

U.S. Fire Administration/Technical Report Series

Gasoline Tanker Incidents in Chicago, Illinois and Fairfax County, Virginia

Case Studies in Hazardous Materials Planning

USFA-TR-032/March/May 1989



FEMA

U.S. Fire Administration Fire Investigations Program

The U.S. Fire Administration develops reports on selected major fires throughout the country. The fires usually involve multiple deaths or a large loss of property. But the primary criterion for deciding to do a report is whether it will result in significant “lessons learned.” In some cases these lessons bring to light new knowledge about fire--the effect of building construction or contents, human behavior in fire, etc. In other cases, the lessons are not new but are serious enough to highlight once again, with yet another fire tragedy report. In some cases, special reports are developed to discuss events, drills, or new technologies which are of interest to the fire service.

The reports are sent to fire magazines and are distributed at National and Regional fire meetings. The International Association of Fire Chiefs assists the USFA in disseminating the findings throughout the fire service. On a continuing basis the reports are available on request from the USFA; announcements of their availability are published widely in fire journals and newsletters.

This body of work provides detailed information on the nature of the fire problem for policymakers who must decide on allocations of resources between fire and other pressing problems, and within the fire service to improve codes and code enforcement, training, public fire education, building technology, and other related areas.

The Fire Administration, which has no regulatory authority, sends an experienced fire investigator into a community after a major incident only after having conferred with the local fire authorities to insure that the assistance and presence of the USFA would be supportive and would in no way interfere with any review of the incident they are themselves conducting. The intent is not to arrive during the event or even immediately after, but rather after the dust settles, so that a complete and objective review of all the important aspects of the incident can be made. Local authorities review the USFA’s report while it is in draft. The USFA investigator or team is available to local authorities should they wish to request technical assistance for their own investigation.

This report and its recommendations were developed by USFA staff and by TriData Corporation, Arlington, Virginia, its staff and consultants, who are under contract to assist the Fire Administration in carrying out the Fire Reports Program.

The U.S. Fire Administration greatly appreciates the cooperation received from the Florida Highway Patrol; Collier County offices of the Sheriff, Emergency Medical Services, and Emergency Management; and the Golden Gate Fire Control and Rescue District.

For additional copies of this report write to the U.S. Fire Administration, 16825 South Seton Avenue, Emmitsburg, Maryland 21727. The report is available on the Administration’s Web site at <http://www.usfa.dhs.gov/>

Gasoline Tanker Incidents in Chicago, Illinois and Fairfax County, Virginia

Case Studies in Hazardous Materials Planning

Investigated by: Charles Jennings

This is Report 032 of the Major Fires Investigation Project conducted by TriData Corporation under contract EMW-88-C-2649 to the United States Fire Administration, Federal Emergency Management Agency.

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FEMA

Department of Homeland Security
United States Fire Administration
National Fire Data Center

U.S. Fire Administration

Mission Statement

As an entity of the Department of Homeland Security, the mission of the USFA is to reduce life and economic losses due to fire and related emergencies, through leadership, advocacy, coordination, and support. We serve the Nation independently, in coordination with other Federal agencies, and in partnership with fire protection and emergency service communities. With a commitment to excellence, we provide public education, training, technology, and data initiatives.



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Gasoline Tanker Incidents in Chicago, Illinois, and Fairfax County, Virginia (March 30, 1989 and May 29, 1989)

INTRODUCTION

This report summarizes two gasoline tanker incidents, one in Fairfax County, Virginia, involving a tanker overturned on a ramp between an interstate highway and a major commuter route, and the other in Chicago, which resulted in a fire in a residential neighborhood. They were selected for investigation because they demonstrate good planning that helped lead to successful outcomes.

The emergence of hazardous materials (Hazmat) incidents as a major area of concern for the fire service has found many departments scrambling to meet increasing training needs and to purchase equipment and supplies necessary for the safe handling of these incidents. While training in the hands-on techniques and skills required for response to such incidents is essential for safe operations, an equally important underlying aspect of Hazmat response is planning. A large commitment and a thorough assessment of a community's needs, resources, and facilities must be undertaken to support Hazmat response.

Fire departments must forge liaisons with diverse agencies such as transportation departments, public works, and police for concerns such as traffic management, scene control, responsibility, and, ultimately, liability for decisions made in Hazmat response.

Planning, a behind-the-scenes and unglamorous task, may be unappreciated for its essential nature in Hazmat response. It is hoped that these two examples will help stimulate fire service leaders and those considering starting a Hazmat response team to commit adequate resources to the planning mission.

Incident #1

Gasoline Tanker Overtums, Leaks on Ramp from Interstate Highway Fairfax County, Virginia

Investigated by: Charles Jennings

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OVERVIEW

At approximately 0328, Thursday, March 30, 1989, a fully loaded 8,800-gallon gasoline tanker overturned on an exit ramp from I-495, the Washington, DC, beltway. Approximately 150-180 gallons of gasoline leaked from the tanker's dome covers. The driver suffered minor injuries. Fairfax County Fire and Rescue Department units responded, stabilized the scene, contained the product, and supervised the off-loading operation. One major route to the beltway was partially closed for 12 hours; the beltway remained open throughout the incident. There were no additional injuries.

A group known as the Freeway Incident Management Team (FIMT) was activated and coordinated response among several agencies to minimize the disruption of traffic for the morning rush hour. The FIMT includes representatives of county and State police, the State highway department, and fire departments who respond to incidents that can be disruptive to the flow of traffic (see Appendix A). The FIMT agreement establishes responsibility for incident command and defines the duties of each organization for particular types of incidents. Traffic problems as a result of this incident were minimal thanks to the effectiveness of that coordination.

SUMMARY OF KEY ISSUES

Issues	Comments
Incident	8,800-gallon gasoline tanker overturned on ramp from I-495, the major commuter route for the Washington, DC metropolitan area. 150-180 gallons were released. No ignition occurred.
Incident Command	Well-developed Incident Command and Hazmat training and procedures were instrumental in successful outcome. Needed resources had been identified in planning for incidents of this type.
Traffic Management	FIMT mobilized and was successful in preventing significant traffic problems.
Casualties	Driver received minor injuries when tanker overturned. No other injuries resulted.
Time of Day	Accident occurred prior to morning rush hour, allowing diversion of traffic before flow patterns became established.
Environmental Impact	None.

BACKGROUND

The Fairfax County, Virginia, Fire and Rescue Department protect the 680,000 residents of Fairfax County, which is located west of Washington, DC. The department operates 31 engines, 12 truck, 7 rescue squads, 35 ambulances, 2 fire boats, a Hazmat response unit, and other equipment. The department protects 399 square miles from 31 stations with 1,002 career uniformed personnel and 450 active and certified volunteers. Its Chief, Warren Isman, is a Nationally-known authority of Hazmat response and has authored numerous publications on the subject.

The Hazmat response team, which cross-staffs an engine company, is run with five personnel around the clock. The Hazmat team makes about 380 responses per year. All Hazmat personnel are Level III certified. Fairfax County's Hazmat team went into service in October 1983.

Three of seven rescue squads in Fairfax County are designated as support units for the Hazmat team. (Three others are cave-in units, and the remaining squad is for standard duty.) The Hazmat support rescue squads are staffed with three Hazmat-qualified personnel and are equipped to handle minor spills and leaks.

A Hazmat response thus is handled by the Hazmat response unit and one of the rescue squads designated for Hazmat support. Other equipment dispatched includes two engines, a ladder, and an ambulance. For major incidents, additional Hazmat personnel can be obtained through the other Hazmat support squads or by recalling off-duty members.

Fairfax County makes a strong effort to recover costs associated with Hazmat incidents from the owners or other responsible parties. Costs recovered include overtime, damaged equipment, or supplies used at the incident. This is accomplished with the County's Attorney's office. (A copy of Fairfax County's cost recovery Standard Operating Procedures [SOP] is included in appendix E.)

THE INCIDENT

At approximately 0328 on Thursday, March 30, 1989, a fully loaded 8,800-gallon gasoline tanker overturned on an exit ramp from Interstate 495, the Capital Beltway, to Route 7 in Fairfax County, Virginia. (See Appendix B for police accident report.) The driver of the tanker received minor injuries in the crash but was able to remove himself from the vehicle. Approximately 150-180 gallons of

gasoline started to leak from the dome covers. The accident occurred on sloping property, as Route 7 crosses below Interstate 495 (see Appendix F). On notification at 0329, the Fairfax County Fire and Rescue Department dispatched a Hazmat assignment consisting of two engines, one ladder company, the Hazmat unit, a heavy rescue squad Hazmat support unit, an ambulance, a battalion chief, and a foam unit (see Appendix C). On arrival five minutes later the first due engine officer requested an additional foam unit and a battalion chief.

It was quickly ascertained that the driver of the vehicle had escaped and there was no immediate threat to life.

Following Fairfax County's SOP, the officer of the first arriving engine isolated the area and confirmed that the product involved was indeed gasoline (see Appendix D).

At 0352 the water supply was established and the Hazmat team arrived on the scene. At approximately 0410 the company that owned the tank truck was notified and their response team was requested.

Because the incident occurred on sloping terrain, firefighters first covered the nearest downhill storm sewer grate. A protective foam blanket was applied to the spill and the tanker was secured in its overturned position. Much of the leaking gasoline was absorbed into the soil, as the tanker was physically off the road. The foam blanket was maintained throughout the incident.

Because of the position of the tanker and the fact the dome covers were damaged, it was decided that the best way to remove the product would be by cutting a hole in the side of the tank (see Fairfax County Hazmat Response Team Manual, Appendix D).

The second tanker arrived at 0628. It was decided at that time that the off-loading operation would be delayed until after morning rush hour, due to proximity of the accident to the beltway. State police officers were positioned and standing by throughout the incident to close the Capital Beltway if the tanker did ignite.

At approximately 0933, the Incident Commander announced that drilling would start. Using an air-powered drill, contractor personnel drilled a three-inch diameter hole in the side of the tanker. Drilling was completed in five minutes. The off-loading process began shortly thereafter. The product from the overturned tanker was pumped into an adjacent tanker brought to the scene by the tanker owner. Because the pump was powered by the recovery tanker's engine, a hose stream was placed on its exhaust pipe to reduce the chance of igniting the spill. Off-loading was completed without incident at 1311. The tanker was up righted and the command post was broken down about 30 minutes later. Units started being released from this incident at 1350. The last units went in service at 1510.

INCIDENT COMMAND

Fairfax County uses the Incident Command System (ICS). This incident was commanded by Chief of the Department Warren Isman. Other ICS functions used in this incident were a public information officer, safety officer, and an aide, in addition to an operations section which consisted of a suppression officer and the emergency medical services (EMS) officer. The suppression operation consisted of three sectors: the west side of the incident, the east side, and the foam sector. The duty apparatus officer also responded to the incident. At one point he made repairs that were critical to the operation of one of the foam units. In addition to the apparatus already listed, an aid station,

a command unit, a lighting unit, and a canteen operated on this incident. The incident command chart is included in Appendix C.

Because of the location of the incident at the junction of two commuter routes and its potential duration, the FIMT was activated. Responding agencies formed a single command post, made arrangements for alternate routes, and prepared information for the media.

When decisions were made as to rerouting traffic for the morning rush hour, contacts were made with the media to ensure these were announced on morning radio and television shows. Each responding agency notified its dispatch center of the detour routes so that they could respond to inquiries from the media and the public. Chief Isman gave “live” television interviews during the incident. State police assigned officers to stand by to close I-495 if the tanker ignited. The highway department moved signs into place and lifted rules requiring a maximum number of vehicle occupants along a parallel highway. Fairfax County Police assisted with traffic control and conducted the accident investigation.

CONCLUSION

The multitude of considerations and agencies involved in a highway Hazmat response makes it imperative that high-level planning be done to coordinate response to these incidents. A system such as that used in Fairfax County was capable of marshalling resources and providing a degree of coordination that was well beyond a simple agreement to respond and operate at the fire department’s request. Under the FIMT, the senior fire department official is in charge of the incident. This clarifies many of the difficulties in working with agencies such as the highway department, who may be unsure of who to report to or whose orders to follow.

LESSONS LEARNED

1. The impetus for multi-agency planning must often come from the highest political levels.

Chief Isman decried the traffic management response to highway Hazmat incidents in an August 1985 television interview following a similar incident in Fairfax County. He stated, “It’s going to take a major spill to get the public to say stop.” Public outcry after a number of Hazmat incidents over several years led elected officials to call for the FIMT through the regional council of governments in 1988.

2. Agreements on jurisdictions and command should be worked out in advance.

The agreements in-place in Fairfax County and their planning prevented any undue delays in obtaining necessary equipment and communicating with other agencies. There was no quarreling with police or highway officials over who was in charge.

3. Even “routine” Hazmat incidents, because of their requirements for outside equipment and expertise, and their duration necessitate thorough planning.

Resources needed for handling highway Hazmat incidents should be identified in advance. Typical of Fairfax County’s planning is the use of the county school system to provide meals at emergency scenes. This arrangement provides hot or cold meals with a one and one-half hour response time.

4. Avoiding undue traffic congestion is a key aspect of incident management at highway incidents.

Delays in traffic can slow the arrival of equipment and personnel responding to an incident. They also waste thousands of staff hours in local businesses, waste fuel, and aggravate the public. Arrangements should be made for prompt notification of responsible police agencies, and agreements should be formalized ahead of time for determining authority for road closings and traffic diversion, particularly where an incident could potentially affect interchanges remote from the incident.

5. Having a Hazmat team does not mean that your team will handle every situation without outside help.

Fairfax County maintains a list of contractors who specialize in the removal and recovery of Hazmat. In this incident, fire department personnel secured the scene and supervised contractor personnel who actually drilled the hole in the tanker and pumped the gasoline out. Chief Isman states that his team performs hands-on work of this type only as a “last resort.”

APPENDICES

- A. Northern Virginia Freeway Incident Management Team Overview
- B. Fairfax County Police Accident Report
- C. ICS Tactical Worksheet Showing Units Operating on the Accident
- D. Hazardous Materials Response Team Manual, Fairfax County, Virginia (excerpts) pp. 10-20, 26, 27
- E. Fairfax County SOP on Hazmat Clean-up Cost Recovery
- F. Photographs

APPENDIX A

NORTHERN VIRGINIA FREEWAY INCIDENT MANAGEMENT TEAM OVERVIEW

1. GENERAL INFORMATION

1.1 BACKGROUND

This manual is a product of the Northern Virginia Freeway Management Team. The Freeway Management Team is a group comprised of a number of local and State transportation and emergency service agencies studying ways in which the day-to-day operation of the freeway system in the Northern Virginia area can be improved. The freeway system includes I-66 (to the western border of Prince William County), I-95 (to the southern border of Prince William County) I-495 on the Virginia side of the Potomac River, and the Dulles Toll Road. Figure 1-1 presents a map of the major roadways in Northern Virginia.

The purpose of this manual is to document an operational plan and certain traffic management procedures for use by agency personnel at the scene of accidents, breakdowns, spills and hazardous materials incidents that occur on the freeway. These include both the major and minor incidents. The manual is intended to inform agency personnel (especially those who are new to the area or to their responsibilities) about interagency policies and procedures so that good coordination and communication can be maintained during freeway incident situations and other emergencies. It is the hope of the Freeway Management Team that these procedures will both help to prevent further loss of life and property and help to minimize the impact of freeway incidents on the flow of traffic in the Northern Virginia area.

Although building new roadways and freeways is important, we also need to manage the transportation facilities we already have. Millions of dollars have been invested in the highway system. To obtain the most out of taxpayer investment in that system, attention needs to be given to keeping the lanes open to carry traffic as much as possible. This is the essence of freeway management. The policies and procedures outlined in this manual build on the past and current efforts in traffic management by Northern Virginia's transportation and emergency service agencies.

This effort was initiated by the Virginia Department of Transportation (VDOT) in the spring of 1988 in response to the continually worsening traffic congestion on the freeway systems in Northern Virginia. Staff from various police, highway and fire departments have been meeting to discuss ideas for improved freeway management. This manual is one of the results of those discussions.

1.2 WHAT IS FREEWAY MANAGEMENT?

Freeway management looks at the highway system as a resource which can be used either efficiently or inefficiently. It is an activity which should be applied to any freeway, whether new or old, to assure that the taxpayer receives the full benefit of the many millions of dollars invested in the highway infrastructure.

When accidents occur on the freeway, a major part of its capacity is lost. Engineers have estimated that 50 to 60 percent of the delay on freeways is due to accidents, spills and breakdowns blocking traffic. Freeway management is aimed at reducing the impact of these incidents and applying other strategies to help the freeway system operate more efficiently, while at the same time preserving life and property. A major theme of freeway management is “keep the traffic moving.” When blockages occur, they need to be cleared quickly to keep ordinary delays from becoming inordinately long.

Statistics have indicated that on a typical heavily traveled 6-lane urban freeway one can expect some 400 lane-blocking incidents (accidents, spills or breakdowns) each year for each 10 miles of freeway. When these incidents occur, they not only delay traffic, but create additional safety hazards as drivers unexpectedly approach slow or stopped traffic. Unfortunately, incident occurrences on the freeway system cannot be completely prevented. However, their impact on traffic can be controlled through *incident management*.

When traffic flow is heavy, even small savings in incident clearance time can mean a great deal in reducing traffic congestion. A typical freeway lane can carry 2,000 vehicles per hour. An incident blocking one lane of a three-lane freeway reduces flow capacity by approximately 50 percent, from almost 6,000 vehicles per hour to only 3,000 per hour. If the freeway was already running at capacity before the incident occurred, in just 20 minutes the traffic backup could extend 2-1/2 miles or more. It is likely that traffic congestion resulting from such an incident would continue for the remainder of the peak period, even if the incident was cleared after 20 minutes. Figure 1-2 illustrates how quickly congestion can build. When a major incident occurs, many hours of time and gallons of gasoline are wasted, and motorists experience the frustrations of being late for work, missing appointments, and just sitting in traffic.

Figure 1-3 indicates some of the costs of traffic incidents. These costs are more significant than most people realize. The figure illustrates what happens if an incident is allowed to block one lane of traffic on a three-lane freeway for certain periods of time. It assumes that the freeway is running at capacity when the incident occurs. If the incident lasts just 20 minutes, the amount of delay caused to motorists would be over 1,200 vehicle-hours. If the delays are valued at \$4.00 per hour (a conservative value compared to what is used in most engineering studies), the cost of the incident due to delay alone would total about \$5,000.

In addition to preserving life and property, one of the goals of incident management is to minimize the impact of incidents on traffic congestion and to reduce the probability of secondary incidents. Once an incident does occur, its impact on traffic can be minimized by:

- Reducing the time for incident detection and verification
- Reducing response time (the time for response personnel and equipment to arrive at the scene)
- Exercising proper on-scene management of personnel and traffic

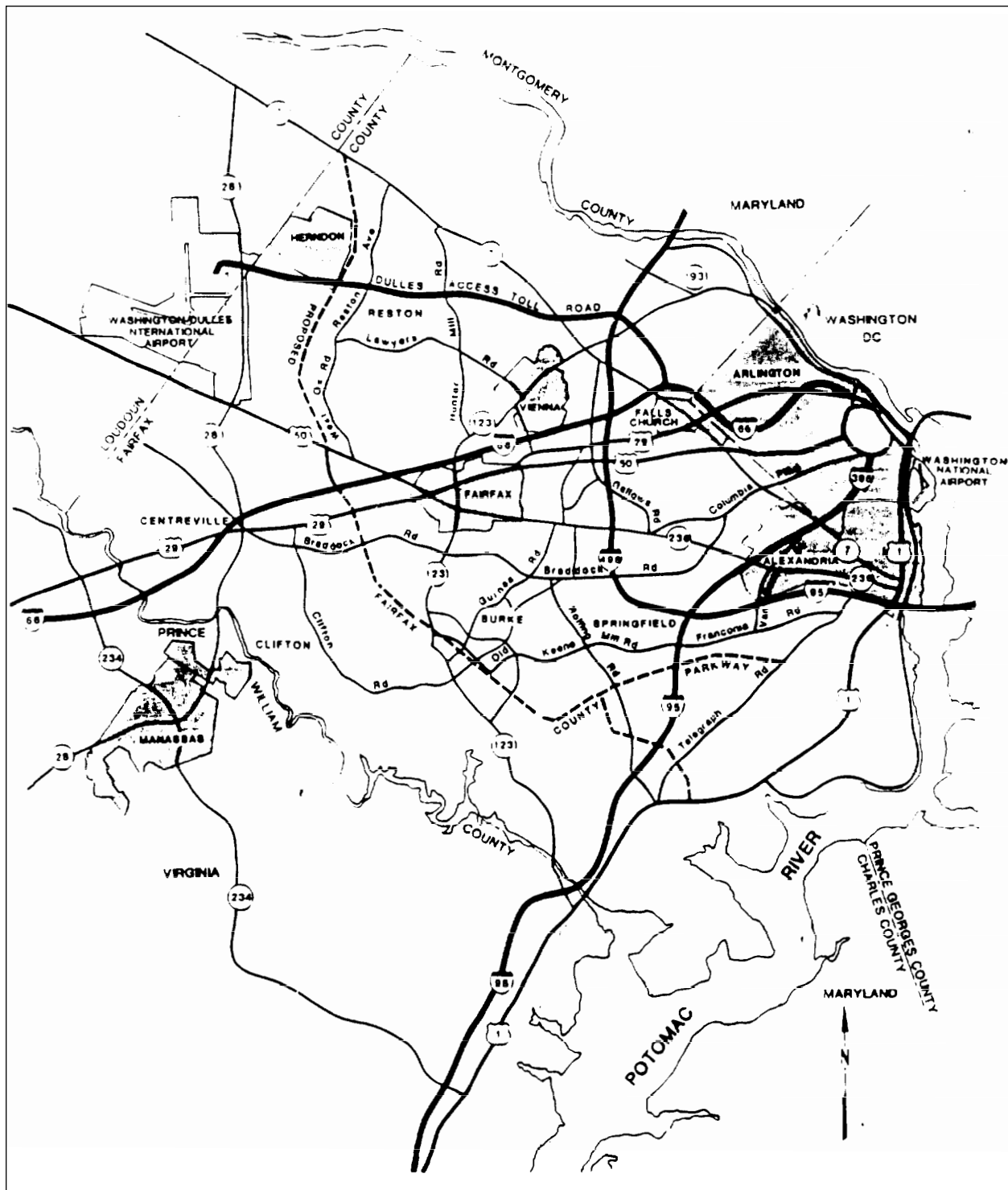


Figure 1-1. Northern Virginia Road Network

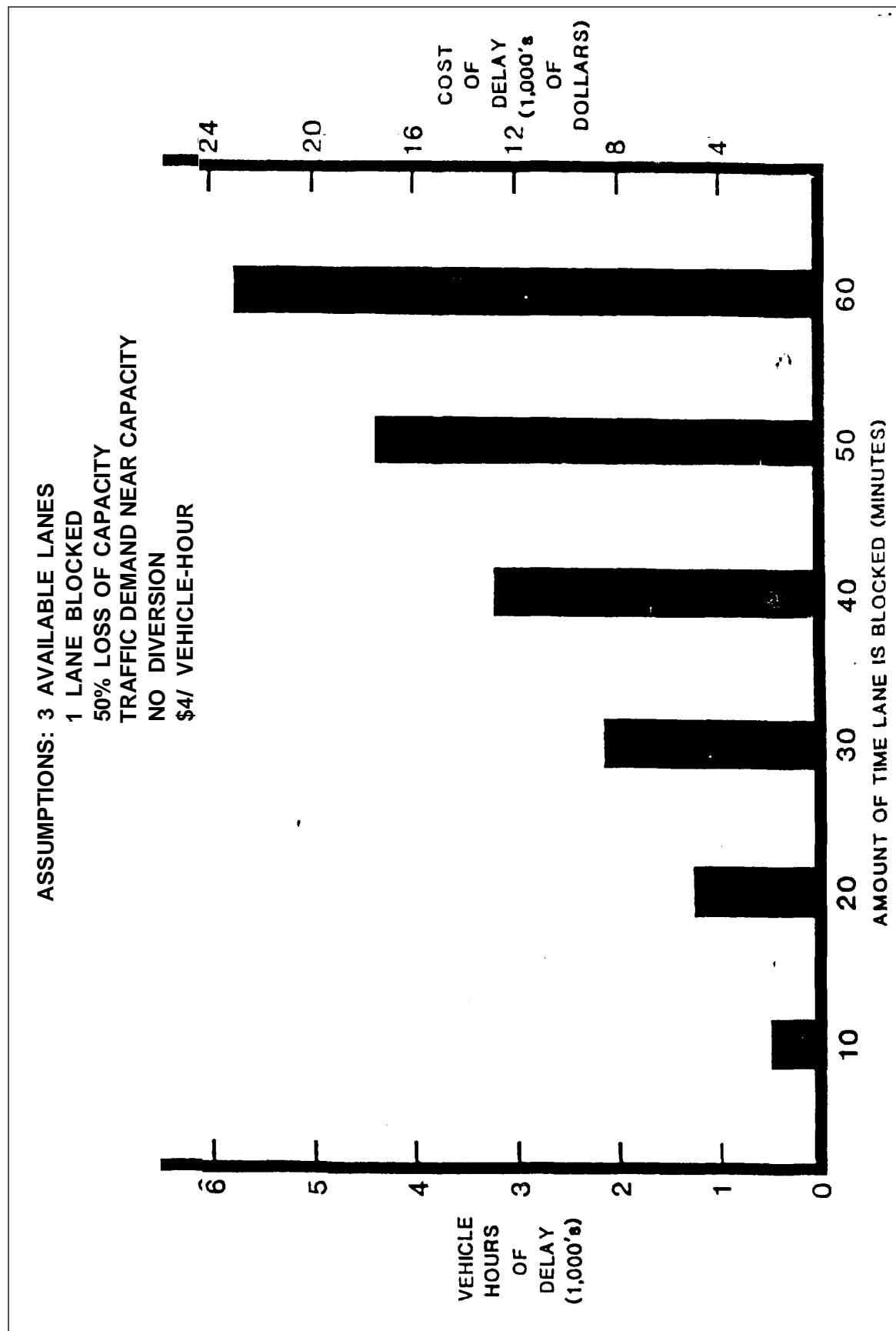


Figure 1-2. Effect of a Rush-Hour Lane Blockage on Vehicle Delay

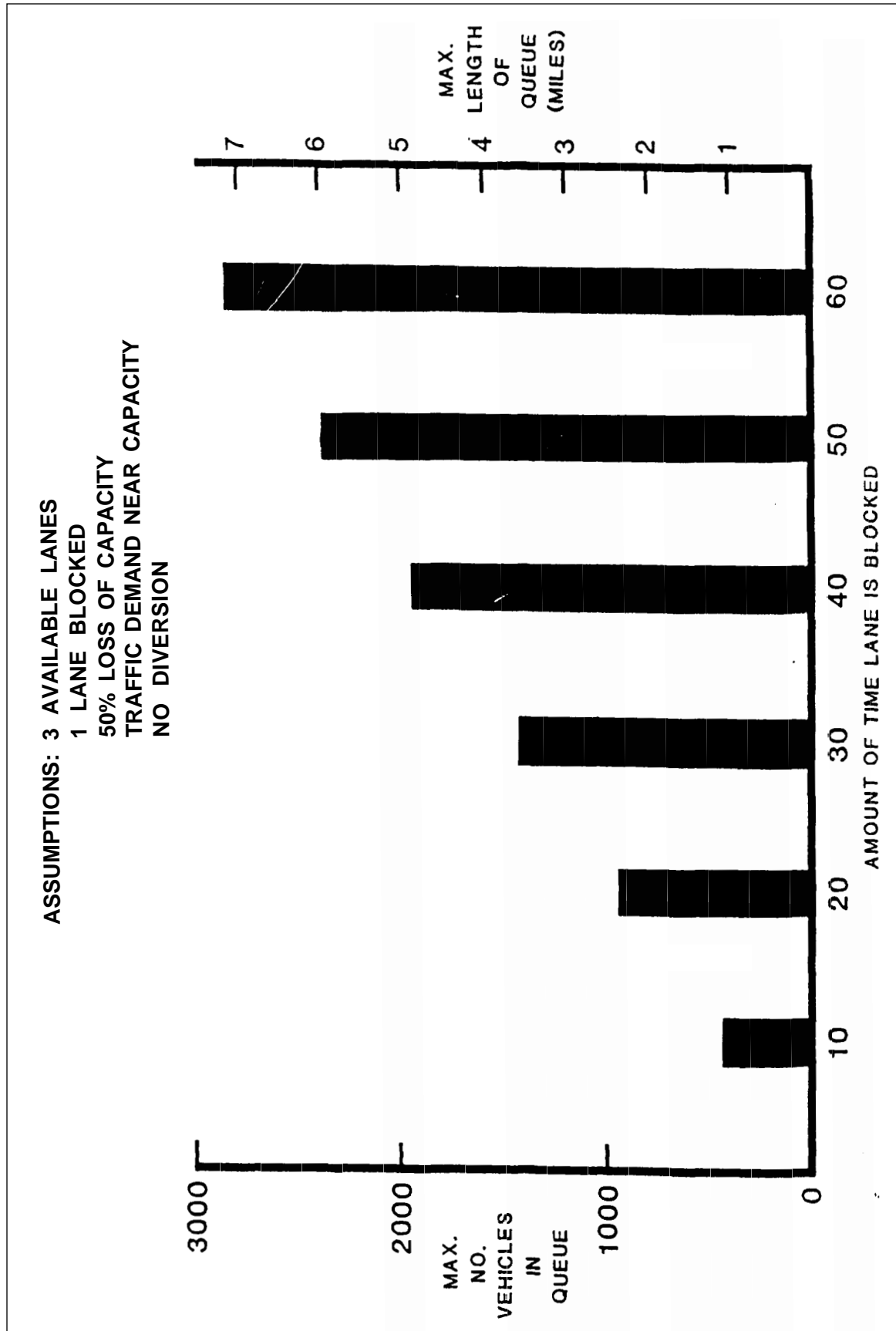


Figure 1-3. Effect of a Rush-Hour Lane Blockage on Maximum Queue Length

- Reducing the clearance time (the time required for the incident to be removed from the roadway)
- Providing timely, accurate information to the public

Restoring conditions back to normal as soon as practical makes everyone's job easier, and improves the public's perception of each of the agencies involved. Much of this manual is devoted to methods for speeding the restoration of freeway traffic flow while giving due priority to preserving life, preventing injury, and protecting property.

2. INTERAGENCY RESPONSIBILITIES AND AGREEMENTS

2.1 GENERAL AGENCY RESPONSIBILITIES FOR FREEWAY INCIDENTS

Incidents range from minor stalls and fender benders to major accidents with many agencies involved. The question often arises "Who is in charge?" The real question, however, is not "Who is in charge?" but "Who is in charge of what?". Managing an incident and related traffic problems is a team effort and each agency present has a part to play. Although the responsibilities may vary from one incident to the next, listed below are the normal practices for agencies in the Northern Virginia area.

General Responsibilities

Virginia State Police – The State Police are the responsible agency for responding to traffic incidents on the interstate system. However, they can turn over authority to the respective county or city police departments depending on the circumstances in each situation. The ranking VSP officer is in charge of the incident scene, unless a fire or hazardous material spill is involved, in which case the ranking fire official is in charge. As stated earlier, each agency has their own areas of expertise, and responsibilities need to be shared on the basis of that expertise.

Virginia Department of Transportation – Provides traffic management support, when needed, at an incident scene. The police often rely on VDOT for equipment and personnel for incident clean-up, special signing, and related activities. Usually, this is needed only for the major incidents. The VDOT safety service patrol, consisting of roving pickup trucks on I-95, I-395, and I-495, provides emergency help for stranded motorists, as well as assistance at the scenes of incidents, where necessary. VDOT also operates the I-395/I-66 Traffic Management System (TMS). More information about both these services is provided in Section 3.

City and County Police – The city and county police departments may respond to incidents on the interstate system, depending on the proximity of their officers to the incident, availability of State police personnel and the nature of the incident. For incidents occurring on State roads, VDOT may be asked to assist. For incidents on other roads, the city or county public works and transportation departments would be relied upon for support.

Fire and Rescue Agencies – The determination of the need for fire and rescue services is normally made by the ranking police officer at the scene, unless fire or rescue has been summoned to the scene already. Fire trucks are often requested as a precautionary measure even though there is no fire at the time. For incidents involving fire or hazardous materials, the fire agency is in charge of activities at the scene.

City and County Public Works and Transportation Agencies – These agencies are not normally involved in incidents on State roadways, but may provide traffic management support at incidents on city or county roadways or where traffic seriously spills over from incidents on State roadways. They may also be involved in signal operations to accommodate detours from the interstate system.

Agencies in Maryland and the District of Columbia – Coordination is maintained between Virginia, Maryland, and the District on incidents at the borders between jurisdictions.

Media Representatives – The media, especially commercial radio stations, play an important role in disseminating traffic information to the public. While there is no formal coordinating mechanism between local or State agencies and the media, the local police agencies relay emergency traffic information to the stations that report on traffic. Likewise, incidents spotted by radio traffic reporters are normally relayed to the appropriate agency. Public relations staff from each agency normally coordinate the dissemination of information to the media, particularly during major incidents.

2.2 OVERVIEW OF THE NORTHERN VIRGINIA FREEWAY OPERATIONAL PLAN

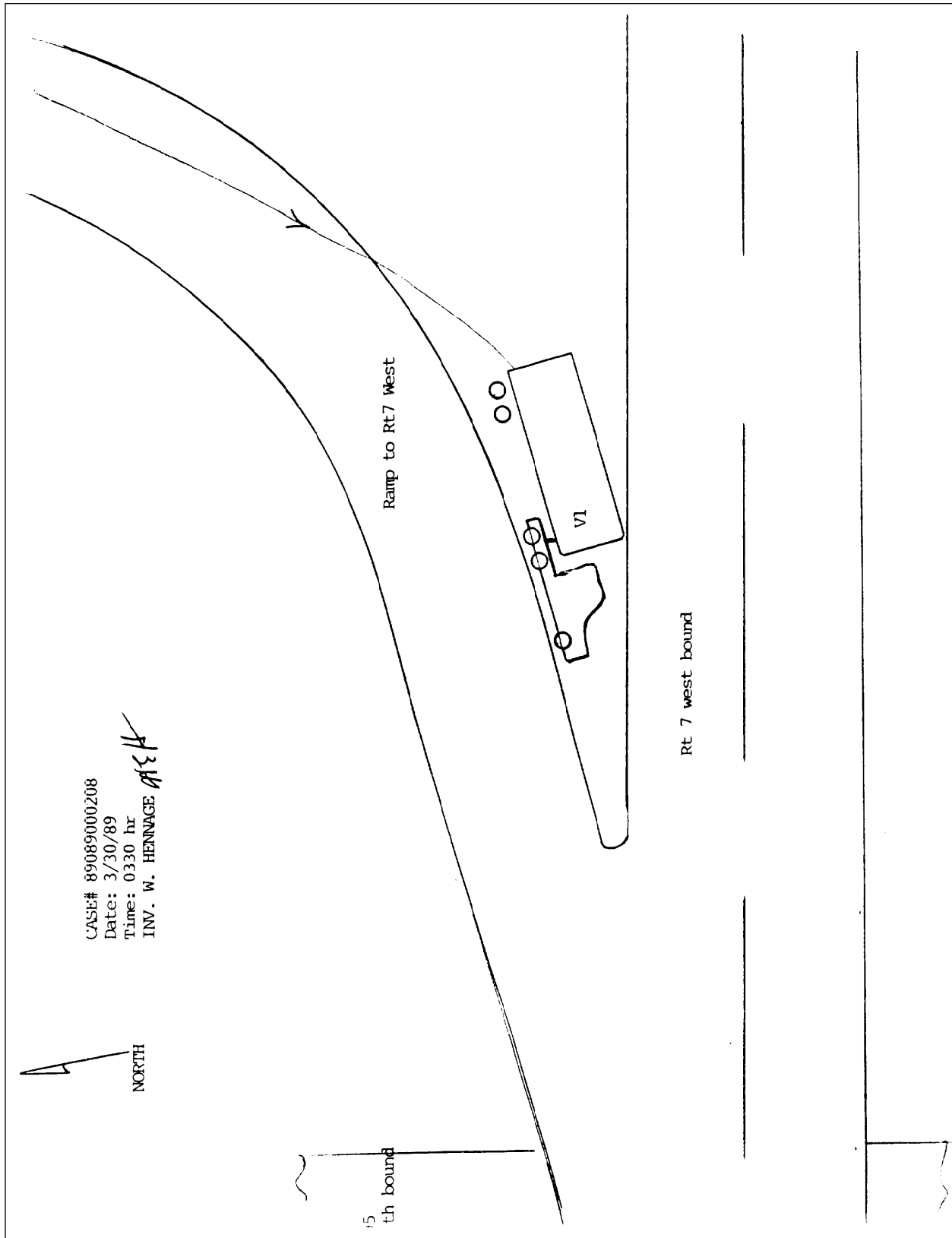
The operating plan for Northern Virginia freeways can be summed up simply as “keep the traffic moving.” As stated earlier, a large portion of the congestion and delay on the freeway system is due to incident occurrences, including accidents, spills, and breakdowns. The operating plan is oriented toward detecting, responding to and clearing incidents as rapidly as possible to minimize their impacts.

The operating plan has many facets and cannot be summarized neatly into a simple diagram or flow chart. It consists of agencies working together, doing their respective part of mitigating the congestion-causing effects of incidents and planning to address other operational problems that occur. It means carrying out the policies and procedures set forth in this Manual. A key component of the plan is the Northern Virginia District Operational Plan for Establishment of an Incident Command and Control Center, presented in Section 2.3. The plan should be improved and expanded over time as new and better ideas and procedures are put forward.


APPENDIX B

ACCIDENT DATE: 3/30/89 TIME: 0329K COUNTY OF ACCIDENT: Fairfax		MILE POST NUMB: ROAD CROSSING TO NO. 150 FEET: OFFICIAL USE ONLY:	
CITY OR TOWN: ROUTE NO. OR STREET NAME AT SCENE: I 495 Exit Ramp	LANDMARKS AT SCENE: None	NUMBER OF VEHICLES: 1	17 3
X AT INTERSECTION WITH OR _____ MILES _____ FEET _____ N _____ S _____ E _____ W _____ OF Rt. 7 Leesburg Pike		18 X	
VEHICLE NO. 1 DRIVER'S NAME (LAST, FIRST, MIDDLE): ADDRESS (STREET & NO.): CITY: STATE: ZIP CODE:		VEHICLE NO. 2 (OR PEDESTRIAN) DRIVER'S NAME (LAST, FIRST, MIDDLE): ADDRESS (STREET & NO.): CITY: STATE: ZIP CODE:	
19 1		20 X	
21 8		22 X	
23 X		24 X	
25 X		26 1	
27 X		28 1	
29 X		30 X	
31 1		32 X	
33 X		34 3	
35 X		36 X	
37 X		38 X	
SEE ATTACHED DIAGRAM			
V-1 was northbound on I-495 and exited onto the ramp for westbound Rt. 7. The truck entered the curve at too great a speed and rolled over.			
Fail to Keep Vehicle Under Control V:1			
NAMES OF INJURED - IF DECEASED, INCLUDE DATE OF DEATH			
McNealy, Allen R., Jr.			
TROOPER/OFFICER'S NAME: Inv. W. Hennage BADGE/ID NUMBER: 1454 DEPARTMENT NAME AND CODE NUMBER: FFX CTY P.D. 029 REVIEWING OFFICER: DATE REPORT FILED:			
Case #89089000208 338 713.01			

Appendix B (continued)



APPENDIX C

FAIRFAX COUNTY FIRE AND RESCUE DEPARTMENT INCIDENT COMMAND SYSTEM TACTICAL WORKSHEET									
		ALARM DATA DATE: 3/29/89 TIME: 0329 ADDRESS: AT 495 E RT 7 OCCUPANCY: NATURE Gasoline Tanker							
INCIDENT COMMANDER ISMAN		PRO SAT TRICARICO		SAFETY CAPT JARELL		UNION		ALARM DATA 1 2 3 4 SPECIALS	
OPERATIONS SECTION A.R.C. STEINBERG		RESEARCH & PLANNING SECTION		RESOURCE SUPPORT SECTION		COMMAND POSITION TIME LOCATION STATUS REPORT OPERATIONS STAGING SUPPRESSION EMS CONTROL RESEARCH SECTION RESOURCE SECTION		STAGING ASSIGNMENT #1 TIME IN TIME OUT ASSIGNMENT #2 TIME IN TIME OUT TYP SECTOR/CHIEF	
SUPPRESSION OFFICER B.C. MARTIN		STAGING OFFICER		EMERGENCY MEDICAL OFFICER E.M.S. 3		TECHNICAL ADVISORY EQUIPMENT/PLANNING DUTY APP OFFICER		COMMUNICATIONS WELFARE	
SECTOR A B.C. 02 Water Supp. RT 7 Suppression		SECTOR B Chief 13 Banks E-13 RT 7		SECTOR C B.C. 43 Millard Form 2 Form 3 Form 26		SECTOR D		SECTOR E	
OFFICER LOCATION TASK RADIO CHANNEL STATUS REPORT TIMES UNITS TIME IN TIME OUT		OFFICER LOCATION TASK RADIO CHANNEL STATUS REPORT TIMES UNITS TIME IN TIME OUT		OFFICER LOCATION TASK RADIO CHANNEL STATUS REPORT TIMES UNITS TIME IN TIME OUT		OFFICER LOCATION TASK RADIO CHANNEL STATUS REPORT TIMES UNITS TIME IN TIME OUT		OFFICER LOCATION TASK RADIO CHANNEL STATUS REPORT TIMES UNITS TIME IN TIME OUT	
E-13 3 E-18 3 E-29 3 H.M. 34 R.D. 01 3		E-76 3 E-30 3		Form 2 Form 3 Form 26					
RESOURCES POLICE FUEL PUBLIC WORKS HEAVY EQUIPMENT SUPPORT WATER SUPPLY AID STATION AMPLE PERSONNEL STAGING SPECIAL UNITS TCU—COMMAND UNIT LIGHT & AIR UNIT HAZ MAT SQUAD CAME IN UNIT HELICOPTER NOTIFICATIONS FM INVESTIGATOR SAFETY OFFICER E.E. INSPECTOR ELECTRICAL INSPECTOR HEALTH INSPECTOR UTILITIES GAS COMPANY POWER COMPANY TELEPHONE COMPANY WATER COMPANY WELFARE DENTIST RED CROSS CHAPLAIN DUTY APP OFFICER									

Fuel Tank..Enearte 0620
 Clean-up Crew on Scene 0525
 Eastern Motion Lines Rep. Arrived 05
 8000 gallon Gasoline

APPENDIX D

Hazardous Materials Response Team Manual Fairfax County, Virginia

II. OPERATIONS

A. Duties and Responsibilities for First Arriving Companies on a Hazardous Materials Incident

All Fire and Rescue Department members are members of the Hazardous Materials Response Team, in that it is the duty and responsibility of each department member to conserve life and property and minimize damage to the environment. The successful management of a hazardous materials incident depends on a team effort of all divisions of the Fire and Rescue Department. The following procedures are to be followed by first arriving units at a dispatched or discovered hazardous materials incident:

When a full hazardous materials incident response is dispatched, E.O.C. will provide all pertinent information received to the first due company, Battalion Chief and Hazardous Materials 34.

Hazardous materials incident response will be initiated by E.O.C. on any incident involving any hazardous material, placarded vehicle or location, or known target hazard. This is to include pesticides, PCBs, biohazards, large natural gas or propane leaks or fires.

(Large scale incidents will be any natural gas incident greater than single domestic service and propane installation larger than 100 lb. cylinder.)

As soon as arriving units discover that an incident involves hazardous materials, they will immediately notify E.O.C. and the responding battalion chief. A full hazardous materials incident response will then be initiated.

Units will approach the scene from the upwind and uphill side if at all possible. Units will avoid driving past the incident or locations in smoke, visible vapor cloud or locations near visible or potential liquid run-off.

Units will locate not closer than 300 feet from the point of the incident if nothing is visible.

Only the first arriving units (usually one function in addition to the first arriving engine) will approach the scene directly unless needed for immediate life saving rescue operations.

The first arriving units will establish a control zone or "Hot" area past which only those members wearing full and proper protective gear will be allowed entry.

The scene will be controlled and stabilized as soon as possible and command established.

All personnel at or approaching the hot zone will wear and use all elements of the protective clothing ensemble including SCBA on positive pressure mode.

Number of personnel operating in or near the hot zone will be kept to a minimum.

Entry will be restricted and those leaving the scene should be detained for medical treatment and monitoring, providing information and possible decontamination.

Except for immediate life-saving rescue, no major fire suppression or control operation will be initiated until the materials involved and its hazards are identified.

The first arriving units will designate a staging area at which incoming apparatus will assemble. A staging officer, (2nd due engine, unless otherwise stated) will coordinate further apparatus movements.

First arriving units will obtain as much information as possible from as many sources as possible (driver, plant managers, witnesses, etc.).

Attempts will be made to identify the product by using labels, placards, shipping papers or whatever other means are available. This will be done only if it is possible to do so without undue risk to Fire and Rescue crews.

All information concerning the materials and situation will be relayed to responding Hazardous Materials Team units.

Hazardous Materials Response Team units will relay initial action considerations to Incident Commander based on information received and after consulting on-board references.

In a spill, leak or other product release, units will use tools or resources at hand to control spill or shut off leak if product properties and/or situation dictates.

Evacuation may be initiated by the Incident Commander depending on the situation.

Explosimeter readings will be taken as soon as possible.

B. Incident Operations

On incidents involving hazardous materials or when the Hazardous Materials unit is dispatched, the Incident Commander and the senior Hazardous Materials Response Team officer will work in close coordination, cooperation and communication.

As soon as possible, the Incident Commander will give the alternate senior Hazardous Materials Response Team officer a brief situation report on an alternate radio channel. As soon as the Hazardous Materials unit (or squad) arrives on the scene, the senior Hazardous Materials Response Team officer will report to the Incident Commander and the Incident Commander will brief the senior Hazardous Materials Response Team officer of the situation. They will discuss the situation, potentials, variable, etc., and mutually decide on the proper course of action. The Incident Commander (senior fire officer overall) retains command and responsibility for the entire incident.

As in any function unit, the Hazardous Materials Response Team personnel will follow the chain of their functional command up to the senior Hazardous Materials Response Team officer, who will answer to the Incident Commander.

Conversely, requests, orders, tasks, etc., from the Incident Commander for Hazardous Materials Response Team personnel will follow chain of command from Incident Commander to Hazardous Materials Response Team Officer in charge.

1. **Managing the Hazardous Materials Incident**

Based on the situation and information, an incident will be managed by the following guidelines:

- a. The initial officer in charge with the approval of Hazardous Materials Response Team and battalion chief, may decide no further service or response is necessary.
- b. Further evaluation on scene by Hazardous Materials Response Team units may be needed.
- c. The incident needs the service of the Hazardous Materials Response Team in the form of a 3 stage response.

STAGE I – Incident is handled by Fairfax County Fire and Rescue Units only.

Level 1 – Incident is handled by first non-hazardous materials responders.

Level 2 – Incident requires service of Hazardous Materials Rescue Squad.

Level 3 – Incident requires full response of Fairfax County Fire and Rescue Department Hazardous Materials Response Team.

STAGE II – Incident requires services of other county agencies.

STAGE III – Incident requires multi-jurisdictional and agency response.

The Fairfax County Hazardous Materials Response Team utilizes an Incident Command System for the systematic management of a hazardous materials incident.

The Hazardous Materials Response Team officer in charge, in conjunction with the Incident Commander, will use any or all parts of the Incident Command System as the incident indicates.

Incident Command System

The Incident Command System assists the Hazardous Materials Response Team to safely and efficiently manage a Hazardous Materials incident by establishing incident functions and duties and responsibilities of those functions.

The incident functions or positions will be assigned based on incident situation needs and priorities balanced with availability of trained personnel. The list of functions in general but not binding priority is:

- Hazardous Materials Response Team O.I.C.
- Research
- Safety Sectors
- Decontamination or Warm Zone Sector
- Entry Team Leader
- Incident Recorder (Aide)

- EMS Liaison
- Press/P.I.O Liaison

Incident Command System function personnel will be appropriately identified on the scene.

2. Restricted Entry

As soon in operation as possible, areas of restricted entry (zones) will be established. These zones shall be termed:

- a. Area of maximum hazard (exclusion or Hot)
- b. Decontamination area (Warm)
- c. Clean area (Cold) (restricted to public access)

The first arriving units will establish an initial hot zone. The Hazardous Materials Response Team officer in charge and the safety sector officer* will establish restricted entry areas. Boundaries of zones may be adjusted as conditions dictate. The following guidelines will apply:

Topography, weather conditions, building layout, properties and state of product involved and other varying factors will influence boundaries of restricted entry areas.

Only those properties protected will be allowed into the hot zone and warm zone AT ANY TIME.

Persons exiting the hot zone must pass through controlled access points and undergo proper decontamination in warm zone and medical evaluation.

Zone boundaries and controlled access points will be clearly marked.

All command posts, canteens, triage, staging areas, etc., must be located out of the hot or warm zones. Press areas will be located out of cold zone.

Boundaries of hot/warm zone will be monitored by explosimeters, radiation detectors and air sampling devices.

All entries into warm and hot zones will be recorded and monitored by the Safety Sector.

Zone boundaries will be marked by traffic cones or other suitable markers. The hot zone will be marked by red banner guard and the warm zone by yellow banner guard.

3. General Safety Procedures

The safe outcome of all operations is the goal of all members of the Fire and Rescue department. In order to insure the safety of all operating personnel at a hazardous materials incident, the following procedures will be followed:

*Safety Sector Officer will be site specific.

Unsafe acts, potentially dangerous situation, improper protective clothing, or a failure to follow established procedures will be brought to the members' attention immediately. This does not relieve the officer of responsibility of his/her crew, but does place safety awareness and responsibility on every member of the HMRT.

Levels of protective clothing, operational priorities and tactics, decontamination and many other operations will depend on the nature and state of the product involved. Therefore, product identification is a prime objective in any Hazardous Materials Incident.

Until product identification is positively completed, the maximum level of protective clothing available will be utilized.

Controlled access areas (zones) will be set up as soon as possible.

A safety sector officer will be appointed as soon as possible whose duties are outlined in the HMRT Incident Command System.

Explosimeter readings will be taken around the complete perimeter, especially downhill and downwind.

A protective hoseline and a 15 lb. dry chemical extinguisher will be in position, charged, staffed by at least Level 1 personnel in the warm/hot entry point whenever entry or approach is made into hot zone.

The entry team will utilize 15 lb. dry chemical extinguishers and protective hoselines with them.

Stationary explosimeters will be placed to monitor boundaries of the hot/warm zone.

Avoid contamination at all time (walking or stationing self in vapor cloud, liquid runoff, dust, smoke and other products, leaning on or kneeling in contaminated objects/areas, or positioning too close to the affected areas).

Consideration will be given to covering spilled product with foam blanket to suppress vapors or use of emulsifying agent to break down the product.

Any product transfer or handling will be preceded by proper grounding and bonding of the containers.

Sustained foam and/or water supply will be provided.

Any and all entries will be done in pairs of properly clad workers with an equal number of equally clad members in back-up mode.

All situations will be treated as worst case potential scenarios.

Apparatus positioning will be considered.

Avoid driving past incident area or through vapor cloud, visible spill or flow of product.

In general, the safest position is uphill and upwind from the incident scene.

Consider backing apparatus the final approach to the scene to allow quick exit if needed.

**THESE SAFETY PROCEDURES WILL BE USED IN CONJUNCTION WITH
PROCEDURES FOR HAZARD CLASS AND SITUATIONS**

4. General Considerations for Managing a Hazardous Materials Incident

Life safety of all parties is the #1 priority. Lives will not be risked to save property.

Immediate Considerations:

- What is the potential of the situation?
- Is aggressive action called for?
- What form of aggressive action?
- Is withdrawal of personnel and evacuation of area called for?
- How extensive evacuation?
- Safe identification of product is of high priority.
- Follow guidelines in HMRT Procedures, DOT Guidebook, and other references (at least 3 others).
- If no I.D. number is available, use General Hazard Class Guidelines.
- Consider product properties and its effects on the following:
 - Persons exposed
 - Extinguishing agents
 - Protective clothing requirements
 - Compatibility/reactivity
 - Containment methods
 - Decontamination
 - Effect on personal and commercial property and business loss
- Consider secondary product properties other than placard/label.
- Notify/consult industry/government response groups.
- State Water Control Board will be notified in case of any spill of any type exceeding 50-gallons or if critical threat to natural water system.

5. Specific Action Guides for Hazard Class and Situations

SITUATIONS

General Considerations for all Chemicals and Situations

These guidelines should be used in conjunction with the Department of Transportation (DOT) guidebook and other references.

- Full protective clothing as available shall be worn and used
- Isolate area, deny entry, and set up control zones
- Check evacuation charts
- Explosimeter readings will be taken
- Consult at least three sources of reference in addition to DOT Guidebook
- Avoid contamination
- Multiple hazards of chemicals will be considered
- Eliminate ignition sources (do not rely on water streams to prevent ignition)
- Standby hoselines, dry chemical extinguishers, and sustained water supply will be provided
- Patch or control leaks if can be done without undue risk
- Compatibility with patching materials, protective clothing, and absorbents will be referenced
- If product is transferred or handled, bonding and grounding will be done to eliminate static electrical discharge

ROLL-OVER OF TANK VEHICLES

- Control and isolate area.
- Check areas with explosimeters immediately; then regularly.
- Completely research product before attempting to patch, perform off-loading or otherwise modify leak or situation.
- Ground vehicle.
- Stabilize vehicle (further brace if needed).
- Disconnect air system.
- Disable electrical system using batter switch.
- Perform containment (dikes, basins, etc.).
- If not leaking, anticipate and prepare for product release at any time.
- Contact shipper; utilize their recovery mechanism.
- Prepare to assist and/or provide standby for shipper's contractor.

General Rules to be Observed


- Loaded vehicles will not be up righted until off-loaded.
- Regular turnout gear should not be used if exposed to splash or contact with product (use nonpermeable over garment).
- If gear is saturated, remove it immediately.

- Consider foam for vapor suppression, personnel should not disturb foam blanket.
- Treat spill or roll-over as if it were on fire.
- Use full turnout gear including SCBA.

Preferred Order of Product Removal (pump-off)

- Regular discharge lines
- Internal valves
- Vapor recovery line
- Dome boot
- Air drill through tank skin
- Consider use of dome clamp on leaking cone lids (do not over tighten)

APPENDIX E

FAIRFAX COUNTY FIRE AND RESCUE DEPARTMENT STANDARD OPERATING PROCEDURE		
	SUBJECT HAZARDOUS MATERIALS CLEAN-UP COST RECOVERY	S.O.P. 5.1.04 PAGE 1 OF 3
	CATEGORY Suppression	SUBCATEGORY Operations
	APPROVED BY: <i>[Signature]</i> DATE: April 2, 1986	
	CHIEF, FIRE AND RESCUE DEPARTMENT	
	FORMS REQUIRED: FSA-180, Hazardous Materials Report	
<p>PURPOSE:</p> <p>To establish a procedure and provide guidelines for accurately reporting materials, equipment, staff hours, and other miscellaneous resources used in mitigating hazardous materials incidents. This information is to be used primarily in cost recovery efforts and to develop a data base useful in the budgetary and planning processes of the Fire and Rescue Department.</p> <p>I. PROCEDURE</p> <p>At the completion of an incident involving the Hazardous Materials Response Team (HMRT), the senior Haz Mat officer on the scene shall be responsible for completing the HAZARDOUS MATERIALS REPORT, FSA-180. An addendum shall be attached for the purpose of reporting Fire and Rescue Department overtime staff utilized and any other outside resources that may have been commandeered or contracted for during the course of the incident.</p> <p>A. Completing FSA-180</p> <ol style="list-style-type: none"> 1. Provide the information required at the top of the report: <u>Haz Mat Units Responding</u>, <u>Type of Incident</u>, <u>Incident Number</u>, <u>Date</u>, <u>Time</u> and <u>Location of Incident</u>. 2. Under the heading <u>Material Used</u>, list the description and quantity of items such as absorbents, disposable gloves, emulsifiers, neutralizers, disposable protective wear, and any other warehoused materials used during the incident. 		

Appendix E (Continued)

SUBJECT HAZARDOUS MATERIALS CLEAN-UP COST RECOVERY		S.O.P. 5.1.04
CATEGORY Suppression	SUBCATEGORY Operations	PAGE 2 OF 3

3. Under the heading Material/Supplies Contaminated, list the description and quantity of any tools, large patching devices, protective clothing ensembles (including breathing apparatus, encapsulated suits, turnout, etc.), metering devices, and motorized fire equipment that were contaminated, destroyed, or left at the scene of the incident.
 4. The information required under the heading Involved Parties shall be provided by the senior Haz Mat officer, since he has greater access to it through the research process that is carried out during the incident.
 - a. The CARRIER shall be the transporter (truck line, railroad, etc.) involved in the incident.
 - b. The SUPPLIER shall be the manufacturer or owner (DUPONT, UNION CARBIDE, etc.) of the product involved in the incident. In an incident at fixed facility (manufacturing plant sewage treatment plant, etc.) the SUPPLIER shall be the organization that owned or operated the facility (TRANS CIRCUIT, PAR GAS, etc.).
 5. Under the heading Additional Information, it is important to note any corporate contacts, insurance companies or any other information the officer feels is pertinent to cost recovery.
- B. Completing the Addendum
- The officer filling out the FSA-180 shall also be responsible for completing the addendum. This shall be done in the regular department memorandum format.
1. Under a heading Fire and Rescue Department Staff Utilized, the officer shall list the name, rank, pay grade and step of every department employee on overtime involved with the incident. This shall include all suppression,

Appendix E (Continued)

SUBJECT HAZARDOUS MATERIALS CLEAN-UP COST RECOVERY		S.O.P. 5.1.04
CATEGORY Suppression	SUBCATEGORY Operations	PAGE 3 OF 3

Haz Mat, EMS and other staff personnel that took part. The amount of overtime hours each individual was committed to the incident shall be calculated and noted next to his/her name.

2. Under a heading Miscellaneous Resources Utilized, the staff officer shall account for any other resources used that were not previously listed. This might include any private contractors called in for clean-up and decontamination who would be expected to bill Fairfax County for their services. Materials and equipment that were commandeered during the course of an incident shall also be recorded here.

C. Routing the Report

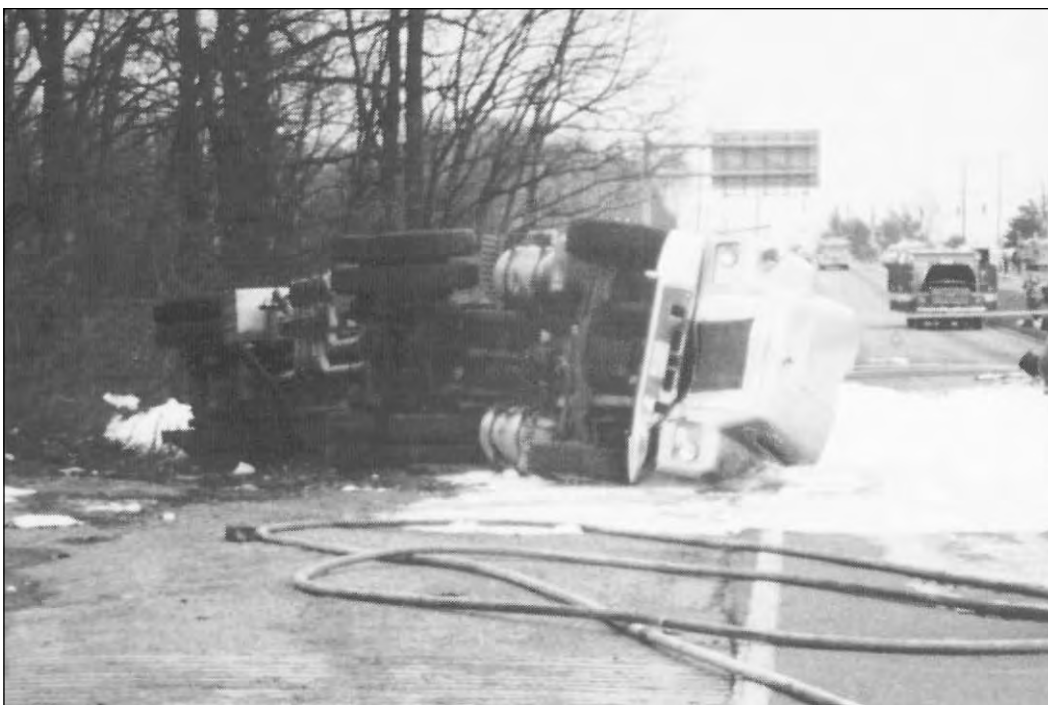
Once the report is complete, copies shall be sent to the Deputy Chief for Operations, the duty assistant chief and to Fire Station 34. It shall be the responsibility of the assistant chief to ensure that the report is forwarded to the Resource Management Section for cost recovery processing.

APPENDIX F

Photographs



1. Overturned tanker showing dome covers.



2. Tanker, sprawled on roadway; Hazmat unit is in background.



3. Aerial view of accident scene. I-495 across center of photograph, Route 7 runs vertical in center of photograph.



4. Second tanker pumping fuel from the overturned tanker.



5. Contractor personnel complete off-loading operation. Firefighters atop tank are at position of hole that was drilled. Note water spray directed at exhaust pipe of the recovery tanker.

Incident #2

Heavy Streams, Foam Attack Save Exposures in Chicago Gasoline Tanker Fire

Investigated by: Charles Jennings

Contacts: Deputy Fire Commissioner Patrick W. Kehoe
Deputy District Chief Frank Moriarty
District Chief John Sterling
Chicago Fire Department
R. J. Quinn Fire Academy
558 West De Koven Street
Chicago, Illinois 60607
(312) 744-4737

OVERVIEW

On May 29, 1989, Memorial Day, the Chicago Fire Department responded to a fire involving a 8,800-gallon gasoline tanker. The gasoline tanker had struck a dumpster, which resulted in a puncture and spill fire that engulfed the tanker. The incident occurred in a residential neighborhood in proximity to several exposures including a three-story apartment building, a two-story building under renovation, and elevated railroad tracks. First arriving companies put numerous heavy streams into service. Foam was used as a holding action on the spill portion of the fire until adequate resources allowed a well coordinated and executed foam attack on the tanker. The tanker was extinguished without loss of any exposed buildings and, though it was engulfed in flames, with minimal damage to the tanker itself. The tractor section of the tank truck was driven away from the scene undamaged and approximately 5,000-gallons of gasoline were recovered from the burned tank trailer.

There were no injuries as a result of this incident and dollar loss beyond the tanker itself was estimated at \$6,000. This incident demonstrated a combination of strong incident command good firefighting skills, and effective planning. Also highlighted in this incident was the use of engine companies that had pre-piped foam capabilities and on-board foam tanks.

SUMMARY OF KEY ISSUES

Issues	Comments
Incident	8,800-gallon gasoline tanker struck a construction dumpster, started leaking, and ignited immediately. Flaming product flowed into sewer and down residential street.
Damage	Minor damage to exterior of exposure. Tank trailer and car parked in spill fire received moderate damage.
Incident Command	Strong Incident Command System (ICS) marshaled three alarms of resources, and coordinated a holding action until adequate foam supplies were on-scene to effect extinguishment.
Traffic	Light vehicle traffic due to the holiday reduced the chance of injuries to civilians and permitted unobstructed access by firefighters.
Casualties	None
Initial Tactics	Excellent tactical decision-making by first-due company officers kept fire from extending to the exposure. The skillful deployment of numerous heavy streams, including ladder pipes helped prevent a general failure of the tank trailer, and prevented further damage.
Environmental Impact	None.

BACKGROUND

The Chicago Fire Department, like many departments across the United States, relies on a decentralized foam deployment strategy. Many engine companies carry the standard four to five 5-gallon containers of foam along with a foam eductor and nozzle combination. A recent acquisition has been self-educting nozzle sets capable of flowing up to 350-gallons per minute. These nozzles are used on master stream devices and can also be hand held on a large line. They eliminate the need for a separate eductor and simplify foam operations.

Chicago makes an effort to deploy recently-purchased engines with pre-piped foam capabilities throughout the city, with priority given to areas adjacent to interstate highways and to companies that would be second-due to fires occurring at Chicago airports.

Of Chicago's 102 engine companies, 38 have foam capabilities ranging from possession of a self-educting nozzle to presence of an on-board foam tank and built-in proportioning. One engine company is equipped with up to 150 gallons in an on-board foam tank and the hazardous materials (Hazmat) team also carries 500 gallons of foam and a foam nozzle. Chicago firefighters regularly receive training in the use of and the theories of foam and water fire attack operations. Fixed hazards, such as tank foams, have on-site foam stockpiles.

Hazmat response in Chicago is handled by members of the Hazardous Incident Team (HIT). Five firefighters and an officer respond with a dedicated two-piece company. The first piece (511) is similar in appearance to a heavy rescue squad and is equipped with the standard complement of identification and mitigation equipment. The second piece (511A) is a standard inner city freight truck converted to haul extra quantities of foam, absorbent, lime, and other bulky items. Interestingly, several HIT members are certified divers. Chicago reports that this combination has been very successful in coping with waterfront incidents. Diving operations are coordinated with members of Chicago's Snorkel Squads, which also perform all heavy and special rescue-related functions in addition to fire suppression duties.

In addition, Chicago has an incident command system (ICS). Supporting the incident commander in Hazmat situations is the Hazmat team coordinator. This chief-level assignment oversees operation of the HIT, and is responsible for much of the planning for response to Hazmat incidents. In addition to the Hazmat coordinator there is also a chief officer responsible for emergency management planning. Chicago's high level commitment of personnel to these functions has contributed to their handling of complex incidents within the framework of the ICS. The department regularly critiques operations and makes improvements to their standard operating procedures (SOP) accordingly.

THE INCIDENT

A light rain fell on Memorial Day, May 29, 1989, as a fully-loaded gasoline tanker drove along Fullerton Street. The tanker swerved to avoid a car and slid into a construction dumpster which was against the curb. The impact ripped the tanker trailer about three feet from the rear and just below the midline. Ignition occurred immediately and flames shot up as the spilling gasoline burned and flowed onto the street around the tanker. The time was 0740. (See Appendix G.)

The Chicago Fire Department received the alarm by telephone and dispatched a "still" assignment of two engines, two trucks, and a battalion chief. Because a working fire was anticipated by dispatchers, a Snorkel Squad was also dispatched according to standard procedure. On arrival at 0743 Engine 43 observed flames involving the rear three-fifths of the trailer with flames 30 to 40 feet high and burning gasoline flowing along the curbline. Plywood boards covering the first-floor windows of a two-story building (exposure #1) located about 20 feet from the tanker were smoking from exposure to radiant heat. Burning gasoline had engulfed a car and was approaching elevated railroad tracks carrying Chicago Transit trains. A three-story apartment building across the street was fully occupied.

The officer on Engine 43 called for a "box alarm," which brought the total number of apparatus responding to four engines, three trucks, a snorkel squad, an ambulance, and two battalion chiefs.

Engine 43 positioned their apparatus so that their deck pipe could be played on both the exposure building and the tank truck. They also pulled a 1 3/4-inch handline which they used on the running spill fire.

The second district chief arrived at 0746 and requested a second alarm. As other units arrived, they placed heavy streams and numerous handlines into service to protect the exposure building and cool the tank trailer where it was being exposed to fire.

Most units coming into the scene were directed to place streams and handlines in-service. At the same time, a search was conducted of the primary exposure building, a one-story store with a smaller, second floor section housing an apartment. The first floor of this exposure was being renovated and the first floor windows were covered with plywood.

The second exposure, located approximately 50 feet from the tanker, was a three-story apartment building. Occupants of this building had already initiated an evacuation upon fire department arrival. Firefighters on the box alarm had to enter this building to evacuate remaining occupants. Truck companies were split between ladder pipe operations, assisting in movement of foam containers, evacuation of civilians, and assisting engine companies with ladders and staff power.

A third alarm was requested at 0811 by the deputy fire commissioner, with a special call for two engines equipped with 40-gallon foam tanks. Approximately 14 streams were in use at the height of the operation.

Since the tank was punctured about halfway up its height, gasoline poured out of the tanker throughout the incident. Companies placed heavy streams on the exposure building and the tank itself. The spill fire extended over the course of the incident due to the continued addition of fresh product and the runoff from the hose streams being used. Because of the topography and the dynamic nature of the spill, the spill ultimately extended about half a block east in Fullerton Avenue and around the corner to Sacramento Street to just beyond the far edge of exposure #1.

Companies equipped with foam controlled the spill fire. Because the spill encircled several vehicles, the foam blanket broke at some point and handlines were used on a fog pattern to protect exposed vehicles.

Once adequate foam was on site, the Incident Commander prepared for extinguishment. Companies had stretched lines to the roof and second floor of exposure #1 and were using them to absorb the heat coming from the fire. On orders from the Incident Commander, selected hoselines were chosen for the extinguishment operation. Personnel from third alarm companies without foam capabilities primarily operated to carry foam containers to supply foam streams selected for extinguishment. When each foam line had an adequate supply of concentrate, water streams were shut down or diverted and the foam attack began. The actual extinguishment effort took about three minutes. The fire was declared under control at 0948.

The foam blanket was maintained while the tanker was off-loaded through normal means using the intact piping below the tank trailer. The aluminum over the three sections of the tank trailer had burned away in the fire. The rear tires on the side of the tanker that was ripped open were also burned, but the other set of rear tires remained intact.

INCIDENT COMMAND

Under the direction of the Incident Commander, sectors were set up on all sides of the burning tanker. Each sector was commanded by a battalion chief. In addition, a command post was established in the gas station parking lot across the street from the incident. Other positions used in the ICS included a plans chief and a public information officer. Fire Commissioner Raymond Orozco spoke on “live” television broadcasts from the scene.

In addition to engine and truck companies, the Hazmat unit, a snorkel squad, and a mobile command post vehicle operated at the incident. A dry chemical unit was called to the scene to stand by but was not used.

DAMAGE AND ENVIRONMENTAL IMPACT

Total damage was placed at 91,000 dollars of which 85,000 dollars was to the tank trailer, 5,000 dollars to the exterior of the two-story exposure building, and 1,000 dollars to a parked car. Fire did not extend to the interior of the exposure building. There was no environmental impact from this incident. Approximately 5,000 gallons of gasoline were recovered. The tractor section of the tanker was driven from the scene. There were no injuries to civilians or firefighters.

Sewers in the area were checked for explosive vapors, but none were found. As a precaution, fire hydrants in the area were opened to flush the sewers.

ANALYSIS

This incident demonstrates graphically the results that can be achieved when planning, incident command, and firefighter skills combine. The Chicago Fire Department had in-place a planned foam capability. A well developed ICS with adequate inputs for Hazmat expertise allowed the Incident Commander to effectively control and command three alarms worth of apparatus operating in a fairly confined area. Finally, the regular training of firefighters in the use of foam and well-established procedures for handling basic Hazmat incidents such as this one made the positive outcome possible.

The potential for greater damage was evident in this incident. The fact that damage was mainly confined to the tank trailer itself and some vehicles that were parked inside the spill fire is extraordinary and not just good luck. Damage associated with gasoline tanker fires in habitated areas is usually much more severe, but the capability of the Chicago Fire Department to muster resources rapidly and to deploy hose streams effectively and aggressively was instrumental in minimizing damage.

LESSONS LEARNED

1. Training in the use of master stream devices is critical.

One of the keys to the success of this incident was the rapid and effective deployment of numerous master streams to protect exposure and cool the fire-exposed portions of the tank trailer, particularly the undercarriage. In many fire departments, training in master stream devices is often neglected, usually because they are not used very often. A less effective attack might have allowed the tank to fail, which would have resulted in the probable loss of the primary exposure building and widespread damage.

2. Placement of apparatus should anticipate likely progress of the incident.

The expanding spill fire had the potential to threaten apparatus operating at the incident. At one point, a handline was used to protect an exposed unit parked near the curb on Sacramento Street. Although the unit assumed an excellent position to attack the tanker and protect exposures, hindsight revealed that the unit was in the path of the spill fire when it extended around the corner. A balance must be struck between mounting an aggressive attack in an urban neighborhood and writing off exposures in the name of absolute security of operating apparatus.

3. ICS are essential.

The Chicago Fire Department's ICS was key to the control of personnel and mustering of foam supplies. The excellent coordination of the switch from the water to the foam attack highlights the effectiveness of the system and the discipline of the firefighters.

4. Training in the use of foam pays off.

The intelligent use of foam on the spill fire and the coordination with hose streams demonstrated an understanding of foam operations on the part of rank and file firefighters. This effective use of foam conserved concentrate for the extinguishment operation and the disciplined use of hoselines permitted the foam to do its job.

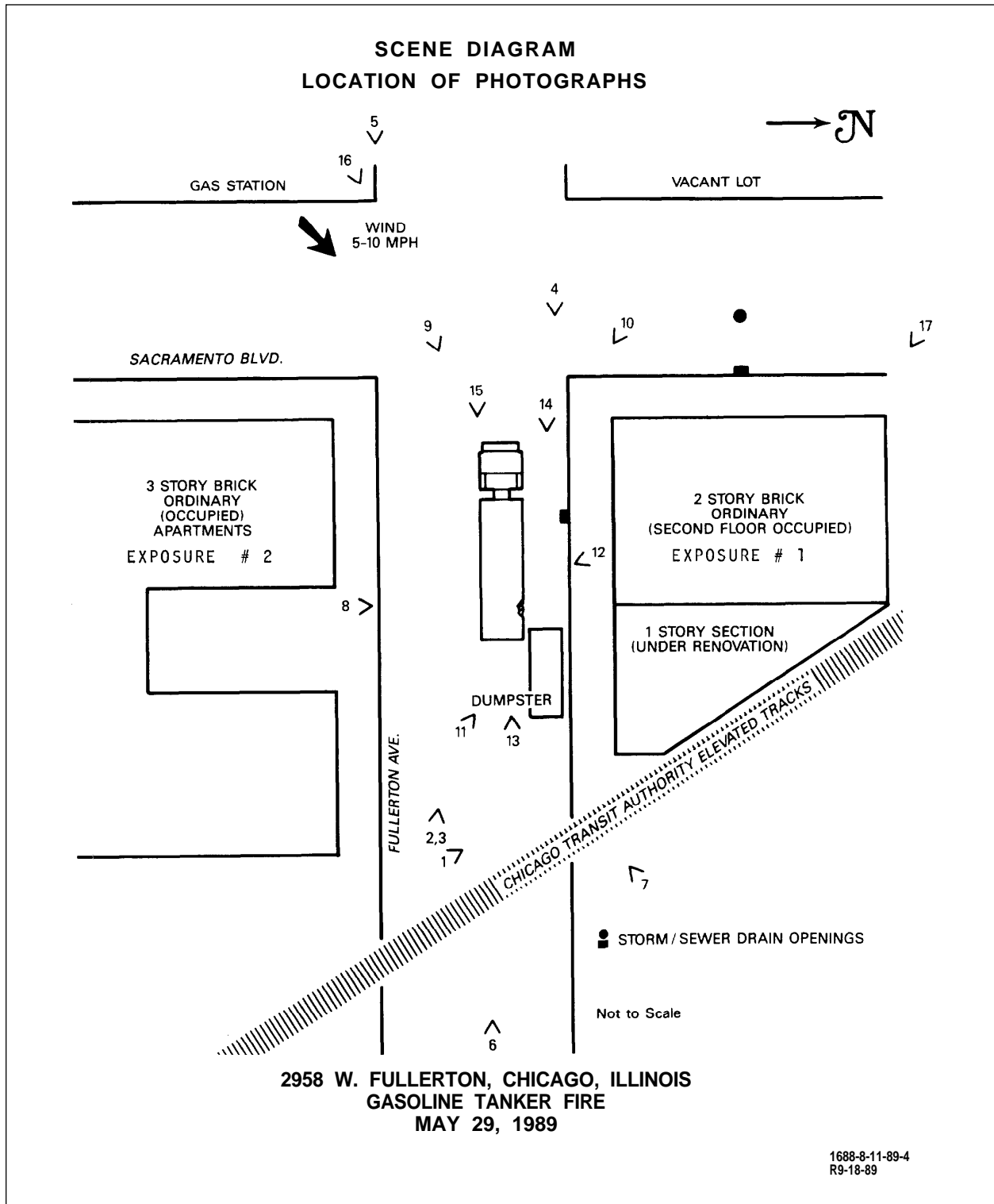
CONCLUSION

The Chicago and Fairfax County Fire Departments demonstrated in the two Hazmat incidents described above the favorable results possible when effective planning, incident command, and fire-fighting skill come together.

APPENDICES

- G. Diagram of Fire Scene, Shows Location of Photographs
- H. Chicago Fire Department Consolidated Incident Report
- I. Chicago Fire Department *Guidelines and Procedures for Hazardous Materials Incidents*
- J. Inventory of 5-1-1, Chicago's Hazmat Response Team primary vehicle
- K. Chicago Fire Department Hazardous Incident Team Activity Report
- L. Photographs (1-15 by Chicago Fire Department, 16-18 by author)

APPENDIX G



APPENDIX H

DATE 5-29-89 DISTRICT 2 ALARM 3-11 BOX 6148

INC. # 235006 PRIMARY ADDRESS 2958 W. Fullerton

SECONDARY ADDRESS _____

TYPE OF INCIDENT

- Non Hi-Rise ☐
High Rise ☐
Hazardous ☒
E.M.S. ☐
Plan ☐

FS/R

REFERRAL SENT TO

- F.P.B. ☐
O.F.I. ☐
D.I.S. ☐

CONSOLIDATED FIRE REPORT



CFD-31.105

APPROVED

D.C. E. J. O'Brien

DIST. 2

Appendix H (Continued)

REPORTING SYSTEM														
A	10	FDID	INCIDENT NO.	EXP	MO.	DAY	YEAR	DAY OF WEEK	5 <input type="checkbox"/> Thursday	ALARM TIME	ARRIVAL TIME	BACK SERVICE		
		BITIND	16 245010600015	48	89	1	0	Sunday	3 <input type="checkbox"/> Tuesday	2 01240	01243	11330		
B		11 <input checked="" type="checkbox"/> Structure fire	29 <input type="checkbox"/> Overpressure rupture	44 <input type="checkbox"/> Power line down	54 <input type="checkbox"/> Animal Rescue	65 <input type="checkbox"/> Steam gas								
		12 <input checked="" type="checkbox"/> Vehicle fire	32 <input type="checkbox"/> Emergency Medical call	45 <input type="checkbox"/> Arcing electric equipment	55 <input type="checkbox"/> Assist Police	66 <input type="checkbox"/> mistaken for smoke								
		13 <input type="checkbox"/> Brush, grass, leaves	33 <input type="checkbox"/> Locked-in trapped	46 <input type="checkbox"/> Aircraft standby	56 <input type="checkbox"/> Unauthorized burning	71 <input type="checkbox"/> Malicious false								
		14 <input type="checkbox"/> Trash, Rubbish	34 <input type="checkbox"/> Search	47 <input type="checkbox"/> Chemical spill	57 <input type="checkbox"/> Bomb Scare	72 <input type="checkbox"/> Alarm malfunction								
		15 <input type="checkbox"/> Explosion, No after fire	35 <input type="checkbox"/> Exinction	48 <input type="checkbox"/> Hazardous condition	58 <input type="checkbox"/> Other service calls	73 <input type="checkbox"/> Unintentional false								
		16 <input type="checkbox"/> Outside spill with fire	36 <input type="checkbox"/> Rescue-Not classified	49 <input type="checkbox"/> Water removal	59 <input type="checkbox"/> Smoke scare	74 <input type="checkbox"/> Unclassified								
		17 <input type="checkbox"/> Other fires not classified	41 <input type="checkbox"/> Spill, leak-No fire	53 <input type="checkbox"/> Smoke removal	63 <input type="checkbox"/> Controlled burn	99 <input type="checkbox"/> Other								
C		ACTION TAKEN												
		1 <input checked="" type="checkbox"/> Extinguishment	5 <input type="checkbox"/> Stand by	9 <input type="checkbox"/> Not classified										
		2 <input type="checkbox"/> Rescue or Assistance	6 <input type="checkbox"/> Salvage	0 <input type="checkbox"/> Undetermined										
		3 <input type="checkbox"/> Investigation only	7 <input type="checkbox"/> Ambulance											
		4 <input type="checkbox"/> Remove Hazard												
D		FIXED PROPERTY USE (Occupancy)												
		STREET 1912												
E		IGNITION FACTOR												
		ACCIDENT 171												
F		CORRECT ADDRESS (Up to maximum of 21 characters)												
		2958 W. FULLERTON												
G		OCCUPANT NAME (LAST, FIRST, MI)												
		KANEY TRAILS, INC												
H		TELEPHONE												
		ROOM or APT.												
I		OWNER NAME (LAST, FIRST, MI)												
		Same												
J		ADDRESS												
		TELEPHONE												
K		METHOD OF ALARM												
		1 <input type="checkbox"/> Telephone direct	4 <input type="checkbox"/> Radio	8 <input type="checkbox"/> Voice signal municipal alarm signal	Engine Co	SHIFT	NO. ALARMS							
		2 <input type="checkbox"/> Municipal alarm system	5 <input type="checkbox"/> Verbal	9 <input type="checkbox"/> Not classified above	Still Dist									
		3 <input type="checkbox"/> Private alarm system	6 <input type="checkbox"/> No alarm recd	0 <input type="checkbox"/> Undetermined or not reported										
		7 <input type="checkbox"/> Tie-line (911)												
L		NO FIRE SERVICE PERSONNEL RESPONDED												
		1150												
M		NO ENGINES RESPONDED												
		112												
N		NO AERIAL APPARATUS RESPONDED												
		119												
O		NO OTHER VEHICLES RESPONDED												
		1120												
P		NUMBER OF INJURIES												
		FIRE SERVICE 110 OTHER 110												
Q		NUMBER OF FATALITIES												
		FIRE SERVICE 110 OTHER 110												
R		COMPLEX												
		STREET 1916												
S		MOBILE PROPERTY TYPE (Complete Line S)												
		GAS. TANKER 125												
T		AREA OF FIRE ORIGIN												
		TRAILER 182												
U		EQUIPMENT INVOLVED IN IGNITION (Complete Line T)												
		D NA 198												
V		FORM OF HEAT IGNITION												
		SPARKS 151												
W		TYPE OF MATERIAL IGNITED												
		GASOLINE 123												
X		FORM OF MATERIAL IGNITED												
		FULL 165												
Y		METHOD OF EXTINGUISHMENT												
		1 <input type="checkbox"/> Self extinguished	2 <input type="checkbox"/> Make shift aids	5 <input type="checkbox"/> Pre-connect hose/tank only	8 <input checked="" type="checkbox"/> Master stream device									
		3 <input type="checkbox"/> Portable extinguisher	6 <input type="checkbox"/> Pre-connect hose/hydrant draft standpipe	9 <input type="checkbox"/> Not classified above										
		4 <input type="checkbox"/> Automatic ext. system	7 <input type="checkbox"/> Hand-laid hose/hydrant draft standpipe	0 <input type="checkbox"/> Undetermined or not reported										
Z		LEVEL OF FIRE ORIGIN												
		1 <input checked="" type="checkbox"/> Grade level to 9 ft	6 <input type="checkbox"/> Over 70 feet											
		2 <input type="checkbox"/> 10 to 19 feet	7 <input type="checkbox"/> Objects in flight											
		3 <input type="checkbox"/> 20 to 29 feet	8 <input type="checkbox"/> Below ground level											
		4 <input type="checkbox"/> 30 to 49 feet	9 <input type="checkbox"/> Not classified above											
		5 <input type="checkbox"/> 50 to 70 feet	0 <input type="checkbox"/> Undetermined											
AA		ESTIMATED TOTAL DOLLAR LOSS												
		111,185,000												
AB		NFIRS 1 LAYOUT 4												
AC		DISCLAIMER: No representation is made, intended, or implied as to the validity or accuracy of information herein.												
AD		Number of Stories												
		1 <input type="checkbox"/> 1 story	4 <input type="checkbox"/> 5 to 6 stories	7 <input type="checkbox"/> 25 to 49 stories										
		2 <input type="checkbox"/> 2 story	5 <input type="checkbox"/> 7 to 12 stories	8 <input type="checkbox"/> 50 stories or more										
		3 <input type="checkbox"/> 3 to 4 stories	6 <input type="checkbox"/> 13 to 24 stories	0 <input type="checkbox"/> Number of Stories undetermined or not reported										
AE		CONSTRUCTION TYPE												
		1 <input type="checkbox"/> Fire resistive	6 <input type="checkbox"/> Unprotected ordinary											
		2 <input type="checkbox"/> Heavy timber	7 <input type="checkbox"/> Protected wood frame											
		3 <input type="checkbox"/> Protected noncombustible	8 <input type="checkbox"/> Unprotected wood frame											
		4 <input type="checkbox"/> Unprotected noncombustible	9 <input type="checkbox"/> Not classified above											
		5 <input type="checkbox"/> Protected ordinary	0 <input type="checkbox"/> Undetermined or not reported											
AF		EXTENT OF DAMAGE												
		1 <input type="checkbox"/> Confined to the object of origin	1 <input type="checkbox"/> Flame	1 <input type="checkbox"/> Smoke										
		2 <input type="checkbox"/> Confined to part of room or area of origin	2 <input type="checkbox"/> 1	2 <input type="checkbox"/> 2										
		3 <input type="checkbox"/> Confined to room of origin	3 <input type="checkbox"/> 3	3 <input type="checkbox"/> 3										
		4 <input type="checkbox"/> Confined to the fire-rated comp. of origin	4 <input type="checkbox"/> 4	4 <input type="checkbox"/> 4										
		5 <input type="checkbox"/> Confined to floor of origin	5 <input type="checkbox"/> 5	5 <input type="checkbox"/> 5										
		6 <input type="checkbox"/> Confined to structure of origin	6 <input type="checkbox"/> 6	6 <input type="checkbox"/> 6										
		7 <input type="checkbox"/> Extended beyond structure of origin	7 <input type="checkbox"/> 7	7 <input type="checkbox"/> 7										
		9 <input type="checkbox"/> No damage of this type (N/A)	9 <input type="checkbox"/> 9	9 <input type="checkbox"/> 9										
AG		DETECTOR PERFORMANCE												
		1 <input type="checkbox"/> Det in room or space of fire origin - oper												
		2 <input type="checkbox"/> Det not in rm or space of fire origin - oper												
		3 <input type="checkbox"/> Det in rm or space of origin - no oper												
		4 <input type="checkbox"/> Det not in rm or space of origin - no oper												
		5 <input type="checkbox"/> Det not in rm or space of fire origin but fire too small to oper												
		9 <input type="checkbox"/> Not classified above												
		0 <input type="checkbox"/> Undetermined or not reported												
		8 <input type="checkbox"/> No detector's present (N/A)												
AH		SPRINKLER PERFORMANCE												
		1 <input type="checkbox"/> Equipment operated												
		2 <input type="checkbox"/> Equipment should have operated - did not												
		3 <input type="checkbox"/> Equipment pre but fire too small to oper												
		9 <input type="checkbox"/> Not classified above												
		0 <input type="checkbox"/> Undetermined or not reported												
		8 <input type="checkbox"/> No equipment present (N/A)												
AI		TYPE OF MATERIAL GENERATING MOST SMOKE												
		IF SMOKE SPREAD BEYOND ROOM OF ORIGIN												
AJ		AVENUE OF SMOKE TRAVEL												
		1 <input type="checkbox"/> Air handling duct	4 <input type="checkbox"/> Stairwell	7 <input type="checkbox"/> Utility opening in floor										
		2 <input type="checkbox"/> Corridor	5 <input type="checkbox"/> Opening in construction	9 <input type="checkbox"/> Not classified above										
		3 <input type="checkbox"/> Elevator shaft	6 <input type="checkbox"/> Utility opening in wall	0 <input type="checkbox"/> Undetermined or not reported										
		8 <input type="checkbox"/> No avenue of smoke travel (N/A)												
AK		FORM OF MATERIAL GENERATING MOST SMOKE												
		C P D - I.D. #												
AL		IF MOBILE PROPERTY												
		YEAR	MAKE	MODEL	SERIAL NO.	LICENSE NO.								
AM		IF EQUIPMENT INVOLVED IN IGNITION												
		YEAR	MAKE	MODEL	SERIAL NO.									
AN		INCIDENT COMMANDER												
		E. Brule 67												
AO		DATE												
		5-28-89												

Appendix H (Continued)

REPORTING SYSTEM																	
A	10	FDID	INCIDENT NO.	EXP.	MO.	DAY	YEAR	DAY OF WEEK	5 <input type="checkbox"/> Thursday 6 <input type="checkbox"/> Friday 7 <input type="checkbox"/> Saturday	ALARM TIME	PREVAL TIME	BACK IN SERVICE					
		BITIN016	255101016	012	015	24	89	Monday	2	07140	07143	11330					
P	11	11 <input type="checkbox"/> Structure fire	29 <input type="checkbox"/> Overpressure Rupture	44 <input type="checkbox"/> Power line down	54 <input type="checkbox"/> Animal Rescue	60 <input type="checkbox"/> Steam gas											
		12 <input type="checkbox"/> Vehicle fire	30 <input type="checkbox"/> Emergency Medical call	45 <input type="checkbox"/> Arcing electric equipment	55 <input type="checkbox"/> Assist Police	71 <input type="checkbox"/> Malicious false											
		13 <input type="checkbox"/> Brush, grass, leaves	31 <input type="checkbox"/> Locked-in trapped	46 <input type="checkbox"/> Aircraft standby	56 <input type="checkbox"/> Unauthorized burning	72 <input type="checkbox"/> Bomb scare											
		14 <input type="checkbox"/> Trash, Rubbish	32 <input type="checkbox"/> Search	47 <input type="checkbox"/> Chemical spill	57 <input type="checkbox"/> Other service calls	73 <input type="checkbox"/> Alarm malfunction											
		15 <input type="checkbox"/> Explosion, No after fire	33 <input type="checkbox"/> Extrication	48 <input type="checkbox"/> Hazardous condition	58 <input type="checkbox"/> Water removal	74 <input type="checkbox"/> Unintentional false											
		16 <input type="checkbox"/> Outside spill with fire	34 <input type="checkbox"/> Rescue-Not classified	49 <input type="checkbox"/> Smoke removal	59 <input type="checkbox"/> Controlled burn	75 <input type="checkbox"/> Unclassified											
		17 <input type="checkbox"/> Other fires not classified	40 <input type="checkbox"/> Spill, leak-No fire	50 <input type="checkbox"/> Stand by	61 <input type="checkbox"/> Salvage	76 <input type="checkbox"/> Other											
		18 <input type="checkbox"/> Other fires not classified	41 <input type="checkbox"/> Investigation only	51 <input type="checkbox"/> Ambulance	62 <input type="checkbox"/> Not classified	77 <input type="checkbox"/> Undetermined											
C	12	FIXED PROPERTY USE (Occupancy)				IGNITION FACTOR											
D		STREET				COMMUNICATION											
E		CORRECT ADDRESS (Up to maximum of 21 characters)															
F		2958 W FULLERTON															
G	11	OCCUPANT NAME (LAST, FIRST, MI)				TELEPHONE				ROOM or APT.							
H	12	OWNER NAME (LAST, FIRST, MI)				ADDRESS				TELEPHONE							
I	13	METHOD OF ALARM		4 <input type="checkbox"/> Radio		6 <input type="checkbox"/> Voice signal municipal alarm signal		Engine Co		SHIFT		NO ALARMS					
J		1 <input type="checkbox"/> Telephone direct		5 <input type="checkbox"/> Verbal		9 <input type="checkbox"/> Not classified above		7		1467		R					
K		2 <input type="checkbox"/> Municipal alarm system		8 <input type="checkbox"/> No alarm rec'd		0 <input type="checkbox"/> Undetermined or not reported											
L		3 <input type="checkbox"/> Private alarm system		7 <input type="checkbox"/> Fire line (911)													
M		NO. FIRE SERVICE PERSONNEL RESPONDED		NO. ENGINES RESPONDED		NO. AERIAL APPARATUS RESPONDED		NO. OTHER VEHICLES RESPONDED									
N	20	NUMBER OF INJURIES				NUMBER OF FATALITIES											
O		FIRE SERVICE				OTHER				FIRE SERVICE				OTHER			
P		COMPLEX				MOBILE PROPERTY TYPE (Complete Line S)											
Q		STREET				196				AUTO							
R		AREA OF FIRE ORIGIN				EQUIPMENT INVOLVED IN IGNITION (Complete Line T)											
S		UNDERCARRIAGE				DNA											
T		FORM OF HEAT IGNITION				TYPE OF MATERIAL IGNITED				FORM OF MATERIAL IGNITED							
U		COMMUNICATION				181				TIRES							
V		METHOD OF EXTINGUISHMENT		2 <input type="checkbox"/> Self extinguished		3 <input type="checkbox"/> Make shift aids		5 <input type="checkbox"/> Pre-connect hose/tank only		6 <input type="checkbox"/> Pre-connect hose/hydrant draft standpipe		7 <input type="checkbox"/> Hand-laid hose/hydrant draft standpipe					
W		1 <input type="checkbox"/> Level of fire origin		5 <input type="checkbox"/> Over 70 feet		6 <input type="checkbox"/> Portable extinguisher		7 <input type="checkbox"/> Automatic ext. system		8 <input type="checkbox"/> Water stream device		9 <input type="checkbox"/> Not classified above					
X		2 <input type="checkbox"/> 10 to 19 feet		7 <input type="checkbox"/> Objects in flight		8 <input type="checkbox"/> Estimated total dollar loss		9 <input type="checkbox"/> NFIRS 1 LAYOUT 4		10 <input type="checkbox"/> Undetermined or not reported		11 <input type="checkbox"/> Undetermined or not reported					
Y		3 <input type="checkbox"/> 20 to 29 feet		8 <input type="checkbox"/> Below ground level		1 <input type="checkbox"/> 11,111,000											
Z		4 <input type="checkbox"/> 30 to 49 feet		9 <input type="checkbox"/> Not classified above													
AA		5 <input type="checkbox"/> 50 to 70 feet		0 <input type="checkbox"/> Under mined													
AB		Number of Stories		1 <input type="checkbox"/> 1 story		4 <input type="checkbox"/> 5 to 6 stories		7 <input type="checkbox"/> 25 to 49 stories		8 <input type="checkbox"/> 50 stories or more		0 <input type="checkbox"/> Number of Stories undetermined or not reported					
AC		2 <input type="checkbox"/> 2 story		5 <input type="checkbox"/> 7 to 12 stories		6 <input type="checkbox"/> 13 to 24 stories		CONSTRUCTION TYPE		1 <input type="checkbox"/> Fire resistant		6 <input type="checkbox"/> Unprotected ordinary					
AD		3 <input type="checkbox"/> 3 to 4 stories		8 <input type="checkbox"/> 13 to 24 stories		9 <input type="checkbox"/> 25 to 49 stories		2 <input type="checkbox"/> Heavy timber		7 <input type="checkbox"/> Protected wood frame		8 <input type="checkbox"/> Unprotected wood frame					
AE		EXTENT OF DAMAGE		1 <input type="checkbox"/> Confined to the object of origin		2 <input type="checkbox"/> Confined to part of room or area of origin		3 <input type="checkbox"/> Confined to room of origin		4 <input type="checkbox"/> Confined to the fire-rated comp. of origin		5 <input type="checkbox"/> Confined to floor of origin					
AF		6 <input type="checkbox"/> Confined to structure of origin		7 <input type="checkbox"/> Extended beyond structure of origin		8 <input type="checkbox"/> No damage of this type (N/A)		DETECTOR PERFORMANCE		1 <input type="checkbox"/> Det. in room or space of fire origin - oper		2 <input type="checkbox"/> Det. not in rm. or space of fire origin - oper					
AG		9 <input type="checkbox"/> No damage of this type (N/A)		0 <input type="checkbox"/> No damage of this type (N/A)		1 <input type="checkbox"/> No damage of this type (N/A)		3 <input type="checkbox"/> Det. in rm. or space of fire origin - no oper		4 <input type="checkbox"/> Det. not in rm. or space of fire origin - no oper		5 <input type="checkbox"/> Det. not in rm. or space of fire origin - but fire too small to oper					
AH		TYPE OF MATERIAL GENERATING MOST SMOKE		1 <input type="checkbox"/> Smoke spread beyond room of origin		2 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Sprinkler performance		1 <input type="checkbox"/> Equipment operated		2 <input type="checkbox"/> Equipment should have operated - did not					
AI		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		6 <input type="checkbox"/> Sprinkler performance		3 <input type="checkbox"/> Equipment oper. but fire too small to oper		4 <input type="checkbox"/> Not classified above					
AJ		FORM OF MATERIAL GENERATING MOST SMOKE		1 <input type="checkbox"/> Smoke spread beyond room of origin		2 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Sprinkler performance		5 <input type="checkbox"/> Undetermined or not reported		6 <input type="checkbox"/> No equipment present (N/A)					
AK		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		6 <input type="checkbox"/> Sprinkler performance		6 <input type="checkbox"/> No equipment present (N/A)		7 <input type="checkbox"/> Utility opening in floor					
AL		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		7 <input type="checkbox"/> Sprinkler performance		7 <input type="checkbox"/> Utility opening in floor		8 <input type="checkbox"/> Not classified above					
AM		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		8 <input type="checkbox"/> Sprinkler performance		8 <input type="checkbox"/> Utility opening in floor		9 <input type="checkbox"/> Undetermined or not reported					
AN		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		9 <input type="checkbox"/> Sprinkler performance		9 <input type="checkbox"/> Utility opening in floor		0 <input type="checkbox"/> No avenue of smoke travel (N/A)					
AO		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		0 <input type="checkbox"/> Sprinkler performance		0 <input type="checkbox"/> Utility opening in floor		1 <input type="checkbox"/> No avenue of smoke travel (N/A)					
AP		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		1 <input type="checkbox"/> Sprinkler performance		1 <input type="checkbox"/> Utility opening in floor		2 <input type="checkbox"/> No avenue of smoke travel (N/A)					
AQ		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		2 <input type="checkbox"/> Sprinkler performance		2 <input type="checkbox"/> Utility opening in floor		3 <input type="checkbox"/> No avenue of smoke travel (N/A)					
AR		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		3 <input type="checkbox"/> Sprinkler performance		3 <input type="checkbox"/> Utility opening in floor		4 <input type="checkbox"/> No avenue of smoke travel (N/A)					
AS		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Sprinkler performance		4 <input type="checkbox"/> Utility opening in floor		5 <input type="checkbox"/> No avenue of smoke travel (N/A)					
AT		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Sprinkler performance		5 <input type="checkbox"/> Utility opening in floor		6 <input type="checkbox"/> No avenue of smoke travel (N/A)					
AU		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		6 <input type="checkbox"/> Sprinkler performance		6 <input type="checkbox"/> Utility opening in floor		7 <input type="checkbox"/> No avenue of smoke travel (N/A)					
AV		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		7 <input type="checkbox"/> Sprinkler performance		7 <input type="checkbox"/> Utility opening in floor		8 <input type="checkbox"/> No avenue of smoke travel (N/A)					
AW		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		8 <input type="checkbox"/> Sprinkler performance		8 <input type="checkbox"/> Utility opening in floor		9 <input type="checkbox"/> No avenue of smoke travel (N/A)					
AX		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		9 <input type="checkbox"/> Sprinkler performance		9 <input type="checkbox"/> Utility opening in floor		0 <input type="checkbox"/> No avenue of smoke travel (N/A)					
AY		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		0 <input type="checkbox"/> Sprinkler performance		0 <input type="checkbox"/> Utility opening in floor		1 <input type="checkbox"/> No avenue of smoke travel (N/A)					
AZ		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		1 <input type="checkbox"/> Sprinkler performance		1 <input type="checkbox"/> Utility opening in floor		2 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BA		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		2 <input type="checkbox"/> Sprinkler performance		2 <input type="checkbox"/> Utility opening in floor		3 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BB		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		3 <input type="checkbox"/> Sprinkler performance		3 <input type="checkbox"/> Utility opening in floor		4 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BC		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Sprinkler performance		4 <input type="checkbox"/> Utility opening in floor		5 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BD		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Sprinkler performance		5 <input type="checkbox"/> Utility opening in floor		6 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BE		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		6 <input type="checkbox"/> Sprinkler performance		6 <input type="checkbox"/> Utility opening in floor		7 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BF		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		7 <input type="checkbox"/> Sprinkler performance		7 <input type="checkbox"/> Utility opening in floor		8 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BG		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		8 <input type="checkbox"/> Sprinkler performance		8 <input type="checkbox"/> Utility opening in floor		9 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BH		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		9 <input type="checkbox"/> Sprinkler performance		9 <input type="checkbox"/> Utility opening in floor		0 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BI		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		0 <input type="checkbox"/> Sprinkler performance		0 <input type="checkbox"/> Utility opening in floor		1 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BJ		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		1 <input type="checkbox"/> Sprinkler performance		1 <input type="checkbox"/> Utility opening in floor		2 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BK		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		2 <input type="checkbox"/> Sprinkler performance		2 <input type="checkbox"/> Utility opening in floor		3 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BL		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		3 <input type="checkbox"/> Sprinkler performance		3 <input type="checkbox"/> Utility opening in floor		4 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BM		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Sprinkler performance		4 <input type="checkbox"/> Utility opening in floor		5 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BN		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Sprinkler performance		5 <input type="checkbox"/> Utility opening in floor		6 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BO		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		6 <input type="checkbox"/> Sprinkler performance		6 <input type="checkbox"/> Utility opening in floor		7 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BP		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		7 <input type="checkbox"/> Sprinkler performance		7 <input type="checkbox"/> Utility opening in floor		8 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BQ		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		8 <input type="checkbox"/> Sprinkler performance		8 <input type="checkbox"/> Utility opening in floor		9 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BK		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		9 <input type="checkbox"/> Sprinkler performance		9 <input type="checkbox"/> Utility opening in floor		0 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BL		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		0 <input type="checkbox"/> Sprinkler performance		0 <input type="checkbox"/> Utility opening in floor		1 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BM		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		1 <input type="checkbox"/> Sprinkler performance		1 <input type="checkbox"/> Utility opening in floor		2 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BN		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		2 <input type="checkbox"/> Sprinkler performance		2 <input type="checkbox"/> Utility opening in floor		3 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BO		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		3 <input type="checkbox"/> Sprinkler performance		3 <input type="checkbox"/> Utility opening in floor		4 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BP		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Sprinkler performance		4 <input type="checkbox"/> Utility opening in floor		5 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BQ		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Sprinkler performance		5 <input type="checkbox"/> Utility opening in floor		6 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BK		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		6 <input type="checkbox"/> Sprinkler performance		6 <input type="checkbox"/> Utility opening in floor		7 <input type="checkbox"/> No avenue of smoke travel (N/A)					
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BM		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		8 <input type="checkbox"/> Sprinkler performance		8 <input type="checkbox"/> Utility opening in floor		9 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BN		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		9 <input type="checkbox"/> Sprinkler performance		9 <input type="checkbox"/> Utility opening in floor		0 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BO		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		0 <input type="checkbox"/> Sprinkler performance		0 <input type="checkbox"/> Utility opening in floor		1 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BP		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		1 <input type="checkbox"/> Sprinkler performance		1 <input type="checkbox"/> Utility opening in floor		2 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BQ		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		2 <input type="checkbox"/> Sprinkler performance		2 <input type="checkbox"/> Utility opening in floor		3 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BK		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		3 <input type="checkbox"/> Sprinkler performance		3 <input type="checkbox"/> Utility opening in floor		4 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BL		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Sprinkler performance		4 <input type="checkbox"/> Utility opening in floor		5 <input type="checkbox"/> No avenue of smoke travel (N/A)					
BM		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Sprinkler performance		5 <input type="checkbox"/> Utility opening in floor		6 <input type="checkbox"/> No avenue of smoke travel (N/A)					
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BO		3 <input type="checkbox"/> Smoke spread beyond room of origin		4 <input type="checkbox"/> Smoke spread beyond room of origin		5 <input type="checkbox"/> Smoke spread beyond room of origin		7 <input type="checkbox"/> Sprinkler performance		7 <input type="checkbox"/> Utility opening in floor		8 <input type="checkbox"/> No avenue of smoke travel (N/A)					

Appendix H (Continued)

REPORTING SYSTEM											
DID		INCIDENT NO.		EXP.	MO.	DAY	YEAR	DAY OF WEEK	ALARM TIME	ARRIVAL TIME	BACK IN SERVICE
ITIN 016		21451016		611	015	29	89	Monday 4	201740	01743	11330
<div> <div> <input checked="" type="checkbox"/> Structure fire <input type="checkbox"/> Vehicle fire <input type="checkbox"/> Brush, grass, leaves <input type="checkbox"/> Trash, rubbish <input type="checkbox"/> Explosion, No after fire <input type="checkbox"/> Outside spill with fire <input type="checkbox"/> Other fires not classified </div> <div> <input type="checkbox"/> Overpressure Rupture <input type="checkbox"/> Emergency Medical call <input type="checkbox"/> Locked-in trapped <input type="checkbox"/> Search <input type="checkbox"/> Extrication <input type="checkbox"/> Rescue-Not classified <input type="checkbox"/> Spill, leak-No fire </div> <div> <input type="checkbox"/> Power line down <input type="checkbox"/> Arcing electric equipment <input type="checkbox"/> Aircraft standby <input type="checkbox"/> Chemical spill <input type="checkbox"/> Hazardous condition <input type="checkbox"/> Water removal <input type="checkbox"/> Smoke removal </div> <div> <input type="checkbox"/> Animal Rescue <input type="checkbox"/> Assist Police <input type="checkbox"/> Unauthorized burning <input type="checkbox"/> Other service calls <input type="checkbox"/> Smoke scare <input type="checkbox"/> Controlled burn </div> <div> <input type="checkbox"/> Steam gas mistaken for smoke <input type="checkbox"/> Malicious false <input type="checkbox"/> Bomb Scare <input type="checkbox"/> Alarm Malfunction <input type="checkbox"/> Unintentional false <input type="checkbox"/> Unclassified <input type="checkbox"/> Other </div> </div>											
<div> <div> <input type="checkbox"/> 1 Extinguishment <input type="checkbox"/> 2 Rescue or Assistance <input type="checkbox"/> 3 Investigation only <input type="checkbox"/> 4 Remove Hazard </div> <div> <input type="checkbox"/> 5 Stand by <input type="checkbox"/> 6 Salvage <input type="checkbox"/> 7 Ambulance </div> <div> <input type="checkbox"/> 9 Not classified <input type="checkbox"/> 0 Undetermined </div> </div>											
<div> <div> FIXED PROPERTY USE (Occupancy) REHAB. BLDG 918 </div> <div> IGNITION FACTOR COMMUNICATION 165 </div> </div>											
<div> <div> CORRECT ADDRESS (Up to maximum of 21 characters) 2958 W FULLERTON </div> <div> OCCUPANT NAME (LAST, FIRST, MI) 11 </div> <div> TELEPHONE 12 </div> <div> ROOM OR APT. 13 </div> </div>											
<div> <div> OWNER NAME (LAST, FIRST, MI) LOGAN SQ. BLDG. MATER. SUPPLY CO. </div> <div> ADDRESS 2500 N. MILWAUKEE </div> <div> TELEPHONE 14 </div> </div>											
<div> <div> METHOD OF ALARM <input type="checkbox"/> Telephone direct <input type="checkbox"/> Municipal alarm system <input type="checkbox"/> Private alarm system </div> <div> <input type="checkbox"/> Radio <input type="checkbox"/> Verbal <input type="checkbox"/> No alarm recd. <input type="checkbox"/> TIE-line (911) </div> <div> <input type="checkbox"/> Voice signal municipal alarm signal <input type="checkbox"/> Not classified above <input type="checkbox"/> Undetermined or not reported </div> <div> Engine Co Shift NO. ALARMS </div> </div>											
<div> <div> NO. FIRE SERVICE PERSONNEL RESPONDED 15 </div> <div> NO. ENGINES RESPONDED 16 </div> <div> NO. AERIAL APPARATUS RESPONDED 17 </div> <div> NO. OTHER VEHICLES RESPONDED 18 </div> </div>											
<div> <div> NUMBER OF INJURIES FIRE SERVICE OTHER </div> <div> NUMBER OF FATALITIES FIRE SERVICE OTHER </div> </div>											
<div> <div> COMPLEX REHAB. BLDG 911 </div> <div> MOBILE PROPERTY TYPE (Complete Line S) DNA 198 </div> </div>											
<div> <div> AREA OF FIRE ORIGIN EXT. WALLS 176 </div> <div> EQUIPMENT INVOLVED IN IGNITION (Complete Line T) DNA 198 </div> </div>											
<div> <div> FORM OF HEAT IGNITION COMMUNICATION 181 </div> <div> TYPE OF MATERIAL IGNITED WOOD 163 </div> <div> FORM OF MATERIAL IGNITED EXT. SURFACE 113 </div> </div>											
<div> <div> METHOD OF EXTINGUISHMENT <input type="checkbox"/> Self extinguished <input type="checkbox"/> Make shift aids <input type="checkbox"/> Portable extinguisher <input type="checkbox"/> Automatic ext. system </div> <div> <input type="checkbox"/> Pre-connect hose/tank only <input type="checkbox"/> Pre-connect hose/hydrant draft standpipe <input type="checkbox"/> Hand-laid hose/hydrant draft standpipe </div> <div> <input type="checkbox"/> Master stream device <input type="checkbox"/> Not classified above <input type="checkbox"/> Undetermined or not reported </div> </div>											
<div> <div> LEVEL OF FIRE ORIGIN <input type="checkbox"/> Gade level to 9 ft. <input type="checkbox"/> 10 to 19 feet <input type="checkbox"/> 20 to 29 feet <input type="checkbox"/> 30 to 49 feet <input type="checkbox"/> 50 to 70 feet <input type="checkbox"/> Over 70 feet <input type="checkbox"/> Objects in flight <input type="checkbox"/> Below ground level <input type="checkbox"/> Not classified above <input type="checkbox"/> Undetermined </div> <div> ESTIMATED TOTAL DOLLAR LOSS 11,150.00 </div> <div> NFIRS 1 LAYOUT 4 </div> <div> DISCLAIMER: No representation is made, intended, or implied as to the validity or accuracy of information herein. </div> </div>											
<div> <div> Number of Stories <input type="checkbox"/> 1 story <input type="checkbox"/> 2 story <input type="checkbox"/> 3 or 4 stories <input type="checkbox"/> 5 to 6 stories <input type="checkbox"/> 7 to 12 stories <input type="checkbox"/> 13 to 24 stories <input type="checkbox"/> 25 to 49 stories <input type="checkbox"/> 50 stories or more <input type="checkbox"/> Number of Stories undetermined or not reported. </div> <div> CONSTRUCTION TYPE <input type="checkbox"/> Fire resistive <input type="checkbox"/> Heavy timber <input type="checkbox"/> Protected noncombustible <input type="checkbox"/> Unprotected noncombustible <input type="checkbox"/> Unprotected ordinary </div> <div> <input type="checkbox"/> Unprotected ordinary <input type="checkbox"/> Protected wood frame <input type="checkbox"/> Unprotected wood frame <input type="checkbox"/> Not classified above <input type="checkbox"/> Undetermined or not reported </div> </div>											
<div> <div> EXTENT OF DAMAGE <input type="checkbox"/> Confined to the object of origin <input type="checkbox"/> Confined to part of room or area of origin <input type="checkbox"/> Confined to room of origin <input type="checkbox"/> Confined to the fire-rated comp. of origin <input type="checkbox"/> Confined to floor of origin <input type="checkbox"/> Confined to structure of origin <input type="checkbox"/> Extended beyond structure of origin <input type="checkbox"/> No damage of this type (N/A) </div> <div> Flame 4 </div> <div> Smoke 9 </div> <div> DETECTOR PERFORMANCE <input type="checkbox"/> Det. in room or space of fire origin - oper. <input type="checkbox"/> Det. not in rm. or space of fire origin - oper. <input type="checkbox"/> Det. in rm. or space of origin - no oper. <input type="checkbox"/> Det. not in rm. or space of origin - no oper. <input type="checkbox"/> Det. not in rm. or space of fire origin, but fire too small to oper. <input type="checkbox"/> Not classified above <input type="checkbox"/> Undetermined or not reported <input type="checkbox"/> No detectors present (N/A) </div> <div> SPRINKLER PERFORMANCE <input type="checkbox"/> Equipment operated <input type="checkbox"/> Equipment should have operated - did not <input type="checkbox"/> Equipment pre. but fire too small to oper. <input type="checkbox"/> Not classified above <input type="checkbox"/> Undetermined or not reported <input type="checkbox"/> No equipment present (N/A) </div> </div>											
<div> <div> TYPE OF MATERIAL GENERATING MOST SMOKE IF SMOKE SPREAD BEYOND ROOM OF ORIGIN 163 </div> <div> AVENUE OF SMOKE TRAVEL <input type="checkbox"/> Air handling duct <input type="checkbox"/> Corridor <input type="checkbox"/> Elevator shaft <input type="checkbox"/> Stairwell <input type="checkbox"/> Opening in construction <input type="checkbox"/> Utility opening in wall </div> <div> <input type="checkbox"/> Utility opening in floor <input type="checkbox"/> Not classified above <input type="checkbox"/> Undetermined or not reported <input type="checkbox"/> No avenue of smoke travel (N/A) </div> </div>											
<div> <div> FORM OF MATERIAL GENERATING MOST SMOKE EXT. MAT. 113 </div> <div> C.P.D. - I.D. # </div> </div>											
<div> <div> IF MOBILE PROPERTY YEAR MAKE MODEL SERIAL NO. LICENSE NO. </div> <div> IF EQUIPMENT INVOLVED IN IGNITION YEAR MAKE MODEL SERIAL NO. </div> </div>											
<div> <div> INCIDENT COMMANDER E. Dulie 67 </div> <div> DATE 5-29-89 </div> </div>											

Appendix H (Continued)

COMMUNICATION COMMAND CENTER 2-7-2 Date: 5-29-89
 BOX NO.: 648 ADDRESS: 2958 W Fullerton - On Street
 TYPE OF BUILDING: ORD SIZE: 50x75 NO. STORIES: 2
 OCCUPANCY: 1 family TRUSS ROOF: YES NO ☒
 SPRINKLER: YES NO ☒ STANDPIPE: YES NO ☒
 OCCUPIED: YES NO ☒ UNDER DEMOLITION: YES NO ☒
 OWNER'S NAME: Malloy Tula
 WRECKING COMPANY: _____

ALARM	ENGINE COMPANIES					TRUCKS			SNK.		SQ.		AMB.	DDC	BATTALIONS			
S/BOX	43	106	91	76		13	28	21	59	2	51	1		3	222	6	433	7
2-11	20	35	44	56		14	19	35					31			3	5	10
3-11	42	4	30	124	5	107	23	44	36									
4-11																		
5-11																		
SPECIAL																		
SPECIAL																		
SPECIAL																		
SPECIAL																		
SPECIAL																		

ALARM	TIME	SIGNATURE	EXTRA AND SPECIAL EQUIPMENT
STILL	0740	5-1-1	Haz-mat
BOX	0743	492	
2-11	0811	643	
3-11			
4-11			
5-11			
SPECIAL			
SPECIAL			
SPECIAL			
SPECIAL			
SPECIAL			

REMARKS: Multi Foam application for 9000 Gal Gas Tanker Fire
S.O. 0848 17# 235000

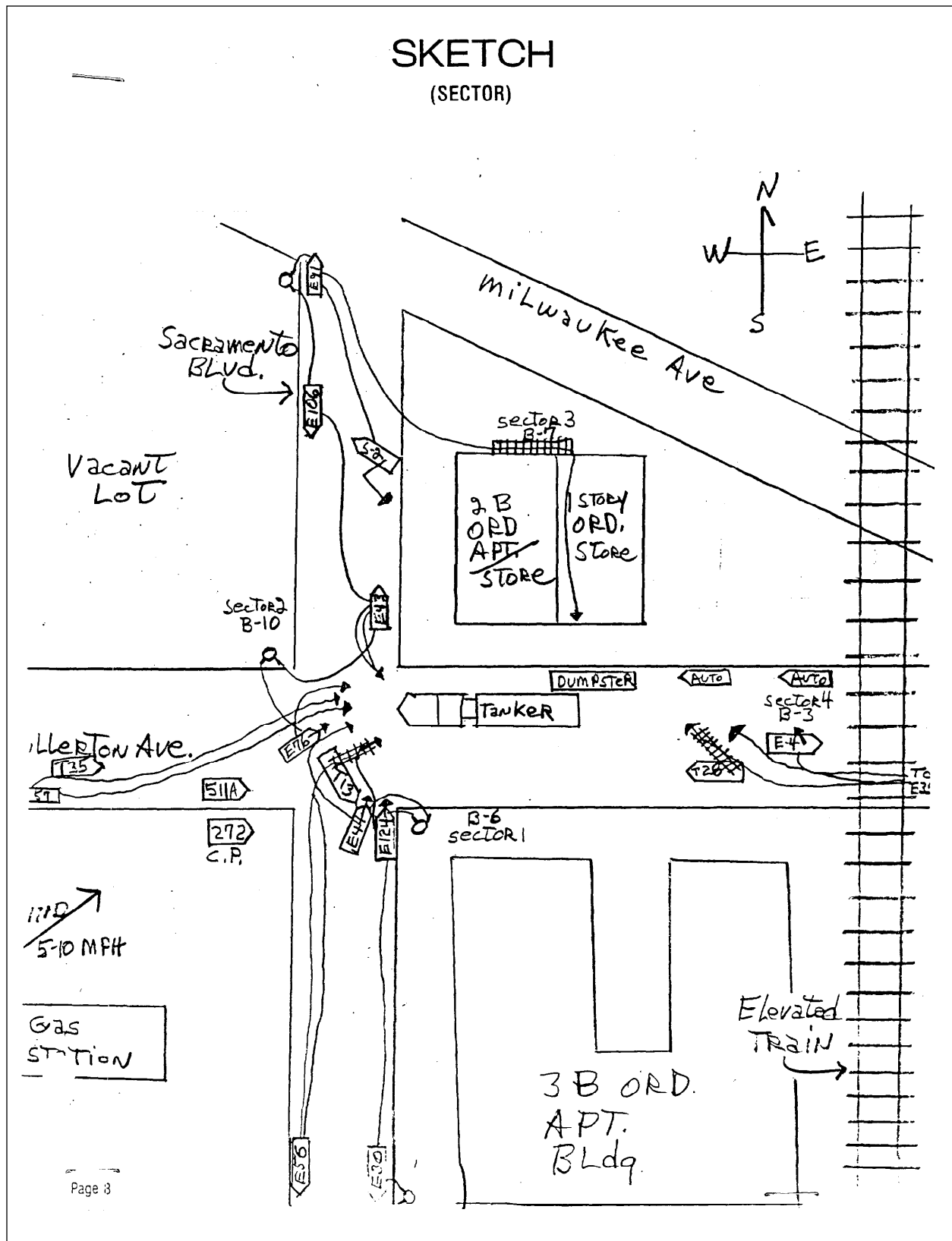
Appendix H (Continued)

[illegible]

AUXILIARY EQUIPMENT PERFORMANCE

[illegible]

Appendix H (Continued)



Appendix H (Continued)

TO THE FIRE COMMISSIONER:

Report the Operation of this Department to _____

(Address)

a 3 -11 Alarm at 2958 W. Fullerton

on 5/29/89 Day/Date at 0740 Hrs. Duration of Fire 5 3/4 Hrs.

Respectfully

Daniel O. Moll
Deputy District Chief

DATA	Stories In Height <u>2</u>		Type of Roof <u>wood</u>	
	Building Size <u>50 X 75</u>		Area <u>2250</u> Sq. Ft	
	Wind Direction <u>SW</u> at <u>5-10</u> m.p.h.		Temperature <u>70</u> Humidity <u>100</u> %	
OCCUPANCY CLASSIFICATION	RESIDENTIAL UNITS		MERCANTILE UNIT <input checked="" type="checkbox"/>	
	Single-Family Dwellings	<input type="checkbox"/>	INDUSTRIAL UNITS	
	Multiple Dwellings	<input type="checkbox"/>	Low Hazard Industrial <input type="checkbox"/>	
	INSTITUTIONAL UNITS	<input type="checkbox"/>	Moderate Hazard Industrial <input type="checkbox"/>	
	ASSEMBLY UNITS		STORAGE UNITS	
	Large Assembly	<input type="checkbox"/>	Low Hazard Storage <input type="checkbox"/>	
	Small Assembly	<input type="checkbox"/>	Moderate Hazard Storage <input type="checkbox"/>	
	Schools	<input type="checkbox"/>	Garage <input type="checkbox"/>	
	Open Air Assembly Units	<input type="checkbox"/>	HAZARDOUS USE <input type="checkbox"/>	
	Business Units	<input type="checkbox"/>	MISCELLANEOUS STRUCTURE <input type="checkbox"/>	
CONSTR.	Fire Resistive	<input type="checkbox"/>	Ordinary	<input checked="" type="checkbox"/>
	Non-Combustible	<input type="checkbox"/>	Frame	<input type="checkbox"/>
	Mill-Heavy Timber	<input type="checkbox"/>	Mixed	<input type="checkbox"/>
FIRE PROTECTION	Automatic Sprinklers	<input type="checkbox"/>	Smoke Detectors	<input type="checkbox"/>
	Fire Pump	<input type="checkbox"/>	Heat Detectors	<input type="checkbox"/>
	Standpipe	<input type="checkbox"/>	PRIVATE ALARM SYSTEM	<input type="checkbox"/>
	Gravity Tank	<input type="checkbox"/>	A.D.T.	<input type="checkbox"/>
	City Main	<input type="checkbox"/>	Exit Signs	<input type="checkbox"/>
	Siamese Location			
PLACE OF ORIGIN	Basement () Floor () Other (X) Confined to place of origin <input checked="" type="checkbox"/> Extended to other floors _____			
	Communicated to _____			
	Address _____	Size _____	Const. class _____	Occ. class _____
	Address _____	Size _____	Const. class _____	Occ. class _____
	Address _____	Size _____	Const. class _____	Occ. class _____

Appendix H (Continued)

Write a Narrative Covering Points Where They Apply:

1. Discovery of fire
2. Delay in response
3. Delay in reporting
4. Cause of failure in fire protection
5. Points of interest
6. Condition of building after fire
7. Recommendations
8. Other reports included:

F.P.B. ☐ O.F.I. ☐ D.I.S. ☐ Police ☐ Safety Officer ☐ Water Officer ☐ Fire Critique ☒ NIFIRS ☒
Photo ☐ Command Van Tab ☒

1. DRIVER of TRUCK
2. None
3. Immediate
4. None
5. Availability of foam equiped pumbers major factor in safely extinguishing fire.
6. Exposure building good.
Tractor driven away from scene.
7. Continued training in foam application and exposure protection, particularly undamaged Tanks.

Appendix H (Continued)



CHICAGO FIRE DEPARTMENT BUREAU OF FIRE SUPPRESSION & RESCUE HAZARDOUS MATERIALS INCIDENT CRITIQUE



APPENDIX H (cont'd)

INCIDENT NUMBER 225006 INCIDENT ADDRESS 2958 W. Fullerton
 DATE OF INCIDENT 5-29-89 TIME OF INCIDENT 0750' TYPE OF ALARM 3-11
 DDC SUBMITTING REPORT Daniel Moll DISTRICT No. 2
 DATE OF CRITIQUE 6-1-89 LOCATION OF CRITIQUE E-106 quarters

OFFICERS AND COMPANIES IN ATTENDANCE:

OFFICERS NAME	COMPANY NUMBER
<u>2-1-10 J. Moriarty, 2-1-15 P. Kehoe, Commander Moriarty H.R.T.</u>	
<u>Batt. 3 Rickert, Batt. 5 Minch</u>	
<u>Batt. 6 Brelie, Batt. 7 Fleischhacker, Batt. 10 Garrity</u>	
<u>Lt. Lynch</u>	<u>E-43</u>
<u>Lt. Davis</u>	<u>E-76</u>
<u>Lt. Ruhnke</u>	<u>E-91</u>
<u>Capt. Gollogly</u>	<u>E-106</u>
<u>Lt. Bassett</u>	<u>T-13</u>
<u>Capt. Kasprzyk</u>	<u>T-28</u>
<u>Lt. Boyd</u>	<u>Sq. 2</u>
<u>Capt. Dougherty</u>	<u>5-1-1</u>

INCIDENT WEATHER CONDITIONS

CONDITIONS AT TIME OF ARRIVAL AT SCENE Tanker trailer in street with burning gasoline.
 CHANGE OF CONDITIONS DURING INCIDENT YES- NO ☒ x
 IF CHANGE OCCURED DESCRIBE _____
 WIND DIRECTION SW WIND VELOCITY 5-10 mph

INCIDENT DEVELOPMENT

WHEN WAS HAZMAT RESPONSE REQUESTED with 2-11 REQUESTED BY 2-2-2
 DESCRIBE SITUATION FOUND BY INITIAL ARRIVING UNITS:
Tanker trailer with hole on right side leaking gasoline, rear 3/5s of
trailer burning, flames 30 - 40 feet high and burning gasoline flowing
along curb into sewer.

DESCRIBE ACTIONS OF INITIAL RESPONSE UNITS:

Set up master streams to cool remainder of tank and protect exposed
building at 2958 W. Fullerton.

Appendix H (Continued)

WAS THE DEPARTMENTS'S HAZARDOUS MATERIALS PROTOCOL PLACED INTO EFFECT?

YES X NO REMARKS: Called for Haz-mat response with 2-11,
asked for 6-2-4 and 6-2-6 along with 2 foam engines. Called for 3-11 and
2 additional foam engines.

EVACUATION PROCEDURES

WAS AN EVACUATION NECESSARY? YES x NO

WHO GAVE THE ORDER TO EVACUATE? 2-2-2

HOW WAS EVACUATION DISTANCES DETERMINED? Proximity to tanker. Evacuated
apartments in buildings directly north and south of tanker.

IF EVACUATION WAS NECESSARY, WHO CARRIED IT OUT? Truck 35, T/L 21 and Squad 2.

EVALUATE EVACUATION IMPLEMENTATION Effective because occupants could see
the fire, hear the equipment and sense impending danger.

DESCRIBE AND EVALUATE HOW THE INCIDENT WAS ULTIMATELY HANDLED (e.g. was material allowed to dissipate by itself, diluted, placed in containment drums, etc.)

Tanker was cooled with master streams until sufficient foam lines
were in place at which time master streams were diverted and foam application
begun to extinguish fire. Remaining product was pumped into another tanker
after fire was extinguished. Damaged tanker trailer was hoisted on flatbed
trailer and removed from scene.

Appendix H (Continued)

T ALL OUTSIDE AGENCIES NOTIFIED AND IF THEY-RESPONDED WHAT ROLE DID THEY PERFORM. (e.g. State EPA, Federal EPA, Metropolitan Sanitary District, etc.)

Metropolitan Sanitary District checked sewers and basements for vapors.

Red Cross stood by to assist.

State and Federal EPA were notified.

PROTECTIVE CLOTHING
WHAT LEVEL OF PROTECTIVE CLOTHING WAS NECESSARY AT THIS INCIDENT?
(see current incident command manual)

LEVEL A ____ LEVEL B ____ LEVEL C ____ LEVEL D X

MATERIAL OF CHEMICAL SUITS USED Structural firefighting turnout clothes used.

INJURIES/CASUALTIES
WERE THERE CASUALTIES/INJURIES AT THIS INCIDENT? YES ____ NO X

2. DEAD CIVILIAN 0 NO. INJURED CIVILIAN 0

FIREFIGHTER 0 FIREFIGHTER 0

WAS AN EMS PLAN 1 or 2 IMPLEMENTED? YES ____ NO X

DESCRIBE AND EVALUATE TREATMENT PROVIDED VICTIMS N.A.

SCENE DESCRIPTION 2-7-2

WAS A COMMAND POST SET UP? YES X NO ____ WHERE SW corner Fullerton & Sacramento

WAS A (STAGING AREA DESIGNATED? YES X NO ____ WHERE Fullerton and Kedzie

A HOT AREA DEFINED? YES ____ NO X HOW LARGE ____

WAS AN ISOLATED AREA DEFINED? YES ____ NO X HOW LARGE ____

WAS A RESTRICTED AREA DEFINED? YES X NO ____ HOW LARGE 150' radius

WAS A TRIAGE/TREATMENT AREA NECESSARY? YES ____ NO X

Appendix H (Continued)

WAS A DECONTAMINATION AREA SET UP? YES _____ NO X

DESCRIBE AND EVALUATE DECONTAMINATION PROCEDURES UTILIZED NA

WHAT WAS DECONED? NO. CIVILIANS 0 NO. FIREFIGHTERS 0

NO. VEHICLES 0 NO. TOOLS' 0

IF OTHER DESCRIBE _____

WHO CONDUCTED DECONTAMINATION? NA

WHO DIRECTED DECONTAMINATION? NA

ANY ADDITIONAL REMARKS OR SUGGESTIONS FOR IMPROVING EFFICIENCY OF OPERATIONS?

ATTACH TO THIS CRITIQUE ANY ADDITIONAL DOCUMENTS YOU FEEL ARE PERTINENT TO

THE CRITIQUE. BRIEF DESCRIPTION OF ATTACHMENTS _____

OFFICER SUBMITTING THIS CRITIQUE: *Daniel Moll*

DISTRICT 2 DATE June 1, 1989

APPENDIX I

GUIDELINES AND PROCEDURES FOR HAZARDOUS MATERIALS INCIDENTS

The mission of the Chicago Fire Department, in a hazardous materials incident, is to isolate, contain and stabilize hazardous materials until such time as the proper officials require the owner of the product to properly dispose of the material.

Hazardous materials shall be defined as: any explosive, flammable, oxidizer, poison, etiologic agent, radioactive, corrosive, or other substance or material, in a quantity or form that may pose an unreasonable risk to health, safety and the environment.

Although no two hazardous materials incidents are the same, the following Standard Operating Procedure shall be placed into effect when any hazardous material is involved:

1.1 Upon receiving notification of a suspected or potential hazardous materials incident, either from a citizen, other public agency or the first responding emergency company, the Fire Alarm Office shall initiate a Level 1 Hazardous Material Incident Response.

1.2 **Level 1** --- Minimum initial response to any suspected or potential hazardous materials incident. This level is primarily for investigative activities and/or to mitigate incidents involving small quantities or low potential materials.

1.3 A **Level 1** Hazardous Material Response shall consist of:

1 - Battalion Chief

1 - Engine

1 - Truck

1 - HIT Task Force consisting of:

1 - Squad

1 - 5-1-1

1 - 5-1-1-A (If incident involves the potential of bulk quantities.)

1 - Ambulance

ABSORBENTS, LIME, 500 A ASIN 500
30 BAGS 1000 LBS 1000 LBS, AFF 32-67.

Appendix I (Continued)

- 1.4 **Level 2** --- A confirmed incident involving a moderate or high potential and/or a large quantity of material; or an incident requiring protective clothing above Level D (structural firefighting clothes); or an incident requiring the need to initiate an evacuation.
- 1.5 A **Level 2** Hazardous Material Response shall consist of the additional following units:
1 - Deputy District Chief
1 - HIT Task Force Team Engine
1 - HIT Task Force Team Truck
1 - Hazardous Materials Coordinator
1 - Safety Officer
1 - EMS Field Officer
1 - Air Mask Support Vehicle
1 - Command Van
- 1.6 **Level 3** --- An extensive incident which may require additional manpower, more supplies than are normally carried by the HIT Task Force, an expanded evacuation area, etc.
- 1.7 A **Level 3** Hazardous Material Response shall consist of the additional following units:
1- District Chief
Any additional Fire Department units and/or other agencies as requested by the Incident Commander.

INCIDENT COMMAND PROCEDURES;

- 2.1 It must be remembered that a hazardous materials incident may present a number of problems that are not present in most fire ground operations, i.e. large populated areas affected by toxic gases or reactive materials which could require evacuation procedures.
- 2.2 The Incident Command Procedure, as adopted by our department, shall be used at hazardous materials incidents.

Appendix I (Continued)

- 2.3 The Incident Commander shall cause a Command Post to be established, taking into consideration the physical properties of the hazardous material(s) involved. The upwind side of the incident shall be designated as Sector #1 and the Command Post located within this sector.
- 2.4 While operating at a hazardous material incident, the Hazardous Incident Team Officer shall advise the Incident Commander of the level of response needed and/or other agencies, units, equipment, etc. that will be required in order to safely mitigate the incident. The Hazardous Incident Team Officer will remain continually available to the Incident Commander for advise and consultation.
- 2.5 The Incident Commander shall designate and cause the following areas to be established:
- 2.5.1 Hot Zone - That area which immediately involves a hazardous material release. This area shall be considered immediately dangerous to life and health due to toxic atmosphere, adverse reactions, etc. Only personnel who have a definite need and the proper protective clothing will be allowed in this zone.
- 2.5.2 Restricted Zone - That area which immediately surrounds the Hot Zone. This zone is a safety area which has the potential of contamination. Only needed emergency personnel shall be allowed in the Restricted Zone. The up wind side of the Restricted Zone shall be used for the Decontamination and Isolated Areas.
- 2.5.3 Safe Area - That area which immediately surrounds the Restricted Zone and is believed to be free of contamination.
- 2.5.4 Isolated Area - That area, located in the up wind side of the Restricted Zone, for the exclusive use of the Hazardous Incident Team to set up and prepare for mitigation of the incident.

Appendix I (Continued)

- 2.5.5 Decontamination Area - That area, usually located within the Restricted Zone and on the up wind side, which is used to physically remove or neutralize contaminants from victims, Department personnel, apparatus and equipment.
- 2.5.6 Triage Area - That area in which all persons exiting the Decontamination Area are medically evaluated by Emergency Medical Services personnel.
- 2.5.7 Staging Area - That area which is used as a stand-by location for companies not actually committed to the incident. Normally a location close the incident, but enough removed so as not to interfere with the operations at the incident. Special care must be used to insure that this area is upwind.
- 2.6 Personnel, apparatus and equipment not actively engaged in the mitigation procedures shall be kept in the staging area.
- 2.7 An access route shall be clearly defined and kept open for egress and exit of emergency vehicles. This route will be used for emergency evacuation in the event that the incident escalates.
- 2.8 The Chicago Police Department shall be called upon to maintain the exterior perimeters, effect evacuation, etc. Additional outside agencies, such as the Department of Human Services and the Red Cross will be notified to assist in the relocation of those affected.
- 2.9 The Incident Commander shall insure that the incident is continually monitored to detect any change which would necessitate additional evacuation or other measures to effectively handle the incident.
- 2.10 The Incident Commander shall insure that all proper notifications are made to the respective Local, State and Federal agencies as necessary.

Appendix I (Continued)

- 2.11 When the specific properties and/or methods of handling the material(s) involved is not absolutely certain, the Hazardous Incident Team shall communicate directly with Chemtrec, manufacturers, other agencies or knowledgeable persons, as necessary, to obtain needed accurate information.

UNIT RESPONSES:

- 3.1 The Fire Alarm Office will notify the responding companies of the wind direction and velocity. This information will be obtained from the U.S. Weather Bureau.
- 3.2 Responding companies are to approach the scene from the upwind side.
- 3.3 First arriving units shall:
- 3.3.1 Not enter a vapor cloud or otherwise contaminated area or place themselves in a hazardous position or situation.
- 3.3.2 They shall isolate the area and deny entry to all persons.
- 3.3.3 Locate any available shipping papers or facility documents, such as chemical inventory lists, Material Safety Data Sheets, etc. and supply this information to the Incident Commander.
- 3.3.4 Identify the hazardous material(s) involved. Determine the quantity of product involved, type of container.
- 3.3.5 Transmit the product information, via radio, to the Hazardous Incident Team if they are not yet on the scene.
- 3.3.6 Reference the DOT Emergency Response Guidebook and any other available response documents to determine the proper immediate actions to be taken.
- 3.3.7 Until such time as the material(s) are positively identified and the proper procedures are established, extreme caution and full protective measures shall be implemented.

Appendix I (Continued)

- 3.4 No hazardous material, or suspected hazardous material, is to be washed away or in any other manner, improperly disposed of. All current Environmental Protection Agency regulations will be adhered to and their recommendations will be followed.
- 3.5 The primary mitigation team will be comprised of members from 5-1-1 and the Squad.
- 3.6 The Team Engine and Team Truck will perform duties such as: back up to the primary mitigations team, decontamination, diking, equipment set up, etc.
- 3.7 A minimum number of HIT Team personnel, as needed, but not less than two shall make up the Mitigation Team. A back up team of at least two personnel, with the appropriate level of protective clothing, shall be ready at all times for relief or emergency rescue.
- 3.8 After reporting to the Incident Commander, the first arriving Ambulance company shall take the necessary actions to treat any victims, after these victims have been properly decontaminated.
- 3.8 If there are no victims, the Ambulance company will proceed to the Isolated Area to take necessary vitals of all members prior to these members donning chemical protective clothing.
- 3.9 Upon completion of taking pre-entry vitals, the Ambulance personnel will then move to the exit side of the Decontamination Area and at that point shall establish a post operation triage area.
- 3.10 If the first Ambulance is occupied with victims, the Incident Commander will immediately request that a second Ambulance be dispatched to perform the necessary activities in the Isolated Area and the Triage Area.
- 3.11 Any injured civilian or department personnel shall be decontaminated by the Hazardous Incident Team as expeditiously as possible and then removed to the triage area for treatment and transportation by EMS personnel if necessary.

Appendix I (Continued)

LEVELS OF PROTECTIVE CLOTHING:

- 4.1 After the proper identification of the material(s) involved has been made, the Hazardous Incident Team will then determine the required level of protective clothing.
- 4.2 The levels of protective clothing will be:
 - 4.2.1 **Level A** - Total encapsulating suits made of materials which are compatible to the chemicals involved.
 - 4.2.2 **Level B** - Approved disposable encapsulating suit with SCBA.
 - 4.2.3 **Level C** - Approved disposable suit with SCBA.
 - 4.2.4 **Level D** - Structural fire fighting clothing with SCBA.

DECONTAMINATION:

- 5.1 Special attention will be given to personnel and equipment during all Hazardous Materials operations.
- 5.2 Efforts will be made to minimize the number of personnel and the amount of equipment needed in the hot area.
- 5.3 Prior to any fire department personnel, entering a contaminated area, the Incident Commander shall cause a Decontamination Area to be established.
- 5.4 Careful determination will be made as to the specific type of decontamination procedures necessary to handle the particular hazardous material(s) involved in the incident.
- 5.5 Due to inclement weather or other pertinent factors, decontamination at the scene may not always be possible. In this situation, the nearest suitable fire house or other designated structure may be used as the decontamination station for personnel apparatus and equipment.

Appendix I (Continued)

GENERAL GUIDELINES:

- 6.1 Extreme caution shall be exercised by all Fire Department personnel to ensure minimum exposure to the Hazardous Materials.
- 6.2 All available specialized tools, equipment and apparatus, shall be used to provide maximum protection and efficiency.
- 6.3 Normally, the personnel from the Hazardous Incident Team Task Force will operate as the mitigation team.
- 6.4 Only those persons specifically trained shall use the specialized equipment.

APPENDIX J

EQUIPMENT LOCATION			
5-1-1			
OFFICERS SIDE			
2 SMOKE EJECTORS	4 301B MET-L-EX EXTINGUISHERS	JEB TOOL	Door
2 20' SMOKE EJECTOR CHUTES	1 ABSORBENT SNAKE	CASE OF WOODEN PLUGS	
2* 50' ELECTRIC EXTENSION CHORDS	ASSORTED ROLLS OF BOUNDARY TAPE	CASE OF RUBBER PLUGS	
2 PROSSER PUMPS	CAUTION SIGNS WITH STANDS	CASE OF GAS COMPANY PLUGS	
* ONE CHORD IN BLACK CASE		CLASS "A" "B" "C"	CHLORINE KITS
			AMMONIA
			BLEACH

Appendix J (Continued)

DRIVERS SIDE			
2 - 500 GPM FOG NOZZLES	4 - 1 HOUR AIR BOTTLES	SAND BUCKETS	
1 - 1 3/4" HIGH-EX FOAM PIPE	2 - 1/2 HOUR AIR BOTTLES	LIME BUCKETS	
1 - 2 1/2" AFFF FOAM PIPE	BATTERY CHARGER	SODA - SOPS	
1 - HIGH EX FOAM PROPORTIONER	PCB DECONTAMINANT		
1 - AFFF FOAM PROPORTIONER	3 - 12 - 1 OIL WATERING CAN		
1 - GUZZLER			
2 - METAL BUCKETS			
1 - DECON - PUMP			
2 METAL WHEEL CHOKES			
FUEL TANK & FILL			

Appendix J (Continued)

	UNDER BENCH SEAT	
	CONTAINER ABSORBANT PADS	
	CONTAINER OF MET-L-X	
	2 CONTAINERS EMULSIFIER	
SEC 1	VITON SUITS WITH FLASH PROTECTION	} FOR COLLAPSIBLE ATTIC LADDER THIS SPACE
2	VITON SUITS	
3	VITON SUITS	
4	BUTYL SUITS WITH FLASH PROTECTION	
5	BUTYL SUITS	
6	BUTYL SUITS	
7	AMMO BOX WITH LITHMUS PAPER, PCB TEST KITS, CAMERA & FILM/FIRST AID KIT	
8	CPE SUITS	
9	CASE OF ABSORBANT MATERIAL	
10	CLOTHES CHEST WITH THROW AWAY SUITS	
	" " BOOTIES	
	NITRILE GLOVES	
	DUCT TAPE	
	MISC. SUPPLIES	
	BLUE CONTAINER WITH TYVEC/SARANEX THROW AWAY SUITS	
	CASE OF ABSORBANT MATERIAL	

Appendix J (Continued)

	ABOVE DESK	
	INFORMATION RESOURCE CENTER	
	BELOW DESK	
	PORTA-POWER (INCOMPLETE)	
	CONTAINER OF OIL DRY	
SEC 11	HARD HATS	2 PAIR EYE GOOGLES
	SMALL BIN ASSORTED GLOVES	
SEC 12	PATAY PUMP/W EXTRA DIAPHRAGMS AND PUMP HANDLE	
HIN	6 FOOT WOODEN STEP LADDER	
ND 12	ASSORTED ROLLS OF VISQUEENNE	
	HEAVY DUTY GARBAGE BAGS	
	SQUEEGEE WITH HANDLE	
	3 CORN BROOMS	
	3 5' STICKS OF STYRAFOAM PLUGGING	
SEC 13	1 AMMO BOX WITH 2 PORTABLE RADIOS	
	1 AMMO BOX WITH HANDHELD MIKE ACCESSORIES	
	2 EXTRA BATTERIES FOR RADIOS	
	EAR PLUGS	
	BOX SIZE D BATTERIES	
	EXPLDSIMETER	
	PAIR OF BINOCULARS	
	INFRATRACE HEAT GUN	
	NON-SPARKING DUST PAN	
	SERIES C PLUG KIT	

Appendix J (Continued)

APPENDIX J (cont'd)

Sec 13 Non-SPARKING CROW BAR

SEC 14 COTIE PIE RADIATION MONITORING GUN
 RECOVERY DRUM TOOL AND ACCESSORIES KIT
 1 TOOL BOX WITH ASSORTED TOOLS AND WRENCHES
 1 NON-SPARKING TOOL KIT WITH ASSORTED TOOLS
 AND WRENCHES
 1 BLUE CONTAINER WITH PLUG-N-DIKE AND
 ASSORTED GASKET MATERIAL
 1 10 POUND NON-SPARKING SLEDGE HAMMER

SEC 15 DRAEGER MONITORING TUBE KIT
 MODEL 16A1 TRITECHTOR (BLUE)
 TAN CONTAINER WITH ASSORTED GLOVES
 PVC
 NITON
 NITRILE
 BUTYL
 SURGICAL
 TAN CONTAINER WITH STERILE WATER AND SKIN
 LOTION
 TAN CONTAINER WITH RADIOLOGICAL MONITORS
 DOSIMETERS
 CDV-700 MONITOR
 CDV-715 "
 COMPUTER LINK UP
 RADIO POWER PACK

between
sec 15 & 16 in column - AIR PROBE TUBES FOR EXPLOSI-METER

SEC 16 PROXIMITY SUIT
 DECONTAMINATION KIT
 ABSORBANT PADS - 3 CONTAINERS

Appendix J (Continued)

2 WOODEN FOLDING CHAIRS

2 85 GALLON RECOVERY DRUMS

2 CIRCULAR DRUM DOLLYS

INSIDE 85 GALLON DRUMS WILL BE

2 SALVAGE COVERS

1 LARGE PATCH KIT

1 SMALL PATCH KIT

12 GALLON RECOVERY DRUMS

PAIR OF METAL CRUTCHES

SWIMMING POOL

PLASTIC CONES

2 - ENTRY SUITS

DECONTAMINATION SHOWER

Rear Compartment

Banjo shovel

Spade shovel

Drum dolly

Dome Covers

Pry Bar

APPENDIX K



FIRE DEPARTMENT OF THE CITY OF CHICAGO

BUREAU OF FIRE SUPPRESSION AND RESCUE
HAZARDOUS INCIDENT TEAM

ACTIVITY REPORT

Incident # 225006

Time of Response 0740

Date 5-29-89

Time of Return 1225

Location 2958 W. FULLERTON

Nature of Incident GASOLINE TANKER FIRE

Reported To 2-2-2 MDAL

Actions Taken SET UP MULTI-VERSAL W/500 GPM FOAM PIPE AT SIDE OF TANKER,
SET UP AKRON 2 1/2" FOAM PIPE ON POINT OF VANTAGE ROOF. APPLIED FOAM,
PUT OUT FIRE. NOTIFIED CONSUMER SERVICES & SANITARY DISTRICT. BOTH ON
SCENE CHECKED BOTH SIDES OF STREET FOR GASOLINE VAPORS IN
BASEMENTS, FOUND NONE. FLUSHED AREA W/ HYDRANTS.
TANKER TRUCK OWNED BY TANEY TRANSPORT, ROCKFORD, ILL.

Mitigation Personnel CAPT. DOUGHERTY, ENGR. O'CONNELL & FF GILHOLLY (SQD. 5)

Supplies Used 67 5 GAL. BUCKETS OF 3/4% FOAM CONCENTRATE

Equipment Used 500 GPM MULTI-VERSAL W/FOAM PIPE & 2 1/2" AKRON FOAM
PIPE

Approved:

John M. Ciccone
Hazardous Materials Coordinator

Respectfully Submitted:

C.F. Dougherty - Capt. H.I.T. 1
H.I.T. Officer

Appendix K (Continued)

C F D # 225006 LOCATION 2958 W. FULLERTON

page 4
PART II

HAZARDOUS MATERIALS INCIDENT EVALUATION

IESDA Incident# <u>108718</u>	County where incident occurred <u>COOK</u>	Name and title of person completing report <u>DOUGHERTY, CAPTAIN</u>		
Organization completing report <u>CHICAGO FIRE DEPT.</u>		Address (City/State) <u>CHICAGO, IL</u>	Zip <u>60614</u>	Tel.# <u>(312) 444-8610</u>

Your Organization <input type="checkbox"/> 1 Private (specify) <input checked="" type="checkbox"/> 2 Municipal <input type="checkbox"/> 3 County <input type="checkbox"/> 4 State of Illinois <input type="checkbox"/> 5 Other Government (specify)	Your Function <input type="checkbox"/> 1 Spiller/Spiller's Representative <input checked="" type="checkbox"/> 2 Fire Fighting <input type="checkbox"/> 3 Law Enforcement <input type="checkbox"/> 4 Hazardous Materials Contractor <input type="checkbox"/> 5 Emergency Medical <input type="checkbox"/> 6 Emergency Management <input type="checkbox"/> 7 Environmental Protection <input type="checkbox"/> 8 Other (specify)	Actions Taken by Your Organization (X as many as apply) <input checked="" type="checkbox"/> Security/Crowd control <input checked="" type="checkbox"/> Spill Mitigation <input checked="" type="checkbox"/> Clean-up/Recovery <input checked="" type="checkbox"/> Medical Assistance <input checked="" type="checkbox"/> Fire Fighting <input checked="" type="checkbox"/> Rescue <input checked="" type="checkbox"/> Public Information/Warnings <input checked="" type="checkbox"/> Technical Assistance/Sampling <input type="checkbox"/> Other
---	---	---

Incident Information (give date & time) When did incident occur? When was your organization notified? When did you initially respond? When did you arrive on the scene? When did you terminate operations?	Initial Response Was <input type="checkbox"/> 1 - By telephone <input checked="" type="checkbox"/> 2 - On-scene <input type="checkbox"/> 3 - Not needed Number of Hazardous Materials Related Injuries _____ Deaths _____
--	---

Spill Origin <input type="checkbox"/> 1 Highway <input type="checkbox"/> 5 Loading Dock <input type="checkbox"/> 9 Storage Area <input type="checkbox"/> 2 Plant Processing <input type="checkbox"/> 6 Oil Field <input type="checkbox"/> 10 Fixed Facility <input type="checkbox"/> 3 Pipeline <input type="checkbox"/> 7 Rail <input type="checkbox"/> 11 Agricultural <input type="checkbox"/> 4 Waterway <input checked="" type="checkbox"/> 8 Other (specify) <u>CITY STREET</u>	Was more than one chemical involved? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Primary Commodity Involved: UN# <u>1203</u> (or) NAs _____ Chemical Name: <u>GASOLINE</u> Type: <input type="checkbox"/> 1 Gas <input checked="" type="checkbox"/> 2 Liquid <input type="checkbox"/> 3 Semi-solid <input type="checkbox"/> 4 Solid Trade Name: _____
--	---

Container <input checked="" type="checkbox"/> 1 Truck <input type="checkbox"/> 5 Process pipe <input type="checkbox"/> 1 Pounds (preferred unit) <input checked="" type="checkbox"/> 2 Railroad car <input type="checkbox"/> 6 Aboveground tank <input type="checkbox"/> 2 Gallons <input type="checkbox"/> 3 Drum <input type="checkbox"/> 7 Underground tank <input type="checkbox"/> 3 Cubes <input type="checkbox"/> 4 Pipeline <input type="checkbox"/> 8 Other (specify) <input type="checkbox"/> 4 Cu. ft. (natural gas)	Estimated Amount At risk: <table border="1" style="display: inline-table; text-align: center;"> <tr><td></td><td>8</td><td>4</td><td>0</td><td>0</td></tr> </table> Released: <table border="1" style="display: inline-table; text-align: center;"> <tr><td></td><td>3</td><td>5</td><td>0</td><td>0</td></tr> </table> Recovered: <table border="1" style="display: inline-table; text-align: center;"> <tr><td></td><td>5</td><td>1</td><td>0</td><td>0</td></tr> </table>		8	4	0	0		3	5	0	0		5	1	0	0
	8	4	0	0												
	3	5	0	0												
	5	1	0	0												

RESOURCES USED: Man-hours: _____ Replacement Costs: _____	Please answer the following questions using the rating system listed.
--	---

1 - Does not apply 2 - Strongly disagree 3 - Disagree with reservation 4 - Do not know	5 - neither agree or disagree 6 - agree with reservation	7 - Agree 8 - Strongly agree
---	---	---------------------------------

1. Notification to you was timely 2. Spiller's response was adequate 3. Spiller's contingency plan was sufficient 4. Local government's contingency plan was adequate 5. The state's contingency plan was adequate 6. The state's technical support was adequate 7. The state's response on-scene was appropriate 8. Local government's response was appropriate 9. Needed equipment was quickly available 10. Security and crowd control was adequate	11. Your personnel protective equipment was adequate 12. Spill control equipment was adequate 13. Spill control supplies were sufficient 14. Training of your staff was adequate for this incident 15. This incident posed a threat to public health and safety 16. Your organization's training & preparedness was adequate for the role it was expected to play 17. Emergency medical services were adequate 18. Inter-governmental cooperation was satisfactory 19. Overall you were pleased with the way this incident was handled by all parties involved
---	--

Illinois Hazardous Materials Advisory Board c/o Illinois Department of Transportation 2300 South Dirksen Parkway Springfield, IL 62764 (217) 785-1181	IMPORTANT NOTICE: This Board is requesting information that is necessary to accomplish the statutory purpose as outlined under Chapter 127 of the Illinois Revised Statutes. Disclosure of this information is VOLUNTARY. This form has been approved by the State Forms Management Center. IL 494-0742
---	--

Mailed
5-27-81 Date

Appendix K (Continued)



CHICAGO FIRE DEPARTMENT BUREAU OF FIRE SUPPRESSION & RESCUE



Company Performance Report at Special Duty or Extra Alarms

CORRECT ADDRESS OF ALARM 2958 W. FULLERTON BOX NO: 6148
 DATE: 5-29-89 TIME RESPONDED: 0740 ALARM RESPONDED ON: STILL
 COMPANY NUMBER: H.I.T. 1 NO. OF MEN WORKING: 3
 CHIEF OFFICER REPORTED TO: 2-2-2 MOHL SECTOR WORKED AT FIRE: ALL
 DESCRIBE WORK COMPANY PERFORMED AT FIRE: SET UP MULTI-VERSAL W/500 GPM
FOAM ON N. SIDE OF TANKER, SET UP 2 1/2" AIRON FOAM PIPE ON ROOF, APPLIED
FOAM TO TANKER & SPILLED GASOLINE. CHECKED BASEMENTS ON BOTH SIDE
OF FULLERTON. FLUSHED AREA W/ HYDRANTS.

TIME BACK IN SERVICE: 1225

NO. OF LINES	AMOUNT OF HOSE LED OUT IN FEET					PRESSURE		PUMP TIME		QUICK WATER USED	DIECK GUN USED	MULTI- VERSAL USED	WORK TIME	
	1 3/4"	2 1/2"	3"	4"	5"	HYD.	ENG.	ENG.	MIN.				ENG.	MIN.

MAKE A DETAILED SKETCH BELOW SHOWING THE LOCATION OF THE FIRE BLDG AND POSITION OF APPARATUS.
 ENGINES SHOW HYDRANT USE AND HOSE LEAD OUTS. TRUCKS/TOWER LADDERS SHOW LADDERS RAISED.
 SHOW SECTOR NO'S AND INDICATE NORTH IN CIRCLE.

APPARATUS NOT USED

COMPANY OFFICER: E.F. DOUGHERTY - CAPT. H.I.T. 1
 (PRINT NAME)

E.F. Dougherty
 (SIGNATURE)

APPROVED/DISAPPROVED: _____

BATTALION CHIEF

DEPUTY DISTRICT CHIEF

C.F.D. 152 (REV. 10/88)

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APPENDIX L

Photographs



1. Fire conditions along Fullerton Street between tanker and "el" tracks.



2. First streams (arrow) in operation on tanker; two-story exposure building is obscured by fire and smoke.



3. Another view of the tanker; Snorkel Squad 2 is visible at upper right.



4. Firefighters operate foam handline to control spill fire. Note streams directed at exposure and tanker, including from second floor of exposure.



5. Tanker surrounded by streams.



6. View of incident from Fullerton Street. Tanker is on other side of railroad overpass.



7. Spill fire flares up as it flows around parked car. Note runoff in foreground.



8. Foam attack in progress, elevated water streams are standing by. Note vantage point for foam handline in use on roof of exposure.



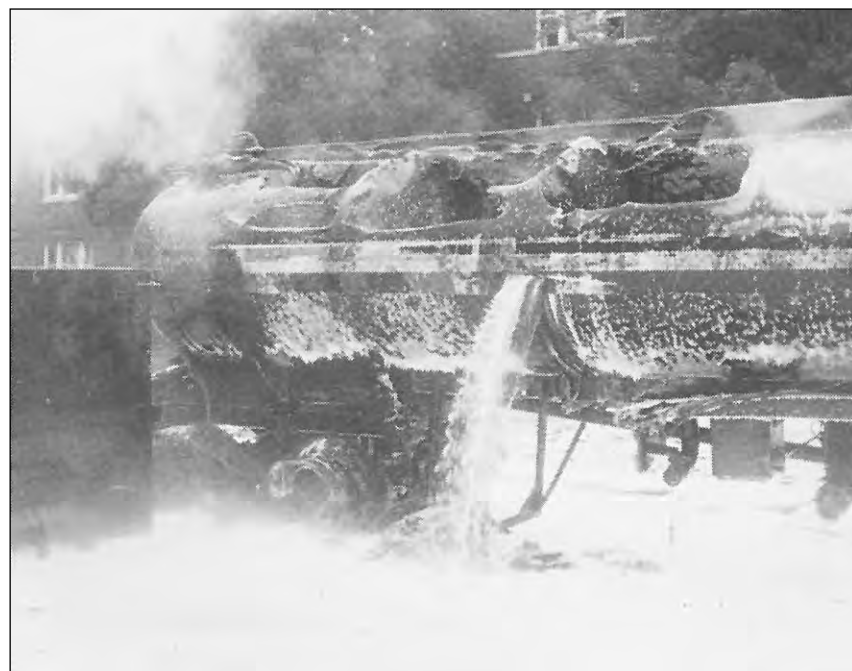
9. Knockdown complete, foam lines are going for the rest of the spill.



10. Fire out, but product continues pouring from tank trailer.



11. Firefighters flood debris in dumpster to prevent re-ignition of gasoline.



12. Damage to rear of tank trailer; gasoline still pours from puncture.



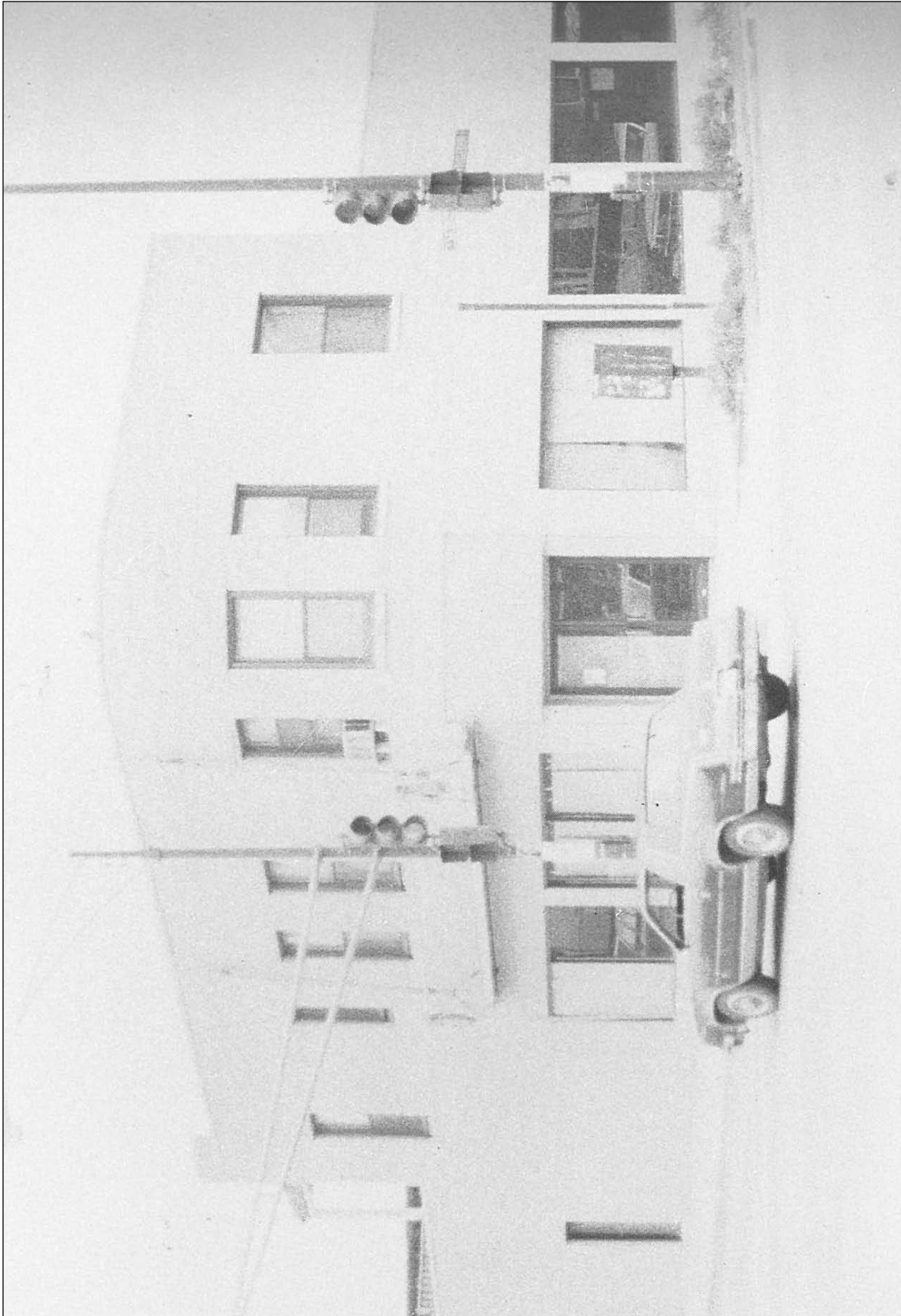
13. Rear of tanker, left side are intact.



14. Fire out, units standing by.



15. Off-loading in progress, water department employees check manhole for explosive vapors.



16. Primary exposure building weeks after the incident. Note reflection of dumpster in windows on right hand side.



17. Rear of primary exposure building showing proximity to "el" and access to second floor/roof.



18. 511A, Chicago's second piece of the Hazmat Team. This unit carries absorbent, various supplies, and foam concentrate.