

RADAR & LIDAR
20 hour Basic Certification

by
Law Enforcement Services, LLC



<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>4 hours</u>
Objectives, Handouts, & Testing		.5	Radar Basics (continued)		.5
The Speed Problem		.5	4.10	Lines of Equal Sensitivity	
1.1	History		4.11	Inverse Square Law	
1.2	National Statistics		4.12	Contour Lines of Equal Sensitivity	
1.3	2000 NHTSA Statistics		4.13	Beam Range - Sensitivity	
1.4	Recognition and Reaction Time		4.14	Automatic Gain Circuitry	
1.5	Braking and Total Stopping Distance		4.15	Target Reflectivity	
1.6	Velocity and Speed		4.16	Range Control Techniques	
1.7	Momentum and Kinetic Energy		4.17	Doppler Audio	
			4.18	Cosine Effect	
Speed Laws and Public Safety		.5	Installation, Testing and Operation		1.5
2.1	Basic Speed Law		5.1	Installation	
2.2	Speed Limit Misconceptions		5.2	*Testing	
2.3	Speed Limits and Compliance		5.3	Operation	
2.4	85th Percentiles		5.4	Tracking History	
2.5	Public Safety		5.5	Radar Effects (stationary)	
Speed Enforcement		1.0	5.6	Enforcement Considerations	
3.1	Pacing		5.7	Radar Detectors and Jammers	
3.2	Time-Distance		5.8	Radar Detector/Detectors (RDD)	
3.3	Time-Distance Computers		5.9	Radar/Lidar Jammers	
3.4	RADAR		Understanding Moving RADAR		2.0
3.5	LIDAR		6.1	Principles of Moving Radar	
3.6	Estimating Distances		6.2	Cosine Effects in Moving Radar	
3.7	Estimating Speeds		6.3	Shadowing Effects in Moving Radar	
3.8	Stopwatch Calibration Checks		6.4	Eliminating Low Doppler Errors	
3.9	Distance Calibration Checks		6.5	Calculating Moving Cosine and Shadowing Effects	
3.10	Speedometer Calibration Checks		6.6	Moving Radar Operation	
Radar Basics		1.5	6.7	Radar Effects (moving)	
4.1	Types of Radar		6.8	Enforcement Considerations	
4.2	The Doppler Principle		Practical Exercise (during lunch & breaks)		
4.3	Waves and Frequencies		Light Segment Test		
4.4	Characteristics of Radio Waves		Internal Circuitry Test		
4.5	The Doppler Shift		Tuning Fork Tests		
4.6	Police Traffic Radar		Stationary - Front & Rear		
4.7	The Radar Beam		Faster Vehicle Mode		
4.8	Understanding Trigonometric Functions		Moving - Front Opposite & Same		
4.9	Determining Beam Widths		Rear Opposite & Same		

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<u>Day #2</u>	<u>08:00 - 12:00</u>	<u>4 hours</u>	<u>Day #2</u>	<u>12:00 - 17:00</u>	<u>4 hours</u>
Modern Police Radar			Photo Radar		
		1.5			.5
7.1	Digital Signal Processing		9.1	General Operation	
7.2	Patrol 5/20 or 10/20		9.2	Photo Radar and Private Enterprise	
7.3	Continuous Tracking		9.3	Photo Radar Court Cases	
7.4	Same Lane Tracking		9.4	State Laws Regulating Photo Radar	
7.5	Patrol Speed Display-Lock		Standards, Certification, and Law		
7.6	Patrol Speed Blank				1.0
7.7	Fastest Vehicle Mode		10.1	Federal Standards	
7.8	Complete Tracking History		10.2	IACP Standards and Testing	
7.9	Counting Unit Displays		10.3	Radar Case Law - United States	
7.10	Counting Unit Controls		10.4	Radar Case Law - Canada	
7.11	Rechargeable Battery Handles		10.5	Radar Case Law Conclusions	
7.12	Directional Sensing Radar		10.6	Certification	
7.13	Vehicle Speed Sensor		10.7	Court Testimony	
7.14	STALKER DSR 2X		10.8	Traffic Evidence Kit	
7.15	POP Technology		Course Review & Questions		
7.16	Target Acquisition				1.0
7.17	Speed Detection Video Interface		Final Exam		
7.18	STALKER II MDR				1.0
LIDAR			Final Exam Review		
		2.0			.5
11.1	History of Laser		Day #3		
11.2	Principles of Operation			08:00 - 12:00	4 hours
11.3	Lidar Sighting Systems		Time-Distance, Radar & Lidar Operation		
11.4	Lidar Tracking History				3.5
11.5	Lidar Effects		Course Evaluation &		
11.6	Time-Distance				.5
11.7	Survey Measurements		Presentation of Certificates		
11.8	Inclement Weather Program				
11.9	Safety Considerations				
11.10	Military Warning				
11.11	Testing Lidar				
11.12	Lidar Case Law				
11.13	Autovelox 105 SE				
Radar and Occupational Safety					
		.5			
8.1	Energy Levels of Microwave				
8.2	Microwave and Cancer				
8.3	Safety Rules				