

OBJECTIVE 3.1 Identify the types and limitations of emergency warning devices on law enforcement vehicles.

## **INTRODUCTION**

When properly used, emergency warning devices may enhance the officer's ability to maneuver in traffic and reduce the risk to self and others.

## **CONTENT**

### **1. HEADLIGHTS**

- a. During daylight, headlights should be used in conjunction with emergency overhead lights.
  - (1) Headlights are usually more discernible than traditional red or blue overheads in the daytime.
  - (2) Most drivers will see headlights before they hear the siren or see the overheads.
  - (3) Emergency flasher lights may be helpful in daylight.
- b. During hours of darkness, high beam lamps have a tendency to obliterate the emergency lights and blind oncoming drivers.

### **2. LIGHTS AND SIRENS**

- a. Sirens are often required, by statute, regardless of the time of day, when engaged in emergency driving, and some states now require by statute the utilization of overhead lights and siren in an emergency response.
- b. Emergency lights and sirens are not substitutes for caution and use of mastered driving skills.
- c. Various factors affect the siren's audibility and the light's visibility.
  - (1) Weather Conditions
    - (a) The siren may be heard sooner on an overcast or cloudy day.

- (b) Siren audibility tends to dissipate into the atmosphere on clear days.
  - (c) Fog will allow sound to carry through its moisture with a minimum loss of decibels at close range. The greater the distance, however, the greater the sound blockage.
  - (d) Emergency lights are virtually ineffective in foggy weather.
  - (e) Inclement weather of any kind greatly reduces the value of lights and siren. The quality of the driving then becomes even more critical.
- (2) Vehicular Traffic Conditions
- (a) Sirens become less discernible with the increase of traffic noise.
  - (b) Large vehicles, such as heavy trucks and buses, will decrease the effectiveness of the siren.
- (3) Location
- (a) The siren may be less discernible in a residential area. Large trees and hedges tend to absorb sound.
  - (b) Tall buildings tend to block out, deflect, or tunnel sound transmission. When this occurs, the value of the siren is diminished.
  - (c) In flat, open areas the sound of a siren can be heard for a greater distance.
- (4) Pedestrian Traffic Conditions
- (a) Emergency lights may not adequately warn pedestrians.
  - (b) Sirens offer greater warning to pedestrian traffic.
  - (c) Great care and caution must be taken in areas congested with foot traffic.
  - (d) The use of warning devices in school zones is enhanced by a reduction in speed.

- (e) Speed control is the preferred response in areas where pedestrian traffic is the norm.

- (5) Citizen Awareness
  - (a) Drivers and pedestrians are not always attentive, so they may not see or hear an emergency warning device. They may be distracted by one or more of the following:
    - (1) Children misbehaving
    - (2) Conversation with passenger
    - (3) Radio on loudly
    - (4) Air conditioner or heater fan noise
    - (5) Windows rolled up
    - (6) Construction
    - (7) Law enforcement activity in another area
    - (8) Sight-seeing syndrome
  - (b) The public may respond to the warning by panic stopping, panic steering, or sudden acceleration.
- (6) Speed And Emergency Equipment Warning Devices
  - (a) As speed increases, the effectiveness of the siren decreases.
    - (1) Due to the increase of speed and the resultant increase in feet per second traveled by the emergency response vehicle, other drivers and pedestrians may not have sufficient time to react to the sound of the siren.
    - (2) As speed increases, a driver may not hear the siren until the officer is one or two car lengths behind the vehicle.

- (b) As the officer's speed increases, the chances of having a collision increase and the time for processing information and decision-making decreases
- (c) The lights and siren also affect the officer's behavior
  - (1) Tunnel vision develops at high speed and the officer tends to forget that the emergency warning devices are operating
  - (2) Speed reference is lost due to the elimination of the sounds of speed, such as wind and engine noise
  - (3) The use of emergency lights and siren may provide a false sense of security. Don't succumb to the "Invincibility Syndrome." These warning devices are there to benefit the public. The responsibility for safe driving rests with the officer

**SUMMARY**

Emergency warning devices are a means of communication. Communication is a process involving the sending of message, reception of the message, and confirmation of an understanding of the message. When the emergency message is sent early, prior to the arrival of the law enforcement vehicle, the pedestrian's and driving public's reaction will be more reliable and consistent.

**SUGGESTED INSTRUCTIONAL METHODOLOGY****LECTURE**

Ask questions of a student after presenting one or two statements as to the how or why of the content presented. Example: "Why is it a good idea to use headlights in conjunction with emergency overhead lights during the daytime?"

**LECTURE - with 35mm Slides and Videotape**

Take slides or videotapes of local areas where sirens may be less effective to demonstrate the problem created by:

1. weather conditions
2. vehicle or traffic conditions

3. location of the vehicle
4. pedestrian traffic conditions

**RANGE**

Have one of the range cars equipped with a siren mounted in the trunk to minimize outside noise and a switching device accessible to the instructor. Turn the siren on after the students have successfully completed one of the range exercises so they can experience the additional distraction the siren creates as the students continue to perform the same exercise. The same activity can be accomplished with a pre-recorded tape of a siren sounding.

**RESOURCES AND AIDS**

1. Publications from companies specializing in emergency warning device systems
2. Agency policy and procedure regarding use of emergency warning devices
3. State statutes regarding use of emergency warning devices

**SUGGESTED EVALUATION METHODOLOGY****STUDENTS**

1. Written or verbal responses to questions on uses, types, and limitations of emergency warning devices
2. Observation of correct use of emergency warning devices during simulated emergency response activities
3. Written or verbal responses to questions regarding use of strategies when given emergency response scenarios

**COURSE**

1. Observe on-the-job use of lights and sirens
2. Review agency collision reports to determine if emergency warning devices were used properly



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# Types and Limitations of Emergency Warning Devices

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- **Headlights**
  - Extremely useful, especially during daylight hours
  - High beams have tendency to blind oncoming traffic during dark
- **Lights and Siren**
  - Sirens are often required by statute, regardless of time of day
  - Some states require both lights and siren to be used
  - Do not replace the use of good decision making and driving skill
  - Various weather factors can impact effectiveness
  - Not effective in all locations, due to surroundings
  - May not be effectively interpreted by traffic, including pedestrian traffic
  - Effectiveness lost as speed increases
  - Often promote an “invincibility syndrome”