

RADAR Operator

Orland Police Department #3740

Expanded Course Outline

Statement of Purpose:

To provide California Law Enforcement Officers with information on the use of RADAR for speed enforcement including RADAR history, theory, effects, operations, and case law. To develop the skills of California Law Enforcement Officers in the estimation of speed and actual operations of RADAR units.

- I. Introduction
 - a. Classroom familiarization
 - i. Facility rules
 - ii. Break areas
 - b. Course breakdown and schedule
 - i. Course topics
 - ii. Hour allotment
- II. Purpose of speed enforcement
 - a. Collisions
 - i. Primary collision factors
 - ii. Prevention
 - b. Complaints
 - i. Public input
 - c. Why radar?
 - i. Supplemental enforcement tool
- III. Speed offenses
 - a. Prima facie
 - i. 22352 VC
 - ii. 22350 VC
 - b. Maximums
 - i. 22349 VC
 - ii. 22356 VC
 - iii. 22406 VC
- IV. History of radar
 - a. General history
 - i. Types of radar
- V. Physical properties of radar
 - a. Radio waves
 - i. Microwave radiation
 - ii. Speed
 - iii. Frequency

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- 1. K, Ka
 - iv. Wavelength
 - b. Beam characteristics
 - i. Conical
 - ii. 85% directed forward
 - iii. Side lobes
 - iv. Operational range
 - v. Transmitted beam angle
 - vi. Beam width calculations
 - c. Doppler principle – stationary
 - i. Doppler shift
 - ii. Cycles per second
 - d. Doppler principle – moving
 - i. Closing rate speed
- VI. Effects (Situational caused false readings)
 - a. Cosine (stationary)
 - b. Cosine (moving)
 - c. Shadow
 - d. Nichols
 - e. Billboard
 - f. Scanning
 - g. Harmonics
 - h. Weather
 - i. Mirrors/reflection
 - j. Batching
 - k. Other interference
 - l. Old technology effects
 - i. Feedback/panning
 - ii. Auto gain
 - iii. Power-on or power surge
 - iv. Radio frequency interference (RFI)
 - m. Recognizing effects
 - i. Momentary in nature
 - ii. No supportive evidence
 - n. Tracking history
 - i. Visual estimation
 - ii. Target in beam
 - iii. Doppler tone
 - iv. Reading on radar unit

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- v. Speedometer check (moving mode only)
 - o. Target acquisition
 - i. Reflective capability
 - ii. Speed
 - iii. Distance
 - iv. Position
 - v. Relative size to distance
- VII. Equipment Operation
 - a. ABCs
 - i. Equipment connections
 - b. Mounting requirements
 - i. Safety
 - c. Individual equipment operation
 - i. Applied Concepts Stalker Dual
 - ii. Basic
 - iii. DSR
 - iv. Decatur Genesis
 - v. Applied Concepts Stalker ATR
 - d. Operational safety
 - i. Microwave exposure
- VIII. Patrol techniques and tactics
 - a. Safety
 - i. Turns and entering traffic
 - ii. Multitasking
 - iii. Relation of your patrol vehicle to other vehicles
 - iv. Showing violator speed readings
 - b. Tactics
 - i. Position in line of traffic
 - ii. Geography
 - iii. Environmental
 - iv. Using RF hold
- IX. Traffic surveys and speed traps
 - a. Surveys
 - i. Process
 - ii. Caltrans
 - iii. County or city
 - iv. 85% percentile or critical speed
 - b. Speed traps
 - i. 40802 VC

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- ii. Radar enforcement without survey
 - iii. Timing vehicle over distance
- X. Case Law
 - a. Validity of the Doppler principle
 - i. State v. Dantonio (New Jersey)
 - b. Operator training and qualifications
 - i. Honeycutt v. Kentucky
 - ii. Florida v. Aguilera
 - iii. People v. Hanson
 - c. Surveys
 - i. People v. DiFiore
 - ii. People v. Goulet
 - d. Accuracy
 - i. State v. Tomanelli
 - e. Additional Case Law
- XI. Radar Evidence
 - a. Subpoenas
 - b. Standard documents
 - i. Operator certificate
 - ii. Speedometer calibration
 - iii. Vehicle information
 - iv. IACP Certification
 - c. Departmental specific documents
 - i. Radar calibration log
 - ii. Range and Speed Determination Test
- XII. Additional radar information
 - a. Distance calculations
 - b. Departmental FCC license
 - c. Radar/lidar jammers
 - i. Types
 - ii. Laws regarding use
- XIII. Courtroom testimony
 - a. Officer's notes
 - b. Testimony
 - c. Mock trial
- XIV. Practical exercise
 - a. Safety
 - b. Equipment orientation
 - c. Visual speed and range determinations (Oral Exam)

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- XV. Review
- XVI. Final Examination

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