either overt with standard aircraft L band transponders or covert beacon tracking of "tags" type transponders operating with low duty cycle. Relay of communication transmissions is also possible except for the OTH system. Clearly, a far more rigorous analysis should precede any major systems decisions.

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WIDE AREA SURVEILLANCE/COMMUNICATIONS OPTIONS

	OTH HF RADAR	AEROSTAT +RADAR	AIRCRAFT +RADAR	DRONE +RADAR	AIRSHIP +RADAR	SATELLITE +RADAR
ALTITUDE-KM	0	3.0	10.0	20.0	3.0	1000
DETECTION RANGE-KM	2000	200	400	500	200	3000
TARGETS DETECTED A/C	X	X	X	X	X	X
SHIPS		X	X	X	X	X
VEHICLES		X	X	X	X	X
CLASSIFICATION		?	X	?	X	X
BEACON (TAG) TRACKING		X	X	X	X	X
COMMUNICATIONS RELAY		X	X	X	X	X
YEAR OF I.O.C.	90	Now	Now	93	95	98
UNIT COST	\$200M	\$5M	\$100M	\$50M	\$50M	\$1000M
AVAILABILITY ON STATION	90%	95%	30%	30%	50%	100%
MANNING PER UNIT	40	20	40	30	60	10
CARRIBBEAN COVERAGE CAPITAL COST	\$400M	\$200	\$1000M	\$300M	\$2000M	\$500M
ANNUAL COST	\$50M	\$150	\$250M	\$100M	\$500M	\$50M

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(U) BEACONS AND RELATED TRACKING AIDS

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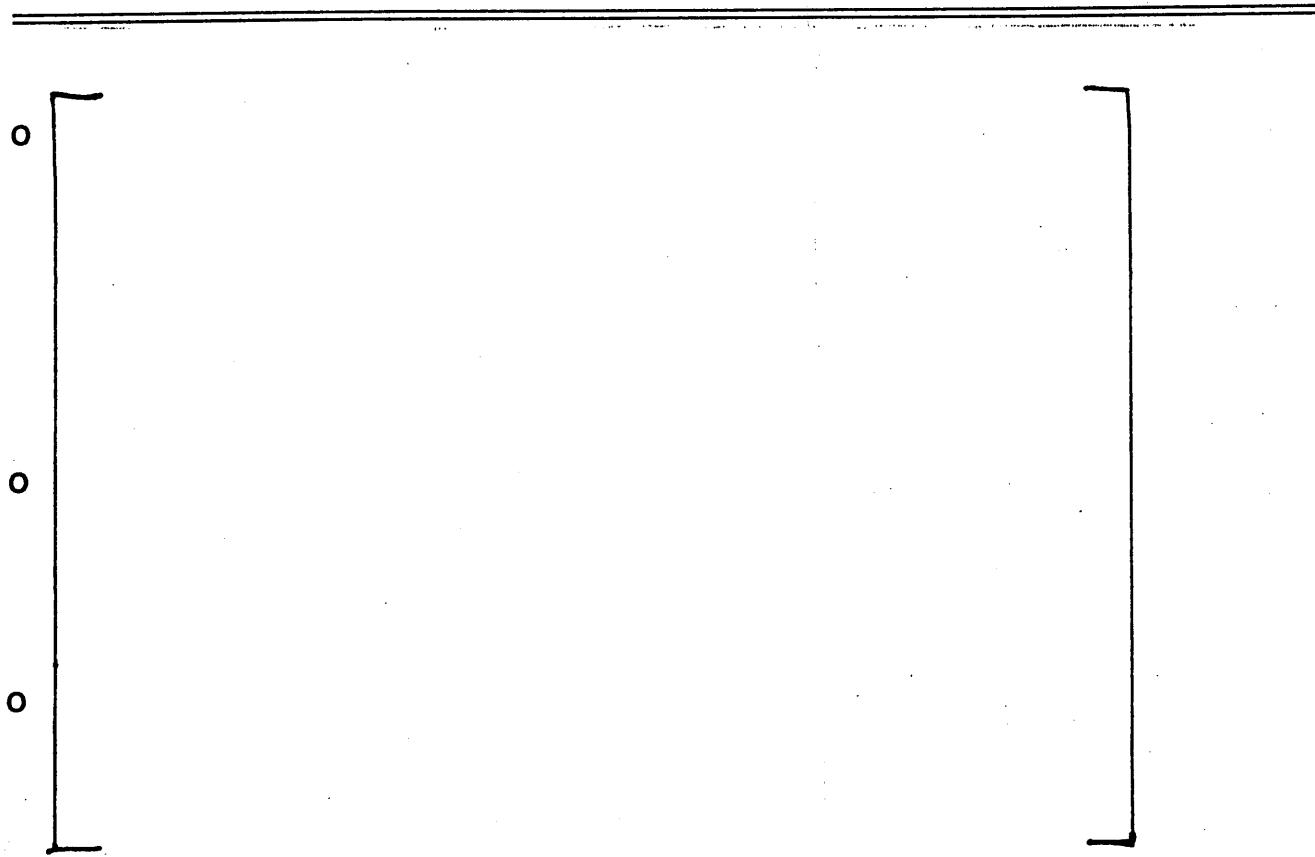
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BEACONS AND RELATED TRACKING AIDS



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(U) SIGNATURE ENHANCEMENT WITH TAGGANTS

(U) The signatures of drugs, explosives, people, money, vehicles and other high priority items may be immensely enhanced through the purposeful tagging of these items with materials (taggants) which are secretly emplaced and easily detected by appropriate means. An operator can thus choose the means of detection and is not compelled to utilize the properties of the item of interest for primary detection. Taggants and detectors can be devised for remote sensing applications such as vehicle or people-following.

(U) Taggants have not been widely employed in the past save the Soviet use of fluorescent chemicals for people, vehicle and paper tracking. Methods have been devised for tagging and later detecting both explosives and electric blasting caps -- although their use has been proscribed as a result of Congressional lobbies.

(U) Paper currency presents a challenge to taggant application, as does the remote identification of people and vehicles in such a way as to preclude any chance of discovery by the suspects. Taggants which are easily identified, secure from discovery and very easily applied are needed. Applied in this way, taggant technology can be exceedingly useful, but is today underdeveloped and seldom used. Two examples of novel taggant systems are described below:

(U) Laser Excited Fluorescent Microspheres - Consider glass microspheres one micron in diameter and doped with an appropriate rare earth ion. When excited by a laser precisely tuned to the narrow absorption band of the rare earth ion the excited ion will emit a photon of precise energy and thus fluoresce in a region to which a simple detector is tuned. The glass microspheres are invisible when applied. This system could be used to "bar code" articles and be read at great distances.

(U) Pheromones as Taggants - Insects, fish and mammals are very responsive to the presence of specific organic molecules (pheromones). Pheromones are sex attractants, trail markers and danger indicators excreted by the species involved and read by appropriate individuals of the same species. Pheromones are probably detectable by targeted species at concentrations as low as 10^3 or 10^2 molecules/cc. Since pheromones can be synthesized, many of them are available commercially. Their ability to elicit a physical response (attraction, physical agitation, sexual behavior) from simple species such as lady bugs, house flies or roaches at very low concentrations which are unnoticed by humans or other than the targeted species suggests their use as taggants.

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SIGNATURE ENHANCEMENT WITH TAGGANTS

USE OF TAGGANTS -- RELATIVELY UNTRIED

- o TAGGANT SECRETLY APPLIED TO:
 - Narcotics, Explosives, Vehicles, Money, People
- o TAGGANT IDENTIFIED BY SPECIFIC MEANS
 - Point Detector
 - Remote Detector
- o TAGGANT/DETECTOR CHOICE OF OPERATOR
- o TAGGANTS RARELY USED
 - Soviet Fluorescent Dust (1986)
- o NEW TAGGANT OPPORTUNITIES FOR R&D
 - Laser Excited Fluorescent Microspheres
 - excited by laser - read by tuned detector
 - vehicles, contraband articles, etc.
 - Insect Pheromones As Taggants
 - $10^3 - 10^2$ molecules/cc sensitivity
 - synthesized-available-species specific

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(U) SCREENING PORTALS

(U) The Task Force exhibited considerable interest (and controversy) over the potential to improve the rapid screening of people passing through Customs and Immigration. The need to be able to rapidly "sort" the suspicious from the "normal" is well recognized. Law enforcement personnel currently use a broad variety of "profiles" (from dress to behavior) in an attempt to discriminate the more likely suspects. (**As noted earlier, Dr. Bobrow dissents from this interest in screening portals.**)

(U) Heavily instrumented booths might well be used to raise the efficiency of inspectors at natural screening points by allowing the rapid separation of the great majority of the law abiding. The few remaining could then be given more intensive personal screening-- as is now done based on visual "profiles."

(U) The greatest hurdle to overcome in the utilization of instrumented portals is public acceptance. However, metal detectors at airports are a start in this direction and complex portals are now in routine use at many high security facilities and are beginning to be used at other facilities such as banks and computer centers. If the concept is pursued on a systematic basis, new capabilities can be installed in such a way that the "customers" will use the portal as the best of the available alternatives (quicker, cheaper, less intrusive). The benefits of the concept should be sold both to the Congress and the media. Even if this is not possible the technology should be pursued so that it is "on the shelf" and thus available when some real or perceived disaster generates a need. Eventually, such a system could well become a worldwide standard like magnetometers.

(U) A number of detection techniques presently being pursued are applicable. As these technologies become mature (effective, inexpensive, quick and non-intrusive) they can be added to a portal. Many of these require a booth to be usable, and in every case a booth would raise the signal to noise ratio of the detectors. An added benefit of the concept is the psychological man-machine interface that can be created in the booth.

(U) Once using a portal becomes common practice, more advanced techniques can be tried out and used if found to be practical. If a means to identify the person or object being screened (a passport or other readable identifier) is included, then it would be possible to integrate the observed data into a national data base system for both real time alerting and long term analysis.

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SCREENING PORTALS

- o RAISE EFFECTIVENESS OF LEA
 - Instrumentation Replaces/Augments Skilled Inspection
 - Generate Data for LEA Data Base System
- o CAPABILITY ADDED GRADUALLY
 - New Equipment Must be Effective, Cheap, and Quick
- o USERS MUST SEE BENEFITS
 - Already Started With Metal Detectors
 - Portal Quicker (Cheaper?) Than Alternatives
 - Congressional, Media Support
 - Can Be Upgraded as Needs/Capabilities Arise
- o BOTH DEPARTURE AND ARRIVAL
- o MODIFY CONCEPT FOR LUGGAGE, CONTAINERS

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(U) DOCUMENT AUTOMATION

(U) Legitimate travel, business, and commerce all generate substantial "paper trails" both to comply with the law and to assure completion of the transaction or receipt of insurance for in transit losses. The criminal seeks to avoid this documentation.

(U) Shipment or movement of vehicles, people or things across international borders normally requires documentation generated at the origin and examined at the entry point. For people movement, documentation includes passports, visas, and airline/other common carrier documents. Vehicles transiting borders commonly require licensing, registration, and insurance documents. Shipments that transit borders require accompanying cargo manifests. The quantity of this documentation is enormous; the quality is variable and non-standard. This "paper trail" is a valuable investigative tool, but is mostly a manual process and thus often ineffective for real-time interdiction of criminal activities.

(U) Cargo manifests are reviewed manually by customs agents, with a small percentage selected -- again by "profile" -- for further investigation. If during review a manifest is flagged, inspectors may check telephone numbers, addresses, etc. to verify that the shipper/destination address are correct. Similarly, it is often necessary to obtain a visa for travel across international borders. Procedures are not uniform and in most locations, information on visas/passports is entered into a database manually. Retrieval to check validity of visas and passports is slow at best. There is very limited use of available technology, except for a modest capability to read OCR data on U.S. passports.

(U) Technology exists today to automate many of the document inspection and investigative processes. Standardization of control documents into machine-readable formats would make possible rapid validity checks on both people and materials before they exit control points. Implementation of such a system would require a large, centralized database system for collecting input data from the various points of entry/exit and disseminating alert information back to them.

(U) Future research should address the problem of machine comparison of photographs, fingerprints, and high-security documents. This technology should be exported and encouraged in foreign countries, so that data exchanges and comparisons would be possible. In addition, to further reduce paper handling, mechanisms should be sought to permit shippers, travel agents, and inspectors to input directly into enforcement databases.

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DOCUMENT AUTOMATION

- o AUTOMATION ESSENTIAL TO REALTIME IDENTIFICATION AND INTERDICTION
- o VOLUME OF DATA NOT AMENABLE TO MANUAL SEARCH
- o NEW MACHINE-READABLE FORMS REQUIRED
 - Passports and Declarations
 - Cargo Manifests
 - Import/Export Documents
 - Currency Transaction Reports
- o SUPPORTING DEVELOPMENTS
 - Information Systems to Identify Possible Violators
 - Data Base System to Collect from and Disseminate to all Users
 - Direct Electronic Input to Enforcement Databases when Possible
- o HIGH-SECURITY DOCUMENT AUTHENTICATION TECHNIQUES MAY BE REQUIRED IN SOME AREAS (E.G. PASSPORTS) TO COMBAT COUNTERFEITING

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(U) DOGS AS DETECTORS

(U) There is increasing reliance on dogs for detection based on their demonstrated high sensitivity to many odors. Over 4,000 dogs are now trained to detect a wide variety of objects including concealed drugs and explosives and initiators typical of terrorist devices. Dogs have also been trained to detect flammable solvents used in incidents of arson and to detect people lost or trapped as a result of natural disasters such as floods and earthquakes. They have also successfully detected currency during searches of cargo and personal luggage. Of the 4,000 dogs trained for detection, many are also trained for sentry or patrol duties. In addition, it is estimated that another 2,000 dogs are trained only for sentry or guard applications.

(U) A typical cost estimate for training one dog is around \$5,000. This includes the purchase price of the dog, all veterinary expenses, food, handling and training equipment, personnel and administrative support costs. Annual costs for the retraining of this dog are several hundred dollars or more per year, excluding overhead, travel and handler salary. The total cost for maintenance and use of a dog varies with the user organization, and has been estimated to be as high as \$80,000 per year. This includes handler salary, overhead and all administrative costs.

(U) Detector dogs are legally accepted as non-intrusive and they also have the advantage of being generally accepted by the public. Detector dogs also have a documented history of success. For example, in the Customs Service the dog and handler search teams are more than twice as successful in detecting illicit drugs on a cost and benefit basis as agents working alone. There are no electromechanical sensors currently available for field use that are as effective as dogs in the detection of drugs and terrorist devices. Dogs not only have olfactory sensitivities that can equal or exceed that of many vapor sensing instruments, they are also extremely mobile and can independently and aggressively search large areas. Due to their inherent search capability, dogs should have a great advantage over mechanical devices in detecting and following faint odor trails.

(U) Detection dogs are also very adaptable and can be trained to a new odor, even in the field, in three to four days. Over 10,000 dogs were used by the military in World War II. During the Vietnam War about 1,600 dogs provided excellent support in sentry, scout, tracking and mine detection duties. There are still no electromechanical instruments that can duplicate many of these capabilities.

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DOGS AS DETECTORS

- o 4,000 DOGS NOW USED BY U.S. AS DETECTORS FOR:
 - Concealed Explosives & Initiators
 - Currency
 - Arson Investigations
 - Detecting People

- o ADVANTAGES OF DOGS AS DETECTORS:
 - Accepted Legally as Non-Intrusive
 - Generally Accepted by Traveling Public
 - Documented Success Rate
 - Better Than Available Electromechanical Sensors

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(U) CONCERNS WITH THE USE OF DOGS

(U) One of the stumbling blocks to expanding dog training and employment in this country is the lack of an adequate domestic source for dogs which are of acceptable quality. Many dogs which have been entering the training and detection programs of several United States' organizations have been purchased overseas. The primary reason is that animals obtained overseas are generally of better health due to lack of in-breeding. Consequently, these dogs have a longer useful lifetime and provide a higher return on the training investment.

(U) The cost of a domestic dog as a detector is increased as a result of the high rate of failure among those dogs which enter a training program. This occurs as a result of the inability of current screening methods to pre-determine physical or psychological problems inherent in a dog. Consequently, the costs incurred by the dog in training, up to its time of failure, are passed along to the remaining qualified dogs. Better training is also needed for the handlers to help them better observe or interpret their dogs' responses.

(U) In a series of trials at one laboratory, trained dogs have successfully, with 90 to 95 percent accuracy, detected the presence of butyric acid at a concentration of one molecule in 1,000,000,000,000,000 or "10 to the 15th power". Other reports have indicated that a dog's sensitivity is not quite this high. Most agree that a trained dog can reliably detect a variety of volatile compounds at concentrations of one molecule in 1,000,000,000 (10 to the ninth). One must appreciate that the dog's sensitivity will vary greatly as a function of the chemical target. All groups agree that the true limits of a dog's capability are not accurately known, and that they may well not be fully utilized. In addition, a common comment of almost all dog handlers and trainers is that they do not know exactly what component or components of a material, such as an explosive, is the primary scent detected by their dogs.

(U) Another problem arises if a dog is required to perform multiple, sometimes unrelated tasks, such as sentry and detection duties. The result is that the dog performs the detection task at reduced efficiency. These all suggest that there is some uncertainty in the sensitivity, selectivity and reliability of the dogs as a detector which could, however, be resolved by further investigation.

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CONCERNS WITH THE USE OF DOGS

- o ADEQUATE SUPPLY
 - Domestic Availability
 - Expensive Imports

- o TRAINING
 - Costs
 - Behavior or Response Interpretation

- o SENSITIVITY/SELECTIVITY
 - Lower Limits Undetermined
 - Reduced by Multiple-Tasking

- o RELIABILITY/ACCURACY

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(U) TRAFFICKERS AND TERRORISTS

(U) The collectable information on drug production, movement, distribution and sales is enormous. Data on involved countries, companies and individuals is also available. Sophisticated data networking, inferencing and strategic gaming can help track, predict, intercept and capture drugs entering the U.S. Frequently, there is also some information available from informants and elsewhere to indicate the planned movement of terrorists.

(U) In fact, one basic common denominator in most criminal activity is the international movement of the criminals themselves. Another is that those persons almost invariably try to hide their identity. Systems that might be able to improve the process of screening dishonest from honest travelers would be very useful. They would apply equally to smugglers, terrorists, and others trying to hide their true identity.

(U) There is thus a great need for rapid, constitutional, reproducible, and inexpensive means of unequivocally identifying people and recording their movements and associations. Improved passports and automatic passport readers as well as the collection and retrieving of other physical markers such as voice prints and fingerprints are needed. Standardized data collection with a central collection and redistribution center with software for specific use tailored to individual agency needs should be developed. It could benefit from existent resources such as EPIC, the FBI, and Treasury Enforcement Computer System (TECS).

(U) Extensive use is currently made of "profiles" which attempt to describe both the travel patterns and behavior patterns of various types of law breakers. Field availability of high risk passenger lists fitting specific profiles coupled with the ability to query the system on individuals' travel patterns and financial associations could be of considerable help. Furthermore, dogs are frequently credited with being able to sense instinctively people who are uneasy. Is it possible to develop other sensors that can help in the initial sorting for persons deserving closer scrutiny?

(U) Minimal requirements include the rapid identification of all persons and inferencing from the available database -- in coordination with a primary screen by an enforcement officer. Secondary screening could then use more sophisticated techniques. Controls against abuse of such a system and its databases would have to be assured. Nevertheless, development of such a powerful tool could serve as a major deterrent for traffickers and terrorists required to make repetitive trips across international borders, not only those with the U.S. but worldwide.

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TRAFFICKERS AND TERRORISTS

- o PEOPLE MOVEMENT BASIC TO DRUG TRAFFICKING AND TERRORISM
 - Have Schedules, Accountability and Paper Trails
 - Fear Jail and Seek Anonymity
 - Contraband Money, Drugs or Weapons May Accompany

- o PEOPLE IDENTIFIERS/DISCRIMINATORS NEED MODERNIZATION.
 - Passport, Retinal Patterns, Fingerprint, Voice Print, Need Automatic Readers
 - Rapid Data Base Access Inferencing, and Networking Programs Needed at Field Locations
 - Development of Multi-Component Profiles for Rapid Automatic Screening
 - Essential Role of Enforcement Officers for Interpretation of Findings and Direct Interaction with People

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PHYSIOLOGIC CLUES FOR STRESS/DECEPTION DETECTION

(U) The Task Force devoted considerable effort to exploring the potential -- and usefulness -- of using various types of sensors to help highlight stress in individuals which might somehow hint at their involvement in illegal activities. There is clearly no consensus, or even optimism, that detection of a pounding heart or nervous movements while waiting in line clearly suggest proof of guilt. Nevertheless, such observations are routinely taught to Customs agents and Immigration officials (and others) as part of suspect "profiles."

(U) Clearly, such stress responses alone cannot discriminate deception from simple situational anxiety such as fear of flying, exasperation over delays, etc. However, combining the measurement of physiologic end points such as heart rate, skin resistance, or sweating with specific questions intended to enhance fear of detection in the guilty might be able to help discriminate ("Do you have anything secreted in a body cavity?" is an "allowable" question, according to training tapes). However, the essential component of such a systems approach would always remain the enforcement officer who would interpret the physiologic response to questions as well as more complex behavioral changes.

(U) The Task Force also learned from many different briefers that the criminal can quite easily be deterred from a given path and/or a given target by the threat of capture. Their objectives -- and means -- are seldom as fixed as in a military operational planning. Moreover, by nature and outlook the offender tends to exaggerate the capabilities of law enforcement officials. The simple presence of technology to detect stress in the guilty might well be a deterrent itself even though it has real limitations. Clearly, such techniques risk being branded as "remote polygraphs" -- as could a mother's powers of observation of her children!

(U) Measuring several physiological parameters (i.e., pulse and breathing rates) at once may not improve the discrimination of normal situational anxiety from guilt-induced stress. However, measuring several parameters could improve the quantification of stress and possibly lessen the biologic variability between people and cultures.

(U) Certain physiologic variables can be measured readily and quickly now. A field trial of limited nature carefully observed could give insight into the potential of future improvements in measuring more complex physiologic variables. Several Task Force members believe that this avenue deserves further professional attention, while one or two others view it as a gross waste of money.

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PHYSIOLOGIC CLUES FOR STRESS/DECEPTION DETECTION

- o **STRESS PRESENT IN GUILTY AND INNOCENT**
 - **Guilty Stress More With Specific Questioning**

- o **NERVOUS RESPONSES HELP ENFORCEMENT OFFICERS**
 - **Measurable Rapidly and Easily**

- o **STRESS MEASUREMENT COULD HAVE DETERRENT EFFECT**
 - **Available For Field Testing**

- o **MORE COMPLEX PHYSIOLOGIC TESTING 5-10 YEARS IN FUTURE**

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(U) HUMAN RESOURCES

(U) Enforcement Officers

(U) Enforcement officers remain our most critical and effective resource. Solutions to crimes frequently come from complex deductive and intuitive approaches combined with imaginative data collection and screening. Even screening of incoming passengers depends very heavily on trained observers interacting with passengers. The potential now for enormously greater databases, automated readers of specific identifiers and networking software opens the door to marked improvement in screening and tracking procedures.

(U) The human component, however, is not lessened but is increased in terms of the design of data collection systems and supporting software, the field use of the databases and the interpretation and use of the results. Focused training and education and development of team approaches and support will need to be integrated with long term professional career tracks. The inevitable emotional stress facing enforcement officers must be recognized as a normal response and dealt with in an organized, open fashion. Present day opportunities for program improvement and integration and capture of the approaches of experienced and effective officers must be a major target.

(U) People Opportunities

(U) There are a number of opportunities which offer potentially high payoffs in the war against drug trafficking. First, we should improve the methods of individual identification and correlation of data associated with people and substance movement, money transfer, and high risk profiles. Second, we should establish an interagency working group that would share in training, collection of data, development of software, participation in gaming, and the planning, validation and modification of ongoing anti-drug approaches or techniques. Third, we should conduct a program which observes and measures a number of physiologic variables of a suspected trafficker undergoing interrogation by a law enforcement officer. We need to encourage the development of a technology base and the eventual validation of models devised in a permanent center of excellence. Finally, a national center or forum must define our nation's policy toward illegal drug consumers, while enlisting the full support for enforcement of that policy from the American people.

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HUMAN RESOURCES

ENFORCEMENT OFFICERS

- o INFERENCING POWER OF HUMAN MIND NOT REPLACEABLE WITH HARDWARE
- o DATABASES AND SOFTWARE CAN MAXIMIZE USE OF HUMAN RESOURCES
- o IMPROVED TRAINING, TEAM AND INDIVIDUAL SUPPORT NEEDED
- o VALIDATION OF FIELD PROCEDURES AND STRATEGIC GAMING ESSENTIAL FOR PROGRAM IMPROVEMENT

PEOPLE OPPORTUNITIES

- o INDIVIDUAL IDENTIFICATION AND CORRELATION
- o INTERAGENCY WORKING GROUP
- o QUANTIFICATION OF PHYSIOLOGIC VARIABLES
- o NEED NATIONAL SUPPORT FOR CONSUMER INTERDICTION
- o NATIONAL POLICY FORUM

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(U) DEMAND REDUCTION

(U) This Task Force effort addresses means to reduce available drug supplies by decreasing production, and interdicting delivery of drugs from other countries and within the United States. The Task Force also recognizes -- as does National Drug Policy -- that a reduction in demand for drugs is essential for long term success. Because of its importance, this effort probably deserves a separate effort.

(U) Active intervention can be accomplished by first identifying the drug users using a reliable test and secondly by devising means of either treating or convincing the drug user not to use drugs. An example of this is the drug program presently in use in the military. Regular, reliable testing on all military combined with consistent enforcement and punishment has reduced illicit drug use to near zero.

(U) There appears to be a growing concern that mandatory drug testing is justifiable for certain jobs relating to public safety. For example, train engineers, pilots, bus drivers, police, school teachers, health care workers and people involved in matters of national security would pose a real risk to the public if under the influence of drugs. People who commit violent crimes and drivers stopped for suspicion of DWI could also be tested for drugs.

(U) The nature of any punishment also deserves careful consideration but need not be limited to jail. Fines, loss of driving privileges or bars from jobs involving public safety could be effective if enforced. Longer term efforts toward grass roots public support and investment in needed biologic and behavioral science research would be of help. A separate effort focused on demand reduction deserves serious consideration. A national forum to air the alternatives and to weigh the risks and benefits might well be beneficial.

(U) It seems clear, however, that "detering the user" is not only a matter of education and rationalization. It also involves demonstrated willingness by the Government to resist the infection, enforce the prohibitions, and penalize the offenders. In this respect, there should be direct linkage between improved and more visible enforcement and the individual's decision to avoid involvement.

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DEMAND REDUCTION

- o MEANS OF IDENTIFYING DRUG USERS CHEAPLY AND RELIABLY
 - Tests Available and Proven
- o AUTHORITY AND JUSTIFICATION TO REQUIRE REGULAR TESTING
 - Present for some Segments of Society
- o CREATION OF CONSISTENT AND DEFENSIBLE PENALTIES FOR USERS
- o USE OF PUBLIC EDUCATION AND GRASS ROOTS ORGANIZATION TO GAIN SUPPORT OF PEOPLE
- o INVEST IN LONGER TERM BASIC RESEARCH IN BIOLOGIC AND BEHAVIORAL AREAS
- o MAINTAIN AND SUPPORT LAW ENFORCEMENT FOR DRUG PRODUCERS AND TRAFFICKERS
- o DEMAND REDUCTION DESERVES SEPARATE EFFORT

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(U) CURRENT CRIMINAL ASSET TRACKING

(U) Investigations into major drug trafficking organizations have been greatly enhanced through interagency financial task forces. Analysis and documentation of fiscal transactions, generally involving cash, have delineated wider drug conspiracies; increased prosecution options through tax evasion, currency reporting, and transporting statutes; and increased drug related asset and currency seizures. Undercover money laundering "sting" operations, such as Operation Pisces and Cashweb, have provided successful infiltration into drug trafficking organizations. The seizure of drug proceeds has been recognized by many governments as a potential source of income and has served to encourage cooperation with U.S. law enforcement authorities in following the money trail.

(U) Prosecution of money launderers has been greatly improved by the passage of the Money Laundering Control Act of 1986. Now a defendant who knowingly conducts a financial transaction with drug proceeds in order to promote the drug enterprise or to conceal or disguise the source, origin, location, or ownership of the proceeds can be prosecuted for money laundering. The Act also criminalizes the process of structuring currency transactions to purposefully cause a domestic financial institution to fail to file a currency transaction report. Bank Secrecy Act (BSA) regulations have also been adopted which require financial institutions to aggregate multiple transactions daily among branches and to verify identities of their customers to better identify structuring violations and violators.

(U) As a result of civil and criminal BSA enforcement in 1984, CTR compliance by domestic financial institutions has increased exponentially. CTR filings at the IRS Data Center have increased from .7 million in 1984, to 1.8 million in 1985, 3.7 million in 1986, and are projected to be 5 million in 1987. This increased compliance resulted in a backlog which has recently been reduced from eight months to 30 days. A magnetic tape pilot program has achieved an initial reduction in errors and processing time. The Customs Financial Analysis Division (FAD) receives CTR data and adds CMIR data for analysis by Customs Artificial Intelligence System to target money launderers and non-compliant financial institutions.

(U) The sums of money involved in major trafficking operations are so large that they may well provide a trail that is more visible than the packets of drugs. The Task Force believes that major additional efforts to understand and exploit this unique and inescapable characteristic of the drug trade would bear important fruit.

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CURRENT CRIMINAL ASSET TRACKING

- o FINANCIAL INVESTIGATIONS IMPROVING
 - Interagency Financial Task Forces
 - Narco-Asset Removal Increasing
 - Successful Infiltrations and Foreign Government Cooperation
- o LEGISLATION/REGULATION IMPROVING
 - Money Laundering Control Act
 - Structuring Offense
 - Aggregation/Identification Regs for Bank Secrecy Act (BSA)
- o BSA FINANCIAL DATA BASE AND ANALYSIS IMPROVING
 - Currency Transaction Report (CTR) Compliance Improving
 - Processing Backlogs Diminishing
 - Artificial Intelligence for Targeting

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(U) CRIMINAL ASSET TRACKING LIMITATIONS

(U) Our collective knowledge of the mechanisms used by the drug trafficker to move his funds needs to be increased. A centrally managed strategic intelligence collection and analysis program is not currently showing required results. Part of this problem may be circular in that the intelligence agencies require targeting information from the law enforcement agencies while the law enforcement agencies need strategic intelligence to understand the basic mechanisms of the flow.

(U) The special problems of sifting through the \$1 trillion per day of electronic funds transfers (EFTs) in order to identify drug related or other seizable money transfers require advanced analysis tools, methodologies, and an active strategy.

(U) Although the current automated databases are potentially usable, they are not integrated into a system that provides coherent and comprehensive problem reduction. Hardware, software and legal restrictions inhibit full sharing of financial data. This causes a significant problem for systems users which results in misunderstood and therefore unused database capabilities. Until a systems analysis approach is adopted and the databases are integrated (within legal limits) there will be many missed opportunities for targeting, prosecutions, seizures, and disruption of the criminal infrastructure through asset removal activities.

(U) The basic information on the flow of our currency needs to be greatly improved. Tracking of currency itself (not EFTs), especially currency known to have been used in drug (or terrorist) transactions, is currently very difficult, expensive and imprecise. Tracking, however, has a very high value in determining basic flow patterns throughout our financial institutions.

(U) Present methods generally involve the recording of individual bill serial numbers and then hopefully, intercepting them again. The task of tracking our currency is seen as crucial to any attempt at understanding the flow of criminal assets. In addition, there is the continuing problem of the mixing of real and counterfeit funds. There is also a strong need to improve the rapidity with which currency authentication can be carried out. Currency movement is also involved in many other crimes, from bank robbery to terrorism (the former often bankrolls the latter!). The current lack of sensors and taggants for tracking currency under certain controlled circumstances appears to the Task Force to be a serious -- but correctable -- shortcoming in law enforcement efforts.

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CRIMINAL ASSET TRACKING LIMITATIONS

- o STRATEGIC INTELLIGENCE INADEQUATE
 - Money Flow Unknown
 - Centralized Management Needed
 - Intelligence Community Input Required By Law Enforcement
 - Law Enforcement Information Required To Direct Intelligence Community
 - Sifting Of Electronic Fund Transfers Needed
- o INADEQUATE SYSTEM ANALYSIS OF FINANCIAL DATABASE
 - Insufficient Database Interfaces
 - Under Utilization of Database Capabilities
 - Missing Targeting Opportunities
- o DETECTION AND TRACKING OF CURRENCY
 - Limited Sensors for Currency
 - Currency Tracking Device Required

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(U) ASSET RECOVERY OPPORTUNITIES

(U) The bottom line for the drug trafficker is money. Law enforcement experience has shown that more information about the drug enterprise can be achieved through financial investigation and infiltration than through the drug dealer. An attack on the profits and operating funds of the enterprise is more likely to disrupt the drug enterprise than confiscating drugs. Moreover, the seized narco-asset can be forfeited to fund the enforcement operation.

(U) Strategic intelligence concerning the drug trade's illegal money flow is woefully lacking, notwithstanding recent substantial infiltration into the money side of the trade. We know the various methods of moving illegal money out of the country but not the relative proportions. Nor do we know with any degree of exactness the gross proportions of money attributable to the drug trade which remain in the U.S., exit the country and remain in exile, or those funds which are subsequently repatriated. Modeling of the money flows in both a domestic and international setting, and the training of a core group of intelligence analysts to manipulate the model will provide a baseline for strategic targeting initiatives. However, a centralized management for the collection and analysis of financial information, working within the existing framework of intelligence and law enforcement systems, will be required to make effective use of the model and to better direct both the intelligence and law enforcement communities.

(U) Improvement of our operational intelligence capabilities presents a tremendous opportunity for enhancing criminal prosecution and asset recovery and denial. A tremendous amount of information is currently being collected and stored in databases which do not integrate. Immigration information which is not automated makes targeting of alien money launderers and "smurfs" a near impossibility. The databases need to have automated integration capabilities, to the extent that the law permits. Expert systems need to be utilized to target financial violators, to pursue investigations and prosecutions, and to seize and recover narco-assets -- as other laws permit.

(U) It is important to understand that the law does provide for the total seizure of all assets associated with a drug-related enterprise when it has been identified as such. In this respect, "target regeneration" can thus be slowed by preventing new criminals from stepping into an existing physical infrastructure.

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ASSET RECOVERY OPPORTUNITIES

- o INVESTIGATING THE MONEY SIDE OF NARCOTICS TRAFFICKING HAS GREAT POTENTIAL FOR COST EFFECTIVE RETURN.
 - Use Seizures For Program Funding

- o IMPROVE STRATEGIC INTELLIGENCE CAPABILITIES
 - Creation of a Money Flow Model
 - Centralized Management of Collection and Analysis
 - Coordination Between the Intelligence and Law Enforcement Communities

- o IMPROVE OPERATIONAL INTELLIGENCE CAPABILITIES
 - Database Interfaces (As Law Permits)
 - Expand Expert Systems for Targeting Violators
 - Expand Expert Systems for Pursuing Investigations

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(U) NATIONAL MONEY MODEL

(U) It has been estimated that the profits from illegal drug activities in the United States are in the range of \$50 - \$75 billion annually. At each level of the domestic drug marketing chain, distributors have significant amounts of currency which must be discretely moved into the banking system and/or transformed into legitimate financial assets. Estimates of the current situation are based on the widely divergent views of the front line agencies combatting illegal drug activity.

(U) In order to provide a baseline for money laundering analysis, a money model needs to be developed. This simulation model would encompass the most important facets of the diverse money scheme. It would allow extant knowledge of drug and other money laundering activity to be played against the model for assessment and comparison. The simulation model components would include both domestic and international financial institutions, such as banks, savings and loans, credit unions, and commercial brokerage houses. Electronic and physical transfer mechanisms should also be included. Each actor and mechanism would be represented with regard to the rules and regulations that control their financial operations. Implementation would probably include a set of rules to facilitate the examination of alternative regulations or scenarios of operation.

(U) The specification of the system to be modeled can only adequately be developed with the integral involvement of key/knowledgeable individuals from each of the operational departments and agencies involved in identifying, tracking, and investigating illegal money laundering activity. These key people would provide details about the various schemes that are currently being used to launder money so that the baseline simulation model would be as complete and accurate as possible.

(U) The pursuit of such models needs to be supported by the enforcement agencies directly involved. Defense modeling skills (and facilities) should be made available on request. Similar efforts have already been undertaken successfully for other models by the FBI and the Institute for Defense Analyses. This approach could well be used as a model for additional applications.

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NATIONAL MONEY MODEL

- o **SIMULATION MODEL**
 - Establish Base Line Money Flows
 - Identify Major Facets of Existing Money Laundering Schemes
 - Explore Hypothetical Money Laundering Schemes and Impact
 - Determine Overall Level of Fiscal Flow, Both Legitimate and Illegal

- o **COMPONENTS**
 - Financial Institutions
 - Domestic
 - International
 - Transfer Mechanisms
 - Electronic
 - Physical

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(U) INFORMATION PROCESSING AND ANALYSIS
CURRENT ENVIRONMENT

~~(C)~~ Agencies involved in drug law enforcement are critically dependent upon information technology. The same is true of counter-terrorism activities. Virtually all agencies use computer-based information systems tied to their respective responsibilities in these mission areas. A number of systems provide effective service to operating agencies as well as to others permitted on-line access to files concerning narcotics trafficking and related matters. Diverse drug enforcement functions and operational actions are supported continuously by systems operated by Customs Service, DEA, FBI and others, and the hundreds of thousands of daily file transactions performed with these systems represent a key capability in counternarcotics. Counterterrorism systems operated by FBI, CIA and other elements of the Intelligence Community have proven particularly effective in intelligence work and interdiction support.

(U) While it is noteworthy that law enforcement and intelligence systems capabilities are substantial and cover a broad spectrum of functions and operational support activities—strategic and tactical — significant limitations exist.

(U) Input media for many systems are in manual form. This is, of course, less efficient than use of machine-readable media; consequently, data-entry backlogs frequently occur or time to enter is unnecessarily long. Another limitation stems from manual interfaces between/among systems and from a sparseness of automated linkages. Principal mode of operation is on-line query/response. Requirements for complex analytic assessments required by law enforcement and intelligence (drugs, terrorism) agencies go well beyond capabilities of existing information systems. More functionality is required, to assess complex drug trafficking patterns, organized crime drug conspiracies and domestic and international money-laundering operations.

(U) This challenge has been addressed by the FBI, which has already fielded new generation organized crime information systems (OCIS) and terrorist information systems (TIS) and has applied AI technology in achieving operational knowledge-based expert systems in counterterrorism, organized crime, and drugs.

(U) Systems now in place exhibit unevenness in technology levels, systems engineering practice and operational capabilities. Effort and resources are needed to bring all information processing systems to the required level for mission support.

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INFORMATION PROCESSING & ANALYSIS--CURRENT ENVIRONMENT

- o INFO TECHNOLOGY VITAL TO EFFORTS AGAINST DRUGS & TERRORISM
- o KEY D-E AND/OR C-T FUNCTIONS SUPPORTED:
 - Real-Time Interdiction
 - Intelligence Collection, Analysis, Dissemination
 - Strategic and Tactical Planning and Analysis
 - Crisis Alert and Management
 - Case Investigation and Prosecution
- o CURRENT ARRAY OF AUTOMATED SYSTEMS POWERFUL BUT LIMITED
- o BOTTLENECKS, OPERATIONAL INEFFICIENCIES MODERATE EFFECTIVENESS
- o CURRENT QUERY MODES INSUFFICIENT FOR COMPLEX ASSESSMENTS
- o UNEVENNESS IN SYSTEMS TECHNOLOGY LEVELS
- o MORE FUNCTIONALITY IMPERATIVE

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(U) DRUG/TERRORISM INFORMATION/EXPERT SYSTEMS

(U) A review of selected systems available for drug enforcement and counterterrorism discloses several limitations in functionality and connectivity.

(U) Currently, very few systems interconnect with other automated systems. To increase cost effectiveness and to enhance operational effectiveness, selected linkages amongst appropriate databases and information sharing are needed. A promising example of this approach is the FBI's TIGER PAW system, which ties into and coordinates operations of the TECS, NADDIS, and EPIC IT systems at the DEA's El Paso Intelligence Center (EPIC).

(U) Increased functionality must also be built into these systems to handle the increasing volume and analytic complexity of available information. Knowledge Based Expert Systems, such as the FBI's "BIG FLOYD," can access information from existing data bases and provide the necessary functionality. Investigators using such advanced systems will be able to better assess and pursue drug trafficking groups and complex money laundering operations. While counterterrorism systems are currently more advanced, it is imperative that these systems keep pace with technology to counter future threats.

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**DRUG/TERRORISM
INFORMATION/EXPERT SYSTEMS**

SYSTEM		System Type		Mission Support		Access		Data Type		Highest Level of Data Sensitivity		
		STRATEGIC	TACTICAL	INTERDICTION	PROSECUTION	TECHNICAL	OTHER	APP. OR LINK	NAT. SECURITY DIRECT	PROPERTY	INTERNAL USE ONLY	NON-CLASSIFIED
DOA	NADDIS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	EPIC IT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TREASURY	TECS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PAES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	C/FDB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	IRS/FDB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	CAIS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DASIS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INS	CIS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	ST/SC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	NCIC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	TIS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	TIGER PAW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	OBR III	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	BIG FLOYD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRISONS-	SENTRY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FAA -	FAA/OKC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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STATE -	AULOS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CIA	DESIST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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IC -	FLASH BOARD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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(U) A CONCEPT FOR A MONEY LAUNDERING EXPERT SYSTEM

(U) The increasing sophistication and complexity of money laundering schemes to hide the massive profits of drug trafficking have precipitated the need to utilize advanced technology to support appropriate countermeasures. The passage in 1986 of new Money Laundering Statutes (Title 18, USC 1956, 1957) has given law enforcement personnel the means for investigating and prosecuting money laundering operations. Expert systems can now be designed to aid investigators in searching for hidden patterns of transactions and tracing money flow through various financial institutions.

(U) The first step in developing an expert system on money laundering would be to establish the domain and boundaries of the problem. There currently exists substantial expertise in various government agencies (DEA, FBI, Customs, IRS, etc.) on Money Laundering (ML) operations. Also, a large body of data scattered over the course of numerous financial investigations is available. This expertise and information could be used in developing a money laundering model. The model could be used to simulate various laundering and money flow scenarios and find hidden patterns of illegal transactions. A model database, accepting data from a variety of sources (existing investigations, targeted data sources, bank info), would be built to test and support the model.

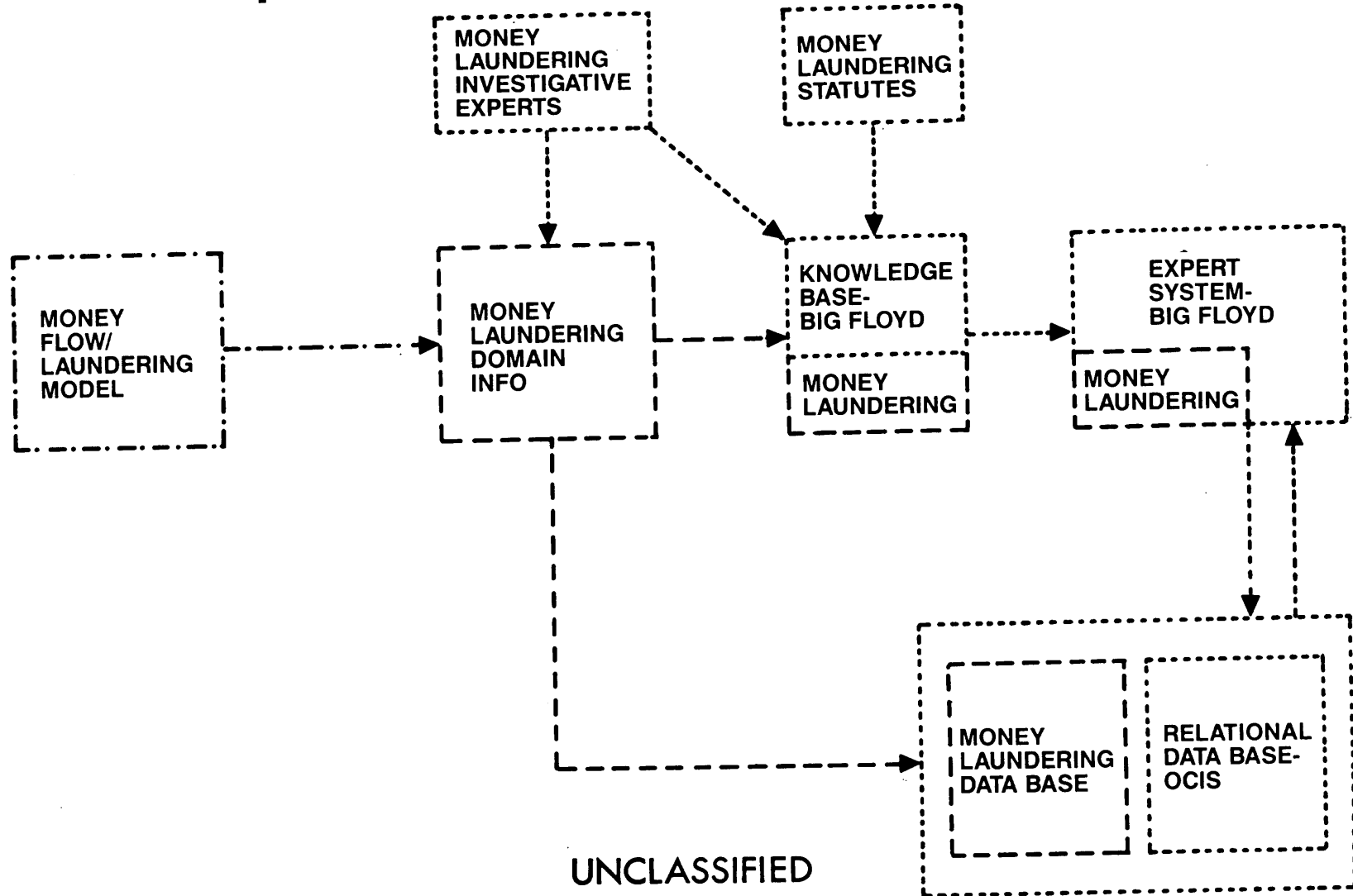
(U) The next phase would be to build a money laundering database that would include information from existing automated systems, such as the FBI's Organized Crime Information System (OCIS). The database description, attribute definitions, entity relationships, boundaries, transforms, and contexts would be derived from the ML domain description and the ML model. If necessary, this could be accomplished without the ML model. This database will accept information from current systems and potential new systems, as well as new available financial and intelligence data.

(U) Simultaneously, a knowledge base of ML operations would be developed. This would consist of a set of codes, templates, and explanations, codifying the drug expert's knowledge and pertinent criminal statutes. Once this knowledge base is built, it can then be incorporated into a criminal investigative expert system (i.e., FBI's BIG FLOYD). The ML Expert System would enable an investigator to search through data collected in the ML database as well as OCIS and put together patterns, make inferences, graphically display linkages, and examine clusters. Such a system would be of tremendous value as an intelligent assistant to an investigator. This principle has been proven in the use of "BIG FLOYD" in a major FBI labor racketeering investigation.

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Concept for a Money Laundering Expert System



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(U) INFORMATION PROCESSING OPPORTUNITIES/CHALLENGES

~~(C)~~ Review of drug enforcement and counterterrorism information systems indicates opportunities for substantive extensions and functional/operational improvements. Major individual and interagency programs are already underway community wide in counterterrorism, including progressive development of an expert system (OBR III) by the FBI to operate with its terrorist info system (TIS). Further, IDA is performing a comprehensive study leading to a new, fully automated FBI Strategic Information and Operations Center (SIOC).

(U) Counterdrug technology-based system improvement opportunities could be readily exploited in key mission areas such as interdiction support, intelligence analysis, and investigations. Numerous approaches for improvement of existing, evolving and new generation systems exist. Artificial Intelligence technology in the form of Knowledge Based Expert Systems is especially powerful. Furthermore, conventional technology can play an important role in advancing efficiency and effectiveness of current and emerging systems. Improved interoperability is needed. This can be achieved by means of direct automated inter-system linkages. Machine readable media for systems data exchange is another achievable improvement. Through selective integration techniques, e.g., data dictionaries and telecommunications protocols, systems operations can be improved.

(U) All initiatives toward extended interoperability must include explicit actions to address concerns over large federal databases spanning multiple agencies and systems. Verifiable controls for security, privacy, auditability and data integrity are mandatory. Protection of systems/databases from intrusion and abuse is essential as are trusted gateways for network interactions. Implementations should be consistent with jurisdictional, legal considerations and applicable federal guidelines.

~~(C)~~ Advanced AI technology can be applied promptly. AI-based systems are feasible for counternarcotics or counterterrorism data fusion, C³I, and crisis management in strategic and tactical contexts. New information systems for interdiction, surveillance and investigations will benefit counternarcotics efforts. Promising is an initiative to extend the FBI's BIG FLOYD Organized Crime Expert System to encompass money laundering analysis. Included in this forthcoming work is development of an institutional knowledge base for money laundering and interfacing with Treasury/Los Alamos developmental money flow model. Further, this work will take advantage of the Bureau's new OCIS-2 due for deployment in 1988.

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INFORMATION PROCESSING OPPORTUNITIES/CHALLENGES

- o **CRITICALITY OF INFO TECH MANDATES SYSTEMS ADVANCEMENTS**
- o **TECHNOLOGY EXPLOITATION IS KEY-AI MOST PROMISING**
- o **IMPROVED SYSTEMS INTEROPERABILITY (as law permits)**
 - **Selected Upgrade/Expansion of Automated Linkages**
 - **Automated Information Exchange**
 - **Selective Integration**
 - **Up-front Actions on Concern Over Large Federal Databases**
- o **ADVANCED AI TECH FOR EXTENDED FUNCTIONALITY**
 - **AI-Based Extensions for Narc, Terr C³I, Crisis Mgmt**
 - **New Generation (4th - 5th) Info Systems for all Missions**
- o **LAUNDERING EXPERT - FBI'S "BIG FLOYD +"**
 - **Add Institutional Knowledge Base for Laundering**
 - **New Statutes Codified as Knowledge**
 - **Interface with Treasury \$ Flow Model**
 - **Integrates w/Bureau's OCIS-II**

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(U) R&D AND PROCUREMENTS FUNDING FOR LAW ENFORCEMENT AGENCIES

(U) For the sake of comparison, this chart shows the level of total manpower and annual RDT&E and procurement budgets for the LEAs in comparison with DoD. The civilian agencies charged with principal responsibility for law enforcement and combatting international terrorism, including the Coast Guard, have 1/23rd of DoD's manpower, and only 1/51th of DoD's total budget. They have tiny RDT&E budgets totalling less than 1/160th of the DoD RDT&E budget. With the exception of the FAA whose R&D requirements are largely funded out of the Air Transportation Trust Fund, these levels of funding preclude the development of new or specialized technology. As a result, these agencies use their funds to tailor equipment available on the public-market to their particular needs.

(U) This practice has led to very "cost efficient" procurements but has severely limited the levels of technology available to law enforcement authorities that are on a par with those available to their criminal adversaries. The criminal adversaries, of course, are less constrained by budget limitations and procurement procedures and are uninhibited by legal constraints. They are therefore able to respond very quickly and imaginatively to new law enforcement system technical capabilities.

(U) The procurement accounts of these agencies are not much better in terms of meeting the dramatically increasing demands placed on them by the expanding traffic in drugs and other contraband. The total of LEA procurements amounts to less than 1/72th of DoD procurement amounts. While the LEAs clearly do not need tanks, strategic missiles, or aircraft carriers, some of their other needs very closely parallel those of Defense.

(U) In stark contrast, DoD invests tens of billions in developing technology and applying it to maintain a sound national deterrent posture vis a vis its adversary. Fortunately many of the areas in which Defense invests are directly applicable to the problems faced by LEAs. DoD could, if authorized, make major contributions to filling the technology needs of the LEAs through the development -- and procurement -- of "dual-use" assets such as wide area surveillance systems as well as coastal/border sensors and warning and control systems. Many other equipments (such as helicopters) can also be identical. In fact, there has already been a very substantial degree of cooperation between DoD and the LEAs, both in providing equipment and in the sharing of important CONUS military base facilities. More appears warranted. However, the war against crime remains a long-term problem which deserves not only maximum interagency cooperation, but also appropriation levels high enough for each responsible agency to contribute substantially to its own gamut of problems.

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RELATIVE TOTAL AGENCY FUNDING (FY 87 \$M)

		RDT&E	PROCURE	TOTAL	MANPOWER (Total Manyears)
JUSTICE	DEA	2	25	410	5,050
	FBI	21	200	1,280	22,400
	INS	2	21	610	11,700
TRANSPORTATION	Coast Guard	23	350	1,962	44,340
	FAA	135*	678*	1,000	44,500
TREASURY	Customs	78	58+	690	12,700
	ATF	1	7	180	3,000
Non-Defense	TOTAL:	262	1,339	6,132	143,690
DEFENSE	DoD Tot:	41,900	95,800	311,600	3,246,600
DoD/Non-DoD Ratios:		161:1	72:1	51:1	23:1

*FAA Trust Fund line items not funded out of General Fund

+Customs Received \$160M Transfers from DoD and Forfeiture Funds

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(U) MAJOR CURRENT RDT&E PROGRAMS

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MAJOR CURRENT RDT&E PROGRAMS



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(U) MAJOR CURRENT PROCUREMENT PROGRAMS

(U) In its attempts to deter both conventional and nuclear conflict with the Soviet Union, the Defense Department has on order a total of over \$550 billion in "major" program acquisitions, according to their Selected Acquisition Report summary to the Congress. By comparison, the LEAs have a total of about \$890 million planned for "major" acquisitions at the present time. Such figures are clearly inadequate to the tasks at hand.

(U) The distribution of these LEA procurements is shown on the facing chart. By far the largest single procurement item is for aircraft (as it is in DoD). Ships are next (for the Coast Guard), and the balloon-borne "aerostat" radars are the third largest planned procurement. Note that the emphasis on C³I is also very substantial.

(U) It should also be noted that over one third of this total is already expected to be purchased by DoD for use by the LEAs--pursuant to Congressional mandate. This chart also shows that the Coast Guard has the largest investment program, with Customs running second. The procurement programs of the FBI, Border Patrol, and DEA are very small indeed by almost any standard.

(U) While it is not the intent of this Task Force to comment on the current operations and posture of the various LEAs, the Task Force Chairman cannot avoid some reference to the tragically inadequate posture of the Border Patrol in its efforts to stem the flow of aliens crossing by foot, mule, and car from Mexico. Clearly, there have been many political implications with regard to this alien "resource" in the U.S. Southwest. Now, however, this human flow is shielding very substantial amounts of lethal drugs either grown in Mexico, or passing through in cooperation with the Colombian drug kingpins.

(U) If the Task Force found any one area in which our actions speak louder than -- and in direct contradiction to -- our words, it is in the San Diego Sector of the U.S. Border Patrol. In this 66-mile sector, 900+ officers/agents and 100+ support personnel apprehended and returned to Mexico 63,000 illegal aliens in the single month of July, 1987. The Border Patrol considers itself fortunate to be getting two miles of concrete automobile barriers, and one mile of modern fencing in their FY87 procurement budget. The vast majority of that sector will still be without any form of barrier or fence. There is simply no way to convince Californians -- or Mexicans -- that we are "serious" about stemming the flow of drugs under these conditions. Technology has existed for years by means of which to make major inroads into that problem: It is the will that is lacking, as demonstrated by the facing chart on planned LEA procurement.

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MAJOR CURRENT PROCUREMENTS
(MILLIONS OF DOLLARS)

	COAST GUARD	CUSTOMS	FBI	BORDER PATROL	DEA	DOD SUPPORT	TOTALS
AIRCRAFT	170	55				200	425
SHIPS	155						155
VEHICLES				5			5
RADARS						100	100
BARRIERS				6			6
LE FACIL & EQUIP	50	27	10		5		92
C ³ I CENTERS		48					48
COMM EQUIP		5	22	7	12	10	56
TOTAL	375	135	32	18	17	310	887

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(U) ACQUISITION PROBLEMS

(U) The LEAs appear to have substantial problems in the acquisition area. The agencies charged with the suppression of terrorism and the control of drug trafficking are currently funded at less than threshold amounts in the RIT&E area. Thus, they can never improve their operational effectiveness through the development of new technology. As a consequence of their lack of "in house" resources the LEA community sometimes becomes excessively dependent upon contractor salesmen for their technology input, and lack the ability to independently check their claims.

(U) Since little operations analysis data have been collected by the agencies, there is also an inadequate basis for assessing major new "requirements." Earlier discussions of the range of available area surveillance systems, for instance, indicate the need for more thorough analysis. Overall needs, of course, are obvious: but the solutions are not.

(U) Lastly, the LEA community has often been frustrated by accepting relatively inexpensive demonstration programs which show promise of success, only to find that they cannot afford the giant leap from demonstration devices to the acquisition of finished, fieldable systems.

(U) Procurement funds available to the LEA community are also uniformly below the threshold for true effectiveness. This applies across the spectrum from dogs to radios. A systems approach for major acquisitions seems to be lacking. The LEAs also have little expectation that adequate operation and maintenance (O&M) funds will ever be available to operate the larger systems. The E-2Cs recently provided by DoD to Coast Guard and Customs, for instance, were not supported by increased operating funds!

(U) One particular deficiency is the uneven distribution of non-appropriated funds generated from the use (or sale) of seized/forfeited assets. The Border Patrol, which is in dire need of additional hardware assets, for instance, cannot benefit from major seizures by the DEA. In fact, the majority of forfeiture funds are returned to the General Fund. It would appear that a major motivation for enhanced enforcement is thereby denied. Some better system for allocating these forfeiture funds -- possibly through an instrument of the NDPB -- might be very productive.

(U) Finally, LEA procurement practices which require unclassified and advertised bids tend to aid the traffickers and terrorists -- who thus get valuable advanced warning about future planned LEA capabilities. They can, in fact, get on the bidders' lists!

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ACQUISITION PROBLEMS

- o **RDT&E PROBLEM AREAS:**
 - Technology Funding Levels Well "Below Threshold"
 - Agencies Dependent on Contractor Salesmen
 - Limited Analytical Basis for Assessing "Requirements"
 - Cannot Afford Jump from Demonstration to Acquisition
- o **PROCUREMENT PROBLEM AREAS:**
 - Funding Levels Well "Below Threshold"
 - Lack of Systems Approach for Major Acquisitions
 - Lack of Acquisition and O&M Funding to Field Big Systems
 - Uneven Distribution of "Non-appropriated Funds"
 - Some Procurement Practices Give Edge to Traffickers/Terrorists
 - Majority of Forfeiture Funds Go Back to General Fund

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(U) GENERAL CONCLUSIONS

(U) The Task Force has generated a substantial number of conclusions which are pertinent to the problems at hand. In some cases, they doubtless bear the mark of "initial shock" associated with exploring a new area. But the fact is clear, the LEAs are "at war" with major, dedicated, organized criminals who are dead set on pursuing their objectives. Coupled with the magnitude of the problems and the difficulty of solving them, the Task Force agrees with the President (NSDD 221) that both the "drug war" and the "war on terrorism" are vital to the national security of this country.

(U) It is also important to understand, however, that drug and terrorism problems are only a "subset" of the broader spectrum of domestic and international crimes that must be controlled. Espionage, high-tech transfers, bank fraud, and organized crime are but a few of the other issues facing the same law enforcement officials. Customs officials at the San Ysidro border crossing from Mexico, for instance, are given 30 seconds to check if each transitting car and its passengers are violating any one of 400 laws monitored by 40 separate agencies!

(U) Furthermore, the ability of these "high-tech" criminal organizations to adjust to changing LEA efforts is extraordinary. While each of the several hundred organizations may perceive different paths of lower resistance, each can change its transport, communications, and money laundering procedures within weeks to avoid, say, a new aerostat in the Bahamas, a new law in Panama, or a new kind of passport in Italy.

(U) There do appear to be some distinct differences in the two "wars" being addressed: the problems of countering terrorism will rely more on outstanding intelligence and penetration of the terrorist gangs, while the drug war will involve a broader spectrum of attacks on the source crops and factories, on the total transportation system, and on the prosecution of the criminals through due civil process.

(U) The Task Force is in full agreement, however, that neither "war" can be won by technology and hardware alone. While not exhaustively addressed in this limited scope/time effort, it is abundantly clear that there must be major demand-reduction efforts to in some way "deter" the users of both drugs and terrorist tactics. The drug war will probably fail without successful, major, sustained demand-reduction efforts. This fact is reiterated throughout this report.

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GENERAL CONCLUSIONS

- o THE LAW ENFORCEMENT AGENCIES ARE AT WAR AGAINST CRIME
- o NATIONAL SECURITY IS THREATENED BY TERRORISM AND DRUGS
- o TERROR/DRUG ISSUES ARE PART OF BROADER CRIME PROBLEMS
- o CRIMINALS SHIFT RAPIDLY TO PATHS OF LOWER PERCEIVED RESISTANCE
- o WAR ON TERROR RELIES MORE ON INTELLIGENCE & PENETRATION
- o DRUG WAR RELIES MORE ON SOURCE DENIAL, INTERDICTION & PROSECUTION
- o NEITHER WAR CAN BE "WON" WITH TECHNOLOGY & HARDWARE ALONE:
....THERE MUST BE DEMAND-REDUCTION BY "DETECTING THE USER"

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(U) MORE GENERAL CONCLUSIONS

(U) The report goes to some length to indicate the extent to which detecting these criminals, their "wares", and their organizations is like looking for a needle in a haystack. For instance, U.S. annual consumption of imported cocaine is on the order of 100 tons. The total U.S. cargo imports per year are about two billion tons. In another extreme case, we note that there are "only" about 1,000 active terrorists dedicated to targeting U.S. people and resources, while over 300 million people now enter the U.S. each year.

(U) It becomes evident that the infrastructure that supports terrorism and drug trafficking goes well beyond the criminal instruments themselves. The Task Force concludes that the reverse money flow may be more detectable in some cases (the money even weighs more than the cocaine it procures). Furthermore, at some nodes in the taxonomy, the people may be the critical element (couriers, pilots, kingpins, etc.). In other cases, the paper trail left by legitimate transactions is often anathema to the criminal. Bills of lading, passports, money transaction reports can all offer clues to legitimacy, if the vast quantity of it can be speedily and accurately sifted for the "needles"--in some cases using expert systems and artificial intelligence techniques to establish the sorting rules, and the suitable comparison techniques for related files.

(U) In many areas, the problems of countering terrorists and traffickers appear most similar at the R&D level, where detectors and trackers and "taggants" and physical surveillance devices and intelligence gatherers may play a prominent role in apprehending--and prosecuting--both. On the other hand, the extent of the physical infrastructure associated with growing, processing, shipping, storing, distributing and selling drugs seems to offer a far broader spectrum of detection and attack opportunities. In the case of the terrorist, for instance, since guns and explosives are so available in the U.S., he would be foolish to bring them into the country. The trafficker, on the other hand, can hardly avoid an enormously elaborate "transportation system."

(U) As mentioned earlier, however, these are "high-tech" crimes in which money is virtually no object, and the "technology race" is even more evident than it was amongst the "rum runners" in the days of Prohibition. Fortunately, all the costs of these counter systems need not be paid for from appropriated funds. As in the case of the X-ray machines and magnetometers at airports, some costs can be defrayed by trust funds, user fees, and even seized assets. Regardless of the funding however, these "wars" represent long-term, Big League problems that will not be solved "on the cheap" with hand-held devices, with Little League budgets, or with "bootleg" funds from DoD, for that matter.

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MORE GENERAL CONCLUSIONS

- o **LAW ENFORCEMENT MEANS FINDING NEEDLES IN BIG HAYSTACKS**
- o **MONEY, PEOPLE, AND PAPER TRAILS ARE MAJOR DETECTION TARGETS**
- o **IMPROVED DATA PROCESSING MAY UNRAVEL SOME MAJOR CONNECTIONS**
- o **DRUG & TERROR NEEDS SEEM MOST ALIKE AT RDT&E LEVEL**
- o **DRUG WAR SEEMS TO NEED MORE NEW TECHNOLOGIES THAN TERRORISM**
- o **TRAFFICKERS & TERRORISTS ARE FORCING A "TECHNOLOGY RACE"**
- o **SEIZED ASSETS AND USER FEES CAN PARTLY DEFRAY COSTS**
- o **INTERNATIONAL CRIME IS A LONG-TERM BIG LEAGUE PROBLEM**

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(U) STILL MORE CONCLUSIONS

(U) The Task Force was somewhat surprised to find that the LEAs are generally very well informed about the Defense technological state-of-the-art. In fact, DoD is already helping the LEAs in these "wars" on many fronts, from buying major items (like aerostats) to providing land and shared facilities on military bases (March AFB).

(U) On the other hand, there are some other technologies which DoD itself has not pursued very far that may be very useful in this context. The greater use of "sniffer" dogs--as well as learning how they sniff, and how they might sniff better--may offer an interesting partial solution to several detection problems. Those noses still remain superior in sensitivity to any other sensor against many substances and materials.

(U) There are some additional technologies (many in the biological area) which may offer additional benefits. In the main, however, the overall drug problem appears to need several larger "systems," running the gamut from long-range, wide-area surveillance systems, to a new international standard for authenticatable passports. The small agencies, with very limited procurement funds and virtually no RDT&E funds, however, are not going to be able to pursue either avenue alone. This is true even though many of these large "systems" can be integrated from existing technologies with substantial "growth potential." The parallel to the International Air Traffic Control System operating under ICAO agreements among nations is not farfetched.

(U) It is also clear that these LEAs, awash in problems of day-to-day business and an extraordinary set of "real-world" problems, have not spent enough effort analyzing their own problems and the "big picture." The Task Force found itself unable to make any very specific recommendations, or worthwhile impact assessments, in the absence of such analysis. It is also quite evident that the current labyrinth of statutes and regulations seriously complicates law enforcement efforts. Defense experts have difficulty accepting the thought of consuming one to three years in "target acquisition" (to get to indictment), followed by another year or two for "target kill" (i.e., successful prosecution).

(U) This report does not dwell on the many and extensive areas of productive cooperation between DoD and the LEAs, particularly in the sharing of assets and facilities. Nevertheless, it is clear that DoD could--and really should--adopt a more vigorous, if only supportive, role in these "wars against crime," and that it can itself benefit from the fruits of these efforts, both technologically and national securitywise.

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STILL MORE GENERAL CONCLUSIONS

-
- o **NON-DoD AGENCIES GENERALLY FAMILIAR WITH DoD TECHNOLOGIES**
 - o **DOGS, THOUGH CONTROVERSIAL, ARE STILL SUPERIOR IN SENSITIVITY TO OTHER SENSORS**
 - o **SOME NEWER TECHNOLOGIES CAN BE "FORCED", BUT...**
 - o **LARGER "SYSTEMS" NEEDED NOW TO MAKE MAJOR INROADS ON DRUGS**
 - o **SMALLER AGENCIES CANNOT SUPPORT HI-TECH R&D OR LARGE SYSTEMS**
 - o **SOME LARGE SYSTEMS CAN BE BUILT AROUND EXISTING TECHNOLOGIES**
 - o **DYNAMICS OF DRUG PROBLEM NEED EXTENSIVE ANALYSIS**
 - o **"RULES OF ENGAGEMENT" SIGNIFICANTLY COMPLICATE EFFORTS**
 - o **DoD NEEDS TO ADOPT A MORE VIGOROUS, IF ONLY SUPPORTIVE, ROLE**

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(U) OVERLAPPING DoD/LEA MISSION AREAS

(U) Both the DoD and the LEA missions share common technological features which could be brought to bear upon serious LEA problems such as drug trafficking and terrorism. These commonalities include the acquisition of both strategic and tactical intelligence which would aid the LEAs in drug interdiction. Physical surveillance by all possible technological means would enhance the criminal prosecution rate. Both contraband and criminal detection required by the LEA community would be improved by bringing to bear technology available or under development by the DoD. Timely and secure command and control functions are common requirements of both the DoD and the LEAs as are operations and data analyses.

(U) The technological mission areas denoted above would be equally applicable to both the drug and terrorism problems, as well as to other criminal activities and DoD mission areas. In fact, all the LEAs with the exception of the DEA have primary mission responsibilities quite aside from stopping trafficking and terrorism. The total span of these criminal areas includes: espionage, high-tech information transfer, organized crime, terrorism, drug trafficking at all levels including drug use within the Armed Services, smuggling, money laundering, bank and investment fraud, and illegal immigration. At the same time, these technologies also apply to the military missions of: low intensity conflict, special operating forces, and urban warfare.

(U) It would seem clear -- at least at the acquisition level -- that there is no useful purpose served by segregating or compartmentalizing the developments done for any subset of these activities, either on the LEA side or on the DoD side. While there may be many overwhelming reasons for keeping separate the various agencies (and military departments) themselves, little is gained by subdividing and sub-optimizing the very scarce RDT&E and procurement funds.

(U) It thus appears clear that mutual technological assistance of the DoD and the LEA community would not only provide direct gains in law enforcement, but also in national security by creating a synergistic interaction which would be effective in peacetime and vital in times of national mobilization. This is not meant to suggest, however, that needed resources should come out of DoD's "hide." It means that cooperative use of limited resources--in all quarters--will produce mutually useful results.

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OVERLAPPING DoD/LEA MISSION AREAS

-
- o EMPHASIZE TECHNOLOGICAL SIMILARITIES FOR:
 - Strategic Intelligence
 - Tactical Intelligence (Interdiction)
 - Physical Surveillance (Prosecution)
 - Contraband/Criminal Detection
 - Timely/Secure Command & Control
 - Operations & Data Analysis
 - o ACROSS THE SPECTRUM OF ORGANIZED/INTERNATIONAL CRIME & WARS:
 - Espionage
 - High-Tech Transfers
 - Terrorism
 - Drug Trafficking
 - Smuggling
 - Money Laundering
 - Bank/Fund Fraud
 - Illegal Immigration
 - Low Intensity Conflict
 - Special Operating Forces
 - Urban Warfare

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(U) ROLE AND LIMITS OF TECHNOLOGY
(AN ADVISOR'S CAUTION)

(U) Although it may seem trite to some, it is necessary to keep in mind that the total contribution to be made by additional RDT&E is quite limited. The advisors in particular are concerned lest this DSB report give the impression that either or both of these major international crimes can be solved by technology alone.

(U) Modern technology can be profitably employed in the search for needles in haystacks and can provide more efficient use of limited intelligence/enforcement manpower. In addition, the tasks of intelligence gathering, surveillance and drug interdiction in the various portions of the taxonomies can be carried out with greater efficiency through the clever application of technology. All of this, of course, can raise the cost of doing business for criminals and terrorists.

(U) Nevertheless, technology clearly cannot replace the human element in law enforcement or intelligence gathering nor can it eliminate all drug traffickers and terrorists. Technology is certainly unable to influence terrorist motivations or completely eliminate the sources of all drugs and the demand for them within the populace.

(U) In general, the proper application of certain technologies could produce some very significant gains in the drug and terrorism war. Technology may also be able to provide a deterrent to crime and terrorism well beyond its actual capabilities by playing upon the imagination of the criminal or terrorist. Most importantly, successful investment on new and specialized technology would demonstrate a firm national will and the international leadership to mitigate the drug problem and diminish the frequency of terrorist attacks. Such contributions, however, must be achieved through operationally useful hardware, properly supported by skilled personnel and the necessary operating funds.

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ROLE & LIMITS OF TECHNOLOGY

TECHNOLOGY CAN:

- o PROVIDE MAJOR ASSIST IN FINDING NEEDLES IN HAYSTACKS
- o STRETCH LIMITED INTELLIGENCE/ENFORCEMENT MANPOWER
- o IMPROVE INTELLIGENCE, SURVEILLANCE, AND INTERDICTION
- o RAISE RISKS AND COSTS TO CRIMINALS

TECHNOLOGY CANNOT:

- o REPLACE HUMAN ELEMENT IN LAW ENFORCEMENT OR INTELLIGENCE
- o ELIMINATE TERRORISTS OR TRAFFICKERS
- o ELIMINATE TERRORIST MOTIVATIONS
- o ELIMINATE DEMAND FOR, NOR SOURCES OF, DRUGS

TECHNOLOGY MAY BE ABLE TO HELP:

- o "WIN" SOME SIGNIFICANT BATTLES
- o PROVIDE A DETERRENT WELL BEYOND "REAL" CAPABILITY
- o DEMONSTRATE NATIONAL WILL & LEADERSHIP

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(U) OPERATIONS ANALYSIS SUPPORT

(U) At the present time the LEAs are seriously lacking in the area of operations analysis support. Systematic analyses are needed in order to identify the interactions of criminal organizations, their contraband, and the the flow of money which results from drug sales. Analyses should be made of criminal violation of our national borders and the interaction of relative border porosity with drug trafficking and terrorist activities. Broader studies should be made of the actual impact of drug trafficking upon national security and the economy. We also need to determine how both strategic and tactical intelligence can be most effectively collected and used. Studies of expert systems and artificial intelligence may suggest new directions for data interpretation. Major systems should be carefully examined in terms of fulfilling their functional requirements along with the interaction of system architecture with function.

(U) An excellent example of data handling is to be found at EPIC, El Paso, Texas, and the Task Force concludes that this center should be further improved not only for its innate operational usefulness, but also as a center for pertinent operations analysis.

(U) An interagency National Center for Law Enforcement Analysis could be established which provides access to the best minds available, an institutional memory, and synergism between related topics and issues. Such a National Center would best have the status of an FCRC and appropriate contractual arrangements. In this manner the LEA community could rely upon 20 to 30 experts augmented by outside consultants. Such an institution would constitute a "critical mass" in the law enforcement field and ensure interagency interaction at the level of operations analysis.

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OPERATIONS ANALYSIS SUPPORT

-
- o **SYSTEMATIC ANALYSIS IS NEEDED IN SUCH AREAS AS:**
 - Organization and Flow of Criminals and Their Contraband
 - Physical & Electronic Flow of Money/Instruments
 - Criminal Violation of National Borders (In & Out)
 - Impact of Trafficking on National Security & Wellbeing
 - Effectiveness & Need for Strategic & Tactical Intelligence
 - Enhancements to Operations at EPIC, El Paso, TX
 - Expert Systems/Artificial Intelligence
 - Functional Requirements for Major Systems Architecture
 - o **A NATIONAL CENTER FOR LAW ENFORCEMENT ANALYSIS WOULD PROVIDE:**
 - Access to Best Available Minds as Required
 - Institutional Memory
 - Synergism Across Related Topics and Issues
 - FCRC Status and Contractual Arrangements
 - "Critical Mass" of 20 to 30 Experts + Outside Augmentation

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(U) SYSTEMS ENGINEERING SUPPORT

(U) The Task Force, comprised of persons experienced in Defense matters, is convinced that "system solutions" are needed for many of the major problem areas identified. To successfully solve such complex problems as the screening of people, baggage, cargo, and money as well as tracking of aircraft and boats, the procurement of individual sensors and surveillance devices will not be sufficient. It will be necessary to combine the outputs from a number of different sensor components into integrated databases and to process and distribute these databases to law enforcement personnel capable of interdicting the drugs and/or terrorists. Warning and control systems (as opposed to "intelligence") are required to coordinate and accomplish the actual apprehension operations across the many jurisdictions that are often involved.

(U) Identification and screening of travelers will surely aid in creating a database which could assist in identifying traffickers and terrorists out of the 300 million legal travellers entering the U.S. Systems to assist in examining the baggage from some 20,000 airline flights a day and checking them for taggants or sampling them for other chemicals automatically would be advantageous. A good system to examine and search these containers is non-existent and therefore needed. The ability to understand and track money flow will enhance identification of traffickers and assist in seizures, investigations and prosecutions. Improved taggants, tracking and surveillance systems both at home and abroad could substantially enhance tactical and strategic intelligence. The present (part time) use of various satellites has been limited by the availability of various clandestine components. All of these expanded endeavors could provide a tremendous asset to the LEAs. The process of integrating the individual components into cohesive entities is, in DoD parlance, called system engineering.

(U) Much DoD expertise in the system engineering process lies in system engineering organizations which have become skilled in designing systems for DoD, FAA, NASA, and DoE, as well as for industrial organizations. A number of non-profit Federally Funded Contract Research and Development Centers (FFRDCs) currently support government agencies. They could provide valuable assistance to law enforcement agencies in the form of overall system design, interface specifications, component specifications, and contractual support as well as testing of fielded systems. The Task Force sees no reason why DoD should not offer to share such skills with the LEAs when and where the need exists.

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SYSTEMS ENGINEERING SUPPORT

-
- o **SYSTEMS SOLUTIONS ARE NEEDED TO MAJOR PROBLEM AREAS:**
 - Identification & Screening of Travelers (In & Out)
 - Automated Passenger Baggage Search
 - Automated Cargo Identification & Search
 - Full Surveillance and Control of Land/Sea Borders
 - Command & Control of Multi-Agency Operations
 - Selective AI/ES Correlation of Data Bases & Paper Trails
 - Rapid Identification/Authentication of Money
 - Urban Tagging/Tracking/Surveillance Systems
 - Foreign Crop Identification/Eradication/Tagging Systems
 - o **SYSTEMS ENGINEERING CENTERS CAN OFFER:**
 - Continuity and Expertise of Highly Skilled Personnel
 - Establishment of DT&E Specifications and Interfaces
 - FCRC Status and Contractual Arrangements
 - "Critical Mass" of 200 to 300 Experts + Program Management

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(U) RESOURCE ALLOCATION PREFERENCES

(U) LEAs can be assisted with additional personnel, with funding to operate and maintain equipment, with more of currently available equipment, and with RDT&E to develop them. Agency advisors were asked to indicate their personal preference for the order in which such assistance was needed by their agency.

(U) The relative resource needs of an LEA depend largely on their present use of manpower vs. technology, and on the operational improvements offered by available technology. Civilian drug enforcement agencies generally are manpower-intensive. Existing hardware can help these agencies to be more effective to a point, but new technology development is needed for significant performance improvement or change in methods of operation. Other agencies are more hardware dependent, but may need personnel to operate the equipment, or more funding to increase equipment utilization.

(U) An informal poll of the Task Force advisors from the other agencies pointed up their priorities for additional resources. Their collective top priority would be for buying additional hardware, either off-the-shelf or with some adaptation. Their second priority would be for operating funds. Additional manpower occupied their third priority, and expanded RDT&E efforts were of lowest average priority. Although some advisors identified manpower as a higher priority, it usually was accompanied either by existing hardware or operating funds as an equal priority.

(U) The preferences indicated by the advisors stem from the fact that the LEAs are involved in a real and immediate battle in which they are badly outnumbered. While there may be "only" one thousand or so active terrorists targeted on the U.S., organized crime and drug trafficking involve at least 200,000 criminals. Hardware can help fight these battles, and RDT&E may eventually make this hardware more efficient, but the urgent need is for resources that can be used now, rather than some years hence.

(U) There is, in fact, a more healthy skepticism for the role of R&D in the LEAs than in DoD. The Task Force feels that this increases the desirability of combining LEA RDT&E needs across the crime spectrum, and merging them, wherever possible, with similar needs for low intensity conflict, special operations, and urban warfare. The LEA's realism should generally predominate in such mergers. Excessive specialization towards a particular illegal substance or a particular crime or a particular criminal would probably find little support as an LEA "requirement."

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RESOURCE ALLOCATION PREFERENCES

(UNOFFICIAL POLL OF ADVISORS)

IN WHAT ORDER WOULD YOU ADD ADDITIONAL RESOURCES?

Agency	A	B	C	D		E	F	G	H	OVER-ALL
				Drgs	Terr					
MANPOWER	4	1	4	4	4	1	3	4	1	4
OPERATIONS	2	3	3	2	3	4	1	2	1	2
HARDWARE	1	1	2	1	2	3	2	1	3	1
RDT&E	3	4	1	3	1	2	4	3	4	3

(UNOFFICIAL POLL OF ADVISORS)

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(U) PRIORITIES IN APPLICATION

(U) New technologies that are pursued should respond to existing stated and implied priorities. For instance, the national objectives listed on the facing chart provide the full gamut of improved capabilities specified by the White House. (They are not ranked in order.) The Task Force addressed all of these in some fashion except for demand-reduction and improved cooperation with Mexico. Whether either should be approached with carrot or stick appears problematic.

(U) Any technologies developed should if possible apply to both the anti-drug and anti-terrorist programs as well as to other criminal activities and also to the military functions in low intensity conflict, special operations and urban warfare. This was discussed on the previous page. Hence imagery technologies that will lead only to the detection of, say, the coca bush, or detector technologies, like some of the vapor detectors, which can only detect a particular type of explosive -- or a single form of a single drug -- must be accorded lower priority, and lower value.

(U) Technologies which are limited in their geographic area of application or to a relatively short span of usefulness must also be given lower priority. Hence a tracking system which depends on a very low power RF signal, or LORAN, is thereby limited to areas where an agent can be close by or within LORAN coverage. A preferred alternative would be a tracking system using GPS and permitting world-wide coverage monitored through a satellite a continent away. An example of a short-life system, on the other hand, is a covert beacon which responds to ATC radar frequencies and can therefore be compromised by even an unwitting traffic controller -- or by a smart smuggler using commercially available electronic sweeping services (another drug-related growth industry!).

(U) Other seemingly promising technologies are simply impractical for routine but continuous law enforcement applications. These can include those which appear to solve a problem, but can easily be defeated by an experienced criminal, e.g., a single array OTH radar defeated by a drug smuggler "flying a chord." Other technologies may exceed any reasonable operating funding and technical expertise of the LEAs, particularly if they are unique and have no broader training and support "tail." There are many legal limits on acceptable means of gathering intelligence, particularly if they violate reasonable expectations of privacy, and there are other systems which can provide valuable data, but which cannot be used for prosecuting offenders because of their national security sensitivity. Finally, the LEAs have demonstrated that they can make some very cost effective acquisitions, and they should not be dissuaded lightly from that approach.

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PRIORITIES IN APPLICATION

-
- o SATISFY NATIONAL ANTI-DRUG/TERRORIST POLICY OBJECTIVES
 - Improved Intelligence
 - Eradication at the Source
 - Interdiction & Border Control
 - Investigation and Prosecution
 - Control of Chemicals Used for Production
 - Reduction in Demand
 - International Cooperation with Mexico
 - o APPLY ACROSS CRIME/LOW-INTENSITY-WARFARE SPECTRUM
 - o APPLY ACROSS TIME AND NATIONAL BOUNDARIES
 - o "REAL-WORLD" AFFORDABILITY & OPERABILITY
 - Continuous "Warfighting" not "Deterrence Posturing"
 - Civil Agency Funding History and Patterns
 - Work within Practical Legal/Regulatory/Political Limits
 - Use Adaptations & Product Improvements vs All-new Systems
 - Maintain Valuable LEA Cost Consciousness

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(U) PRIORITIES IN EFFECTIVENESS

(U) The Task Force also tried to define the priorities that the LEAs would assign in achieving greater operational effectiveness. One major improvement can be made in the development and use of tactical intelligence which can be used to improve the interdiction of both the criminals and their adjuncts. Coast Guard, Customs, and Border Patrol acknowledge that a depressingly large fraction of the seizures still result from "cold hits" in which no prior specific intelligence or warning was available.

(U) There is also an earnest desire to improve the infallibility of the evidence gathered for successful prosecution. Inadequate evidence, or the need to avoid exposing sensitive sources, can "taint" a prosecution, and result in its dismissal. At the other end of the taxonomy, there is substantial interest in somehow decreasing the supply of drugs pressing against our borders, by increasing the crop eradication program and the destruction of remote processing laboratories. While sympathetic to these objectives, the Task Force was not sanguine that suitable means are within reach to do either.

(U) There is considerable variance between agencies as to their operational emphasis on the "working level" criminal vs. his controlling infrastructure. All feel that rooting out the "kingpins" and leaders is essential and more "cost effective." Furthermore, there seemed to be unanimity that forcing the problems back within U.S. borders would allow more effective enforcement to be carried out. The problems of attacking crime in an international environment -- often with very little foreign cooperation -- are generally accepted as extremely frustrating.

(U) Not surprisingly, there is a clear preference for going after the "wholesale," or bulk, operations, and this tends to favor increased focus on "trans-border" operations. Such operations are likely to become more visible if forced towards greater frequency, even though the individual seizures may be smaller. In this same vein, the notion of going after the criminal and his act, rather than a particular item, seems to be favored.

(U) Finally, there was total agreement that priority must be increased on possible means of reducing demand -- for both terror and drugs. This involves shifts in the international political climate, and in the domestic social climate. While easier said than done, this represents a tacit admission that the "wars" cannot be won by law enforcement actions alone, even though their execution may enhance "user deterrence."

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PRIORITIES IN EFFECTIVENESS

-
- o ADD EFFECTIVENESS TO EXISTING, LIMITED, ENFORCEMENT RESOURCES
 - More Emphasis on Tactical (Interdiction) Intelligence
 - Less Dependence on "Cold Hits"
 - Enhance Prosecution Success via Irrefutable Evidence
 - Crop Eradication and Laboratory Destruction
 - o TRY TO DEFEAT CONTROLLING INFRASTRUCTURE
 - Continue Emphasis on Useful "Operational" Intelligence
 - Force Problems Back Within U.S. Borders and Control
 - o RAISE RISKS AND COSTS OF "WHOLESALE" (BULK) OPERATIONS
 - Increase Vulnerability of Criminal Operations Near Borders
 - Force Towards More Frequent, Smaller, Operations
 - o ATTACK ROOT ISSUES RATHER THAN ITEM-SPECIFIC SOLUTIONS
 - Pursue the Criminal Act as well as the Substances
 - o REDUCE THE DEMAND FOR -- AND TOLERANCE OF -- DRUGS AND TERRORISM

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(U) BIG LEAGUE OPERATION

(U) The 20,000 miles of borders which the U.S. shares with Mexico and Canada -- and two oceans and a gulf -- cannot be secured in peacetime or in time of war without a major investment in technology, manpower, and above all, dollars. The drug traffickers have nearly unlimited funds to spend. There remains an enormous demand for drugs and this equates to "money in the bank" for the drug entrepreneur.

(U) In order to effectively deter drug traffic and terrorism the U.S. must develop large scale systems which can detect an illegal operation early in its conception, detect the transport means, track the illegal person or article and obtain an arrest. Such systems are costly in all respects. They deal with fully flexible land, sea and air transportation means in the hands of the opposition. Methods for countermeasures abound.

(U) Drug traffickers and terrorists would apply their financial resources and ingenuity to quickly defeat all but the best technologies applied against them. Any system must be of sufficient scale to prevent simple walking around the fence, sailing around the coverage area or flying over the barrier. It must be able to detect, track and direct apprehension assets against the drug trafficker or terrorist attempting to enter the U.S. These criminals can be expected to probe any weakness in the system. They will use any means available to defeat it and are not limited by laws or regulations. The law enforcement forces opposing the drug traffickers and terrorists are on continuous alert and must maintain a high state of readiness. The choice of time, place and mode of entering the U.S. rests with the opposition.

(U) The "wartime" nature of current LEA efforts is illustrated by the relative average flying time of LEA and DoD aircraft: 1200 hrs/year vice 300 for DoD aircraft. There seems to be a significant difference in the operational acceptability of many quasi-military equipments when required to operate more continuously.

(U) It is clear, however, that the war on drugs cannot be won unless domestic demand is severely reduced by all possible means, including education and moral community pressures. By any possible standards, the "wars" against drugs and terror -- as well as the dozens of other related international crimes -- seem to be substantially underfunded. The "Big League" nature of the problems does not appear to be reflected in the level of effort and resources devoted.

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BIG LEAGUE OPERATION

- o **CANNOT SECURE 20,000 MILE U.S. BORDER ON THE CHEAP**
 - **Enormous "Demand"---or Fanaticism--to Deter**
 - **Unlimited Drug Money**

- o **MUST SEEK EFFICIENT LARGE-SCALE SYSTEMS SOLUTIONS**
 - **Detect, Track, Apprehend, Seize & Recover Assets, Prosecute**

- o **DEALING WITH HIGHLY SKILLED & FLEXIBLE OPPONENTS**
 - **Fully Flexible Land, Sea, and Air -- and Intermodel**

- o **CONTINUOUS OPERATIONS EQUATE TO "WARTIME" USE RATES**
 - **1200 LEA Flying Hours/Year vs 300 for DoD**

- o **PROBABLY CANNOT "WIN" WITHOUT SEVERELY CURTAILING DEMAND**

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(U) SUMMARY OF RECOMMENDATIONS

(U) The Task Force wrestled with the issues of priorities in resource allocation, in the applicability of various programs, and in the ranking of the effectiveness sought. Unlike SDI, and many other defense programs, the results are not clearly a technologist's dream. Given their choices, the agencies would add resources first to hardware, second to operating funds, thirdly to manpower, and only lastly to RDT&E. This is not because they underestimate the role of new technology, but because they do not underestimate the importance of current operations.

(U) Against this backdrop, we offer three basic recommendations. The first deals with increasing emphasis on technology and acquisition. The second deals with a "Big League" LEA modernization program, and the last deals generally with the need to remove some of the excessive impediments implicit in current laws and statutes--including the DoD's own internal Guidance and Directives which do not yet fully reflect NSDD 221.

(U) With regard to increased emphasis on acquisition, we propose that "Technology Advisors" with some stature be assigned within each LEA, and that a permanent "Research and Technology Group" be added within the National Drug Policy Board (NDPB). This Group would have assigned to it an Advisory Board along the lines of our own DSB. Several (up to eight) existing Government RDT&E centers (in and outside DoD) would be redesignated as National Technology Development Centers to serve DoD/LEA combined needs. A national Center for Law Enforcement Analysis would be formed within--and spawned from--a current DoD FCRC (such as Rand or IDA), and the LEAs would be encouraged to use DoD-type Systems Engineering Centers much in the way that MITRE has provided services to the development and modernization of the FAA's air traffic control system.

(U) The Task Force also believes that the Federal Government must come to understand that these "wars" against drugs and terrorists are Big League operations, requiring suitably appropriated Big League budgets. To make this point, we suggest a purely hypothetical \$10 billion program (spent out over five years) comprised 15 percent of RDT&E, 35 percent hardware acquisition, and 50 percent operating and manpower funding increases. This \$10 billion could represent a 100 percent increase for the relevant parts of these LEAs, but would equate to only one percent of the estimated societal change done by drug traffic alone. It would also amount to less than two-thirds of one percent relative to Federal expenditures for national security. The composition of a hypothetical procurement budget illustrates the range of major and minor procurements that could help the LEAs. Some share of those procurements might be underwritten by DoD itself and could provide some major improvements in C³I capabilities for CINCSOUTH. However, the Task Force does not presume to establish funding priorities or sources: the NDPB should do this.

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SUMMARY OF RECOMMENDATIONS

- o GREATER GOVERNMENT EMPHASIS ON TECHNOLOGY AND ACQUISITION
 - "Technology Advisors" for Law Enforcement Agencies
 - Research & Technology Group under National Drug Policy Board
 - RT&A Advisory Board to Research & Technology Group (e.g. DSB)
 - Designate National Technology Development Centers (e.g. NVL)
 - Form National Center for Law Enforcement Analysis (e.g. IDA/DoD)
 - Use Major Systems Engineering Centers (e.g. MITRE/FAA)

- o ACCEPT NEED FOR "BIG LEAGUE" LEA MODERNIZATION PROGRAM
 - \$10 Billion Program over Five Years

- o PURSUE SUBSTANTIAL EFFORT TO IMPROVE LAWS & REGULATIONS
 - Limited to Revisions to Current Statutes & Regulations

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(U) ESTABLISHING A RESEARCH AND TECHNOLOGY GROUP UNDER NDPB

(U) The National Drug Policy Board (NDPB), is chaired by the Attorney General and made up of cabinet officers including the Secretary of Defense. It supports national policies and has identified a combined effort for reducing drug supply through interdiction, prosecution and eradication while simultaneously reducing demand through programs such as education and rehabilitation. The activities which are needed to support both areas of attack are diverse, usually uncoordinated within the framework of this problem, and must compete for internal funding against older, more established missions.

(U) Establishment of a Research and Technology Group (RTG), with members at the Assistant Secretary level, is recommended to provide a means to focus the use of technology, recommend responsibility for execution, and identify appropriate funding. NDPB decisions would be monitored during execution to determine if objectives have been met. A support system to accomplish these functions would consist of (1) an Executive Director, (2) a Research, Technology and Acquisition (RT&A) Advisory Board similar to the DSB, and (3) a Research, Development, Test and Acquisition (RDT&A) Activity.

(U) The Executive Director and his staff would be responsible for insuring connectivity with senior bodies and organizations needing research and technology support in both physical and social sciences. They would also provide the coordination among the RD&A Advisory Board, the RDT&A activity and the RTG. This staff might also assume a role in apportioning forfeiture funds among deserving agency claimants.

(U) The RDT&A Advisory Board would be composed of persons from academia, industry and government agencies, perhaps including one or two DSB members. It would make recommendations to the NDPB through the RTG. These recommendations would include exploitation strategies, program options and funding alternatives developed from reviews of technology bases, ongoing programs, operational needs and special topics assigned by NDPB. This body would be charged with assuring that the efforts of the National Technology Development Centers (NTDCs) received continuing support.

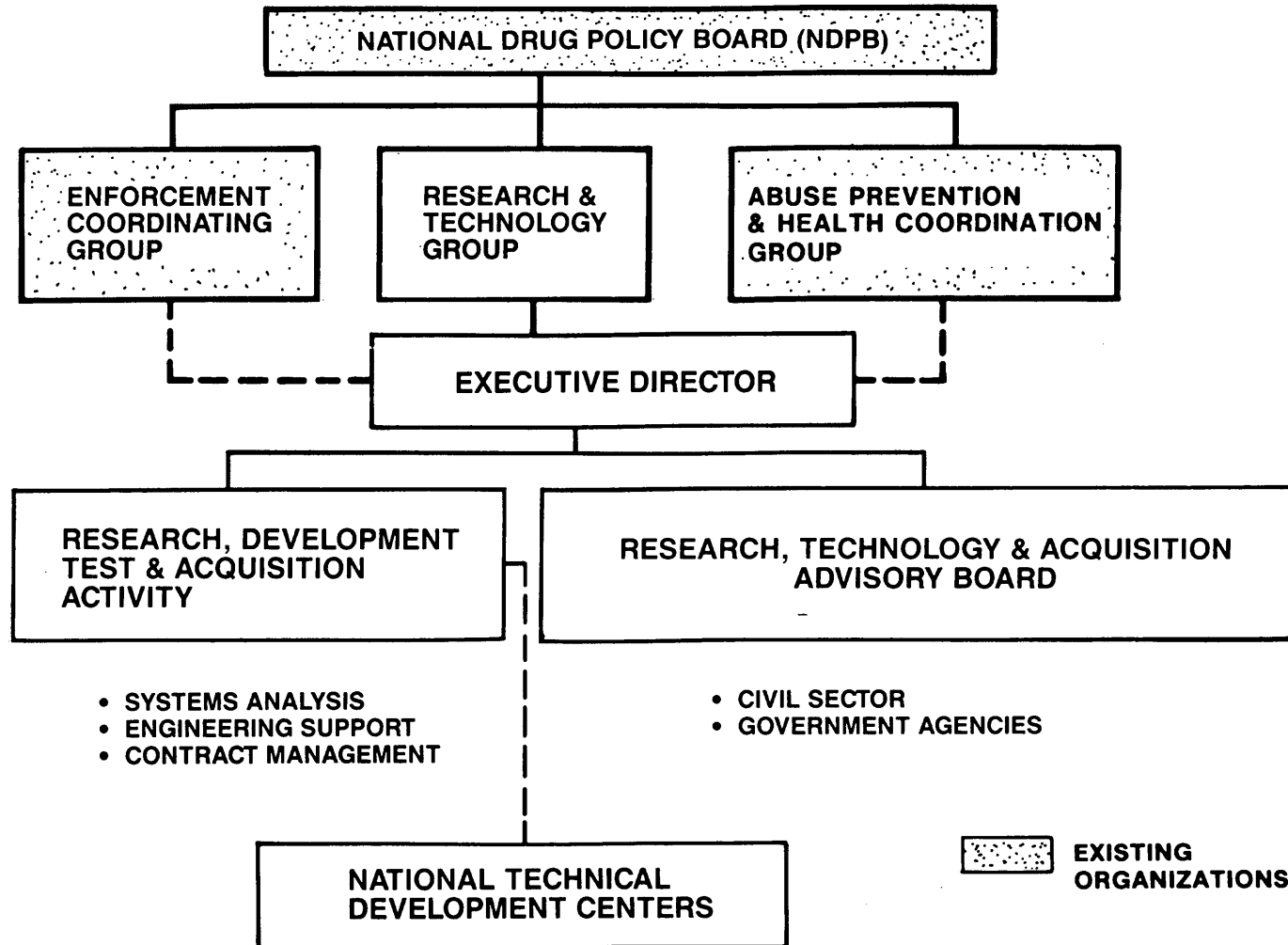
(U) The RDT&A Activity would provide funding support to various centers, laboratories or other activities. Their services could include studies and analysis, engineering support, contract management, quick reaction capability and maintenance of a technical library. Linked to this activity would be the National Technical Development Centers responsible for the management of RDT&E efforts in drug and terrorist matters.

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ESTABLISHING A RESEARCH AND TECHNOLOGY GROUP UNDER NDPB



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(U) NATIONAL TECHNOLOGY DEVELOPMENT CENTERS

(U) In order to provide a focus for the significant technology development activities the Task Force recommends that a number of National Centers for Technology Development be designated and established within existing facilities within the U.S. Government. Each Center should have a well-defined charter which clearly orients the technical activities by "mission," such as a National Technology Development Center for Biosensors. New technology as well as upgrades of mature programs would be addressed and provide a spectrum of activities. In each case proposed, this NTDC function would represent a new and distinct "second flag" flying over an existing facility or laboratory.

(U) Each Center would not only be required to establish and maintain a high level of technical competence in the field but must balance this with "hands on" (operational) knowledge of how the system will be used, in what environment, etc. so as to insure that the developed hardware is operationally useful. The charter must clearly state that the Center is indeed the center of all knowledge of work being done in the technical area both in the U.S. as well as internationally. In fact, since the subject area is of international concern, each Center should be encouraged to undertake, where meaningful, international cooperative programs.

(U) In order to fund and man these centers, we look to El Paso Intelligence Center (EPIC) as a role model. Its budget is a separate line item under a selected administrative agency and it is manned by personnel from various agencies who are assigned to the Center for some duration. However, under any arrangement there must be the flexibility for ease of transferring funds from Government agencies and short turnaround on contracting work to industry so that the Center can respond to the various agency needs in a timely manner. Multi-agency funding and manning should be employed where possible.

(U) As in the DoD, it is essential that these Centers ensure that their product is tested and evaluated both at the end of the development phase and throughout the subsequent life of the project -- to correct problems and provide updates.

(U) As an important by-product, these Centers can also undertake development work in mission-related targets of opportunity, since the know-how exists and can be readily as well as efficiently tapped to undertake these additional tasks.

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NATIONAL TECHNOLOGY DEVELOPMENT CENTERS

- o CLEAR TECHNICAL "MISSION" ORIENTATION
- o FULL SPECTRUM: NEW TECHNOLOGY TO MATURE PROGRAM UPGRADES
- o HIGH LEVEL OF INTERNAL "HANDS ON" TECHNICAL COMPETENCE
- o FULL KNOWLEDGE OF RELATED U.S. EFFORTS--WHEREVER DONE
- o MULTI-AGENCY FUNDING AND MANNING WHERE POSSIBLE
- o ABILITY TO TRANSFER FUNDS WITHIN GOV'T OR CONTRACT OUT
- o OBLIGATION TO TEST, EVALUATE AND FOLLOW-UP IN THE FIELD
- o MISSION-RELATED TARGET OF OPPORTUNITY FUNDING
- o WELL-EXERCISED QUICK-REACTION CAPABILITY
- o CANDIDATES FOR NON-APPROPRIATED FUNDS

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(U) POTENTIAL NATIONAL TECHNOLOGY DEVELOPMENT CENTERS

(U) The Task Force recommends that a maximum of eight National Technology Development Centers be designated. Each would serve both the drug and terrorism wars, as well as low intensity conflict. In no special order, they would be:

- For Night Vision, Department of Defense, Army Materiel Command, Night Vision Laboratory at Ft. Belvoir, VA (DoD:NVL)
- For Ground Sensors, Department of Defense, Army Materiel Command, Communication Electronic Command, Ft. Monmouth, NJ (DoD:CECOM)
- For Physical/Electronic Security, Department of Defense, Air Force Systems Command, Electronic Systems Division, Hanscom Field, MA (DoD:ESD)
- For Physical/Electronic Surveillance & Tracking, Department of Justice, Federal Bureau of Investigation and Drug Enforcement Agency, Washington, D.C. (FBI/DEA)
- For Imaging/Electronic Surveillance, Central Intelligence Agency and National Security Agency, Washington, D.C. (CIA/NSA)
- For Chemical/Biosensors (e.g., animals, immunology), Department of Defense, Army Materiel Command, Chemical Research Development and Engineering Center, Aberdeen, MD (DoD:CRDEC)
- For Chemical/Molecular Detectors, Department of Energy, Sandia National Laboratories, Albuquerque, NM (DoE:SNL)
- For Explosive Ordnance Detection, Department of Defense, Naval Ordnance Station, Indian Head, MD (DoD:NOS)

(U) Each of these existing activities should be "upgraded" in terms of charter, funding and manning. Thus each of the agencies' R&D needs can be more met through one or more of the Centers. We recommend that some or all of these specific Centers be placed into formal status by FY89. It is envisioned that these Centers be required to be fully manned and operational within a three year period, but that each designated Center begin its National role as soon as possible--perhaps by the President--in order to emphasize the need to contribute to the ongoing "war" efforts. Each should be level-of-effort funded at about \$50 million annually for these combined national efforts.

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POTENTIAL NATIONAL TECHNOLOGY DEVELOPMENT CENTERS

- o DESIGNATE & UPGRADE FOLLOWING LABS AS NATIONAL CENTERS:
 - Night Vision (DoD: NVL)
 - Ground Sensors (DoD: CECOM)
 - Physical Security Systems (DoD: ESD)
 - Physical/Electronic Surveillance (FBI/DEA)
 - Imaging/Electronic Intelligence (CIA/NSA)
 - Biosensors (e.g. Dogs, Immunology) (DoD: CRDEC)
 - Chemical/Molecular Detectors (DoE: SNL)
 - Explosive Ordnance Detection (DoD: NOS)

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(U) OPPORTUNITIES FOR A NATIONAL TECHNOLOGY DEVELOPMENT CENTER FOR BIOSENSORS

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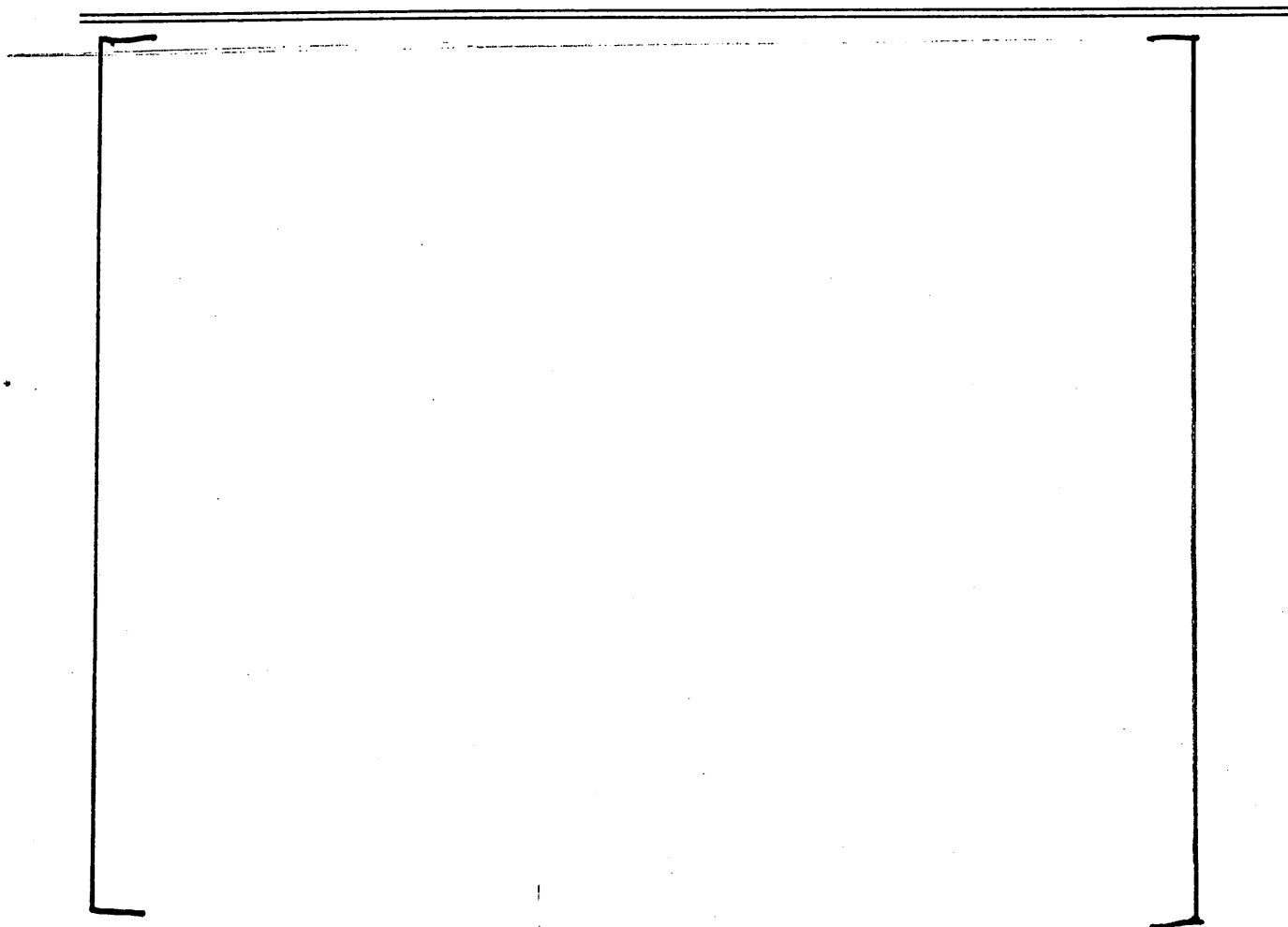
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OPPORTUNITIES FOR A NATIONAL TECHNOLOGY DEVELOPMENT CENTER
FOR BIOSENSORS



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(U) NATIONAL CENTER FOR LAW ENFORCEMENT ANALYSIS

(U) Throughout our Task Force deliberations it was abundantly clear that there is an unfulfilled requirement for analyses to be undertaken at the systems level (that is from "Farm to Arm" for drugs and "Interdoctrination to Attack" for terrorism). In order to systematically investigate possible technology contributions, the Task Force developed and utilized its own taxonomies since none were available. Data related to the flow process of the people, money, communications, contraband etc. were found to be spotty, unreliable and generally lacking in areas critical to the needed evaluation of U.S. strategic and tactical countermeasure programs. This may be due to the lack of a central national law enforcement analysis capability. Such a national center could identify data, needs, models, simulation, etc. It would be a dedicated organization, chartered to conduct the war on drugs and terrorism (and related crimes). It is noted elsewhere that analyses are needed before selecting the characteristics of some major needed "systems."

(U) The Task Force recommends that such a Center be established, using one of the DoD Federal Contract Research Centers as a parent organization utilizing its larger available manpower and administrations (especially contractual) resources whenever possible. A critical mass of 20 to 30 experts is required to fulfill this very important essential function. The IDA/FBI cooperative relationships are suggested as a role model.

(U) A similar requirement exists relative to the systems engineering needed to support the increasing demand for hardware and software systems being developed for the needs of the various agencies. In this case, several centers might be required to address different systems problems. Such centers could require several hundred professionals to undertake the systems engineering function. They would establish (as in the DoD) DT&E specifications and interfaces for each of the systems managers; be responsible for ensuring that the developing system meets the specifications; and work closely with the operational personnel to ensure that effective, maintainable systems are developed.

(U) A role model in this area is the MITRE/FAA relationship for the nation's air traffic control system. The Task Force is essentially suggesting that similar "systems" may be required for a "cargo control system," or a "border control system," or an "immigration control system."

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NATIONAL CENTER FOR LAW ENFORCEMENT ANALYSIS

- o NATIONAL CENTER FOR LAW ENFORCEMENT ANALYSIS WOULD PROVIDE:
 - Access to Best Available Minds as Required
 - Institutional Memory
 - Synergism Across Related Topics and Issues
 - FCRC Status and Contractual Arrangements
 - "Critical Mass" of 20 to 30 Experts + Outside Augmentation

- o SYSTEMS ENGINEERING CENTERS CAN OFFER:
 - Continuity and Expertise of Highly Skilled Personnel
 - Establishment of DT&E Specifications and Interfaces
 - FCRC Status and Contractual Arrangements
 - "Critical Mass" of 200-300 Experts + Program Management

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(U) MAJOR SYSTEMS PROCUREMENTS

(e) The list of major procurements on the facing page is intended to be illustrative of the types of procurements required over the next five years to bring the LEA drug and terrorist "wars" into the Big League. These are nothing more than "ballpark" estimates to provide a rough indication of the magnitude of the problem and a possible distribution of the funding. No priorities are assigned or implied:

- \$300 M for about 30 automated cargo ports permitting rapid identification of containers, and some kinds of detectors to provide clues as to their contents;
- \$500 M for "people-screening portals" to authenticate identity and rapidly test against common smuggler/terrorist profiles;
- \$100 M for about 2,000 of either some (unspecified) hand-held inspection kits using modern detectors, or some more highly specialized dog teams, or both;
- \$400 M for a pair of South-looking over-the-horizon radars to monitor all aircraft traffic from the most suspect Central/South American countries;
- \$1000 M for a share of a 10 radar-satellite procurement to provide accurate tracking information for all shipping throughout the Caribbean;
- \$300 M for a dedicated LEA communications and beacon/taggant-tracking satellite;
- \$700 M for about 20 Blimp Warning & Control Systems (BWACS) to monitor border crossings and coastal ships and small boats: the greatest vulnerabilities if air routes are closed;
- \$400 M in "interceptor" aircraft to visually identify suspect border crossers;
- \$500 M for about 50 helicopters to "pounce" on illegitimate landing/transfer points;
- \$300 M for miscellaneous miniaturized surveillance, tracking, and tagging equipment;
- \$300 M for automated data processing and AI/ES computer equipment;
- \$300 M to the Corps of Engineers to decrease the porosity of the Southern U.S. land borders where aliens and drugs now enter illegally together in very large numbers.

(e) Of the \$5,100 M total, it is estimated that \$800 M could be gained from user fees (portals and cargo ports), while another \$800 M could be derived from forfeiture funds (inspection kits, aircraft, and surveillance equipment). Of the \$3,500 M "net" cost, funding priorities permitting, DoD might well share in the costs of the radars, satellites, BWACS and helicopters, since they have an immediate mobilization role. Most of the "big ticket" items require little if any additional RDT&E. Most of the more costly items are anti-drug-related, but one-third would have anti-terrorist applications as well.

(c) Regardless of the funding source, The Task Force feels this level of investment is required to come to grips with the major problems outside and approaching our borders. The specific items are at best notional and in many cases deserve much more analysis and systems engineering.

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MAJOR SYSTEMS PROCUREMENT

o MAJOR SYSTEMS PROCUREMENTS--TOTAL APPN:	\$3500M
-- 30 Automated Container Ports @ \$10M	=\$300 M*
-- 500 People Screening Portals @ \$1M	=\$500 M*
-- 2000 Inspection Kits @ \$50K	=\$100 M**
-- 2 South-Looking OTH Radar @ \$200M	=\$400 M
-- 1 of 10 Shared Radar Satellites (for Caribbean)	=\$1000 M
-- 1 Dedicated Commo/Tracking Satellite	=\$300 M
-- 20 BWACS Coastal Patrol Airships @ \$35M	=\$700 M
-- 20 "Interceptor" Aircraft @ \$20M	=\$400 M**
-- 50 "Pouncer" Helicopters @ \$10M	=\$500 M
-- Misc Surveillance/Tracker/Taggants	=\$300 M**
-- Automated Data Processing Equipment	=\$300 M
-- Corps of Engineers Support to Borders	=\$300 M

* = User Cost: \$800M: ** = Seizure/Forfeiture: \$800M

(All Procurements Have Military Role in Mobilization-- and Could Therefore be shared with DoD)

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(U) REGULATORY CHANGES NEEDED

(U) Each U.S. Government Department is obliged to develop and promulgate regulations and directives in its area of responsibility. The resulting regulations bear the force of law and are often directly responsive to legislative initiatives. They often reflect Congressional preferences or once-prevailing administration attitudes. Thus, they are often easier to change than laws to meet contemporary governmental needs.

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(U) For instance, the DoD role in combatting drug trafficking and terrorism can be helped by some modest changes to DoD Directive 5525.5 concerning DoD Support to the LEAs. The Task Force recommends that it be changed to include direction to the USDA to consider LEA "requirements" in the development of applicable military systems; make available relevant DoD analytical and information processing techniques; and provide acquisition management services to the LEAs for development and procurement of common equipment and systems or those having probable military application in periods of national emergency or mobilization. DoDD 5525.5 should also provide more specific direction to DoD components regarding permissible support to LEAs relating to enforcement of the Controlled Substance Act, the Anti-Drug Abuse Act and counter-terrorism.

(U) The next update of the Defense Guidance should also address, as appropriate, the threats to national security from drugs and terrorism as reflected in NSDD 221, and in a revised DoDD 5525.5.

(U) LEA-generated forfeiture funds may be used by agencies involved in their capture within certain restrictions which are generally set by the Departments within which the agencies reside. In addition, OMB generally demands budget appropriation offsets in anticipation of availability of such funds. The pertinent Departments should liberalize their policies re the use of forfeiture funds. The OMB should be discouraged from undermining the value of these forfeiture funds to the LEAs. And the NDPB would do well to devise means for more evenly allocating these funds amongst the needy LEAs.

(U) The great potential utility of following the flow of "drug money" is only now becoming clear. Closer tracking of international funds flows could be very helpful. Fund transfers across borders should be subjected to more detailed reporting and review. In fact, it may be possible to achieve useful improvements within existing laws.

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REGULATORY CHANGES NEEDED

DEFENSE SUPPORT:

- DoD Directive 5525.5 Should be Updated to Reflect NSDD 221
- Defense Guidance Should Address NSDD 221 as Appropriate

FORFEITURE FUNDS:

- Regulations Restricting Uses And Amounts Of Forfeiture Funds By LEAs Should Be Relaxed By Departments
- Use Of Forfeiture Funds Should Not Be Offset By Reductions In Budget Requests/Appropriations

TRACKING MONEY

- Export Of U.S. Funds, Should Be Subject To More Detailed Reporting & Review Within Existing Law

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(U) LEGISLATIVE CHANGES NEEDED

(U) In recent years several laws have been enacted that significantly increase the penalties for infractions relating to drug trafficking and the illegal manufacture and trade in munitions and explosives. Activities that support illicit drug manufacture and distribution have been criminalized by establishing controls on trade in substances and financial transactions that facilitate drug and explosives trafficking. Additional constructive steps could further strengthen LEA effectiveness by simplifying their procedures, improving their resource management, and making it more difficult for criminals to counter LEA efforts. These legal issues deserve to be addressed by some permanent instrument of the NDPB, probably a new standing committee devoted to seeking and encouraging appropriate new laws or reasonable modifications to existing legislation.

(U) The Freedom of Information Act and the Competition in Contracting Act provide conduits of information of great value to organized criminals. While substantial and time-consuming efforts are made by the LEAs to "sanitize" the requested information, they need authority for greater latitude in declining response to FOIA requests.

(U) The Competition in Contracting Act has routinely used provisions for highly sensitive procurements to be handled through classified channels. However, the definitions of sensitive tend to be restrictively interpreted, and many projects, which would be better kept beyond access by criminal elements, are publicly advertised. The criteria for applying limited competitions, unadvertised, contaminated and covered processes should be substantially relaxed as they apply to the LEAs.

(U) The Economy Act requires that LEAs reimburse the DoD for any costs incurred by DoD in support of LEAs. The LEA operating budgets can be readily depleted by even small DoD levels of assistance, and they are thus very reluctant to request DoD assistance even when it would be very effective. Such inhibitions seriously limit useful DoD involvement. The most straightforward alternative, of course, would be to increase the operating budgets of LEAs to include amounts earmarked for reimbursement. However, in actuality DoD waives reimbursement in the great majority of cases because substantially equivalent military training is derived.

(U) Other changes could ease operational problems. In one case, an 11th Circuit Court ruling inhibits cooperative Customs/Coast Guard operations. In another, a law prevents LEAs from accepting donations of equipment or facilities to help carry out their functions. Legislation is needed to remove these kinds of restrictions and thereby streamline operations and enhance working relationships with local jurisdictions.

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LEGISLATIVE CHANGES NEEDED

- o **LAWS ADDRESSING DRUG TRAFFIC & TERRORISM HAVE BEEN SIGNIFICANTLY STRENGTHENED**
 - Increased Penalties
 - Criminalizing Certain Support Activities
- o **FREEDOM OF INFORMATION ACTION**
 - Gives Drug Traffickers Knowledge to Help Them Avoid Apprehension
 - Limit Application of FOIA as Applied to LEAs
- o **COMPETITION IN CONTRACTING ACT**
 - Tells Criminals What Systems They Will Have to Counter in the Future
 - Exempt LEA Sensitive Acquisitions from CICA
- o **ECONOMY ACT**
 - Inhibits DoD Element Support to LEAs because of Requirement to Reimburse DoD
 - Provides Special Budget Authority for Reimbursement of DoD Under the Economy Act

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(U) POTENTIAL FIVE YEAR BIG LEAGUE COSTS

(C) The Task Force has concluded that the magnitude of the twin problems of combatting terrorism and drugs probably requires a substantial increase in overall funding--possibly on the order of \$10 billion more over the next ten years. The total funding of the agencies involved is currently about \$6 billion per year, with perhaps only about \$2 billion per year devoted to combatting drugs and terrorism. The chart on the facing page illustrates how these extra funds might be allocated.

(C) While notable accomplishments have been made by these agencies, they need additional technical and analytic capabilities if they are to be able to cope with these serious national problems. A sounder analytical foundation can be provided through some center funded at a rate of approximately \$10 million annually.

(C) The Task Force has also recommended that several National Technology Development Centers be established within existing government laboratories and facilities to pursue RDT&E efforts of common interests for the wars against drugs and terrorism, as well as for low intensity conflict. Six centers funded at a level of \$50 million annually would produce a 5-year cost of \$1.5 billion: about 15 percent of the total add-on proposed.

(C) The Task Force has also recommended a major increase in investment in new hardware to support the LEA efforts. Of the \$5 billion or so suggested for the five year period, \$3.5 billion in appropriations would be needed, distributed roughly as suggested on a prior chart. This substantial procurement of new equipments would provide greatly improved capabilities for intelligence gathering, warning and control of reaction forces, surveillance and inspection.

(C) In keeping with the advice of the LEA representatives, however, a major increase in operating costs (including manpower) is also recommended. Assuming that these costs represent 80 percent of the LEA budgets, a 25 percent increase for the five years is estimated to cost a total of \$5 billion, or 50 percent of the total increase suggested.

(C) This 5-year, \$10 billion sum would constitute a 33 percent increase in these LEAs' budgets, but less than 1 percent of the current social costs -- less, in fact, than the costs of incarcerating current offenders. While it also represents a 100 percent increase in resources for the "wars" on drugs and terrorism, it represents less than two-thirds of 1 percent increase in spending for national security. Such expenditures are certainly warranted, but how the allocations should be made, or where the resources should be derived, will probably have to fall to some instrument of the NDPB.

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POTENTIAL FIVE YEAR BIG LEAGUE COSTS

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- o MEANINGFUL ANALYTICAL FOUNDATIONS:
 - 5 Yrs x \$10M per year = \$50M
 - o ABOVE-THRESHOLD RDT&E COSTS:
 - 5 Yrs x 6 NTDCs x \$50M per year = \$1500M (15%)
 - o MAJOR SYSTEMS PROCUREMENTS--TOTAL: = \$3500M (35%)
 - See Earlier Chart Detail
 - o LEA OPERATING & MANPOWER COSTS:
 - 5 Yrs x 25% x 75% Total LEA Budgets = \$5000M (50%)
- 5-YR TOTAL: = \$10,000M+

\$10B = 33% INCREASE IN LEA BUDGETS = 1% OF SOCIAL COSTS

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(U) POTENTIAL IMPACT OF RECOMMENDATIONS

(U) The Task Force cannot avoid addressing the basic issue of the potential impact of accepting these recommendations. The first impact would be to achieve a substantially more visible and credible deterrent. Just as alarm systems deter home burglaries, highly visible and significantly more capable detection and control systems can deter some terrorist and smugglers. With closer scrutiny at the borders and high tech surveillance equipment in use, a clear indication of national will can be expressed that would be seen by both Americans and the rest of the world. The countries that support the growth and processing of the crops, as well as those that provide tacit or open support of transiting criminals, should get a clearer signal of our national intent to fight back.

(U) But the impact would be more than symbolic. These efforts can substantially increase both costs and risks to bulk smugglers entering the U.S., and to terrorists traveling among civilized nations. It is estimated by the Task Force that somewhere between 10 and 20 percent, at best, of drugs entering the U.S. each year are seized. We believe these efforts can increase the chances of apprehending smugglers and seizing their assets by a factor of two- to four-fold. This represents a substantial increase in seizures as well as "attrition" to the traffickers themselves that may in fact cause some marginal criminals to change their lifestyles. Because of the vast availability of the drug sources, however, as well as the persistent demand, the Task Force is unwilling to claim that the net inflow will be down: only that the traffickers' costs will be substantially higher.

(U) These measures would also lead to significantly more secure national borders against drugs, terrorists, illegal aliens, high-tech exports, etc. Many of the systems suggested are in some measure selected for their contribution to the highly visible surveillance and control of national borders and the avenues of approach. These systems could also be of substantial use to our Southern Command.

(U) The Task Force believes that these steps may also have a modest, indirect, reduction in U.S. demand for drugs. If these steps imbue in our own people--particularly the young--the thought that: "They're serious about this problem," there might be a measurable impact on present (and future) consumption. It could make it easier to "Just Say No"; in fact, that slogan could be painted on the BWACS cruising the Southern shores and borders--and at every "people portal" entering and leaving the U.S. Furthermore, the U.S. has an inescapable role as a world leader to demonstrate our national resolve to be fully engaged in the wars on drugs and criminals. This program would fully establish that intent and would provide equipment we could share with the rest of the world.

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POTENTIAL IMPACT OF RECOMMENDATIONS

- o **SUBSTANTIALLY MORE VISIBLE/CREDIBLE DETERRENT**
 - Evident Demonstration of Will Against Crime
- o **SUBSTANTIALLY INCREASED COST/RISK TO BULK SMUGGLER**
 - Much Higher Chances of Apprehension
 - Substantial Increase in Drugs & Assets Seized
- o **SIGNIFICANTLY MORE SECURE NATIONAL BORDERS**
 - Against Criminals, Contraband, Illicit Fund Flow
- o **MODEST, INDIRECT, REDUCTION IN DEMAND FOR DRUGS**
 - Much Higher Visibility to U.S. Population
- o **ESTABLISH U.S. LEADERSHIP IN ROLE AGAINST INTERNATIONAL CRIME**
 - Set International Standards for "Border Control" etc.

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(U) GAINS FOR DEFENSE DEPARTMENT

(U) Provision of the technical assistance and technology herein recommended is a major contribution by DoD to the national war on drugs and terrorism that will benefit DoD in tangible ways as well as in the public and political perceptions.

(U) Military training exercises to support LEA needs can be conducted in a real environment rather than simulated or practice; results can be tangible and meaningful. Experience has shown personnel to be better motivated and training to be more rewarding under such conditions. This does not in any way imply infringement on the quite proper limitations of the Posse Comitatus Act.

(U) LEA evaluation and operational deployment of new detectors and sensors will provide extensive data on their performance and reliability. LEA requirements also will lead to the development of new technology with military application.

(U) Much of this technology and the experience gained from its deployment can increase the physical security of military bases, embassies, and other facilities; improve the capability of all commands for low intensity conflict and urban warfare; and especially improve the intelligence/surveillance capabilities of the Southern Command.

(U) Addition of DoD technology to LEA resources will improve the security of our national borders against terrorism, the exportation of critical technology, and other threats to national and DoD security.

(U) Increased drug enforcement and any decrease in drug use also will improve off-base living conditions for military personnel and dependents, as well as work-place conditions with civilian and non-DoD personnel.

(U) Finally, the increased quantities of tested detection and interdiction technology and persons experienced in its use can provide ready-to-deploy equipment and personnel in the event of mobilization. The very diverse aspects of national security are in fact related and can ultimately reinforce one another if and when stressed.

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GAINS FOR DEFENSE DEPARTMENT

- o MAJOR OPPORTUNITY TO CONTRIBUTE TO WARS ON DRUGS & TERRORISM
- o SOME OPPORTUNITIES TO "TRAIN" IN REAL ENVIRONMENT
- o POTENTIAL FOR INCREASED EMBASSY & MILITARY BASE SECURITY
- o IMPROVED NATIONAL SECURITY OF BORDERS
- o IMPROVED LOW INTENSITY CONFLICT CAPABILITIES
- o IMPROVED URBAN WARFARE CAPABILITIES
- o VERY USEFUL MOBILIZATION ASSETS -- AND PERSONNEL
- o IMPROVED MILITARY DETECTOR/SENSOR TECHNOLOGIES
- o IMPROVED DRUG-FREE ENVIRONMENT AT HOME AND WORK

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