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Speed-Watch

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COVER

Perhaps the major innovation in traffic law enforcement during the past half century is the advent of the speed-watch and the radar speedmeter to measure speeds of passing cars. The speed-watch, featured in our article on page 3, is shown here in operation by Patrolman Charles Smith of Troop B. Cover photo and those illustrating article were taken by Corporal W. E. Saunders of the State Highway Patrol.

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THE CLEARINGHOUSE

Accountants and Finance Officers Meet

The annual schools for county accountants and municipal finance officers will be held by the Institute of Government in Chapel Hill this month and next. County accountants will meet April 24-26, and municipal finance officers will meet May 9-11. J. Alexander McMahon of the Institute of Government staff will be in charge.

Tax Supervisors and Collectors Convene

The North Carolina Tax Collectors' Association will hold its annual meeting in Chapel Hill on April 18 and 19. Henry W. Lewis, assistant director of the Institute of Government, will be in charge of local arrangements.

A five-day school for new tax supervisors has been announced for May 14-18. Mr. Lewis will be in charge of this school also.

Local Government Notes

In **Winston-Salem** the possibility of seeking legislation which would enable the city to enact a city payroll tax has again been suggested by Mayor Marshall Kurfees.

Taxes are *cut* sometimes. In January, the **Lucama** town commissioners lowered the town tax rate from 80 cents per $100 valuation to 50 cents for 1956.

Charlotte's new auditorium and coliseum has shown an operating profit of some $28,000 in the four months of operation since opening in early September of last year. Gross income from the $4,698,000 facilities was a little over $50,000. Cost of the buildings and depreciation are not included in the operating profit statement.

Raleigh has sold part of its old city farm property to the International Paper Company, which will build a milk carton fabrication plant on the site. Other industrial firms have expressed interest in other parts of the property, and it is expected that the city will receive some $200,000 from the sale of the full tract.

Also up for consideration again in **Raleigh** is a site for a new city hall.

OLDEST SHERIFF

A reader has disputed the designation of Sheriff C. J. McDonald of Moore County as "the state's senior sheriff in point of service," in our February issue. He declares that Sheriff J. K. Reid of Washington County has served continuously since March, 1923, and had served prior to that as deputy to his father. Our apologies to Sheriff Reid.

Are there any other claimants to the title?

The planning commission has listed six possible locations, and the council is expected to narrow the choices in the near future.

The city-county planning commission, representing **Forsyth County** and **Winston-Salem,** has recommended the establishment of a civic and cultural center on a 26-acre tract now owned by the city. The tentative plan proposed by the commission provides for several groups of buildings and facilities. One group would provide office and gallery space for art groups such as the Little Theater, Symphony Association, Civic Music, and the Arts Council. Another group might provide facilities for the Chamber of Commerce, automobile clubs, United Fund, Boy Scouts, Girl Scouts and similar organizations. Still another section would house the American Legion, the Elks, and numerous other women's clubs, fraternal organizations, and professional associations. A central auditorium, kitchen, and parking areas would serve all the organizations and offices in the center.

The **Asheville** City Council has approved plans for securing the services of an engineering firm to survey airport sites in Buncombe County. The special survey is expected to develop information necessary for the planning of new airport facilities for Asheville.

The Civil Aeronautics Administration has allocated $298,825 to the **Greensboro-High Point** Airport Authority to match local funds. The total amount will be spent for the purchase of land for a new administration building site and for the construction of the administration building itself. Construction of the administration building will be the first step in a four-year program of improvements designed to make the airport one of the best in the state.

Water Committee

Greensboro city councilman Victor Higgins has been named new chairman of the Seven-City Water Committee which is seeking more adequate sources of water supply for seven Piedmont cities. An engineering survey is planned and is expected to show that the only source available will be the Yadkin River. The seven cities represented are **Greensboro, Lexington, Thomasville, High Point, Burlington, Kernersville,** and **Winston-Salem.**

Reidsville voters have approved a $100,000 bond issue to finance improvements in the water supply system.

In an election held in early March, the voters of **Greensboro** approved a bond issue of $7,650,000 for water and sewer improvements, new streets, bridges, and improvements on city yards. A proposed issue of $1,900,000 for additional funds to be used in the construction of the city's memorial auditorium was rejected by a narrow margin. As a result, the design of the proposed auditorium is being reconsidered.

Monroe and **Raleigh** have adopted fire prevention codes. **Asheville** has been advised that the adoption of such a code is necessary to keep its Class 4 fire insurance rating.

The city attorneys for **Winston-Salem** have advised against the erection of an Easter Crucifixion scene on the lawns of the city hall. A suggestion had been made that the city appropriate money for the purpose and the attorneys were asked if the expenditure would be proper. In commenting on the proposal they said:

> "Under the Constitution of the United States, every state and its political subdivisions, such as municipalities, are required 'to be a neutral in its relations with groups of religious believers and non-believers.' . . . Therefore, we have come to the conclusion that . . . it would be a violation of law for the city to adopt and carry out this proposal. . . ."

Greensboro's police chief, Jeter L. Williamson, made a survey of local doctors in connection with a pro-

(Continued on page 10)

PUBLIC PURCHASING

By WARREN JAKE WICKER
Assistant Director, Institute of Government

Carolinas' Chapter of NIGP Meets In Charlotte

Members of the Carolinas' Chapter of the National Institute of Governmental Purchasing met in Charlotte on March 9 to hear two guest speakers and discuss current purchasing problems. Principal speaker was Clifton Mack, Commissioner of the Federal Supply Service, General Services Administration, Washington, D. C. He reviewed briefly the organization of the Federal Supply Service and noted that it, like any central purchasing organization, had to show a saving in purchasing and do a better job of procurement to justify its existence. Otherwise it would be just another agency. Centralization, he said, is not the goal. The purpose is efficient purchasing.

He reminded the purchasing agents that they were in a better position than any other group of governmental officials to do "a real job for the taxpayer." Outlays for materials, equipment and supplies usually stand next to salaries and wages in size of governmental expenditures. As a result, careful and efficient administration of the purchasing function can result in substantial savings for taxpayers.

Mr. Mack also pointed out that the role of the governmental buyer is different from that of the average buyer in business and industry. The governmental buyer is buying for *use*, while the private buyer is usually buying for resale or for fabrication. This fact affects both the procedure to be used and the specifications which must be drawn.

In conclusion, he stressed the importance of property control. The control of inventory together with the ability to see the possibility of transferring surplus property, he said, are essential to efficient purchasing.

Albert H. Hall, also of Washington, D. C., and Executive Vice President of the NIGP, discussed the current work of the organization with those present. He pointed out that the NIGP was "dedicated to raising the standards of governmental buying" and that in this effort the NIGP cooperated fully with other purchasing organizations and various governmental agencies.

He reported that legislation concerned with excise tax exemptions and surplus property which is being sponsored by the NIGP and several other county and municipal associations seems assured of passage in the present session of Congress. The excise tax exemption bill provides for each city, county, or other governmental body to be assigned an excise tax exemption number. This number could be printed on all purchase orders and thus eliminate the need for completing an excise tax exemption certificate. Such a procedure would save much time for purchasing officials.

The surplus property legislation is designed to permit counties and cities to buy surplus federal property at negotiated prices, rather than at auction as is presently the case. Thus cities and counties would have an opportunity to purchase surplus property before it is turned into private surplus channels.

R. Powell Black, city manager of Aiken, S. C., was in charge of the program and led the discussion following the talks by the guests. Problems discussed were: controlling the amount of time taken by salesmen, the purchase of automobile tires, the use of decals, identical bids, sewer solvents, warehousing operations, and and the purchase of gasoline and oils.

During the business session, presided over by President Aaron C. Shepherd, city purchasing agent for Winston-Salem, J. McDonald Wray of Charleston, S. C., was elected secretary-treasurer to serve until 1957.

The Chapter will hold its next meeting in the early fall.

Bid Deposits

North Carolina statutes (G.S. 143-129) require a bid deposit of 5 per cent on formal contracts let by cities, towns, and counties. The deposits may be submitted in three forms: cash, certified checks, and bid bonds. What do bidders and purchasing officials think of this requirement? To find the answer, and to secure information about the operation of the bid deposit requirement, a questionnaire was recently mailed to purchasing officials throughout the state. From the replies received, and based on experiences during 1955, the answer to the above question may be summarized as follows:

1. Bidders doing business with North Carolina cities, towns, and counties accept the deposit requirement as a necessary part of the normal bid and contract procedure and object to it only infrequently. Most of those replying had received no comments from vendors about the deposit. A few had received scattered complaints. On the whole, small local firms raised more objections than larger firms with national distribution.

2. Relatively few bids have been rejected because vendors failed to include the deposit and, in the opinion of the purchasing officials, very few vendors have failed to submit a bid because of their objection to the requirement. In most of the governments reporting, no bids were rejected on this basis during 1955. Altogether, it appears that three to four per cent of bids received are not considered because of the failure to include a deposit. Some officials reported that a few vendors had failed to submit a bid at all because of objections to the requirement.

3. Almost three-fourths of all bid deposits are submitted in the form of certified checks. Bid bonds are the next most frequently used device and cash deposits stand third in frequency of use. All the governing units reporting had received deposits in the form of certified checks, but less than half had received deposits in the form of bid bonds or in cash.

(Continued on page 10)

SPEED - WATCH

Modern Counterpart of an Old Device

By
Zebulon D. Alley,
Assistant Director of the Institute of Government

Introduction

A defendant was convicted of speeding on evidence obtained with a scientific speed timing device. He appealed, contending such evidence was inadmissible. The court said:

> "We cannot say as a matter of law that the evidence would not justify the judge in coming to the conclusion that the . . . [device] would be useful in determining the speed of the car. Indeed it would seem desirable to have some machine whose action being dependent upon the laws of nature would record the speed of a moving object."

While this might well be a quotation from a recent speed-watch or radar case, in reality it is the language of the Massachusetts Supreme Court some 46 years ago (1910) in the case of *Commonwealth v. Buxton.*[1]

It may come as a surprise to learn that controversial scientific speed timing devices have been appearing on the motoring scene since the day of the first horseless carriage, yet this is true. The history of the efforts of law enforcement officers to find dependable devices with which to obtain evidence of speed is an interesting one. As we shall see, it begins with the officer equipped with a stop watch in 1902, and evolves to the officer equipped with a speed-watch or radar speedmeter in 1956.

While the early motor vehicles traveled quite slowly when compared to those of today, their top speeds of 30 to 40 miles per hour were very dangerous on the narrow, unpaved roads of that time. As more and more accidents were caused by speeding, officers faced the necessity of finding efficient and accurate methods of ascertaining speed—methods which would result in evidence admissible in court.

Development of Speed Measuring Devices

No doubt the first evidence to be presented in speeding cases was the estimate of officers themselves. While an estimate was admissible in evidence, it was open to attack on the ground that it was not an accurate measure. In the search for better means of obtaining evidence of speeding, a logical instrument for the police officers to utilize was the stop watch, long known as a completely reliable precision instrument.

The earliest reported speeding cases involving the use of stop watches appeared in England, where such evidence was accepted as early as 1906.[2] An even earlier English case is reported in which not a stop watch but an ordinary watch with a sweep second hand was used. This was the case of *Gorham v. Brice*,[3] decided in 1902. In those cases the officer merely checked the motorist over a measured distance and calculated his speed. So long as the watch was not shown to be inaccurate on the particular occasion, no difficulty was experienced in introducing this evidence.

Possibly the first American use of the stop watch in the calculation of motor vehicle speed, was that described in a recent issue of *The Saturday Evening Post.* In an article, "Traffic is a Monster," by Rufus Farman, the following description appeared:[4]

> "On the wide roads leading from the Bronx into Westchester County, motorists would 'tune up to forty and fifty miles an hour and laugh at pursuing bicycle police.' At this point, [1903] Police Commissioner William McAdoo introduced perhaps the first 'scientific' speed trap. The system, put to work along the Hudson drives, consisted of three dummy tree trunks set up at one-mile intervals along the roadside. A policeman equipped with a stop watch and a telephone was concealed inside each fake tree.
>
> "When a car sped past the first station, the policeman telephoned the exact time to the officer in the next tree. The second officer set his stop watch accordingly. When the car went by his post, he computed its speed for the mile. If this was above the limit, he telephoned the policeman in the third tree, who lowered a pole across the road and stopped the car. Of 3200 cars that passed in a month, 140 were stopped and the drivers were warned. 'A warning is enough,' wrote one commentator. 'Offenders do not care to monkey twice with this automatic buzz-saw.' "

While this device was more accurate and dependable than a mere estimate, evidence derived with it was open to objection as hearsay, since each officer would have had to testify as to what was said to him over the telephone. In addition, there was the need to positively identify the offender in court. For instance in the example set out above, neither of the three officers could observe the vehicle in question over the entire three mile distance. It would seem that these drawbacks were recognized, since according to the article, no prosecutions based on this evidence were attempted. Even today in radar and speed-watch cases, the officer must testify that he observed the vehicle through the clocking zone and that the defendant was operating the vehicle in question.

Apparently the first single unit scientific device to be used in the United States was the one leading to the Massachusetts case of *Commonwealth v. Buxton*, mentioned earlier. Strangely enough, the device to which the court referred, a "photo-speed recorder," worked on exactly the same principle as the "speed-watch" in use today on North Carolina highways—that distance, divided by the time it takes to travel that distance, equals speed.

The "photo-speed recorder" was a camera with a stop watch attachment. With the camera mounted in a fixed position, two photographs were taken of the vehicle from behind, the shadow of the watch hand being superimposed on the plate. The difference in size of the object in the two pictures indicated how far it had traveled, and the stop watch measured the time it had taken to travel that distance. With the present day "speed-watch" the distance is always 132 feet, the distance between two rubber tubes. In both cases, time is measured by the same precision instrument, the stop watch. It would seem that the

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1. 205 Mass. 49, 53, 91 N.E. 128, 129 (1910).
2. Plancq v. Marks, 94 L.T. 577, 22 T.L.R. 432 (1906).
3. 18 T.L.R. 424 (1902).
4. Jan. 28, 1956, p. 82.

difficulty of explaining how distance could be measured by photographs limited the use of the "photo-speed recorder," since no other case based upon evidence secured with it appears in the reports.

Use of Speedometer

The early methods of ascertaining speed had one thing in common: the officer in each instance was on foot, while the vehicle being timed was moving. This raised the problem of apprehending the speeder.

When the first police cars and motorcycles were equipped with speedometers, this problem was solved. The officer could check the speed of a motorist with a reasonably accurate instrument and, if a violation occurred, apprehend him. Speedometers have now been in common use in motor vehicles for more than 40 years.[5] Speedometer readings have long been accepted by courts as valid evidence of speeding violations, if the speedometer was shown to have been accurate on the occasion in question. In a Washington case decided in 1917, *City of Spokane v. Knight*,[6] the court said: "Speedometers, like other machines, may get out of order; but, where they are tested regularly, they may be relied upon with reasonable certainty to determine accurately the rate of speed at which a machine is driven."

Through the years, the speedometer has been the mainstay of the traffic officer in securing evidence of speeding violations. Untold numbers of speeders have been convicted on evidence secured with it. Rarely has such evidence been questioned; it has never been questioned in North Carolina.

Speedometers have also been used in connection with cameras. The North Carolina State Highway Patrol has made limited use of a device which is called a "speed clocking camera." A description of this device appeared in an article by Basil L. Sherrill entitled "Scientific Enforcement," in the May, 1954, issue of *Popular Government*.[7]

5. Commonwealth v. Parish, 138 Pa. Super. 593, 10 A. 2d 896 (1940).

6. 96 Wash. 403, 405, 165 P. 105, 106 (1917).

7. "The latest scientific enforcement device adopted by the Patrol is a speed-clocking camera . . . The 35 millimeter camera is bolted to the roof of a patrol car, with the lens against the windshield. When a button is pressed by the patrolman, either still or a series of motion pictures can be taken. The pictures will show not only the car ahead and its license number, but also the road, signs alongside the road, the patrol car speedometer, the time and date."

Speed-Watch and Radar

As the North Carolina motor vehicle population increased from 150,558 in 1921, to 1,384,760 in 1953, it became more and more apparent that officers in patrol cars could check only a small percentage for speed violations. They were handicapped by crowded highways which often made it dangerous or impossible to get into a checking position behind a suspected violator. The solution to this difficulty came with the advent of the first two practical stationary speed timing devices, the radar speedmeter and speed-watch.

While utilizing both, the North Carolina State Highway Patrol has decided on the speed-watch rather than the radar speedmeter for its major effort. As between the two, there is no great difference in accuracy and dependability, but the principle of the speed-watch is simpler and it was chosen for that reason.

The most important part of the speed-watch is an ordinary stop watch, with which most people are familiar. The electrical circuit which actuates the stop watch is a very simple one. This being true, it was hoped that the courts would quickly come to understand the device and recognize it as an accurate instrument with which to measure the speed of motor vehicles. To a large degree this has been the result. To date no great trouble has been experienced in introducing speed-watch evidence, although from time to time expert testimony has been introduced to explain it.

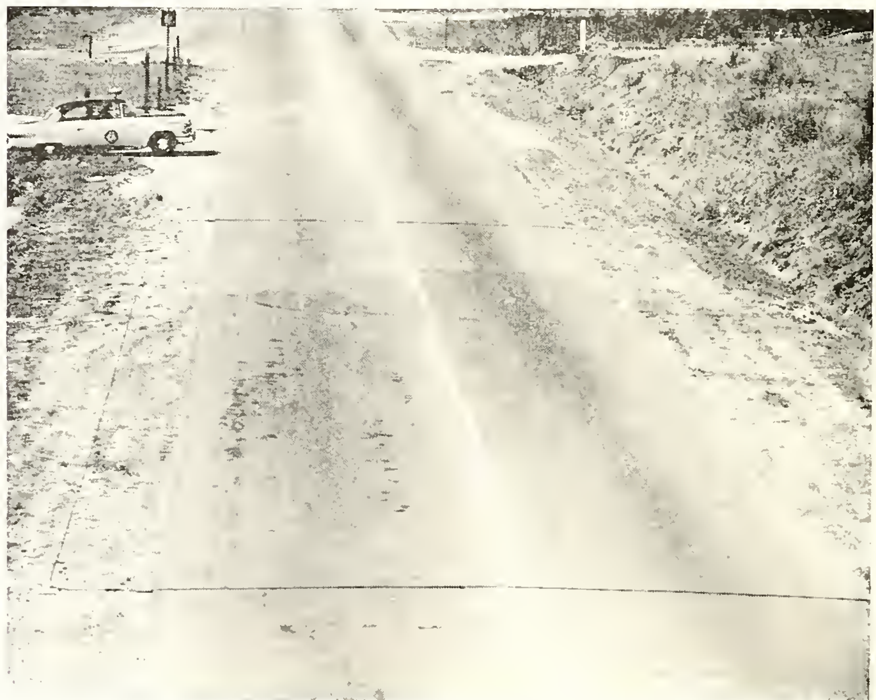
The North Carolina Highway Patrol has five radar speedmeters, one for each of the five troops. The first ten speed-watches were purchased by the Patrol in September of 1953. By January of 1954 there were sixty. Since that time these sixty speed-watches and five radar speedmeters have been in almost constant daily use and have brought about over 50,000 convictions. In addition, twenty-three North Carolina cities and towns are using the speed-watch, while many others are using the radar speedmeter.

This article being principally concerned with the legal aspects of the speed-watch, a simple description and explanation of the device would appear proper at this point. A more complete description and explanation may be found in this same issue.

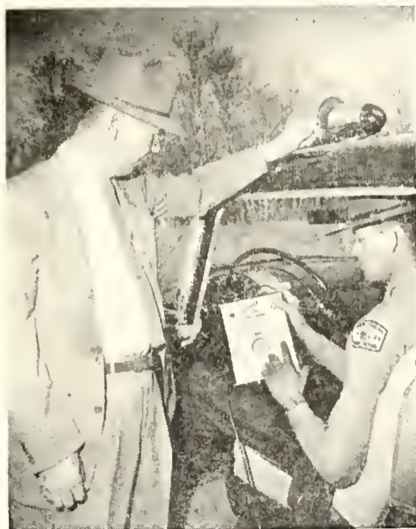
Operation of Speed-Watch

The speed-watch works on the proven principle that distance divided by time equals speed. It is composed of the following: two rubber tubes stretched across the highway 132 feet apart; a metal box containing a mercury switch at the end of each tube; a cable connected to each of these switch boxes running to a patrol car located a short distance away; and, in the patrol car, a small control box together with a 7-1/2 volt dry cell battery.

When the officer sees a vehicle ap-



A complete speed-watch installation



Pfc. L. H. Kirby shows Mr. G. A. Jones of Garner the speed at which he was clocked.

proaching, he throws a switch which activates an electrical circuit connected to the first tube. When the front tires of the vehicle cross the first tube, air in that tube is forced against mercury in the switch box located at the end of the tube. The mercury connects two electrical contacts and a charge of electricity flows to the control box. There a relay is closed, and a small electro-magnet (called a solenoid) forces a metal lever down onto the stem of the stop watch. This starts the watch.

After the vehicle has set the watch in motion by crossing the first tube, the operating officer throws the switch to activate the second tube. This action also releases the metal lever from the watch stem, and the watch continues to run. When the vehicle crosses the second tube, its mercury switch is closed and the lever is again depressed, stopping the watch. To clock a vehicle coming from the opposite direction, the above procedure is merely reversed, since pressure on either tube depresses the watch stem.

The rubber tubes are always placed across the highway exactly 132 feet apart. This being true, the manufacturers of the speed-watch have ascertained how fast a vehicle must travel to go 132 feet in any given number of seconds or fractions of seconds, These speeds are set out on a dial around the watch which is mounted in the center of the control box. Therefore, when the watch hand points to the number of seconds which have elapsed between the time the vehicle crossed the first and second tubes, it also points to the speed at which the vehicle must have traveled to have gone 132 feet in that amount of time. The shorter the amount of time elapsed, the faster the vehicle must have traveled. For instance, when the watch stops at 1 second, the hand points to 90 miles per hour on the outside dial. When it stops at 3 seconds, the hand points to 30 miles per hour.

In order to insure that the speed-watch is working properly, it is checked each time before operation. This checking process requires two patrolmen. After making sure that the two tubes are exactly 132 feet apart, the officers check the electrical contacts and the stop watch. The device is then ready to be tested. One of the officers drives his patrol car, equipped with a recently calibrated speedometer, across the tubes at various speeds. The speeds recorded by the speed-watch are then compared with the speedometer readings. If they correspond, the speed-watch is ready for operation. After operation the speed-watch is again checked in the same manner.

Thus speed enforcement measures have evolved from the personal estimate of the officer on foot, to the first attempts at scientific detection, to the officer in a patrol car with a calibrated speedometer, and back to the scientific device. Today an officer can check *all* the traffic going in one or both directions, thus ascertaining the speed of far more vehicles than with the speedometer equipped patrol car. Many dangerous drivers are taken off the highways by the speed-watch—potential killers who otherwise might bring tragedy to the lives of innocent people.

Use of the speed-watch has resulted in the apprehension of many violators who might have gone undetected by a cruising patrolman. Oddly enough it has even been used to catch the very slow driver who often causes accidents. Its most important effect, however, has been the *prevention* of speeding. Prevention of traffic violations and the elimination of highway accidents are announced goals of the North Carolina Highway Patrol, not necessarily the apprehension and conviction of *every* violator.

In furtherance of these goals, signs with the warning "speed electrically timed" have been posted, dummy rubber tubes have been placed in conspicuous places, and newspaper, radio and television publicity has been utilized. It is interesting to note that the warning signs have been put out at approximately 5 mile intervals throughout the entire state highway system, on both primary and secondary roads. In addition to the willful violators, many inadvertent ones check their speedometers and slow down on seeing signs or dummy tubes. These measures, plus the ever present possibility of encountering a speed-watch, are causing potential violators to drive more slowly today.

This, then, is the speed-watch. Its mechanism is simple; its principle, time-honored. The heart of this device is an ordinary spring-driven stop watch. The electrical current does not run the watch, but merely starts and stops it. If the current is too weak to do this, there is no question of error in the speed shown, since the watch simply will not operate. If the officer fails to throw the switch to the "first tube" position, the watch will not start and no clocking takes place. If, after a vehicle crosses the first tube, the officer fails to throw the switch to the "second tube" position, the watch continues to run, and speed indicated is slower and slower. The speed-watch is not a "trap" but a life and property saving device.

Evidentiary Problems

In order to have the results of scientific or mechanical apparatus admitted in evidence, the person presenting it must take the following steps: First, he must either put an expert on the stand to explain and to testify to the scientific soundness and accuracy of the machine, or the court must take "judicial notice" of this; second, he must prove that the device was in good working order at the time in question; and third, he must show that it was properly operated on the particular occasion by a trained person. From time to time, in lower courts in North Carolina expert testimony has been introduced to explain the speed-watch. This is necessary when a device is new and untested, for otherwise neither the court nor the jury would know how much weight, if any, to give to such evidence. It is submitted, however, that the speed-watch is no longer in that category, for it is neither new nor untested.

In an article on radar, which recently appeared in the *North Carolina Law Review*,[8] Professor Herbert R. Baer of the University of North Carolina Law School had this to say about the admission of the results of scientific apparatus:

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8. Baer, "Radar Goes to Court," 33 N.C. Law Review, 355, 380, n. 90.

(Continued on inside back cover)

The Speed-Watch's Operation: A Detailed Description

A speed-watch is composed of the following parts: two rubber tubes—one end of each tube being plugged, the other end connected to a mercury switch; weights to hold the tubes in place; two mercury switches; a control box, in which is mounted an ordinary spring driven stop watch which measures six seconds or any part thereof; a 7½ volt dry cell D.C. battery; and cables for connecting the mercury switches to the control box and battery.

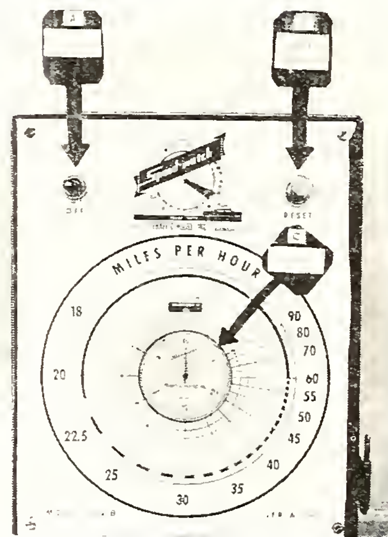
When the tubes are placed across the highway at right angles to it, they are spaced exactly 132 feet apart. This distance must always be the same since the speeds are calculated with reference to 132 feet. Weights are placed at the ends of each tube to hold them in place. The mercury switches are connected to the two tubes and on the same side of the road. The electric cable is plugged into each of the mercury switches, connecting them to the control box and battery, which may be kept in the officer's car or set beside the highway. If the control box is kept in the officer's car the cable may be quickly detached to allow immediate pursuit of a violator. This is the normal practice when an officer is working alone.

When a vehicle approaches, the officer throws a three-way toggle switch on the control box to the "first tube" position. (One position on the switch is for the first rubber tube and its electrical circuit, the middle position is "off," and the other position is for the second tube and its circuit.) When the switch is thrown to the "first tube" position, the circuit attached to the first tube is activated. Although the switch thrown by the officer activates the circuit, the connection to the control box is not complete until the vehicle crosses the tube. This negates any possibility of human error.

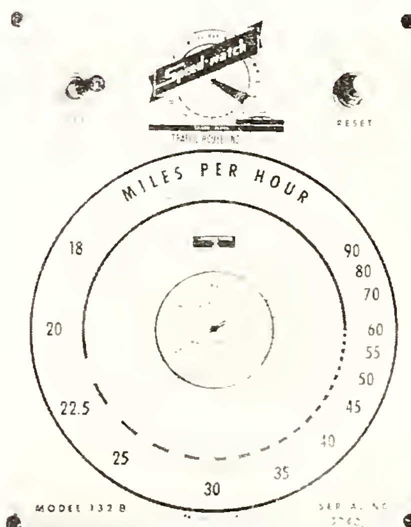
When the front tires of a vehicle pass over the first tube, air pressure forces mercury in a mercury switch against two electrical contacts. This closes the circuit from the first tube to the control box. The closing of the circuit allows a charge of electricity to flow from the battery to a magnetic relay switch inside the control box. When this relay is activated, it connects a small circuit inside the control box and at the same time disconnects the first tube circuit. The relay holds this small circuit closed until the officer throws the three-way switch again. Since the relay breaks the circuit to the first tube and its mercury switch, the rear tires of the vehicle have no effect.

The small circuit inside the control box runs from the battery through the relay to a small electromagnet called a solenoid. When activated, the solenoid forces a small metal lever down onto the watch stem, starting the watch. Once started, the watch runs free until the stem is released and pressed down again.

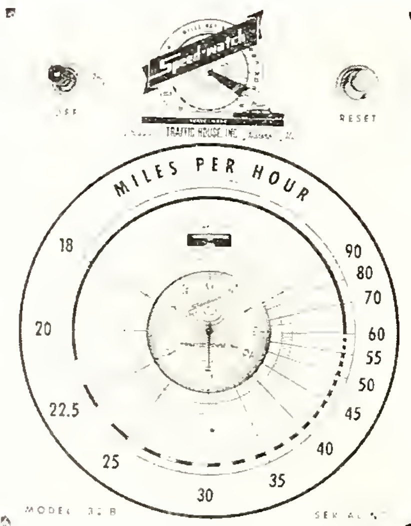
The length of time required for



The face of the speed-watch



Reading at 90 miles per hour



Reading at 30 miles per hour

the current to flow from the mercury switch to the control box is .000000267 seconds or less. The human reaction time, during manual operation of a stop watch, is much longer and the possibility for error considerably greater.

After the vehicle has passed over the first tube the officer throws the three-way switch to the "second tube" position. When the switch passes through "off" the current to the relay is turned off, the small circuit is broken, and the metal lever is withdrawn from the watch stem. This has no effect on the watch, which is powered by its own spring and continues to run. The second tube circuit is now connected to the relay, but that circuit is broken at its mercury switch so no electricity is flowing to the relay.

When the vehicle passes over the second tube, again pressure from the front tires forces the mercury against the contacts, closing the circuit. Again the relay switch closes, breaking the second tube circuit, closing the small circuit within the control box, and activating the solenoid. This time when the metal lever presses down on the watch stem the watch is stopped.

The precision built stop watch records the time in seconds and fractions of seconds it takes a vehicle to travel 132 feet, the distance between the two tubes. It is started and stopped by the pressure of the front tires on the tubes. The first time its stem is pressed, the watch starts. When the stem is pressed again it stops, showing the number of seconds and fractions of seconds which have elapsed. When the officer presses a "reset" button, the stem is pressed a third time and the indicator returns to zero. The watch is spring driven and must be hand wound.

If the officer wishes to clock a vehicle coming from the opposite direction, the above procedure is simply reversed. When he sees the vehicle approaching he throws the switch to the "second tube" position. This time when the vehicle crosses the number two tube the relay circuit is closed and the lever presses the stem to start the watch. After the vehicle has crossed the tube, the officer throws the three-way switch to the "first tube" position. This breaks the relay circuit and activates the number one tube circuit. When the vehicle crosses number one tube, the relay circuit is again closed, the stem pressed again and the watch is stopped.

The speed-watch works on the familiar principle that distance divided by time equals rate of speed. When the distance is measured in feet, and the time in seconds, these measurements must be converted into fractions of miles and fractions of hours, in order to determine speed in miles per hour. For example, the 132 feet between the tubes equals 1/40 of a mile, and 1 second equals 1/3600 of an hour. With the speed-

(Continued on inside back cover)

DEPOSITIONS BEFORE NOTARIES IN NORTH CAROLINA

[*The following article is a chapter of the* NOTARY PUBLIC GUIDEBOOK, *revised 1956, to be published by* THE INSTITUTE OF GOVERNMENT *in the near future.* ED.]

By
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Introduction

A deposition is a written statement taken under oath, before a notary public or other authorized official. It may be introduced into evidence upon any judicial hearing to which it is pertinent. It has the same force and effect that the oral testimony of the deposing witness would have in the trial of the action. The purpose of a deposition is to allow a party to obtain the testimony of a witness who is unable to attend court in person due to residence in a foreign country or state, confinement in prison, age or sickness, or any other of the reasons listed in G.S. 8-83. The authority of a notary public to take depositions, the manner in which they must be taken, and the manner in which they should be returned to the court for introduction at the trial are described herein.

Notary's Authority

The authority of a notary public to take depositions is provided by the following statutes: G.S. 10-4(a)—"a notary public commissioned under the laws of this State acting anywhere in this State may—(2) Take affidavits and depositions; (3) Administer oaths and affirmations. . . ." G.S. 8-71—"depositions may be taken by a notary public of this State or of any other state or foreign country . . . without a commission issuing from the court." To the same effect as the latter statute are G.S. 8-75 (depositions in justices' courts) and G.S. 8-76 (depositions before municipal authorities). G.S. 8-77—"In all actions for the purpose of trying the title to the office of the clerk of the superior court, register of deeds, county treasurer or sheriff of any county, it shall be competent and lawful to take the deposition of witnesses before . . . a notary public. . . ." Depositions for use in federal courts also may be taken before notaries public in North Carolina. Rule 28(a) of the Rules of Civil Procedure for the District Courts of the United States provides that within the U. S. or its territories or insular possessions depositions shall be taken before an officer authorized to administer oaths by the laws of the U. S. *or of the place where the examination is held.* North Carolina notaries have the authority to administer oaths by virtue of G.S. 10-4(a) (3), quoted above.

When Disqualified

No North Carolina statutes or cases which describe the circumstances by which a notary public is disqualified to take a deposition have been found. The rule generally followed in the United States is that the commissioner or notary taking a deposition must stand impartially between the parties to the action and that relationship to either party, no matter how remote, which would give rise to a presumption of bias or prejudice in favor of or against either party disqualifies him to act. Such disqualifying relationships would be, for example, kinship to either party or employment, other than to take the deposition, by either party, such as would create an interest, financial or otherwise, in the outcome of the case.[1] For example, it has been held that an employee of a mercantile firm is incompetent to take the deposition of his employer;[2] an attorney for a witness is disqualified to take his deposition on behalf of another party in another case;[3] an attorney employed by plaintiff's counsel to find witnesses is disqualified to take depositions of those witnesses;[4] an attorney's stenographer is disqualified to take client's deposition.[5] The disqualification of a notary to take a deposition may be waived by consent of the parties or by failure to object before trial.[6]

One possible exception to the disqualification rule is found in G.S. 10-4(c), which provides that "a notary public who is a stockholder, director, officer, or employee of a corporation is not disqualified to exercise any power, which he is authorized by this section to exercise, with respect to any instrument or other matter to which such corporation is a party or in which it is interested unless he is individually a party thereto." G.S. 10-4 is one of the sections which authorize notaries public to take depositions.

General Procedure[7]

For detailed discussion of each step, see following sections. Any party in a civil action or special proceeding may take the depositions of persons whose evidence he desires to use, without any special order therefor, unless the witness shall be beyond the limits of the United States.[8] The party must serve written notice upon the adverse party or his attorney, specifying the time and place the deposition will be taken and the name of the witness.[9] In certain cases, notice by publication is authorized.[10]

At the appointed time and place the person commissioned by the court to take the deposition, or a notary public, administers the oath to the witness and the examination begins. The party on whose behalf the deposition is taken, or his attorney, may question the witness orally or he may submit written questions. In either case, the adverse party or his attorney may cross-examine the witness orally or in writing. In some cases the questions and cross-questions are all written and are prepared by the parties or their attorneys in advance of the examination. When this method is used, the examination may be conducted by the commissioner or notary alone. During the examination, any objection should be made after the question and before the answer is given. The commissioner or notary should record all such objections but make no ruling thereon. The witness should answer all questions.

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1. See 3 WIGMORE, EVIDENCE § 803 (3d Ed. 1940).
2. Blumm v. Jones, 86 Tex. 492, 25 S.W. 694 (1894).
3. Clegg v. Gulf, C. & S. F. Ry. 127 S.W. 1098 (Tex. Civ. App. 1910), *aff'd.* 104 Tex. 280, 137 S.W. 109 (1911).
4. Testard v. Butler, 20 Tex. Civ. App. 106, 48 S.W. 753 (1898).
5. Wuerth v. Wuerth, 264 Mich. 640, 250 N.W. 520 (1933).
6. Williford v. Bailey, 132 N.C. 402, 43 S.E. 928 (1903); Kerchner v. Reilly, 72 N.C. 171 (1875); G.S. 8-82.
7. See McINTOSH, N.C. PRACTICE AND PROCEDURE IN CIVIL CASES § 984 (1929).
8. G.S. 8-71.
9. G.S. 8-72.
10. G.S. 8-73.

The entire examination must be written or typed in the presence of the witness by the commissioner or notary, or by a disinterested person under his control. Upon completion of the examination the deposition is read by the witness or is read to him, and he is given an opportunity to make any changes he wishes in order that the deposition will speak the truth. After all such changes have been made the witness signs the deposition in the presence of the commissioner or notary. Then that officer certifies and signs the deposition, and sends it in a sealed envelope to the court in which the action is pending. After giving the parties to the action one day's notice, the clerk or the judge holding the court opens and passes upon the admissibility of the deposition.[11] Any objections to the introduction of the deposition should be made by the parties or their attorneys, in writing, at this time. Having been opened and passed upon by the court, the deposition is legal evidence and may be introduced at the trial.

Notice to Parties

G.S. 8-72 requires that, in civil actions and special proceedings, written notice be given to the adverse party as to the time and place a deposition will be taken. This statute also prescribes the length of time notice must be given before the deposition is taken. It takes into account the distance from the residence of the party notified to the place where the deposition is to be taken and the availability of public transportation. In criminal actions, G.S. 8-74 provides that the solicitor or prosecuting attorney of the district, county or town in which the action is pending have ten days' notice of the taking of a deposition, but this section does not apply to the taking of depositions for use in courts of justices of the peace. Notice by publication in certain cases is authorized by G.S. 8-73. The giving of notice is the responsibility of the parties, not of the notary public taking the deposition, with one exception. G.S. 8-76 provides, in part: "if the person upon whom the notice . . . is to be served is absent from or cannot after due diligence be found within this State, but can be found within the county in which the deposition is to be taken, then . . . said notice shall be personally served on such person . . . by the notary taking such deposition. . . ." This section only applies to depositions taken on behalf of "any board of aldermen, board of town or county commissioners or any person interested in any proceeding, investigation, hearing or trial before such board. . . ." A failure to give proper notice prejudices the right to introduce the deposition into evidence but does not preclude the taking of it.

Time and Place of Taking

A deposition should be taken at the time and place named in the notice to parties. If not so taken, it is subject to a motion to suppress which may preclude its admission into evidence. However, the time or place of taking may be changed by agreement of the parties and slight changes which are not prejudicial to the adverse party will not invalidate the deposition. There is no requirement that depositions be taken at a neutral meeting place. They may be taken wherever the witness is located. For example, the depositions of the plaintiff's employees may be taken at the plaintiff's place of business.[12] The time of taking should be reasonable under the circumstances and as suitable as possible to the convenience of the parties and witnesses.

Power to Compel Attendance

North Carolina notaries have no direct authority to compel witnesses to appear and give their depositions. On the contrary, since G.S. 8-78 specifically limits the authority to subpoena witnesses to "commissioners to take depositions *appointed by the courts* of this State . . . and all persons *acting under a commission issuing from any court of record* in this State. . . ." [emphasis added] it seems clear that notaries do not have this power. The statute authorizing depositions to be taken before notaries, G.S. 8-71, distinguishes between depositions "taken on commission, issuing from the court" and depositions "taken by a notary public . . . without a commission issuing from the court." Furthermore, nothing in GENERAL STATUTES Chapter 10, *Notaries*, or Chapter 5, *Contempt*, gives notaries the power to punish for contempt or otherwise to enforce their orders. Where a witness fails to appear at the appointed time and place, therefore, the party desiring the deposition would have to take the matter before the court in which the action was pending.

Administering Oath

Although there is no specific directive in the deposition statutes (G.S. 8-71, *et.seq.*) that the deposing witness take an oath before testifying, it seems clear that this must be done if the deposition is to be admitted into evidence. The attitude of the law is well expressed in G.S. 11-1 as follows: "lawful oaths for the discovery of truth and establishing right are necessary and highly conducive to the important end of good government. . . ." After noting the solemnity with which oaths should be administered, Justice Reade for the Supreme Court said, "After this manner every witness in North Carolina must be sworn."[13] In a dictum in *Chesson v. Kieckhefer Container Co.*[14] the Supreme Court states, "the competency, in proper cases, of written depositions for the production of proof in civil cases is unquestioned. . . . In such cases, it sufficiently complies with the constitutional mandate [for trial by jury] if the testimony was taken *under oath* in the manner prescribed by law, with opportunity to cross-examine." [Emphasis added] A notary is authorized to administer oaths by G.S. 10-4(a)(3).

Examining Witness

Either the notary public before whom the deposition is taken, the counsel for the parties, or the parties themselves may examine the witness. In any case, the party against whom the testimony is taken must be allowed to cross-examine the witness.[15] Examination by a notary in the absence of the parties or their counsel should be accomplished by means of written interrogatories and cross-interrogatories submitted by the parties. If the parties are present or represented by counsel, the witness must be examined by them on oral or on written interrogatories and cross-interrogatories.[16] No North Carolina cases have been found which decide the validity of mixed oral and written examinations; *e.g.*, where the witness is given written questions and is cross-examined orally. In the absence of statutory or judicial prohibition, there is no apparent reason why such an examination should not be allowed, provided that it is fully recorded. The witness must answer questions put to him at the time the deposition is taken, however, since

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11. G.S. 8-71.

12. Bank v. Carr, 130 N.C. 479, 41 S.E. 876 (1902).

13. State v. Davis, 69 N. C. 383, 385 (1873).

14. 223 N.C. 378, 380, 26 S.E.(2d) 904, 906 (1943).

15. Sugg v. St. Mary's Oil Engine Co., 193 N.C. 814, 138 S.E. 169 (1927); Riverview Milling Co. v. State Highway Commission, 190 N.C. 692, 130 S.E. 724 (1925).

16. See Howell v. Solomon, 167 N.C. 588, 83 S.E. 609 (1914) (*written*) and Chippewa Valley Bank v. National Bank, 116 N.C. 815, 21 S.E. 688 (1895) (*oral*).

written statements prepared beforehand are not admissible.[17]

If the witness does not understand the English language, or if his understanding is limited, it is proper to employ an interpreter. He should be a disinterested party and should be sworn to translate the examination of the witness truthfully and accurately.[18] The translated testimony of the witness should be recorded.

Power to Compel Answers

A notary public does not have the power to compel a witness to answer questions. Notaries are excluded from the enumeration of persons given the authority to commit to jail any person "refusing to give his testimony on oath touching such matters as he may be lawfully examined unto," contained in G.S. 8-78. No statute gives notaries the power to punish for contempt. Unless they are taking a deposition under the authority of a court order or commission, they are not performing a function delegated by the court, but by statute, therefore do not have the inherent power of a court to punish for contempt. Since a notary public takes depositions under the authority of the statutes without an order of the court [Notary's Authority, *supra*], the authority of a judge before whom an action is pending is not defied by the refusal of a witness to give his testimony before a notary. It follows that the power of the court could not be invoked to punish such refusal as contempt of court.

When a witness refuses to answer questions the notary should follow the usual procedure in taking depositions, record the questions, the refusal of the witness to answer and the grounds, if any, upon which his refusal is based. The papers should then be forwarded to the court in which the action is pending for further action.

Objections to Questions

At the beginning or during the course of the examination of the deposing witness either party or his attorney may object to the conduct of the proceedings or to the questions or cross-questions which are asked.[19] The entire proceeding should be recorded, including all such objections. The notary taking the depositions should not rule on these objections, for that is the province of the clerk or judge.[20] It is important that all objections be recorded because a party may lose his right to except to the admission of such evidence at the trial or on appeal if the record fails to show that objection was made in apt time.[21]

Recording and Transcribing

The entire examination of the witness should be written down in his presence at the time it is held.[22] No North Carolina authority prohibiting the taking of a deposition in shorthand has been found. If a deposition is thus recorded, the stenographic copy should be transcribed before the deposition is signed and certified.[23] The recording of the proceedings may be done by someone other than the notary or the commissioner, but it must be done by a disinterested party.[24] If the deposition is reduced to writing by counsel for a party to the suit, it will be rejected.[25]

Signing and Certifying

"Since the writing is to stand as the witness' own words, and since there is always an indefinable coefficient of error in transcription, there should be given a final opportunity for correction by the *reading over* to or by the witness, of the writing as completed."[26] After the deposition has been approved by the witness, it should be sworn to and subscribed by him in the presence of the notary or commissioner taking the deposition.[27] Although this is not a statutory requirement and is not essential to the admissibility of the deposition, if it is otherwise regular and satisfactorily identified, it is much the better practice.[28] The commissioner or notary should then certify the deposition, sign it in his official capacity and affix to it his official seal.[29] It is not necessary that the notary's certificate state his non-kinship to the parties,[30] or negate any other disqualification, since the instrument properly signed and certified is presumed regular.[31]

Forwarding to Court; Other Papers

When a deposition has been completed in all respects, all papers or instruments referred to therein should be attached to it. If such additional papers or instruments are needed for more than one deposition, or if they are not within the control of the parties, exemplified copies may be used.[32] There is no statutory requirement that such papers be included with the deposition, but the Supreme Court has said that it is "the customary practice" and "the safer and better rule, as it lessens the opportunity for deception and fraud."[33]

The papers are then "sealed up by the commissioner or notary public and returned to the court. . . ."[34] It is suggested that the deposition and attached papers be sealed in an envelope with the names of the parties and the witness written thereon and this envelope then be enclosed in another envelope addressed to the clerk of the court in which the action is pending. The papers may be personally delivered or returned by mail. It has been held that a deposition was not invalidated because the attorney for the party offering it placed it in the mail for the convenience of the notary.[35]

Special Cases—Criminal Actions

Depositions may be taken for a defendant in criminal actions under the authority of G.S. 8-74. Although not specifically authorized to do so, there is no apparent reason why a notary public might not be appointed to perform this function. The statute reads, "it shall be the duty of the clerk to appoint some responsible person to take the deposition. . . ." The general procedure would be the same as in civil actions, except that "the solicitor or prosecuting attorney of the district, county or town in which such action is pending [must] have ten

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17. 3 WIGMORE, EVIDENCE § 787 (3d Ed. 1940).

18. 3 WIGMORE, EVIDENCE § 811 (3d Ed. 1940).

19. Jeffords v. Albemarle Waterworks, 157 N.C. 10, 72 S.E. 624 (1911).

20. Sugg v. St. Mary's Oil Engine Co., 193 N.C. 814, 138 S.E. 169 (1927).

21. Fleming v. A.C.L.R.R., 236 N.C. 568, 73 S.E. (2d) 544 (1952); Grandy v. Walker, 234 N.C. 734, 68 S.E.(2d) 807 (1951); G.S. § 8-82.

22. Chippewa Valley Bank v. National Bank, 116 N.C. 815, 21 S.E. 688 (1895).

23. JOHN, AMERICAN NOTARY AND COMMISSIONER OF DEEDS MANUAL § 288 (6th Ed. 1951); 3 WIGMORE, EVIDENCE § 804 (3d Ed. 1940).

24. Miles F. Bixler Co. v. Britton, 192 N.C. 199, 134 S.E. 488 (1926).

25. Mosely v. Mosely, 1 N.C. 631 (Conf. 522) (1804).

26. 3 WIGMORE, EVIDENCE § 805 (3d Ed. 1940).

27. Miles F. Bixler Co. v. Britton, 192 N.C. 199, 134 S.E. 488 (1926).

28. Riff v. Yadkin R.R., 189 N.C. 585, 127 S.E. 588 (1925); Boggs v. Cullowhee Mining Co., 162 N.C. 393, 78 S.E. 274 (1913); Murphy v. Work, 2 N.C. (1 Hayw.) 105 (1794); Rutherford v. Nelson, 2 N.C. (1 Hayw.) 105 (1794).

29. G.S. 10-9; G.S. 8-71. See 5 WIGMORE, EVIDENCE § 1676 b (3d Ed. 1940).

30. Younce v. Broad River Lumber Co., 155 N.C. 239, 71 S.E. 329 (1911).

31. Miles F. Bixler Co. v. Britton, 192 N.C. 199, 134 S.E. 488 (1926).

32. Jones v. Herndon, 29 N.C. (7 Ired.) 79 (1846).

33. In re Will of Clodfelter, 171 N.C. 528, 529, 88 S.E. 625, 625 (1916). 7 WIGMORE, EVIDENCE § 2104 (3d Ed. 1940).

34. G.S. 8-71.

35. Randle v. Grady, 228 N.C. 159, 45 S.E.(2d) 35 (1947).

days' notice of the taking of such deposition [so that he] may appear in person or by representative to conduct the cross-examination" of the witness. This statute does not apply to the taking of depositions in justice of the peace courts.

Same—Justices' Courts

The authority for taking depositions for use in justices' courts is provided by G.S. 8-75. The statute provides that "Any party in a *civil action* [emphasis added] before a justice of the peace may take the depositions of all persons whose evidence he may desire to use in the action . . .; such depositions may be taken by a notary public of this or any other state, or of a foreign country, without a commission issuing from the court." The proceedings in such a case "shall be in all respects as if such action were in the superior court." The deposition is returned to the clerk of the superior court of the justice's county, who must open and pass upon it before delivering it to the justice. No authority has been found for taking depositions for use in criminal actions pending in courts of justices of the peace.

Same—Municipal Authorities

G.S. 8-76 authorizes the taking of depositions of "all persons whose evidence may be desired" for use in 'any proceeding, investigation, hearing or trial" before "any board of aldermen, board of town or county commissioners." The deposition may be taken on behalf of the officials conducting the proceeding, etc., or by "any person" interested therein. "[S]uch depositions may be taken by a notary public of this State or of any other state or foreign country without a commission issuing from the court; and the notice and proceedings upon the taking of said depositions shall be the same as provided for in civil actions. . . ." This section provides one exception to the requirements for notice [see Notice to Parties, *supra*]. It provides, "if the person upon whom the notice . . . is to be served is absent from or cannot after due diligence be found within this State, but can be found within the county in which the deposition is to be taken, then, in that case, said notice shall be *personally served* [emphasis added] on such person by the commissioner . . . or by the notary taking such deposition. . . ." Presumably this means that personal service must be made by the commissioner or notary *of another state* when the witness is found outside of North Carolina, although no authority has been found which spells this out. The deposition and any other papers are returned to the clerk of the superior court of the county in which the proceeding is pending and must be opened and passed upon by him before being delivered to the authorities conducting the proceedings.

Same—Quo Warranto Proceedings

Depositions for use in quo warranto proceedings are authorized by G.S. 8-77, which provides, "In all actions for the purpose of trying the title to the office of clerk of the superior court, register of deeds, county treasurer or sheriff of any county, it shall be competent and lawful to take the deposition of witnesses before a commissioner . . . or a notary public, under the same rules as to time of notice and as to the manner of taking and filing the same as is now provided by law for the taking of depositions in other cases. . . ." Of course, if the office of the clerk is being tried the deposition should be returned to the court, not to the clerk, because "the judge holding the court, if the clerk is a party to the action, shall open and pass upon the same. . . ."[36]

36. G.S. 8-71.

Public Purchasing
(Continued from page 2)

4. Some 60 per cent of those replying to the questionnaire believe that the statutes should be changed to allow the governing body or the purchasing official to waive the bid deposit requirement in their discretion.

Among those who favored changing the statutes, about half would give the governing body the discretion to waive the requirement and the other half would give the purchasing official the power. These officials noted the extra paper work which the requirement imposes and believe that in most of the smaller purchases the deposit is not necessary for the protection of the government. A. B. Sansbury, city manager of Lumberton, pointed out that it is sometimes a burden on ". . . small firms operating on limited capital."

On the other side are the officials who think the deposit requirement is necessary for the protection of the buyer. Aaron C. Shepherd, city purchasing agent of Winston-Salem, wrote that if the deposits were not required ". . . there is great likelihood that small operators would submit bids and want to back out of the contract and thus cause the [governmental unit] a loss of time." He also pointed out that the governing body or the purchasing official would be subject to much criticism if the requirement were waived for some vendors and not for others.

A compromise solution to the problem of the paper work involved was suggested by Harry Weatherly, Guilford County Manager. He noted that Guilford has secured special legislation which permits the purchase of goods with a value of less than $2,000 without receiving formal bids. In this way, the deposit requirement is eliminated for a large majority of the county purchases.

[Note: A fuller report on the bid deposit questionnaire may be found in the February issue of the Institute of Government's PURCHASING BULLETIN.]

Local Government Notes
(Continued from page 1)

posal that ambulances be required to observe all regular traffic regulations. Ninety-eight doctors replied and 99 per cent of those replying said that the time saved by speeding ambulances did not make any difference between life and death in the majority of cases. Moreover, 63 per cent of the doctors felt that more patients were harmed than helped by the emergency runs. Ninety-three per cent of the doctors favored enactment of an ordinance requiring ambulances to observe all traffic laws.

Forsyth County and **Winston-Salem** have launched a program to eliminate duplications of street names in the city and county. The work is being done under the direction of the city-county planning commission, working with a committee whose members represent the city, the county, and a representative of the State Highway Commission. A study of the situation revealed that as many as nine different streets had identical names; e.g., a Park Drive, Park Street, Park Road, etc. Officials point out that as a result there is much confusion in the delivery of mail and danger that fire and police forces will be delayed in answering calls. In deciding as to which street among duplicates will retain its name, three factors will be considered:

1. The number of houses and other buildings served by the street.
2. The length of the street.
3. Whether one of the streets concerned is a logical extension of some other street.

PUBLIC SCHOOLS

By JOSEPH P. HENNESSEE
Assistant Director, Institute of Government

Federal Aid to Education

The battle over federal aid to education continues and today two federal aid bills grow where only one grew before. In a special message to Congress during January, the President asked for a school aid program under which the federal government would provide 1 1/4 billion dollars in direct grants to states for school construction over the next five years. The Kelley bill, already approved by the House Labor and Education Committee, would provide 1 3/5 billions in direct grants for school construction over the next four years. The principal difference in these two proposals lies in the manner in which the federal aid funds are to be divided among the states.

President's Proposal

Under the President's proposal, states would be required to match the federal grants on the basis of ability to pay. Under this plan the state with the greatest income per school age child would be required to match each federal dollar with two state dollars. This matching rate is graduated down to the state having the lowest income per school age child. This state would only be required to put up one dollar for each two dollars of federal funds.

Kelley Bill

The Kelley bill, on the other hand, would provide federal aid to the states on a basis of school age population. without regard to state income.

The Secretary of Health, Education and Welfare has stated that the Kelley plan is unacceptable, since it would not give the money to the states that need it most. Under this plan, as pointed out, New York and California (both near the top in per capita income) would, by virtue of their large school age populations, receive the major share of the aid. Representative Kelley objects to the President's proposal on the grounds that the "variable grant" theory would place the school business under greater federal control. Representative Graham A. Barden of North Carolina, chairman of the House Labor and Education Committee takes a dim view of both school aid proposals and expresses a fear that both proposals may permit federal inroads into state control over education.

Arguments for Aid

Those in favor of federal aid to education uniformly urge that many communities simply do not have available locally the resources to cope with present and future school building needs. Unless they can get help, they cannot provide enough school buildings. Proponents argue that the logical place to which these communities should turn for help is the federal government. The rationale is that the need for schools is national in scope and that those states most able to pay should help bear the school costs for their less prosperous neighbors. This system of spreading out the costs, they point out, is already accepted on the state level. Many object, however, that the present aid proposals do not provide sufficient aid to be effective.

Arguments against Aid

Opponents of any federal aid to education make two main objections. Residents of the more prosperous states object to being taxed to pay for schools in other states. Others, particularly from the South, fear that federal control will follow any federal aid funds.

This fear of federal control is not without foundation. Already the Kelley bill has been amended so as to permit the Labor Department to fix a "prevailing wage" rate for all labor employed on federal school aid projects. Southern leaders fear that either or both measures may be amended to specifically forbid payments to school districts where the races are segregated. In fact, southern leaders are in general agreement that much of the South may be barred from receiving any federal school aid on the grounds that a community is not complying with the Supreme Court's ruling against school segregation, even if an anti-segregation amendment is not adopted. The Justice Department has declined to comment on reports that the Attorney General has said that he won't allow federal payments for school construction in states defying the court's anti-segregation ruling.

Under a revised timetable, reflecting the increased controversy, a House vote on the Kelley bill has been delayed. Bitter debate is in prospect. In fact the whole atmosphere has changed. With the opening of the Congress in January there was a sense of urgency. Today there is an atmosphere of caution.

Although the only purpose is to help states build badly needed schools, federal aid to education is caught in such a deadly crossfire of pressures on such controversial issues as racial segregation, states rights, and prevailing wages for construction workers that the success of any federal aid proposal is put in doubt. Add to this a partisan political fight in which Republicans are pledged to fight for substituting the President's version for the Kelley bill (the product of a Democratic-controlled committee), and the chances of any federal school aid proposal's being passed during this session are indeed slim.

How would North Carolina fare under each proposal? Under the Kelley bill North Carolina would receive approximately $12,000,000 per year, based on the 1953 school population figures. It is not known how much we would receive each year under the President's proposal. Nor is it known exactly what the matching ratio of state to federal funds would be. Since, however, we were rated 44th among the states in per capita income per school child in 1952, the ratio should be only slightly over one dollar of state funds to each two dollars of federal funds.

Books of Current Interest

Municipal Finance

THE MUNICIPAL INCOME TAX: ITS HISTORY AND PROBLEMS. *By Robert A. Sigafoos. Chicago 37: Public Administration Service, 1313 E. 60th Street. 1955. $5.00. Pages 169.*

This book is an intensive study of municipal income taxes. It includes chapters concerning the growth of this new form of municipal revenue, municipal income tax ordinances, and the various kinds of income taxes. Problems of enforcement, revenues from the tax (including per capita yield), and an appraisal of the tax in the light of ability to pay, exemptions, progressvie rates, the taxing of nonresidents, stability, and tax burden, are other topics considered.

Public Works

PUBLIC WORKS AND EMPLOYMENT FROM THE LOCAL GOVERNMENT POINT OF VIEW. *By Eugene C. McKean and Harold C. Taylor. Chicago 37: Public Administration Service, 1313 E. 60th Street. 1955. $5.00. Pages 274.*

This book studies the "relationship of public works programs to this . . . problem of alternating booms and depressions." The findings of the analysis raise serious doubts as to the efficacy of depending on public works to act as a stabilizer. The authors state that the book "should be of equal value to those students of economics and public administration whose counsel is sought by community officials in connection with problems of public works planning and scheduling."

Police Training

POLICE PATROL. *By Richard L. Holcomb. Springfield, Illinois: Charles C. Thomas, Publisher. 1952. $3.50. Pages 115.*

This publication is the first of a series designed to present the methods used in everyday police work. The material was drawn from the experience of many police officers in scattered sections of the country. The methods presented are intended to apply to police patrol everywhere, but particularly to motorized police patrol in cities and towns.

CRIME DETECTION. *By Arne Svenson and Otto Wendel. Houston: The Elsevier Publishing Company. 1955. $9.25. Pages 376.*

The authors have intended this guide for all police officers entrusted with the responsible task of investigating the scene of a crime. Counsel and judges will be assisted by a knowledge of the special police scientific methods, of the value of clues found at the scene of a crime, and of the results which can be obtained from a correct interpretation of close investigation of them. Well illustrated with actual photographs.

A RECRUIT ASKS SOME QUESTIONS. *By John P. Peper. Springfield, Illinois: Charles C. Thomas, Publisher. 1954. $4.50. Pages 146.*

"When should I make an arrest?" "How do I investigate a crime?" "How do I write reports?" These and countless other questions are presented and answered by the author. In addition, the book makes available to the profession for the first time a Study Guide which includes tested training materials and procedure for the recruit, as well as for older officers, training supervisors, and command personnel.

POLICE MATHEMATICS: A TEXTBOOK IN APPLIED MATHEMATICS FOR POLICE. *By Conrad Rizer. Springfield, Illinois: Charles C. Thomas, Publisher. 1955. $5.75. Pages 154.*

This textbook is for members or prospective members of the police force, who will either use mathematics as a working tool in criminal investigation or traffic control, or as a general background for the better understanding of the methods used in criminal investigation or traffic control. It contains both theory and applications.

Crime and the Law

THE CRIME PROBLEM. *By Walter C. Rickless. New York 1: Appleton-Century-Crofts, Inc., 25 W. 32d Street. 2d ed., 1955. $6.50. Pages 728.*

This text is a realistic and systematic study of crime in the United States, its closely affiliated problems, and the measures to combat it. Facts and statistics are so numerous as to make this a valuable reference work.

CRIME, COURTS, AND PROBATION. *By Charles L. Chute and Marjorie Bell. New York: The Macmillan Company, 60 Fifth Avenue. 1956. $4.75. Pages 268.*

"Crime, Courts, and Probation" is an authoritative description of the development of probation as a social policy and as a technique. Much of the material is derived from the personal experiences of Charles L. Chute, who fought for probation reforms for nearly 50 years. The book includes an introduction by Roscoe Pound, a sketch of the history of the treatment of convicted criminals in the western world, a discussion of the philosophy and basic purpose of probation, and a portrait of John Augustus, the Boston shoemaker who pioneered the probation movement more than a century ago. An actual illustration of the workings of probation has been contributed by Judge Louis Goldstein in the concluding chapter entitled "My Six Probationers."

ADMINISTRATION OF CRIMINAL JUSTICE IN THE UNITED STATES. *Chicago 37: American Bar Association, 1155 E. 60th Street. 1955. $2.00. Pages 197.*

Miscellany

LAW AND THE PRACTICE OF MEDICINE. *By Kenneth George Gray. Toronto: The Ryerson Press. 2nd ed., 1955. $3.25. Pages 133.*

Although the author discusses the legal problems which most frequently confront doctors and hospitals in Canada, these problems, for the most part, are those which face doctors in any land. This volume is particularly valuable because Dr. Gray assumes no knowledge of the law on the part of the medical profession to whom he is addressing his volume.

THE PHYSICIAN AND THE LAW. *By Rowland H. Long. New York 1: Appleton-Century-Crofts, Inc., 35 W. 32d Street. 1955. $5.75. Pages 284.*

ELEMENTARY STATISTICS FOR STUDENTS OF SOCIAL SCIENCE AND BUSINESS. *By R. Clay Sprowls. New York 36: McGraw-Hill Book Company, Inc., 330 W. 42d Street. 1955. $5.50. Pages 392.*

PERSONALITY TESTS—USES AND LIMITATIONS. *By Frederick Gehlmann and others. Chicago 37: Civil Service Assembly, 1313 E. 60th Street. 1956. $2.00. Pages 23.*

INTERNATIONAL RELATIONS. *By M. Margaret Ball and Hugh B. Killough. New York: The Ronald Press Company, 15 East 26th Street. 1956. $6.50. Pages 667.*

Speed-Watch

(Continued from page 5)

> "Whenever the results obtained through the use of a new scientific device or process are offered in evidence, the court at first may and frequently should require expert testimony. Later, as case after case has been tried and the results of the device or process have repeatedly been introduced following the explanation of the expert, the courts will take judicial notice of the accuracy of the scientific device or process in question, and it is then no longer necessary to produce the expert. . . ."

Judicial Notice

"Judicial knowledge" is defined as: "Knowledge of that which is so notorious that everybody, including judges, knows it, and hence need not be proved."[9] The act of "taking judicial notice" means merely that the judge, either on his own motion or that of counsel, declares facts to be ". . . so indisputable, and so generally known *or so readily verifiable* that it would be a waste of time and perversion of the judicial function to require them to be proved or to allow either party to deny their truth."[10] [Emphasis added.]

As applied to results obtained with scientific apparatus, judicial notice merely replaces the expert witness as the first step in admitting such testimony. When a fact or device comes to the stage when it either is or should be commonly known, the time and expense of producing an expert may be saved if the trial court takes judicial notice of such fact or device. In the case of *State v. Vick*,[11] our Supreme Court said: "There are many facts of which the court may take judicial notice, and they should take notice of whatever is, or ought to be, generally known within the limits of their jurisdiction, for justice does not require that courts profess to be more ignorant than the rest of mankind."

9. Black's Law Dictionary, 4th ed.
10. Stansbury, N.C. Evidence, §11.
11. 213 N.C. 235, 238, 195 S.E. 779, 780 (1938).

The question of whether to take judicial notice of the speed-watch has not been presented to our Supreme Court. Indeed, the only speed-watch case which has been before the Supreme Court of North Carolina is the recent case of *State v. Caviness*.[12] In other states, apparently the only such case to be appealed was *Carrier v. Commonwealth*,[13] a 1951 Kentucky case. In neither case was the question of judicial notice raised.

Due, no doubt, to the fact that the radar speedmeter is more complicated than the speed-watch, many radar cases have been appealed.[14] In addition, there have been several articles and notes in various law reviews on the subject.[15] In the first case to indicate that judicial notice might be taken of the radar speedmeter, the New Jersey Supreme Court in *State v. Dantonio*,[16] had this to say:

> ". . . a recent tabulation indicates that [radar] speedmeters are being used in 43 states by almost 500 police departments. See *Radar Traffic Controls*, 23 Tenn. L. Rev. 784 (1955). The writings on the subject assert that when properly operated they accurately record speed . . . and nothing to the contrary has been brought to our attention; *under the circumstances it would seem that evidence of radar speedmeter readings should be received in evidence upon a showing that the speedmeter was properly set up and tested by the police officers without any need for independent expert testimony by electrical engineers as to its general nature and trustworthiness.*" [Emphasis added.]

12. 248 N.C. 288, S.E.2d (1955).
13. Ky., 242 S.W.2d 633 (1951).
14. State v. Moffitt, 100 A.2d 778 (Del. Super. Ct. 1953); People v. Offerman, 204 Misc. 769, 125 N.Y.S. 2d 179 (Sup. Ct. 1953); People of the City of Rochester v. Torpey, 204 Misc. 1023, 128 N.Y.S.2d 864 (Monroe County Ct. 1953); People v. Katz, 205 Misc. 522, 129 N.Y.S.2d 8 (Ct. Spec. Sess. Yonkers 1954); People v. Sarver, 205 Misc. 523, 129 N.Y.S.2d 9 (Ct. Spec. Sess. New Rochelle 1954); People of the City of Buffalo v. Beck, 205 Misc. 757, 130 N.Y.S.2d 354 (Sup. Ct. 1954); State v. Dantonio, 31 N.J. Super. 105, 105 A.2d 918 (1954) aff'd 18 N.J. 570, 115 A.2d 35 (1955).
15. Woodbridge, "Radar in the Courts," 40 Va.L.Rev. 809 (1954); Radar Speedmeters—A Symposium: Kopper, "The Scientific Reliability of Radar Speedmeters," 33 N.C.L.Rev. 343 (1955); Baer, "Radar Goes to Court," 33 N.C L.Rev. 355 (1955); Langschmidt, "Radar Traffic Controls," 23 Tenn.L.Rev. 784 (1955); 58 Dick.L.Rev. 400 (1954), 39 Ia.L. Rev. 511 (1954), 15 Ohio S.L.J. 223 (1954), 33 N.C.L.Rev. 273 (1955), 8 Okla.L.Rev. 95 (1955), 5 Mercer L.Rev. 322 (1954), 38 Tul.L.Rev. 398 (1954), and 7 Vand.L.Rev. 411 (1954).
16. 18 N.J. 570, 578, 115 A.2d 35, 40 (1955).

Since the complicated radar speedmeter has become a subject of judicial notice, clearly the much simpler speed-watch should be so accepted. Even the common automobile speedometer, which has long been recognized by the courts, is more complicated and less accurate than the speed-watch.

Conclusion

Today there are more than 600 speed-watches in use by state, county, and city law enforcement officers in 31 states and Canada. Time after time it has been shown that, when properly operated, the speed-watch is an extremely accurate instrument for measuring speed. It is not as subject to error as a speedometer, nor is it subject to human error. Truly, it is a "machine whose action being dependent upon the laws of nature . . . [will] record the speed of a moving object," and do so accurately. Speed-watch evidence should be received without preliminary expert explanation upon a showing that the device was properly set up, tested and operated.

The speed-watch has proved its value and now, through the medium of judicial notice, it should be given a vote of confidence.

Operation of Speed-Watch

(Continued from page 6)

watch, the distance is always the same, 132 feet. This being true, the makers of this instrument have calculated in advance the speed at which a vehicle must travel to cross the 132 feet in any given number of seconds or fractions of seconds. The formula used is $X = 1/40 \div a \; 3600$. X is the speed in miles per hour and a is the number of seconds elapsed.

Since the stop watch measures up to six seconds, speeds have been ascertained for this entire six second range. These speeds are set out on a dial on the face of the control box, and the stop watch is mounted in the center of this dial. When the hand of the watch indicates that a certain number of seconds has elapsed between the time a vehicle crossed the first and second tubes, it also points to the speed—the speed at which the vehicle must have traveled to have gone 132 feet in that number of seconds. For example, when the hand stops at one second, it also points to 90 miles per hour. The longer the watch runs, the slower the speed will be. Thus when the hand points to three seconds, it also points to 30 miles per hour on the outside dial.

Publications for Sale

The following Institute of Government publications are currently available for sale to interested citizens, libraries, and others. Orders should be mailed to the Institute of Government, Box 990, Chapel Hill.

LAW AND ADMINISTRATION SERIES:

THE LAW OF ARREST by Ernest W. Machen, Jr., 1950, 151 pp prtd ($1.50)

THE LAW OF SEARCH AND SEIZURE by Ernest W. Machen, Jr., 1950, 158 pp prtd ($1.50)

PROPERTY TAX COLLECTION IN NORTH CAROLINA by Henry W. Lewis, 1951, 342 pp prtd ($2.50)

LEGISLATIVE COMMITTEES IN NORTH CAROLINA by Henry W. Lewis, 1952, 144 pp prtd ($1.50)

ZONING IN NORTH CAROLINA by Philip P. Green, Jr., 1952, 428 pp prtd ($3.50)

GENERAL ASSEMBLY OF NORTH CAROLINA: GUIDEBOOK OF ORGANIZATION AND PROCEDURE by Henry W. Lewis, 1952, 125 pp prtd ($1.50)

SOCIAL SECURITY AND STATE AND LOCAL RETIREMENT IN NORTH CAROLINA by Donald B. Hayman, 1953, 173 pp prtd ($2.00)

THE SCHOOL SEGREGATION DECISION by James C. N. Paul, 1954, 132 pp prtd ($2.00)

GUIDEBOOK SERIES:

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SOURCES OF MUNICIPAL REVENUE by John Alexander McMahon, 1953, 61 pp mimeo ($1.00)

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COUNTY SALARIES, WORKING HOURS, VACATION, SICK LEAVE by Donald B. Hayman, 1954, 37 pp mimeo ($1.00)

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PUBLIC LIBRARIES IN NORTH CAROLINA, PROCEEDINGS OF THE FIRST TRUSTEE-LIBRARIAN INSTITUTE (Ed. George H. Esser, Jr.), 1952, 47 pp prtd ($1.00)

SOURCES OF COUNTY REVENUE by John Alexander McMahon, rev. ed., 1954, 65 pp mimeo ($1.00)

FORECLOSURE OF CITY AND COUNTY PROPERTY TAXES AND SPECIAL ASSESSMENTS IN NORTH CAROLINA by Peyton B. Abbott, 1944, 86 pp mimeo ($2.50)

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