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EQUIPMENT OPERATION - CITATION PROCEDURE
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CHAPTER 5

EQUIPMENT OPERATION - CITATION PROCEDURE

1. VERIFYING RADAR EQUIPMENT CALIBRATION.

a. General. Equipment calibration is frequently challenged in court by violators and is the subject of many motorist inquiries concerning radar. The departmental requirement for the independent Critical Performance Test (CPT) verifies radar accuracy before the device is placed in service and each 30-month interval thereafter. This departmental requirement exceeds the National Highway Traffic Safety Administration (NHTSA) 36-month testing recommendation. Field calibration checks shall be performed as specified in this chapter.

b. Interval. The radar unit shall have its internal operation and tuning fork tests conducted at the beginning and end of each shift. If required by local procedure (court request, etc.), multipiece radar equipment may have its internal operation checked after each enforcement stop using the internal and Doppler reflection tests.

c. Internal Operation/Tuning Fork Test Procedure. Any device which fails the test procedure shall be immediately removed from service and sent to the designated repair facility. The test procedures shall include:

(1) A light-segment test of all digits using the manufacturer's protocol (Stalker Dual SL/Nonconsolidated Patrol Vehicle Environment vehicles only).

(2) An internal operation check to the manufacturer's specification reading.

(3) A stationary-mode calibration check using the low-speed tuning fork on one of the antennas.

(4) A stationary-mode calibration check using the high-speed tuning fork on one of the antennas.

(5) A moving mode calibration check using both high- and low-speed tuning forks on one of the antennas (for vehicles which are not equipped with Vehicle Speed Sensing units).

(a) Only one antenna on a dual-antenna unit needs to be tested.

(6) Doppler Reflection Test. The patrol vehicle's speedometer reading (or its current calibration from the CHP 227, Speedometer Calibration Chart) should match the reading displayed in the radar unit's patrol speed window while the

vehicle is in motion. This test should be performed on both antennas. This test should be used for multipiece equipment only.

NOTE: The Doppler reflection test is superior to the tuning fork test in the identification of off-frequency antennas. Unlike the Doppler reflection test, the tuning fork test only checks the proper operation of the counting unit. Since rear antenna access is from the street side of the patrol vehicle, the danger to the operator from passing traffic precludes a tuning fork test after each enforcement stop.

d. Records. Records of the calibration check shall be maintained on the CHP 99B, Radar Calibration Log.

(1) Make sure the calibration check log is completely filled out for each shift, (e.g., tuning fork serial numbers, date, vehicle serial number, radar make and model, and officer's name and identification number).

(2) Completed calibration check logs shall be maintained in Area files for three years rotating, and shall be kept available for court testimony.

e. Retention. Both tuning forks, the CHP 99B, and information concerning the manufacturer's calibration check protocol shall be maintained in the small three-ring binder provided. The binder is to be carried with its respective unit.

f. Use of the Tuning Fork. The tuning fork(s) should be struck on a surface which is softer than the material the tuning fork is made from (e.g., steering wheel). The tuning fork(s) should be held with the tines directly crossing the radar beam, with one tine closer to the antenna. Optimal position of the tuning fork is approximately one-half to two inches in front of the antenna aperture. Calibration checks should produce a displayed speed within one miles-per-hour of the rated tuning fork speed.

2. VERIFYING LIDAR EQUIPMENT CALIBRATION.

a. General. Equipment calibration is frequently challenged in court by violators and is the subject of many motorist inquiries concerning lidar. The departmental requirement for the independent CPT verifies lidar accuracy before the device is placed in service and each 30-month interval thereafter. This departmental requirement exceeds the NHTSA 36-month testing recommendation. Field calibration checks shall be performed as specified in this chapter.

b. Interval. The lidar unit shall have its internal operation tests conducted at the beginning and end of each shift. If required by local procedure (court request, etc.),

lidar equipment may have its internal operation checked after each enforcement stop using the internal operation test.

c. Internal Operation Test Procedure. Any device which fails the internal test procedure shall be immediately removed from service and sent to the designated repair facility. The test procedures shall include:

- (1) A light-segment test of all digits using the manufacturer's protocol.
- (2) An internal operation check to the manufacturer's specification reading.
- (3) A sight alignment test.
- (4) A Delta distance test.

d. Records. Records of the calibration check shall be maintained on the CHP 99J, Lidar Calibration Log.

- (1) Make sure the calibration check log is completely filled out for each shift, (e.g., date; lidar make, model, and serial number; and officer's name and identification number).
- (2) Completed calibration check logs shall be maintained in Area files for three years rotating, and shall be kept available for court testimony.

e. Retention. The CHP 99J and information concerning the manufacturer's calibration check protocol shall be maintained in the small binder provided. The binder is to be carried with its respective lidar unit.

3. BASIC DIRECTIVES.

a. Speed Estimation. Radar/lidar shall be used as a supplement to an independent estimation of speed by the officer and shall not be relied upon as the sole determinant of vehicle speed.

b. Direct Aim. Radar/lidar shall not be reflected off any intermediate object (e.g., patrol car mirror) to determine the speed of a target vehicle.

c. Radar Speed Lock. Officers are discouraged from manually locking the target speed in order to maintain both an audio- and digital-tracking history on the target vehicle. The NHTSA supports manually locking the target speed. The operator may manually lock the target speed in the display window (especially on three-window units). If the target speed is locked, the reading may be shown to the violator if the safety of both the officer and the violator will not be compromised.

d. Motorcycle Mounting. All permanent mounts on motorcycles for radar/lidar equipment shall be approved by the Academy Motorcycle Training Unit and Fleet Operations Section. On departmental motorcycles, handheld radar units shall be used in the stationary mode only. When not in use, transmitting radar units shall not be left in a position facing the officer's body.

4. TRACKING HISTORY.

a. General. The term "tracking history" refers to the sequence of steps performed by the officer prior to issuing a radar/lidar citation. Because radar/lidar is only a verification of an officer's independent estimate of speed, obtaining a complete tracking history of the violator is a critical step. The following procedures must be accomplished before a valid radar/lidar citation can be issued.

b. Target Vehicle Verification.

(1) Make certain the target is within the radar/lidar beam. The operator should know the functional range and beam width of the radar/lidar equipment used. The beam width at a particular location can be calculated (refer to the Radar Operator Training Manual).

(2) Visually estimate the speed of the target.

(3) For radar use, monitor changes in the Doppler audio while tracking the speed of the target and its movement through the radar beam, and note the cosine effect as the target vehicle passes the patrol car.

(4) For radar used in moving mode, verify the radar unit's patrol speed display reading with the speedometer of the patrol vehicle.

(5) Note the radar/lidar unit reading of the target speed.

(6) An officer may find it useful to note the tracking history and general observation of traffic conditions on the back of the green copy of the citation.

(7) Same-lane tracking history is different. Radar Doppler audio will not be directly related to the target vehicle's speed, but rather it is a component of the Doppler shift between the patrol vehicle and the target. Faster/slower mode must be correctly selected. Variations in patrol car speed, if the mode is properly selected and the target speed is stable, should not produce a change in the indicated target speed, but will produce a change in Doppler audio.

c. Interference. Officers must ensure no interference has precluded a reliable tracking history.

5. SPEED TEAMS.

a. Deployment. Normally, single-enforcement units will deploy radar/lidar as a function of normal road patrol. Where speed enforcement problems warrant, speed team units may be used when the safety of motorists and officers is not compromised.

b. Recording the Tracking History. Obtaining a valid tracking history before making an enforcement stop is one of the most important factors for court testimony. Because the use of speed team units complicates this process, the following special provisions for recording the tracking history have been established.

(1) An officer operating the radar/lidar unit shall be responsible for recording such items as:

- (a) The location of the observing officer.
- (b) Tracking history and speed of the violator.
- (c) The citing officer's identification number.
- (d) The date and time of the violation.
- (e) The description of the cited vehicle.

6. CHP 215, NOTICE TO APPEAR, RADAR/LIDAR INFORMATION. Officers shall place a notation in the violation portion of the CHP 215 to indicate that radar/lidar was used to verify a speeding violation. This information will be used to identify the radar/lidar device (and vehicle for moving mode radar citations) used to gather evidence of the speeding violation. The notation shall include the following information:

- a. The radar/lidar unit serial number.
- b. The California Highway Patrol vehicle license number (not required for stationary mode or lidar citations).

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