

Orland Police Department

Expanded Course Outline

Radar Operator

- 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
 - 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
 - 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
 - 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
 - XV. Review
 - XVI. Final Examination