SANTA CLARA COUNTY – OFFICE OF THE SHERIFF
Radar-Laser Operator (LIDAR) 23320
Expanded Course Outline

Objective: This course will provide peace officers with the skills and knowledge necessary to effectively operate LIDAR (Light, Distance, and Ranging) equipment using as a speed enforcement tool. The training includes practice of LIDAR setup and operation, minimizing perturbation factors, speed estimation skills, and developing the requisite knowledge to present proper testimony in court. Course complies with all content requirements per California Vehicle Code Section 40802.

I. Introduction
   A. Course Objective
   B. Pretest

II. Basic Principles and History
   A. Laser Energy
   B. Types of Lasers
   C. Health Considerations
   D. How LIDAR works
   E. Characteristics of a LIDAR Signal
      1. Signal Speed
      2. Wavelength
      3. Frequency
   F. Behaviors of a LIDAR Signal
      1. Reflected
      2. Refracted
      3. Absorbed
   G. LIDAR vs. Other Speed Measurement Devices
      1. Technical Issues
      2. Outside Interference
      3. Comparison of Beam Width
   H. LIDAR Interferences and Effects
      1. Radio Frequency Interference
      2. Low Voltage
      3. Panning
      4. Cosine Angular Effect

III. Operational Considerations of LIDAR
- A. Inspection
- B. Transportation
- C. Pre / Post-shift Calibration Checks
  1. Internal Accuracy Checks
  2. Internal Circuit Test
  3. Range Accuracy Check
  4. Fixed Distance Zero Velocity Check
  5. Delta Distance Velocity Check
- D. Deployment Considerations
  1. General Safety
  2. Specific Operational Considerations
  3. Enforcement Issues
  4. Care and Handling

IV. Laws Applicable to LIDAR
- A. Statutory Law
  1. V.C. 40802(c)(1)
- B. Fundamental Issues
  1. Operating principles of Lidar
  2. Properly working at time of use
  3. Necessary qualifications
  4. Speed measurement came from the vehicle driven by the accused
- C. Case Law
  1. Fleming Vs. Superior Court (1925)
  2. People Vs. Beamer (1955)
  3. People Vs. Halapoff (1976)
  4. People Vs. Miller (1979)
  5. People Vs. Kruegur, Pantos, et al (1986)
- D. In the Courtroom
  1. Courtroom Testimony
  2. Evidence Kits
  3. Citation Notes
  4. Sample Testimony

V. LIDAR Operator Training – Practical Application
- A. Set-up and preparation
  1. Facilities and Environment
  2. LIDAR Unit Demonstration
     a. Various Effects

VI. LIDAR Evidence Kit
- A. Contents
  1. Licenses and Certification Documentation
  2. Logs
  3. Operators Manual
- B. Application
  1. Relevance to use in field
  2. Relevance to use in court

VII. Written Exam

VIII. Practical Field Exercises
- A. Set up and Safety Review
  1. Instructors' responsibilities
  2. Student's responsibilities
  3. Directions for practical activities
- B. Students measure speed and range of a moving vehicle
  1. LIDAR setup
  2. LIDAR Use
  3. Measurement results

IX. Moot Court
- A. Review of court videos
  1. Court participants
  2. Peace Officer responsibilities
- B. Roll Play for actual future testimony
  1. Scenario Setup
  2. Peace Officer on the witness stand
- C. Debrief of court experience

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Hourly Distribution

Time	Content
0800-0900	Course Introduction / Pretest
0900-1000	Basic Principles and History
1000-1100	Operational Considerations of LIDAR
1100-1200	Laws Applicable to LIDAR
1200-1300	lunch
1300-1600	LIDAR Operator Training, Practical Application, LIDAR Evidence Kit
1600-1700	Court preparation / Moot Court