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are the rights of non-debtor partners who redeem or purchase the interest charged?³⁶

As there is no case authority for solutions to the questions here proposed other than the issues already discussed the author will not attempt to reach any solutions.

In conclusion, although it has been forty years since the Uniform Partnership Act was first recommended by the National Conference of Commissioners on Uniform State Laws³⁷ there are still many questions arising under Section 28 which must be determined by statute, court decision, or court rule before Section 28 will be used to the full extent for which it was designed.

MARGIE MILLHONE

RADAR—BLACK MAGIC TO CATCH SPEEDERS

The observant Wyoming motorist, out, perhaps, for a Sunday afternoon drive between Cheyenne and Laramie on U. S. Highway No. 30, will notice several large black and white signs along the highway indicating, "SPEED LIMIT 60 CHECKED BY RADAR." Not being well-versed in the art of radar, he will probably shrug his shoulders and wonder what new kind of black magic the Highway Patrol has "cooked up" to apprehend speed violators. It is to be hoped that if he is cruising at more than sixty miles per hour, he will let up a little on the accelerator, not knowing what to expect from this radar check.

Radar has been used for almost half a dozen years by law enforcement agencies to catch speeders. It is now in use in most states,¹ and the Wyoming Highway Patrol has adopted it.²

In rather simplified language, here is how the radar speedmeter—"the little black box" as it has been called—works: behind the front panel of the speedmeter are two antennas; one of these sends out a cone-shaped stream of radar waves at a certain frequency in the direction the speedmeter is pointed. When a moving vehicle runs through these waves, they bounce back off of it at a different frequency from which they were sent out, and the change in frequency varies directly with the speed of the moving object off which they reflect. The second antenna catches the reflected waves and their frequency is compared with that of the waves sent

36. 28 Wash. L. R. 1, J. Gordon Gose in his article, "The Charging Order under the Uniform Partnership Act" does a most comprehensive job of discussing the effect of Section 28 and the problems that are undecided under this section.

37. U.L.A., v. 7, p. 3.

1. U.S. News & World Report, Aug. 6, 1954, pp. 36-7.

2. For information about the Wyoming Highway Patrol's use of the radar speedmeter the writer wishes gratefully to acknowledge the aid and co-operation of Col. William R. Bradley of the Wyoming Highway Patrol.

out. The difference in frequency is amplified and translated into miles per hour on a speedometer dial which is part of the speedmeter. The speed of moving vehicles is recorded on a graph hooked up to the speedmeter. Usually the speedmeter is placed on the fender or in the open trunk of a police car called the "radar car" which is parked alongside the road; the closer it is to the road, the more accurate it will be. Down the road in one or both directions from the radar car will be one or two other police cars, known as "pickup cars." These cars and the radar car communicate back and forth by radio. When a speed violator passes the radar car, the radar operator or another police officer in the radar car radios the pickup car down the road, and this latter car apprehends the speeder.³

Although radar generally has been in use for more than a decade, its utilization by law enforcement agencies can be considered fairly recent. It presents some interesting problems in the field of evidence and trial practice which it is the purpose of this note to discuss.⁴

To date there has been a very small amount of reported litigation dealing with the use of the radar speedmeter. An exhaustive search has turned up a total of only seven such cases. By counting noses, it appears that there have been four convictions for speeding upheld and two reversed; in one case the court merely charged the jury. It is interesting to note that all of the seven cases were decided in Atlantic seaboard states,⁵ and that they were all decided by lower appellate courts.

The two cases in which speeding convictions, based on evidence of the radar speedmeter, were reversed laid down several objectionable points to such evidence. These cases will be discussed first; then the points raised by them will be considered, followed by a few miscellaneous considerations. In *People v. Offermann*⁶ the Supreme Court of Erie County, New York, reversed a conviction for speeding wherein defendant had been arrested and brought to justice by virtue of the speedmeter, for the following reasons: (1) the trial judge did not permit an adjournment so that an expert witness could be produced to testify concerning the accuracy of the radar speedmeter; (2) the State attempted to qualify a police officer with no formal training in electronics, radio, or engineering as an expert witness; (3) testimony by police officers as to tests run by them to check the accuracy of the radar speedmeter amounted to hearsay; according to the Court's reasoning, when the officer operating the speedmeter testified that the radar dial corresponded to the speedometer reading on the car being driven through the scope of the radar waves he was relying on what the driver of the patrol car being driven through told him by radio; when the

3. Popular Science Monthly, Vol. 161:3, Sept. 1952, p. 95 ff. For a more detailed explanation of this principle, see also Note in 30 N. C. L. Rev. 385 (1952) on the use of the radar speedmeter; see also U. S. News & World Report, op. cit.

4. The scope of this note does not include discussion of problems presented by the law of arrest. But for an interesting commentary on this point, cf. Note in 30 N. C. L. Rev. 385, 389, 390 (1952).

5. Five cases are from New York, and one each from Delaware and New Jersey.

6. 204 Misc. 769, 125 N.Y.S.2d 179 (1953).

latter officer testified that the reading of the radar dial checked with the speedometer of the moving car, he relied on what the radar operator told him over the radio; (4) statements by the trial judge that he had checked the accuracy of the speedometer by driving his own car through its waves was hearsay and could not come within the field of judicial notice.

A later New York case decided in the same court by the same justice who wrote the *Offermann* opinion reversed a similar conviction of speeding for the sole reason that the trial judge had taken judicial notice of the operation and accuracy of the radar speedmeter.⁷ The Court stated in that case:

"The theory of the operation of this electrically operated device and the accuracy of its measurement of speed is not a proper subject for judicial notice at this time. Electronics is a recent development in the science embracing the mysteries of electricity. (Citing the *Offermann* case). Certainly it cannot be said that such knowledge is 'notorious' as above described or that it is 'the general knowledge of the country' nor is the operation of the device 'a practical application of scientific facts which are generally known or ought to be known.'"⁸

Now for the consideration of the problems of expert testimony and judicial notice. Certainly it seems probable that radar-electronics and its operation and principles are not matters of common knowledge throughout the nation, or in a particular jurisdiction. The general rule in regard to scientific evidence is that a court may not take judicial notice of scientific facts which are so lacking in notoriety as not to be a part of everyone's common knowledge.⁹ Thus it would appear that the decision in the later New York case was correct.

If a fact may not be judicially noted, it remains to prove it by ordinary means.¹⁰ None of the radar cases have gone to far as to hold that evidence of speed by means of using the speedometer is completely inadmissible; thus recognizing the principle that a scientific fact or device is admissible when it is sufficiently established to have gained general acceptance in the particular field in which it belongs.¹¹ In *People of City of Rochester v. Torpey*¹² the Court said, in affirming a radar speedmeter conviction:

"The use of radar is comparatively new as a means of bringing about the arrest of violators of ordinances pertaining to the speed of automobiles and until such time as the courts recognize radar equipment as a method of accurately measuring the speed of automobiles in those cases in which the People rely solely upon the speed indicator of the radar equipment, it will be necessary to

7. *People of City of Buffalo v. Beck*, _____ Misc. _____, 130 N.Y.S.2d 354 (1954).

8. *Id.* at 357.

9. 20 Am. Jur. 111, Evidence Sec. 97; 31 C.J.S. 654, Evidence Sec. 75.

10. 20 Am. Jur. 46, Evidence Sec. 16 et seq.; 31 C.J.S. 509, Evidence Sec. 16 et seq.

11. Such as evidence of the lie detector tests. See, for example, *Henderson v. State*, 230 P.2d 495 (Okla. 1951), cert. denied 342 U.S. 898, 72 S.Ct. 234, 96 L.Ed. 673 (1951); cf. article by Dean William Wicker in 22 Tenn. L. Rev. 711 (1953) entitled "The Polygraphic Truth Test and The Law of Evidence"; Note on "Admissibility of Evidence Obtained by Scientific Devices and Analysis" in 6 Ark. L. Rev. 181 (1953).

12. 204 Misc. 1023, 128 N.Y.S.2d 864 (1953).

establish by expert testimony the accuracy of radar for the purpose of measuring speed."¹³

Furthermore, in *People v. Offermann*¹⁴ the inference is that radar evidence would have stood a much better chance of being admitted had an expert testified.

The purpose of expert testimony is to aid the jury in reaching its verdict by enlightening it on some fact or facts that may be beyond the knowledge of the jury members. Since radar speedometer operation and principles are not subject to judicial notice, and the cases indicate expert testimony is necessary, the prosecution should introduce an expert witness to explain the operation of the speedometer, and its underlying principles, in order to lay a proper foundation. This witness may use charts and diagrams in order to instruct the jury of the purpose and construction of the speedometer. Perhaps it might be a good idea to exhibit the speedometer itself so as to make the explanation easier, as was done in *State v. Moffitt*.¹⁵ After the foundation is thus laid, the expert or skilled witness should be able to express his opinion as to the speedometer's accuracy on the day of the arrest in question. The result of this expert testimony should be that each juror will be able to say to himself:

"Mr. X-pert has explained this radar speedometer so that I understand it. He has, in fact, made me understand it in such a way that my opinion agrees with his."¹⁶

A question arises as to what qualifications an expert witness should have. Actually the question becomes, what are the minimum qualifications? A person totally untrained in radio, engineering or electronics would not qualify.¹⁷ On the other hand, a skilled witness like the one who testified in *People on Inf. of Laibowitz v. Katz*,¹⁸ *People v. Sarver*,¹⁹ and *State v. Dantonio*²⁰ would certainly qualify as an expert: this man²¹ was an electrical engineering teacher and research worker in the field of electrical installation and automatic control at Johns Hopkins University. Between these two extremes would be a witness whose background included *some* experience and/or research in engineering, radio, etc., and acquaintance with textbooks on the specific subject. This latter person should certainly be qualified as an expert or skilled witness. It should be remembered that the trial judge must determine whether or not a person is qualified to testify as an expert. The trial judge has wide discretion in deter-

13. *People of City of Rochester v. Torpey*, 204 Misc. 1023, 128 N.Y.S.2d 864, 866 (1953).

14. 204 Misc. 769, 125 N.Y.S.2d 179 (1953).

15. 100 A.2d 778 (Del. 1953).

16. *McCoy v. Clegg*, 36 Wyo. 473, 257 Pac. 484 (1927); McKelvey, "Handbook of the Law of Evidence" Sec. 181 et. seq.; cf. also article by Dean Mason Ladd in 5 Vand. L. Rev. 429 (1952) entitled "Expert Testimony."

17. *People v. Offermann*, 204 Misc. 769, 125 N.Y.S.2d 179 (1953).

18. _____ Misc. _____, 129 N.Y.S.2d 8 (1954).

19. 205 Misc. 523, 129 N.Y.S.2d 9 (1954).

20. 105 A.2d 918 (N.J. 1954).

21. Identified in the cases of Dr. Kopper.

mining this question, and his decision will not be set aside unless clearly erroneous.²²

The Wyoming Highway Patrol tests the radar speedmeter for accuracy by running a patrol car through its waves both before and after the speedmeter is used for law enforcement purposes. In two of the speedmeter cases, *State v. Moffitt*²³ and *State v. Dantonio*²⁴ the courts indicated that such tests would not have to be made by a person skilled in electronics in order to make the evidence of the testing admissible.²⁵

The hearsay element also present a problem. As will be remembered, in *People v. Offerman*²⁶ evidence as to tests run by the police officers to check the speedmeter's accuracy was held to be improperly admitted by the trial court as constituting hearsay.²⁷ In a later case from the New York Court of Special Sessions of New Rochelle, *People v. Sarver*,²⁸ the Court upheld a speeding conviction based on speedmeter evidence, saying:

" . . . it conclusively appears that the radar speed meter is an accurate and reliable instrument for the measurement of velocity. It must take its place along with the ordinary mechanical speedometer as a device which accurately measures the speed of a moving vehicle. . . . The radar speed meter is no different than any other scientific device. Admissibility of tests made by it depends on its accuracy and reliability."²⁹

Essentially the same idea was expressed in *People on Inf. of Laibowitz v. Katz*.³⁰ The result is that while the courts may not yet take *judicial notice* of the radar speedmeter and its operation and accuracy, they should allow evidence of it to bring about a conviction of speed violators. But it must be proved to be accurate.

In *State v. Moffitt*³¹ the expert witness testified as to the speedmeter's margin of error, and the methods of testing its accuracy. There was expert testimony in *People v. Sarver*³² that the device was accurate within a possible variation of one or two miles per hour; the same expert testified in *People on Inf. of Laibowitz v. Katz*³³ that the radar operator can tell when the machine is out of calibration or that it is not working properly. It would therefore seem proper to prove the speedmeter's accuracy by evidence of tests made by the police officers comprising the radar and pickup

22. *People v. Offermann*, 204 Misc. 769, 125 N.Y.S.2d 179 (1953); McKelvey, op. cit. supra Note 16, at 345; 20 Am. Jur. 657 Evidence Sec. 783 et seq.

23. 100 A.2d 778 (Del. 1953).

24. 105 A.2d 918 (N.J. 1954).

25. See *Commonwealth v. Buxton*, 205 Mass. 49, 91 N.E. 128 (1910) where evidence of photographic speed recorder with a chronometer used to determine the speed of an automobile was held admissible. It was also held to be immaterial that the experimenter was not an expert.

26. 204 Misc. 769, 125 N.Y.S.2d 179 (1953).

27. *Ibid.*

28. 205 Misc. 523, 129 N.Y.S.2d 9 (1954).

29. *People v. Sarver*, 205 Misc. 523, 129 N.Y.S.2d 9, 13 (1954).

30. _____ Misc. _____, 129 N.Y.S.2d 8 (1954).

31. 100 A.2d 778 (Del. 1953).

32. 205 Misc. 523, 129 N.Y.S.2d 9 (1954).

33. _____ Misc. _____, 129 N.Y.S.2d 8 (1954).

team, in addition to the expert testimony necessary to lay a foundation. But if the testimony of the testing officers is to be held inadmissible as hearsay under reasoning such as the Court employed in the *Offermann* case, then the purpose of this testing evidence to establish the speedometer's accuracy will be frustrated.

However, all is not lost. In the most recent speedometer case, *State v. Dantonio*,³⁴ the Court held that as to testing the speedometer by driving a police car through its scope of waves, the testimony of the radar operator who watches the dial of the speedometer and testimony of the officer who observes the speedometer of the non-radar car is admissible, since each officer testifies to independent facts. As the Court put it:

"If the speedometer of the patrol car, the electric speedometer and the graph of the radar equipment check accurately, what has occurred is the patrol car officer has established the fact that his patrol car has passed through the radar area at a designated speed, while the radar operator establishes that at the time and place in question a car came through the radar scope at a designated speed, which is identified as a police patrol car as it passed the station wagon where the radar equipment is installed. . . . The fact of the speed of the patrol car and the recording of the electric speedometer, the graph machine, the observation of the radar operator remain the same without benefit of radio communication."³⁵

It is submitted that the result reached on this point in the *Dantonio* case is a proper one, and sounder in principle than the *Offermann* decision.

Suppose the following situation: officer X is operating the radar speedometer and officer Y drives the non-radar patrol car in a test run; approaching the radar car, Y radios that he is coming through at 60 miles per hour on the nose; he whizzes by and then X radios that the radar dial showed 60 miles per hour. Y observed that his speedometer needle showed a speed of 60. The graph of the speedometer recorded 60 miles per hour, and X noted the time, place and identity of the police car driven through. In court, if Y testifies that the radar dial showed 60 miles per hour because that is what X told him over the radio, it is clearly hearsay; and the same is true if X testifies that the car speedometer showed a speed of 60 because Y told him so.³⁶ But X may testify as to what the radar dial showed and be cross-examined as to it. Likewise, Y may testify that his speedometer showed a speed of 60 miles per hour, and he is subject to cross-examination. Both X and Y testify to facts and there is no objectionable hearsay present; these are facts which they visually perceived.³⁷

There are still other problems which must be taken into consideration. The first of these is proving the identity of the violator. It was contended

34. 105 A.2d 918 (N.J. 1954).

35. *State v. Dantonio*, 105 A.2d 918, 921 (N.J. 1954).

36. In this respect the *Offermann* case is correct.

37. For an interesting and more detailed discussion of the hearsay element in connection with the *Offerman* case, see case comment in 7 *Vand. L. Rev.* 411 (1954).

in *People v. Sarver*³⁸ that the police officer who directed defendant's arrest could not identify the defendant. The Court answered this contention, saying:

"The testimony showed that Officer Rabbitt (the radar operator) saw a green truck which approached and passed him at an excessive rate of speed as recorded on the speed meter's graph. This information was passed on to Officer Burkhardt, who arrested the driver of the green truck, who is the defendant. The circumstances conclusively established the defendant's identity. No further identification is necessary."³⁹

The radar operator in *State v. Dantonio*⁴⁰ identified the violator's vehicle and radioed the officers in the pickup car of a potential violation, and on the recording graph noted the description and registration number of the speeding vehicle.

The Wyoming Highway Patrol makes a careful record on the graph of the speed, color, make, year and registration number of the offending vehicle. This practice certainly meets the standards of the decided cases. Furthermore, since the pickup cars are usually not very far from the radar car, in a situation where there is a level road and good visibility, the radar officer might actually see the violator stopped by the pickup car, which certainly would add strength to the identification.⁴¹

The sufficiency of the evidence is another factor to be considered. It is apparent from the radar speedmeter cases reported that the speedmeter will be successful in courts if the proper steps are taken: (1) a record of the speed violation should be made, probably like the one used by the Wyoming Highway Patrol; (2) tests as to the accuracy of the speedmeter should be run off both before and after the speedmeter is used to enforce the laws; (3) the conducting officers should testify as to the tests by way of facts, and avoid the hearsay pitfall; (4) until the time when courts are willing to take judicial notice of the speedmeter, an expert should be called in to testify as to its principles and operation.

Law enforcement officers have long apprehended speed violators by giving chase in the police car, keeping a certain distance behind and clocking the violator's speed by the police car speedometer. In *City of Spokane v. Knight*⁴² this method was employed, and the court reasoned that although the method did not give conclusive evidence of a violation, it was enough to go to the jury.

*Carrier v. Commonwealth*⁴³ dealt with the Prather speed device, by which rubber hoses attached to road switch boxes are laid across the road-

38. 205 Misc. 23, 129 N.Y.S.2d 9 (1954).

39. *People v. Sarver*, 205 Misc. 523, 129 N.Y.S.2d 9, 11 (1954)

40. 105 A.2d 918 (N.J. 1954).

41. This occurred in *People on Inf. of Laibowitz v. Katz*, _____ Misc. _____, 129 N.Y.S. 2d 8 (1954).

42. 96 Wash. 403, 165 Pac. 105 (1917).

43. 242 S.W.2d 633 (Ky. 1951).

way a certain distance apart; these are connected to an electrical timer which times the speed of vehicles going between the hoses. The Court in this case commented:

"We have long accepted the testimony of police officers based upon the calibrations of a speedometer as competent evidence, even though it is a matter of common knowledge that various degrees of friction, temperature of the atmosphere, air pressure in the tires, and other factors affect the operation of the instrument to some extent."⁴⁴

Evidence of this Prather device was admitted after expert testimony had been given.

The radar speedmeter is more complicated than an ordinary car speedometer or an electrical timing device like the Prather speed device, but it is believed that courts should admit evidence of the speedmeter conditioned on proof of accuracy if the four elements laid down above are present, just as in the case of a speedometer. Then, in any case where conflicting evidence crops up, the jury may perform its function and resolve the conflict one way or another.

The court is faced with the problem of what instructions should be made to the jury. The crux of the Court's charge to the jury in *State v. Moffitt*⁴⁵ was as follows:

"In the present case, however, before you can return a verdict of guilty under this contention—that is, a finding by reason only of the Speed Meter—you must be satisfied beyond a reasonable⁴⁶ doubt that the Speed Meter used in the present case was functioning properly, was properly operated at the time, and was in fact an accurate recorder of speed; further, that its accuracy had been properly tested within a reasonable time from the date of its use. . . ."⁴⁷

It is submitted that this is an excellent instruction, one that any court should be aware of.

The "Brandeis brief" type of argument would attempt to show many statistics on the effects of speed in accidents, property damage, loss of life, and the necessity to do something about this alarming situation. It is not proposed here to envelop the reader in statistics. Suffice it to say that it is a matter of common knowledge that excessive speed is a killer. Traffic enforcement and speed regulation come within the general welfare, public safety and police powers of the State. Enforcement of the speed regulations by using the radar speedmeter should be upheld by the courts, when proper steps of introducing the method of its use are taken. Although courts have not readily admitted evidence of truth serums and lie detectors,⁴⁸ there

44. *Carrier v. Commonwealth*, 242 S.W.2d 633, 635 (Ky. 1951).

45. 100 A.2d 778 (Del. 1953).

46. The word "reasonably" appears, but this probably should be "reasonable."

47. *State v. Moffitt*, 100 A.2d 778, 779 (Del. 1953).

48. 6 Ark. L. Rev. 181 (1952).

are not the constitutional "self-incrimination" and "illegal searches and seizures" problems presented, in the case of the speedmeter, which harry the former line of cases. In Wyoming, moreover, large, legible signs along the highway⁴⁹ warn the motorist that his speed may be checked by radar, and the Wyoming Highway Patrol so far has confined its radar operations to these posted areas. Thus the driver cannot be heard to yell, "Speedtrap!"

One court aptly stated that we live in a world where many wonderful scientific devices are controlled by pushbutton, but that there is no reason to have pushbutton justice.⁵⁰ How true this is! But neither should the courts trip themselves up in the roots of antiquity. As a matter of public policy the radar speedmeter can be of great value in law enforcement. Something must be done about the senseless slaughter on the highways, which is at least partly attributable to high speed.⁵¹ The speedmeter is basically accurate, as has been concluded in the majority of decided cases on the subject, and if this accuracy is proven in court, there seems to be no good reason why evidence of speed based on use of the speedmeter should not be admissible.

PAUL K. ADAMS

RIPARIAN RIGHTS IN APPROPRIATION STATES

Eight western states, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming, professedly do not recognize the common law doctrine of riparian rights. In this arid section of the country, a major concern is the utilization of water for beneficial purposes such as irrigation, mining and power. The fear has always been that what little water there is will not be used to the fullest extent possible. As a result, the term "water rights" has acquired a local technical definition such as the one set out in a Wyoming statute:¹ "A water right is a right to use the water of the state when such use has been acquired by the beneficial application of water." It is not surprising, therefore, that in these states which follow the doctrine of prior appropriation, the doctrine of riparian rights has been thought of by the courts mainly in the terms of the right to the use of water. However, many other rights of persons owning the banks of a stream have been called riparian rights.

Black's Law Dictionary² defines riparian rights as, "The rights of the owners of lands on the banks of water courses, relating to the water, its

49. Printed in black and white.

50. *People v. Offermann*, 204 Misc. 769, 125 N.Y.S.2d 179 (1953).

51. Col. William R. Bradley of the Wyoming Highway Patrol estimates that a good-sized, perhaps a majority, of accidents occurring on Wyoming highways are one-car, no collision accidents, and that speed is responsible for a large number of these accidents.

1. Wyo. Comp. Stat. 1945, Sec. 71-312.

2. Black's Law Dictionary, 4th Ed. 1490 (1951).