DISSENTING OPINION BY NAKAMURA, C.J.

After a bench trial, the District Court of the First Circuit (District Court) found Defendant-Appellant Hatem A. Eid (Eid) guilty as charged of excessive speeding for driving his car at least 30 miles per hour (mph) over the applicable speed limit. The District Court's verdict was based on the testimony of Honolulu Police Officer Benjamin Perez, Jr. (Officer Perez). Officer Perez testified that he "pace clocked" Eid's car for about three-tenths of a mile, keeping a constant distance between Officer Perez's car and Eid's car.[1] During this pace clock, the speedometer of Officer Perez's car showed that Eid was traveling 65 mph in an area where the speed limit was 25 mph.

Prior to trial, Eid filed a motion in limine to preclude Plaintiff-Appellee State of Hawaiʻi (State) from introducing evidence of the speed check done on Officer Perez's vehicle and the speedometer reading from Officer Perez's vehicle when the officer paced clocked Eid's vehicle. After an extensive pretrial evidentiary hearing, the District Court denied Eid's motion in limine. On appeal, Eid contends that the District Court erred in denying his motion in limine.[2]

In my view, the State established that it was able to lay an adequate foundation that Officer Perez's speedometer was sufficiently reliable to permit the admission of Officer Perez's speedometer reading. In particular, the State presented sufficient evidence to support a finding that Officer Perez's speedometer was in proper working order when he conducted the pace clocking of Eid's car. I would uphold the trial court's denial of Eid's motion in limine. Accordingly, I respectfully dissent.

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[1] Officer Perez described "pace clocking" as "follow[ing] another vehicle for a given distance to see the speed of that vehicle."

[2] Eid also argues on appeal that the District Court erred in denying his pretrial motion to compel discovery. Eid's appeal is limited to challenging the District Court's rulings on his motion in limine and his motion to compel discovery. He does not separately challenge other aspects of the District Court's admission at trial of the speed check evidence or the speedometer reading from Officer Perez's vehicle.

I.

The Hawaiʻi Supreme Court has held that in order to lay an adequate foundation for the admission of evidence derived from a scientific measuring device, there must be a showing that the measurement produced can be relied upon as a substantive fact. State v. Fitzwater, 122 Hawaiʻi 354, 375-76, 227 P.3d 520, 541-42 (2010); State v. Wallace, 80 Hawaiʻi 382, 407, 910 P.2d 695, 720 (1996). For measuring devices based on accepted scientific principles, a sufficient foundation can be laid by a showing that (1) the device was tested in accordance with accepted procedures to determine that it was functioning properly; and (2) the operator was qualified by training and experience to operate the device. State v. Tailo, 70 Haw. 580, 582, 779 P.2d 11, 13 (1989). The prerequisite that the device was functioning properly has also been described by the supreme court as a "showing that the measuring instrument [was] in proper working order." Wallace, 80 Hawaiʻi at 407, 910 P.2d at 720 (internal quotation marks and citation omitted).

II.

In this case, the District Court based its decision to deny Eid's motion in limine on a pretrial hearing that spanned five days and included testimony by expert automotive mechanics called by both Eid and the State.[3] Officer Perez cited Eid for excessive speeding on September 19, 2007. Roy's Kalihi Automotive Center and Towing (Roy's Automotive) performed speed checks for the speedometer of the car used by Officer Perez in citing Eid. Roy's Automotive had a contract with the Honolulu Police Department (HPD) to perform speed checks for the HPD during 2007. After this contract expired, Roy's Automotive

[3] The pretrial hearing was described as a "test case" for excessive speeding charges based on a police officer's speedometer reading during a pace clocking. The hearing encompassed both a motion to compel discovery and a motion in limine to preclude evidence of the speed check and the speedometer reading, which were filed by the defense in Eid's case and in another case.

resumed performing speed checks for the HPD in March 2008 on "an interim emergency bid."

Roy Ozaki (Roy), the owner of Roy's Automotive, and his son, Duane Ozaki (Duane), are licensed automotive mechanics and are master certified automobile technicians. They both work as mechanics for Roy's Automotive and were the only individuals performing speed checks for vehicles sent for testing by the HPD. Roy estimated that Roy's Automotive did more than 1,200 speed checks for the HPD in 2007, and Duane estimated that he had done about 700 speed checks. Both Roy and Duane were qualified by the District Court as automotive mechanic experts and testified at the pretrial hearing.[4]

Duane explained how a vehicle's speedometer measures speed. Older vehicles have speedometers that measure speed mechanically. A gear attached to the vehicle's transmission is connected to a cable that transmits the gear's movement to a speedometer head that registers the vehicle's speed. Newer vehicles have a "vehicle speed sensor" that relays an electronic signal from the vehicle's transmission that is used to calculate the vehicle's speed, with the electronic signal going to the engine computer and then to the speedometer head, or vice versa.

Roy's Automotive used a device called a speedometer dynamometer[5] to perform speed checks on the speedometers of vehicles sent for testing by the HPD. The speedometer dynamometer used by Roy's Automotive consists of three main components: (1) a master head manufactured by North Hollywood Speedometer & Clock Co. Inc. (North Hollywood Speedometer), which registers a speed on a display similar to a speedometer; (2)

[4] Roy was qualified as an automotive vehicle mechanic expert and a motor vehicle mechanic dealer expert. Duane was qualified as an expert in the fields of automotive mechanics and repair and auto technology.

[5] This device was referred to in various ways at the pretrial hearing, including speedometer dynamometer, dynamometer, dyno, and dyno rollers. For simplicity, we will refer to the device used by Roy's Automotive to conduct speed checks as a "speedometer dynamometer."

rollers; and (3) a cable. During a speed check, the drive wheels of the car whose speedometer is being tested are placed on the rollers of the speedometer dynamometer, the car is started, and the car's accelerator is depressed, which causes the car's wheels to spin. The rollers are connected by the cable to the master head. The car's wheels cause the rollers to turn, which causes the cable that connects the rollers to the master head to spin. The spinning cable causes the needle on the master head display to move and designate a speed, which is based on the speed at which the rollers are spinning. The speed reading from the master head is compared with the speed shown on the car's speedometer. A speed check card is prepared which reflects the readings of the two devices at various speeds, including the extent to which the car's speedometer reading differs from the master head's reading. The process used by the speedometer dynamometer is strictly mechanical; there are no electronics or computer software involved.

Roy obtained the speedometer dynamometer from Jack Higa (Higa) on the condition that Roy bid for the contract to perform speed checks for the HPD. The speedometer dynamometer did not come with a manual, and Higa did not train Roy on how to use the device.

Roy testified that when he obtained the speedometer dynamometer, Higa advised him that the device was easy for a mechanic to understand and use and therefore Higa did not need to teach Roy or Duane anything. Roy recounted that Higa told him, "eh, you guys mechanics, you got two rolling wheels, the one cable, just get the car on there and you measure everything out. It's as simple as that, and you guys mechanics, you supposed to know what you're doing." Roy testified that because he and Duane were "licensed technicians," no special training was necessary

for them to use the speedometer dynamometer and that for a mechanic, using the device was "pretty straightforward."[6]

Although Roy knew that North Hollywood Speedometer had manufactured the master head for the speedometer dynamometer, he did not know who manufactured the rollers and the cable. He also did not know whether Higa had purchased the speedometer dynamometer intact or had assembled the component parts himself. After obtaining the speedometer dynamometer, Roy performed maintenance on it by replacing the bearings for the rollers and changing the cable with a spare made by Higa.

In addition to using the speedometer dynamometer to perform speed checks, Roy's Automotive also used scanners to perform speed checks on approximately 12 to 14 vehicles sent by the HPD, including a July 23, 2007, speed check of Officer Perez's vehicle. A scanner is a diagnostic tool that is attached to the on-board computer that newer cars use to produce speedometer readings. A scanner reads data sent to a car's computer system, including the data used to produce the speed reading shown on the car's speedometer. Roy's Automotive updated the software for the scanners every two or three years, but did not calibrate the scanners.

The master head of the speedometer dynamometer only measures speeds up to 100 mph. For speed checks in which a scanner was used, Roy's Automotive would place the car on the speedometer dynamometer and also connect the scanner. The person conducting the speed check would look at the readings from both the master head of the speedometer dynamometer and the scanner in testing the car's speedometer up to 100 mph. In testing the car's speedometer at speeds above 100 mph, the master head of the

[6] Eid's expert witness, Marcus Ho (Ho), who was qualified as an expert in the mechanics of a dynamometer, testified that a dynamometer can be used to measure a vehicle's speed. Ho further testified that he was not aware of any certification, school, or formal training for operating or using a dynamometer; that the dynamometer was just another tool used in the automotive industry; and that a person would gain knowledge about a dynamometer by using it and through experience.

speedometer dynamometer would be disconnected and only the scanner used.

In February or March of 2007, Roy noticed that readings from the master head of the speedometer dynamometer were "okay" up to 75 mph but were differing from the car's speedometer by 2 or 3 mph at 85 mph and by 4 or 5 mph at 95 mph. Roy called North Hollywood Speedometer and spoke with its owner, Hartmut Behrens (Behrens). Behrens advised Roy that these results were close enough to the 2 percent margin of error for the master head that there was no need to send it to North Hollywood Speedometer.

In January 2008, Roy sent the master head to North Hollywood Speedometer to get it "checked out."[7] In response, North Hollywood Speedometer sent two letters to Roy's Automotive that were signed by Behrens. The first letter, dated January 16, 2008, stated that the master head had been overhauled and calibrated to the "specifications of the speedometer roller device" used by Roy's Automotive.[8] The second letter[9] stated that the master head was checked for accuracy before it was overhauled by North Hollywood Speedometer, with the following results:

MPH Readout at:	Masterhead indicated:
30	31
60	62
80	82
90	93

The second letter further reported that "[b]esides the damage to the outside casing and lens we found the instrument to be in

[7] As part of this process, Roy measured the rollers on his speedometer dynamometer and provided this information to North Hollywood Speedometer.

[8] The January 16, 2008, letter further stated that the "identical set up" has been used by North Hollywood Speedometer to check speedometers for accuracy for more than 40 years, including certain "CHP" stations and ambulance companies.

[9] The second letter was dated "January 29, 2009," but Roy indicated that the "2009" was a typographical error and should have read "2008."

working condition." Both letters were admitted in evidence by stipulation at the pretrial hearing.

A speed check card showing the speed check of Officer Perez's car that was performed by Roy's Automotive on July 23, 2007, was also admitted in evidence by stipulation at the pretrial hearing. This speed check was performed through the use of both the speedometer dynamometer and a "Snap On" scanner. The July 23, 2007, speed check card shows that Officer Perez's speedometer was tested and found to be registering: (1) 25 miles at 25 mph; (2) 35 miles at 35 mph; (3) 45 miles at 45 mph; (4) 55 miles at 55 mph; (5) 65 miles at 65 mph; (6) 1 mile slow at 75 mph; (7) 2 miles slow at 85 mph; (8) 3 miles slow at 95 mph; (9) 3 miles slow at 105 mph; and (10) 3 miles slow at 110 mph.

At trial, the District Court admitted the July 23, 2007, speed check card into evidence as well as an April 5, 2007, speed check card for Officer Perez's vehicle. The April 5, 2007, speed check card was based on a speed check performed by Roy's Automotive on April 5, 2007, using only the speedometer dynamometer. The April 5, 2007, speed check card showed that Officer Perez's speedometer was tested and found accurate at speeds up to 75 mph, but was 3 miles fast at 85 mph and 5 miles fast at 95 mph.

III.

The majority relies upon Fitzwater, 122 Hawaiʻi 354, 227 P.3d 520, in concluding that the District Court erred in denying Eid's motion in limine. Based on Fitzwater, the majority holds that the State failed to demonstrate that it could lay a sufficient foundation for the admission of the speed check evidence and consequently the speedometer reading in this case. In particular, the majority points out that the State failed to prove the manufacturer of the equipment used to perform the speed check because only the manufacturer of the master head and not the entire speedometer dynamometer was established.

The District Court rendered its decision in this case before Fitzwater was decided. It is true that in Fitzwater, the supreme court stated:

> Thus, in order for the results of speed checks to be admissible, the State must establish: (1) how and when the speed check was performed, including whether it was performed in the manner specified by the manufacturer of the equipment used to perform the check, and (2) the identity and qualifications of the person performing the check, including whether that person had whatever training the manufacturer recommends in order to competently perform it.

Id. at 376-77, 227 P.3d at 542-43.

In Eid's case, the State did not present evidence that the speed check was "performed in the manner specified by the manufacturer of the equipment used to perform the check." Indeed, it is not clear that there is a single manufacturer of the speedometer dynamometer used to perform the speed checks, much less a method of performing the speed checks recommended by the manufacturer. Roy, the owner of the company contracted by the HPD to perform speed checks, testified that although he knew that North Hollywood Speedometer manufactured the master head for the speedometer dynamometer, he did not know who manufactured the rollers and the cable, the other main components of the device. Roy also did not know whether Higa, from whom Roy had obtained the device, had purchased the speedometer dynamometer intact or had assembled the component parts himself. There was no manual for the speedometer dynamometer.

The State also did not present evidence that Roy and Duane received training recommended by the manufacturer on how to use the speedometer dynamometer. Instead, the State presented evidence that Roy and Duane did not need specific training on how to use the device because as auto mechanics, the device was easy for them to understand and use.

In Fitzwater, the record did not contain details on how the speed check on the officer's vehicle was done. The court noted that Officer Ah Yat, the officer who issued the speeding citation and the prosecution's sole witness, "did not testify

about how the [speed] checks are done." Fitzwater, 122 Hawaiʻi at 358, 227 P.3d at 524. Officer Ah Yat acknowledged that he had not personally taken his vehicle to Jack's Speedo Shop to have the speed check performed (and thus had not witnessed the speed check) and did not talk to anyone at Jack's Speedo Shop about how the test was conducted. Id. at 359, 227 P.3d at 525.[10]

Because the record in Fitzwater was devoid of information about the nature of the test conducted in performing the speed check, the court necessarily had to make assumptions about the test and the training necessary to perform the test in rendering its opinion. The court stated:

> The record does not indicate exactly what kind of test was performed at Jack's Speedo Shop, although it is fair to infer that the test required some specialized training and/or expertise to perform. Officer Ah Yat did not indicate that he had any such training or expertise; instead, his testimony was quite clearly based solely on the contents of the speed check card.

Id. at 375, 227 P.3d at 541.

I believe that the court's statements in Fitzwater concerning the foundational requirements to admit speed check results and an officer's speedometer reading must be viewed in the context of the assumptions the court was required to make due to the lack of information about the kind of test performed. Given the sparse record in Fitzwater, the court assumed that there was a manufacturer of the device used to perform the speed check test that had specified a procedure for performing the speed check and had recommended training on how to use the device. Given the context in which Fitzwater was decided, I do not read Fitzwater as imposing an inflexible rule that, regardless of whether the court's assumptions about speed checks are true, the only way to establish the foundational requirements for admission of speed check results and speedometer readings is

[10] The speedometer dynamometer acquired by Roy's Automotive and used to conduct the speed check on Officer Perez's speedometer apparently had previously been used by Jack's Speedo Shop.

by reference to procedures and training established by the manufacturer.

Such a restrictive reading would be inconsistent with the essential purpose of the foundation requirement, which is to provide assurances that the proffered evidence is reliable, and with the supreme court's long-established view that a sufficient foundation for evidence derived from a scientific measuring device is established by a showing that the measurement produced can be relied upon as a substantive fact. Fitzwater, 122 Hawaiʻi at 375-76, 227 P.3d at 541-42; Wallace, 80 Hawaiʻi at 407, 910 P.2d at 720. It would also conflict with the view that a sufficient foundation for the results of measuring devices based on accepted scientific principles can be established by a showing that the device was in good working order and used by someone qualified to operate the device. See Tailo, 70 Haw. at 582, 779 P.2d at 13; Wallace, 80 Hawaiʻi at 407, 412, 910 P.2d at 720, 725.

The factors cited by the court in Fitzwater are applicable to establishing an adequate foundation for test results where a manufacturer's recommendations for using the device and for training exist and the device is sufficiently complex that it is necessary for such recommendations to be followed to properly operate the device. However, where such manufacturer's recommendations do not exist or the individuals using the device have sufficient independent expertise to understand and properly use the device, I do not believe that the absence of evidence regarding a manufacturer's recommendations precludes the State from establishing an adequate foundation.

IV.

In this case, the crucial evidence necessary to prove the excessive speeding charge was Officer Perez's speedometer reading, and thus the crucial measuring device was Officer Perez's speedometer. In my view, the State presented evidence at the pretrial hearing establishing that it was able to lay an

adequate foundation for the admission of Officer Perez's speedometer reading. The evidence showed that Officer Perez's speedometer was in good working order on September 19, 2007, when Officer Perez issued the citation to Eid for traveling 65 mph in a 25 mph zone. The speedometer was tested for accuracy through the use of a speedometer dynamometer on July 23, 2007. The test by the speedometer dynamometer showed that the speedometer was accurate, with no discrepancies found, up through 65 mph. The speed check test was performed by a licensed automotive mechanic and master certified automobile technician who understood how the speedometer dynamometer worked and had extensive experience in performing speed checks using that device. The reliability of the speedometer dynamometer was supported by tests performed by the manufacturer of the master head for the speedometer dynamometer in January 2008, which showed that the master head was accurate within 2 mph for speeds up to 80 mph. The validity of the July 23, 2007, speed check was further confirmed by the use of a scanner in addition to the speedometer dynamometer in performing the speed check.[11]

The same basic evidence establishes that the State was able to lay an adequate foundation for the admission of the July 23, 2007, speed check evidence. The evidence showed that only Roy and Duane performed speed checks for Roy's Automotive, both of whom were experienced, licenced mechanics and certified automobile technicians.[12] The State established how and when the July 23, 2007, speed check on Officer Perez's car was performed,

[11] A speed check was also performed on Officer Perez's speedometer with the use of the speedometer dynamometer on April 5, 2007. The April 5, 2007, speed check also showed that Officer Perez's speedometer was accurate, with no discrepancies, up through 65 mph. The April 5, 2007, speed check card was not introduced at the pretrial hearing, but only at trial. Thus, the District Court did not rely on it in denying Eid's motion in limine. However, the April 5, 2007, speed check provides additional corroboration that Officer Perez's speedometer was in good working order when Officer Perez cited Eid.

[12] The evidence, specifically the signature or initials on the July 23, 2007, speed check card, indicates that Roy performed that speed check on Officer Perez's car. However, this was not established by direct testimony at the pretrial hearing.

including the procedures used in performing the speed check. The evidence showed that the speed check was performed by the use of a speedometer dynamometer; that the device was capable of measuring a vehicle's speed; that the device was purely mechanical; that both Roy and Duane understood how the device worked and had used it numerous times; and that for mechanics with their level of experience and expertise, no additional special training was necessary to use the device because the use and operation of the device was straightforward. The evidence further showed that within six months of the July 23, 2007, speed check, the master head of the speedometer dynamometer had been tested for accuracy by its manufacturer and was found to be accurate to within 2 mph for speeds up to 80 mph. In addition, the July 23, 2007, speed check results from the speedometer dynamometer were corroborated up through 100 mph by a scanner that had also been used during the July 23, 2007, speed check.

The speed reading from Officer Perez's speedometer showed that Eid was traveling 40 mph over the posted speed limit, which is 10 mph more than necessary to prove the excessive speeding offense. This 10 mph margin of error provides additional support for my conclusion that the State established its ability to lay a sufficient foundation to admit Officer Perez's speedometer reading and that the District Court did not err in denying Eid's motion in limine.

For the foregoing reasons, I respectfully dissent.