

Police Traffic RADAR & LIDAR Instructor Course Agenda

by
Law Enforcement Services, LLC
revised 9-2025



<u>Day 1</u>	<u>08:00 - 12:00</u>	<u>4 hours</u>	<u>Day 1</u>	<u>13:00 - 17:00</u>	<u>5 hours</u>
Objectives, Handouts, & Testing	.5		Radar Basics (slide 145)		2.0
Student Introductions	.5		4.1 Types of Radar		
The Speed Problem (slide 26)	1.0		4.2 The Doppler Effect		
1.1 History			4.3 Waves and Frequencies		
1.2 National Statistics			4.4 Characteristics of Radio Waves		
1.3 NHTSA Statistics			4.5 The Doppler Shift		
1.4 Recognition and Reaction Time			4.6 Police Traffic Radar		
1.5 Braking and Total Stopping Distance			4.7 The Radar Beam		
1.6 Velocity and Speed			4.8 Understanding Trigonometric Functions		
1.7 Momentum and Kinetic Energy (chapter review questions)			4.9 Determining Beam Widths		
Speed Laws and Public Safety (slide 71)	1.0		4.10 Lines of Equal Sensitivity		
2.1 Basic Speed Law			4.11 Inverse Square Law		
2.2 Speed Limit Misconceptions			4.12 Contour Lines of Equal Sensitivity		
2.3 Speed Limits and Compliance			4.13 Beam Range - Sensitivity		
2.4 85th Percentiles			4.14 Automatic Gain Circuitry		
2.5 Public Safety (chapter review questions)			4.15 Target Reflectivity		
Speed Enforcement (slide 94)	1.0		4.16 Range Control Techniques		
3.1 Pacing			4.17 Doppler Audio		
3.2 Time-Distance			4.18 Cosine Effect (chapter review questions)		
3.3 Time-Distance Computers			Installation, Testing and Operation (228)		1.0
3.4 RADAR			5.1 Installation		
3.5 LIDAR			5.2 Testing		
3.6 Estimating Distances			Practical Exercise		1.0
3.7 Estimating Speeds			Light Segment Test		
3.8 Stopwatch Calibration Checks			Internal Circuitry Test		
3.9 Distance Calibration Checks			Tuning Fork Tests		
3.10 Speedometer Calibration Checks			Tuning Fork Mode		
3.11 Checking Radar with GPS (chapter review questions)			Stationary Mode		
			Front & Rear Antenna		
			Faster Vehicle Mode		
			Moving Mode		
			Front Opposite & Same		
			Rear Opposite & Same		
			Home Work		1.0
			Review Chapters 1-5 (Read NHTSA pages 172-178)		

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Day 2 08:00 - 12:00 4 hours

Installation, Testing and Operation 1.0

(continued - slide 257)

- 5.3 Operation
- 5.4 Tracking History
- 5.5 Radar Effects (stationary)
- 5.6 Enforcement Considerations
- 5.7 RADAR/LIDAR Detectors
- 5.8 RADAR Detector/Detectors (RDD)
- 5.9 RADAR/LIDAR Jammers
(chapter review questions)

Practical Exercise 1.0

- Light Segment Test
- Internal Circuitry Test
- Tuning Fork Tests
- Tuning Fork Modes
 - Stationary Mode
 - Front & Rear Antenna
 - Faster Vehicle Mode
 - Moving Mode
 - Front Opposite & Same
 - Rear Opposite & Same

Understanding Moving RADAR (325) 2.0

- 6.1 Principles of Moving Radar
- 6.2 Cosine Effects in Moving Radar
- 6.3 Shadowing Effects in Moving Radar
- 6.4 Eliminating Low Doppler Errors
- 6.5 Calculating Moving Cosine and
Shadowing Effects
- 6.6 Moving Radar Operation
- 6.7 Radar Effects (moving)
- 6.8 Enforcement Considerations
(chapter review questions)

Day 2 13:00 - 17:00 5 hours

Modern Police Radar (slide 367) 2.0

- 7.1 Digital Signal Processing
- 7.2 Patrol 5/20 or 10/20

- 7.3 Continuous Tracking
- 7.4 Same Lane Tracking
- 7.5 Track Thru Locking (TTL)
- 7.6 Patrol Speed Blank
- 7.7 Fastest Vehicle Mode
- 7.8 Complete Tracking History
- 7.9 Counting Unit Displays
- 7.10 Counting Unit Controls
- 7.11 Rechargeable Battery Handles
- 7.12 Directional Sensing Radar
- 7.13 Vehicle Speed Sensor
- 7.14 STALKER DSR 2X
- 7.15 POP Technology
- 7.16 Target Acquisition
- 7.17 Speed Detection Video Interface
- 7.18 STALKER II MDR
- 7.19 Decatur Radar Mirror Display
- 7.20 MPH Ranger EZ
- 7.21 OBD-II output and VSS
- 7.22 VSS access via GPS
- 7.23 LCD Displays
- 7.24 Stalker DSR 2X vs Golden Eagle 3
- 7.25 Stalker Virtual Radar Display
(chapter review questions)

Radar and Occupational Safety (427) 0.5

- 8.1 Energy Levels of Microwave
- 8.2 Microwave and Cancer
- 8.3 Safety Rules
(chapter review questions)

Photo Radar (slide 435) 1.0

- 9.1 General Operation
- 9.2 Photo Radar and Private Enterprise
- 9.3 Photo Radar Court Cases
- 9.4 State Laws Regulating Photo Radar
- 9.5 Photo Lidar
- 9.6 ASE and Public Safety
(chapter review questions)

Homework 1.5

Review Chapters 5-9 (Begin reading your issued radar & lidar manual)

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<u>Day 3</u>	<u>08:00 - 12:00</u>	<u>4 hours</u>	<u>Day 3</u>	<u>13:00 - 17:00</u>	<u>5 hours</u>
LIDAR (slide 516)		2.0	Course Review & Questions		1.0
11.1 History of Laser			Final Exam		1.0
11.2 Principles of Operation			Moot Court (preparation)		1.5
11.3 Lidar Sighting Systems			Selection of:		
11.4 Lidar Tracking History			Officer, Defendant, Prosecutor,		
11.5 Lidar Effects			Defense Attorneys & Jury.		
11.6 Time-Distance			The traffic stop role play:		
11.7 Survey Measurements			(officer & defendant)		
11.8 Distance Between Cars (DBC)			Homework		1.5
11.9 Inclement Weather Program			(Classroom Presentation Preparation & finish		
11.10 Auto Obstruction Mode			reading your radar & lidar manual, download the		
11.11 HUD Speed & Distance Display			RADAR & LIDAR Instructor flashdrive if you		
11.12 Automatic Locks			brought a laptop computer, review the contents		
11.13 Rechargeable Battery Handles			of the Document file and the 1.Read Me file.)		
11.14 LTI TruCAM			<u>Day 4</u>	<u>08:00 - 12:00</u>	<u>4 hours</u>
11.15 Safety Considerations			Instructor Presentations		4.0
11.16 Military Warning			(Please wear department issued uniform) 15 to 20 min-		
11.17 Testing Lidar			ute presentation before the entire class on a chapter of		
11.18 Lidar Case Law			<u>Understanding Police Traffic RADAR & LIDAR.</u>		
11.19 LIDAR Case Law Conclusions			<u>Day 4</u>	<u>13:00 - 17:00</u>	<u>5 hours</u>
11.20 AutoveloX 105 SE			Instructor Presentations		1.5
(chapter review questions)			Practical Exercise		2.5
Standards, Certification, and Law (471)		1.5	RADAR, LIDAR, Stopwatch Operation		
10.1 Federal Standards			85th Percentile Speed Survey		
10.2 IACP Standards and Testing			Speed Estimates - Daylight Stationary		
10.3 Radar Case Law - United States			Class Photo		
10.4 Radar Case Law - Canada			Homework		1.0
10.5 Radar Case Law Conclusions			(Moot Court Preparation, review Instructor		
10.6 Tuning Fork Tests and Case Law			Re-Certification Guidelines.pdf)		
10.7 Stalker Radar Self Tests			<u>Day 5</u>	<u>08:00 - 12:00</u>	<u>4 hours</u>
10.8 Certification			Moot Court		3.5
10.9 Court Testimony			Course Evaluation		.25
10.10 Traffic Evidence Kit			Presentation of Certificates		.25
(chapter review questions)					
Summary (slide 591)		0.5			
12.1 The Future of Radar and Lidar					
12.2 Public Opinion					
12.3 The Five Es of Public Safety					
12.4 Supreme Court Case Law & traffic stops					