

**IN THE SUPERIOR COURT OF THE STATE OF DELAWARE**

STATE OF DELAWARE,

v.

KWAREASE A. BYARD,

Defendant.

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Cr. ID. No. 1604019011

Submitted: April 25, 2018

Decided: May 1, 2018

Upon the Defendant's Motion to Exclude Expert Testimony

**DENIED**

**OPINION**

Michael B. DegliObizzi, Esquire, Department of Justice, Wilmington, Delaware,  
Attorney for the State

Michael W. Modica, Esquire, Wilmington, Delaware, Attorney for Defendant

**JOHNSTON, J**

**FACTUAL AND PROCEDURAL CONTEXT**

The Court held a *Daubert* hearing on April 25, 2018. The hearing concerned the admissibility of data collected from a car's crash sensing device, more commonly known as an Event Data Recorder ("EDR"). This is an issue of first impression in Delaware.

The Defendant, Kwarease Byard, is alleged to have been in a one car accident. In connection with that accident, Byard was charged with assault, reckless driving, speeding, driving during suspension, and failure to show proof of insurance. In advance of trial, the State notified Byard that it intended to introduce the expert testimony of Corporal Joseph Aube of the Delaware State Police. Aube is expected to testify that the data recovered from the EDR demonstrates the speed Byard was traveling immediately before the accident.

Byard has moved for the exclusion of this testimony absent a showing by the State that the EDR evidence is sufficiently reliable to be admissible under the Delaware Rules of Evidence.<sup>1</sup>

#### **ADMISSION OF EXPERT TESTIMONY STANDARD**

The Delaware Supreme Court has adopted the *Daubert* standard to determine the admissibility of expert testimony.<sup>2</sup> Under this standard, the Court asks whether: (i) the witness is “qualified as an expert by knowledge, skill, experience, training or education;” (ii) the evidence is relevant and reliable; (iii) the expert’s opinion is based upon information “reasonably relied upon by experts in the particular field;” (iv) the expert testimony will “assist the trier of fact to understand the evidence or

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<sup>1</sup> Byard also raised a second issue in his motion: whether Corporal Aube is qualified to testify regarding the EDR. This second issue was not addressed at the hearing and will be resolved at a later date.

<sup>2</sup> See *Eskin v. Carden*, 842 A.2d 1222, 1231 (Del. 2004) (citing *Daubert v. Merrell Dow*, 509 U.S. 579 (1993)).

to determine a fact in issue;” and (v) the expert testimony will not create unfair prejudice or confuse or mislead the jury.<sup>3</sup>

When assessing the second factor of the *Daubert* standard—the reliability of the expert’s opinion—trial courts consult a non-exclusive list of four more questions: (1) whether the opinion at issue is susceptible to testing and has been subjected to such testing; (2) whether the opinion has been subjected to peer review; (3) whether there is a known or potential rate of error associated with the methodology used and whether there are standards controlling the technique’s operation; and (4) whether the theory has been accepted in the scientific community.<sup>4</sup>

### ANALYSIS

Though the admissibility of data retrieved from an EDR is a question of first impression in Delaware, several other jurisdictions have considered the issue. It would appear that EDR evidence has been admitted in every instance in which it was challenged. The majority of these cases, however, reached this conclusion under the *Frye*, rather than the *Daubert* standard. Nonetheless, these cases are instructive. The *Frye* standard’s sole focus—the general acceptance of the evidence in the particular field in which it belongs<sup>5</sup>—is analogous to *Daubert*’s inquiry into the acceptance of

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<sup>3</sup> *Id.* at 1227 (quoting *Cunningham v. McDonald*, 689 A.2d 1190, 1193 (Del.1997)).

<sup>4</sup> *Sturgis v. Bayside Health Ass’n Chartered*, 942 A.2d 579, 584 (Del. 2007).

<sup>5</sup> *Frye v. U.S.*, 293 F. 1013, 1014 (D.C. Cir. 1923) (requiring the subject of expert testimony to be “sufficiently established to have gained general acceptance in the particular field in which it belongs” to be ruled admissible).

the subject of the testimony within the scientific community. These *Frye* cases uniformly declare that EDR evidence is generally accepted as reliable, primarily because the EDR's underlying technology is not novel.<sup>6</sup>

The Court has located only three appellate cases that did not analyze the admissibility of EDR evidence under *Frye*. Though well-reasoned, two of the three cases do not walk the same path through *Daubert* that this Court must under Delaware law.

The first of these two cases is *Commonwealth v. Zimmerman*,<sup>7</sup> a case decided under Massachusetts law. The Supreme Judicial Court of Massachusetts has “accept[ed] the basic reasoning of *Daubert* because it is consistent with [Massachusetts'] test of demonstrated reliability.”<sup>8</sup> That test, however, is more akin to a *Frye-Daubert* hybrid than a Delawarean wholesale adoption of *Daubert*. In

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<sup>6</sup> *Easter v. State*, 115 A.3d 239, 248 (Md. Ct. Spec. App. 2015) (“[T]he circuit court did not abuse its discretion in determining that ‘black box’ data derived from the air bag control module of appellant’s SUV was sufficiently reliable to support the expert’s testimony.”); *Com. v. Safka*, 95 A.3d 304, 308 (Pa. Super. Ct. 2014) (“This evidence establishes that the technology has existed for almost 40 years, has been adopted by the major automobile manufacturers, and has been recognized as an acceptable tool used by accident reconstruction experts to determine a vehicle’s speed prior to an impact. It is not novel science; it is an accepted technology.”); *State v. Shabazz*, 946 A.2d 626, 631 (N.J. Super. 2005) (accepting testimony of an expert witness that “there are no organizations within the automotive community which question the reliability of EDR devices”); *Matos v. State*, 899 So.2d 403, 407 (Fla. Dist. Ct. App. 2005) (“The process of recording and downloading [EDR] data is not a novel technique or method . . . [EDR] data is generally accepted in the relevant scientific field, warranting its introduction.”); *Bachman v. General Motors Corp.*, 776 N.E.2d 262, 281 (Ill. App. Ct. 2002) (“Crash sensors such as the [EDR] have been in production in automobiles for over a decade, and the microprocessors that run them and record their data also run everyday appliances, such as computers and televisions.”).

<sup>7</sup> 873 N.E.2d 1215 (Mass. App. Ct. 2007).

<sup>8</sup> *Id.* at 1217–18 (quoting *Commonwealth v. Lanigan*, 641 N.E.2d 1342, 1349 (1994)).

Massachusetts, the proponent of the evidence “may lay a foundation by showing that the underlying scientific theory is generally accepted within the relevant scientific community, *or* by showing that the theory is reliable or valid through other means.”<sup>9</sup>

In *Zimmerman*, the Appeals Court of Massachusetts applied this hybrid test in affirming the trial’s court decision to admit EDR data. The Appeals Court explained that the expert testified:

that the technology behind the EDR had been known for many years; that he and others had tested the speed of motor vehicles by other methods to compare information provided by the EDRs and had found the EDRs to be reliable; that EDRs need no maintenance and calibration for ten years; and that his calculations based on the physical and other evidence in this case were consistent with the EDR data from the defendant’s vehicle.<sup>10</sup>

However, the trial court “did not refer to the alternate prongs” of Massachusetts’ hybrid test in its decision, leaving the appeals court to conclude that the trial court only “implicit[ly]” decided that the expert’s testimony indicated EDR data’s “validity,”<sup>11</sup> unfortunately without providing any substantive analysis. The appeals court went on to affirm the admissibility of the EDR data on the alternative ground that there was “ general acceptance of data from motor vehicle crash recorders in the relevant scientific community.”<sup>12</sup> Though Massachusetts is

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<sup>9</sup> *Id.* (quoting *Commonwealth v. Patterson*, 840 N.E.2d 12, 24 (Mass. 2005) (emphasis in original)).

<sup>10</sup> *Id.* at 1220.

<sup>11</sup> *Id.*

<sup>12</sup> *Id.* at 1220–21.

nominally a *Daubert* jurisdiction, the *Zimmerman* court admitted the evidence without performing a complete *Daubert* analysis.

The same is true in *State v. Diaz*,<sup>13</sup> another appellate case in a *Daubert* jurisdiction, which admitted EDR evidence. The procedural posture of *Diaz*, a New Mexico case, precluded a substantive *Daubert* analysis. In *Diaz*, the defendant failed to make a *Daubert* motion before trial, but later objected to the admission of EDR data on the grounds that it required expert testimony. Rather than exclude the EDR evidence, the trial court allowed the State to amend its witness list to include an EDR expert. On appeal, the Defendant attacked the expert's qualifications, but specifically noted that the Defendant "was not challenging the science underlying the [EDR] system data . . . ."<sup>14</sup> "In the absence of such a challenge, the district court was entitled to assume that the underlying reliability of the [EDR] system need not be examined . . . ."<sup>15</sup> In other words, neither at trial nor on appeal did the New Mexico courts have the opportunity to analyze the admissibility of the EDR data through a *Daubert* analysis.

It appears that the only appellate case performing a *Daubert* analysis of EDR data is *State v. Clary*,<sup>16</sup> an unpublished Arizona Court of Appeals decision. In *Clary*,

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<sup>13</sup> 2017 WL 1017356 (N.M. Ct. App.).

<sup>14</sup> *Id.* at \*1.

<sup>15</sup> *Id.*

<sup>16</sup> 2016 WL 4525041, at \*7 (Ariz. Ct. App.).

the court found EDR data reliable when an expert testified at an evidentiary hearing that the EDR data “had been tested, that his reconstruction opinions were subject to peer and supervisor review, and that the error rates were approximately plus or minus four miles per hour for speed and ten miles per hour for a change in velocity.”<sup>17</sup> The court also concluded that standards existed “to control how such data should be used by accident reconstructionists” because of the expert’s testimony “that he was trained and certified by the Collision Safety Institute to download and analyze [EDR] data.”<sup>18</sup> Finally, the court relied on cases from *Frye* jurisdictions to establish that EDR technology has been generally accepted in the accident reconstruction field.<sup>19</sup>

In sum, caselaw demonstrates that EDR evidence has been met with an overwhelming chorus of approval in jurisdictions across the country, without a single voice raised in dissent. Though authority for admission under the *Frye* standard is stronger than that under *Daubert*, this appears to be the result only of where the issue happened to be raised, rather than a meaningful difference in outcome between the two standards. No *Daubert* jurisdiction has yet to reject EDR evidence.

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<sup>17</sup> *Id.*

<sup>18</sup> *Id.*

<sup>19</sup> *Id.* (citing *Com. v. Safka*, 95 A.3d 304 (Pa. Super. Ct. 2014); *Bachman v. General Motors Corp.*, 776 N.E.2d 262 (Ill. App. Ct. 2002)).

With the weight of authority established firmly on the side of admission, the Court now turns to the evidence of reliability presented in this case.

Richard R. Ruth testified in support of the admission of EDR data. Ruth, a registered professional engineer in the state of Michigan, testified that he was employed by the Ford Motor Company for thirty-three years, where he was a member of the Ford Event Data Recorder Policy Committee and worked as Manager of Design Analysis Vehicle Dynamics and Interior. Ruth has been a member of the Society of Automotive Engineers (“SAE”) for forty-three years and has attended and presented at EDR conferences and symposiums across the country. Ruth has authored peer reviewed papers on EDR and works as a peer reviewer for the SAE World Congress. He currently works as an instructor at the University of North Florida, Institute of Police Technology and Management in Use of EDR Traffic Crash Recon. Ruth also owns his own consulting business, in which he reads EDRs and applies the data to traffic crash reconstruction to determine vehicle speeds and driver behavior before a crash.

Ruth addressed each of the *Daubert* factors of reliability:

- (1) whether a theory or technique has been tested;
- (2) whether it has been subjected to peer review and publication;
- (3) whether a technique had a high known or potential rate of error and whether there are standards controlling its operation; and
- (4) whether the theory or technique enjoys general acceptance within a relevant scientific community.<sup>20</sup>

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<sup>20</sup> *Sturgis v. Bayside Health Ass'n Chartered*, 942 A.2d 579, 584 (Del. 2007).



As to the first three factors, Ruth testified that there are peer-reviewed publications that tested EDR systems and thereby established its known error rate. Ruth testified that the EDR is susceptible to testing through the use of crash simulations, in which the EDR's reported speed of the vehicle prior to the crash was compared to an independent means of measuring speed, such as a fifth wheel or a GPS unit.

The results of these tests have been widely published in peer-reviewed journals. These publications established the potential rate of error associated with an EDR. Generally, the EDR has been found to be an accurate measure of a vehicle's speed plus or minus 4%. The EDR has been found to be an accurate measure of crash severity, measured by the change in velocity, plus or minus 10%.

As for whether there are standards controlling EDR's operation, Ruth testified that the National Highway Traffic Safety Administration ("NHTSA") issued a rule regulating minimum accuracy benchmarks for EDR. The stated purpose of the regulation "is to help ensure that EDRs record, in a readily usable manner, data valuable for effective crash investigations and for analysis of safety equipment performance (e.g., advanced restraint systems)."<sup>21</sup> To achieve that purpose, the regulation sets requirements for what data elements the EDR must contain, the

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<sup>21</sup> 49 C.F.R. § 563.2.

format of the data, rules for the capture of data, rules for crash test performance and survivability, and what information on the EDR must be included in the owner's manual.<sup>22</sup> Finally, the regulation also sets the standard of the acceptable range of accuracy for the various elements EDRs are capable of recording.<sup>23</sup> For instance, the NHTSA requires an EDR's measure of a vehicle's indicated speed to be accurate within plus or minus 1 km/h.<sup>24</sup>

Ruth also addressed whether the theory has been accepted in the scientific community. This factor is resoundingly established by the above cited caselaw. Ruth added that EDR is regularly used by automakers to establish whether safety systems worked properly in the event of a crash, by insurance companies to confirm or deny claims, by the National Transportation Safety Board to collect accident data, and by crash reconstructionists across North America. He also testified that an estimated 99% of new cars are outfitted with an EDR. Ruth asserted that he was unaware of anyone in the accident reconstruction field that rejected the use of data extracted from an EDR.

Ruth's testimony establishes that EDR data is sufficiently reliable for admission under *Daubert*.

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<sup>22</sup> 49 C.F.R. § 563.6.

<sup>23</sup> 49 C.F.R. § 563.8.

<sup>24</sup> *Id.*

## CONCLUSION

The Court finds that evidence from an EDR is sufficiently reliable for admission. The expert in this case demonstrated that: (1) the accuracy of EDR data has been tested; (2) the results of the tests have been published in peer-reviewed journals; (3) these tests have established the EDR's error rate; (4) the NHTSA has promulgated standards for the EDR's accuracy; and (5) the technology has been universally embraced in the automotive industry and related fields.

The EDR testimony is relevant and will assist the trier of fact to understand the evidence and to determine a factual issue. The evidence will not create unfair prejudice or confusion.

**THEREFORE**, the Defendant's Motion to Exclude Expert Testimony is hereby **DENIED**.

**IT IS SO ORDERED.**



The Honorable Mary M. Johnston