

## Science & Technology

# Technology to win the war on drugs: Is there the political will to use it?

by Marsha Freeman

In a speech presented to a seminar in Mexico City on March 13, *EIR's* Contributing Editor Lyndon LaRouche outlined measures for a "total war" on the international drug traffickers. Among his recommendations was the use of satellites, aircraft, and space-age communications technologies to locate and destroy "every field of marijuana, opium, and cocaine, in the Americas, excepting those fields properly licensed by governments."

We present here a review of the technologies that exist to carry out this plan.

Between 1972 and 1982, the U.S. government, in a joint program of the State Department and the National Aeronautics and Space Administration, developed new remote sensing techniques which were proven successful in locating illicit drugs. Airborne sensing systems, combined with Landsat satellite data, could pinpoint all significant opium poppy, cannabis, and coca crops worldwide.

Yet this capability is not being used, even in nations such as Mexico and Colombia which have asked the United States to help them in their war on drugs. If the United States decides to escalate its current war on drugs to include destroying the crops in the ground, it can activate the international agreements and remote sensing systems already available to accomplish the task.

On March 29, 1978 the United States and Mexico signed a Memorandum of Understanding to develop an "advanced airborne data collection and ground data processing system for use by the Mexican government in identification of opium poppy fields in Mexico." A total of \$7.5 million was allocated for this effort.

The program, called Curb Illegal Narcotics, ran for two years, during which time the system was developed, Mexican pilots and ground teams were trained, and the identification of the drug crops was proven successful.

The sensing system consists of a multispectral scanner attached under the wing of a jet plane. Its operation is based on the fact that every growing plant has its own radiative signature. When hit by sunlight, it reflects back radiation in a specific array of frequencies, unlike any other particular plant.

For example, cannabis plants can be detected in the 1.55-

1.75 micron band of the infrared part of the electromagnetic spectrum. This indicates their specific, identifiable signature.

The remote sensing system designed for Mexico was able to scan 12,000 square miles of land per day, or the entire country every 15 days. Since the cannabis plants grow for 120 days, this high frequency of coverage makes it possible to "see" fields a few times before taking any action.

In 1982, the State Department funding for the recommended follow-up to this program was cut off, and at the same time, Drug Enforcement Administration acting administrator Francis Mullen, of the FBI, quashed the program. This left the Mexicans with a complete remote sensing system they do not have the money to operate. For some tens of millions of dollars per year, this system could be locating most of the illegal drug crops in Mexico.

In November 1980, the Colombian Minister of Justice requested information from the U.S. embassy in Bogota, on the use of remote sensing technology to determine the scope of illicit cultivation of cannabis and coca, as a prerequisite to initiating a herbicidal eradication program. Yet after the feasibility of using the remote sensing technology to aid the Colombian effort was demonstrated, no funds were forthcoming to implement the program.

The forward to the 1980 Final Report by NASA on the Curb Illegal Narcotics project states that at the end of the program, "all scientific and technical aspects of the project have been judged successful by both governments." The benefits of using the technology "had scarcely begun to be fully realized" at that time.

The report stresses that "perhaps the real success lies in the mutual cooperation, respect and trust realized by this merger of NASA technology, Department of State foresight, and Mexican talent and desire to excel. The two nations have opened new doors for the transfer of technology, and both nations have benefited."

But compare this to the war of words being waged against Mexico by the State Department, which is charging that the Mexican government is not seriously interested in fighting drugs. Though this destructive, lying campaign was curbed as the White House, through Attorney General Ed Meese, has escalated the war on drugs, there has yet to be a move to

actually use the Advanced Poppy Detection System in Mexico.

In many of the nations of Ibero-America, the governments themselves are heavily committed to the war on drugs, and since the growth of crops is illegal, many of the narco-traffickers are now cultivating smaller plots that are partially hidden. For this reason, the use of airborne sensing systems that fly only a few thousand feet above the ground is indispensable for the war on drugs.

In nations such as Iran and Pakistan, where the governments either sanction or ignore the growing of illicit drugs, the fields are so large, that they can be identified by space-based Landsat systems, with a lower resolution. Combining these two capabilities, all of the significant illicit drugs could be located.

Then all that is needed is the political decision to destroy the crops, and cut off the source of this \$400 billion plague against the people of this world.

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## Documentation

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*From the "Final Report, Curb Illegal Narcotics," National Space Technology Laboratories, National Aeronautics and Space Administration, December 1980.*

Through a Memorandum of Understanding (MOU) with the Department of State, NASA has been providing assistance since 1978 whereby advanced remote sensing and computer technology have been applied to an on-going cooperative control program with Mexico.

The primary objective of the MOU was to develop and transfer to the Government of Mexico an Advanced Poppy Detection System (APDS).

In January of 1980, the completed APDS was delivered to Mexico City. The system consisted of an airborne data collection platform, made up of a high-altitude, high-performance aircraft modified for remote sensing applications, a very high resolution multispectral scanner and associated data recording equipment, a ground-updated inertial navigation system, and a large format aerial camera, plus a ground data processing system capable of processing large volumes of resulting aircraft data in a very short time period.

More than 225 man-weeks of training were provided for 24 Mexican personnel through technical workshops conducted at all hardware manufacturers' facilities, through hands-on experience with the interim system in Mexico and with the advanced system at the National Space Technology Laboratories prior to transfer.

The CIN project was concluded on September 30, 1980, as scheduled. All technical aspects of the project were completed as specified within the planned schedule and funding levels, and the ability of the total system to perform the designed task has been successfully demonstrated by Mexican personnel.

Based on the project results and the extent of the activities

over the past three years, the Department of State has requested that NASA initiate a two-year follow-on effort with Mexico, during which advanced remote sensing technology will be applied to the multispectral scanner to significantly improve its sensitivity. In addition, the ground data processing system throughput rate will be improved beyond the current 200+ equivalent Landsat frames in 72 hours by the incorporation of an array processor. The follow-on activity will allow continued transfer of remote sensing technology between the United States and the Government of Mexico.

*From the "Remote Sensing Feasibility Study: Colombia, Final Report," National Space Technology Laboratories, NASA, January 1983.*

### Conclusions:

a. Adequate ground observations of Cannabis were made to positively state that detection by electro-optical remote sensing is feasible.

b. Additional ground observations of Coca fields are required to assess variables such as ground cover, soil type, slope, competing vegetation, etc.

c. Remote sensing is invaluable when more conventional methods, such as visual reconnaissance, are unsuccessful.

- At present, visual reconnaissance would be extremely successful in Colombia, as no attempts to conceal fields or to resort to small plots to avoid recognition were observed.

- If an effective eradication campaign currently existed, all fields observed during the five-day visit could be located and destroyed by conventional techniques.

- However, said campaign would force a change in farming techniques [to smaller plots to avoid detection—ed.], which would justify the use of remote sensing in 2-3 years, roughly the time required to design and build a remote sensing system.

Although no decision was made relative to a potential Phase 3 of the project in which NASA would develop a complete Cannabis/Coca detection system for Colombia, it was obvious that such a system was not required at the present time. Remote sensing would prove valuable in the years to come, however, if an effective eradication campaign, using visual recon in a search-and-destroy effort similar to that employed by Mexico for poppy eradication in the mid-1970s, was currently in place in Colombia.

Consequently, the Remote Sensing Feasibility Study in Colombia concluded with the successful completion of Phase 2 of the project. The study clearly demonstrated the potential for effective application of remote sensing techniques and served as a necessary first step in evaluating the eventual use of an advanced, highly automated concept for broad area illicit narcotics control.