

**THE BILL BLACKWOOD
LAW ENFORCEMENT MANAGEMENT INSTITUTE OF TEXAS**

ASSESSING THE NEED FOR A HAZARDOUS MATERIALS POLICY

A Policy Research Project
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of the Requirements for the Professional Designation
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ABSTRACT

Police officers have historically been the first emergency response personnel on the scene of a hazardous materials incident. As a result of their rapid response, police officers have been the most likely persons to obtain critical information needed for a timely and successful resolution of the incident. ALL officers are required to take prompt and effective action upon notification from a citizen of any type of emergency (PPD). However, an officer can be neither prompt nor effective in rendering aid to victims if his health has been adversely affected by a hazardous substance. An officer's ability to rapidly identify a substance may have the effect of reducing injuries and determining whether or not evacuation procedures must be implemented in the community.

Police managers traditional responses to hazardous materials training for officers has been negative and may be related to an absence of information concerning the necessity for such training. A review of applicable federal statutes, law enforcement related journal articles, interviews with local experts concerning safety & training, and technical information concerning hazardous materials was conducted over a period of more than a year. The results of the research indicated a need for continuous and expanded training efforts as well as a need for police officers to participate in the emergency planning process. The primary recommendation was the adoption of a hazardous materials policy which addresses procedures for approaching and resolving these types of incidents and which emphasizes training as well as to increase participation in local emergency planning.

Introduction

The purpose of the research project is to assess the importance of adopting a policy concerning the necessity of training and involvement of the Pasadena Police Department in local emergency planning. The traditional response to hazardous materials training within the Pasadena Police Department has been cursory and may be as a result of a failure to recognize the potential for serious injury or death. Until 1994, the Pasadena Police Department provided cadets with four (4) hours of training concerning placard recognition during the basic academy and did not provide any type of follow-up training. Police officers routinely arrive on the scene of a hazardous materials incident well ahead of other emergency responders.

Southeast Harris County contains a total of 88 chemical manufacturing complexes (EHCMA:5/94). Theoretically, all of the manufactured products must leave these facilities in order for the corporation to generate a profit and remain fiscally sound.

Pasadena police officers have occasion to come in contact with hazardous materials most often during the course of transportation and in response to an incident which has occurred inside of a manufacturing facility. The Primary Purposes of this paper are

- (1.) to inform supervisors of the existing federal requirements for training and refresher training,
- (2.) to inform this group of the sources of training and information that are currently available,
- (3.) the importance of continued involvement in local emergency planning.

A review of the relevant federal statutes, law enforcement

related journals, technical information, and interviews with local safety and training experts, was conducted over a period of more than two years prior to the date of this report. The anticipated response to this research be the implementation and adherence to the recommendations of this proposal. The purpose of this project is not the creation of an environmental crimes unit such as was recently implemented by the Houston Police Department.

Historical, Legal, or Theoretical Context

The significance of this proposal to the Pasadena area may be demonstrated by six significant incidents:

(1.) May 11, 1976, an overturned compressed gas tractor-trailer of Anhydrous Ammonia killed 5, required hospitalized of 50 citizens, and more than 200 citizens were reported as injured. The accident occurred at the intersection of US-59 and IH-610. The compressed gas trailer was loaded at the Tenneco Terminal in Pasadena and traveled through Pasadena just minutes prior to the accident. ("Hazardous trucks review is urged.")

(2.) March 30, 1982, an overturned gasoline truck at SH-225 and IH-610 instantly killed a police officer, ("Policeman dies in fiery wreck; ramp damaged.")

(3.) October 23, 1989, a massive explosion at Phillips 66 manufacturing facility killed 23 citizens instantly and resulted in hundreds of injuries. ("23 sought in ravaged plant explosion.")

(4.) April 21 1994, a large release of Nitrogen-Tetroxide (poisonous gas) from NASA/ Johnson Space Center in south Pasadena. (Gaffney:1994).

(5.) October 12, 1994, an explosion at Enron Methanol manufacturing facility injured several chemical operators having been hospitalized. ("No major injuries in plant blast.") As a result of this explosion, Pasadena Police officers responded to the scene and observed a large vapor cloud floating in close proximity to the ground and rising in elevation as it floated from north to south in the city. Chemical facility administrators initially reported that the cloud had been steam vapor; however, a subsequent test of the residue from the cloud revealed that Asbestos (known carcinogen) had been present (Mattingly:1995).

(6.) January 9, 1996, at the Velsicol Manufacturing facility located in the Bayport Industrial Complex, Pasadena Police and Fire Departments responded to a railroad tank car leak. The substance was later determined to have been Benzoic-Acid (derivative of Benzene, a known carcinogen). The intensity and size of the leak resulted in a vapor cloud approximately four times the size of a football field.(CITY OF PASADENA; Fire Incident Report: Jan 9, 96)

According to an article in the Pasadena Citizen on August 18, 1994:
"Harris County ranks first in chemical plant accidents in the nation according to a survey conducted between 1988-1992. Harris County-which includes the Houston Ship Channel and Bayport Industrial District has the largest concentration of chemical plants in the United States" ("Harris County ranks first in chemical plant accidents.")

The Federal Government's initial recognition of a problem concerning hazardous substances occurred in the mid 1970's in response to an investigation which revealed that toxic substances buried underground for many years had an adverse effect on the health of the residents of the area. The results of the investigation became known as known as the "Love Canal" incident

and occurred in New York. The official federal response occurred in 1976 with the implementation of the "Resource Conservation and Recovery Act" (42 CFR 6901a). This legislation provided training grants in occupations involving the design operation and maintenance of solid waste disposal. However, this act failed to mandate training for either public or private sector employees involved in these types of activities.

The most important aspect of this act was a national policy that:
"wherever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible" (42 CFR 6902b).

The second federal recognition concerning hazardous substances occurred in 1986 with the adoption of the Superfund Amendment and Reauthorization Act (SARA), Title III (29 CFR 1910.120). The Federal Government had previously established a program which came to be known as the "Superfund" in order to reclaim the area known as "Love Canal."

SARA Title III has also been referred to as the:
"Emergency Planning and Community Right to Know Act and has become an Environmental Protection Agency standard"
(Hoover: 1988).

The provisions of this statute established State Emergency Response Committees (SERC's) in every state and authorized the establishment of Local Emergency Planning Committees (LEPC's) (Hoover:1988) Furthermore, the provisions of this statute mandated training for all private sector employees involved or expected to become involved in emergency response to hazardous materials incidents (29 CFR 1910.120). Effective March 6, 1990 all of the provisions enumerated in SARA Title III (29 CFR 1910.120) became applicable to

all state and local government employees (40 CFR 311.1). This directive contained a definition of the word employee :
"A compensated or non-compensated worker who is controlled directly by a State or local government, as contrasted to an independent contractor (40 CFR 311.2)."

Review of Literature or Practice

A review of the literature specified the requirements and significance of hazardous materials training for all first responders. According to former Los Angeles Police Chief Gates:
"All police officers are classified as 'first responders' with respect to their functional responsibilities at hazardous materials incidents (Gates:1991)."

Pasadena Police Officers are most likely to contact hazardous materials during transportation of these products. Federal Legislation has been adopted with the specific intent of informing and protecting first responders to hazardous material incidents.

According to an article in Law and Order Magazine in June 1993:
"Officers become 'first responders' just by virtue to being at, or responding to the scene of an incident involving a hazardous chemical (Hermann:1993:)."

The adopted legislation categorized all types of hazardous and potentially materials into 1 of 9 separate classifications (49 CFR Ch.I). These 9 classifications have been specifically formulated into a placarding system. This system specified that each category of substance be distinguished with a separate color and number of 1-9 at the bottom to designate classification of these diamond shaped placards. These placards have been mandated by federal law to appear on the exterior of all types and sizes of containers (49 CFR 172.411). The specific types of hazardous materials have been identified by a four (4) digit number located in the center of each placard and this numbering system has been

officially referred to as the UN or "United Nations Number"(ERG).

According to an article published concerning "Emergency Response

Equipment" in Police Chief Magazine:

"What is almost universally true, though, is that the police agency will be the first on the scene and faced with some hard evacuation questions. In the most common situation, the most important item is a booklet that should be standard equipment in every police car, fire engine, and ambulance: the U.S. Department of Transportation Emergency Response Guide (Pilant, 1993)."

The DOT/ Emergency Response Guide (ERG) has provided information on virtually all types of hazardous materials by either a four digit identification number (UN) or by the material name index. The ERG has provided 66 response guides and has listed the names of specific materials which if spilled or leaked require an "upwind approach" and a "specific isolation and protective action distance" (ERG). According to the above referenced article:

"The most important thing a law enforcement agency can do is to ensure that its officers are properly trained. Problems that result from a lack of training are obvious, with the most serious being the loss of lives, vicarious liability, and litigation (Pilant:1993:)."

However, "the most reliable warning of chemicals in a load are the shipping papers (Hermann:1993:)." This document has been commonly referred to by operators as "the bills (Bill of Lading) are the most complete source of information about the load" (Hermann:1993). However, every officer must be trained to use the Emergency Response Guide (ERG) and to familiarize themselves with information which may be contained in the shipping papers. Officers who fail to periodically review and receive refresher training on this information will not be proficient in determine the chemical names and required isolation distances of certain hazardous materials.

Discussion of Relevant Issues

The key issues involved in this proposal involve the necessity of mandatory training for hazardous materials response, the sources of information and training currently available, as well as the continued involvement of the police in local emergency planning. The necessity for training in law enforcement concerning hazardous materials has been addressed by the F.B.I. According to that agency's November 1993 Bulletin :

"The initial actions performed at the scene of a hazardous materials incident set the stage for the ultimate success or failure in resolving the emergency. Proper training represents the most effective insurance against a minor accident becoming a major disaster" (Donahue:1993).

The Occupational Health and Safety Administration has mandated that all emergency response personnel receive minimum training levels in accordance with the "Hazardous Waste Operations and Emergency Response Act." The effective date of that regulation was March of 1990 and the document has been commonly referred to in the chemical manufacturing industry as "HAZWOPER" (Donahue:1993:). Any public official of a governmental agency who fails to comply with the standards of training established in "HAZWOPER" may receive civil fines and could face "the possibility of prosecution for failure to comply with either SARA or OSHA requirements" (Donahue:1993). OSHA has specified 5 distinct levels of training with distinct training requirements for each level:

- (1.) First Responder (Awareness Level),
 - (2.) First Responder (Operations Level),
 - (3.) Hazardous Materials Technician,
 - (4.) Hazardous Materials Specialist,
 - (5.) On-Scene Incident Commander
- (Donahue:1993).

According to Mr. Michael Donahue (associate director of CHEMTREC),

"most law enforcement officers operate at the first responder awareness level." An issue related to training has been the importance of "refresher training" which has also been addressed by federal legislation. According to the provisions of SARA Title III, all employees who have received mandatory first responder training: "shall receive annual refresher training of sufficient content and duration to maintain their competency in those areas at least yearly" (29 CFR 1910.120).

Every hazardous material incident contains 5 elements of response by law enforcement officers. Those areas of response have been identified as:

- (1.) Recognition
- (2.) Evaluation
- (3.) Control
- (4.) Information
- (5.) Safety

These elements are not necessarily sequential steps for responding; however, each element and activity is interrelated (TEEX/OES:HMER).

Gasoline has been identified as the hazardous material which has been most commonly transported on the highways and responsible for the most fatalities (Hermann:1993). Gasoline has been made easily identifiable to first responders with a red placard which contains a 4 digit UN number of 1203 in the center portion.

Police Officers responding to a hazardous materials incident on a freeway may encounter problems not related to other types of hazardous materials incidents. A study which was conducted by the Texas Transportation institute in 1993 revealed that most freeway incidents which involve trucks usually occur between 9:00 A.M. and 4:00 P.M. The study also revealed that the average clearance time for an overturned truck or spilled load was between 2.5 hours and

3 hours. Furthermore, these incidents most often occurred at freeway to freeway interchanges such as State Highway 225 and Beltway 8 in Pasadena (TTI/Report 1345-1). The Texas Department of Transportation (TxDOT) has begun to install permanent changeable message signs (CMS) along freeway corridors to aid in diverting traffic or to provide special instructions to motorists. One such electronic sign was installed on the east bound side of SH-225 in Pasadena between Bearle Road and South Avenue. The location of this electronic sign will aid in diverting traffic in the event of a hazardous materials incident on the freeway and will also serve to warn motorists of potential harmful effects relating to incidents at chemical manufacturing facilities which border the freeway.

Computerized information sources currently available include "Operation Respond" and "HMIX." The Pasadena Police Department was the first Emergency Operations Center in the world to have immediate access to computerized information on hazardous materials being shipped by railroad tank cars (Handley: 1994). The rapid availability of this information has been considered vital to first responders. An average of 220,000 railroad tank cars each year travel through the Port Terminal Rail Yard in the 400 block of North Witter in Pasadena (Handley:1996).

"Operation Respond" was developed in the Houston area as result of a federal grant and coordinated effort from the Federal Railroad Administrations and the railroad industry. The Houston area has been referred to by federal safety officials as "the geographic equivalent of a stick of TNT" (Saccomano:1995).

National trucking firms as well as the Federal Highway Administration have also committed to the project and designated funds. Computer software donated by "Operation Respond" to local Police Communications Centers has enabled first responders to obtain immediate information from the transporters. According to an article in February 6, 1995 of Traffic World Magazine: •

"The database has a direct connection to the carriers cargo data base and gives responders information on rail car contents and procedures for handling hazardous materials" (Saccomano:1995).

The mission of "Operation Respond" has been the coordination of efforts between police, fire, and E.M.S. in an attempt to maximize coordination of efforts (Saccomano:1995). The North American Free Trade Agreement (NAFTA) has indirectly resulted in the extension of Operation Respond to Laredo on the Mexican border, to the greater Baton Rouge-New Orleans area, to Niagara County New York on the Canadian border.

The Federal Emergency Management Agency (FEMA) has developed an electronic bulletin board for information concerning hazardous materials. The service has been referred to as the Hazardous Materials Information Exchange (HMIX) and provides information concerning training, instructional materials, as well as on-line databases without cost to users. (Harrington:1989). According to an article in Traffic Management Magazine in 1989, HMIX does more than provide training and information:

"It serves as a communications network for hazardous-materials contingency planners, emergency-response personnel, enforcement staff and others" (Harrington:1989).

The Pasadena Local Emergency Planning Committee (LEPC) conducted a formal drill on May 25, 1995 which involved more than

500 participants and included 12 Pasadena Police officers. The purpose of the drill was to measure efficiency and effectiveness of first responders from the public and private sectors also to recommend suggestions for improvement of service to both sectors. The drill simulated a collision between a tank truck and a cargo truck both carrying hazardous materials and was staged in connection with the crash of a military helicopter containing 40 injured persons. The general consensus among the evaluators was that the drill had been an overall success as a result of cooperation between the public and private sector responders. (Gonzales:1995).

According to the Emergency Management Coordinator for the Ft. Collins, Colorado Police Department:
What all departments should plan for are hazardous materials incidents and airplane crashes. There is virtually no place in the United States that isn't under some kind of major flight path. Departments should also think about train accidents and other types of major transportation disasters (Pilant:pg.35).

The primary constraint involved concerning first responders has been referred to as "Fighting the Action Impulse."
"[Officers] are trained to take action, not stand around and wait for information about whether the cargo is hazardous."
(Saccomano: 1995).

Police officers must receive training to promote their awareness that plunging into a hazardous materials spill probably would not be the best course of action if adequate information has not been made available concerning the extent of the danger.(Sacomano:1995)

The results of a cost/benefit analysis would indicate that the only actual cost to the department would be the loss of man-hours while officers attend this TCLEOSE approved training(Whitman:1995).

SARA TITLE III, Section 305(a)

provides five (5) million dollars annually to states to enhance their training efforts in the area of planning and responding to chemical incidents (TEEX/OES-HMER;pg. 2-7).

The Division of Emergency Management has been designated to award training grants and provide instructors to public service agencies who request any of the 5 levels of training (Whitman: 1995). Information concerning training grants and instructors has been coordinated through the Pasadena LEPC. Several local chemical manufacturers have committed to continue to provide opportunities for hands on training concerning hazardous materials response. This training has been provided without cost to the department and has been coordinated through participation in the Pasadena LEPC.

Conclusions/ Recommendations

In conclusion, training and knowledge would reduce the department's liability in the event that an officer or citizen were to be injured at the scene of a hazardous materials incident.

This proposal has to addressed the mandatory requirements for hazardous materials training, to identify sources of training and information, and to encourage departmental involvement in the local emergency planning process.

The relevancy to the Pasadena Police Department has been addressed considering the large volume of chemical manufacturers in our area and the local history involving injuries and deaths. The recommendations of this proposal are the adoption of a policy which would address procedures for approaching and resolving a hazardous materials incident and which emphasizes the necessity of continual and enhanced training. The secondary recommendation of this proposal is to increase participation in the LEPC.

October 4, 1996

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Mr. Corkey Sandel,

Please find enclosed the bibliography for my Policy Research Project
"Assessing the Need for a Hazardous Materials Policy." I apologize for any
inconvenience which may have been caused as a result of my failure to enclose
the bibliography with the original document. Thank you for your
consideration in this matter.

A handwritten signature in cursive script, reading "M.P. Jackson". The signature is written in dark ink and is positioned above the printed name and address.

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