

OBJECTIVE 2.5 Identify common physiological factors that contribute to law enforcement collisions.

INTRODUCTION

An officer in a vehicle six to eight or more hours a day has a higher potential for being involved in a collision than the general motoring public. In addition, there are physiological factors which increase the potential for collisions. When a driver is experiencing certain physiological problems, the performance of the driving task is more difficult.

CONTENT

1. VISION

- a. Acuity - Sharpness of vision or ability to focus. Ideal visual acuity for example is 20/20.
- b. Depth Perception - Ability to distinguish dimensions of depth - "which objects are closer than others".
- c. Field of Vision - The range of peripheral vision possessed by each individual - affected by speed. The faster the speed of the person or vehicle, the smaller the field of peripheral vision.
- d. Color Vision - The ability to distinguish one color from another
- e. Night Vision - The ability of the eye to maximize available light after dark - visual distance or range is reduced during night driving.

2. HEARING

Hearing is the audio capability of each individual. Impairment or "funnel hearing" is oftentimes caused by the stress of an emergency response. Certain sounds are tuned out and are no longer audible.

3. SENSORY

- a. Equilibrium - The body's center of balance is located in the inner ear, which maintains the body's state of equilibrium or balance.

- b. Touch - a physiological sense which provides input to the brain. This input which can be called "feel", assists in making driving-related decisions.

4. SMELL

Smell is an additional sense which provides input to the brain and assists in making driving-related decisions. Common odors that indicate a hazard include: gasoline, fire, chemicals, burning rubber or brake metal.

5. TIMING

Timing is the coordination of hands, eyes and feet in the maneuvering of a vehicle. The coordination varies from person to person and can be affected by stress, fatigue, or distraction. Reaction time is most often associated with timing.

6. PHYSICAL STATURE

Physical stature refers to the height and weight of the individual driver. Driver size can affect driving capabilities and should receive attention and compensation to ensure maximum effectiveness.

7. MEDICAL CONDITION

Medical condition refers to the overall physiological state of the body. The influence of medications, alcohol or drugs can greatly impair the reaction capabilities of an individual as well as impair visual acuity. Drivers should be screened and cautioned against operating an emergency vehicle while under the influence of any substance that might create an impairment.

SUMMARY

Officers operating an emergency vehicle encounter many distractions from the routine of driving. These distractions include, but are not limited to, surveillance, use of radio and other equipment, high rates of speed, long time spans in the vehicle, and fatigue caused by job-related stress. In order to minimize the effect of these distractions, officers should engage in the following:

- a. Obtain adequate sleep (8 hours daily) prior to going on shift.
- b. Abstain from any form of alcohol at least 8 hours prior to beginning shift. (Alcohol burn-off rates should be considered).

- c. Abstain from the ingestion of any controlled substance.
- d. Exercise additional caution any time the speed limit is compromised.
- e. Participate in a regular physical exercise program.
- f. Minimize the potential for stress.
- g. Abstain from medications that affect alertness or reaction time.

By having a knowledge of the physiological factors that influence driving decisions and physical performance, the officer can better prepare for the operation of the emergency vehicle. Knowledge of such factors should reduce the incidence of collisions; however, the application of such knowledge is generally the key to success.

SUGGESTED INSTRUCTIONAL METHODOLOGY

LECTURE

Use the content outline to present some of the human factors that can contribute to a law-enforcement collision. The use of transparencies to outline the key factors may be helpful.

LECTURE WITH CLASS DISCUSSION

Ask the class to give reasons why the officers may have more psychological or physiological factors working against them than the average driver. Make a list on the chalkboard of the response.

SMALL GROUP

Divide the class into groups of 3-6 students and have each group compile a list in response to the question, "What psychological and physiological factors increase an officer's chances of being involved in a collision?" Then ask the students to explain how the factors can be avoided or minimized.

RESOURCES AND AIDS

1. Psychology textbooks and articles
2. Physiology textbooks and articles
3. *Psychology On the Road*, by David Shiner. John Wiley and Sons, Inc., 1978.
4. *Vision and Highway Safety*, by Merrill Allen. Chilton Book Company, 1970.

SUGGESTED EVALUATION METHODOLOGY**STUDENTS**

1. Written or verbal response to questions concentrating on psychological and physiological factors influencing the law enforcement driver
2. Observation of psychological and physiological changes occurring in students during practice driving exercises

COURSE

Observation and evaluation of on-the-job performance of students relative to psychological and physiological control

Psychological Factors

- Aggressiveness
- Assertiveness
- Attitudes and Values
- Emotions
- Patience
- Fatigue