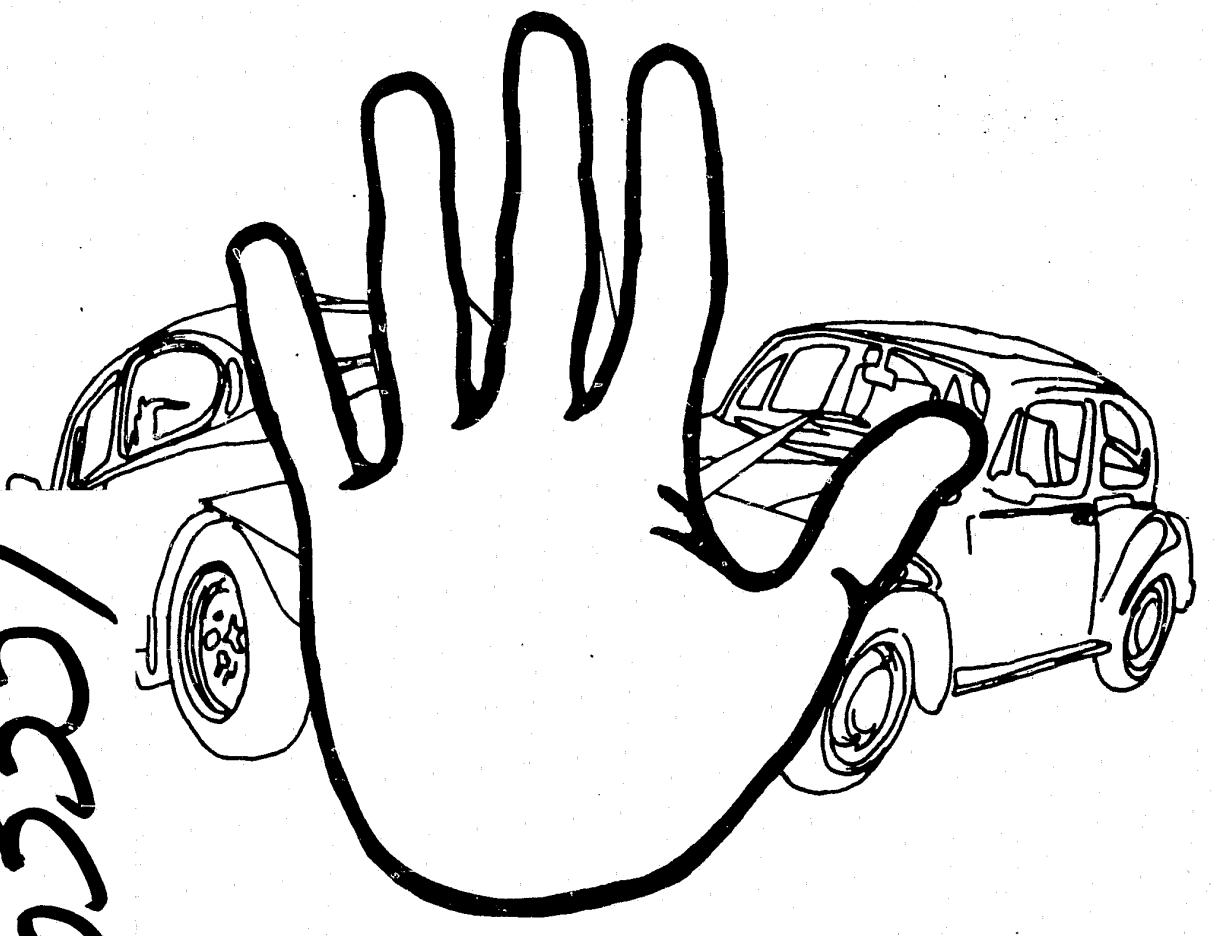
4

COLLISION MANAGEMENT PROCEDURES

PART 2
Controlling the Scene



Distributed by the

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Below are the sites, dates and a listing of departments who participated in the pilot programs:

Baltimore City Police Academy - 9/29/75-11/21/75

Aberdeen Police Department
Baltimore County Sheriff's Office
Bowie State College
Brunswick Police Department
Cecil County Sheriff's Office
Coppin State College
Department of General Services
Harford County Sheriff's Office
Md. Center for Public Broadcasting
Mass Transit Administration
Military Department of Maryland
North East Police Department
University of Maryland-Baltimore County Campus

Salisbury, Maryland - 10/6/75-12/2/75

Cambridge Police Department
Centreville Police Department
Chestertown Police Department
Crisfield Police Department
Denton Police Department
Easton Police Department
Federalsburg Police Department
Fruitland Police Department
Hurlock Police Department
Kent County Sheriff's Office
Ocean City Police Department
Pocomoke City Police Department
Queen Anne's County Sheriff's Office
Queenstown Police Department
Rock Hall Police Department
Salisbury Police Department
Salisbury State College
Talbot County Sheriff's Office
University of Baltimore

Prince Georges County - 10/14/75-12/15/75

Armed Forces Police
Bladensburg Police Department
Brentwood Police Department
Calvert County Sheriff's Office
Charles County Sheriff's Office
Cheverly Police Department
GSA-Office of Buildings and Grounds
Hyattsville Police Department
Md. National Capital Park Police
Mt. Rainier Police Department
Riverdale Police Department
St. Mary's County Sheriff's Office
Takoma Park Police Department
University Park Police Department
Washington County Sheriff's Office

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IV

COLLISION MANAGEMENT PROCEDURES, PART II: "CONTROLLING THE SCENE"

ABSTRACT

This unit is designed to provide the student with information on how to control the collision scene from becoming worse. It includes the procedures for proper handling of accident situations. The unit helps the officer to recognize potential hazards, including dangerous cargo. The unit also deals with procedures for handling accidents involving dangerous substances and the care and handling of injured persons.

BEHAVIORAL OBJECTIVES

Identify the considerations and requirements to control the accident scene and prevent the situation from getting worse, namely:

- Recognizing the risks from fire, dangerous substances, and other hazards and initiating safety precautions
- Administering first-aid and arranging for the care and handling of the injured
- Initiating and maintaining traffic and crowd control
- Arranging for the removal of damaged vehicles, when they present an immediate hazard to on-coming traffic
- Instituting theft prevention measures for the involved vehicles and occupants.

IV

COLLISION MANAGEMENT PROCEDURES II

Controlling the Scene

Considerations and Requirements

General

The patrolman at the scene of an accident may encounter a number of situations. There may be confusion, hysteria, injuries, fire, inclement weather, traffic congestion, poor visibility, indications or reports that the accident involved a hit-and-run vehicle, and many other situations or conditions with which he has to cope. The main objective for the patrolman, while controlling the scene, is to keep the accident from getting worse. The officer must be calm, flexible, make sound decisions quickly and see that they are carried out.

Steps for Proper Handling

Each accident is the result of a different set of circumstances. No two accidents are exactly the same; therefore, the patrolman's actions will vary with the situation. The urgency of any one of its aspects as well as the seriousness of the accident, will determine the course of action the patrolman will take. Caring for injured persons should generally be a first concern, especially if the injuries are serious. Arrangements for accident scene traffic

control are of high priority, as well as preserving accident-scene evidence until it is recorded or not needed. Instituting theft prevention measures is also a responsibility, but it is considered secondary. Many of the patrolman's actions are accomplished almost simultaneously and without regard to a fixed sequence.

Determine Need for Additional Outside Assistance

The patrolman is in the best position to determine what assistance, if any, is required to bring the situation under control. After he has assessed the requirements, he summons additional assistance not already enroute, such as, ambulance service, fire fighting services, authorized tow/wrecker services for automobiles and/or heavy trucks, rescue squad, additional police as applicable (e.g., supervisory personnel, patrolmen, accident investigation squad, recue squad), medical examiner/coroner, special equipment, utility companies, etc.

Determine Need for Volunteer/Bystander Assistance

Depending on the seriousness of the accident, the patrolman may need to recruit volunteer/bystander assistance. With the proper guidance, volunteers/bystanders can perform such tasks as assisting with traffic control, placing warning devices, keeping people away from hazards, preserving evidence, assisting the injured, carrying messages, etc. The patrolman must give the volunteers specific instructions. Do not be vague. Let the individual know exactly what, where, and how to perform a specific task. Select responsible and easily-

identifiable persons such as truck, bus, or taxi drivers. However, the patrolman should discourage volunteer assistance if it is not required. The principals may be recruited and kept busy with various tasks until the patrolman has time to interview them.

Recognition of Potential Hazards

General

The patrolman responding to the scene must identify potential or existing hazards which might make the accident worse. The risk of fire is present in most vehicular accidents. Although fire seldom occurs the patrolman must be aware of this hazard as well as other hazards (e.g., trucks carrying dangerous cargo, fallen power lines, broken fire hydrants, icy road condition, etc.). Hazards have the potential of increasing the seriousness of the accident by further endangering life and property. The patrolman should be alert to recognize certain hazardous situations (such as widespread fire) where the probability of the patrolman's loss of life is greater than the probability of rescue.

Fire

The patrolman should take precautionary action to reduce a fire hazard. Initial action should include turning off the ignition and all lights on vehicles involved. Summon the fire department if a fire has started or if in the patrolman's opinion a fire may start. Fire may not erupt; however, the fire department is trained to neutralize the potential fire hazard. The following are dangerous conditions for which the fire department is normally summoned:

- Spillage of flammables from a passenger car or a tank truck loaded with flammables exists
- Accidents which caused extensive front end vehicular damage
- Vehicles which have turned over or rolled over on their sides
- In all cases where dangerous cargo is involved (e.g., explosives, flammables, etc.)

When summoning fire fighting assistance, it is important to tell the fire department what has been done and the current state of affairs, and warn them of any additional hazards. In the case of injured personnel who are unable to leave a vehicle on fire or the danger of fire and/or explosion exists, the patrolman must take immediate action to extricate the injured in the best and quickest way he knows. This may mean subjecting the individual to further injury. However, it is better to have a living injured person than a charred body.

Types and Uses of Fire Extinguishers

The carbon dioxide and dry-powder type fire extinguishers are most commonly used by police. See exhibit 4-1 (pages IV - 7 and IV - 8) for detailed information on each type of extinguisher.

Fire-related Precautionary Measures

The patrolman must exercise precautionary measures to prevent fire-related injuries at the scene. Dependent on the situation, civilian personnel can help until the necessary assistance arrives at the scene. The patrolman should keep spectators away from the scene. Flares/fusees should be placed well away from the immediate area in situations involving flammable liquids and never be placed downgrade from the spillage. The patrolman should guard against smoking by spectators or cigarettes thrown by passing motorists and arrange for the warning of occupants of nearby buildings, especially if the accident happened at night when the danger of an explosion or widespread fire exists. Buildings within 500 feet in all directions should be vacated.

Exhibit 4-1

Fire extinguishers

	Carbon Dioxide	Dry Powder
		
METHOD OF OPERATING	OPEN VALVE	RELEASE SAFETY LOCK PULL TRIGGER
HOW TO USE	Pull outlocking pin in handle. Hold horn in left hand and valve grip in right hand. Approach fire as close as possible and open valve, directing discharge at nearest edge of fire. Some models have wheel handle which turns to open valve.	Pull pin to release safety lock. Squeeze trigger valve on extinguisher or hose. On some types there is a separate device for puncturing gas cylinder. Hold extinguisher upright and aim nozzle at base of flame. Use sweeping motion on large area fire.
RANGE OF STREAM	15 lb. Size 6 to 8 Feet	8 to 12 Feet
KIND OF FIRES ON WHICH EXTINGUISHER IS MOST EFFECTIVE Note: None of these extinguishers are suitable for fires in metals such as magnesium, aluminum, sodium or fine steel turnings.	Best Use On Electrical equipment Flammable liquids Gasoline Oils and greases Paints, varnishes Solvents Can be used wherever smothering action is effective. Not particularly effective in high winds.	Best Use On Flammable liquids Gasoline Oils and greases Paints, varnishes Solvents Electrical equipment Can be Used On Textiles Wood Paper Rubbish
NATURE OF PRINCIPAL EXTINGUISHING AGENT	Carbon Dioxide gas produced when liquid is released from cylinder.	Dry chemical powder expelled by inert gas or air pressure.
PRINCIPAL EXTINGUISHING EFFECT	"SNUFFING" OR BLANKETING	BLANKETING
EFFECT OF FREEZING TEMPERATURES ON EXTINGUISHER CHARGES	Approximate climatic operating temperatures 120 degrees above to 40 degrees below zero.	Not subject to freezing.
HOW TO CHECK FOR FULL CHARGE	Check gauge reading periodically. Weigh extinguisher. Check weight with full charge marked on extinguisher.	All types: Check amount and condition of dry powder. Gas cylinder types: Check condition of cylinder outlet. weigh and check weight with that stamped on cylinder.

Exhibit 4-1 (Continued)

Fire extinguishers

	Carbon Dioxide	Dry Powder
How to Check for Full Charge (Continued)		Gauge types: Check gauge reading periodically and check total weight of unit against marked weight.
RECHARGING PERIOD	RECHARGE AFTER USE Extinguisher should be checked annually by weighing	RECHARGE AFTER USE Check condition of powder and gas cylinder annually.

Specific Fire Control Measures

The following are the fire control measures a patrolman should use for the specific situations:

- Tire fires. Sometimes a tire will start to burn after a vehicle has stopped, especially if heavy braking or skidding is involved. Trucks which are heavily loaded are most likely to have this problem. Water is the best extinguishing agent. However, in the absence of water or snow, shoveling dirt on the tire should control the flames or prevent ignition.
- Fire under the hood. Try to extinguish the flames by directing the extinguisher flow through the grill or underneath the vehicle. If this is not feasible or not effective, raise the hood slowly and attempt to extinguish the flames through the opening at the same time. Avoid raising the hood quickly since this would feed oxygen to the flames. If after expending the contents of the extinguisher, the fire is not completely out, attempt to smother the flames with sand or dirt.
- Fire inside the vehicle (upholstery, etc.). When possible, pull the seat cushions out of the vehicle and attempt to extinguish the flames. The upholstery should be saturated with water to assure that the fire is completely out. Handle truck cargo the same way as the seat cushions and use the appropriate extinguishing agent.

- Clothing on fire. Do not permit the person(s) to run or move around since this would fan the flames. Place the person on the ground. Forcible restraint such as a football tackle may be necessary. Smother the flames with a blanket or other material that you might have available. If nothing is available, roll the victim over and over on the ground to smother flames. Once the flames are out and water is available, douse the victim's clothing with water to insure all sparks are out. Apply first aid for burns and arrange for the transport of the victim to the hospital.

Control Measures After the Fire is Out.

The patrolman should protect the vehicle to prevent the fire from recurring, or until the fire department takes over. Do not allow vehicles to be started or removed until all hazards have been controlled. Vehicles that are to be towed should be inspected to insure that no part is dragging on the pavement which may create sparks and fire. If possible, move any burned part a safe distance from undamaged property. For example, have burned seats removed from the vehicle and laid aside. Continue to keep spectators away and prohibit smoking.

The following points should be kept in mind by the Maryland police officer:

1. Consider the danger to the surrounding communities and whether evacuation is needed.

2. Where the probability of the patrolman's loss of life is greater than the probability of effecting a rescue, the patrolman should not be fool hardy and attempt the rescue.

3. Fire fighting instructions are to be carried in the truck.

4. A follow-up investigation may also be necessary to determine what traffic laws were violated and if there is sufficient evidence to prosecute.

5. Positive identification is not to be assumed. It may include:
    1. Viewing
    2. Finger printing
    3. Dental work inspection
    4. Other.

6. Flasher and dome lights should be activated except if there is a possibility of an explosion. When there is a danger of a fire or explosion -- only those warning devices which will not ignite are used.

7. A roll of rope of at least 100 feet will prove advantageous in any patrol vehicle, and one of the uses would be to restrain the crowd.

8. If evidence is apparent, photograph and measure (pacing), etc.

9. Fire prevention measures should preempt theft prevention measures.

10. If there is flammable material present, it must be washed away prior to moving vehicle because of sparking.

11. If a gasoline tank is ruptured, the leaking gas should be caught rather than spilled down the highway.

12. Care should be exercised especially in a heated damaged engine that carburetor or fuel line spill does not occur on craning thus igniting the fuel.

13. Theft prevention measures:

    Use floodlight trucks to remove the cover of darkness.

14. Fire-

All commercial carriers are required to carry instructions as to how to extinguish any fire which may erupt.

15. Electric Hazards-

After a preconceived plan has been worked out with the power company, a call to headquarters which is relayed will result in effective efficient turning off of power. Don't cross moist ground in the area of the broken wires to ascertain the pole number.

16. Refer to the law releasing police from liability by the exercising of good principles of first aid procedure.

17. The patrolman on the scene should not stand around and engage in idle conversations since this may create a bad image.

18. Warning devices may include portable signs - such as can be set up in the road, a reflectorize curtain which is part of police vehicle equipment, etc.

19. Considerations for maintaining traffic flow-

Use a disposable detour sign which could be placed by a patrolman in the adjacent area through which the detour is being routed. Use roads or streets that are adequate and already have the safety devices where needed.

20. Also consider use of radio stations to advise drivers as to the route to take, especially in serious, time consuming accidents.

21. Preserving physical evidence

The preservation of evidence may be necessary for a minor accident. In an investigation the patrolman preserves the factual evidence that will be used to prove even a minor case. It may only be photographic evidence of the vehicle damage or vehicle debris and the location.

22. Moving Damaged vehicles - in emergencies-

The police department should have a definite procedure for such towing. The procedure that is established here maybe the type that causes questioning into the favoritism by officers and illegal activity.

23. Precautions moving vehicles-

Care must be taken to insure a dangling part does not ignite any spilled fluid.

24. Additional theft prevention measures-

Install a strong box in the trunk of the car to preserve evidence and store valuables.

Recognition of Dangerous Cargo

General

Patrolmen responding to the scene of an accident involving a truck must be able to recognize the type of cargo the vehicle is transporting in order to evaluate the potential danger to life and property and to determine the appropriate action. Federal regulations and state laws stipulate that vehicles transporting potentially dangerous cargo be conspicuously marked and shipping containers labeled.

Classes of Hazardous Material

There are several classes of hazardous material. The patrolman should have an understanding of these materials, as well as be able to recognize them. The following is a brief description of each type class of hazardous material.

- Explosives. There are three classes of explosives: Class A, B,and C. Class A explosives are detonating explosives of maximum hazard. Some examples are explosive ammunition of various types, solid high explosive, more than 1,000 blasting caps, etc. Class B explosives function by rapid combustion rather than detonating. Primary hazard is fire. Some examples are special fireworks, flash powders, railway torpedoes, etc. Class C are relatively safe explosives, such as common fireworks, highway fusees,small arms ammunition, etc.

- Flammable liquid. Any liquid which gives off flammable vapors. Some examples are gasoline, ether, alcohol, etc.
- Flammable solids. Solids, other than explosives, which are liable to cause fire through friction, through absorption of moisture, through spontaneous chemical changes, or as a result of retained heat from the manufacturing or processing of the commodity. Some examples are charcoal, phosphorus, motion picture film, etc.
- Oxidizing materials. Substances which will decompose readily when heated to yield oxygen and may react violently with other chemicals or combustible materials. Examples include chlorates, nitrates, certain peroxides, etc.
- Corrosive liquids. Liquids which will cause severe damage to living tissue and to freight by chemical action, or are liable to cause fire when in contact with organic matter or with certain chemicals. Some examples are sulfuric acid, hydrochloric acid, nitric acid, etc.
- Compressed gas. Any material in the container having an absolute pressure exceeding 40 p.s.i. at 70°F. or an absolute pressure exceeding 104 p.s.i. at 130°F.; or any liquid flammable material having a vapor pressure in excess of 40 p.s.i. absolute at 100°F. There are two types of compressed gases. The first is flammable compressed gas which offers the hazards of fire and explosion. Some examples are acetylene, propane, hydrogen, etc.

The second is non-flammable compressed gas which does not meet the explosion or fire tests prescribed by regulation but offers the least hazard of pressure against the container. Examples include oxygen, helium, sulfuric dioxide, etc.

- Poisons. There are three classes of poisons: Classes A, B, and C. Class A are extremely dangerous poisonous gases or liquids of such a nature that a very small amount of the gas or vapor from the liquid, when mixed with air, is dangerous to life. Some examples are lewisite, mustard gas, nitrogen peroxide, etc. Class B are poisonous liquids or solids including pastes or semi-liquids which are known to be so toxic to man as to afford a hazard to health, but to a lesser degree than Class A poisons. Examples including insecticides, as arsenic, carbolic acid, etc. Class C are irritating substances in liquid or solid form which give off dangerous or intensely irritating fumes when exposed to air or upon contact with fire. Some examples are tear gas grenades, sylyl bromide, brombenzyl cyanide (liquid), etc.

- Radioactive materials. These are materials that spontaneously emit radiation capable of penetrating and severely damaging living tissue and undeveloped film. Radioactive materials are classified as I, II, or III, depending on the radiation levels emitted or their reaction with other radioactive materials. Radioactive

material classified as III offers the greatest hazards of radiation or interaction with other radioactive materials. Those classified as I offer the least. Those classified as II have a slightly higher level than I. Examples of radioactive materials are cobalt 60, iridium 192, gold 198, uranium 233, or substances containing such materials.

Placards and labels.

A truck carrying hazardous materials must display placards on four sides of the vehicle, which best describes the class of hazardous material it is transporting. In addition, the shipping containers must be labeled in accordance with the regulations. The patrolman should be able to recognize the various placards and labels and thus identify the presence of hazardous materials. The lettering on the placards should be at least four inches high. The shipping container labels are diamond shaped and are four inches wide on each side. Exhibit 4-2 (page IV - 21) illustrates the various placards, as well as examples of shipping container labels. The following is a brief review of each type of placard and container shipping labels.

- Cargo Fire - Avoid Water placards are used in addition to the appropriate hazardous material placard to warn individuals attempting to extinguish a fire. The lettering is black on a white background.

- Dangerous placards are used when commodities requiring different placards are loaded on the same vehicle and have a combined weight of 1,000 or more pounds. The placard lettering is red on a white background.
- Explosive A or Explosive B placards have red lettering on a white background. Placards are not required for Explosive C. Container shipping labels are not required for explosives.
- Flammable placards are used for flammable solids or flammable liquids, or a combination of both. The placard lettering is red on a white background. The container shipping labels show black lettering on a yellow background for flammable solids and black lettering on a red background for flammable liquids.
- Flammable Gas placards are used for shipments of 1,000 or more pounds of flammable compressed gas. The placard lettering is red on a white background. The container shipping labels have black lettering on a red background.
- Compressed Gas placards are used for shipments of 1,000 or more pounds of non-flammable compressed gas. The placard lettering is green on a white background. The container shipping labels have black lettering on a green background.
- Corrosives placards are used for shipments of 1,000 or more pounds of corrosive materials. The placard lettering is blue on a white background. The container shipping labels have black lettering on a white background.

- Poison placards are used for any quantity of Poison Class A or a combination of Poison Class A and B, or if 1,000 pounds or more of Class B poison is transported. The placard lettering is blue on a white background. The container shipping labels have red lettering on a white background. Class C poisons do not require placards; however, they are labeled.
- Oxidizers placards are used for shipments of 1,000 or more pounds and have yellow lettering on a black background. The container shipping labels have black lettering on a yellow background.
- Radioactive placards are required on vehicles carrying radioactive material of the class III variety. The placard lettering is black on a yellow background. The container shipping labels for radioactive II and III materials have black lettering on a half white and yellow background with type "II" and "III" printed in red. Radioactive I material labels have black lettering on a white background.

HAZARDOUS MATERIALS PLACARDS FOR RAIL

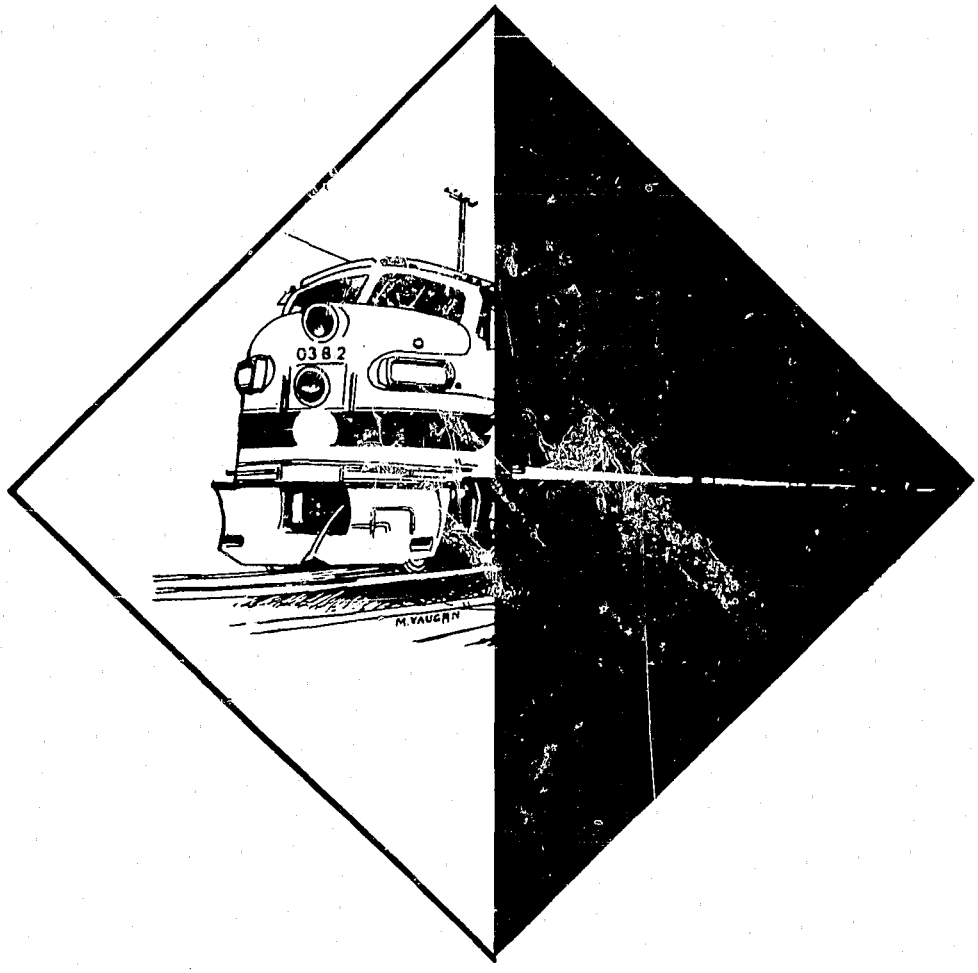


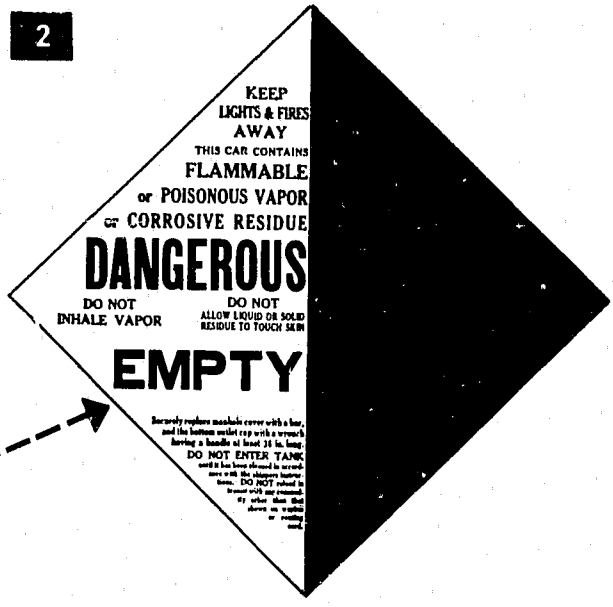
chart 3

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF HAZARDOUS MATERIALS
400 SIXTH STREET, S.W.
Washington, D.C. 20590

1


KEEP
LIGHTS
AND
FIRES AWAY!
DANGEROUS
HANDLE CAREFULLY
This car must not be next to a car placarded Explosives
Avoid contact with leaking acid or corrosive liquid
Beware of fumes or vapors!

2


KEEP
LIGHTS & FIRES
AWAY
THIS CAR CONTAINS
FLAMMABLE
or POISONOUS VAPOR
or CORROSIVE RESIDUE
DANGEROUS
DO NOT
INHALE VAPOR
DO NOT
ALLOW LIQUID OR SOLID
RESIDUE TO TOUCH SKIN
EMPTY
DO NOT ENTER TANK

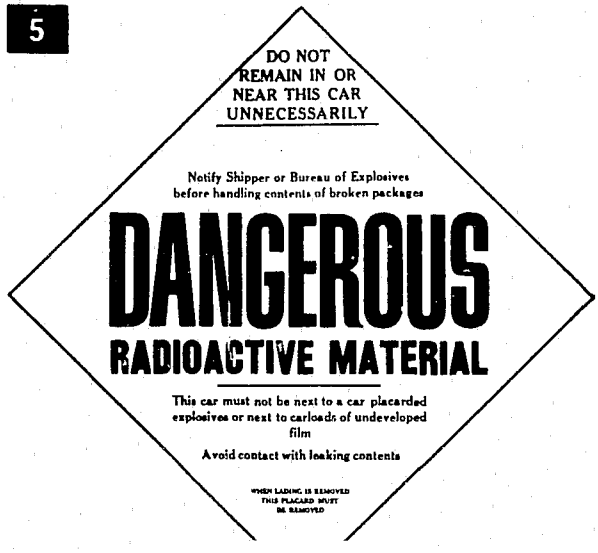
3


CAUTION
This car contains residual phosphorus and must be kept
FILLED
WITH

4


R COMPANY
EXPLOSIVES
HANDLE CAREFULLY
KEEP FIRE AWAY
STATION 19
CONDENSED RULES FOR HANDLING THIS CAR
1. In switching this car in yards or on sidings have a non-placarded car between this car and engine.
2. This car must not be cut off while in motion.
3. Avoid all shocks to this car. Other cars must not be allowed to strike this car. Couple carefully.
4. When the explosives are unloaded this placard must be removed from car.

5


DO NOT
REMAIN IN OR
NEAR THIS CAR
UNNECESSARILY
Notify Shipper or Bureau of Explosives before handling contents of broken packages
DANGEROUS
RADIOACTIVE MATERIAL
This car must not be next to a car placarded explosives or next to carloads of undeveloped film
Avoid contact with leaking contents

6

DO NOT REMAIN ON OR NEAR THIS CAR UNNECESSARILY

Lading must not be transferred en route under any conditions before shipper and Bureau of Explosives are notified.

FLAMMABLE POISON GAS

NAME OF CONTENTS

This car must not be next to a car placarded "Explosives". Beware of liquid and of gas leaking from tank or fittings.

WHEN LADING IS REMOVED THIS PLACARD MUST BE REVERSED

(FOR TANK CARS)

7

KEEP LIGHTS AND FIRES AWAY

THIS CAR CONTAINS FLAMMABLE POISON GAS OR RESIDUE

DANGEROUS

DO NOT INHALE GAS

DO NOT ALLOW LIQUID OR SOLID RESIDUE TO TOUCH SKIN

EMPTY

KEEP MANWAY BONNET COVER SECURELY CLOSED. DO NOT ENTER TANK UNTIL IT HAS BEEN CLEANED IN ACCORDANCE WITH THE SHIPPERS INSTRUCTIONS

DO NOT RELOAD IN TRANSIT

8

DO NOT REMAIN ON OR NEAR THIS CAR UNNECESSARILY

Lading must not be transferred en route under any conditions before shipper and Bureau of Explosives are notified.

POISON GAS

NAME OF CONTENTS

This car must not be next to a car placarded "Explosives". Beware of liquid and of gas leaking from tank or fittings.

WHEN LADING IS REMOVED THIS PLACARD MUST BE REVERSED

(FOR TANK CARS)

9

KEEP LIGHTS AND FIRES AWAY

THIS CAR CONTAINS POISON GAS OR RESIDUE

DANGEROUS

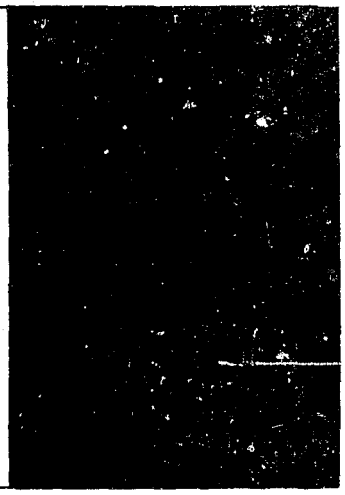
DO NOT INHALE GAS

DO NOT ALLOW LIQUID OR SOLID RESIDUE TO TOUCH SKIN

EMPTY

KEEP MANWAY BONNET COVER SECURELY CLOSED. DO NOT ENTER TANK UNTIL IT HAS BEEN CLEANED IN ACCORDANCE WITH THE SHIPPERS INSTRUCTIONS

DO NOT RELOAD IN TRANSIT



10

CAUTION

This Car Contains

POISON GAS

Beware of Fumes from Leaking Packages.

(FOR OTHER THAN TANK CARS)

11

DANGER

The lading of this car has been

FUMIGATED or TREATED

with

(Name of poisonous liquid, solid, or gas)

BEFORE UNLOADING, open both doors and DO NOT ENTER until car is free of gas. REMOVE ALL POISONOUS MATERIAL before release of empty car.

KEY TO USE OF RAIL PLACARDS

Ref: Title 49, CFR, PART 174

RAIL CARS ARE REQUIRED TO BE PLACARDED AS DESCRIBED BELOW. PLACARDS AS REQUIRED, MUST BE APPLIED TO BOTH ENDS AND BOTH SIDES OF THE CAR. FOR ADDITIONAL INFORMATION, SEE SECTIONS 174.540 THRU 174.557.

1. DANGEROUS PLACARD– Used on:

a. Cars loaded with bulk shipments and tank cars containing flammable liquids or solids, oxidizing materials, acids and corrosive liquids, Class B poisons, compressed flammable gases and compressed nonflammable gases. (Ref. Sec. 174.541(a)(2), (3) and 174.552)

b. Other than tank cars containing one or more labeled packages of flammable liquids or solids, oxidizing materials, corrosive liquids, Class B poisons and Class B explosives. (Ref. Sec. 174.541(a)(1) and (4))

2 DANGEROUS–EMPTY PLACARD– Used on tank cars after material requiring dangerous placard has been unloaded to warn personnel of the potential hazards. (Ref. Sec. 174.562(b) and 174.563)

3 CAUTION–RESIDUAL PHOSPHORUS–EMPTY PLACARD– Used to warn personnel that tank cars last contained white or yellow phosphorus. (Ref. Sec. 174.541(c) and 174.555)

4 EXPLOSIVE PLACARD– Used on cars containing any quantity of Class A explosives. (Ref. Sec. 174.540, 174.541(a)(5) and 174.550)

5 DANGEROUS–RADIOACTIVE MATERIAL PLACARD– Used on cars containing any quantity of "radioactive yellow III" and to carload lots of certain other radioactive materials. (Ref. Sec. 174.541(b), 174.553, 173.392 and 173.393(j))

6 FLAMMABLE POISON GAS PLACARD– Used on Class 105A-W tank cars containing hydrocyanic acid. (Ref. Sec. 174-542(b) and 174.556)

7 FLAMMABLE POISON GAS–EMPTY PLACARD– Used on tank cars after a materials requiring a flammable poison gas placard has been unloaded. (Ref. Sec. 174.562(d) and 174.563(d))

8 POISON GAS PLACARD– Used on tank cars containing Class A poisons except hydrocyanic acid. (Ref. Sec. 174.542(c) and 174.557)

9 POISON GAS–EMPTY PLACARD– Used on empty tank cars that last contained a Class A poison other than hydrocyanic acid. (Ref. Sec. 174.562(e) and 174.563(f))

10 POISON GAS PLACARD– Used on cars other than tank cars that contain packages or containers bearing a "Poison Gas" label. (Ref. Sec. 174.542(a)(1)(2) and 174.551)

11 DANGER–FUMIGATED OR TREATED PLACARD– Used on cars containing lading which has been fumigated or treated with poisonous liquids, solids or gases. (Ref. Sec. 174.579)

☆ U.S. GOVERNMENT PRINTING OFFICE : 1973–726-831/525 3-1

Reprinted September 1974

NEWLY AUTHORIZED HAZARDOUS MATERIALS WARNING LABELS

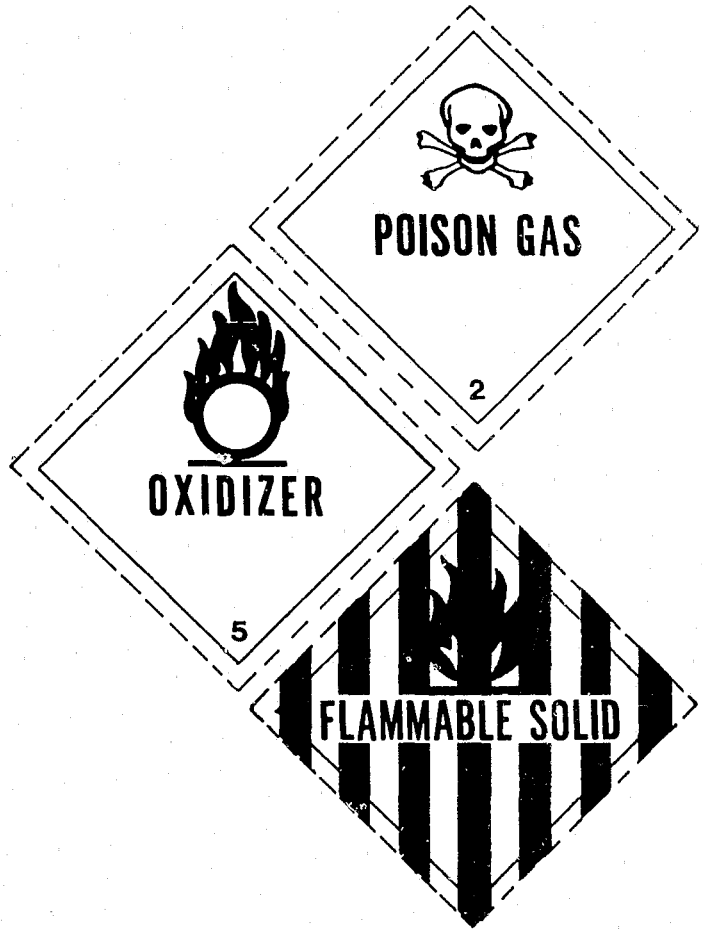


chart 4

THE NEWLY AUTHORIZED DOT LABELS ILLUSTRATED IN THIS CHART ARE BASED ON THE UNITED NATIONS LABELING SYSTEM AND ARE AUTHORIZED FOR DOMESTIC AND FOREIGN SHIPMENTS.

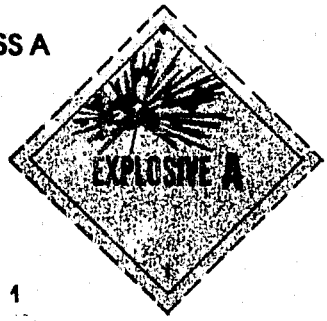
U. S. DEPARTMENT OF TRANSPORTATION
OFFICE OF THE SECRETARY
OFFICE OF HAZARDOUS MATERIALS
Washington, D. C. 20590

NEWLY AUTH[illegible]

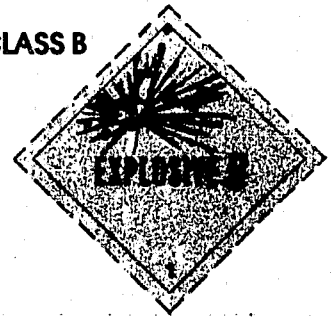
NOTE: General g[illegible]

EXPLOSIVES

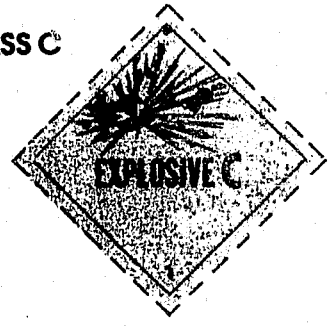
CLASS A



CLASS B

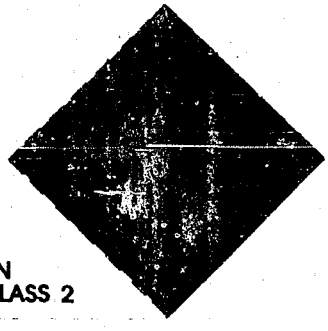


CLASS C



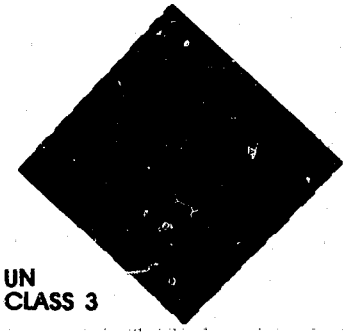
UN CLASS 1

COMPRESSED GASES



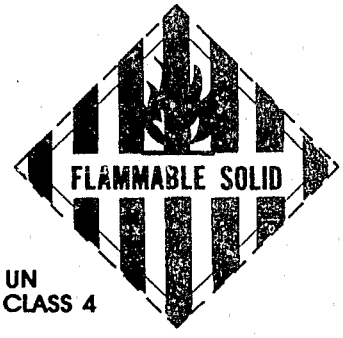
UN CLASS 2

FLAMMABLE LIQUID



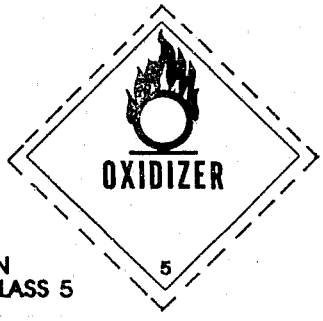
UN CLASS 3

FLAMMABLE SOLID



UN CLASS 4

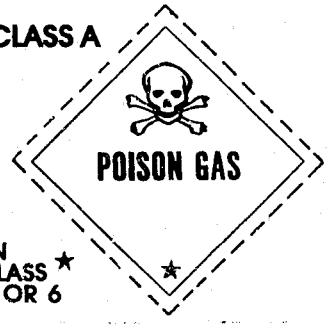
OXIDIZING MATERIAL



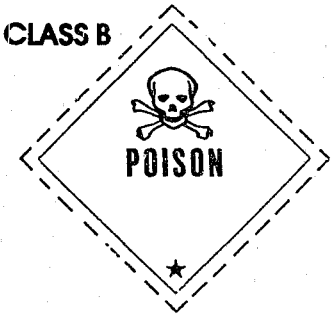
UN CLASS 5

POISONOUS MATERIAL

CLASS A



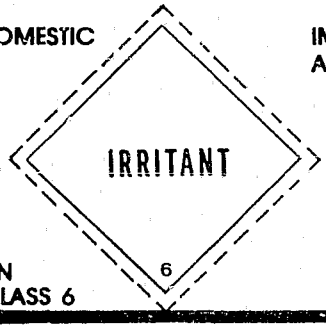
CLASS B



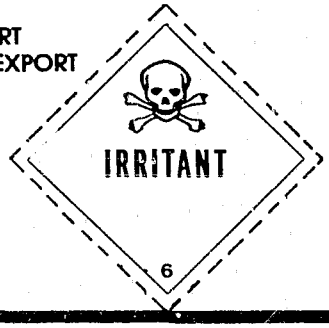
UN CLASS ★ 2 OR 6

IRRITATING MATERIAL

DOMESTIC



IMPORT AND EXPORT

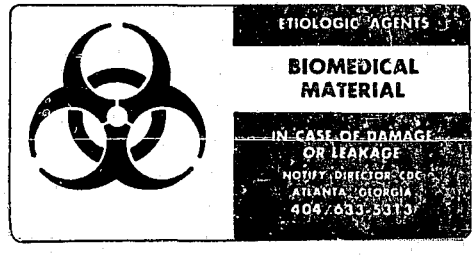


UN CLASS 6

ETIOLOGIC AGENT

Required for domestic shipments including the domestic portion of import and export movements.

Note: A Poison Label may be used on import/export shipments in addition to this label.



NOTE: The bottom half of the DOT diamond shaped labels may be printed in the language of the country of origin.

REQUIREMENTS:

1. The above DOT labels are a
2. Previously required labels may the above labels become m

Explosive labels - Janua

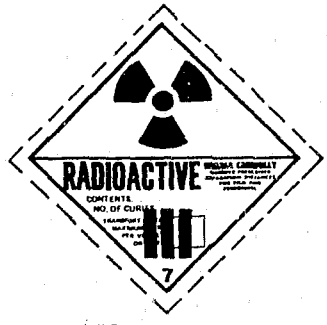
All other labels - Janua

MATERIALS WARNING

abels will be found on the back cover.

RADIOACTIVE MATERIALS

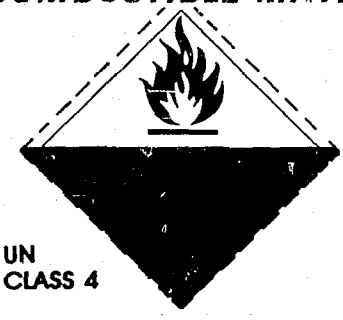
UN CLASS 7



CORROSIVE MATERIAL

UN CLASS 8

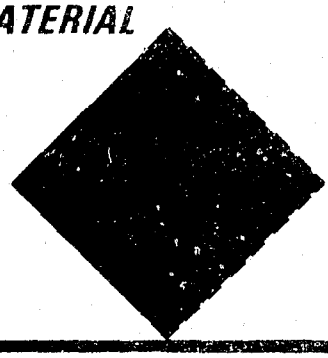
SPONTANEOUSLY COMBUSTIBLE MATERIAL



UN CLASS 4

NOTE: May be used in addition to other required labels.

WATER-REACTIVE MATERIAL



BUNG

CAUTION **Unscrew This Bung SLOWLY**

Do not unscrew entirely until all interior pressure has escaped through the loosened threads.

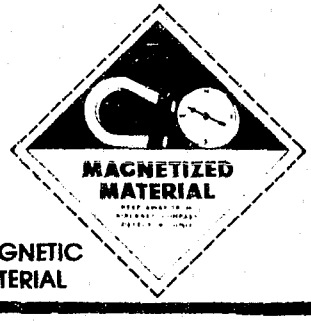
REMOVE BUNG IN OPEN AIR. Keep all open flame lights and fires away. Enclosed Electric Lights are safe.

EMPTY

EMPTY

NON-DOT LABELS USED FOR AIR SHIPMENTS

CARGO AIRCRAFT ONLY



MAGNETIC MATERIAL

ıoı ed for immediate use.
ɔe used until the dates indicated below at which time
ndatory.
1, 1974.
, 1975.

Hazardous materials class numbers are required by some foreign governments. The labels may be overstamped or overprinted with the appropriate hazard class number located in the bottom corner of the label (Ref. Sec. 173.404(g)). Listed below are the hazard classifications and United Nations numerical class designations:

DOT Classifications	United Nations class
Class A explosives	1
Class B explosives	1
Class C explosives	1
Flammable compressed gas	2
Nonflammable compressed gas	2
Flammable liquid	3
Flammable solid	4
Oxidizing material	5
Poisonous gas, Class A	2 or 6
Poisonous liquid, Class A	6
Poisonous liquid or solid, Class B	6
Irritating material	6
Etiologic agent	6
Radioactive materials	7
Corrosive material	8

GENERAL GUIDELINES ON USE OF LABELS

1. Shipper must furnish and attach appropriate label(s) to each package of hazardous material offered for shipment unless exempted from labeling requirements. (Ref. Title 49, CFR, Sec. 173.404(a)).

2. If the material in a package has more than one hazard classification, one of which is Class A explosives, Class A poison, or Radioactive Materials, the package must be labeled for each hazard. (Ref. Title 49, CFR, Sec. 173.402(b)).

3. When two or more hazardous materials of different classes are packed within the same packaging or outer enclosure, the outside of the package must be labeled for each material involved. (Ref. Title 49, CFR, Sec. 173.403(a)).

4. Radioactive materials requiring labeling, must be labeled on two opposite sides of the package. (Ref. Title 49, CFR, Sec. 173.402(a) (10)).

5. Labels must not be applied to a package containing only material which is not subject to Parts 170-189 of this subchapter or which is exempted therefrom. However, this paragraph does not prohibit the use of labels required for purposes of import or export shipments or required by 14 CFR 103.13 of the Federal Aviation Regulations on packages destined for transportation by air. (Ref. Title 49, CFR, Sec. 173.404(b)).

EXPORT AND IMPORT SHIPMENTS

EXPORT SHIPMENTS – Exporters are advised that shipments by water or air to foreign destinations may be rejected for transportation if they bear warning labels other than those illustrated in this chart, since many countries are implementing labeling requirements conforming to the United Nations Recommendations.

IMPORT SHIPMENTS – Labels having the same size, color and symbols as prescribed by Title 49 affixed to packages in another country are authorized for shipments in the USA. They may contain inscriptions required by the country of origin. (Ref. Title 49, CFR, Sec. 173.404(f)).

NOTE: The section numbers and references shown above are found in the Code of Federal Regulations, CFR Title 49-Transportation, Parts 100-199 and CFR Title 14-Aeronautics and Space, Parts 60-199. The same references may be found in the following publications which also contain a reprint of Title 49 CFR Parts 100-199:

R.M. Graziano's Tariff (Bureau of Explosives)
ATA (American Trucking Association) Dangerous Articles Tariff

DEPARTMENT OF TRANSPORTATION * UNITED STATES OF AMERICA *

U.S. GOVERNMENT PRINTING OFFICE : 1974 O - 537-581

REV. JANUARY 1974

TRUCK PLACARDING CHART

TRUCK PLACARDS AND LABELS REQUIRED BY U.S. DEPARTMENT OF TRANSPORTATION

This chart has been prepared to assist emergency response personnel to identify the presence of Hazardous Materials on motor vehicles. The rectangular signs in the blue shaded area are the "Placards" required on both sides, front, and rear of the motor vehicle. Below each placard is the amount (gross weight) of a hazardous material that must be in the vehicle before a placard is required, except that cargo tanks must be placarded whether loaded or empty. To the right of each placard is the "Label" that is required on packages containing Hazardous Materials.

In handling an emergency, obtain shipping papers from driver, if possible, to determine name of Hazardous Material. For additional assistance in handling an emergency, call: (800) 424-9300.

PLACARDS | LABELS

EXPLOSIVES A

Placard any quantity of Explosives A or combination of A & B Explosives. See DANGEROUS for mixed loads.

EXPLOSIVES B

Placard any quantity of Explosives B. Use EXPLOSIVES A placard if mixed with Explosives A materials. For other mixed loades see DANGEROUS.

COMPRESSED GAS

ard 1000 pounds or more gross ght of Nonflammable Compressed ses.

CORROSIVES

Placard 1000 pounds or more gross weight of Corrosive Liquids.

COMBUSTIBLE

Placard when packagings exceed 110 gallon rated capacity.

(No Label Specified)

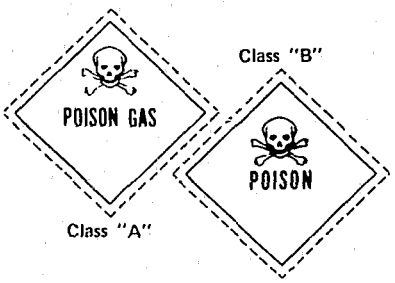
CARGO FIRE-AVOID WATER

To be used only with another Placard.

Placard to be used when so stated on shipping papers or when appropriate.

(No Label Specified)

POISON



Placard any quantity of Poison Class "A" or a combination of Poison Class "A" and "B". Placard 1,000 pounds or more gross weight of Poison Class "B". For mixed loads, see DANGEROUS.

PLACARDS | LABELS

FLAMMABLE

Placard 1000 pounds or more of either Flammable Solids, Flammable Liquids, or combinations of both.

FLAMMABLE GAS

Placard 1000 pounds or more gross weight of Flammable Compressed Gas.

OXIDIZERS

Placard 1000 pounds or more gross weight of Oxidizing Material.

RADIOACTIVE

Placard any quantity of shipments bearing radioactive yellow III label.

No placard required for material bearing "radioactive – white I" or "radioactive yellow II" labels.

For mixed loads, see DANGEROUS.

DANGEROUS

Use the DANGEROUS placard for mixed loads *containing* more than one kind of hazardous material requiring placards when the aggregate gross weight totals 1000 pounds or more.

Double placarding should be used when loads requiring the DANGEROUS placard are mixed with any quantity of the following commodities by adding the specific placard to the DANGEROUS placard.

Explosives A
Explosives B

Radioactive (Yellow-III)

Poison (Class "A")

Federal Highway Administration
Bureau of Motor Carrier Safety

Directions: Circle the letter of the one item which best completes the following statements.

1. The major concern of the patrolman controlling the scene of a serious accident is to:

   a. care for the injured

   b. arrange for traffic control

   c. preserve accident-scene evidence

   d. all of the above.

2. You are on the scene of an accident where no fire exists, but circumstances warrant you to take precautionary measures to prevent a fire and related injuries. Next to each statement below place either the letter F to indicate the precautionary actions the patrolman should take to reduce a fire hazard, or the letter I to indicate what the patrolman should do to prevent fire-related injuries. Use both letters, if applicable.

_____ a. Place flares away from the immediate area

_____ b. Turn off the ignition of involved vehicles

_____ c. Guard against smoking by spectators

_____ d. Warn occupants of nearby buildings to evacuate

_____ e. Turn off lights of all involved vehicles

3. In order to determine the appropriate action at the scene of an accident involving hazardous cargo, a patrolman must be able to identify the class of material involved. Test your skill by placing the letter in Column B next to its corresponding class in Column A.

COLUMN A: Class	COLUMN B: Material
_____ 1. Class B explosive	a. 1500 blasting caps
_____ 2. Flammable solids	b. sulfuric acid
_____ 3. Corrosive liquid	c. arsenic
_____ 4. Non-flammable compressed gas	d. hydrogen
_____ 5. Class B poison	e. mustard gas
	f. railway torpedoes
	g. helium
	h. motion picture film

4. A patrolman must be able to recognize the various placards and shipping labels which identify the type of hazardous cargo being transported. Test your skill by matching the placard/shipping labels in Column B to the cargo in Column A. Letters in Column B may be used more than once. The color of the lettering is indicated first and the color of the background next - (green lettering on a white background).

COLUMN A: Cargo	COLUMN B: Placard/Labels
_____ 1. Explosive A	a. blue on white/red on white
_____ 2. Flammable liquids	b. green on white/black on green
_____ 3. Corrosives	c. red on white/black on red
_____ 4. Poisons - Classes A & B	d. blue on white/black on white
_____ 5. Radioactive, Class II	e. black on yellow/black on white + yellow
	f. red on white/none

Turn to page IV - 60 to check your answers.

Handling Procedures for Accidents Involving Dangerous Substances

General

Most dangerous substances require special knowledge in order to handle them. In the event of an accident, many trucks transporting dangerous substances carry special instructions for police, fire department and truck drivers, which describe handling procedures and first aid instructions for the injured. Normally, these instructions are in an envelope inside the cab of the truck. Where they are provided, the patrolman should follow them.

Procedures for Protecting the Scene

The patrolman must recognize the hazard in order to take appropriate action. There are no strict set of chronological steps for any accident scene and the patrolman's actions will depend on the most urgent matter at hand. A review of the actions of considerations which may be appropriate are listed below:

- Re-park the police vehicle, if necessary, in a location which is a safe distance from the hazard
- Remove injured persons from danger as quickly as possible
- Keep spectators away from the scene; however, do not hesitate to utilize civilian assistance until additional help arrives on the scene

- Notify headquarters of the collision, type of vehicles and hazards involved. If warranted, request additional assistance
- When high explosive or radioactive materials are involved, headquarters will notify the nearest military installation or the Atomic Energy Commission Office for special monitoring. If fire is involved, attempt to extinguish it only if it has not reached the cargo area of the vehicle. Stay out of the smoke as much as possible and follow the advice of the special monitoring team once they have arrived at the scene. If the team has not arrived and there has been a fire involving radioactive material, segregate all individuals who may have been contaminated and wait the arrival of the team. Do not permit anyone to enter the scene until it is safe to do so. Do not attempt to clean up the scene until it is approved by the special monitoring team. In addition, consideration should be given to rerouting traffic and/or evacuation of homes in the affected area.

Electrical Hazards

Vehicular accidents involving electrical power lines are dangerous to life and property since the hazards of electric shock and fire are present. Some precautionary measures are listed below:

- Contact the power company and request immediate shutdown of power. Advise the power company of the exact location of the accident, including the pole identification numbers.
- Keep spectators at least 100 feet from the scene of the downed wires.
- Consider advising the occupants, if they are inside the vehicle and not seriously injured, to remain inside until the power company can shut the power off.
- In the event of serious injury, where death may be imminent unless rescue is immediately effected and there may be a delay in power shutdown, an attempt should be made to remove the wires. Two methods may be employed in removing the electrical wires; however, both involve extreme risk of electrical shock. The wire may be removed by using a very dry rope which has been stored in a dry area for some time or by using a very dry wooden pole which has been stored in a dry area for some time. However, these acts should not be considered routine but a last resort if power shutdown may be delayed. Downed/cracked utility poles present the same hazards as downed wires and the same safety precautions should be employed.

Other Hazards

There are many other hazards that may contribute to degrading the accident scene, e.g., water from a broken fire hydrant, spilled substances either liquids or solids, obstructive debris. The patrolman at the scene must determine and summon the necessary aid to neutralize the hazard.

Care and Handling of the Injured

General

A responsibility of a patrolman controlling the scene is to see that the injured are cared for until professional medical assistance is available. The patrolman is not expected to treat injuries; rather, he applies first-aid measures which may save lives and keep injuries from intensifying until competent medical assistance arrives at the scene. If not immediately evident, inquire whether there are any injured persons. Victims may have got out of the vehicles; they may have been thrown from the vehicle into weeds, bushes, etc.; they may have walked for aid and collapsed. Summon the required assistance, i.e., ambulances, helicopter, doctors, if not already en route.

Emergency First Aid

The patrolman should evaluate the injured person's condition in order to apply effective first-aid measures. Usually the injuries incurred are of such a serious nature that they require expert medical attention, or they are relatively minor and can wait for treatment. However, some serious injuries require immediate first-aid to prevent serious complications or a fatality. The principal life-saving first-aid steps are to stop the bleeding, restore breathing or clear the airways, and treat for shock. Injuries that require prompt action are reviewed below:

- Severe bleeding, such as arterial bleeding, can result in death. The patrolman should be aware of the various pressure points to control the bleeding.

- Shock is the depressed state of all body functions due to a failure of the circulation. Shock may cause death, even when the injuries are relatively minor. Since shock is easier to prevent than cure, treatment should be started before symptoms develop. Rough or improper treatment should be avoided since it can worsen the victim's condition and cause shock.
- Compound fractures result when a bone breaks through the surface of the skin and is exposed. They can result from improper handling of a simple fracture.
- Spinal and neck fractures are considered to be the most dangerous injury to persons. They are most common in serious accidents. The inability to move fingers, hands, toes, and feet are symptoms of this type of injury. A general paralysis or the deformation of posture may be further indications of spinal or neck fractures. Extreme care must be taken in moving the victim.
- Asphyxiation or suffocation rarely occurs in traffic accidents; however, it can happen. This condition results from the lack of oxygen. The major symptom is the lack of breath and unconsciousness. The causes may be one of several, e.g., carbon monoxide poisoning, drowning, stomach squeezed against the steering wheel, a severe blow in the stomach, chest, back of the neck or certain areas in the back, electrocution, etc.

Immediate Threats to Injured Persons

The patrolman must determine if there are any immediate or potential threats which may endanger the injured. Such threats as fire, oncoming traffic, exposure, etc., may require that the injured person be moved to a safe location until medical help arrives. If possible, certain types of injuries should be treated before moving the person, especially those injuries involving arterial bleeding and extreme shock. Injuries such as fractures of the neck, head, ribs, and spine require extreme care in moving. Moving the victim may result in additional injuries. However, when he is lying in the face of danger, it is better to move him rather than risk a fatality.

Make use of the best help available until professional medical assistance arrives at the scene. Most people have compassion for the injured and will volunteer assistance. However, legally, the ordinary bystander is not compelled to assist an injured person. When possible, avoid enlisting help from passengers or excited bystanders, since they are emotionally aroused and therefore may inadvertently cause further injuries to the victim.

Removal/Extrication Procedures

As a result of an accident, persons may be trapped by the vehicle(s). Some examples would be: vehicles that have rolled over and the victim is pinned underneath, vehicles that are badly crushed and have pinned persons inside. When fire or oncoming traffic poses a threat, immediate action

must be taken to remove/extricate the victim. Some related considerations are reviewed below:

- Use whatever tools are available such as a jack handle, pinch bar, or a wrench to pry open a door to get at the person. Accessibility often depends upon the position of the person inside the vehicle. When time permits, first aid should be given to a seriously injured person prior to moving him.
- Six or seven men can normally lift a car enough to remove a person trapped under it. However, a tow truck or a strong jack is required to lift a truck.
- When doors are jammed and an effort to pry them open fails, break the window and clear the glass before going in after the injured.
- If a car is lying on its side, entry may be gained by prying open the trunk and cutting or battering through the rear seat.
- Professional help may be required in removing persons pinned in or under a vehicle and should be summoned at the first opportunity. Fire departments have useful equipment and training in removing trapped persons. Rescue squads, associated with either police or fire departments, have specific equipment and training to handle most situations. Tow trucks can also be useful in freeing trapped persons. Make the people as comfortable as possible until they can be extricated.

Protecting the Injured

The patrolman should move the injured to a protected area, to await the ambulance, unless they are so seriously injured that further injuries may result. Move the people to the side of a vehicle away from the road or on a side away from approaching traffic. If the weather is inclement or a long wait is expected, move the people under cover, e.g., a nearby building. The location should afford easy access by an ambulance and doctor. However, if they are in no immediate danger and they can be made relatively comfortable, do not move them.

Record the Injured's Destination

Once the ambulance or doctor has arrived and assumed the responsibility of the injured, the patrolman should record the destination of the injured, i.e., hospital or doctor's office, as well as record the name and address of the injured person. A follow-up investigation may be necessary for a number of reasons.

It may be necessary to determine the true extent of injuries. If the injuries are critical, the police need to learn if the person died in order to determine what legal action is to be taken. The character of trial proceedings resulting from the accident will depend on whether the injured lived or died.

Notification

The identity of the injured is needed to notify certain persons of the accident, especially if a fatality is involved. The patrolman may not personally notify the individuals, but he should be sure it will be done. Individuals normally notified are relatives of the injured, the owner of the vehicle if he is not present, and the employers of bus, truck, and cab drivers.

Accidents Involving a Fatality

Usually a fatality can be determined by the nature of the injuries, e.g., a person's head may be crushed or he may be decapitated or disemboweled. However, death may not always be evident. The patrolman should not assume that a person is dead until he has checked for some of the more important signs of life, listed below:

- Heartbeat or pulse; the best places to feel for the pulse are the neck - on either side of the Adam's apple, and just below the wrist. Pulse is often difficult to locate due to the physical make-up of the people and their condition.
- Pupillary response; the pupils of the eye contract or become smaller in diameter when a light is flashed in the eyes. If the person were dead, the pupils ordinarily would not respond to a flash of light.

- Breath; a cool mirror, piece of glass, or plated metal becomes cloudy from the breath as a result of being held closely to the mouth or nostrils. There will be no moisture apparent if the person is dead or the mirror or glass is as warm as the body.
- If the patrolman has any doubt about a victim being deceased, he should continue to render first aid and care for the victim until competent medical assistance arrives at the scene.

Traffic and Crowd Control

General

Traffic and crowd control at the scene of an accident is one of the high priority aspects of accident management. Negligence or mishandling of any of these aspects may result in additional accidents due to congestion and confusion. Bystanders may be hurt. Traffic may destroy valuable evidence which may have helped in reconstructing the accident, as well as substantiating charges of law violations. The manner in which the patrolman conducts traffic and crowd control may affect the number of witnesses that will volunteer information; courtesy and firm direction should be a concern. The patrolman should assess the need for additional assistance required to maintain traffic and crowd control. Normally, the patrolman can handle the situation alone; however, accidents which completely block the roadway will usually require additional manpower to facilitate traffic and crowd control. Utilize competent civilians (truck drivers, service personnel) when the situation demands immediate help to warn and control traffic and bystanders until professional assistance arrives.

Warning Devices

The patrolman must know exactly what kind of equipment the patrol car is equipped with in order to make utmost use of it as well as replenishing expended supplies. It is too late at the scene of an accident to discover

that the supplies of flares are expended. There are several types of warning devices which are used to warn approaching traffic.

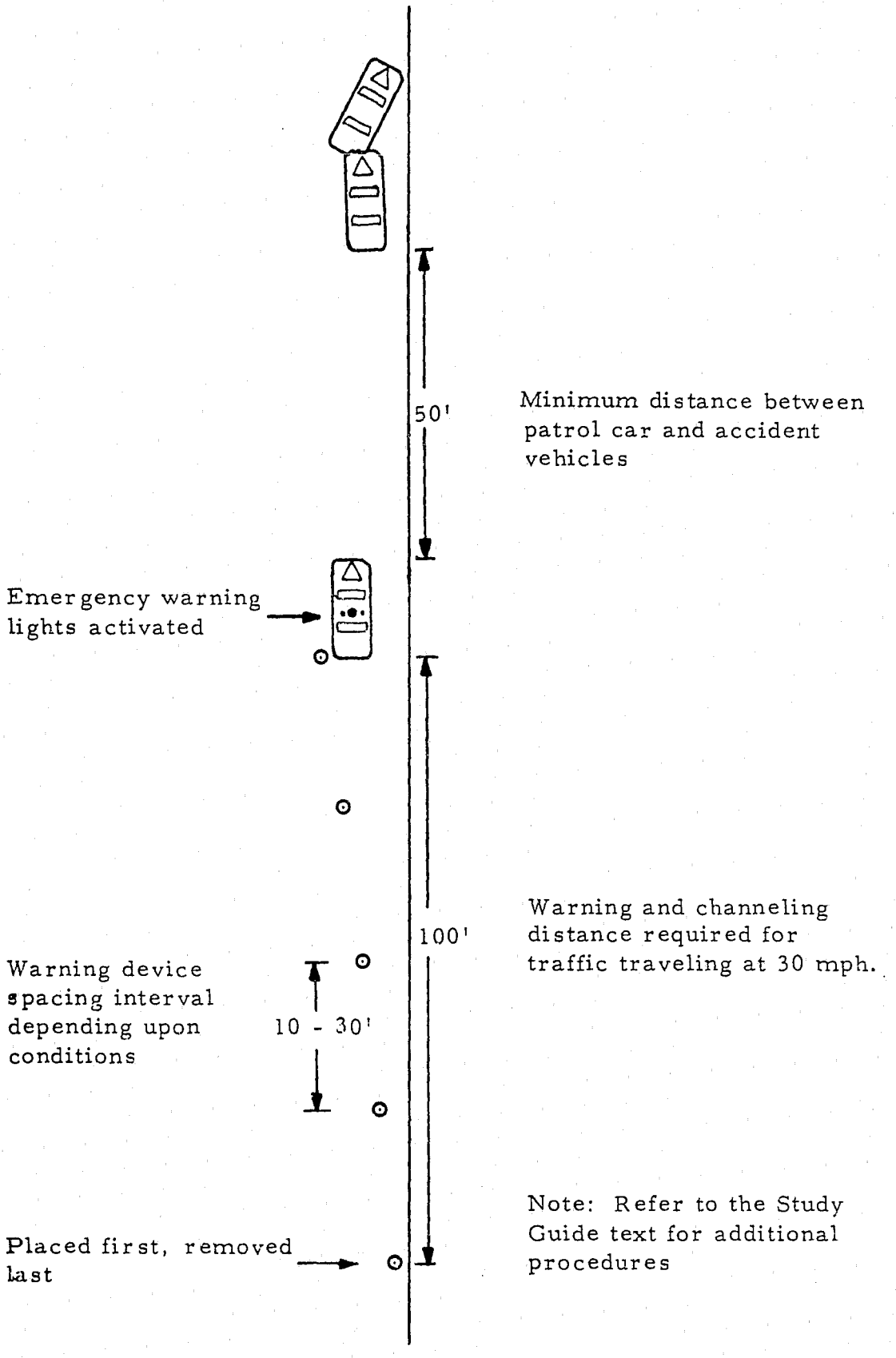
- Daylight warning devices. Traffic approaching the accident scene may be warned by using traffic cones, flags, reflectors, flares/fusees and/or people directing traffic.
- Nighttime warning devices. Some form of lighting is necessary to warn approaching traffic during periods of low visibility or darkness. Flares/fusees, torches, automobile headlights, flashlights, lighted batons are examples of nighttime warning devices. Flares/fusees are the most common warning devices used during periods of darkness.
- Patrol vehicle devices. The flasher and dome lights should be activated, regardless of the time of day.

Placement of the Warning Devices

Warning devices, such as flares/fusees, cones, reflectors, etc., are designed to alert approaching traffic of an impending hazard or adverse road condition, as well as to channel traffic safely past the situation. Although most warning devices are highly visible from a distance, experience has shown that a large number of motorists do not reduce their speed or merge into a safer traffic lane until they are close to the warning device. Therefore, the patrolman must place the devices to permit the motorist to perceive and properly respond to the conditions within a margin of safety. Speeds

Exhibit 4-3

General placement of warning devices



of vehicles, traffic volume, stopping distance, lane obstruction, and the location of the accident are some of the factors to consider in placing the devices. Exhibit 4-3 (page IV - 45) illustrates the general placement of warning devices in conjunction with the following examples.

- A car traveling at 30 mph on dry pavement will require approximately 80 feet of stopping distance. Therefore, for such a situation, the patrolman should place the first warning device a minimum of 100 feet from the scene to provide for an adequate margin of safety.
- A car traveling 60 mph will require approximately 180 feet of stopping distance. Therefore, the patrolman should place the first flare a minimum of 200 feet from the scene.

The need for additional warning devices must be considered when an accident occurs on a hill, curve, or where visibility is limited. Furthermore, warning devices may be required in opposing traffic lanes when the accident interferes with such traffic flow. Placing the devices while approaching the scene will save the patrolman from back-tracking. Care must be exercised so that the patrol car is not creating a hazard to traffic while flares are being placed.

Safety precautions must be initiated while handling flares/fusees since improper or careless handling can result in serious burns. The proper handling procedure is explained below.

- Grasp the flare in one hand near the base. Pull the black tape up and across the cap to expose the striking surface with the other hand. Next, twist off the cap to remove it and expose the point of ignition. Position yourself with the wind at your back before igniting the fusee. This prevents the toxic smoke and sparks from being blown toward you.
- Extend both arms in front of you. Hold the flare in one hand, while in the other hold the cap against the top of the flare. Ignite the device by moving the flare in a motion away from the body and against the cap surface. Hold the flare at arm's length after it has ignited and lower it to the ground. Place it on the pavement or on the side of the roadway with the burning end facing the traffic to be warned. Do not throw a burning flare to the ground. You may be struck and injured by small pieces of burning phosphorous that are forced loose by the impact of the fall.
- A flare should not be placed upright but at a slight angle. Standing a fusee or flare upright may present a hazard in a heavy rainstorm. Rain drops falling on the burning end may cause tiny bits of burning phosphorous to be propelled as much as 20 feet. Burning flares are removed from the roadway when they have served their purpose. Do not kick a burning flare aside. Instead, use a stick or other implement to roll it to the side of the roadway. Once the flare has been moved either to the curb or on the shoulder

of the roadway, it may be extinguished by grasping it by the base and forcing the burning end into the ground or into the point where the curb meets the street surface.

Considerations for Maintaining a Traffic Flow

Placing warning devices does reduce the chance of additional accidents occurring, but the devices must be supplemented by active traffic direction and control in order to maintain the most efficient flow. In the event of a complete road blockage or severe congestion, the patrolman should consider a temporary detour route. The patrolman will need assistance to establish blockades at the detour points. The detour must:

- Accommodate the traffic in terms of weight, height and volume requirements
- Be adequately marked to prevent drivers from becoming lost
- Facilitate approaches and departures of emergency vehicles
- Be a convenient route for a majority of traffic.

When one or more traffic lanes permit traffic past the accident scene, traffic control must be maintained in all lanes, including opposing traffic lanes, to prevent "gaper's block" and additional accidents. Once the patrolman has turned over the responsibility of caring for the injured to competent medical aid, his primary effort should be devoted to maintaining traffic and crowd control until the scene is cleared.

Parking by Curious Drivers

Curious drivers who park their vehicles near the scene can hamper traffic flow as well as hinder the operation of emergency vehicles. Active traffic direction and control can prevent the overly-curious driver from stopping. Inform drivers to keep moving and that stopping is not permitted.

Pedestrians and Bystanders

The patrolman must keep spectators away from the immediate area of the accident since they will hinder the emergency-response personnel and equipment. He should not let bystanders move or treat the injured unless the patrolman is convinced they are qualified. The patrolman must be courteous but commanding in handling pedestrians or bystanders. He should shout only as a last resort. Bystanders should be restricted to any available sidewalk. If a crowd should form and one person tries to get closer to the scene, all will attempt to follow suit.

Preserving Physical Evidence

The preservation of accident-related evidence may not be necessary for a minor accident. Probably the most important factor to consider is clearing the roadway. However, in most serious accidents, preserving accident evidence such as debris and skidmarks is very important. The patrolman should protect them until they are recorded or not needed as further evidence. Short-lived evidence, such as debris denoting the collision point, tire prints, skidmarks, radiator or crankcase run-off, blood stains, must be protected from traffic and bystanders until it has been recorded and/or photographed. If evidence must be moved or obliterated prior to recording it, the exact position of the item should be marked for later measurement and recording.

The patrolman may have to consider temporarily holding up traffic to protect the evidence until it has been recorded. In situations where traffic lanes are open, some evidence may be in jeopardy of being removed or destroyed. The patrolman may have to guide the traffic around the evidence by using signals and gestures and/or by placement of warning devices.

Moving Damaged Vehicles in Emergencies

General

Damaged vehicles may be moved in emergencies to prevent further damage to life and property. When such conditions exist the patrolman can have the vehicle moved or impounded. Normally, the owner of the vehicle, if capable, is responsible for removing the vehicle. The patrolman may ask him if he knows or prefers a specific wrecker service and if the person does not prefer a specific service, the patrolman can summon the necessary aid. However, in emergency situations or when no person responsible for the vehicle is available, the patrolman can arrange to have the vehicle moved or impounded. Some situations requiring prompt movement of a damaged vehicle are:

- A person is trapped in a vehicle near fire or spilled flammables and cannot be extricated easily.
- A wrecked vehicle is situated on a blind curve, crest of a hill, or in a fog pocket and presents an immediate hazard to oncoming traffic.
- A vehicle is causing extreme congestion.
- A disabled vehicle is located on or near a heavily traveled limited access highway.

Moving the Vehicle

The best method to move a wrecked vehicle is with the aid of a professional towing service. However, in emergency situations, a tow truck may not be immediately

available and the patrolman must use the best means available. This may involve driving the vehicle, shoving or pushing it off the roadway with volunteer assistance. Move the vehicle only enough to reduce the emergency. This may mean lifting a vehicle just enough to remove a pinned individual or moving it out of the way of oncoming traffic.

Precautions in Moving Vehicles

The patrolman should prevent unnecessary damage to other vehicles. Injuries may result from careless handling of vehicles. Insure that the vehicle is moved completely off the traveled position of the roadway to minimize additional collisions. In addition, the position of all four wheels or four corners of the vehicle after impact should be quickly marked prior to moving the vehicle. This will enable the patrolman to complete any measurements of final resting place at a later time.

Theft Prevention Measures

General

Protecting property is a primary police responsibility. The patrolman has a moral obligation to protect the property of individuals involved in an accident. However, if the owner of the vehicle or a responsible representative is able to look after his property, especially personal belongings, then the responsibility is primarily his. Minor accidents normally do not require theft prevention measures, since the persons involved are able to take care of their own property. The patrolman is more apt to apply theft prevention measures in serious accidents involving injured persons and/or scattered personal property or truck cargo. Theft prevention measures have a high priority. However, they are secondary to fire prevention, care of the injured and traffic and crowd control, although they can be applied concurrently with other responsibilities.

Items Likely to be Stolen

Often items are taken by bystanders or curious drivers at the scene. These individuals do not plan to steal anything, but the temptation is there because they see something they like and want. Some of the items commonly taken at the scene of an accident are:

- From truck cargoes: clothing, food, beverages, cigarettes, small machines, such as typewriters, small articles of furniture such as lamps.

- From passenger vehicles: luggage, tools, cameras, fishing tackle, golf clubs, briefcases, clothing.
- Equipment from vehicles: accessories which are easily removed, such as radiator ornaments, dual exhaust pipes, hub caps or rims, radios, spare tires, tools, mirrors, seat cushions, spot or fog lights.
- From injured or dead persons: wallets and purses, money, jewelry, clothes.

Situations when Theft is Likely to Occur

Situations which are conducive to theft include:

- Insufficient responsible personnel are present at the scene to handle all the emergencies as well as guard against theft.
- Large crowds of spectators may have formed and there is a great deal of confusion.
- The patrolman may not have reached the scene and the vehicles are unattended or the persons are unable to guard their property.
- The individuals involved are tourists and have many tempting personal belongings (e.g., cameras, sporting equipment, etc.).
- Truck cargo is scattered over the roadway.
- Low visibility and/or darkness.

Theft Prevention Measures

The best way to prevent theft is by removing the temptation to steal. Several theft prevention measures can be applied, such as:

- Keep spectators away from the immediate scene.
- Remove ignition keys from automobiles, pick up any personal belongings, and store them inside the vehicle. If possible, lock the glove compartment, car doors,and trunk.
- Spilled solids from trucks should be gathered into a central area and guarded. If possible, the contents should be stored in the truck's cargo area. If the truck driver is able, he should be encouraged to guard his own vehicle. The patrolman should arrange to notify the truck driver's company or authorized insurance agency of the accident as soon as possible, and arrange for transfer of the cargo and evacuation of the vehicle.
- The patrolman should properly identify any property taken into custody to avoid charges of negligence in the handling of the property.

5. Below in Column A are causes and symptoms of injuries and in Column B, types of injuries. Place the letter from Column B next to the appropriate item in Column A. Column B can be used more than once.

COLUMN A: Causes and Symptoms	COLUMN B: Types of Injuries
___ 1. Bone breaks through surface of skin	a. severe bleeding
___ 2. Inability to move fingers, hands, toes and feet	b. shock
___ 3. May cause death even with minor injury	c. compound fractures
___ 4. Lack of breath & unconsciousness	d. spinal & neck fractures
___ 5. Arterial bleeding	e. asphyxiation

6. Frequently ordinary means cannot be used to remove/extricate victims. Match the methods in Column B to the situations in Column A by placing the letter from Column B next to the appropriate number in Column A.

COLUMN A: Situations	COLUMN B: Methods
___ 1. Pry open door to gain access to victim	a. break the window and clear glass
___ 2. Lift a truck to remove person trapped under it	b. tow truck or strong jack
___ 3. Doors are jammed and an effort to pry them open fails	c. pry open trunk and cut through rear seat
___ 4. Enter a car lying on its side	d. use jack handle, pinch bar or wrench
	e. use three bystanders

7. A patrolman should check important life signs before assuming a person is dead. Place the letter of the appropriate life sign in Column B next the appropriate method of checking it in Column A. Column B can be used more than once.

COLUMN A: Method of Checking	COLUMN B: Life Sign
___ 1. Place cool mirror close to mouth or nostrils	a. heartbeat or pulse
___ 2. Place warm piece of glass under nostrils	b. pupillary response
___ 3. Place fingers on either side of Adam's apple	c. breath
	d. inappropriate action

Directions: Circle the letter of the one item which best completes the following statements.

8. If a special monitoring team has not yet arrived at the scene where a fire involving radioactive material has begun, a patrolman should:
   a. avoid any action and await the arrival of the team
   b. segregate all individuals who may have been contaminated
   c. clean up the scene to prepare it for the team
   d. request bystanders to help you with the cleaning.

9. In the event of serious injury where death is imminent unless rescue is immediate, it may be necessary to attempt to remove live wires by using:
   a. a rope or wooden pole that has been stored in a dry area for some time
   b. a belt or jacket if you'll be sure to wear gloves
   e. either of the above is acceptable
   d. none of the above. An electrical shock might be fatal.

10. Several types of devices can be used to warn approaching traffic of an accident. Place a "D" for daytime, an "N" for nighttime, or "D&N" for both to indicate the appropriate time to use the following devices:

___ a. flares

___ b. people directing traffic

___ c. torches

___ d. traffic cones

11. Warning devices are needed to alert approaching traffic. Below are types of dangers involved. Next to each statement below place a "N" for normal and an "A" for additional devices needed to warn motorists of the accident:

___ a. accident interferes with traffic flow in opposing lane

___ b. alert traffic to impending hazard

___ c. channel traffic safely past situation

___ d. accident occurs on a curve

Directions: Circle the letter of the one item which best completes the following statements.

12. A disabled vehicle:

a. must never be moved except by a tow truck

b. may be moved slightly to reduce the emergency

c. may be driven to the garage by the patrolman

d. any of the above.

13. Minor accidents do not require theft prevention measures because:

    a. the property is usually of little value

    b. the persons involved are usually able to take care of it themselves

    c. the patrolman uses these measures only when truck cargoes are involved

    d. all of the above.

14. Circle one of the following statements that is NOT a theft prevention measure:

    a. allow spectators to help move vehicles

    b. remove ignition keys from vehicles and lock doors and

    c. properly mark any property taken into custody

    d. gather spilled solids from trucks into a central area and guard it.

Turn to page IV - 61 to check your answers.

KEY

1. d. all of the above.

   (See pages IV - 2 and IV - 3.)

2. a. F&I
   b. F
   c. F&I (See pages IV - 5 and IV - 6.)
   d. I
   e. F

3. 1. f. railway torpedoes.
   2. h. motion picture film.
   3. b. sulfuric acid. (See pages IV - 15 - IV - 18.)
   4. g. helium.
   5. c. arsenic

4. 1. f. red on white/none.
   2. c. red on white/black on red.
   3. d. blue on white/black on white. (See pages IV - 18 to IV - 20.)
   4. a. blue on white/red on white.
   5. e. black on yellow/black on white and yellow.

KEY

5. 1. c. compound fractures.
   2. d. spinal and neck fractures.
   3. b. shock.
   4. e. asphyxiation.
   5. a. severe bleeding

(See pages IV - 36 and IV - 37.)

6. 1. d. use jack handle, pinch bar or wrench.
   2. b. tow truck or strong jack.
   3. a. break the window and clear glass.
   4. c. pry open trunk and cut through rear seat.

(See page IV - 39.)

7. 1. c. breath.
   2. b. pupillary response.
   3. d. inappropriate action.
   4. a. heartbeat or pulse.

(See page IV - 41.)

8. b. segregate all individuals who may have been contaminated

(See page IV - 33.)

9. a. a rope or wooden pole that has been stored in a dry area for some time

(See page IV - 34 .)

10. a. D&N
    b. D
    c. N
    d. D

(See page IV - 44.)

11. a. A
    b. N
    c. N
    d. A

(See page IV - 46.)

KEY (Cont.)

12. b. may be moved slightly to reduce the emergency

(See page IV - 51.)

13. b. the persons involved are usually able to take care of it themselves.

(See page IV - 53.)

14. a. allow spectators to help move vehicles.
(See page IV - 55.)

END