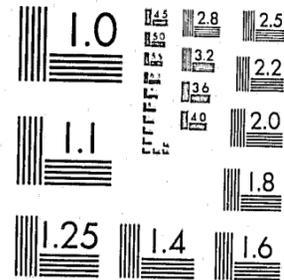


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**92553-92555**

**The Kennedy Assassination and Beyond**

# FBI LAW ENFORCEMENT BULLETIN

NOVEMBER 1983, VOLUME 52, NUMBER 11

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ACQUISITIONS



The Cover: Forensic acoustic operations are important laboratory procedures which have been used in major investigations, including the Kennedy assassination. See article p. 1

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William H. Webster, Director

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Forensic Science



"Forensic analysis of tape recorded gunshots and other transient or impulsive sounds . . . has been an important factor in the disposition of a number of widely publicized . . . investigative matters in the past 20 years . . ."

By  
BRUCE E. KOENIG  
Special Agent  
Technical Services Division  
Federal Bureau of Investigation  
Washington, D.C.

## Acoustic Gunshot Analysis

### The Kennedy Assassination and Beyond

(Part I)

November 1983 / 1

**“... today's officer is finding that a major portion of his work... necessitates his dealing directly with the many and varied emotional dynamics of the community.”**

**Evaluation**

Once the MPDC decided to embark upon a series of training classes in family disturbances for all police officers, it was preceded by an intensive educational and informational process. All officers were initially informed of the danger of intervening in family disturbance situations and encouraged to use safety skills when interacting with families in stress. Second, the project gained high visibility through newspaper accounts, internal police newsletters, and a program on a local television show.<sup>5</sup>

During the past 4 years, over 1,000 officers have been trained to handle family disturbances. The training program's effectiveness is verified by the evaluation studies that have been conducted. An empirical investigation demonstrated that trained officers receive higher ratings for handling and defusing simulated domestic disturbance calls than do untrained officers.<sup>6</sup> The officers' own evaluations of the training continue to remain high, with evaluation scores actually increasing after the officers have returned to street duty. Officers' attitudes toward intervening in domestic disputes also improve after training. Scores on pretests have consistently improved over the past 4 years until the scores on the pretest are now as high as the old scores on the post-test.<sup>7</sup>

Most significantly, trained officers are less likely to be assaulted in responding to disturbance calls than untrained officers.<sup>8</sup> In fact, assaults against police officers in all categories is significantly lower for trained officers than untrained officers. The strong effect which psychodramatic crisis intervention training appears to have on officers in all violent situa-

tions gives credence to the speculation that officers trained in crisis intervention will better observe those situations and use force with more control and authority than untrained officers. For example, it is hypothesized that an officer with a greater role repertoire and increased interpersonal skills will have greater options in coping with a crisis situation than an officer who must rely upon authority and force alone. Training in such areas as nonverbal communication and observation skills may also lead an officer to be more cognizant of subtle verbal and nonverbal cues which may be a prelude to violent behavior. Consequently, the trained officer may be more alert, expecting the violence, and thus better able to deal with aggression or attempted assaults by others.

The program has continued to maintain high visibility in the department through regular press releases and informational articles, as well as continued word-of-mouth from officer to officer. While 48 percent of all street officers have been trained, the actual figures of officers trained in responding to family disturbance calls may actually be twice as high. Since officers are not usually trained in their regular team, it is quite probable that in most family disturbance calls, one of the two responding officers will have been trained. During the past year, the department has focused on new recruits and upper echelon personnel for the training (230 student officers and 76 captains and above were trained). The department is committed to providing full family crisis intervention training to all its street officers and new student officers.

**Conclusion**

The FDIP has demonstrated to the MPDC that a new role is evolving for the police officer. The stereotype officer no longer exists. Where, in the past, the label "social worker" was clearly distasteful to police, today's officer is finding that a major portion of his work, whether it be enforcement or prevention, necessitates his dealing directly with the many and varied emotional dynamics of the community.

While police administrators are reluctant to make this change from their traditional concept of the police officer's role, police trainers must begin to address the needs of the officer by providing him with the skills to deal effectively with socially related problems.

**FBI**

**Footnotes**

- <sup>1</sup> Harper and Row Media Program, *Officer Survival—An Approach to Conflict Management* (New York: Harper and Row Publishers, Inc.)
- <sup>2</sup> Morton Bard, *Training Police in Family Crisis Intervention* (Washington, D.C.: U.S. Government Printing Office, 1973)
- <sup>3</sup> Dale Richard Buchanan, "Action Methods for the Criminal Justice System," *Federal Probation*, March 1981
- <sup>4</sup> Jacob Levi Moreno, *Psychodrama, Volume One* (Beacon, N.Y.: Beacon House, Inc., 1948)
- <sup>5</sup> "Bosses, Cops, G-Men Prepare for Crisis by Acting Them Out," *PM Magazine*, WDCM TV, Washington, D.C., January 10, 1980. "Dramatic Teaching Techniques Enhance Coping Ability," *Security World*, February 1982
- <sup>6</sup> Carole Bandy, Dale Richard Buchanan, and Cynthia Pinto, *Love and Angst in the Home: Evaluating Police Officers' Performance in Simulated Family Disturbance Calls*, unpublished manuscript, 1983
- <sup>7</sup> Dale Richard Buchanan, *Evaluation Overview of the Metropolitan Police Department of Washington, D.C.—Saint Elizabeth's Hospital Family Crisis Intervention Training Program*, unpublished manuscript, 1983
- <sup>8</sup> The only other training program to report a decrease in assaults on police officers (APO's) on trained police officers was Bard's pioneering study which consisted of 18 officers.

Under cover of darkness or behind the protective barrier of fences, guard stations, and corporate structures are occurring some of the most dangerous and far-reaching crimes that law enforcement agencies have to deal with today. Not only do these crimes affect our health and the health of future generations, but they also affect how, or even if, we can use the basic necessities of life. They play a very important part in whether we can enjoy the amenities which are so important to our mental well-being as individuals, and to our society as a whole. These crimes have resulted in untold billions of public dollars being spent to counter their effects and in trying to apprehend the violators.

The above could actually apply to several classes of crime—drug trafficking, white-collar crime, or organized crime. However, it describes briefly a violation that until recently was virtually unknown to either law enforcement or the public at large. It involves the illegal use or disposal of hazardous and toxic materials.



**Enforcing Environmental Laws—  
 A Modern Day Challenge**

By  
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**"Our society has been rudely and abruptly awakened to the dangers that are inherent in the illegal generation, hauling, and disposal of toxic materials."**

For years, most citizens viewed these materials simply as wastes to be disposed of in the cheapest way possible. They didn't realize, or care, what the long term public health and environmental impact would be. Today, Federal and State laws outlaw such activities and generally provide for heavy penalties for persons or companies violating these statutes.

Without repeating once again the long list of horror stories which have been heard in the last few years, it is sufficient to say that violations of environmental and public health statutes have resulted in incalculable damages to life and property.<sup>1</sup> Many books, as well as newspaper, magazine, and technical journal articles, have been written in the last decade detailing the environmental, economic, social, and public health aspects of illegal toxic waste disposal. Very little, however, has been written on the enforcement of these laws except in a very general sense.

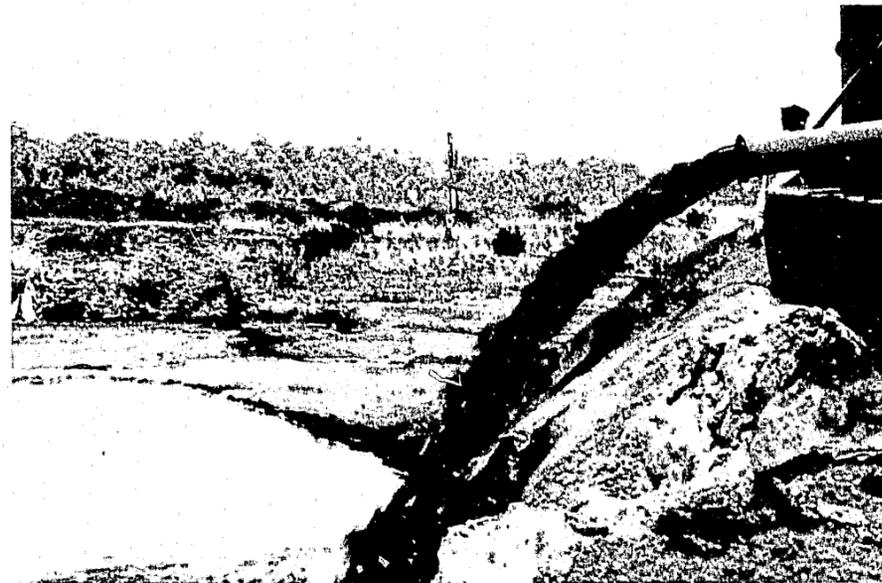
Law enforcement agencies encounter great difficulties when investigating and prosecuting environmental and toxic materials cases, which explains to a large extent the shameful lack of effective enforcement over the last 50 years. Aside from the attitudes of the public toward this activity and whether they want strong enforcement, the plain and simple truth is that effective enforcement of these laws is complex, time-consuming, and difficult.

In 1978, after criticism and pressure from various political and public interest groups, the State of Michigan began an experiment which would hopefully result in a more successful environmental enforcement program. Officials formed an Environmental Enforcement Division within the State's Department of Natural Resources to handle the most serious pollution cases.

Michigan officials realized that a truly effective enforcement program needed people who were experienced law enforcement officers. Previous Michigan "environmental enforcement" programs were handled by technicians and scientists who had little, if any, legal and investigative knowledge or skills. Therefore, they adopted a unique team concept which combined the expertise of technical, legal, and investigative personnel. The investigators are experienced field conservation officers who are fully commissioned and academy-trained peace officers.

Four investigators assigned to work with experts in various technical and scientific fields formed a highly effective unit aimed at reducing the number and severity of public health and environmental violations. Once operational, the team soon produced results, which served as a signal to would-be violators that the State was serious about its enforcement program.

In 1979, the program was expanded to include five officers assigned to the department's uniform division to provide additional enforcement for those cases which are to be primarily prosecuted on the local level. In combination with the investigative and technical staff at departmental headquarters, these field officers have been quite successful.



However, success was not easy to come by. New enforcement techniques had to be developed to tackle the complexity of environmental laws. Rapport had to be established with technical experts in the department's program divisions. Doubling prosecutors and State attorneys had to be convinced that the program was worthy of their time and that the cases put together by these officers were not flawed.

It was difficult for some officials to accept the fact that strong environmental enforcement was a necessary and good objective. Many people believed strongly that environmental laws should be "enforced" on a "gentleman-to-gentleman" basis and that the police, courts, and other non-scientists had no business in the environmental arena.

Technical problems were even more formidable. How do you prove a crime when the corpus delicti is an unknown chemical contaminant in the groundwater 50 feet below the surface, far removed from the actual source of contamination? Drilling rigs, sample bottles, hydrogeologic surveys, respirators, and safety gear have necessarily become standard tools of the trade for investigators. Interpreting laboratory analysis results, file searches and reviews, research on chemical contaminants, and working with air and water quality specialists, chemists, and geologists are part of the daily routine for investigators trying to collect evidence to build an environmental case.

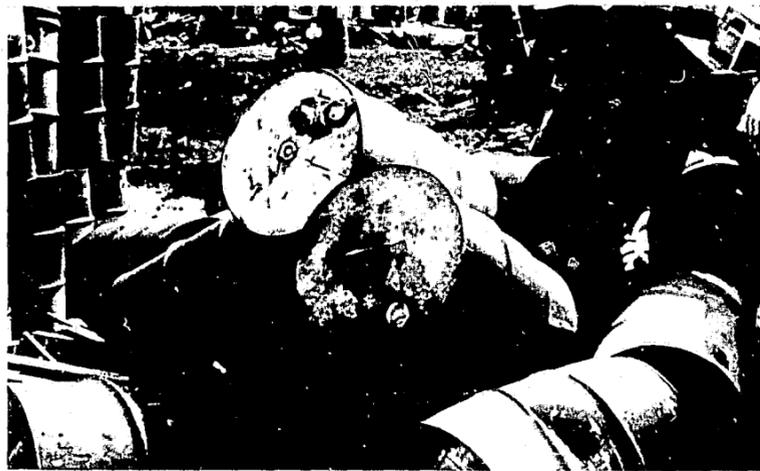
A fundamental aspect of environmental law enforcement is the involvement of nonenforcement experts. Because the investigator cannot personally drill for water samples, conduct a hydrogeologic survey,



plot groundwater movement, or perform laboratory analyses, he must depend on scientific and technical experts. A crucial and arduous part of supervising the development of an environmental case is ensuring that all personnel adhere to the legalities so that their work can be used in any resulting litigation. It is sometimes burdensome for scientists and technicians to understand the complexities of the legal parameters within which enforcement officers must work.

On the other hand, environmental investigators face a constant task of working with and "educating" county prosecutors in the program of environmental enforcement. When securing a warrant, investigators, in most cases, must explain the law to the prosecutor and the environmental, health, economic, and societal reasons for its enforcement. While there are a few State attorneys who are well-versed in environmental laws, most local prosecutors are not familiar with them.

Enforcing environmental laws requires a period of readjustment for the investigator. Not only must he relearn the terms and concepts of college chemistry, he has to become accustomed to enforcing laws which were written in large part by the persons or industries they are designed to regulate. And, legal loopholes are not uncommon in environmental laws. For example, two Michigan environmental laws have "prior notification" sections which require that polluters must initially receive a warning, no matter how serious the violation, before they can be prosecuted. If the State fails to notify the company officially, they cannot be charged for subsequent similar violations.



Learning to interpret and enforce discharge permits is another demanding task. These permits allow an industry to discharge certain contaminants up to a specified level. Often, however, these concentration levels are based on a 24-hour average. Therefore, an investigator must either remain at the site for the entire 24 hours or secure automatic sampling equipment so that the sample is legal. Yet, he must still be able to show that it has not been tampered with. This, in turn, leads to another problem since a company can easily alter its discharge over a 24-hour period so that the end result shows them to be in compliance with the law.

Collecting custody samples from other sources, such as illegally dumped barrels of wastes, lagoons, or toxic wastes dumped onto the ground or into surface waters, presents other technical problems. There is an inherent danger just being near or actually handling such materials.

An investigator quickly learns that working an environmental case is not your typical officer vs. suspect arrangement. Oftentimes, in order to substantiate a case against persons or companies violating environmental laws, he must obtain information that is not readily available or accessible. Physical evidence must be drilled for or dug up; company reports, docu-

ments, or data must be obtained. Corporations, regardless of size, can make it very difficult to interview people or obtain documents, especially if the officer is trying to compile a criminal case.

Corporate structure, batteries of corporate attorneys, and mind-boggling recordkeeping systems make environmental investigations a real challenge. A recurring problem is actually proving who in the hierarchy ordered or authorized the illegal act.

Corporate legal staffs have the time, and obviously the vested interest, to fight or block the State at every turn. The State's resources are just too limited to take on large corporations in litigation that can last for years. Negotiations, compromises, and consent agreements are often resorted to instead of actual litigation.

Even customary investigative processes become anything but routine. Search warrants, for instance, seldom go unchallenged. Motions to quash are almost immediately filed by companies in attempts to block entry.

**"... the destruction of the air we breathe, the poisoning of the water we drink, and the contamination of our land and food with toxins is much too serious a crime to overlook."**



If the necessary probable cause needed for a search warrant cannot be obtained, there is little chance of gaining consent access. And, if consent is granted, limitations are likely to be placed as to the areas searched and the samples collected. Photographs, unless provided for in a court order, are normally otherwise forbidden in the various manufacturing or chemical production plants and adjacent areas.

This leads to another area seldom accessible to investigators—the realm of industrial and business secrets. The need for an investigator to know certain facts conflicts with the company's obvious desire to keep their unique processes secret. In most cases, the only way to obtain such data is through a court order.

The environmental investigator also encounters serious problems in the area of jobs and public opinion vs. the environment. In today's economic climate, this is a very real obstacle to prosecuting persons or firms who violate pollution laws. Investigators are

often caught in the middle between forces who demand strict enforcement and those who do not want it for their own personal reasons, which are usually economic.

County and State prosecutors are often very hesitant about taking a large local employer to court. It is not uncommon for companies who are facing court action to threaten to shut down and leave the State for friendlier climates. Local and State politicians can also apply considerable pressures when they receive complaints from their constituents that in their opinion, the laws are being enforced too strictly.

No matter how well an investigator compiles a case, it may all be for naught if a prosecutor refuses to take it. Also, if powerful political leaders are offended by a strong enforcement posture, the agency can suffer at budget appropriations time.

#### Summary

Our society has been rudely and abruptly awakened to the dangers that are inherent in the illegal generation, hauling, and disposal of toxic materials. In an effort to stop the spread, and in turn, hold down the very real dangers involved with violations of the laws regulating toxic materials, some law enforcement and environmental protection agencies are forming special units to investigate and prosecute these violators. Because of the huge scope of the activities, the tremendous complexity of the laws, and the various social, economic, and political forces involved, this task is anything but easy.

The philosophy still quite prevalent in the criminal justice system, business community, political arena, and engineering and scientific circles is that environmental laws should not be enforced in the same manner as "regular" criminal law classifications. We are discovering, however, after decades of nonenforcement that the price for this inaction is much too high. The temptation is always great to quote the all-too-true horror stories which have resulted because of this program of nonenforcement which was the policy until the 1970's. Suffice it to say that the destruction of the air we breathe, the poisoning of the water we drink, and the contamination of our land and food with toxins is much too serious a crime to overlook.

**FBI**

#### Footnote

Kevin Krajick, "When Will Police Discover The Toxic Time Bomb?" *Police Magazine*, May 1981, pp. 6-17

**END**