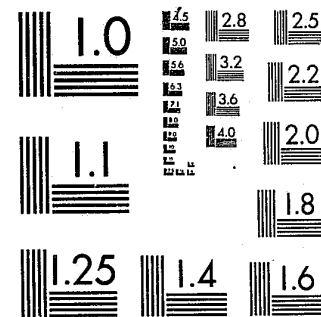


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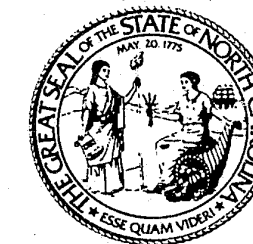
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LEGISLATIVE RESEARCH COMMISSION

POLICE TRAFFIC RADAR



REPORT TO THE 1981 GENERAL ASSEMBLY OF NORTH CAROLINA

U.S. Department of Justice
National Institute of Justice

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STATE OF NORTH CAROLINA
LEGISLATIVE RESEARCH COMMISSION
STATE LEGISLATIVE BUILDING
RALEIGH 27611



January 14, 1981

TO THE MEMBERS OF THE 1981 GENERAL ASSEMBLY:

The Legislative Research Commission herewith reports to the 1981 General Assembly on the matter of the use of radar and other electronic devices for the detection of motor vehicle speed. The report is made pursuant to Resolution 97 of the 1979 General Assembly, Second Session 1980.

This report was prepared by the Legislative Research Commission's Radar Study Committee and is transmitted by the Legislative Research Commission for your consideration.

Respectfully submitted,

Carl J. Stewart, Jr. *W. Craig Lawing*
Carl J. Stewart, Jr. W. Craig Lawing

Cochairmen
Legislative Research Commission

A limited number of copies of this report is available for distribution through the Legislative Library.

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NCJRS

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ACQUISITIONS

INTRODUCTION

The Legislative Research Commission, created by Article 6B of General Statutes Chapter 120, is authorized pursuant to the direction of the General Assembly "to make or cause to be made such studies of and investigations into governmental agencies and institutions and matters of public policy as will aid the General Assembly in performing its duties in the most efficient and effective manner" and "to report to the General Assembly the results of the studies made," which reports "may be accompanied by the recommendations of the Commission and bills suggested to effectuate the recommendations." G.S. 120-30.17. The Commission is chaired by the Speaker of the House and the President Pro Tempore of the Senate, and consists of five Representatives and five Senators, who are appointed respectively by the Cochairmen. G.S. 120-30.10(a).

At the direction of the 1979 General Assembly, the Legislative Research Commission has undertaken studies of twenty-five matters, which were arranged into ten groups according to related subject matter. See Appendix A for a list of the Commission members. Pursuant to G.S. 120-30.10(b) and (c), the Commission Cochairmen appointed study committees consisting of legislators and public members to conduct the studies. Each member of the Legislative Research Commission was delegated the responsibility of overseeing one group of studies and causing the findings and recommendations of the various committees to be reported to the Commission. In addition, one Senator and one Representative from each study committee were designated Cochairmen. See Appendix B for a list of the Study Committee members.

The use of police traffic radar is widespread throughout the nation and, until recently, was widely accepted by courts and the general public as a reliable and accurate means of measuring vehicle speeds. Technological advances have altered the basic concepts initially accepted by the courts resulting in judicial decisions that question the reliability and accuracy of radar. These decisions underscore the fact that under certain conditions traffic radar has its limitations; and stress the need for adequate training of radar operations in order to guarantee that these limitations can be recognized by the operators and that erroneous radar readings can be ignored. With the exception of standards promulgated by the State Highway Patrol for its officers, North Carolina has no statewide minimum standards for radar performance, operation, or training of operators and instructors.

Traffic enforcement policy and procedures vary greatly in North Carolina as approximately 380 local and state agencies engage in some form of traffic enforcement activity. The role of police traffic radar in traffic safety enforcement continues to be of critical importance, especially in view of the safety and fuel conservation benefits of the 55 mph criteria enacted by Congress. Police traffic radar provides a means of increasing enforcement effectiveness and thus enables police administrators to better cope with the scarcity of manpower resources and rapidly increasing fuel costs.

The National Highway Safety Administration (NHTSA) believes that police traffic radar is an effective enforcement tool and

has recommended that each state develop a comprehensive radar speed enforcement program that, as a minimum, embraces equipment standards, operator training, operator certification, and policy and procedural guidance. NHTSA is sponsoring two programs to upgrade both the reliability and credibility of police traffic radar equipment and the quality of operator training. NHTSA is currently involved in an interagency agreement with the National Bureau of Standards to develop performance for speed-timing devices which will subsequently result in the publication of a qualified products list in the Federal Register. This list is designed to enable law enforcement agencies to make better informed radar purchasing decisions and will identify specific radar units that can be purchased by those agencies with federal highway safety funds under 23 U.S.C. 402. NHTSA has also contracted for the development of a model training program for operators of speed timing devices.

The 1979 North Carolina General Assembly authorized the Legislative Research Commission to study the use of police traffic radar and other electronic speed-measuring devices. The text of the Radar Study Committee's Report to the 1979 General Assembly, Second Session, 1980, can be found in APPENDIX C of this report. In response to the recommendations of the Committee, the General Assembly enacted 1979 Session Laws Chapter 1184, which appears in APPENDIX D, and continued the study by ratifying Resolution 97 (SJR 970), which appears in APPENDIX E.

FINDINGS

The provisions of Sections 1 and 2 of Chapter 1184 will be implemented by the Criminal Justice Standards Division of the North Carolina Department of Justice as follows:

1. Establish minimum standards and levels of training for instructors of training programs in radar and other electronic speed measuring instruments.

In order to assure uniform, high quality electronic speed detection training throughout the State, it is necessary to develop minimum standards for radar instructor certification as well as instructor training course standards. The Standards Division currently administers various criminal justice personnel and training certification programs.

As a means of assuring local agency input into the development of the radar certification and training programs, an advisory group will be used. This group will consist of, but not be limited to, representatives from the following:

- a. Municipal and County Law Enforcement Agencies;
- b. North Carolina Law Enforcement Officers' Association;
- c. North Carolina Law Enforcement Training Officers' Association;
- d. North Carolina Association of Chiefs of Police;
- e. Department of Community Colleges;
- f. Department of Crime Control and Public Safety; and
- g. Governor's Highway Safety Program.

A review of federal and state programs in radar instructor training requirements will be conducted. The advisory group will develop certification programs for instructors of electronic speed detection equipment. The standardization of instructor requirements and instructor training coursework will

promote a group of highly qualified instructional personnel to conduct operator training on a statewide basis.

2. Establish minimum standards and levels of training for operators of radar and other electronic speed measuring instruments.

The Standards Division, in conjunction with the advisory group, will develop a certification program for operators of radar and other electronic speed measuring instruments. Included in this program will be prescribed training and other relevant personnel standards to insure competent operator personnel.

The standards contained in the operator and instructor certification programs will be brought before the appropriate agencies for eventual codification in the North Carolina Administrative Code.

3. Develop and deliver, on a statewide basis, radar instructor training that meets or exceeds standards established by NHTSA.

Presently, criminal justice training in North Carolina is provided by a variety of institutions throughout the State. The majority of training in North Carolina is conducted by 56 individual community colleges; however, various state and local agencies also provide training programs to meet training needs.

Because of the diverse nature of the criminal justice training delivery system in this State, it is essential to provide a standardized radar instructor training curriculum

to potential radar instructors. The North Carolina Justice Academy, in consultation with the Standards Division, has the expertise to develop and conduct a radar instructor training course. To accomplish this, the advisory group, in conjunction with the Academy and Standards Division staffs, will develop program curricula.

There are approximately four thousand operators of speed measuring devices throughout the State. Of this, three thousand operators are from local agencies and one thousand are from the North Carolina Highway Patrol. To insure an adequate number of qualified instructors to serve this population, the instructor training program will be offered in four locations in the State. Student representation in these courses will reflect the local and state trainer needs in proportion to their future role of training radar operators. The instructor training programs will produce about eighty certified radar instructors in the State.

The Academy will produce the required printed materials for use in the radar instructor, operator, and supplemental time/distance/speed calculator (VASCAR) training courses. Each participant in the radar instructor training course will receive the necessary course administration and student manuals to insure uniformity of curricula and administration of future radar operator coursework.

4. Develop and deliver, on a statewide basis, radar operator training that meets or exceeds standards established by NHTSA.

The advisory group and Academy, in conjunction with the

Standards Division, will develop a standardized radar operator curriculum. This training course will then be offered throughout the State to persons who need this training for operator certification. About eighteen operator courses will be offered within the initial grant funding period of this project. Student representation in these training programs will be about 76% from local agencies and 25% from the Highway Patrol.

This training will be conducted using the traditional criminal justice training delivery system to include the Academy, Highway Patrol, participating institutions of the North Carolina Community College System, and other local agencies with the resources to host this type of training. Coordination of this training will be the responsibility of the Standards Division and the Academy. The Academy will provide primary instructional staff, course materials, and contract for part-time instructional staff, selecting from the pool of local certified instructors. All curriculum development and delivery of training shall be consistent with #2 in this report and meet or exceed standards established by NHTSA.

5. Develop and deliver, on a statewide basis, supplemental operator training electronic speed detection equipment other than radar instruments.

Several law enforcement agencies in North Carolina currently use VASCAR in traffic law enforcement. These instruments differ in principle from radar devices, but are similar in that no statewide minimum standards exist for performance, operation, or training of operators of this equipment.

The Academy, Standards Division, and advisory group will develop certification standards for operators of VASCAR and include these standards within #1 and #2 of this report. The curriculum will be developed to supplement the radar operator training coursework. The VASCAR supplemental training modules will be scheduled and included in radar operator training courses when local practices require this training for compliance with the radar operator certification program.

6. Establish procedures for the proper care, maintenance, testing and calibration of radar and other electronic speed detection equipment.

Operational procedures for the care, maintenance, testing, and calibration of radar and other electronic speed detection equipment varies among agencies using these instruments. The Standards Division, in consultation with the Department of Crime Control and Public Safety and the advisory group will recommend operational procedures to insure the proper functioning of these instruments. These procedures will be incorporated in the curricula of the radar instructor and operator training courses and later be implemented at the local agency level.

7. Develop maintenance and calibration records systems to be maintained by each agency using radar or other speed detection equipment.

In order to document pertinent operational procedures set forth in #6, the Standards Division will prepare and disseminate record forms which will assist local agencies in documenting operational procedures for the purpose of admissibility of evidence in court proceedings.

8. Develop an automated data records system for radar instructor and operator certification.

Current estimates of radar and other electronic speed detection instrument operators in North Carolina number about four thousand. In order to insure an up-to-date records management system for this group, the current Standards Division's automated records system must be expanded. In conjunction with the North Carolina Police Information Network, the Standards Division will develop the necessary programming to incorporate the radar instructor and operator certification program in its records systems. The hardware to accomplish this will be acquired from the Police Information Network, and all programming efforts and hardware acquisition will be undertaken to accommodate future system expansion in re-certification programs.

On December 1, 1980, the Standards Division and Academy were awarded a Highway Safety Project Grant to begin implementation of #1 - 8 above. This grant of \$194,900 will fund these efforts only through September, 1981. Many of the goals of this grant are of a continuing nature and will extend beyond 1980-81. It will not be possible, within the confines of this grant funding period, to present an adequate number of training programs to meet the training needs of traffic enforcement personnel. In order to insure the continued development, delivery, and monitoring of radar certification and training programs, the Standards Division and Academy will need state appropriations to continue this project.

For the period October 1, 1981, to June 30, 1982, an additional amount of \$172,909 will be required to continue the program. Of the four thousand law enforcement personnel to be trained and certified, the grant money will cover 350; and the additional amount needed will cover 2,300. It is also estimated that there will be 640 new certifications each year. A breakdown of the projected program costs beyond the grant period to the end of fiscal year 1981-82 appears in APPENDIX F.

The Highway Patrol, which is under the Secretary of Crime Control and Public Safety, will be working with the Standards Division in approving speed-timing instruments and establishing operation procedures under new G.S. 17C-6(a)(13). For this the Department will need funds for test equipment (frequency meters, diode guides, etc.) to evaluate radar and VASCAR units to determine whether or not those units meet federal standards. It will also need funds for support equipment (assimilator and power supply units) for VASCAR equipment. Finally, funds will be needed to purchase radar and VASCAR units for training personnel and for testing for federal equipment standards. According to the federal standards for operator training, one piece of each type of unit will be needed for every six to eight students in each class. The radar equipment is portable and can thus be moved from classroom to automobile. The VASCAR units, however, are not portable, and therefore there will be a need for four units for the classroom and eight units for the vehicles. The Department will also need an additional clerk/

typist III to handle the increased paperwork for testing and certification at the Highway Patrol Training Center. (See APPENDIX F.)

RECOMMENDATIONS

1. The 1981 General Assembly should appropriate \$172,909 to the Department of Justice to guarantee continuation of the certification program. This amount would fund the program from October 1, 1981, through fiscal year 1981-82. The Department plans to include a request for funds for this program in its continuation budgets for fiscal year 1982-83 and subsequent fiscal years.

2. The 1981 General Assembly should appropriate \$49,500 to the Department of Crime Control and Public Safety for radar and VASCAR units and test and support equipment for these units. The Department can realize tremendous cost savings if it can acquire the test and support equipment without having to comply with the procedure for letting of public contracts. Therefore the General Assembly should specify that the provisions of G.S. 143-129 shall not apply to the purchase of that equipment. In fact, the Department has personnel with the expertise to fabricate some of this equipment from components at tremendous cost savings.

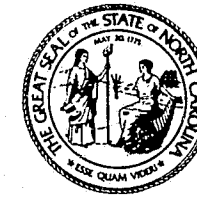
3. The effective date of Section 1 of 1979 Session Laws Chapter 1184 should be moved up to July 1, 1981. It was the intent of the Committee that there be statutory authority for the commencement of the certification provisions in General

Statutes Chapter 17C on July 1, 1981, and that the remaining provisions become effective one year thereafter.

The foregoing recommendations appear in the form of proposed legislation in APPENDIX G.

APPENDIX A

STATE OF NORTH CAROLINA
LEGISLATIVE RESEARCH COMMISSION
STATE LEGISLATIVE BUILDING
RALEIGH 27611



MEMBERSHIP
1979-1981

Cochairmen:

House Speaker Carl J. Stewart, Jr.

Senate President Pro Tempore W. Craig Lawing

Members:

Representative Chris S. Barker, Jr.
New Bern

Senator Henson P. Barnes
Goldsboro

Representative John R. Gamble, Jr.
Lincolnton

Senator Melvin R. Daniels, Jr.
Elizabeth City

Representative H. Parks Helms
Charlotte

Senator Carolyn Mathis
Charlotte

Representative John J. Hunt
Lattimore

Senator R. C. Soles, Jr.
Tabor City

Representative Lura S. Tally
Fayetteville

Senator Charles E. Vickery
Chapel Hill

APPENDIX C

TEXT OF THE LEGISLATIVE RESEARCH COMMISSION
REPORT ON POLICE TRAFFIC RADAR TO THE 1979
GENERAL ASSEMBLY, SECOND SESSION 1980.

This appendix contains only the text of the report. Therefore, references to appendices should be ignored. Copies of that report are on file in the Legislative Library.

The 1979 General Assembly authorized the Legislative Research Commission to study the use of police traffic radar and other electronic speed-measuring devices. Resolution 71 (Senate Joint Resolution 876) authorized the Commission to include in its study:

- "(1) an evaluation of the reliability of available types of equipment, including techniques for calibrating the radar transmitter accuracy on a current basis;
- (2) essential training and supervision of operating personnel, including special requirements, if any, of background training;
- (3) legal ramifications, including nature of essential proof as to the calibration for accuracy of the equipment, qualifications of operator, and demands upon the time of various personnel arising from required appearances in court."

See Appendix C.

This study was initiated because of (1) the importance of the role of police traffic radar in traffic safety enforcement and (2) recent judicial decisions questioning the reliability and accuracy of radar as employed in those cases. See Appendix D for reprints of State v. Hanson and State of Florida v. Aquilera. These decisions did not reject the validity of the underlying scientific principles of Doppler radar. Instead, they underscored the fact that under certain conditions traffic radar has its limitations and stressed the need for adequate training of radar operators in order to guarantee that these limitations can be recognized by the

operators and that erroneous radar readings can therefore be ignored.

COMMITTEE PROCEEDINGS

The Radar Study Committee held its two meetings on March 28 and May 16, 1980, in the State Legislative Building. Although the study was authorized in 1979 and Committee members were appointed subsequent to the adjournment of the First Session of the 1979 General Assembly, the meetings were postponed while awaiting the results of a federal study on performance standards and a model training program for police speed measuring devices. This study, which was conducted by the National Bureau of Standards (NBS) for the National Highway Traffic Safety Administration (NHTSA), was originally scheduled for completion in late 1979. An extension of time was granted, and the performance standards for radar devices should be completed soon.

An interim report was issued by NHTSA and NBS in February, 1980, which revealed the results of preliminary tests of six different radar devices for accuracy and reliability. With this information and with the convening of the 1980 Session nearing, the Committee Cochairmen called the first meeting. (Both Committee meetings were well attended, as may be discerned by reference to Appendix E.)

At both meetings the Committee was presented information about the technical aspects of radar devices, radar calibration and testing requirements, training of radar operators, radar purchasing practices of governments, criticisms of quality and accuracy of some radar equipment, legal aspects of radar evidence in North Carolina and other states, and the efforts of NBS and NHTSA to arrive at federal minimum standards for radar performance and operator training.

There appears in Appendix F a list of persons who made presentations to the Committee at the March 28 and May 16 meetings. Details of both meetings are contained in the Committee's minutes, which are on file in the Legislative Library.

DOPPLER RADAR PRINCIPLES AND OPERATION

In an article in the North Carolina Law Review, entitled, "The Scientific Reliability of Radar Speedometers," Dr. John M. Kopper, one of the country's leading experts on speed radar, gave perhaps the best description in layman's terms of the principle of radar:

"The word RADAR is made up from the capitalized letters in the set of words, RADio Detection And Ranging. Thus, a radar method is one that may be used to detect the presence of a target and determine the distance of that target from the radar set. Radar methods can also be used to obtain information on the bearing of a target, its altitude, and speed. In all the methods electromagnetic energy in the form of radio waves is radiated from the antenna of the transmitter of the radar set so as to 'illuminate' the target; when the target is thus illuminated, it reflects a certain portion of the energy back to the receiver of the radar set. Searching the sky for a target by means of a radar set is like scanning the sky at night with a searchlight. If a part of the light set out by the searchlight comes back to your eyes, we say that something in the sky is reflecting the light, and we deduce from this fact that in the sky there is a cloud or airplane acting as a reflector. All this is a roundabout way of saying that we see a target. In a

similar way a radar set is said to 'see' a target."

33 N.C.L. Rev. 343, 344 (1954).

The radar system employed by law enforcement agencies uses the Doppler effect to read out the speeds of vehicles within the beam range of the system. The Doppler effect is a basic physical principle that states that energy striking a moving object increases or decreases in frequency in direct relation to the speed of the object. The most common example of this effect is the change in the sound of a locomotive horn as the train approaches and passes someone listening to the horn. As the train nears the listener, the pitch of the horn becomes higher; once the train passes the listener, the pitch drops dramatically. The change in pitch is a result of the Doppler effect.

In a speed radar system the Doppler effect is used to measure a change in frequency between a transmitter (radar unit) and receiver (moving vehicle). The system transmits and receives radiomicrowaves in a constant beam (unlike the intermittent pulse waves in military radar). The vehicle being monitored receives the radiomicrowaves and sends them back to the system. This system of transmission and reception satisfies the conditions necessary for the Doppler effect to occur. The radar unit interprets the changing frequency of the radiomicrowaves received from the approaching vehicle and computes the speed of the vehicle based on that frequency change.

In stationary radar systems, this computation is relatively simple because only the target vehicle is in motion. In moving radar systems, the speed of the patrol car must be taken into account. These systems, which are relatively new to the state of the art, actually send out a second beam of radiomicrowaves that reflects

off stationary roadside objects to the system. Using this data, the system then compensates for the speed of the patrol car when converting the radiomicrowave frequency received from the oncoming target vehicle.

THE CRITICS RESPOND: ILLUSTRATIONS OF POTENTIAL ERRORS

Critics of radar are not necessarily at odds with the reliability or accuracy of radar's underlying scientific principles; rather, they are critical of (1) inadequate training of radar operators, which can result in misidentification of targets, and (2) the design of certain radar systems, which can allow external influences (human and environmental factors) to produce erroneous readings. The illustrations which appear in Appendix H are indicative of some of the potential errors pointed out by critics who are looking to improve radar systems, operation, and training.

FINDINGS

- I. With the exception of those promulgated by the State Highway Patrol for its officers, North Carolina has no statewide minimum standards for radar performance, operation, or training of operators and instructors. The State Department of Crime Control and Public Safety and the Highway Patrol should be commended for their efforts in establishing guidelines in the areas of radar operation, training, and traffic safety enforcement measures. Trooper Training Bulletin Number 10, which appears in Appendix G, contains these guidelines.
- II. North Carolina has no statutes addressing the legal evidentiary status of readings from radar and other speed-timing devices in cases involving speeding violations. The North Carolina

courts have admitted into evidence readings obtained by law enforcement officers operating radar and other speed-timing devices and have generally treated those readings in the same manner as other scientific evidence that is offered to prove a fact in issue. The courts have based the admissibility of all scientific test results upon authentication of the underlying scientific principle by either expert testimony, judicial notice, or statutory law. Once a preliminary determination has been made accepting the principle, the results of the scientific test are admissible subsequent to satisfactory showings of the qualifications of the test operator and the accuracy of the test instruments. Some examples of scientific evidence are blood alcohol (breathalyzer) tests in prosecutions for driving under the influence and blood tests in paternity actions.

- III. The official N.C. State Highway Patrol procedure for detecting speed violators is for the officer to form an opinion through his own visual observation, independent of the radar reading, as to the speed of a vehicle, and then support that opinion with the speed reading from the radar unit. See Section 11 of the Training Bulletin in Appendix G. This is evidently contrary to popular belief, which is that the officer relies first on the radar reading and then his visual observation to detect speeding violations. The procedure in the courts of this State for the introduction of evidence of speeding is to (1) hear the testimony of the officer concerning his visual observation of the vehicle alleged to have been speeding and (2) admit into evidence the results of the speed-timing device in order to corroborate the officer's visual observation.

- IV. The National Highway Traffic Safety Administration (NHTSA) is sponsoring two programs to upgrade both the reliability and credibility of police traffic radar equipment and the quality of operator training. In 1977 NHTSA entered into an interagency agreement with the National Bureau of Standards (NBS) to develop performance standards for speed-timing devices, which should be established by June 1980. At that time, NBS will coordinate the testing of existing devices against the standards and subsequently publish a qualified products list in the Federal Register. This list is designed to enable law enforcement agencies to make better-informed radar purchasing decisions and will identify specific radar units that can be purchased by those agencies with federal highway safety funds under Section 402 of Title 23 of the U.S. Code.

In September 1978, NHTSA awarded a contract for the development of a model training program for operators of speed-timing devices.

In its interim report of February 1980, NHTSA strongly urged each state to:

- A. Adopt the forthcoming NBS/NHTSA radar speed measuring device performance standards and require police agencies to purchase devices meeting those standards;
- B. Develop policy guidelines to ensure that radar speed measuring devices receive proper care and upkeep and establish clear procedures for programmed maintenance, testing, and calibration;
- C. Ensure that adequate maintenance and calibration record systems (suitable for introduction as evidence in court) are developed and maintained by each agency using radar speed measuring devices;

- D. Adopt the NHTSA radar operator training program or its equivalent as the statewide minimum training standard;
- E. Develop a comprehensive State-level radar operator certification program and provide for periodic recertification (every 1-3 years);
- F. Develop police radar workshops and seminars for traffic adjudication personnel; and
- G. Establish State-level policy/procedural guidelines to ensure proper use of police traffic radar in meeting traffic safety and energy conservation goals and objectives.

The NHTSA report asserts that radar is a reliable tool when properly installed and operated by skilled and knowledgeable personnel. NHTSA believes that the adoption by the states of the measures listed above should enable law enforcement agencies to respond more effectively to challenges to radar such as those raised in Wisconsin and Florida.

RECOMMENDATIONS

- I. The General Assembly should enact legislation to enable the North Carolina Criminal Justice Education and Training Standards Commission to (A) establish minimum standards and levels of training for certification and recertification of operators of and instructors for training programs in speed-timing instruments and (B) certify and recertify those persons for each type of speed-timing instrument.

- II. The General Assembly should enact legislation to enable the Commission and the Secretary of Crime Control and Public Safety to jointly (A) approve the use of specific types of speed-timing instruments and (B) establish procedures for the operation and standards for calibration and testing for accuracy of each approved instrument.

Comment to Recommendations I and II: The Criminal Justice Education and Training Standards Commission (which is created in General Statutes Chapter 17C) is charged with the power and duty to (1) establish standards for the education and training of State and local criminal justice officers, which by definition includes law enforcement officers who would operate speed-timing devices, and (2) certify criminal justice officers in accordance with the Commission's standards. The requisites of the membership of the Commission as set out in G.S. 17C-3(a) indicate that the Commission would be well qualified and best suited to establish the standards for operator training, certification, and recertification; operation, calibration and testing, and approval of specific speed-timing devices. See Appendix I for a listing of the membership.

- III. The General Assembly should enact legislation that addresses the admissibility of speed-timing evidence in judicial proceedings and that requires periodic testing of all electronic speed-timing instruments. The results of an electronic speed-timing instrument should not be admissible unless (A) the operator is certified by the Commission, (B) the operator used the instrument according to the procedures established by the Commission, (C) the instrument used was approved for use by the Commission and the Secretary, and (D) the instrument had been calibrated and tested for accuracy according to Commission standards.

Although the Federal Communications Commission requires annual frequency checks of radar units, the law should require testing for accuracy (which is not the same as calibration) at least once every six months by a qualified technician. This would in effect codify the present practice of the State Highway Patrol.

- IV. The effective date of the legislation that would implement Recommendations I through III should be no sooner than July 1, 1981, assuming such legislation is enacted during the 1980 Session. This would provide for a beneficial evaluation of the legislation during the interim period and would allow the 1981 General Assembly time to make necessary corrections to the legislation.
- V. The Legislative Research Commission should be authorized to continue its study of radar and other speed-timing devices and to report to the 1981 General Assembly. Because the federal agencies involved in establishing guidelines for radar and other speed-timing instruments will not be arriving at those guidelines until near or after the adjournment sine die of the 1979 General Assembly, the Research Commission believes that its Radar Study Committee should remain in existence to permit it to (A) consider the forthcoming federal guidelines, other related developments, and input and responses from persons that would be affected by Recommendations I through III in this report and (B) provide the 1981 General Assembly with information.

See Appendix J for these recommendations in bill form.

APPENDIX D

S. B. 1028

CHAPTER 1184

AN ACT TO PROVIDE FOR THE ESTABLISHMENT OF MINIMUM STANDARDS FOR OPERATORS AND INSTRUCTORS AND PROCEDURES FOR USE OF RADIO MICROWAVE AND OTHER SPEED-MEASURING INSTRUMENTS.

The General Assembly of North Carolina enacts:

Section 1. G.S. 17C-6(a) is amended by adding the following new subdivisions:

"(11) Establish minimum standards and levels of training for certification and periodic recertification of operators of and instructors for training programs in radio microwave and other electronic speed-measuring instruments.

(12) Certify and recertify, pursuant to the standards that it has established, operators and instructors for training programs for each approved type of radio microwave and other electronic speed-measuring instruments.

(13) In conjunction with the Secretary of Crime Control and Public Safety, approve use of specific models and types of radio microwave and other speed-measuring instruments and establish the procedures for operation of each approved instrument and standards for calibration and testing for accuracy of each approved instrument."

Sec. 2. G.S. 17C-6 is amended by adding the following new subsection:

"(d) The standards established by the commission pursuant to G.S. 17C-6(a)(11) and G.S. 17C-6(a)(12) and by the commission and the Secretary of Crime Control and Public Safety pursuant to G.S. 17C-6(a)(13) shall not be less stringent than standards established by the U.S. Department of Transportation, National Highway Traffic Safety Administration, National Bureau of Standards, or the Federal Communications Commission."

Sec. 3. Chapter 8 of the General Statutes is amended by adding a new section to read:

"§ 8-50.2. *Results of speed-measuring instruments; admissibility.*—(a) The results of the use of radio microwave or other speed-measuring instruments shall be admissible as evidence of the speed of an object in any criminal or civil proceeding for the purpose of corroborating the opinion of a person as to the speed of an object based upon the visual observation of the object by such person.

(b) Notwithstanding the provisions of subsection (a) of this section, the results of a radio microwave or other electronic speed-measuring instrument are not admissible in any proceeding unless it is found that:

(1) The operator of the instrument held, at the time the results of the speed-measuring instrument were obtained, a certificate from the North Carolina Criminal Justice Education and Training Standards Commission (hereinafter referred to as the commission) authorizing him to operate the speed-measuring instrument from which the results were obtained.

(2) The operator of the instrument operated the speed-measuring instrument in accordance with the procedures established by the commission for the operation of such instrument.

(3) The instrument employed was approved for use by the commission and the Secretary of Crime Control and Public Safety pursuant to G.S. 17C-6.

(4) The speed-measuring instrument had been calibrated and tested for accuracy in accordance with the standards established by the commission for that particular instrument.

(c) All radio microwave and other electronic speed-measuring instruments shall be tested for accuracy by a technician possessing at least a Second Class Radiotelephone License from the Federal Communications Commission within a period of six months prior to the alleged violation. A written certificate by such technician showing that the test was made within the required period and that the instrument was accurate shall be competent and prima facie evidence of those facts in any proceeding referred to in subsection (a) of this section.

(d) In every proceeding where the results of a radio microwave or other speed-measuring instrument is sought to be admitted, judicial notice shall be taken of the rules approving the use of the models and types of radio microwave and other speed-measuring instruments and the procedures for operation and calibration or measuring accuracy of such instruments, when such rules are filed with the Attorney General in accordance with General Statutes Chapter 150A."

Sec. 4. This act shall become effective on July 1, 1982.

In the General Assembly read three times and ratified, this the 23rd day of June, 1980.

APPENDIX E

S. R. 970

RESOLUTION 97

A JOINT RESOLUTION AUTHORIZING THE LEGISLATIVE RESEARCH COMMISSION TO CONTINUE ITS STUDY OF THE USE OF RADAR AND OTHER ELECTRONIC DEVICES FOR THE DETECTION OF MOTOR VEHICLE SPEED.

Whereas, Resolution 71 of the 1979 General Assembly authorized the Legislative Research Commission to conduct a study of the use of radar and other electronic devices for metering motor vehicle speed and to report to the 1980 Session; and

Whereas, the National Highway Traffic Safety Administration and the National Bureau of Standards will be promulgating radar performance, maintenance, calibration, and operator training and certification program guidelines near or after the adjournment *sine die* of the 1979 General Assembly; and

Whereas, although the Legislative Research Commission has arrived at recommendations for consideration by the 1979 General Assembly in its 1980 Session, it would be in the public interest if the study could be extended to report to the 1981 General Assembly to allow the Radar Study Committee to consider the federal guidelines and other developments after the 1980 Session;

Now, therefore, be it resolved by the Senate, the House of Representatives concurring:

Section 1. The Legislative Research Commission is authorized to continue the study that was authorized by Resolution 71 of the 1979 General Assembly.

Sec. 2. The Legislative Research Commission may make its report, with findings and recommendations, to the 1981 General Assembly.

Sec. 3. This resolution is effective upon ratification.

In the General Assembly read three times and ratified, this the 25th day of June, 1980.

APPENDIX F ELECTRONIC SPEED DETECTION AND CERTIFICATION PROGRAM

PROJECTED COSTS: FISCAL YEAR 81-82

DEPARTMENT OF JUSTICE

PERSONAL SERVICES:

Regular Salaries

Standards Division Administrative Officer II (1)	\$ 21,593	
Standards Division Clerk/Typist III (1)	9,185	
NC Justice Academy Instructor/Coordinator (3)	61,677	
NC Justice Academy Duplicating Operator (1)	9,185	
	<u>\$101,640</u>	\$101,640.00

FRINGE BENEFITS:

Standards Division

FICA	\$ 2,261	
Retirement	3,256	
Med. Ins.	726	
	<u>\$ 6,243</u>	6,243.00

NC Justice Academy

FICA	\$ 5,151	
Retirement	8,159	
Med. Ins.	1,320	
	<u>\$ 14,630</u>	14,630.00

TRAVEL EXPENSE:

Standards Division	\$ 2,400	
NC Justice Academy	13,500	
	<u>\$ 15,900</u>	15,900.00

TOTAL PERSONAL SERVICES:

15,900.00
\$138,413.00

APPENDIX F

COMMODITIES:

NC Justice Academy Vehicle Supplies	\$ 9,900	
NC Justice Academy Educational Supplies	5,280	
NC Justice Academy Office Supplies	440	
NC Justice Academy Postage	704	
Standards Division Office Supplies	330	
Standards Division	792	
	<u>\$17,446</u>	\$ 17,446.00

ITEMS OF DIRECT COSTS:

NC Justice Academy Contractual Services (Part-time Instructors)	\$13,750	
Standards Division PIN Computer Costs	3,300	
	<u>\$17,050</u>	<u>\$ 17,050.00</u>

TOTAL ESTIMATED COSTS:

\$172,909.00

DEPT. OF CRIME CONTROL AND PUBLIC SAFETY

PERSONAL SERVICES:

Clerk/Typist III

Regular salary	\$ 9,185	
FICA	611	
Retirement	887	
Medical insurance	396	
	<u>\$11,079</u>	\$11,079.00

COMMODITIES:

Radar and VASCAR equipment

4 ea. of Model K-55 @ \$1,500/unit	\$ 6,000	
4 ea. of Model KR-11 @ \$2,000/unit	8,000	
12 ea. of VASCAR @ \$1,500/unit	18,000	
Test and support equipment and Components (frequency meters, diode guides, assimilator and power supply units, etc.)	17,500	
	<u>\$49,500</u>	<u>\$49,500.00</u>

TOTAL ESTIMATED COSTS:

\$60,579.00

SESSION 19 81

APPENDIX G

INTRODUCED BY:

Referred to:

1 A BILL TO BE ENTITLED
2 AN ACT TO APPROPRIATE FUNDS FOR POLICE TRAFFIC RADAR AND
3 VASCAR UNIT TESTING AND OPERATOR AND INSTRUCTOR TRAINING
4 AND CERTIFICATION.
5 The General Assembly of North Carolina enacts:
6 Section 1. There is appropriated from the General
7 Fund to the Department of Justice, in addition to all other
8 funds available, the sum of One Hundred Seventy-Two Thousand
9 Nine Hundred and Nine Dollars (\$172,909) for fiscal year 1981-
10 82 for the purpose of carrying out the provisions of Chapter
11 1184 of the 1979 Session Laws.
12 Sec. 2. There is appropriated from the General Fund
13 to the Department of Crime Control and Public Safety, in
14 addition to all other funds available, the sum of Sixty Thousand
15 Five Hundred Seventy-Nine Dollars (\$60,579) for fiscal year
16 1981-82 for (a) the purchase of traffic radar and vascar units
17 and test and support equipment therefor and (b) an additional
18 clerk/typist III in the Highway Patrol Training Center. For
19 the purposes of this section, the Department of Crime Control
20 and Public Safety shall not be subject to the provisions of
21 G.S. 143-129.

22 Sec. 3. This act shall become effective on July 1,
23 1981.

INTRODUCED BY:

Referred to:

1 A BILL TO BE ENTITLED
2 AN ACT TO CHANGE THE EFFECTIVE DATE OF THE STATUTORY
3 AUTHORIZATION FOR POLICE TRAFFIC RADAR AND VASCAR
4 INSTRUCTOR AND OPERATOR TRAINING AND CERTIFICATION.
5 The General Assembly of North Carolina enacts:
6 Section 1. Section 4 of 1979 Session Laws Chapter
7 1184 is rewritten to read:
8 "Sec. 4. Sections 1 and 2 of this act shall become ef-
9 fective on July 1, 1981. Section 3 of this act shall become
10 effective on July 1, 1982. This section is effective upon
11 ratification."
12 Sec. 2. This act is effective upon ratification.

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