

Pennsylvania State Police Testimony
Senate Committee on Transportation
August 17, 2010

Presented by:
Lt. Colonel Tedescung L. Bandy
Deputy Commissioner of Operations
Pennsylvania State Police

Good morning, Senator Rafferty and members of the Committee on Transportation. On behalf of the Commissioner, Colonel Frank E. Pawlowski, I want to thank you for the opportunity to testify about speed enforcement.

Under the Vehicle Code, all Pennsylvania police officers are authorized to determine the rate of a vehicle's speed using a mechanical or electronic speed timing device. All police officers may also use electronic devices that calculate speed by measuring the elapsed time between measured points on a road surface. Currently, other types of electronic devices, such as RADAR, can only be used by members of the Pennsylvania State Police. However, we fully support amending the Vehicle Code to allow all police officers employed by full-time departments to use RADAR and other electronic speed timing devices.

RADAR or "Radio Detection And Ranging," is a device that transmits radio waves which reflect off a moving vehicle and return to the unit. Speed is measured by the shift between the transmitted frequency and the return frequency, which the unit converts into a miles-per-hour speed reading. When using RADAR, the officer points the unit in the general direction of the target vehicle. At a range of 1,000 feet, the radio waves are transmitted in a cone-shaped pattern that covers about 80 yards. The unit displays the speed from the strongest return signal received, and an audio tone confirms the reading coming from the target vehicle.

RADAR has been a main component of the State Police speed-enforcement program for over 45 years. RADAR's reliability, and the ease of operation, has made it an effective tool in reducing deaths and serious injuries from traffic crashes, many of which are the direct result of excessive speed. With the increasing volume of traffic,

however, safeguarding our highways has become an even greater challenge. Unfortunately, Pennsylvania has not kept pace with the rest of the country in adopting cutting-edge speed-enforcement technology. In fact, we are precluded from using the most accurate and advanced technology on the market.

For example, although state troopers are allowed to use RADAR, they are only authorized to use the devices in a stationary mode. This limitation prevents state troopers from using RADAR while on patrol. Ninety-six percent of other states use “moving RADAR,” enabling their officers to determine the speed of a vehicle as it is moving toward or away from the police car. With moving RADAR, the unit factors in the movement of the police vehicle. For example, if a police officer is driving at 50 miles per hour and the RADAR gun detects the target vehicle is moving away at 20 miles per hour, the target vehicle must be going 70 miles per hour. Moving RADAR would enable our officers to conduct speed enforcement while on active patrol rather than sitting parked on the side of the road.

Significantly, 92 percent of other states, including all of those surrounding Pennsylvania, use an advanced speed-detection technology called LIDAR, or “Light Detection And Ranging.” LIDAR sends out an infrared laser beam rather than a radio wave. Speed is calculated by the length of time it takes for the beam to reflect off the vehicle and return to the unit. The laser beam is very narrow. At 1,000 feet, the laser beam is about three to four feet wide; at 500 feet, the beam is only 18 inches. This allows the officer to easily target a specific vehicle. In addition, LIDAR sends out many laser pulses in a short amount of time, collecting multiple distances. A LIDAR gun takes

several hundred distance samples in less than half a second, so it is extremely accurate.

LIDAR is especially useful in congested traffic conditions or on multiple-lane highways because of its ability to more narrowly and precisely pinpoint a specific vehicle. This would be invaluable, for instance, as a Trooper attempted to identify the speed of an aggressive driver who was erratically and unsafely weaving in and out of traffic. Conventional RADAR, whether stationary or moving, is relatively easy to detect, and there are an abundance of RADAR detectors on the market. In contrast, LIDAR is very difficult to evade because the beam is more focused. By the time a driver realizes LIDAR is nearby, it is too late to avoid detection because the car is already within the beam's effective range.

Despite its numerous advantages, LIDAR should not entirely replace RADAR because LIDAR cannot be used when the police car is in motion. For the most effective enforcement program, we need authorization to use a combination of RADAR, moving RADAR, and LIDAR.

In conclusion, it is my sincere belief that the ability of Pennsylvania police officers to utilize the most modern speed timing technology available, such as RADAR, moving RADAR and LIDAR, will reduce the number of fatalities and injuries on our highways that result from crashes in which excessive speed is the primary causal factor.

On behalf of all the men and women of the Pennsylvania State Police, thank you again for this opportunity to testify before your committee. I would be happy to answer any questions you may have.