ILLINOIS STATE POLICE DIRECTIVE
EQP-006, SPEED DETECTION EQUIPMENT

RESCINDS:	**REVISED:**
EQP-006, 2023-045, revised 01-03-2023.	12-09-2024 **2024-043**
RELATED DOCUMENTS:	**RELATED CALEA STANDARDS (6th Edition):**
EQP-002	17.5.1, 17.5.2, 53.1.1, 61.1.6, 61.1.8

I. POLICY

The Illinois State Police (ISP) will:

I.A. Use speed detection equipment in a manner designed to encourage voluntary compliance with speed limits and to accurately determine the speed of vehicles traveling on roadways.

I.B. Establish procedures for certification of speed detection equipment instructors and operators.

I.C. Establish procedures for certification, maintenance, repair, and use of speed detection equipment.

II. DEFINITIONS

II.A. Speed Detection Equipment – equipment used by the ISP to measure the speed at which a vehicle is traveling. Examples of speed detection equipment include, but are not limited to:

II.A.1. Hand-held Radio Detection and Ranging (RADAR) (HHR)

II.A.2. Moving RADAR

II.A.3. Hand-held Light Detection and Ranging (LIDAR)

II.A.4. Visual Average Speed Computer and Recorder (VASCAR)

II.B. Speedometer – an instrument for indicating speed.

III. PROCEDURES

III.A. Certification

Speed detection equipment operators and instructors will pass an operation proficiency test at least once every 36 months to remain certified. The certification process includes:

III.A.1. A training program from a certified instructor covering:

III.A.1.a. Unit set-up procedures
III.A.1.b. Testing of the unit
III.A.1.c. Unit operation during patrol
III.A.1.d. An explanation of the tracking history of a vehicle

III.A.2. A demonstration of proficiency by:

III.A.2.a. Setting up, testing, and operating a unit
III.A.2.b. Passing a proficiency test with a minimum requirement of 90 percent or nine correct observations out of the ten visual checks required

III.A.2.b.1) The VASCAR proficiency test will consist of performing a calibration, instrument accuracy verification, and the performance of three tests in each of four different modes. The operator must pass these tests with speed deviations not to exceed one mile per hour, plus or minus average error .750 or less miles per hour.

III.A.2.b.2) For the purpose of this directive, a RADAR/LIDAR instructor course offered by a RADAR/LIDAR manufacturer IS NOT an acceptable instructor training course.

III.B. Speed detection equipment instructors will:

III.B.1. Successfully complete a 40-hour National Highway Traffic Safety Administration (NHTSA) course of instruction on certifying speed detection equipment operators.

III.B.2. Train and certify speed detection equipment operators and issue operator/instructor certification cards at the Troop level.

III.B.3. Complete and submit an Illinois State Police Speed Detection Equipment Operation Proficiency Test, form ISP 7-019, for operators being certified. Classification of operators/instructors will be one or more of the following classifications:

III.B.3.a. "A" indicating the operator has demonstrated proficiency and is certified to use HHR
III.B.3.b. "B" indicating the operator has demonstrated proficiency and is certified to use moving mode RADAR
III.B.3.c. "C" indicating the operator has demonstrated proficiency and is certified to use VASCAR
III.B.3.d. "D" indicating the operator has demonstrated proficiency and is certified to use LIDAR

NOTE: Officers successfully completing the proficiency test will receive an "Illinois State Police Certificate of Completion and Competency Traffic Speed Detection Devices," form ISP 7-072. The instructor must sign this card. This certificate is an inspection item, and must be available for presentation at traffic court.

III.B.4. Operate the type of speed detection equipment they instruct.

III.C. Supervisors will:

III.C.1. Monitor operator certification card, ISP 7-072, expiration dates and schedule recertification for speed detection equipment operators as required.

III.C.2. Review and ensure accuracy of the ISP 7-019. This will include ensuring the instructor as well as the Commander or authorizing person properly sign the form.

III.C.3. File the completed proficiency test forms at the Troop.

III.D. RADAR operation guidelines

III.D.1. The RADAR will be checked by the following tests: display test, internal circuit test, and certified tuning forks:

III.D.1.a. The initial RADAR accuracy test will be completed prior to beginning the tour of duty or any RADAR related enforcement. The RADAR accuracy test will consist of the power-on self-test, internal circuit test, and the certified tuning forks.
III.D.1.b. Prior to ending the tour of duty, the final RADAR accuracy test will be completed using the power-on self-test, internal circuit test, and the certified tuning forks.
III.D.1.c. The use of the tuning forks should follow the specifications set forth in the owner's manual of the RADAR device to include the accuracy check for stationary, moving, and same direction modes.

III.D.2. RADAR operators are to be alert for any unusual or suspect readings.

III.D.2.a. If such readings persist, that particular unit will immediately be removed from service.
III.D.2.b. The unit will not be operated until it has been checked by a qualified technician and determined to be functioning properly.

III.D.3. HHR and LIDAR are to be used primarily as a RADAR operated by one individual to monitor speeds of vehicles on roadways while the patrol car is in a stationary position. If a specifically

designed protective storage rack is provided for use with the HHR, it will be used at all times when the HHR is not in the carrying case and when the unit is in motion.

III.D.4. Moving RADAR is to be used primarily as a RADAR operated by one individual to monitor speeds of vehicles on roadways while the patrol car is in a stationary position or moving position.

III.D.4.a. The control unit and the antenna unit (including the rear antenna if so equipped) will be secured on or above the dashboard or attached to the windshield of the patrol vehicle or other suitable location specified in the operating manual of the RADAR so as not to interfere with the deployment of the driver or passenger airbags.

III.D.4.b. When operating RADAR in the moving mode, operators are to verify the patrol vehicle speed displayed with the speed registered on the patrol vehicle speedometer with speed deviations not to exceed, plus or minus, one mile per hour or within the specifications set forth in the operating manual of the operating RADAR.

III.D.4.c. Tuning forks will be checked for accuracy by a certified technician every two years, When the unit has been serviced, when unusual or suspect readings persist, or when deemed necessary by a RADAR instructor.

III.E. LIDAR operation guidelines

The operator will test each aspect of the LIDAR device prior to its use.

III.E.1. Self-test – A test of the instrument is conducted automatically when it is turned on.

III.E.2. Testing – The following tests check for the proper display, aiming and accuracy of the LIDAR device.

III.E.2.a. Scope alignment test – a test to ensure the light beam of the LIDAR is directed precisely where the red dot of the scope indicates.

III.E.2.b. A fixed distance zero velocity check using a pre-determined distance

III.E.2.c. A delta distance velocity check using a pre-determined distance

III.E.3. A certified technician will check LIDAR units every two years, when an unusual or suspect reading persists, or when deemed necessary by a LIDAR instructor.

III.F. VASCAR operation guidelines

III.F.1. Determine the display is working properly.

III.F.2. Perform a calibration check prior to initiating first time VASCAR operations using the operator's pre-measured course using the guidelines set forth in the manufacturer's operation manual. Once the calibration number is recorded, the operator will verify the calibration number for accuracy by driving through the measured course. A reading of +- ¼ of 1% the calibration is acceptable. On a daily basis prior to beginning the tour of duty and ending the tour of duty, the operator will perform an accuracy check my measuring the patrol car speed. The speed displayed on the device should not exceed plus or minus, one mile per hour from the speed displayed on the patrol vehicle speedometer.

III.F.3. Verify device accuracy by obtaining a new calibration number each time there is a change in a patrol vehicle's tires or when service work has been done on a patrol vehicle's transmission. The VASCAR operator should be alert for any unusual or suspect readings or functions of the device.

III.F.3.a. If suspect readings are detected, use of the device will be immediately discontinued.

III.F.3.b. The device will not be operated until it has been checked by a qualified technician and determined to be functioning properly.

III.F.4. A certified technician will check VASCAR units every two years or when deemed necessary by a VASCAR instructor.

III.G. Speedometer calibration

III.G.1. New vehicle speedometers will be checked by the officer assigned the vehicle, and verification recorded when the vehicle is put into service prior to making any speeding violation arrests utilizing the vehicle speedometer.

III.G.1.a. Speedometers will be checked for accuracy by using RADAR, LIDAR, VASCAR or air speed.
III.G.1.b. Vehicles are equipped with a certified speedometer that certifies the accuracy of the speedometer within ±1 MPH at the time of manufacture.
III.G.1.c. Speedometers will be checked for accuracy of registered speeds at speeds of 35, 45, and 55 MPH.
III.G.1.d. Speed deviations must not exceed a tolerance of ±2 MPH at any registered speed.
III.G.1.e. Officers will exercise proper discretion in selecting the location and time for the calibration of speedometers.

III.G.2. Speedometers will be checked thereafter:

III.G.2.a. At least every six months
III.G.2.b. When the rear tires are changed or replaced
III.G.2.c. When any change of differential gears, transmission speedometer pinion gear, or replacement/repair of the speedometer head

III.G.3. The Vehicle Speedometer Calibration Accuracy Verification Form, ISP 5-169, must be completed

Vehicle Speedometer Calibration Accuracy Verification forms will be maintained in the vehicle with the vehicle maintenance record and will include the following:

III.G.3.a. Date of the check
III.G.3.b. Method of checking the speed and the inventory/serial number of the device used
III.G.3.c. Registered speed and the verified (actual) speed
III.G.3.d. Signature of vehicle operator and the person verifying the calibration

III.H. Inspection and maintenance of speed detection equipment

III.H.1. Supervisory personnel will inspect the officer's assigned unit at each troop field inspection.

III.H.2. Inspection of units will ensure proper maintenance, care, and operation of the equipment.

III.H.3. If repair of the unit is beyond the scope of the Communications Equipment Technician (CET), it will be forwarded to the ISP Radio Lab. Before the unit is forwarded to the Radio Lab, the unit will be tagged by the CET with information regarding the problem, service work to be completed, and the Troop to which the unit is assigned.

III.I. Requests from the violators to view locked-in speed results on a speed detection device will be based upon officer discretion and officer safety, and only allowed in situations where there are no traffic problems/hazards or other circumstances that would present a potential safety concern to the violator or officer(s).

Indicates new or revised items.

-End of Directive-