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July 9, 2025

The Honorable Marc C. Lemieux, A.J.S.C.
Monmouth County Courthouse
71 Monument Park
Freehold, New Jersey 07728

Re: State of New Jersey v. Paul Caneiro
Indictment No. 19-02-0283; Case No. 18004915
Written Summation - Motion to Preclude Ballistics Evidence

Dear Judge Lemieux:

On July 7, 2024, after testimony was completed relating to the above-captioned motion, this Court ordered written summations be provided to the Court by Thursday, July 10, 2025. Accordingly, the State submits the following.

This motion was originally filed by the defense on May 6, 2025. In seeking to preclude the ballistic evidence, defendant attempted to take an all-or-nothing approach, essentially arguing that "the evidence turned over by the State was simply insufficient to demonstrate the reliability of the ballistics analysis that was done in this case." Db10. The defendant made several arguments: most specifically, though, that "in this case due to the lack of proper documentation generated and provided about the ballistics analysis undertaken… the State has failed to comply with our discovery rules, meet the requirements of N.J.R.E. 703, or demonstrate the as-applied validity of the

ballistics evidence." Db1[1]. It should be noted, however, that defendant made several specific challenges as well: including the following, a lack of reliable methodology; failure to explain the basis of the opinion; that it was a "net opinion;" the Ballistics examination failed to meet Prongs 2 or 3 of N.J.R.E. 702 (arguing Olenowski); the "missing photographs and explanations as to how conclusions were reached precludes any finding of as-applied validity; the total lack of information about the verifier and his verification rendered the examination unreliable; a lack of information regarding bias mitigation procedures and exposure to biasing information; the NJSP Standard Operating Procedures (SOPs) are too subjective, rendering the examination unreliable; and, finally, that the examination fails to meet the requirements of N.J.R.E. 401 and 403.

Essentially, the State submits the challenge can be summarized as follows -- that "N.J.R.E. 702, 401 and 403 require the State – as the proponent of the evidence – to prove that a reliable methodology was applied reliably in this particular case. Db10. As this Court will recall defendant argued specifically that a hearing could not cure the deficiencies in the ballistics examination and conclusions. This Court, from the beginning, clearly felt otherwise. The State submits that, if there were deficiencies in the "proper documentation generated and provided about the ballistics analysis undertaken," these have been rectified in light of 3 days of testimony from both Detective Sergeant First Class Christopher Clayton and Detective Sergeant Joshua Smith.

[1] Db refers to defendant's brief dated May 6, 2025.

While the Court, at times, reminded both sides of the nature of the challenge and the information that the Court felt it needed to hear, it also allowed the defendant to extensively cross examine Clayton regarding his analysis. While the defense may not like the admittedly subjective nature of ballistics analysis, they certainly cannot now claim that they are not armed with enough information to adequately challenge the testimony at trial.

The State would first note, despite the complete lack of acknowledgement by the defense and its Cognitive Bias expert, Dr. Jeff Kukucka, that rarely with expert testimony can one actually see the actual conclusion (emphasis added). The State submits that during oral arguments, prior to the Court ordering the hearing which was recently concluded, the Court even posed a question to the defense to the effect of, "but don't the pictures even allow you to see what the examiner saw in reaching his conclusions (paraphrasing)?" The point is well taken. While the State does not make light of some of the recommendations offered by Dr. Kukucka, we would argue that when asked if about the representative photographs taken by SFC Clayton, he told this Court that he had no idea what he was looking at (paraphrasing). This, the State would suggest, is disingenuous at best. Anyone who argues that the photos do not allow any insight into the pattern matching or significant agreement of two items, as viewed under the comparison microscope, is purposely ignoring that which is obvious.

While the defense casts aspersions upon the lack of objective definition of "sufficient agreement," it appears that SFC Clayton testified numerous times, to the best of his ability, regarding that definition. Unfortunately, the defense simply does not like the fact that Ballistics is inherently objective,

relying partially on the significant training and combined experience of the examiner. But, like the old saying goes, sometimes this training and experience leads to the conclusion that, "I know it when I see it." The discovery in this case allows the Court and, ultimately, a jury to view these representative photos. If the jury, like Dr. Kukucka, do not see it, then they can choose to reject it. To argue that it must be excluded despite years and years of precedent is draconian.

To be clear, the State is not arguing that the evidence should be admitted because "it always has been." The State is arguing that "it always has been" because Courts have historically (and recently) come to the conclusion that the methodology is sound. SFC Clayton has testified as an expert in the field 61 times in Superior and Federal Courts in this State. He has testified several times in this County. See S-2. Repeatedly, he has testified about his analysis and conclusions as documented in his reports, notes and based on representative photographs. While the State will expand upon this further infra, none of the documents from OSAC, ATF or AFTE were inconsistent with the manner in which Clayton performs and/or documents his analysis and conclusions. To be clear, all require that representative photographs be taken, which is exactly what Clayton did in this case. They all require this in order to allow another qualified examiner to be able to view the conclusions.

In this regard, the defense argues, citing D-7, the AFTE Technical Procedures Manual, that sufficient records enabling another examiner to "evaluate what was done and interpret the data" were not created or kept. The State is not aware of any defense expert that has reviewed this very same documentation from NJSP Ballistics who was unable to evaluate SFC Clayton

or any other examiner's work. I suspect that, were that the case, a report would be generated by another qualified examiner regarding the lack of documentation. While the State is aware that the best way for a defense expert, i.e. another qualified examiner, to review the conclusions, is to conduct their own analysis of the actual evidence, it appears that this has only happened once with respect to SFC Clayton's examinations. However, the State would submit that any qualified examiner could review Clayton's work in this case with the documentation that was provided – not to mention one that actually used to work at NJSP Ballistics.

In their brief filed today, July 10, 2025 defendant indicates that Clayton testified that "another examiner would need to review the physical evidence to evaluate why he arrived at his reported conclusions – and – concerningly, just looking at the documentation he chose to create would not be sufficient." There was no citation to this testimony. However, in looking at his testimony from July 1, 2025, SFC Clayton was asked "do you believe that the work, the work that you, you put out as part of a case or this case, your report, your notes, your photographs, do you believe that they allow a qualified firearm and toolmark examiner, another one, to adequately review your conclusions?" His answer was "yes." July 1, 2025, p. 214, lines 19-25. To be clear, in this regard, what Clayton said about an actual evidence review was that, "[t]o actually physically agree or disagree 100 percent you would actually have to look at the physical evidence and that's what's listed or noted in the document (referring to S-4, SWGGUN Guidelines for the Standardization of Comparison Documentation)… [w]hat you're doing at they can look at these photos and they can understand that this, this is a good – correspondence is there. It's

obvious. But again, for them to do any type of verification work, they would have to look at that physical evidence." 7/1/25, page 238, lines 10-20. The State was never asked if a qualified examiner could view the ballistic evidence in this case and is unaware if a qualified examiner has reviewed the NJSP Ballistics information. Notably, as well, Sgt. Joshua Smith also was asked about this:

> Q Are photographs helpful for people outside of the examiners, in your opinion?
> A Yes, I think so.
> Q But are they the best way to actually compare one item to another, in order to provide a conclusion?
> A No, no, that's not how any type of comparison is done, with photographs. So photograph, just a representation, I've heard it described as, if your examination is a movie, that's one scene from the movie. They're really helpful I think to juries so they can see the pattern for themselves. So, representation, but like here's the proof, is more a representation of what we see to refresh our recollection.

July 3, 2025, page 78, lines 12-24.

While the specific testimony will be discussed further infra, the State submits that caselaw makes clear, time and time again, that ballistics evidence is sufficiently reliable under either a Frye or Daubert standard. Courts have specifically stated that "[t]he science of firearm and toolmark identification is well-established, spanning over 100 years in the United States." State v. Ghigliotty, 463 N.J. Super. 355 (App. Div. 2020); see also State v. McGuire, 419 N.J. Super. 88, 130-31 (App. Div.), certif. denied, 208 N.J. 335 (2011) ("Testimony by tool mark experts has been admitted in New Jersey courts without objection" because "tool mark analysis is not a newcomer to the courtroom"). Within that century there has developed a "foundation of

knowledge about firearm and toolmark identification that has been organized over time and is described in forensic textbooks, scientific literature, reference material, training manuals, and peer reviewed scientific journals." Ghigliotty, 463 N.J. Super. at 362. "Neither the underlying principles nor the methodology" of ballistics "has changed significantly during the last 100 years." Ibid.

The "most widely accepted method used in conducting toolmark examination is a side-by-side, microscopic comparison of the markings on a questioned material item to known source marks imparted by a tool." Ibid. Specifically for ballistics, "[a] firearms toolmark examiner uses a comparison microscope to compare toolmarks on an evidence bullet with toolmarks present on a test fired bullet from the suspected weapon that is linked to either the crime scene or a suspect." Id. at 362-63. "Class characteristics," i.e., "firearm features 'shared by many items of the same type' and determined by the manufacturer that 'help narrow the population of potential firearm source,'" "are evaluated first, followed by individual characteristics," i.e., "'fine microscopic markings and textures' that 'are random in nature, usually arising from the tool working surface incidental to manufacture, but can also be the result of use, wear, and possible care and/or abuse of the tool,' and that form striated or impressed toolmarks on ammunition." Id. at 361-63 (citations omitted).[2]

[2] The Ghigliotty Court's "primer" on ballistics evidence is derived from the very same four sources used by the defendant for his "Primer," see Db11-15, though without defendant's barely hidden biases: Robert M. Thompson, Firearm Identification in the Forensic Science Laboratory (National District Attorneys Association, Alexandria, VA), 2010; National Research Council,

Sergeant Clayton testified similarly regarding the underlying methodology involved with pattern matching. He discussed the AFTE Theory of Identification (S-3) and how it guides conclusions. While it was asked ad nauseum, the answer never changed – yes, the science is subjective; however, it considers the examiner's training and experience and it is the accepted methodology in the field of firearm and toolmark examination. Specifically, when asked about "pattern matching," SFC Clayton indicated that "that's the methodology we use when we're comparing two specimens. Pattern matching or pattern comparisons are visually looking at tool marks to see if either there's a corresponding pattern or there's a lack of corresponding pattern." He continued that pattern comparisons are the accepted methodology in the field of firearm and toolmark examination, indicating "yes, it's what every examiner would utilize when comparing specimens." 7/1/25, page 196, lines 5-15.

Committee to Assess the Feasibility, Accuracy, and Technical Capability of a National Ballistics Database, Ballistic Imaging (Nat'l Academies Press, Washington, D.C.), 2008; National Research Council, Committee on Identifying the Needs of the Forensic Science Community, Strengthening Forensic Science in the United States: A Path Forward (Nat'l Academies Press, Washington, D.C.) 2009; and President's Council of Advisors on Science and Technology, Report to the President, Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods (Executive Office of the President), September 2016. Ghigliotty, 463 N.J. Super. at 360 n.2. As to the last, often referred to as the PCAST Report, a response to that report appeared in the Winter 2022 edition of the Baylor Law Review. See Colonel (Ret.) Jim Agar, The Admissibility of Firearms and Tool Marks Expert Testimony in the Shadow of PCAST, Baylor L. Rev. 93 (2022). While this article is available on the Baylor Law Review's website, see https://law.baylor.edu/why-baylor-law/academics/legal-writing/baylor-law-review/past-issues, the State has appended this to its brief for the convenience and edification of the Court.

Interestingly, while Dr. Jeff Kukucka argued that the importance of examining individual pieces of evidence one at a time prior to comparing any items (ACE-V, LSU, etc.), it seemed clear to the State that this is almost identical to the approach taken by NJSP Ballistics.

Dr. Kukucka testified at length regarding the preferred methods of sequencing in forensic science. Again, this appears to have been largely followed in this case. Clayton testified as follows:

> The process has always been the same. You start off with evaluating each specimen, whether it's a cartridge case and you're evaluating the specimens for their class characteristics. The class characteristics are the same and there's individual characteristics on these specimens. It's possible that they were fired in the same gun. If the class characteristics are different, you can eliminate the two specimens as being fired from the same gun right at that evaluation phase. If the class characteristics are the same and there's individual characteristics to compare, then you would move on to do a microscopic comparison of those specimens, use a comparison microscope. The methodology that we use is pattern comparison or pattern matching. So what we're looking for, we're comparing patterns or groups of patterns that either correspond or there's difference in, differences in those patterns. It's all about pattern recognition and pattern correspondence. From that point you can render your conclusion which could either be identification, elimination or inconclusive, inconclusive meaning you can't tell either way specimens were or were not fired from the same gun and then you would go to the verification process.
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> 7/1/25, page 194, line 20 to page 195, line 19.

The consistency of ballistics evidence has led to its consistent admissibility in New Jersey courtrooms. See Ghigliotty, 463 N.J. Super. at 375 (finding itself so unconcerned with "the general acceptance of the firearm

toolmark identification," that a Frye hearing was not required); see, e.g., State v. Venable, 2025 N.J. Super. Unpub. LEXIS 385 (App. Div. 2025); State v. Morgan, 2025 N.J. Super. Unpub. LEXIS 548 (App. Div. 2025); see also, e.g., United States v. Monteiro, 407 F.Supp.2d 351, 364 (D.Mass 2006) ("For decades, both before and after the Supreme Court's seminal decisions in Daubert and Kumho Tire, admission of … firearm identification testimony … has been semi-automatic; indeed, no federal court has yet deemed it inadmissible").

During the most recent of its 100 years of admissibility, ballistics and toolmark analysis has withstood its critics, including from some of the very sources relied upon by the defendant. In McGuire, 419 N.J. Super. at 131-32, our Appellate Division specifically addressed the National Research Council, Committee on Identifying the Needs of the Forensic Science Community's 2009 Strengthening Forensic Science in the United States: A Path Forward, (NAS report) finding:

> The NAS report was issued in 2009 … It contained some criticism of tool mark analysis, including lack of information about variances among individual tools, lack of a clearly defined process, and a limited scientific basis of knowledge … But the NAS report does not label the discipline "junk science." It acknowledges that tool mark analysis can be helpful in identifying a class of tools, or even a particular tool, that could have left distinctive marks on an object. … The report concludes that development of a precisely specified and scientifically justified testing protocol should be the goal of tool mark analysis.
>
> Since the NAS report was issued, at least two courts have refused to exclude forensic evidence based on criticism contained in that report. … As noted in those cases, the purpose of the NAS report

> is to highlight deficiencies in a forensic field and to propose improvements to existing protocols, not to recommend against admission of evidence.

(emphasis added); see also United States v. Johnson, 2019 U.S. Dist. LEXIS 39590 at *38 (S.D.N.Y 2019) (following publication of the sources relied upon by Caneiro, "courts have carefully reexamined the reliability of toolmark identification evidence" and "[a]ll" have "admitted expert testimony concerning toolmark identification, rejecting arguments that the "2008-2016 scientific reports rendered such evidence inadmissible," with some courts "reason[ing] that the weaknesses in toolmark identification can be effectively explored on cross-examination").

Similarly, despite its criticism of ballistics, the "PCAST Report does not make any recommendations regarding the use of such evidence at trial: '[w]hether firearms analysis should be deemed admissible based on current evidence is a decision that belongs to the courts.'" United States v. Boone, 2024 U.S. Dist. LEXIS 89710 (S.D.N.Y. 2024). Importantly, post PCAST Report studies, see Jaimie A. Smith, Beretta Barrell Fired Bullet Validation Study, 66 J. Forensic Scis. 547 (2020) and Keith L. Monson, et al., Accuracy of Comparison Decisions by Forensic Firearms Examiners, 68 J. Forensic Scis. 86, 87 (2022), have demonstrated that the error rates for ballistics experts is low, from 0.08% to 0.933%. Boone, 2024 U.S. Dist. LEXIS 89710 at * 20-21; see also Ghigliotty, 463 N.J. Super. at 365 (noting that as of 2010, "'reviews of proficiency testing data show that the error rate for misidentifications for firearm evidence is approximately 1.0%").

New Jersey's switch from Frye to Daubert as part of our N.J.R.E. 702 analysis was explicitly not intended to disturb the acceptance and admissibility

of ballistics evidence. When highlighting those "categories of experts who testify frequently in criminal cases," who "use the same methodologies repetitively," and the admissibility of whose testimony cannot be challenged absent "new scientific research" "call[ing] into question the wisdom of" prior "precedent," our Supreme Court first listed "ballistics experts." State v. Olenowski (II), 255 N.J. 529, 581-83 (2023); see also State v. Olenowski (I), 253 N.J. 133, 154 (2023). Defense counsel here has nothing new to offer and, thus, has abandoned a previously-rejected "argu[ment] that … firearm toolmark identification testimony [is] not scientifically reliable under the Daubert standard." Venable, 2025 N.J. Super. Unpub. LEXIS 385 at *7-8, 17. To avoid this inescapable fact, defense counsel has now switched tactics, attacking the specific ballistics testimony intended to be offered by the State here, a so-called "as applied" challenge.

What defendant here dresses up in the "as applied" language he appears to borrow from constitutional law is a wholly meritless, two-pronged attack. First, defendant alleges that the discovery provided by the State in connection with its ballistics expert is insufficient, violating R. 3:13-3 and, therefore, mandating suppression. No such violation of the Rule can be found here. Second, defendant recharacterizes a well-trod, and routinely rejected general challenge to the subjectivity ("cognitive bias") of ballistics testimony as an issue solely faced by the State's expert in this case. This recharacterization can neither erase the consistent rejection of this claim, nor make it a "new" claim this Court should revisit here. The proper place for this line of attack is before the jury on cross-examination and not before this Court pretrial.

Consistent with its discovery obligations, the State provided the defendant with ballistic reports, the notes and photographs associated with these reports, and relevant standard operating procedures. These documents contain the expert's ultimate conclusions, e.g., identification, eliminated, inconclusive, along with descriptions (and photographs) of the "areas of agreement" between the samples, e.g., "several land impressions," and "FP Imp, BR marks (primer), chamber & extractor marks."[3] Ibid.; see also Ghigliotty, 463 N.J. Super. at 364; Johnson, 2019 U.S. Dist. LEXIS 39590 at * 46-47 (noting the importance photographing identified findings as permitting a qualified examiner to see what the expert was looking at and relying upon, thus allowing for independent review). These reports also contain confirmation of an independent review. If, for the sake of argument, they were not, any deficiencies have been cured. The defense now likely possesses more information about the examination of ballistic evidence in this case than any other defendant has ever had.

[3] The inclusion of these descriptions and photographs of the markings upon which the expert relied in order to come to his conclusions is also what makes this report not the "net opinion" defendant claims. The net opinion rule "forbids the admission into evidence of an expert's conclusions that are not supported by factual evidence or other data." State v. Townsend, 186 N.J. 473, 494 (2006); State v. Burney, 255 N.J. 1, 23 (2023). "Simply put, the net opinion rules 'requires an expert to give the why and wherefore of his or her opinion, rather than a mere conclusion.'" Ibid. (quoting Rosenberg v. Tavorath, 352 N.J. Super. 385, 401 (App. Div. 2002)). The reports and notes provided here document the why and wherefores of the ballistic expert's admissible, not "net," opinions.

To this end, defendant originally claimed that this was not enough to satisfy R. 3:13-3(b)(1), which he claims also requires the State to furnish "a summary of the grounds" for the ballistic expert's opinions: "The discovery here fails to explain the facts the examiner relied on to reach his opinion and does not give an explanation for that opinion." Db16. The State submits that, given the hours of testimony from Sergeants Christopher Clayton and Joshua Smith, it would likely be hard for defendant to credibly claim that he does not now possess sufficient information as to how SFC Clayton reached his opinion. As the State recalls, this appeared to be the reason this Court ordered the hearing in the first place -- so that defendant had an opportunity to essentially depose Sgt. Clayton pre-trial, so that he could not later allege that he did not possess sufficient information in order to understand the evidence being used against him.

Defendant's expert – and his opinion as to the subjectivity (or cognitive bias) of ballistic testimony – leads directly to another of defendant's claims. The subjectivity of the State's ballistics expert is not unknown because subjectivity in ballistics analysis is not unique to this expert. As early as 1992, the Association of Firearm and Toolmark Examiners (AFTE), "an international body of practitioners" and "the largest professional organization in the field" and "publish[er]" of "a professional journal concerning firearm and toolmark science," "recognize[d] that identification is 'subjective in nature.'" Ghigliotty, 463 N.J. Super. at 362-64 (citations omitted); Boone, 2024 U.S. Dist. LEXIS 89710 at *23. The AFTE addressed subjectivity by employing set standards and "four potential conclusions for examiners to make following an investigation: (1) identification; (2) inconclusive; (3) elimination; and (4)

unsuitable, meaning that the evidence was not suited for examination." Ghigliotty, 463 N.J. Super. at 364. These conclusions were utilized by the State's expert. DaC, D, E, F, H, I, G, Q.

These subjectivity criticisms, the same or similar criticisms voiced by the defendant's expert, have not led courts to exclude ballistics testimony. See Boone, 2024 U.S. Dist. LEXIS 89710 at *23 ("The Court shares some of these concerns … however, this Court believes that the methodology is governed by controlling standards sufficient to render it reliable); Ghigliotty, 463 N.J. Super. at 365. "[A]ll technical fields which require the testimony of expert witnesses engender some degree of subjectivity requiring the expert to employ his or her individual judgment, which is based on specialized training, education, and relevant work experience." Boone, 2024 U.S. Dist. LEXIS 89710 at *24 (citations omitted). "[T]he weaknesses in the methodology of toolmark identification analysis are readily apparent, have been discussed at length in the scientific literature, and can be addressed effectively on cross-examination. These weaknesses are … not particularly complicated or difficult to grasp, and thus, are likely to be understood by jurors if addressed on cross-examination." Johnson, 2019 U.S. Dist. LEXIS 39590 at *58. Subjectivity does not act as a bar to admissibility of the field of ballistics and, therefore, should not operate as a bar to the admission of the State's expert in this field. Defendant has made sufficiently clear via cross examination where the attack upon the analysis and the subjective nature of same lies. These, clearly, can be addressed effectively on cross examination before a jury. Nothing raised during the hearing in any way warrants preclusion.

As the State noted during its oral argument on this motion, the defense interestingly failed to cite 2 recent cases where the Office of the Public Defender represented the defendant. The State would further note that a cursory review of the defendant's brief filed this morning also fails to acknowledge these cases, despite the Court asking, "why didn't you cite these cases?" during oral argument. The first, State v. Venable, 2025 N.J. Super. Unpub. LEXIS 385 (App. Div. 2015), was decided on March 13, 2025, which involved a July, 2018 incident and NJSP Ballistics evidence from the same, general timeframe as that in the instant case. In Venable, the defendant moved to limit the State's firearms expert testimony, like here, under N.J.R.E. 702 and 403. The Court ultimately denied the motion determining that the expert testimony "was well established" and that New Jersey Court's have repeatedly found toolmark analysis scientifically reliable under the Frye standard and N.J.R.E. 702. At trial, the NJSP Ballistics expert testified that examined bullets matched the gun given microscopic features present on the evidence compared and that discharged cartridge cases also were discharged from the firearm. After the verdict, Olenowski was decided and that a Daubert-like standard would apply "going forward."

In Venable, the Appellate Division noted that defendant's argument was substantially reviewed and rejected by State v. McGuire. There, they considered and rejected one of the authorities on which defendant has relied upon, the 2009 NAS study. The Court specifically stated that "[h]ere the trial court correctly determined that under existing case law, firearm and toolmark identification is based on "a foundation of knowledge" that has been "organized over time" and described in forensic textbooks, scientific literature,

reference materials, training manuals and peer reviewed scientific journals." Id. at *17.

The second recent case, State v. Morgan, 2025 N.J. Super. Unpub. LEXIS 548 (App. Div. 2025) was decided on April 8, 2025. In Morgan, the trial presented testimony from Steven Deady, "a certified member of the Association of Firearm and Toolmark Examiners (AFTE) with decades of experience in the ballistics field. Deady compared over 10,000 specimens in the course of his career and been qualified as an expert approximately 180 times." Id. at *10. Prior to trial defendant moved to preclude the State's ballistics expert testimony, asserting that Deady's "opinions are purely subjective" as he did "not use any reference materials" or "try to match bullet fragments and the shell casings to any other weapons." The defendant also argued that the State had not shown the method Deady used is "sufficiently reliable" and that he offered only a "net opinion." The Court denied the motion. The Appellate Division, relying on Ghigliotty, indicated that "[n]either the underlying principles nor the methodology has changed significantly during the last 100 years" and "the most widely accepted method used in conducting toolmark examination is a side by side, microscopic comparison of the markings on a questioned material item to known source marks imparted by a tool, as Deady did here." Id. at *54-55.

"The Judiciary must ensure that proceedings are fair to both the accused and the victim. Trial judges partly fulfill that responsibility by serving as a gatekeeper. In that role, they must assess whether expert testimony is sufficiently reliable before it can be presented to a jury" State v. J.L.G., 234 N.J. 265, 307-08 (2018). N.J.R.E. 702, and its three-part test for admissibility

of expert testimony, assist trial courts in fulfilling this responsibility. See id. at 280 ("the proponent of expert evidence must establish …: (1) the subject matter of the testimony must be 'beyond the ken of the average juror'; (2) the field of inquiry 'must be at a state of the art such that an expert's testimony could be sufficiently reliable'; and (3) 'the witness must have sufficient expertise to offer' the testimony").

All three requirements are met by ballistics evidence generally, and by the State's expert in particular. All of defendant's varied attacks on the State's ballistics expert attempt to couch what should be fodder for cross-examination in the cloak of inadmissibility. N.J.R.E 702's "tilt in favor of the admissibility of expert testimony" should be accorded the weight it deserves in light of the decades of unbroken law and science recognizing the admissibility of ballistics testimony. State v. Jenewicz, 193 N.J. 440, 454 (2008).

Contrary to the contentions of the defense, the testimony during the course of the N.J.R.E. 104 hearing established the manner in which the instant analysis was conducted. While defendant criticizes the testimony in its July 10, 2025 written summation, the State submits that it's own exhibits make clear that Clayton's analysis was conducted consistent with governing Standards, Directives, Manuals and Standard Operating Procedures.

Much was made about the "transitive inferences" made by Clayton during the course of his testimony. The State submits that, while Clayton's memory regarding each comparison he made may not have been crystal clear, the State would note that this is somewhat disingenuous in light of the fact that this motion was filed by defendant approximately 6 years after the bulk of his analysis was conducted. That being said, while he acknowledged that the

transitive effect of his matches (i.e. 11 matches 17, 17 matches 26; therefore 11 matches 26), this is not, in the State's opinion, a fair characterization of his work under the microscope in this case. While he answered "I don't know" regarding whether he did some individual comparisons of bullets to bullets or casings to casings, the State would note that this was with the caveat that "I don't have documentation so no, I can't say that." The State would submit that this was simply an acknowledgement that he could not credibly testify as to the substance of each pairwise comparison. While this may be something for the defense to exploit on cross-examination, it does not indicate that his evaluation of specimens, his comparison and his conclusions were contrary to the standards, directives, etc. put briefly before him by the defense on cross examination. Notably, the defense attempted to utilize these in a vacuum, asking him to blindly validate their existence, despite not having ever seen some of them. This was clarified on re-direct, when he was shown relevant portions of each.

Specifically, SFC Clayton was asked about D-10, the OSAC reports (3 in total). He was specifically asked about the OSAC 2024 Standard Test Method for Examination and Comparison of Toolmarks for Source Attribution. He testified that Section 4.7.4.4 indicates that "photographs of one comparison may be used as documentation for multiple comparisons as long as what is depicted in the image is representative of the toolmarks and level of agreement observed in all comparisons." While this document was designed by the defense to represent a respected standard in the field, he has been consistently criticized and accused of discovery violations for not photographing each individual comparison, despite the standard clearly not requiring it. He further

testified that this was in line with what he did in this case, indicating that the photos show "illustration of that level of corresponding marks, and also those marks are repeating on all the other cartridges or bullets that I was observing." July 2, 2025, page 5, lines 22-24.

Next, Clayton was shown D-7, the AFTE Technical Procedures Manual, for which verifier Stephen Deady was listed as being a board member. He then read the portion from page 111 where it indicates that "[t]he supporting documentation of one comparison may be used for additional evidence within a case provided the agreement described and depicted is representative of the additional comparisons. He explained that this meant that if "you're looking at multiple specimens and you're finding agreement in the firing pin and the relative agreement is the same on the rest of the firing pins, cartridge cases, you take one representative photograph will represent what you've seen on the other cartridge cases." He said that this was consistent with the ATFE manual. July 3, 2025, page 7, line 18 to page 8, line 11. He further noted that the New Jersey State Police Standard Operating Procedures (S-10) contained similar language, "[s]upporting documentation of one comparison may be used for additional evidence within a case provided the agreement described or depicted is representative of the additional comparisons." July 3, 2025, page 8, line 17 to page 9, line 7.

SFC Clayton also testified about D-8, the ATF Laboratory Services Firearms and Toolmarks Manual, a document he had never seen prior to being presented same by the defense. Clayton, on re-direct, was shown ATF-LS-FT-10, number 5, which read that "[t]herefore, the documentation of the comparison may be supplemented by photomicroscopy, of the representative

area that was observed. For example, the analyst could describe a particular pattern of correspondence as good, his correspondence, and refer to the photograph of the actual comparison as an example of what he or she means by good correspondence. The individual performing the review has interpretable descriptive or depiction of a series of exhibits as compared in source identified or representative photograph of the observed correspondence in included. Not every comparison of a series need be documented by photographs. July 3, 2025, page 9, line 11 to page 10, line 20. Clearly, while photographing each and every individual comparison would be ideal, the State would submit that it is not required by any document presented by the defense. Moreover, given the approximate 200+ cases (most with multiple specimens) that examiners like Clayton and Smith have in a given year, it appear to be extremely impractical and as Sgt. Joshua Smith indicated, "redundant." See, July 3, 2025, page 76, line 21 to page 77, line13. Smith added that "the (additional) picture would be very, very similar and in my opinion wouldn't show anything new or relevant. So, no that wouldn't be unusual (not taking photographs of each comparison). That's how I train people to do it, that's how I trained. That's I think the best practice." Ibid. Clearly, however, the issue is certainly ripe for cross examination.

Having digressed just a bit, the State would remind this Court that SFC Clayton specifically testified about the comparison of bullets and cartridge cases several times. As stated above, the State would submit that this lack of recollection and "I don't know" answers should not be confused with his descriptions of how he actually compared the bullets to each other, as well as the cartridge cases to each other. To be clear, it appears to the State that

Clayton compared the bullets, NJSP #'s 11, 12, 17, 20 and 26 and the Cartridge Cases, #'s 13-16, 18, 19 and 21 and determined that the bullets were fired from the same firearm and that the cartridge cases were fired from the same firearm. Cross comparisons ultimately led to the conclusion that the bullets were fired from the submitted barrel (#16) and the cartridge cases were fired from the same firearm (#6).

SFC Clayton clearly explained that when he did his comparison, he grouped the bullets and that:

> he would take a bullet – say bullet number 11 for example and I would take another bullet, bullet number 12 and then I would compare the patterns and see if I could find a pattern for either agreement or disagreement. If I could find a pattern of sufficient agreement, then I would conclude that 11 and 12 came out of the same gun. So, then I would take 12 off, take another bullet, 17 for example, and I would look for the same corresponding marks to see if they're there or they're not. If they're there, then 17 also came out of 11, it came out of the same barrel. I wouldn't compare 12 and 17 again, because it would be redundant. But I look at all the bullets. And that's where I come to my conclusion that I group them as a group fired from the same barrel.
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> July 3, 2025, page 12, line 11 to page 13, line 5.

While the above and several other portions of his testimony would be consistent with ultimate "transitive" conclusions; it appears what is being missed in the defense summation is that he evaluated every piece of evidence – "but, I look at all the bullets." Earlier, on cross examination, Clayton was also asked about this by the Court:

Court: How are you saying that?

A Again, I'm, I'm not documenting it, so I don't exactly know which ones I'm comparing at the time. I'm taking photographs of 11 versus 17. Typically when I do an examination I'm comparing each bullet. I'm comparing the bullets looking for those areas of sufficient agreement and that's what I would take a photograph of, that 11 versus 17. But I'm comparing, I'm using all the bullets to do comparison work. I just don't document, I'm looking at this bullet to this bullet at this time, this bullet to this bullet at this time. But I am looking at all the bullets to make my comparison… If you took any of these bullets, whatever it might be, they can use any of those bullets and they're going to find those corresponding marks on each of those lane impressions. I just take the photograph of 11 versus 17 and you're looking for those corresponding marks. That's the only – I just photographed that area as a representative example of that sufficient agreement that I'm looking at.

Court And you're saying that all of them, it's on all of them. If somebody else went and looked, they would be on all of them?

A Clayton stated, "Exactly. So that's where you can – we're saying there's two land impressions that I found sufficient agreement of those toolmarks. So, you can take 11 versus 17 and then 17 versus 26 or 26 versus 11 and you're going to find that agreement within those two land impressions.

July 2, 2025, page 284 line, 20 to page 286, line 18.

Clayton later advised that, based upon his training and experience, this process is completely in line with accepted methodology in the field of firearm and toolmark examinations. July 3, 2025, page 13, lines 6-9. To this end, Sgt. Smith was also asked about this on cross examination, providing some extremely helpful context:

Q So in your experience some examiners will look at one, match it to four; right?

A Yes

Q And then match four to three; right?

A Yes

Q And then say, well, therefore one matches three because they both match four?

A Exactly correct.

Q So that why when there's disagreement sometime you'll go back and say, well hey, why don't you actually look at one versus three instead of making that jump from number four; right?

A Well, if they were both identified to four then that would, that would stand on its own. There wouldn't be a need to look at one there because that's a solid conclusion that's, that's well founded and within the scope of, you know – I was talking more to the, the incident where if the person thought that there wasn't enough agreement and perhaps they hadn't performed that, that specific comparison and on three, say for example, there were better breach face marks or better firing pin impression or more distinct marks, just to verify that they had actually done that comparison.

July 3 2025, page 96, line 13 to page 97, line 11.

When asked about this practice in the field, Smith indicated it was more of an exception, but it both ways are "both completely viable and legitimate." This comes from an ATF trained and certified F&T examiner. The State submits that both ways are legitimate; however, reminding this Court again that Clayton, in fact, looked at each bullet. His testimony regarding a lack of independent memory regarding each 1 to 1 comparisons likely speaks to the fact that he does not want to testify to something that he cannot specifically

recall 6 years later. Clearly, however, while he didn't document the series of comparisons, he indicated, [b]ut, I intercompared all the bullet specimens… but you're intercomparing all the five bullets. July 2, 2025, page 281, line 23 to page 282, line 6. SFC Clayton continued when pressed about the cartridge cases, "yes, those cartridge cases they were all intercompared. And again, that's why I only have one photo of each one, 15 versus 13 and any other photos,. They're representative samples of the rest of those cartridge cases." July 2, 2025, page 295, lines 21 to 25.

The defense is now attempting to argue that SFC Clayton is not qualified to offer an opinion regarding the ballistics evidence in this case. Despite the fact that he never took a Physics class in college, the State wholly disagrees and submits that SFC Clayton's testimony clearly established his expertise in the field of Firearm and Toolmark Examination, as acknowledged by this Court on July 1, 2025. He discussed his intensive approximate 2-year training process which he began in 2009 and about the thousands of microscopic comparisons he has conducted. As stated above, he has testified as an expert in the field approximately 61 times. Clayton clearly explained the procedures regarding how ballistic evidence is compared both generally and specifically in this case. He discussed how he has never failed a proficiency test and that he is an AFTE certified firearm and toolmark examiner. He explained that he and others in the field utilize the AFTE Theory of Identification. Clayton testified knowledgably about the AFTE Theory of Identification (S-3). He testified knowledgably about class characteristics, individual characteristics and subclass characteristics. He further discussed pattern comparisons and the definition of "sufficient agreement" and how that is interpreted in practice over

the course of his 16 years in the Ballistics Unit. While the defense has posited this standard as obtuse or trivial, he was quite candid in discussing that this is objective, it is not quantitive and how it is qualitative, utilizing his library of experience and knowledge of seeing pattern correspondence, using "ridges, peaks, and furrows" and how "there's value in those surface contours… we're not just looking at a couple of lines that match up… we're comparing the height, the width, the depth, the spatial relationship of these marks to see if they're corresponding or they're not corresponding." July 1, 2025, page 198, lines 13 to 21. Contrary to the argument of Dr. Kukucka, the focus is not just on whether they match, but also whether they do not match.

One of the issues challenged by the defense and Dr. Kukucka is the idea that the NJSP does not conduct blind verification. The State submits, as a practical matter, that S-10, the NJSP SOP's could certainly be more clear with respect to this issue. The Court, however, has heard uncontroverted evidence from both SFC Clayton and Sgt. Smith that the microscopic verification is conducted in a blind fashion. The transcripts are replete with various discussions regarding the fact that, when the examiner has concluded his analysis, he provides the evidence to a microscopic verifier, or indirectly to a secure locker, without providing any information regarding his conclusions. In this case, Clayton's work was microscopically verified with Stephen Deady, who ultimately signed off on Clayton's report given the fact that there was independent verification of and agreement with Clayton's conclusions in this case. Deady did that with all but one of the report, the last one, which was microscopically verified by Sgt. Smith. Sgt. Smith specifically advised this Court that being a microscopic reviewer is the same exact thing you would do

if you were the assigned examiner, "[i]t's the exact same thing. You're just doing it independent of the first examiner. It's one of the main ways that we guard against errors." July 3, 2025, page 127, lines 1 to 6. To this end, this is also one of the main safeguards that the laboratory uses to combat cognitive bias. This allows 100% blind verification of the examiner's conclusions. SFC Clayton also explained that there are other steps that they take to avoid the effects of cognitive bias – including limiting contact with detectives, not going to crime scenes and attempting to avoid access to task-irrelevant data. July 1, 2025, page 141, line 2 to page 142, line 2. The State submits that this process is wholly in line with any and all standards, manuals and/or directives that have been referenced during this motion.

With respect to the testimony of Dr. Jeff Kukucka, the State submits again, that it is not demeaning the idea that cognitive bias exists. But, breaking his reports and testimony down to its simplest form, Dr. Kukucka's premise is faulty because he had no working knowledge of the procedures in place at the NJSP Ballistics laboratory. Specifically, he indicates that if the NJSP practiced a systematic approach to its evaluation of its evidence, examining each piece one by one before making any comparisons then we could have "significant confidence in the results." The State submits that the testimony was clear regarding this fact; therefore, this Court can have confidence in the reliability in light of Dr. Kukucka's premise. While this was addressed several times, the State would point to one specific example of Clayton's "sequencing" testimony:

> It's the same steps, the practice that we would do. We evaluate for class characteristics, see if there's individual characteristics for comparison purposes. If there are, it's possible that they came from the same gun. Again, if those class characteristics were off, we can do elimination. In this case all these specimens share the same class characteristics, so we then move onto that microscopic comparison, I'm comparing the specimens. I'm looking for those patterns or group of patterns that either correspond or difference in, difference in those corresponding patterns. And then I would render a conclusion and then, -- verification process.
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> July 1, 2025, page 226, line 15 to 227, line 3.

With respect to the verification process, the State submits that the independent verification of SFC Clayton's conclusions lends even more credence to them and supports the premise that the draconian remedy of preclusion should be denied. The State would also note that a major premise of Dr. Kukucka's lack of confidence in the reliability of the NJSP Ballistics analysis was based upon a faulty premise, which he did nothing to investigate, believing that the verification was not blind. Because it actually is, the State would again submit that Dr. Kukucka's premise weighs heavily in favor of admissibility and, to that end, reliability. The defense had made clear that they have more than sufficient information regarding this evidence to adequately cross examine SFC Clayton at trial.

The State submits that the defendant received the benefit of hearing the testimony months before trial will commence. He had the opportunity to cross examine the witnesses and is now in no position to make most, if not all of the arguments originally made in its May 6, 2025 brief. Therefore, based upon the testimony and for the reasons cited above, the State submits that the defendant's motion to preclude the State's ballistic expert should be denied.

Respectfully submitted,

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