

LAKE COUNTY SHERIFF'S

RESERVE DEPUTY UNIT



Traffic Direction and Control

Mission Statement

Lake County Sheriff
Emergency Management Agency
Reserve Deputy Unit

TO PROMOTE EXCELLENCE IN SERVICE,
WHILE ENHANCING AND PROVIDING FOR A
GREATER LEVEL OF PUBLIC SAFETY.

TO PROMOTE A PROFESSIONAL IMAGE,
WHILE ASSISTING THE GENERAL PUBLIC AS
WELL AS OTHER AGENCIES.

TO EXECUTE THE ASSIGNED DUTIES OF THE
OFFICE OF THE SHERIFF WITH THE HIGHEST
LEVEL OF PRIDE AND AWARENESS.

Approved

Gary Del Re
Sheriff

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For simplicity and ease of presentation, we use masculine genders of singular pronouns to refer to both sexes.

Likewise, graphic illustrations are generic. We use them to promote interest and aid comprehension for visual learners

INTRODUCTION

Keeping a free and orderly traffic flow is of primary concern to any traffic enforcement agency. Among the functions of traffic control, the importance of traffic direction cannot be overemphasized. Ordinarily, traffic control devices and signals are sufficient to handle most traffic situations. Their primary function is to regulate, guide, and warn traffic along with the assignment of rights-of-way.

Occasionally, predictable and unpredictable situations occur that are disruptive to the normal traffic flow (i.e., festivals, parades, electrical failures, traffic signal failures, traffic accidents, and highway blockages). Events such as these may require manual traffic direction and control.

SIGNALS AND GESTURES

When an officer has to direct traffic it is his job to tell people how, when and where they may move in vehicles or on foot. The officer must pay attention to cars, pedestrians, and bicyclists and see to it that they are given a chance to proceed. There is a natural tendency to overlook pedestrians and bicyclists.

Actually, what the officer does is tell them how to behave. If he were not on hand to make decisions and direct movements when traffic is heavy, drivers and pedestrians would foolishly try to move at every chance. This causes repeated traffic jams. Motorists would also, without realizing it, get into dangerous situations that they did not anticipate.

The officer's most important job while directing traffic is to let drivers and pedestrians know what he wants them to do. If they do not understand him, they will have trouble and so will he. The instructions that follow were developed to improve the communication process between the traffic officer and the highway user. That is, they show the officer how to make his meaning clear to the drivers and pedestrians.

Drivers are not often where they can hear an officer when he wants them to respond, so the officer cannot just talk to them. He has to use a type of sign language that is clearly understood by everyone. The officer could, of course, motion drivers to stop, start, or turn in many different ways.

Suppose that he does it in a way that is entirely his own and different from all others who direct traffic. Perhaps some of the drivers approaching the officer's corner would catch on, but most of them would be puzzled. Since they have never come across such motions

before, they would probably fail completely to understand the directions and ignore the officer.

Therefore, it is important in direction traffic for all officers to do it the same way. Equally important, the gestures should be made where the driver can see them from a reasonable distance.

Directing Traffic by Hand

When directing traffic by hand the officer must let people know that he is in charge. To project this image the officer must stand where he can be seen and as though he means business.

Stance

To fight fatigue and be able to stand for long periods, he should stand straight with weight distributed equally on each foot. The knees should not be “locked.” When not signaling, his hands should hang easily at the side (see Figure 1) or at a modified military “parade rest” (see Figure 2 on page 5).

He should not face vehicles he has authorized to move but stand with his side towards them. This stance conveys a message that tends to be less disruptive of normal traffic movement and provides a smaller “target” to oncoming traffic.

Figure 1.
Businesslike
Stance



Figure 2.
Businesslike
Stance (Modified
Parade Rest)



Stopping Traffic

The assignment of right-of-way to cross traffic is accomplished by first stopping through traffic. To stop traffic the officer:

1. Looks straight at the driver he wants to stop.
2. Extends an arm.
3. Points his index finger at the driver. The officer holds this position until the driver sees him (see Figure 3 on page 6).
4. With his arm extended, the officer shows the palm of the hand toward the driver until he stops (see Figure 4 on page 6).

When traffic is flowing in both directions, the officer stops one side and then the other (see Figure 5 and Figure 6 on page 7). He should not lower either hand until both directions stop.

Figure 3.
Point



Figure 4.
Exhibit Palm



**Figure 5.
Stop One Side**



**Figure 6.
Stop The Other
Side**



Starting Traffic

To start traffic that is stopped, the officer must decide which side of the traffic is to be started first.

1. Then he looks straight at the driver he wants to start.
2. Extends an arm.

3. And points a finger toward the car he wants to proceed (see Figure 7).
4. After gaining the driver's attention, with the palm of the hand facing upward, the officer swings his hand up and over to the chin (see Figure 8).

Figure 7.
Starting Traffic
(Point)



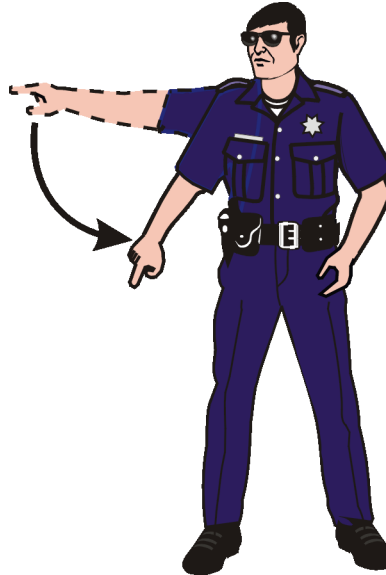
Figure 8.
Starting Traffic
(Wave)



Right Turns

Right turns require the least direction and signaling. The arm the officer signals with will be determined by the car's direction in relation to his position at the time it approaches. When a vehicle is approaching from the right, the officer points toward the driver with the right arm, then swings the arm toward the direction of the intended turn (see Figure 9).

Figure 9.
Right Turn

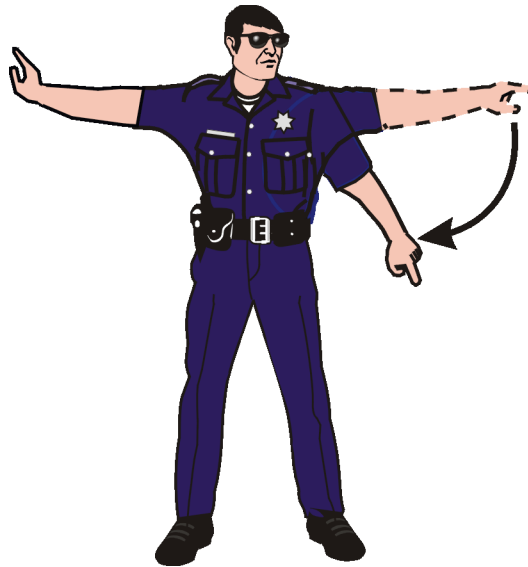


Left Turns

Left turns require more effort on the officer's part. He must be constantly aware of opposing traffic. When appropriate, he halts opposing traffic with the right hand and holds it. Then with the left hand, the officer points to the driver desiring to turn left and gives the signal to turn (see Figure 10 on page 10).

Positioning of left turning vehicles is important, especially when cars are holding up traffic while waiting for an opportunity to turn (no left turn lane available). The officer points to a spot on the highway near him where a car can wait, thus clearing the traffic lane for through traffic. This procedure works best when only one car is trying to turn left. When a larger number are present, there may be a need to assign the right-of-way to the left turning vehicles.

Figure 10.
Left Turn



Two Officers Signaling

For large traffic problems, more than one officer may be needed to control the situation. When two officers are working together at one location, one of the two must originate all signals and gestures. The reason for this is obvious. When two different officers originate signals, conflicts will occur.

The result could be total confusion rather than a smooth operation and may possibly cause accidents. One officer should always be in charge. It would be wise to assign responsibilities with regard to who will be responsible for each traffic entrant.

For example, one officer should direct all north and westbound traffic including turning movements, and the other all south and eastbound traffic including turning movements.

Signaling Aids

Signaling aids are things that used along with hand gestures in order for the officer to get his message across to the driver. These aids may be used during normal traffic direction situations. They are also used during situations when natural and man-made obstacles are present (e.g. rain, fog, loud construction noises, etc.) Signaling aids consist of whistles, traffic wands, and voices.

Whistles

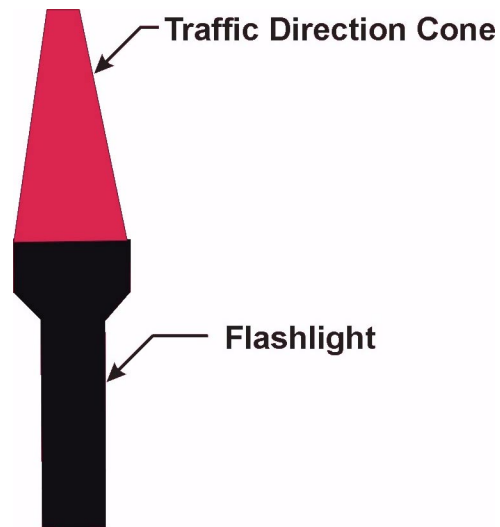
The whistle, when used, should make sharp and distinct sounds. The following signals with the whistle are universal:

1. Go - two short blasts
2. Stop - one long blast
3. Attention Getter (or Emergency) - several short blasts

Traffic Wands

Traffic wands (flashlights with traffic direction cones) aid the officer in times of fog, rain or darkness (see Figure 11). They allow the drivers to see the officer's hand gestures during low visibility periods.

Figure 11.
Flashlight With
Traffic Direction
Cone



Several techniques have been developed and adopted for effective use of the traffic wands. When stopping traffic at times of low visibility with traffic wands, you should:

1. Start with the traffic wands at your sides (see Figure 12 on page 12).
2. Use an exaggerated crossing ("X") motion above your head (see Figure 13 on page 12).
3. Bring the "X" down in front of your chest once you get the driver's attention and the driver stops (see Figure 14 on page 13).

Note: Do not block your vision by holding the "X" in front of your face.

The main purpose of the traffic wand is to attract the attention of drivers. Then it is used for directional purposes. It must be recognized that a too rapid traffic wand movement will decrease its effectiveness.

Figure 12.
Starting Position

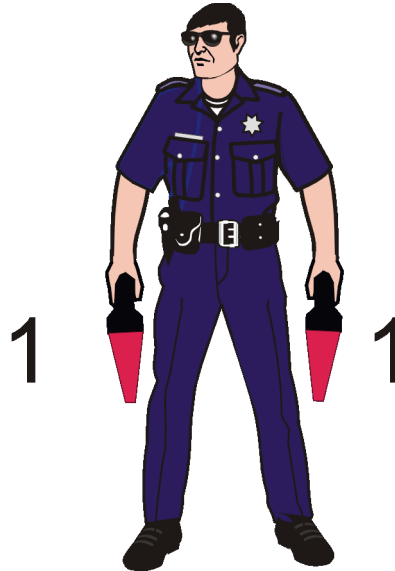


Figure 13.
Getting Driver's Attention

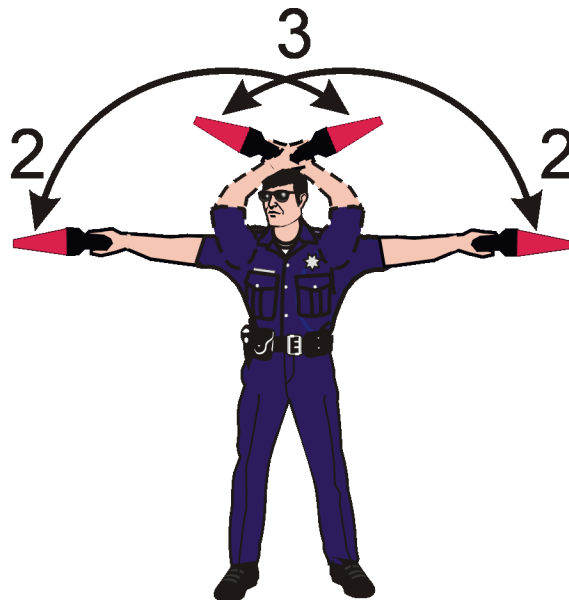
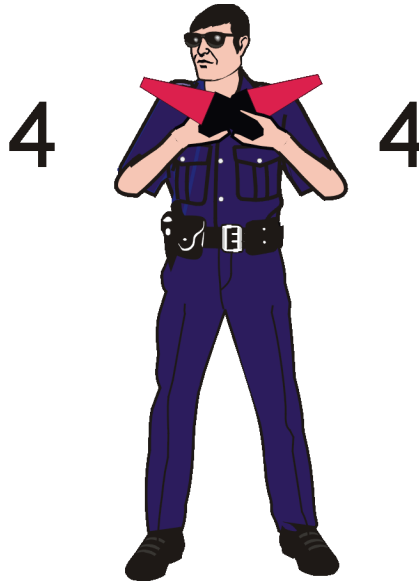


Figure 14.
Stopping Driver



Voice

The voice is seldom used in directing traffic. Arm gestures and the whistle are usually sufficient. Verbal orders are not easy to give or to understand. However, some talking may be necessary, and if used, the officer must be polite and brief. Simple and concise statements are a must.

Conversation should be avoided unless time permits brief explanations to insistent motorists. If time does not permit, and a motorist is still insistent, have the driver move safely off of the road and summon another officer to assist the driver.

INTERSECTION CONTROL

The officer's responsibility is to regulate crossing traffic. He should determine whether east-west or north-south traffic will move and for how long a period of time without interruption.

The following is list of some, but not all of the responsibilities of the officer:

- Control turning movements
- Coordinate vehicle movement at the intersection with adjacent intersections
- Detour traffic when necessary
- Supervise signal obedience and, if necessary, direct traffic to disregard signal indications

- Protect pedestrians and prevent them from illegally crossing the highway
- Prevent illegal parking and vehicles from stopping at locations that will interfere with traffic movements
- Provide for the safe passage of emergency vehicles
- Assist persons seeking information or assistance when time permits
- Handle accidents within the area of his control until an accident investigation unit arrives.

Positioning at intersections is important for efficient traffic directing. It was pointed out earlier that the officer should stand where he can be seen. Some common positions are:

- The center of the intersection (see Figure 15 and Figure 16)
- The corner of the intersection (see Figure 17 on page 15)
- The center entrance to the intersection (see Figure 18 on page 15)

Figure 15.
Center Position
(One Officer)

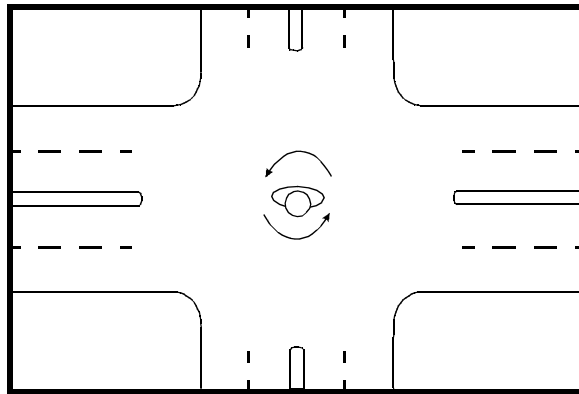


Figure 16.
Center Position
(Two Officers)

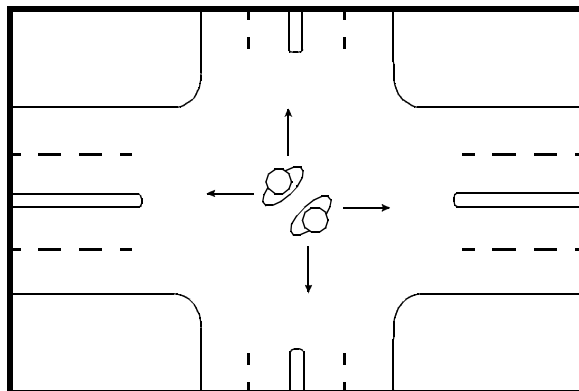


Figure 17.
Corner Position
(One Officer)

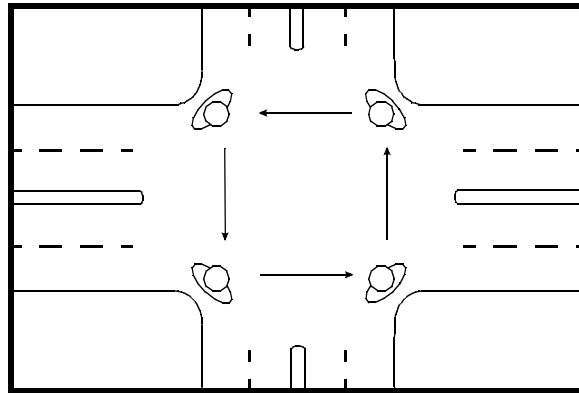
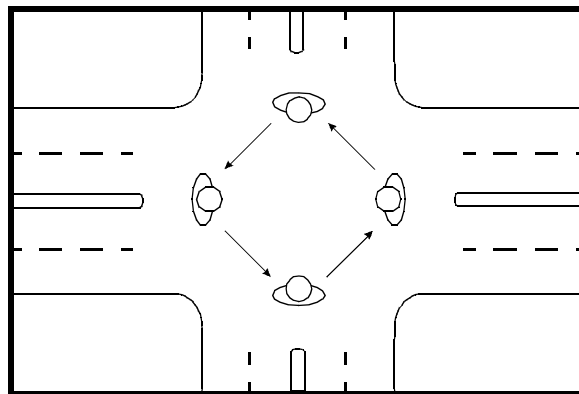


Figure 18.
Center Entrance
Position (One
Officer)



Controlled Intersection

A controlled intersection is one that is normally regulated by a traffic sign (e.g. stop sign) or electronic signalling device (e.g. traffic light).

The best position within a controlled intersection may be any one of the positions previously shown, depending on the type of intersection and prevailing traffic condition.

Uncontrolled Intersection

An uncontrolled intersection is one that is not normally regulated by a traffic sign or electronic signalling device. Intersections of this type are typically found in suburban neighborhoods or in rural settings.

Note: Within the uncontrolled intersection the corner position is usually the best.

Irregular Intersections

As far as irregular intersections, multilane intersections, and divided highway intersections are concerned, the officer will have to adjust to

the situation. More than one officer may be needed to adequately control the intersection.

Any time a position other than the center position is used, a systematic pattern should be developed. Ordinarily, one guideline is that the movement should be unidirectional (moving in the same direction to reach each position).

REGULATING TRAFFIC PATTERNS

“If it ain’t broke, don’t fix it!” Traffic can be overregulated. Needless regulation will cause motorists to wait to be directed and cause further delays.

Non-Functioning Signalized Intersection

At signalized intersections it is recommended that traffic be directed in a manner that is familiar to drivers. This means that at a particular intersection traffic direction should follow the same sequence as the traffic signal. This is recommended whether controls are functioning or not functioning.

For instance, a signal customarily assigns the right-of-way to the left turner in left turn lanes first. When the turning vehicles have cleared the intersection, then through traffic proceeding from the same direction is allowed to go. If this is the sequence, then this is the way traffic should be directed.

The reason for following customary patterns is that drivers are prone to follow patterns with which they are familiar. Directing them in familiar paths eases the communication process.

Typically, the traffic stream has a high concentration of repeat travelers and the ease in which they follow an officer's direction helps minimize traffic conflicts. Also, no decision is necessary on the officer's part as to how he will assign the right-of-way. If he knows the intersection and the signal sequence, he simply follows the sequence.

Functioning Signalized Intersection

An officer may, on occasion, direct traffic in conjunction with a functioning signal. The traffic situation is such that the signal is not adequate to control traffic by itself. This may be a high volume traffic situation with frequent demands for left turns and few turning opportunities. In most cases, the signal will do most of the work. However, action on the officer's part will be required from time to time. He will be afforded more time to be alert for symptoms of jamming. At the same time he must anticipate signal changes.

Preventing Intersection Blockages

All exits of the intersection must be watched. If the intersection starts to fill up, the officer must try to prevent complete blockage. The officer should check the traffic stream and allow cross traffic to cross when practical. He can anticipate congestion and attempt to prevent vehicles from entering the intersection unless they have ample exit space.

The officer must be alert for blockage between intersections. Double parking, unauthorized loading and minor accidents may be the cause for blockage. He determines the reason for mid-block horn blowing and, if necessary, leaves his post and clears the obstruction.

The officer can prevent tie-ups by making certain that motorists trying to make left turns do not hold one or more lanes of traffic up. He may have to use "no turn" signs or resort to detours.

General Rules for Intersection Control

A list of general rules for smooth operation during intersection control include:

1. Use uniform signals and gestures.
2. Try to break traffic at natural gaps whenever possible.
3. In the absence of normal breaks, try to break the line behind slow-moving vehicles such as large trucks.
4. Keep stragglers and daydreamers alert and rolling and in their proper lane.
5. Do not get excited.
6. Do not leave a position just to bawl out a driver.
7. Look cheerful. Be cheerful, but firm.

USE OF FLARES AND FLARE PATTERNS

Highway flares (fusees) are used temporarily to control traffic for a relatively short period of time until the situation requiring their use can be corrected or until other devices have been installed and maintained by the appropriate agency responsible for maintaining that particular highway. Of the many events requiring the warning of oncoming traffic, the most predominant is the traffic accident.

Note: At no time should the officer use a flare as a handheld signal device. Serious bodily harm as well as damage to equipment can result.

Hazards Associated with Flares

The greatest danger associated with the use of flares occurs during the lighting process. Simple safety rules to be observed are:

1. Determine if there is a fire danger before lighting flares such as leaking gasoline, butane, and other flammable substances.
2. Turn head and eyes away before striking because flares have a tendency to pop when struck.
3. Keep flares away from your body by extending your arm. Dripping molten material can cause serious burns.
4. Stand upwind from flares and hold them downward when placing them in the roadway. The toxic fumes being emitted can be harmful if breathed for prolonged periods.
5. To put out the flare, grasp the flare by the end away from the flame and gently tap the burning end on the pavement. Snuff out the flame when the flare is no longer needed.
6. When placing flares at an accident scene, always walk toward oncoming traffic.
7. Do not use the flares to direct traffic. Night blindness and the burning of the skin or clothing can occur.

Techniques for Lighting Flares

1. Waxed sealed cap type
 - a. Pull black tab to break the seal and to expose the striking surface on the cap.
 - b. Twist the cap off and remove to expose the igniting device of the flare.
 - c. Point flare down and away.
 - d. Hold the cap with striking surface in the weak (support) hand and the flare in the strong hand.
 - e. Strike the striking surface of the cap downward and away from your body by moving the flare with your strong hand.
2. Plastic cap type
 - a. Twist the cap off and remove to expose the igniting device.
 - b. Remove the small cover from the cap to expose the striking surface of the cap.
 - c. Point flare down and away.

- d. Hold cap with striking surface in the weak (support) hand and the flare in the strong hand.
 - e. Strike the striking surface of the cap downward and away from your body by moving the flare with your strong hand.
3. If on a grade (hill), in high wind conditions, or if the movement of traffic will make the flares roll, use the cap from the flare.
 - a. After lighting the wax sealed flare:
 - 1). Stuff the loose end of the black tab into the cap, forming a loop with the tab. This should be a reverse loop so that the black top is exposed.
 - 2). Place the cap on the rear of the flare (see Figure 19).
 - b. After lighting the plastic cap type flare, place the plastic cap on the rear of the flare and the extended tip will prevent the flare from rolling (see Figure 20).

Figure 19.
Wax Sealed Type
Flare

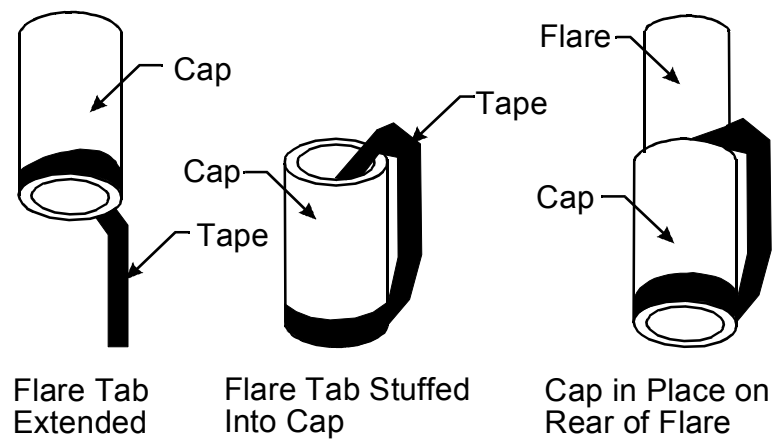
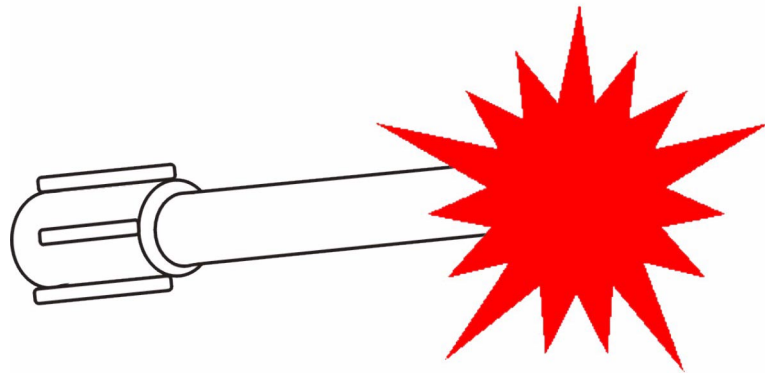


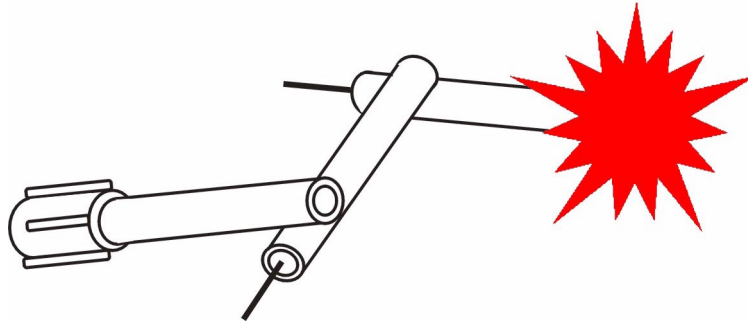
Figure 20.
Plastic Cap Type
Flare



Stacking the Flares

The officer places flares in a criss-cross pattern or stack so that when the first flare has burned out, it will light the next flare. This extends the time period the flares will remain lit and reduces the time the officer is required to place additional flares (see Figure 21).

Figure 21.
Stacking Flares



Procedures for Traffic Accident Scenes

When an officer arrives at an accident scene, he should do several things:

1. He should immediately assess the situation. The safety and well being of the people on the scene (accident victims, witnesses and onlookers) as well as the officer's own safety are the priority.
2. He should visually check the scene and take notice of hazards and blocked lanes.
3. He decides whether a flare pattern is needed and which pattern to use.

A single officer should immediately establish a flare pattern unless first aid is urgently needed. In some situations he may have to utilize the aid of the public. Usually they are very willing to help.

Occasionally, passing motorists will have placed flares at the scene. If flares are already placed on the roadway upon the officer's arrival, it may be necessary to rearrange the pattern to get the desired channeling. Assessing the situation aids in establishing priorities. The handling of emergencies according to relative importance is essential.

When two officers are present, one should immediately establish a flare pattern if the obstruction cannot be readily moved and the other should handle other emergencies at the scene.

Placement of Flares

Thought should be given to the proper location of flares to give approaching drivers a chance to slow down before coming upon the obstruction and to channel traffic into a safe path around the accident.

Where the officer places the flares will vary depending upon the accident, the roadway, weather conditions, and what the officer wishes to accomplish. When investigating accidents near curves and crest, he should always put flares out on the other side of the curve or crest to warn the oncoming drivers that a hazard is present just around the corner or just over the hill (see Figure 22 through Figure 29 for flare positions).

Figure 22.
Flare Position on
Straight Two-
Lane Roads

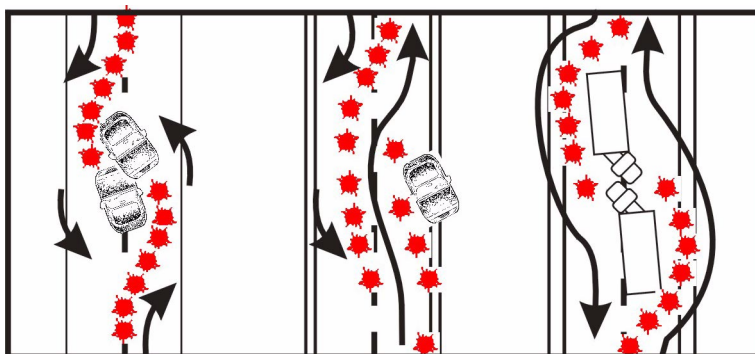
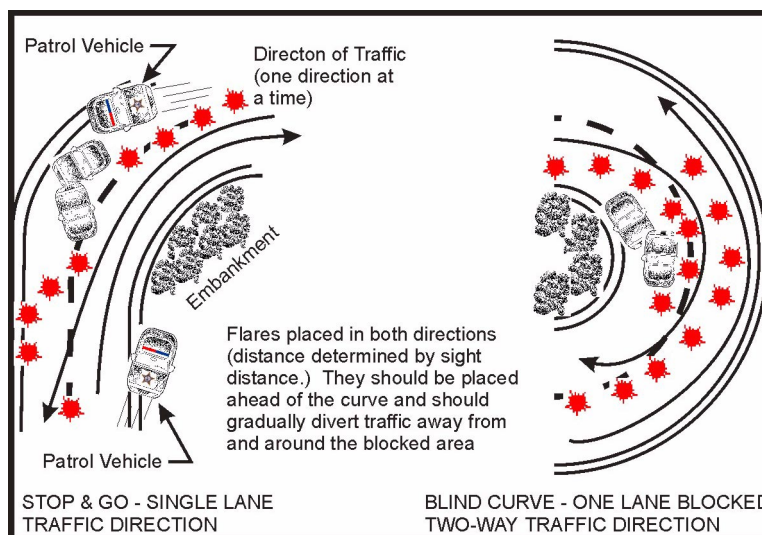


Figure 23.
Flare Position on
Curved Two-Lane
Roads



It should be noted that there is just as much danger in having too many flares placed at a scene as too few. More flares than necessary will cause blending to occur. The red glow of the lighted flares will blend in with all the flashing red taillights of stopping vehicles and will

lead to confusion. Flares set too close together from a distance will blend into a single light and lose their value. Therefore, flares should be placed in a straight line at least 20 to 25 feet apart nearest the obstruction with a gradual increase of 50 to 100 feet apart at the farthest distance needed.

Figure 24.
Two-Lane Roadway With One Lane Blocked at Intersection

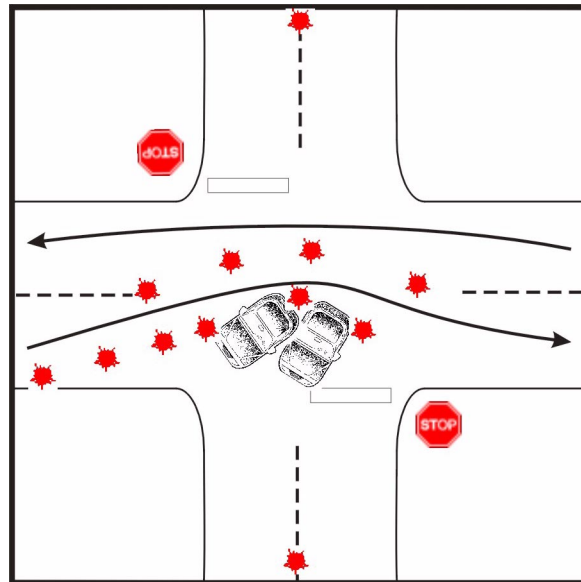
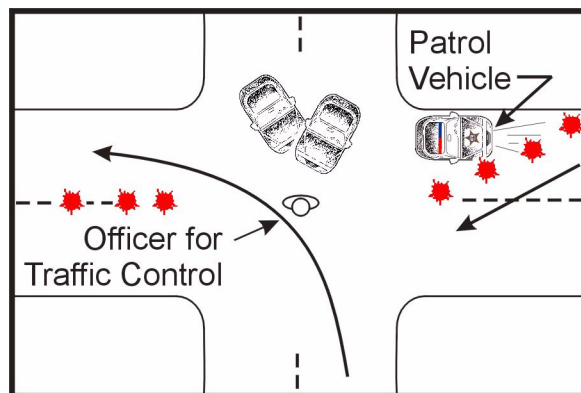


Figure 25.
Typical Four-Way Intersection Control



Flare patterns should be set to direct traffic to one side only and should lead traffic away from the wreckage and injured. Decision making situations for the driver should be avoided. Traffic should be led in simple paths and straight lines. When it is desirable to have traffic change lanes, the officer sets a gradual alignment that will accommodate the speed of passing traffic.

Figure 26.
“T” Intersection
Control

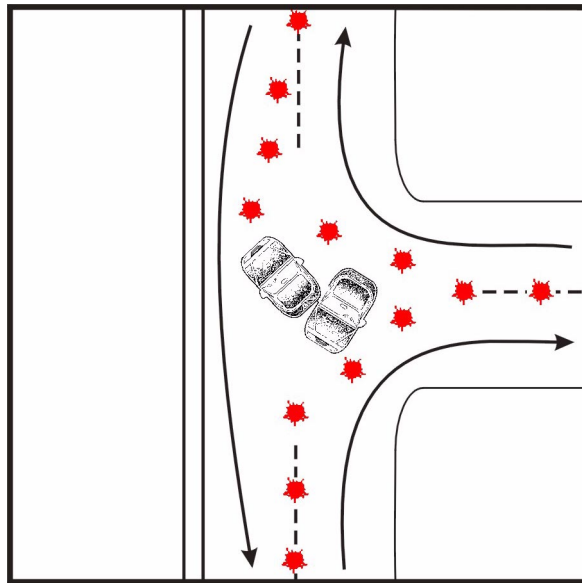
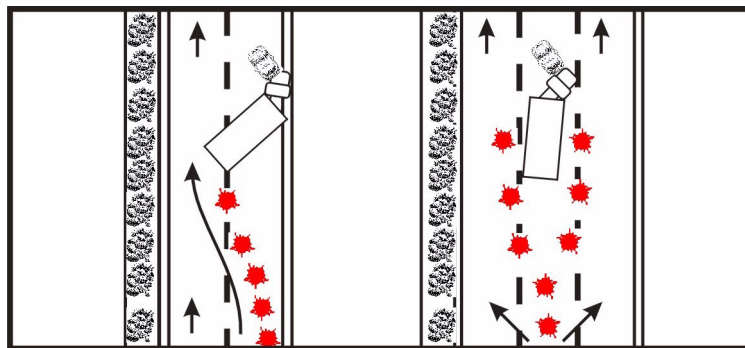


Figure 27.
Freeway Flare
Positions
(Straight Road)



In determining how far away to start a flare pattern, the officer should consider the legal speed and the actual speed of vehicles using the roadway in developing a traffic flare pattern at a scene. That is, speed should always be a consideration. The stopping distance chart (see Table 1 on page 25) can be used to determine how far to start a flare pattern from the obstruction. After determining the speed limit and prevailing speeds of traffic, the officer computes the total stopping distance by adding the thinking distance and the braking distance found on the stopping distance chart. The computed distance is the distance the flare pattern should begin away from the obstruction.

Figure 28.
Expressway
Flare Pattern

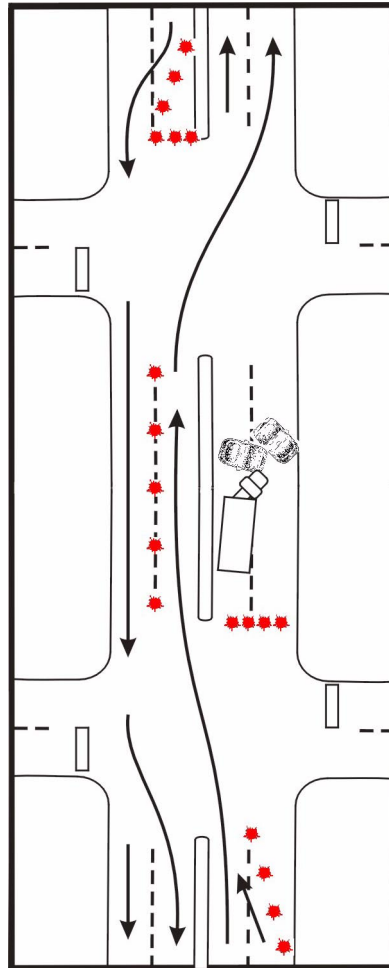


Figure 29.
Freeway Flare
Positions (Inter-
change)

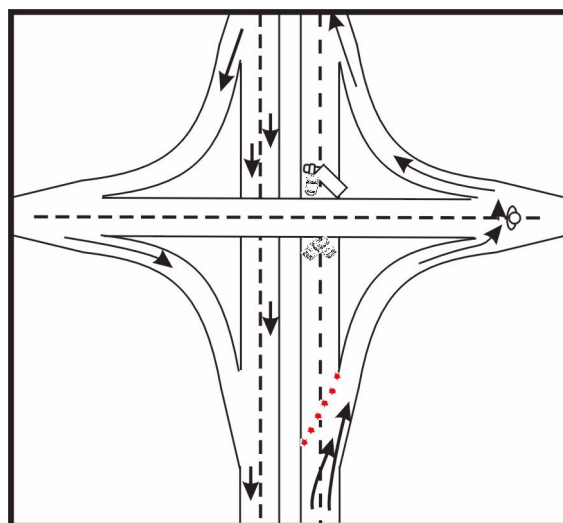


Table 1: Stopping Distance

Passenger Cars Only					
	Speed	Thinking Distance	Braking Distance	Total Feet	
	25	27 feet	34.4 feet	61.4	
	35	38 feet	67 feet	105.0	
	45	49 feet	110 feet	159.0	
	55	60 feet	165 feet	225.0	
	65	71 feet	231 feet	302.0	
Thinking Distance: Distance traveled before brakes are applied while driver is reacting to danger.					
Braking Distance: Distance traveled after brakes have been applied.					
This table is based on average reaction time (0.75 seconds) and passenger car brakes that are 60% efficient. Reaction time, brake efficiency, and road surface conditions always affect total stopping distances.					

SUMMARY

In this manual, traffic direction was approached on a practical basis rather than a theoretical one. We stressed the importance of using uniform signals and gestures for starting, stopping and turning traffic. The use of signaling aids such as the voice, whistle and traffic wands was explained along with their relative benefits and limitations.

Intersection control can be simple or complex depending upon the intersection type, location, and traffic therein. The officer should be aware of his important responsibilities associated with intersection control and important traffic variables. Control is exercised when the officer follows traffic signal sequences at signalized intersections and takes the proper position within an intersection.

Although accidents are not the only events requiring flare patterns to warn oncoming traffic, they are the most prevalent. An officer at the accident scene should establish priorities so that he is able to handle emergencies.

Officers should be instructed in the proper placement and alignment of flares. Aids for establishing flare distance requirements, such as the stopping distance chart, were presented as well as a method for computing thinking distance or reaction distance.

Discussion Questions

1. Discuss the importance of uniform signals and gestures.
2. Discuss the reasons why traffic direction at signalized intersections should follow the normal signal sequence.
3. Discuss why the voice as a signaling aid is seldom used.
4. Discuss the importance of avoiding decision-making situations for the drivers when laying flare patterns.
5. Discuss why speed should always be considered when developing a flare pattern.



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RESERVE DEPUTY UNIT

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