DOCUMENT RESUME

ED 107 805 CE 003 899

| | |
|---|---|
| TITLE | Highway Safety Program Manual: Volume 16: Debris Hazard Control and Cleanup. |
| INSTITUTION | National Highway Traffic Safety Administration (DOT), Washington, D. C. |
| PUB DATE | Jan 75 |
| NOTE | 61p.; For related documents, see CE 003 883-898 and CE 003 900-901 |
| AVAILABLE FROM | Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402 (Stock Number 050-003-00209, $1.25) |
| EDRS PRICE | MF-$0.76 HC-$3.32 PLUS POSTAGE |
| DESCRIPTORS | *Accident Prevention; Evaluation Criteria; Federal Legislation; *Federal Programs; *Guidelines; Local Government; Objectives; Policy; Program Evaluation; Reports; State Government; State Programs; *Traffic Accidents; Traffic Control; *Traffic Safety |
| IDENTIFIERS | *Highway Safety |

ABSTRACT

Volume 16 of the 19-volume Highway Safety Program Manual (which provides guidance to State and local governments on preferred highway safety practices) concentrates on debris hazard control and cleanup. The purpose and objectives of such a program are outlined. Federal authority in the area of highway safety and policies regarding a debris control and cleanup program are explained. Program development and operations (planning considerations, control centers, operational elements, and training) are presented. Criteria for program evaluation and different types of reports (routine, special, and National Highway Traffic Safety Administration) are explained. Local government participation is outlined. Appendixes contain the Highway Safety Program Standard 16, Debris Hazard Control and Cleanup; a glossary of definitions; references; a list of representative projects; a list of resource organizations; a list of communications systems and recommended equipment; and information concerning procedures to follow in the event of an incident involving a nuclear radiation source. (NH)

**Highway Safety** NO **16**
**Program Manual**

# Debris Hazard Control and Cleanup



JANUARY 1975



U.S. DEPARTMENT
OF TRANSPORTATION

NATIONAL HIGHWAY TRAFFIC
SAFETY ADMINISTRATION

# HIGHWAY SAFETY PROGRAM MANUAL

## VOLUME 16

## DEBRIS HAZARD CONTROL AND CLEANUP

This manual is designed as a guide for States and their political subdivisions to use in developing highway safety program policies and procedures. It does not supersede the requirements of Highway Safety Program Standard No. 16.

# FOREWORD

As part of the Highway Safety Program Manual, this volume is designed to provide guidance to State and local governments on preferred highway safety practices. Volumes comprising the Manual are:

0. Planning and Administration
1. Periodic Motor Vehicle Inspection
2. Motor Vehicle Registration
3. Motorcycle Safety
4. Driver Education
5. Driver Licensing
6. Codes and Laws
7. Traffic Courts
8. Alcohol in Relation to Highway Safety
9. Identification and Surveillance of Accident Locations
10. Traffic Records
11. Emergency Medical Services
12. Highway Design, Construction, and Maintenance
13. Traffic Control Devices
14. Pedestrian Safety
15. Police Traffic Services
16. Debris Hazard Control and Cleanup
17. Pupil Transportation Safety
18. Accident Investigation and Reporting

The volumes of the Manual supplement the Highway Safety Program Standards and present additional information to assist State and local agencies in implementing their highway safety programs.

The content of the volumes is based on the best knowledge currently available. As research and operating experience provide new insights and information, the Manual will be updated.

The volumes of the Highway Safety Program Manual deal with preferred highway safety practice and in no way commit the Department of Transportation to funding any particular program or project.

Many expert organizations and individuals at all levels of government and in the private sector contributed heavily in the preparation of the volumes of the Manual. The Department appreciates greatly this help in furthering the national program for improving highway safety for all Americans.

U.S. DEPARTMENT OF TRANSPORTATION

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

# HIGHWAY SAFETY PROGRAM MANUAL

| VOLUME 16 - DEBRIS HAZARD CONTROL AND CLEANUP | TRANSMITTAL 53 |
|---|---|
| CHAPTER CONTENTS | January 1975 |

# HIGHWAY SAFETY PROGRAM MANUAL

| VOLUME 16 - DEBRIS HAZARD CONTROL AND CLEANUP | TRANSMITTAL 53 |
|---|---|
| CHAPTER I. PURPOSE | January 1975 |

Par. I. Introduction
II. Purpose
III. Specific Objectives

## I. INTRODUCTION

Wrecked or otherwise disabled vehicles or other debris resulting from a crash frequently cause additional crashes until they are removed from the traveled way. Inordinate delays to traffic also are produced. Other threats to public safety on the highway are created when spillages of gasoline, other flammable liquids, exotic chemicals, or nuisance materials are not promptly cleaned up.

Prompt cleanup of debris resulting from accidents has been articulated in two Congressional reports.

The House of Representatives report states:

> "Techniques should be instituted to insure the fastest possible notification of an emergency-call boxes, aerial surveillance, patrols, closed-circuit TV, and any other feasibility system. Control centers should be established, manned, and equipped to send to the emergency scene people and equipment capable of providing medical care, transportation of the injured, prompt assessment of all the elements involved in the accident, and restoration of traffic movement."*

*H. Rept. 1700, 89th Congress, 2d Session, p. 20.

The Senate report reads:

> "Finally, adequate methods of traffic handling at the accident scene, and means for prompt removal of damaged vehicles and debris from the roadway are also needed."*

## II. PURPOSE

The purpose of the Program is to provide for the prompt removal of damaged or disabled vehicles from the crash site and for the cleanup of any dangerous spillages resulting from crashes or other mechanical breakdowns of vehicles on public thoroughfares in order:

A. To lessen the probability that the debris will create additional hazards and dangers;

B. To relieve congestion and expedite the resumption of normal traffic flow.

## III. SPECIFIC OBJECTIVES

The specific objectives of the Program are:

A. To develop and implement operational procedures:

1. For prompt notification to responsible officials of the presence of wrecked or otherwise disabled vehicles, spillages, or other debris that present continuing danger to highway users on public thoroughfares.

2. For rapid, orderly, and safe removal from the roadway of such debris.

3. For the safe resumption of normal traffic movement.

4. For early replacement or corrective repairs of damages to the roadway, lighting, or traffic control devices.

---

*S. Rept. 1302, 89th Congress, 2d Session, p. 15.

B. To provide for the specific assignment of responsibilities to designated officials for all aspects of a comprehensive debris hazard control and cleanup program, including overall Program operation.

# HIGHWAY SAFETY PROGRAM MANUAL

| | | |
|---|---|---|
| VOLUME | 16 - DEBRIS HAZARD CONTROL AND CLEANUP | TRANSMITTAL 53 |
| CHAPTER | II. AUTHORITY | January 1975 |

The basic authority for the Standard and the program for debris hazard control and cleanup is contained in Chapter 4, of Title 23, U.S.C. (hereinafter referred to as the Highway Safety Act of 1966).

Section 402(a) of Title 23 states:

> "(a) Each State shall have a highway safety program approved by the Secretary, designed to reduce traffic accidents and deaths, injuries, and property damage resulting therefrom."

Based upon the above authority, the Secretary of Transportation has issued Standard 16, Debris Hazard Control and Cleanup, which is included as Appendix A.

# HIGHWAY SAFETY PROGRAM MANUAL

| VOLUME | 16 - DEBRIS HAZARD CONTROL AND CLEANUP | TRANSMITTAL 53 |
|---|---|---|
| CHAPTER | III. GENERAL POLICY | January 1975 |

Par. I. Introduction
II. Policy

## I. INTRODUCTION

Prompt removal from public thoroughfares of wrecked vehicles, other debris resulting from crashes, and dangerous spillages is mandatory to reduce the likelihood of additional crashes and to provide for prompt restoration of safe traffic movement. The policy of the U. S. Department of Transportation is to assist the State and its political subdivisions to develop effective operational procedures toward this end.

## II. POLICY

A. Each State should have a fully detailed debris hazard control and cleanup program that as a minimum includes:

1. Procedures for prompt notification to responsible officials of a debris situation creating a hazard to highway users.

2. Procedures for rapid, safe, and orderly correction of the debris situation.

3. Procedures for immediate restoration of safe traffic movement, with temporary measures if necessary.

4. Procedures for permanent corrections of damaged highway locations.

B. The State should assure that for all primary and secondary roads in the State under all jurisdictions (State, county, and

local) an adequate program of debris hazard control and clean-up is in effect.

1. The State should assist its political subdivisions in establishing and operating effective debris control programs for roads under their jurisdiction.

2. The State should undertake appropriate agreements where local agencies provide services related to debris control programs on roads under State jurisdiction.

C. Maximum effectiveness of the debris hazard control and clean-up program requires full cooperation and coordination among the various State and local agencies, other private organizations, and their respective capabilities. Program interrelationships among such groups should be clearly delineated and should include at least the following:

1. State and local authorities.

   a. Police services.

   b. Emergency medical services, including:

      (1) Rescue squads.

      (2) Ambulance services.

      (3) Hospital emergency room services.

      (4) Health services.

   c. Fire services.

   d. Highway services.

2. Nongovernmental organizations.

   a. Utilities.

   b. Local transit services.

   c. Auto clubs and towing services.

d. Private contractors with special equipment.

e. Industrial firms with emergency service equipment.

f. News media.

3. Federal agencies providing special support capability such as:

a. Atomic Energy Commission (AEC).

b. Federal Aviation Administration (FAA).

c. Office of Civil Defense (OCD).

d. Office of Emergency Preparedness (OEP).

e. Office of Emergency Transportation (OET).

f. Military installations.

D. Whereas the various services required for effective implementation of a debris control program will be performed by specific agencies having the cognizant responsibility as part of their normal assignments (e.g., police departments dispatching wreckers or towing vehicles to a crash scene, fire departments cleaning up dangerous spillage, highway departments correcting damages to roads, traffic engineering groups repairing or replacing damaged control devices), the debris control program called for here pertains primarily to planning and coordinating these various diverse contributions.

E. Whenever it is feasible to do so, one agency or official should be designated as having primary responsibility for coordinating all aspects of the debris hazard control and cleanup program, both:

1. At the State level.

2. At local levels.

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

# HIGHWAY SAFETY PROGRAM MANUAL

| VOLUME | 16 - DEBRIS HAZARD CONTROL AND CLEANUP | TRANSMITTAL 52 |
|---|---|---|
| CHAPTER | IV. - PROGRAM DEVELOPMENT AND OPERAT | January 1975 |

Par. I. Introduction
II. Planning Considerations
III. Control Centers
IV. Operational Elements
V. Training

## I. INTRODUCTION

Debris or other foreign material on a public thoroughfare will seriously affect the safe and efficient use of the highway. Until this debris is removed or otherwise corrected it will contribute to congestion and delay and present a continuing danger to both persons and property. Three general classes of debris may be identified: 1) vehicle and highway debris resulting from crashes, 2) cargo spillage caused by crashes or other reasons, and 3) other types of debris.

A. Vehicle and highway debris which is deposited and remains upon a highway as the result of a motor vehicle crash includes:

1. Disabled vehicles.

2. Glass and other vehicle parts.

3. Signs.

4. Poles.

5. Wires.

B. Cargo spillage induced by crashes or other causes (e.g., high winds, breaks in tiedowns) includes:

1. Fuels and other flammable liquids.

2. Dangerous chemicals.

3. Toxic or poisonous substances.

4. Nuisance liquids that produce hazards (e.g., molasses).

5. Dry bulk materials.

C. Other types of debris include:

1. Disabled or abandoned vehicles.

2. Articles which fall from vehicles.

3. Mud and other materials deposited on the roadway from vehicles operating to and from fields or construction zones.

4. Animals (live, injured, or dead).

5. Rock slides, trees, and tree limbs.

6. Ice and snow patches.

7. Utility lines.

8. Trash and garbage.

## II. PLANNING CONSIDERATIONS

Planning is an essential first step in developing an effective debris hazard control and cleanup capability. To assist the State and its local political subdivisions in planning their programs, the following series of planning steps is provided:

A. Initial planning study.*

A detailed study should be undertaken to determine the overall scope of the problem, to specify objectives, to consider the assignment of authority and responsibility, and to identify specific operational requirements.

*Although these steps are described sequentially, steps "a" and "b" may be performed concurrently.

1. Specific operational requirements should be identified, including:

   a. Communications.

      Identify the communications system control centers, dispatch points, cross-monitoring capability, and back-up provisions needed.*

   b. Facilities.

      Specify vehicle and repair facilities and materials storage yards needed.

   c. Equipment.

      Specify equipment, devices, and special materials needed.**

   d. Personnel.

      Identify skills required, including supervisory.

   e. Training.

      Identify specific training requirements.

2. Other factors which should be considered pertain either to unique conditions or to the possible presence of hazards in the environment.

   a. Environment.

      Identify special or unusual conditions which arise because of climate, terrain, or access.

   b. Hazards.

      Identify areas where hazards may exist regularly or occasionally.

   c. Traffic patterns.

---

*/** See Appendix F.

Identify high accident rate areas related to known or anticipated traffic volume.

d. Response times.

Identify factors which influence response and cleanup times for different highway environments.

3. Necessity for establishing on-site management authority and responsibility should not be overlooked.

B. Inventory of existing resources and capabilities.

The type, availability, and current use of existing resources and capabilities should be determined.

1. Agency responsibility.

Which agency or service is responsible for what function and at what locations?

2. Communications.

Type of system, user, and location.*

3. Facilities.

Function performed and where located.

4. Trained personnel.

Number and where located.

5. Training sources.

Type of training available and location.

C. Comparison of requirements with resources and capabilities.

The specified requirements and known problem areas should be compared with existing resources and capabilities. At this point current overall debris hazard control and cleanup capability

*See Appendix F.

can be established and additional needs determined in terms of communications, facilities, equipment, personnel, and training.

D. Development of plan.

Based upon the foregoing considerations a plan should be developed to meet the overall objectives of the debris hazard control and cleanup program. The significant elements to be considered are:

1. Responsibility.

   Identify primary and support responsibilities of the various agencies and services involved.

2. Working agreements.

   Establish mutual understanding of operational terms and develop interagency working agreements.

3. Coordination.

   Provide for operational coordination between functional service elements at control or dispatch centers.

4. Procedures.

   Develop operational procedures for on-site management, dispatching (including listing telephone numbers of personnel and services), following safety precautions, using special equipment, and handling unusual or hazardous materials.

5. Performance.

   Establish desired response times and cleanup performance levels.

6. Legal considerations.

   Determine authority to move or impound vehicles or cargo. (This may require enabling legislation.)

7. Priorities.

Establish priorities for program development.

8. Implementation.

Develop an implementation schedule.

E. Implementation of the plan.

The prepared plan will provide the basis for program implementation. Of particular concern are assignment of agency responsibilities, coordination of development work, and incorporation of procedures for assessing and correcting any inadequacies in the plan or the schedule.

F. Evaluation of the plan.

Periodic review of the plan is required as various program elements are implemented and operational data and experience provide additional information for improving and updating the plan.

## III. CONTROL CENTERS

A system of control centers should be established with existing dispatch points being utilized or augmented as necessary to provide for the accomplishment of the following functions throughout the State:

A. Receipt of notification of the existence of a hazardous debris situation.

B. Analysis of hazard potential of reported situation.

C. Notification and/or dispatch of corrective action groups.

D. Coordination of advisory notices to the media.

E. Followup on corrective action.

## IV. OPERATIONAL ELEMENTS

The following operational elements represent a typical sequence of activities to be performed and serve to highlight operational considerations involved in implementing the program.*

*A related discussion of this subject will be found in Chapter IV, Vol. 11, Emergency Medical Services.

A. Detection.

Detection represents the initial recognition of 1) a crash, 2) the presence of debris, or 3) a hazardous highway condition. Of particular importance are:

1. Sources of detection.

   Detection sources might be police units, citizens, maintenance crews, aerial reconnaissance units, or sensing devices.

2. Severity and criticality.

   On-site determination of the seriousness of the situation and of the hazards involved should be made, if possible, by the person reporting the incident.

3. Procedures.

   Agency and related service personnel should be trained in proper reporting procedures.

4. Public awareness.

   Citizens should be made aware of what and where to report.

B. Notification.

Notification can be described as the initial notification or alert to an official agency that an incident creating a debris problem has occurred. The communications system should be capable of receiving notification from alternate sources (e. g., police radios, work crews, dispatchers, citizens, news media helicopters) and be able to act upon multiple alerts during peak traffic periods.

C. Response.

Response represents the assembly and dispatch of personnel and equipment to the site by the agency with primary responsibility and those agencies with specialized supporting roles. Functions to be considered are:

1. Situation analysis.

Control center personnel and the reporting person should attempt to evaluate the incident to determine hazard classification (e.g., chemical, electrical, mechanical, biological, or thermal), the services estimated to be needed at the site, and the probable length of time the highway will be affected.

2. Coordination.

   Control center personnel should coordinate the response of services needed at the site and alert other services. Where hazardous material is involved, efforts should be made to notify the shipper or manufacturer of the cargo.

3. Dispatch.

   Service units should be directed to the site in sufficient quantity, and other services should be informed of action taken.

4. Monitoring control.

   Using information provided by the on-site manager, the control center should monitor progress and request additional services as necessary.

5. Access.

   If service units arriving at the site find access impaired, alternate routing should be determined, and other services should be informed through the control center.

6. Informing the public.

   In major incidents the control center should coordinate with news media on early public announcement of highway congestion or blockage and possible alternate routes.

D. Restoration procedures.

The following actions are representative of corrective steps required to restore the incident site to a safe condition.

1. Site isolation.

With safety considerations of prime importance, the incident site should be isolated to prevent secondary or chain reaction collisions, both protection and working space for service crews and vehicles should be provided, and indiscriminate stopping by uninvolved motorists should be prevented.

2. Advance warning.

   Warning should be provided for approaching motorists.

3. Hazard evaluation.

   An assessment of actual or potentially hazardous conditions should be made and precautions taken prior to actual restoration actions.

4. Extrication.*

   Removal of trapped persons from wreckage may be necessary if fire or other hazards become imminent. In such cases care should be taken to avoid injury or aggravating existing injuries.

5. Additional support.

   Additional specialized support should be requested as needed.

6. Vehicle removal.

   Vehicles should be removed from the highway as expeditiously as possible under previously established legal authority.

7. Rerouting.

   In instances of major restoration action, traffic rerouting of considerable duration may be necessary. All relevant services should be alerted and the public informed.

*A related discussion of this subject will be found in Chapter V, Volume 11, Emergency Medical Services.

8. Debris.

Containment, removal, and disposal of debris should be performed with consideration given to side effects and the handling of unusual materials (e.g., flammable, explosive, or poisonous).

9. Temporary repairs.

Necessary temporary highway or structural repairs should be made.

E. Restoration of traffic movement.

After removal of disabled vehicles and debris, traffic movement should be promptly restored at the incident site. Applicable traffic control techniques should be employed including the use of control devices, such as portable barrier assemblies, cones, flares, and signs. Such devices are particularly necessary for highways with high traffic density.

F. Data collection.

Provision should be made for the collection of pertinent operational data. Incident report data providing response times, numbers and types of equipment used, and special situations or problems which encumbered debris hazard control and cleanup would be particularly relevant. These data could then provide the basis for incident followup or effectiveness critiques by the supervisory personnel of those agencies involved.

G. Operational elements.

Exhibits I and II, following this page, present typical examples of the functional elements involved in debris hazard control and cleanup and the operational relationships and interfaces of these elements.

## V. TRAINING

Currently, no single source for training in debris hazard control and cleanup is known to the Department of Transportation. However, many agencies and organizations provide instruction in certain of the skills needed. The following general training considerations should suggest possible curriculum topics and training sources.

EXHIBIT I

DEBRIS HAZARD CONTROL AND CLEANUP OPERATIONS

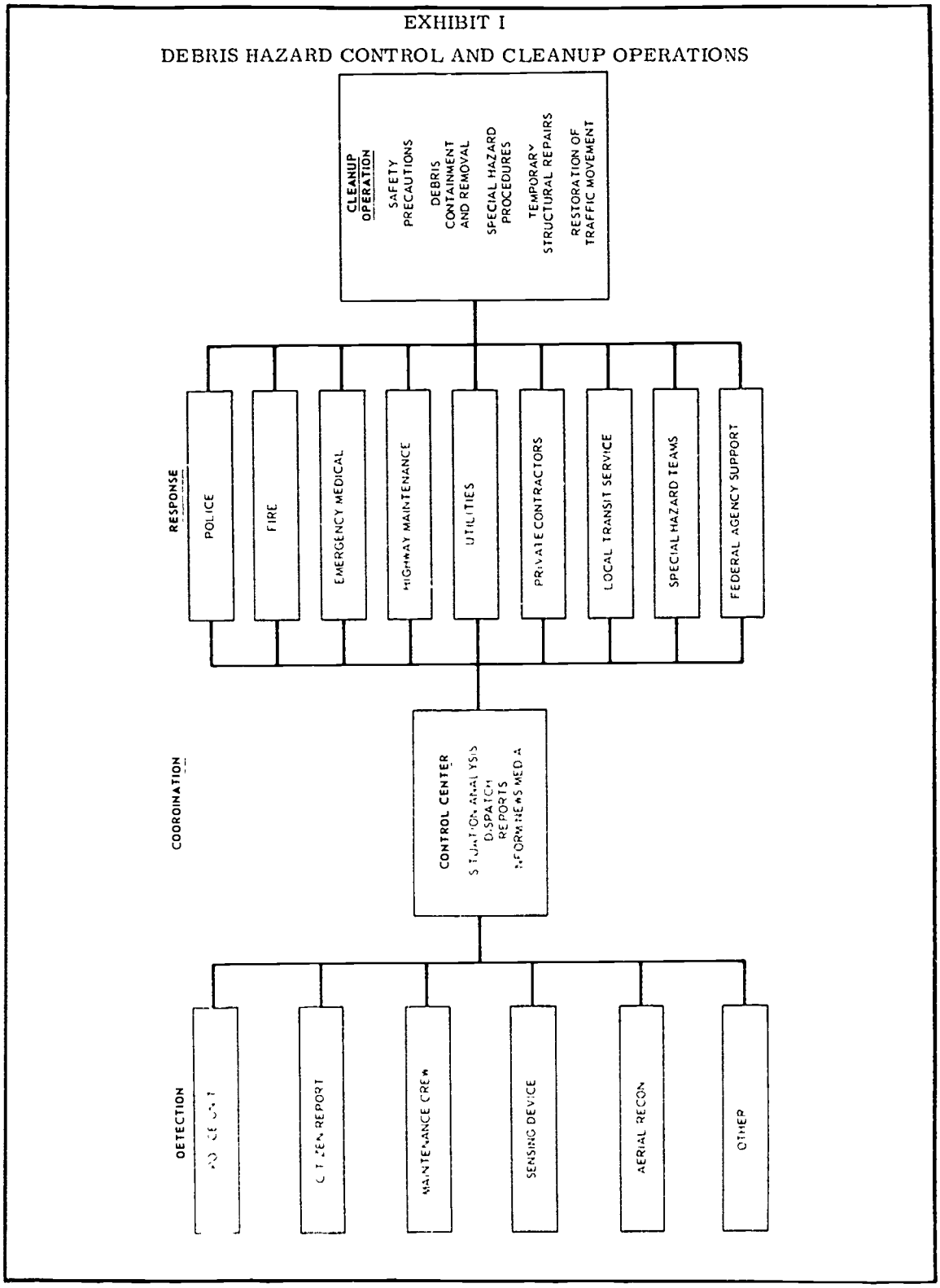

EXHIBIT II

DEBRIS HAZARD CONTROL AND CLEANUP FUNCTIONAL ELEMENTS

A. General training considerations.

1. Since debris hazard control and cleanup occurs at local political jurisdictional levels, the necessary technical skill and procedural training should be provided within the context of existing local agency training programs. Similarly, orientation for local agency officials, both public and private, should be provided.

2. Comparable orientation sessions should be provided for agency officials at the State level, although it is assumed that the emphasis would be on area-wide problems, coordination, planning, and program development, rather than on actual operations.

3. Increased public awareness of traffic safety considerations at incident sites is necessary.

B. Scope of training.

1. Operational crew training which should include:

   a. Communications, including telephone, radio, alternate backup provisions, and dispatching procedures.*

   b. Coordination procedures between public agencies and related private organizations.

   c. Basic traffic control procedures.

   d. Driver training.

   e. Proper use of emergency vehicle equipment.

   f. Highway nomenclature.

   g. Familiarization with expressway design and operation.

   h. Area geography and special conditions.

   i. Local public transit operations.

*For further discussion, see Chapter IV, Volume 11, Emergency Medical Services.

j. Basic fire fighting skills.

k. Familiarization with special hazard conditions, such as:

(1) Solids or liquids which may present danger of fire, explosion, or injury.

(2) Flammable or toxic vapors.

(3) Poisons.

(4) Radioactive materials.

l. Basic and advanced rescue and first aid training.

2. Orientation of local public and private agency officials, which should include:

a. Scope of the problem.

b. Current response capability with available resources.

c. Interagency coordination.

d. Special problems.

e. Operations forecasting based upon weather, time of day, holiday or special event traffic flow considerations.

f. Data collection for operational and reporting purposes.

3. Educating the public.

Increased public awareness should be developed concerning safety considerations at incident sites through mass media and other educational means.

4. Special training programs.

The larger metropolitan areas with complex traffic configurations and sophisticated communications and control facilities should explore the possibility of:

a. Training for special accident cleanup or freeway patrol teams.

b. Field sites for training in the use of special equipment and the handling of hazardous materials.

c. Periodic exercises using simulation techniques, particularly for personnel located at control points in the communications network.

C. Training sources.

1. Since no single source for training in debris hazard control and cleanup is known, State and local authorities should consider as training sources those agencies or organizations which provide instruction for certain of the skills needed. Examples include:

   a. Basic and advanced first aid and rescue.

   b. Basic firefighting.

   c. Special vehicle operation.

2. Where formal ongoing training programs are not available, it should be possible to arrange for instruction by persons having specialized technical competence.

# HIGHWAY SAFETY PROGRAM MANUAL

| VOLUME | 16 - DEBRIS HAZARD CONTROL AND CLEANUP | TRANSMITTAL 53 |
|---|---|---|
| CHAPTER | V. PROGRAM EVALUATION | January 1975 |

Par. I. Introduction
II. Purpose of Evaluation
III. Program Evaluation Checklist
IV. Performance Evaluation

## I. INTRODUCTION

The Standard requires that the program be periodically evaluated by the State and the National Highway Traffic Safety Administration be provided with an evaluation summary. This chapter presents evaluation guidelines to assist the State in evaluating its program and local political jurisdictions in reviewing their operational performance.

## II. PURPOSE OF EVALUATION

The purpose of program evaluation, either on a periodic or continuing basis, is:

A. To assess program accomplishments in relation to program objectives.

B. To identify any needed changes in the program, as might be occasioned by new highway development, population shifts, or other changes.

C. To provide for information for planning resource allocation.

## III. PROGRAM EVALUATION CHECKLIST

To assist the State in evaluating its program, the following program evaluation checklist may be used:

A. Planning.

1. Is there a detailed study in progress or completed identifying operational requirements, including:

   a. Communications?

   b. Facilities?

   c. Equipment?

   d. Personnel?

2. Have problem areas in the environment been identified:

   a. Terrain, access, or climatic?

   b. Presence of potential hazards?

   c. High accident rate?

3. Have existing resources been inventoried:

   a. Current agency or service assignments and responsibilities?

   b. Communications?

   c. Facilities?

   d. Equipment?

   e. Trained personnel?

   f. Training sources?

4. Has a detailed analysis been made comparing the specified requirements and known problem areas with existing resources?

5. Has an overall plan for debris hazard control and cleanup been developed?

6. Has an interagency committee or work group been appointed to provide guidance and to review plans?

7. Have State program criteria been developed to implement the plan?

8. Have means for periodic review and updating of the plan been provided?

B. Legislation.

1. Is there legislation to establish lines of authority and responsibility for:

a. Reporting dangers, hazards, and debris?

b. Restoring safe conditions?

2. Is responsibility for coordination of response for corrective action vested in:

a. A single agency?

b. An established communications system with control?

3. Has legal authority been established for removal of vehicles, cargo, or materials?

C. Operations.

Does the program include:

1. Plans designed to assure quick detection of the presence of dangers, hazards, and debris?

2. Communications system control points which are:

a. Established?

b. Manned by trained personnel?

c. Equipped?

3. Coordination with the following other agencies, services, and disciplines to restore incident sites to a safe condition and restore traffic movement:

a. Police services?

b. Emergency medical services?

c. Fire services?

d. Highway maintenance services?

e. Other supporting services:

(1) Utilities?

(2) Private contractors?

(3) Industrial firms?

(4) Special hazard teams?

(5) Military installations?

4. Procedures for assuring traffic safety and protection for personnel and service units at the incident site?

5. Procedures and equipment for restoring incident sites to a safe condition by containment, removal, or disposal of:

a. Vehicles?

b. Hazardous objects or materials?

c. Dangerous conditions?

6. Means for providing warning to approaching motorists regarding dangerous conditions?

7. Coordination with news media:

a. At the incident site?

b. For public warning and information?

8. Procedures to restore traffic movement by:

a. Applicable techniques?

b. Control equipment and devices?

9. Provision for collection of incident data for periodic analysis of operational effectiveness?

D. Program evaluation.

1. Is program evaluation vested in:

a. A single agency?

b. An interagency policy and review committee?

2. Have procedures been established for periodic program review and evaluation?

3. Have criteria been established for:

a. Desired response times and cleanup times for different environments?

b. Desired performance levels for typical or recurring operations?

IV. PERFORMANCE EVALUATION

A. Comprehensive analyses should be performed periodically on the effectiveness of program procedures as applied to a selected sample of instances where debris hazards occurred.

1. The sample should be selected as representative of the overall debris hazard control problem.

2. Such indicators of program effectiveness as time of response to the initial notification, elapsed time to restoration of safe traffic movement, and others should be carefully measured for each instance in the sample.

3. Results should be compared with the program goals sought.

B. Summary types of analyses should be conducted to examine total program performance, using the sample data plus other relevant, although less detailed, data. Representative items that should be documented include:

1. Number of effective responses.

2. Number of ineffective responses.

3. Number of secondary accidents resulting in part from debris removal inadequacies.

4. Comparison with prior comparable data.

5. Full use of any relevant operational data collected for other purposes, supplemented by any additional data collected specifically for purposes of evaluating the program.

C. Evaluation measures.

Although published data on performance level criteria and measures of effectiveness for debris hazard control and clean-up are very limited, and although considerable developmental work is required, States and local jurisdictions can develop their own evaluation programs in the following areas:

1. Response time analysis.

   An analysis of the entire cleanup operation, identifying separately the times for each of the operational elements of detection, notification, response, cleanup, and restoration of movement.*

2. Correlations.

   Correlations of response time data to traffic flow and accident report data to develop quantifiable measures of clean-up performance in terms of reduction of secondary collisions, traffic delays, or blockages.

3. Effects of improvements.

   Evaluations of the effects of improvements such as the installation of call boxes, new methods or equipment, or procedural training in reducing response time. Evaluation could be initially performed on a test or tryout basis in selected locations.

*See Appendix D for more detailed information on this type of study.

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

# HIGHWAY SAFETY PROGRAM MANUAL

| VOLUME | 16 - DEBRIS HAZARD CONTROL AND CLEANUP | TRANSMITTAL 53 |
|---|---|---|
| CHAPTER | VI. REPORTS | January 1975 |

Par. I. Introduction
II. Routine Reports
III. Special Reports
IV. Reports to National Highway Traffic Safety Administration

## I. INTRODUCTION

A. A reporting system should be established that provides operating officials at all levels with sufficient, but not exhaustive, information as to the status and effectiveness of program operations.

B. All reports should be as brief as possible, oriented largely toward highlighting any unusual developments rather than simple recitation of all data collected.

C. Whenever feasible, full use should be made of reports prepared by other agencies or groups, which to some degree are relevant to the debris control problem.

## II. ROUTINE REPORTS

A. The State should identify all reports that are to be submitted periodically on a scheduled basis:

1. From State agencies.

2. From local governments.

B. Report content may be drawn from any source, including abstracts of relevant data from reports or logs prepared by other agencies and groups such as:

1. Police department.

2. Fire department.

3. Highway maintenance department.

4. Traffic engineering department.

5. Dispatching or control center.

C. Specific items of information to be included in a report should be appropriate to the purposes to be served by the report. Data items of possible usefulness, many of which should be available in accident reports,* include:

1. Time/date: normal or peak traffic flow.

2. Location: special traffic density areas or unusual conditions.

3. Weather conditions.

4. Initial crash or secondary collision.

5. Number of vehicles involved.

6. Types of debris.

7. Hazards involved: mechanical, thermal, chemical, electrical, or biological.

8. Countermeasures employed.

9. Response time.

10. Cleanup time.

11. Equipment used.

12. Agencies or services involved.

13. Rerouting or road closure.

*For an example of a standard police traffic collision report form, see Appendix F, Volume 10, Traffic Records.

14. Access problems.

15. Role of news media.

16. Special conditions: tunnels, bridges, shoulder widths, median design.

III. SPECIAL REPORTS

A. Special reports should be prepared for catastrophic or otherwise unusual situations creating debris hazard problems. To be described in such reports are:

1. Unusual conditions that may have contributed to the debris problem.

2. Any success or failure of the routine debris control procedures.

3. Nature of followup corrective requirements.

B. Criteria for undertaking special reports should be established as part of the overall report systems.

IV. REPORTS TO NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

The Standard requires that the debris hazard control and cleanup program be periodically evaluated by the State and that the NHTSA be provided with an evaluation summary. The NHTSA intends to request summary reports on program operations and evaluation. Such reports will contain summary information similar to that specified in the program evaluation checklist described in Chapter V and the report data described in this chapter.

# HIGHWAY SAFETY PROGRAM MANUAL

| | | |
|---|---|---|
| VOLUME | 16 - DEBRIS HAZARD CONTROL AND CLEANUP | TRANSMITTAL 53 |
| CHAPTER | VII. - LOCAL GOVERNMENT PARTICIPATION | January 1975 |

Par. I. Planning
II. Mutual Aid
III. Training
IV. Evaluation

## I. PLANNING

A. Local governments should plan and develop debris hazard control and cleanup programs. Although conditions and capabilities may vary between local political subdivisions, the guidelines presented in Chapter IV of this volume should be used to the fullest extent possible and to whatever degree they are appropriate for any unusual local conditions.

B. Planning by local authorities should be performed within the program guidelines established by the State; however, primary responsibility for cleanup operations usually rests with local jurisdictions.

C. Local authorities, particularly in the smaller communities, may wish to look to the State for planning assistance.

## II. MUTUAL AID

Neighboring local jurisdictions should establish mutual aid arrangements for debris hazard control and cleanup similar to those for related emergency services, such as fire protection and law enforcement. Such arrangements among political jurisdictions may well provide for more effective use of limited resources.

A. Coordination.

Working agreements establishing authority and responsibility should be established among local political jurisdictions and their respective agencies and services, as well as private organizations, for use of communications systems, equipment, and personnel.

B. Communications.

Communications systems and their operational elements should be considered, including:

1. Control centers, including linkages between control centers and dispatch points.

2. Frequency allocation.

3. Emergency backup provisions.

4. Use of private source systems.

5. Cross-monitoring between services.

6. Joint communications systems.

C. Equipment.

Equipment resources in the area should be inventoried and arrangements made for their shared use. Information of particular importance on equipment includes:

1. Location and availability.

2. Private sources.

3. Prior arrangements for use.

4. Special equipment.

D. Administrative and legal considerations.

Of prime consideration in planning for mutual aid are:

1. Insurance coverage of personnel, facilities, and equipment.

2. Immunity clauses.

3. Reimbursement agreements.

III. TRAINING

A. Training needs should be established by political subdivisions having debris hazard control and cleanup responsibilities for portions of the highway system.

B. The possibility of pooling resources of existing local agency training programs for training personnel from normal jurisdictions in techniques and practices for debris hazard control and cleanup should be examined.

C. If desired training is not available at the local level, existing official or nonofficial sources at the county, regional, State, or national levels should be considered.

IV. EVALUATION

In evaluating their debris hazard control and cleanup operation, local political jurisdictions should use existing operational data and make comparisons with prior performance. In addition, other sources should be explored, such as observation of operations in other communities, critiques from individuals in related services, and counseling by outside technical experts.

APPENDIX A

HIGHWAY SAFETY PROGRAM STANDARD 16

DEBRIS HAZARD CONTROL AND CLEANUP

PURPOSE

To provide for the assignment of official responsibilities and for the planning, training, coordination, and communications necessary to assure the recognition, reporting, and prompt correction of conditions or incidents that constitute potential dangers; that incident sites are restored to a safe condition; and that traffic movement is expeditiously resumed.

STANDARD

Each State in cooperation with its political subdivisions shall have a program which provides for rapid, orderly, and safe removal from the roadway of wreckage, spillage, and debris resulting from motor vehicle accidents, and for otherwise reducing the likelihood of secondary and chain-reaction collisions, and conditions hazardous to the public health and safety.

I. The program shall provide as a minimum that:

A. Operational procedures are established and implemented for:

1. Enabling rescue and salvage equipment personnel to get to the scene of accidents rapidly and to operate effectively on arrival:

a. On heavily traveled freeways and other limited access roads;

b. In other types of locations where wreckage or spillage of hazardous materials on or adjacent to highways endangers the public health and safety;

2. Extricating trapped persons from wreckage with reasonable care - both to avoid injury or aggravating existing injuries;

3. Warning approaching drivers and detouring them with reasonable care past hazardous wreckage or spillage;

4. Safe handling of spillage or potential spillage of materials that are:

   a. Radioactive.

   b. Flammable.

   c. Poisonous.

   d. Explosive.

   e. Otherwise hazardous.

5. Removing wreckage or spillage from roadways or otherwise causing the resumption of safe, orderly traffic flow.

B. Adequate numbers of rescue and salvage personnel are properly trained and retrained in the latest accident cleanup techniques.

C. A communications system is provided, adequately equipped and manned, to provide coordinated effort in incident detection, and the notification, dispatch, and response of appropriate services.

ii. The program shall be periodically evaluated by the State, and the National Highway Traffic Safety Administration shall be provided with an evaluation summary.

# APPENDIX B

## GLOSSARY OF DEFINITIONS

This glossary defines those terms whose meanings may be unclear in the context in which they are used. These definitions are meant to apply only to the usage of these terms in this volume.

Accident - Any event that results in unintended injury, property damage, or loss.

Control Center - A communications facility performing the coordination of debris hazard control and cleanup operations among the various agencies and services involved. Dispatch of service units may be a functional part of this facility.

Dangers, Hazards, Debris - Those substances, materials, objects, conditions, or phenomena, foreign to the normal highway environment, which may be deposited, exist, or occur upon a highway, and which may result from either vehicular or nonvehicular sources, either from a crash or from natural causes.

Debris Hazard Control and Cleanup - The process, other than normal or routine highway repair and maintenance, of containment, removal, and disposal of debris from a highway and the elimination of highway hazards.

Emergency - An unforeseen, sudden, and distressing event demanding evasive or rescue action.

Highway - The entire width between the boundary lines of every way publicly maintained when any part thereof is open to the use of the public for purposes of vehicular travel.

Incident - An event involving the presence of debris or the existence of a hazard upon a highway, including an accident. (Example: A rock falling upon the highway, blocking a lane, would constitute an incident, whereas if the falling rock struck a vehicle and injury or damage resulted, it would be defined as an accident.)

Motor Vehicle - Any vehicle driven or drawn by mechanical power manufactured primarily for use on the public streets, roads, and highways, except any vehicle operated exclusively on a rail or rails.

# APPENDIX C

## REFERENCES

The following is a selected list of authoritative references which may be helpful in implementing the programs specified in this volume. This list is not meant to be a bibliography of all the documents available in this field.

American Insurance Association. Police Interest Bulletin (1966). Engineering and Safety Department, American Insurance Association, 85 John Street, New York, New York 10038.

A series of 11 Bulletins of interest to police agencies.

Arthur D. Little, Inc. The State of the Art of Traffic Safety: A Critical Review and Analysis of the Technical Information on Factors Affecting Traffic Safety (1966). Arthur D. Little, Inc., Cambridge, Massachusetts 02142.

Atomic Energy Commission. Radiological Emergency Procedures for the Nonspecialist (1964). Atomic Energy Commission, Washington, D. C. 20545.

Baker, James S., and Stebbins, William R. Dictionary of Highway Traffic (1960). Traffic Institute, Northwestern University, 1804 Hinman Avenue, Evanston, Illinois 60202.

A collection and comparison of existing definitions of traffic terms taken from various sources in the highway traffic field.

Federal Highway Administration. A Guide for Highway Traffic Regulation in an Emergency (Draft) (1967). Federal Highway Administration, U. S. Department of Transportation, Washington, D. C. 20590.

Illinois, University of. Traffic Accident Reporting Criteria of Principal Users in Illinois (1965). Highway Traffic Safety Center, University of Illinois, Urbana, Illinois 61801.

International Association of Chiefs of Police. Training Key. International Association of Chiefs of Police, 1319 18th Street, N. W., Washington, D. C. 20036.

A series of publications of interest to police agencies.

Keese, C. J., and Wilshire, R. L. Effects of Traffic Accidents on Freeway Operations, Bulletin No. 22 (1963). Texas Transportation Institute, Texas A & M University, College Station, Texas 77843.

Keryeski, J. M., and Surti, H. V. Effect of Television on Police Response Time to an Urban Freeway Incident (1965). National Proving Ground for Freeway Surveillance Control and Electronic Traffic Aids, 8801 John C. Lodge, Detroit, Michigan 48202.

Lynch, F. L, and Keese, C. J. Restoring Freeway Operation After Traffic Accidents, Bulletin No. 28. Texas Transportation Institute, Texas A & M University, College Station, Texas 77843.

McLean, Charles H. "Illinois 'Minute Men' Keep Traffic Moving on Expressways," Traffic Safety, 38-39 (January 1964), pp. 10-11.

Office of Emergency Preparedness, Federal Disaster Assistance (1966). Office of Emergency Preparedness, Executive Office of the President, 604 17th Street, N.W., Washington, D.C. 20504.

Public Health Service. Directory of Poison Control Centers, Document No. 1278. Public Health Service, Department of Health, Education and Welfare, Washington, D.C. 20203.

Sax, Irving N. Dangerous Properties of Industrial Materials (2nd ed.). Reinhold Publishing Corporation, 430 Park Avenue, New York, New York 10022.

Segal, Murray D. Accident Records System Study, State of Maine, for Maine State Highway Commission (1966). Maine State Highway Commission, Augusta, Maine 04330.

Smith, R. D. Current Practices in Accident Reporting and Investigation (1967). Research and Development Division, 1319 18th Street, N.W., Washington, D.C. 20036.

# APPENDIX D

## REPRESENTATIVE PROJECTS

Few, if any, documented studies have been performed for debris hazard control and cleanup. The following are representative of projects which might be undertaken.*

1. Conduct a field study of the extent of debris hazard control and cleanup in the jurisdictional levels of:

   A. A State.

   B. A county.

   C. A city.

   Such studies would examine the extent of detailed documentation of debris hazard control and cleanup in terms of availability and comparability of operational data, information recording procedures, response times, procedures most frequently used, etc.

2. Study and document debris hazard control and cleanup techniques. Study areas investigated would include operations, facilities, equipment, communications, personnel, written documentation, records, and procedures.

3. Test sophisticated techniques and newly developed hardware and technology in relation to debris hazard control and cleanup:

   A. Magnetic and vacuum cleaning equipment.

   B. Fog dispersal equipment.

   C. Helicopters.

   D. Communications improvements.

4. Evaluate various debris hazard control and cleanup programs in terms of:

---

*Readers of this manual are requested to submit information related to completed or ongoing research in debris hazard control and cleanup.

A. Efficiency.

B. Results in terms of crash reduction.

C. Results in terms of congestion reduction.

5. Develop training and education programs:

A. Definition and scope of the debris hazard control and cleanup problem.

B. Specification of training requirements.

C. Preparation of curricula material: lesson plans, instructors' guides, and study manuals.

D. Identification of available training resources.

E. Development of training curricula for possible use in extension seminars:

(1) Problems, materials, and equipment in debris hazard control and cleanup.

(2) Demonstration methods and procedures.

(3) Legal factors and considerations.

6. Conduct a quality control study - a detailed examination of actual debris hazard control and cleanup operations in a selected environment. Precise time recording and analysis would be made for each of the operational elements of detection, notification, dispatch, response, restoration of the incident site, and restoration of movement. A typical incident might be recorded and analyzed as follows:

A. Time of incident: obtained from person(s) involved, observer(s), or police accident report.

B. Time of initial notification: receiving agency log.

C. Time of control center alert: control center log.

D. Time of initial dispatch: control center or dispatch agency log.

E. Time of arrival at site: service unit logs or reports from each service involved.

F. Time of additional support request: on-site service unit log or report.

C Time of additional support dispatch: dispatch agency log.

H. Time of arrival of additional support at site: service unit log or report.

I. Time cleanup completed: service unit log or report.

J. Time traffic movement restored: police report.

## APPENDIX E

## RESOURCE ORGANIZATIONS

The following is a list of organizations, which can provide information on certain of the topics pertaining to debris hazard control and cleanup.

American Association of State Highway Officials (AASHO)
341 National Press Building
Washington, D.C. 20006

American Bridge, Tunnel, and Turnpike Association (ABTTA)
1225 Connecticut Avenue, N.W., Suite 307
Washington, D.C. 20036

American Insurance Association
(formerly National Board of Fire Underwriters)
85 John Street
New York, New York 10038

American Public Works Association (APWA)
1313 East 60th Street
Chicago, Illinois 60636

Atomic Energy Commission
Director, Division of Operational Safety
Washington, D.C. 20545

Bureau of Motor Carrier Safety
Federal Highway Administration
Washington, D.C. 20590

Federal Highway Administration
Washington, D.C. 20590

Clearing House for Federal, Technical, and Scientific Information
5285 Port Royal Road
Springfield, Virginia 22151

Department of Defense
Office of Civil Defense
The Pentagon
Washington, D.C. 20301

Federal Aviation Administration
U. S. Department of Transportation
Washington, D. C. 20590

Institute of Traffic Engineers (ITE)
2029 K Street, N. W.
Washington, D. C. 20006

International Association of Chiefs of Police (IACP)
11 Firstfield Road
Gaithersburg, Maryland 20760

International Association of Fire Chiefs (IAFC)
232 Madison Avenue
New York, New York 10016

International Rescue and First Aid Assocation (IRFAA)
8 Jackson Place
Caldwell, New Jersey 07006

Manufacturing Chemists' Association
1825 Connecticut Avenue, N. W., Suite 411
Washington, D. C. 20009

National Fire Protection Association (NFPA)
60 Batterymarch Street
Boston, Massachusetts 02010

National Highway Traffic Safety Administration
Washington, D. C. 20590

National Safety Council (NSC)
425 N. Michigan Avenue
Chicago, Illinois 60611

National Sheriffs' Association (NSA)
1250 Connecticut Avenue, N. W., Suite 209
Washington, D. C. 20036

Office of Emergency Preparedness
Executive Office of the President
Washington, D. C. 20504

Office of Emergency Transportation
U. S. Department of Transportation
Washington, D. C. 20590

Office of Hazardous Materials
U. S. Department of Transportation
Washington, D. C. 20590

U. S. Coast Guard
U. S. Department of Transportation
Washington, D. C. 20590

# APPENDIX F

## COMMUNICATIONS AND EQUIPMEN

This appendix provides information concerning communications and equipment which may be useful to States and local political jurisdictions in developing their debris hazard control and cleanup programs.

1. Communications.

The following list outlines categories of communications systems that may be found in an area. The list is representative and not intended to be complete for all areas. Categories are:

A. Government communications systems.

(1) State law enforcement.

(2) County law enforcement.

(3) Municipal law enforcement.

(4) Fire departments.

(5) Special emergency.

a. Civil defense shelter communications.

b. Civil defense radiological defense (RADEF) communications.

c. Civil defense warning communications.

d. Civil defense Emergency Operating Center (EOC) communications.

e. Radio Amateur Civil Emergency Services (RACES).

f. Volunteer radio groups using disaster frequency.

(6) Local government (county and municipal services).

(7) Forestry conservation (Department of Conservation).

B. Industrial communications systems.

(1) Special industrial (e.g., road contractors, tractor and equipment companies).

(2) Power utility (e.g., water, gas, and electric companies).

(3) Petroleum and gas (e.g., gas, oil drilling, and oil companies).

(4) Forest products (e.g., logging, milling, and lumber companies).

(5) Relay press (e.g., printing and newspaper companies).

(6) Maritime (e.g., dredging, towboat, fishing, and ferry companies).

(7) Industrial private switchboards.

C. Business and miscellaneous communications systems.

(1) Business (e.g., TV repair, heating-air conditioning, and plumbing companies).

(2) Telephone maintenance (e.g., telephone companies).

(3) Manufacturers' services (e.g., paper, chemical, machine, and metal manufacturing companies).

(4) Miscellaneous common carriers (e.g., answering and dispatch services).

(5) Business and private switchboards (e.g., hotels, motels).

(6) Public address systems.

(7) Civil Air Patrol (CAP).

(8) Citizens band radio.

(9) Amateur radio groups.

D. Transportation communications systems.

(1) Taxicabs.

(2) Railroads.

(3) Auto emergency (e.g., automobile clubs and wrecker companies).

(4) Motor carrier (e.g., trucking, bus companies, moving, delivery, and armored car companies).

(5) Airlines.

E. Military communications systems.

(1) National Guard.

(2) Local military.

F. Common carriers.

(1) Telephone service.

(2) Telegraph service.

(3) Other (e.g., teletype, facsimile, closed-circuit TV, computers).

G. State agency communications systems, such as:

(1) Department of Agriculture.

(2) Employment Service.

(3) Liquor Control Commission.

(4) State Police (Highway Patrol, State Troopers).

(5) Highway Department.

(6) Fish and Game Department.

(7) Department of Education.

(8) Welfare Department.

(9) Transportation Department.

H. Federal Government agencies.

(1) Regional Office of Civil Defense.

(2) Bureau of Land Management.

(3) Department of Commerce.

(4) General Services Administration.

(5) Federal Aviation Administration.

(6) Department of Health, Education, and Welfare.

(7) Department of the Interior.

(8) Federal Bureau of Investigation, U. S. Department of Justice.

2. Equipment.

A. At present, a comprehensive list of debris hazard control and cleanup equipment is not available. Suggestions for various types of equipment such as special vehicles, vehicle modifications, vehicle supplies and accessories, special devices, and materials are requested to be submitted by readers of this Manual.

B. One political jurisdiction has instituted an Expressway Emergency Patrol for the detection and handling of incidents which impede safe traffic flow. Their vehicles are equipped as follows:

A 1-1/2-ton truck chassis with a specially fabricated body is the vehicle type used. The body is designed to provide the necessary compartmentation for the equipment carried. All trucks are equipped with pusher-type bumpers and rear pintle hooks. Tow-winches have been installed on 21 of the units. A full complement of warning lights and two rotating beacons are also standard provisions. More than 60 individual pieces

of equipment are carried in each truck. This includes a first aid kit, water and dry charge and $CO_2$ fire extinguishers, ax and pry bar, fusees and kerosene flares, traffic cones and barricades, salt cans (winter), oil absorbent (summer), tire changing equipment (including an air pressure tank), a gallon can of water, two 2-gallon cans of gasoline, tool box, shovel and broom, blanket, and highway maps.

C. In patrolling the completed sections of its Interstate System, a State Road Commission utilizes six safety patrol units on a 16 hours-per-day, seven days-per-week basis. Each unit consists of a two-way radio-equipped station wagon with the following accessories:

1 spotlight, portable.

1 flashlight (two cell).

1 amber flashing light on dash.

1 five-gallon gas can.

2 two-gallon plastic water cans.

1 resuscitator.

1 cutting torch outfit.

1 22-foot jumper cable.

1 water type fire extinguisher.

1 dry chemical fire extinguisher (15 pounds).

1 dry chemical fire extinguisher (5 pounds).

2 spare tires.

1 rubber sheet.

1 tow chain.

2 chock blocks (wood).

1 hand pump.

1 1-1/2-ton bumper hydraulic jack.

1 10-ton truck hydraulic jack.

1 crowbar.

1 ax.

1 safety scope.

4 red and white cones (small).

1 toolbox and tools.

1 stop-and-go paddle.

1 safety helmet.

1 set of tire chains.

2 power steering belts.

2 headlights, sealbeam (4001-4009).

1 alternator belt.

1 funnel.

1 large first aid kit.

1 small first aid kit.

1 lot of fusees.

1 hand cleaner.

1 100-foot rope.

1 rubber hammer.

1 four-way lug wrench.

1 push broom.

1 shovel.

# APPENDIX G

## INFORMATION AVAILABLE FROM THE ATOMIC ENERGY COMMISSION

The following pages indicate who to notify when an incident occurs involving a nuclear radiation source and provide instructions for immediate emergency actions at the incident site. This information is an example of the type of reference source information available concerning special hazards.

1. Emergency Assistance Available

| PROGRAM | RADIOLOGICAL EMERGENCY ASSISTANCE |
|---|---|
| ADMINISTERING AGENCY | U.S. ATOMIC ENERGY COMMISSION |
| WHEN IS ASSISTANCE AVAILABLE | The responding AEC office will initiate action at any time of day or night to provide such emergency assistance as is most appropriate to the incident. |
| WHAT ASSISTANCE IS AVAILABLE | The following AEC radiological assistance is available:<br><br>A. Radiological emergency monitoring teams of trained and specially equipped personnel organized to be dispatched on short notice to the scene of a radiological incident (accident).<br><br>B. Scientific and technical advice to organizations or individuals involved in post-radiological incident (accident) problems of health and safety. |
| WHO IS ELIGIBLE | Any person, organization, or State, county, or local official cognizant of |

| | |
|---|---|
| | an incident believed to involve radiation or radioactive material hazardous to the health and safety of individuals, or the community, may request AEC radiological advice and assistance. |
| WHERE TO APPLY | A. If nonweapons radioactive material is involved under any circumstances whatsoever:<br><br>Call the AEC Operations Office nearest the scene of the accident or incident.<br><br>B. If it is known or suspected that a nuclear weapon (or explosive) is involved:<br><br>1. And the material is clearly associated with the military, or is in the custody of the military, notify the nearest military installation.<br><br>2. And the material is not clearly associated with the military, call the AEC Albuquerque Operations Office, Albuquerque, New Mexico. |
| PRINTED INFORMATION | There is no published informational material available for distribution. However, for general information and guidance regarding AEC radiological assistance plan policies, plans, and activities, contact AEC Operations Offices or AEC Headquarters (Director, Division of Operational Safety, U. S. Atomic Energy Commission, Washington, D. C. 20545) by letter or telephone. |
| AUTHORIZING LEGISLATION | The Atomic Energy Commission has a general responsibility to help protect |

the health and safety of the public while effectuating the development, use, and control of nuclear energy under the Atomic Energy Act of 1954, as amended. In section 3 of the Act, Congress has stated its intention to provide for a widespread atomic energy program consistent with the health and safety of the public. AEC radiological assistance capabilities in the event of a major disaster involving radiological hazards would be utilized in accordance with the AEC role as established by Federal statutes, executive orders, and appropriate memorandums of understanding with other agencies.

---

2. Instructions for Emergency Action When Radioactive Materials Are Involved (Recommended by the AEC)

When incidents involve a nuclear radiation source, the spillage or release of radioactive material, or there are personal injuries in incidents involving radioactive materials, the following emergency actions and precautions against radiation exposure should apply:

A. Notify immediately _____ at _____ _____. The telephone number is _____ _____.

B. If the incident involves wreckage and a person is believed to be alive and trapped, make every effort possible to rescue him.

C. Restrict the area involved as a result of the incident. Keep the public as far from the scene of the incident as practical. Souvenir collection and handling of debris by onlookers should be prevented.

D. Segregate and detain for further examination those persons who have had possible contact with the radioactive material. Obtain the names and addresses of those involved.

E. Remove injured persons from the area affected by the incident with as little direct personal contact as possible and hold them

at a transfer point. Until physicians familiar with radiological health procedures are present, limit first aid and medical procedures to those that must be done promptly. Whenever recommended by a doctor, an injured individual should be removed to a hospital or office for treatment, and the doctor or hospital should be informed when there is reason to suspect that the injured individual may have radioactive contamination on his body or clothing.

F. In incidents involving fire, fight fires from upwind whenever possible. Treat as a fire involving toxic chemicals. Keep out of smoke, fumes, or dust resulting from the incident. Segregate clothing and tools used at the fire until they can be checked for radioactive contamination. Do not handle suspected material until it has been monitored and released by radiation monitoring personnel.

G. In the event of a vehicle accident involving radioactive material, detour all traffic around the accident scene. If this is not possible, move the vehicle or vehicles involved the shortest distance necessary to clear the right of way. If radioactive material is spilled, prevent the passage of vehicles and people through the area unless absolutely necessary. If right of way must be cleared before the radiological assistance team arrives, wash spillage to the shoulders of the right of way with a minimum dispersal of wash water.

H. DO NOT eat, drink, or smoke in the incident area. Do not use food or drinking water that may have been in contact with material from the incident area.

I. DO NOT try to do too much prior to the arrival of radiation protection specialists and physicians.