Conditions on Admitting an Alcotest Reading

State v. Chun and the Case Law Interpreting It

by Jeffrey Evan Gold

On St. Patrick's Day 2008, the New Jersey Supreme Court issued its opinion in *State v. Chun, et al,*[1] drawing to a close over six years of litigation regarding whether the Draeger Alcotest 7110 MKIII-C breath-testing device using software version NJ 3.11 was reliable for any evidential use in New Jersey courts. The Court upheld most, but not all, of the findings and conclusions of its special master, the Hon. Michael Patrick King, P.J.A.D. ret., who had presided over remand proceedings in the matter for approximately two years. The Court found the Alcotest was reliable, but only on very extensive and specific conditions. These conditions have been the subject of continued litigation in the trial courts, and are now making their way up the appellate ladder.

This article will review *Chun* in detail and the case law since it was decided, as well as provide some history and a few back stories to round out the picture.

The Alcotest B.C. (Before *Chun*)

The Alcotest's odyssey in New Jersey began much earlier than *Chun*. The New Jersey State Police first decided upon the Alcotest as the likely replacement for the archaic Breathalyzer in 1995. Although used since the 1950s, the Breathalyzer was long since eclipsed by more modern devices. Still, the state languished in its actual adoption of the new technology. Finally, in December 2001, the state began the initial pilot program for testing in one town, Pennsauken Township, Camden County.

The Pennsauken pilot cases began an initial two years of litigation in the superior court, Law Division, Camden County, which resulted in the published opinion *State v. Foley.*[2] In *Foley,* Assignment Judge Francis J. Orlando found the Alcotest using software version NJ 3.8 (not NJ 3.11 used by the time of *Chun*) reliable subject to a condition in certain "blowing refusal" cases (cases where the defendant attempts to blow, but the machine does not accept the blows as sufficient). The Pennsauken data showed a very high rate of blowing refusals. Judge Orlando held that a defendant could not be charged with a refusal if he or she blew at least .5 liter of air into the Alcotest, which had been programmed to require 1.5 liters.

Even though the Attorney General's Office was integrally involved in *Foley*, the state inexplicably chose not to appeal Judge Orlando's decision. That left the state with no appellate-level decision on the Alcotest's reliability, a position not much better then when they started *Foley* two years earlier.

Statewide Implementation... Without a Reliability Finding

After changing the firmware in the Alcotest from NJ 3.8 to NJ 3.11, and the instructions given to subjects on blowing into the machine, the state began a statewide implementation of the Alcotest. However, without an appellate-level decision finding the Alcotest reliable, there was certain to be more litigation, and there was. The first county to use the new machine was Middlesex County in February 2005. Like *Foley,* which had begun with the state seeking consolidation of 20 or so municipal court cases for a hearing in the superior court, *Chun* began with a consolidation motion.

There would be another two-and-a-half years of twists and turns, including 18 weeks of hearings by a Supreme Court special master, two special master's reports, five rounds of briefs to the Supreme Court and two rounds of oral arguments before the Court. During that time, driving while intoxicated (DWI) cases were being prosecuted in the municipal courts with Alcotest readings, but with (at least first offense) sentences stayed by the Supreme Court order pending *Chun*.

Thousands of DWI sentences awaited the Court's final decision. These came to be known as '*Chun* stay' cases, and would have their own special issues post-*Chun,* regarding what these stays preserved and what they did not.

The Impact of *Chun*

Justice Helen Hoen, writing for a unanimous Court in *Chun*, took the technical subject matter involved below and made it clear and understandable. The Court's ultimate finding was that the Alcotest is reliable, but only on certain very detailed conditions. Justice Hoen's 131-page opinion (in slip form), plus the 376 pages of special master reports, together make an incredibly detailed resource for judges, prosecutors, and defense attorneys to understand the use of Alcotest readings as evidence in the courts.

Chun was watched closely around the country, as challenges mounted to other breath-testing devices using computer technology, not just the Alcotest. Justice Hoen's opinion in *Chun* is the most significant decision of its kind on the subject nationwide. Indeed, news articles circulated worldwide on the case's progress and the Court's decision.

What "Machine"?

Chun deals only with the Draeger Alcotest 7110 MKIII-C running software version NJ 3.11. "We intend to make no comments about other models of the device or about the software used to operate any other Alcotest model," the Court said.[3] This is important to remember. Several towns now use portable breath testers from Draeger, also called Alcotest. These have not been found reliable by *Chun*. In fact, even the Alcotest 7110 MKIII-C running software version NJ 3.8 (used in the pilot program) has not been found reliable by *Chun*.[4] Further, the opinion does not bear specifically on the use of the "Breathalyzer," except regarding the most general principals.

The Court did not specifically rule on the parts of the system that make up what we think of as the "machine" separately. The state in *Chun* was careful before the special master to seek a ruling on the reliability of the Alcotest unit itself, not the CU34 simulator or temperature probe attached to it. This is true as well of the Ertco-Hart temperature-measuring device, which is used by the coordinator at calibration.

When the New Jersey State Police switched to temperature devices other than those by Ertco-Hart, a legal issue developed. Since *Chun* specifies the Ertco-Hart certificate by name as a foundational document,[5] did the Court mean *only* an Ertco-Hart device, or will a certificate for any similar device due? As of the writing of this article, that issue remains unsettled, but is before the Appellate Division.[6]

Reliable, But on Conditions

The state in *Chun* sought a ruling that hardware and software as a whole were reliable "as is." The defense, of course, sought a ruling that the Alcotest was not reliable at all. As *amicus,* the New Jersey State Bar Association (NJSBA) urged only a conditional finding of reliability. The special master generally agreed with the NJSBA on most but not all of the conditions suggested. The Court then agreed with most, but not all, of the conditions announced by the special master. However, as a whole *Chun* imposed a host of conditions upon the state if it wanted to use the Alcotest for evidential purposes. Specifically, the Court found that the software (or firmware as it is called when burned into the computer chip itself, as here) had to be revised.[7]

Re-Examination of Earlier Jurisprudence

The *Chun* Court analyzed all the prior Supreme Court DWI case law, as well as the changes in the DWI statute, including the increasing penalties and lower threshold readings, and found that this "increasingly restrictive legislative scheme and the new technology of the Alcotest, as compared to the breathalyzer, requires us to re-examine much of our earlier jurisprudence."[8] Such a quiet and reasoned approach to the subject is unusual to the DWI practitioner, who is more used to all rulings overshadowed by the havoc on the road caused by DWI law.

20-Minute Observation Period

There has always been a general scientific requirement of an 'observation' period before requiring a breath test, to avoid contamination by mouth alcohol. The New Jersey State Police, who train all officers in the state in breath testing, have quantified this as a 20-minute observation period, even with the Breathalyzer. However, the fact that the Court in *Chun* actually incorporated language to this effect in its opinion appeared as big news to a lot of practitioners.

The Court said:

> [T]he *operator* must *observe* the test subject for the *required twenty-minute* period of time to ensure that no alcohol has entered the person's mouth while he or she is awaiting the start of the testing sequence. In addition, if the arrestee *swallows anything or regurgitates*, or if the operator notices *chewing gum or tobacco* in the person's mouth, the operator is required to begin counting the twenty-minute period anew.[9]

The Court here was really noting the safeguards the state has been promoting all along.

To start, this language makes clear that a 20-minute period is actually 'required.' The question then is since it is required, is it the state's burden to prove the 20 minutes, and if so, how? The first published answer came in *State v. Filson*,[10] where Mercer County Superior Court Judge Mitchel Ostrer held that:

> [The] defendant is not obliged to present proof that he did vomit or regurgitate in order to suppress the Alcotest results, in the absence of affirmative

> proof from the State that defendant was continuously observed. Rather, the State must present affirmative proof that an operator actually observed the defendant.[11]

This was followed by the Appellate Division in *State v. Ugrovics*,[12] which held that "the State must establish [the 20-minute] element of admissibility by clear and convincing evidence."[13]

The next issue, and it has been a big one, is whether the word "operator" meant just the actual operator, or could others do the observing too. In the early days of the Alcotest, only Breathalyzer-certified officers had been certified in the Alcotest. Because *Chun* took so long, there happened to be a lot of non-Alcotest-certified officers making arrests on the road when *Chun* first came out. These officers had to bring their subjects to a certified Alcotest operator at the station or barracks. So the question arose whether the Court could really have meant that only "the operator must observe"? Why couldn't several officers do the observation, as long as it was a continuous 20 minutes? This became known as 'bracketing' by some.

Ugrovics, supra, has settled this issue, at least for now, by holding:

> We acknowledge that defendant's position is, at first blush, supported by what appears to be the plain language used by the Court in *Chun*. However, a literal, unexamined application of such language here would create an unduly and, in our view, unintended restriction on the State's ability to prosecute DWI cases based on the results of an Alcotest.[14]

The Court went on to decide that:

> To construe the twenty-minute observation requirement as bestowing upon the operator the exclusive responsibility to monitor the test subject elevates form over substance and places an importance on the operator that is inconsistent with what the *Chun* Court envisioned to be his or her diminished role.[15]

Ultimately, the Court went on to hold that any "competent" witness can testify regarding the 20-minute observation.[16] However, what did the *Urgovics* court mean by competent? Competent as in a trained officer? Or competent as in just not an infant or imbecile? Can the window washer testify that while all the officers where out of the room, he clearly observed the defendant for 20 minutes?

Mouthpiece, Cell Phones, Instructions to Blow

"The operator" is also required by protocol to "attach":

> a new, disposable mouthpiece and removes cell phones and portable electronic devices from the testing area. The operator is required to read the following instruction to the test subject: "I want you to take a deep breath and blow into the mouthpiece with one long, continuous breath. Continue to blow until I tell you to stop. Do you understand these instructions?" [17]

These would also seem simple enough instructions. But what happens if the operator doesn't follow them? In the remanded *State v. Chun* (after the opinion) the municipal court excluded Jane Chun's reading, finding that the mouthpiece was not changed, which compromised the reliability of her readings.

There is not a case on cell phones yet, but the parties in *Chun* did stipulate before the special master that the protocol must be followed to avoid any effect on the readings.[18]

While there also is not an opinion on reading the blowing instructions, there are some indications of what to expect. First, remember that *Foley, supra*, found that "blowing refusals" were too high when the Alcotest with firmware version NJ 3.8 was used. The above instructions are curative of some of the issues noted in *Foley*.

On a different kind of blowing instructions, *State v. Schmidt*[19] held that blowing refusals are akin to ambiguous answers to whether he or she would take the test in the first place, and so require the officer to re-advise the defendant of the refusal penalties.

> [W]e do not view defendant's apparently inadequate efforts [to blow sufficiently] after his prior unequivocal consent to be an unequivocal declaration of intent, but rather, an ambiguous indication of purpose...
>
> We regard *Widmaier's* instruction that the second part of the Standard Statement be given if the defendant's response "is conditional in any respect whatsoever," coupled with our holding in *Duffy* requiring the instruction under even more ambiguous circumstances, to provide the necessary foundation for a similar conclusion that the instruction was required under the factually different but equally conditional or ambiguous circumstances of this case.[20]

Therefore, it would seem that both the technical instruction to blow, as well as the legal instruction on what happens if an individual does not blow, are both significant.

Eleven Attempts...and Maybe 11 More for Good Measure?

In footnote 14 of *Chun*, the Court remarked:

> Even if the officer types in the code for a refusal, he is not required to issue a summons for refusal. Instead, the officer may opt to start the test again and give the arrestee eleven more attempts. Alternatively, the officer may decide to terminate testing, with-

> out charging the test subject with refusal. An operator will generally select this option if he or she concludes that the subject has in fact attempted to comply but is not capable of providing a sample that meets the minimum test criteria.[21]

In *Schmidt, supra*, the Court found that *Chun* did not "require" any number of attempts in order to "charge" a defendant with refusal.

> In this regard, we note that there is no requirement in *Chun* that a defendant be afforded all eleven possible attempts to produce an adequate breath sample. Moreover, the Court in that case held that "[c]harging an arrestee with refusal remains largely within the officer's discretion." *Chun, supra*, 194 N.J. at 99, 943 A.2d 114 (*citing Widmaier, supra*, 157 N.J. 475, 724 A.2d 241). So long as the second part of the Standard Statement is read and the defendant, without reasonable excuse, continues to produce inadequate breath samples, we find it to be within a police officer's discretion to terminate the Alcotest and charge the defendant with refusal.[22]

Once charged with refusal, whether sufficient attempts were allowed by the officer would still be a question of fact for the trial court. The Supreme Court in *Chun* noted not only that up to 11 tests can be done, but that "the officer may opt to start the test again and give the arrestee eleven more attempts."[23] This will surely buttress a defense where an officer does not give the subject enough chances in the face of good faith efforts by the defendant. *Schmidt* only decides whether the refusal charge could issue, not the ultimate conclusion at trial.

Is an Error Message a Reading?

The state is obligated to prove that the machine was in "proper working order" if it intends to get a "reading" admitted.[24] What about all those "error messages" that occur with alleged blowing refusals, like "blowing not allowed," "minimum volume not achieved," "blowing time too short," "plateau not reached," etc. Are these readings? These may not be what are first thought of as readings (*i.e.,* a blood alcohol content (BAC) estimation by the machine). But, they are readings of the errors or the insufficiencies of the breath as measured by the machine. They are functions of the machine reading the amount of volume or the length of time or the flow of air. Therefore, the state is obligated to satisfy most, if not all, of the same conditions that *Chun* imposes whether a BAC reading or any other reading is to be admitted.

Copy of Alcohol Influence Report (AIR) to Defendant

Chun notes that "[t]he operator must retain a copy of the AIR and give a copy to the arrestee."[25] Indeed the bottom of every AIR says "copy given to subject." But that has not generally been the case either before or after *Chun*. It would be the simplest matter to comply. The machine itself can print a second copy or a photocopy could be made. However, few subjects are given a copy before they get it in discovery. It is not clear why this is, or what affect the failure has on a defendant's rights.

Probe Serial Number, Probe Value, and Ertco-Hart Device Serial Number

The AIR records the serial number of the Alcotest itself and the CU34 simulator, but it does not presently record the serial number of the temperature probe inside the simulator, or the digital temperature device used to check them at calibration. One of the many commands of *Chun* regarding firmware revision is that:

> The firmware should be rewritten so that the AIR, solution change report, and calibration documents include the temperature probe *serial number* and probe value; ...and that future calibration, certification and linearity reports should include the *serial number of the Ertco-Hart digital temperature measuring system* utilized in performing those testing and maintenance operations.[26]

Although Hansueli Ryser of Draeger publicly said that Draeger was ready with all of the revisions required by *Chun* shortly after the decision, two-and-a-half years after the decision revisions still have not been implemented. The reason the Court ordered the abovementioned revisions is that one cannot coordinate whether the certifications sent in discovery actually pertain to the case unless the serial numbers are noted. In the meantime, without such revisions, the state should be obligated to inform the defense of the numbers and be bound by such a representation.

The "probe value" is a number (*i.e.*, 101, 102, etc.) that is assigned at the factory to each probe. That number corresponds to a value and must be entered into the machine as a fine tuning to each probe. If a wrong number is entered, it will impact the reading.

Finally, the Court names the "Ertco-Hart" device in particular, rather than any such device. As discussed earlier, this is an issue, now that the New Jersey State Police have decided to use another firm's device post-*Chun*.

Discovery of Digital Data

The special master addressed the digital discovery issue as follows:

> h. As to discovery data, the collected centralized historical data ... shall be provided for any Alcotest 7110 relevant to a particular defendant's case in a digital format readable in Microsoft Access or similar program generally

available to consumers in the open market. When such data includes tests from cases concerning defendants not part of the requesting defendant's case, the information provided will include departmental case numbers, ages, and breath temperatures or other relevant scientific data on those other defendants' tests but not their personal identifying information, such as name, address, birth date, drivers license number, license plate number, or social security number.[27]

As *amicus*, the NJSBA in *Chun* specifically asked the Court to include the digital data available by download or on disc:

> NJSBA agrees [with "h" above] but would add a clarification that includes the digital data now available in the 7110 itself and the CD-roms to which historical data is downloaded (since there is no central data collection yet).[28]

The New Jersey Supreme Court agreed.

> Our review of the record satisfies us that there is substantial, credible evidence that supports the Special Master's recommendation concerning the creation and maintenance of a regularly-updated database, as well as his recommendation relating to providing access to that data to defendants.
>
> [footnote] 20. The *amicus* NJSBA suggests that defendants should have access to previously downloaded, centrally collected data. We do not perceive this to be different from the Special Master's recommendation in this regard and the extent of the access to be afforded to any litigant does not appear to be a matter in dispute.[29]

The Court in *Chun* described the data as follows:

> When coordinators undertake to perform this calibration, currently on an annual basis, and other routine inspections, they also download the device's test information onto two compact discs. Ftnt16. In accordance with current State Police protocol, one of these discs is kept in the local police department's evidence file and the other is held by the coordinator.
>
> Ftnt16. The record reflects that each device is capable of storing the data from 1000 test results. Current State Police protocol, however, requires the coordinators to download data from each device before it exceeds 500 tests.[30]

Chun specifically addressed the issue by adopting and enlarging the discovery to be provided. *Chun* decided that in order for a reading to be considered reliable certain safeguards must be in place. Access to the digital data was one of them. The 7110 is a device that defendants will not regularly be able to run their own tests on. The only data available to them to determine that the device in question was working properly is the data gathered by the state on its own machines.

Recognizing this facet of *Chun*, the attorney general's spokesman said shortly after the decision that "[d]ata downloaded from the machines in police departments and state police barracks are available to defense counsel in discovery."[31] The attorney general then issued a memo outlining the procedure locals are to use to comply with providing the digital discovery, which concluded that "...the local agency can store the redacted files in an electronic medium—on a new compact disc, and provide defense counsel with the opportunity to view, or to receive a copy of, the compact disc."[32]

When first faced with the denial of an order to obtain digital data discovery, the Appellate Division summarily reversed the trial court's denial in *State v. Reardon*,[33] ordering that such discovery be provided in accord with the attorney general's memorandum. Subsequently, in *State v Maricic*,[34] the Appellate Division issued a *per curiam,* three-judge panel opinion confirming the right to the digital data.

Volume

As noted earlier, so-called blowing refusal charges had been an issue since *Foley, supra*, and the earlier version of firmware. In *Chun,* the Court also found that "[a]lthough the experts generally agreed that 1.5 liters is the optimal minimum, some people may be incapable of providing that sample."[35] Therefore, "authorizing the issuance of a summons for refusal [where the defendant cannot achieve the minimum volume] is unjust."[36]

> Our conclusion is that the firmware must be revised to accept a minimum breath volume sample of 1.2 liters from women over the age of sixty requires us to consider the impact of this directive for pending prosecutions.[37]
>
> In light of the scientific evidence that we have found to be persuasive, *in the absence of some other evidence that supports the conclusion that any such individual was capable of providing an appropriate sample, by volume,* we must assume that she was unable to do so. For these individuals, then, an AIR demonstrating insufficient breath volume may not be used as proof on a charge of refusal. On the other hand, if the AIR demonstrates that a woman over the age of sixty was able to provide at least one sample that was deemed to be sufficient for purposes of the 1.5 liter volume requirement, but she failed to do so on a subsequent attempt, the AIR demonstrating those facts may be utilized as evidence, albeit not conclusive

proof, in support of a refusal charge.[38]

As noted in the italicized section above, if a defendant can show an idiosyncratic defense, he or she may well prevail on the issue and be acquitted of the refusal. On the issue of equal protection, the Court found that its rule did not discriminate by setting different standards due to sex and age. But again, a defendant is free to argue the facts in his or her case, and sex and age are not off the table in those discussions by any means.

Temperature

Subject temperature was a major battleground in *Chun*. The manufacturer itself recognizes the significance of the variation of human breath temperature and its effect on the reading, and offers a breath temperature monitor that would measure the exact temperature coming into the air hose. However, the calibrating device for that option is rather cumbersome, and apparently would require a van to transport. Nevertheless, the special master decided that human breath temperature was a variable that could be controlled by the added sensor option, and so ordered that either it be adopted or that each reading be reduced by 6.58 percent, since the Alcotest assumed a temperature of 34 degrees C and experts agreed it was closer to 35 degrees C.

The Supreme Court, however, did not agree, and found that "[b]oth the truncation of results and the use of the 2100 to 1 blood/breath ratio, a ratio that in part takes temperature into account, effectively underestimate the calculation to the advantage of the test subject.[39]

> More to the point, perhaps, we reach our conclusion for practical reasons as well. The unrebutted evidence in the record convincingly demonstrates that requiring the addition of the breath temperature sensors would result in an unreasonable maintenance burden to the program.[40]

This does not mean a defendant with a high fever has no defense. The Court was speaking of the average human breath temperature. So again, an idiosyncratic fact pattern will be for the trial court to decide.

Tolerance

In reviewing the approximately 250 cases known as the Pennsauken data and every case later in *Chun*'s Middlesex data (about 1,350),one thing was apparent—there were literally no third tests in the Middlesex data while there was a more normal amount in the Pennsauken data, where about four percent of the cases had third tests. Although Hansueli Ryser of Draeger, on the stand in *Chun*, first denied there was any change in the allowable tolerance between readings, he finally relented on cross-examination, admitting the tolerance was, in fact, changed since *Foley.* This was further confirmed by the testimony of the former chief forensic scientist of New Jersey, Thomas Brettell, who admitted he requested the change, which doubled the allowable tolerance between the readings from what it had been previously in version NJ 3.8.

The *Chun* Court recognized the crucial importance of tolerance to a reading but unfortunately lumped together two different aspects of tolerance, called precision and accuracy.

> Tolerance is the range of any set of measurements that is accepted as being representative of a true reading. Precision and accuracy can be ensured by requiring the application of a narrow range for tolerance. Conversely, the wider the acceptable tolerance between reported results, the lower our confidence in the accuracy of any of the reported results. Therefore, for purposes of permitting any device to be utilized for proof of a *per se* violation of the statute, the acceptable tolerance is of fundamental importance.[41]

Accuracy tolerance is a reflection of how close any reading is to the true reading. For example, how close is a .08 to a true .08? Precision tolerance is a concept also referred to in science as repeatability. This is a core scientific principal that if a result cannot be repeated, it is not likely reliable. In context, it means how close do two readings have to be to each other to assure the Court that either is reliable. Accuracy, in this instance, generally relates to readings very close to a certain important cutoff, (*i.e.*, .01, .04, .08, .10, and .15). But precision is concerned with all readings, and a failure of repeatability within a certain range will mean that both readings are unreliable no matter how high or low.

For example, accuracy focuses on determining exactly how close a baseball pitch is to the center of the plate. Precision focuses on whether the pitcher can hit the strike zone more than once; if he can't, he is not reliable.

The range between high and low acceptable readings for the Breathalyzer was long held to be .01 or less apart.[42] However, the NJ 3.8 version of Alcotest firmware changed this allowable range (without any case law) to 10 percent of the average of the readings at .10 or above and plus or minus .005 BAC below .10 BAC. This kept the precision number at .01 only at a .10 BAC but expanded it above and below. Then, in version NJ 3.11, "the State [further] directed Draeger to reprogram the device so as to take advantage of [a] far wider, effectively doubled, range for tolerance."[43] This made the range at .01 or above effectively 20 percent between the high and low readings, so wide that there was never a third test required. This, the Court recognized, was an intolerable tolerance.

> We therefore direct that for future firmware revisions, the device be programmed to fix the tolerance range to be plus or minus 0.005 percent BAC

> from the mean or plus or minus five percent of the mean, whichever is greater, in order to ensure scientifically accurate, admissible test results.[44]

In the meantime, until that revision (which is still being addressed two-and-a-half years later) the Court ordered:

> [T]he State shall review the BAC results as reported in the AIR and shall calculate whether those results fall within tolerance, and the court shall review those calculations and make them a part of the record. In those cases in which this review reveals that the results fall outside of the acceptable tolerance, the AIR cannot be deemed to be sufficiently scientifically reliable to be admissible and it shall not be admitted into evidence as proof of a *per se* violation.[45]

With so many lawyers and judges doing calculations until the firmware is revised, there were bound to be disputes. One such issue was dealt with in *State v. Rivera*,[46] where the state truncated the mean of the four readings to four places, while the defendant did so to only three. The Court found that no truncation was authorized by *Chun* of the mean at all, but that the calculation in this case at four (as advocated by the state) was the same as if there was no truncation, and so allowed the reading to be admitted.[47]

Neither the defense nor the Court made mention of the fact that, since *Chun*, the New Jersey State Police had been calculating the mean to three places, just as the defense did here, and had been instructing local departments to use the state police website calculator on every test. Therefore, the practitioner must be aware that there are many pre-*Rivera* readings that may violate its interpretation of *Chun*.

Although *Chun* also goes into great detail regarding what to do when there is a third breath test under NJ 3.11, "... we conclude that each AIR that includes three breath tests will be admissible as evidence of an accurate BAC reading only after application of the Shaffer formula 35 to ensure the correct calculation of the lowest possible result and reading."[48] The fact of the matter is that under the 20 percent precision tolerance still programmed in NJ 3.11, a real third test will never be seen. (Occasionally a .00 and then two real readings will be seen, but this is a software glitch, not a true third test.)

On the question of accuracy tolerance, the *Chun* special master concluded: "We urge caution by the trial judge at the critical levels, .04, .08, or .10 when interpreting a close reading in the context of otherwise persuasive exculpatory clinical evidence." He continued, "...because of the margin of error of .004 or .005...and the inevitable influence of analytical and biological variation on a particular test."[49] However, in *State v. Coppola*,[50] Superior Court Judge McNeil, in Camden County, found that such an assertion was contrary to *Chun*.

Coppola was a *Chun* stay case where the defendant asserted that the language of the special master was enough to re-open the guilty plea post-*Chun*. Yet, one could argue that a court could find the same *Coppola* result, (*i.e.,* denying the motion to re-open), and still be consistent with the special master's finding because the mere assertion of such special master language did not establish the "persuasive exculpatory clinical evidence" the special master noted. As there was no appeal in *Coppola*, it is not binding precedent, in any event. So the accuracy issue remains an open one.

Six-Month Re-Calibration

The subject of calibration in *Chun* was another area where the relationship between *Foley* and *Chun* turned out to be important. The initial discovery in *Foley* in 2002 revealed that there was an original manufacturer recommendation for calibration of the Alcotest every six months, dating back to 1998. By the time New Jersey started its pilot program in 2001, however, the manufacturer certificates (which are drawn up with input from the state) on the New Jersey machines said re-calibration was required at one year. This discrepancy came up in *Foley*, but the manufacturer testified that one year was sufficient, so nothing came of the issue.

During the first 13-week hearing in *Chun,* the subject was not raised. It was only after the second remand hearing on the Draeger firmware that the wheels slowly started turning. It was known that the fuel cell component deteriorated. (The Alcotest measures breath alcohol via both an inferred (IR) and electro chemical (EC) sensors, which are also called a fuel cell.) But it was not known until this second hearing in *Chun* that Draeger deployed an algorithm in its firmware that actually borrowed the IR reading to compensate when the EC reading was up to 125 percent of the allowed tolerance between the EC and IR readings (a different tolerance discussed earlier). Finally, the question of why the manufacturer originally required six-month calibrations started to make sense.

As *amicus*, the NJSBA submitted the original *Foley* discovery material with that 1998 Draeger recommendation first to the *Chun* special master and then to the Court itself.

The Court ultimately held:

> The record reflects that a semi-annual inspection and recalibration program recommended by the Special Master is consistent with the manufacturer's recommendations. At the same time, it provides a useful safeguard by affording a more regular opportunity to evaluate and replace aging fuel cells. We discern no reason to permit the

> State to continue to adhere to its program of annual recalibration, particularly in light of the concerns raised as to the utilization of a compensating algorithm in the interim.[51]

The question of whether this particular finding should be applied retroactively to matters pending at the time of the decision (*i.e., Chun* stay case) was decided in *State v. Pollock*,[52] which held that it should not.

> [T]he Court [in *Chun*] required the State to "forthwith" "[c]ommence inspection and recalibration of all Alcotest devices every six months in place of the current annual inspection and recalibration program." *Id.* at 153, 943 A.2d 114. The use of "commence" in the order is consistent with the Court's language in the body of the opinion that it could "discern no reason to permit the State to *continue to adhere* to its program of annual recalibration." *Id.* at 123, 943 A.2d 114 (emphasis added).[53]

The Court was very specific in deciding that this particular issue was not to be applied retroactively. This is not a general pronouncement regarding all the conditions established by *Chun*.

Other Firmware Issues

In addition to what has been discussed, the Court in *Chun* also directed "that the State arrange to have the software corrected to re-enable the catastrophic error detection feature,"[54] and "that the firmware be locked so that only the manufacturer will be able to make changes to it, which changes may then be downloaded by the coordinators."[55]

The Court required as well "that the device be programmed so that on all future AIR printouts, the firmware version then being utilized by the device is reported."[56] Likely due to the hidden tolerance change noted above, the Court also specifically ordered that, in the future, the state must give clear notice of any changes to the firmware.

> We therefore have concluded that this required notice, to the parties, the public and the *amicus* NJSBA, of the future firmware revisions must be sufficiently specific to identify the proposed changes in a manner that affords notice in compliance with due process. A generic notice to the effect that the firmware has been revised, in light of some of the previous alterations that we today correct, will not suffice. [Footnote] 38[57]

What will happen once all the required changes are made? Will there have to be another scientific reliability hearing? In footnote 38, the Court leaves the issue for another day:

> [Footnote] 38. We note that the parties asked this Court to appoint an independent software house to be responsible for any future reviews of the Alcotest source code. We decline to do so at this time, and will determine that issue should there be a challenge in the future to the scientific reliability of the Alcotest based on future firmware revisions.[58]

Training

The special master report required Draeger to "scrupulously" follow the provision of an agreement made between Draeger and the *Chun* defense called Addendum A, as a condition of reliability. One of the key provisions of that agreement was that Drager would sell machines and firmware to defense and defense experts in the future. However, there is no mention of that in the *Chun* opinion itself. This is a tremendous shackle to try to defend in an Alcotest case. Without machines, experts simply cannot do the continuing science necessary to test various issues as they develop.

The special master has also imposed a condition that the state provide training to defense attorneys and defense experts. The Court did recognize training as a condition, but ordered that Draeger, rather than the state, must provide it:

> We...direct that Draeger make Alcotest training, substantially similar to that provided to Alcotest operators and coordinators, available to licensed New Jersey attorneys and their designated experts. The training shall be offered at regular intervals and at locations within the State of New Jersey, at a reasonable cost to those who attend.[59]

So far, Draeger has offered only two training courses since *Chun*, one in North Jersey and one in South Jersey. However, there has been no training offered in the last year and a half.

Repair Records

The Court briefly dealt with the issue of repair records.

> The record includes scant evidence relating to repair history of any of these devices. Presumably the devices that were part of the evidence in the prosecutions for the named defendants were so newly put into service that no repairs have been needed. At the same time, there is evidence suggesting that from time to time one or more of the devices has been adjusted by a coordinator or returned to Draeger for repair. The record reflects that in either event, a document is generated by the coordinators that evidences those repairs. We commend to the State the establishment of a protocol for maintaining repair logs to the extent that these become more frequent and, therefore, potentially relevant.[60]

Subsequently in *State v Maricic*,[61] the

Appellate Division issued a *per curiam*, three-judge panel opinion confirming the right to obtain repair records in discovery.

It appears most police officers, who are trained to report and document every aspect of every police action they do, are not creating any reports when they call a coordinator about the malfunction of a $13,500 machine, or when they send one back to the factory for repairs. There are no local memos documenting calls for or decisions to send a machine for repairs. All that is usually seen in discovery (and then only upon court order) are copies of the Fed Ex or UPS bills. Recently, however, the state police have instituted a routine report to briefly summarize what the coordinator did regarding repair issues. Overall, though, there is still a lack of repair logs called for by the Court.

Foundational Documents

The special master identified 20 documents (although he grouped them into 12 items) that he held were needed to be placed into evidence by the state as a foundation for admissibility of any reading.

> (1) Calibrating Unit, New Standard Solution Report, most recent change, and the operator's credentials of the officer who performed that change; (2) Certificate of Analysis 0.10 Percent Solution used in New Solution Report; (3) Draeger Safety Certificate of Accuracy Alcotest CU34 Simulator; (4) Draeger Safety Certificate of Accuracy Alcotest 7110 Temperature Probe; (5) Draeger Safety Certificate of Accuracy Alcotest 7110 Instrument (unless more relevant NJ Calibration Records (including both Parts I and II are offered)); (6) Calibration Check (including both control tests and linearity tests and the credentials of the operator/coordinator who performed the tests); (7) Certificate of Analysis 0.10 Percent Solution (used in Calibration-Control); (8) Certificate of Analysis 0.04, 0.08, and 0.16 Percent Solution (used in Calibration-Linearity); (9) Calibrating Unit, New Standard Solution Report, following Calibration; (10) Draeger Safety Certificate of Accuracy Alcotest CU34 Simulator for the three simulators used in the 0.04, 0.08, and 0.16 percent solutions when conducting the Calibration-Linearity tests; (11) Draeger Safety Certificate of Accuracy Alcotest 7110 Temperature Probe used in the Calibration tests; and (12) Draeger Safety, Ertco-Hart Digital Temperature Measuring System Report of Calibration, NIST traceability.[62]

The Supreme Court did not go quite as far, requiring only what it called "core foundational documents"[63] be admitted into evidence.

> The [core] foundational documents that we conclude need to be entered into evidence therefore are few. They are: (1) the most recent calibration report prior to a defendant's test, with part I-control tests, part II-linearity tests, and the credentials of the coordinator who performed the calibration; (2) the most recent new standard solution report prior to a defendant's test; and (3) the certificate of analysis of the 0.10 simulator solution used in a defendant's control tests. Absent a pre-trial challenge to the admissibility of the AIR based on one of the other foundational documents produced in discovery, we perceive of no reason to require that they be made a part of the record routinely.[64]

However, all of the foundational documents, whether core or not, "should continue to be produced in discovery."

But what happens when the state does not do so? There may be a difference between the two types of documents. The core documents are required elements of the state's case to admit a reading. A defendant has no obligation to point out deficiencies in the state's case. Therefore, a defendant may be able to simply wait for the trial and object to admission of evidence not provided as required by *Chun* in discovery. However, regarding the non-core foundational document, a defendant may have to complain ahead of time.

Who Must Testify?

After two rounds of special master hearings, four rounds of briefings to the Supreme Court and two oral arguments before them, the *Chun* Court asked the parties and *amicus curiae* to brief the issue of the effect of *Crawford v. Washington*,[65] and a defendant's right to confrontation on the issues in the case before it. Their final conclusion was that the core foundational documents were not testimonial in nature, and could therefore be admitted without the testimony of the officer who performed the new solution report and the coordinator who performed the calibration.

Regarding the AIR itself (which is not an enumerated foundational document, but rather the subject for which the foundation must be laid), the Court stated:

> Although we have concluded that the AIR is not testimonial, we have nevertheless concluded that defendants are entitled to certain safeguards that we have required be implemented in prosecutions based on the Alcotest. We have directed that an opportunity for cross-examination similar to that described in *Simbara* and *Romano* be provided to these defendants through our requirement that the operator of the device be made available to testify. Likewise, we have required the routine production in discovery of all of the foundational documents that might reveal some possible flaw in the operation of the particular device and we have demanded that the core foundational documents that establish the good working order of the device be

admitted into evidence.[66]

Having "required the routine production in discovery of all of the foundational documents that might reveal some possible flaw in the operation of the particular device,"[67] the Court further explained in footnote 47:

> We presume that, in the event that any defendant *perceives* of an irregularity in any of these documents that might affect the proper operation of the device in question, *timely issuance of a subpoena will suffice for purposes of protecting that defendant's rights.* Were the use of the subpoena power to become *routine*, we would commend to the parties, with the assistance of our municipal courts, the use of pretrial *de bene esse* depositions or video conferencing technology to reduce the burden on the State or any independent testing laboratories.[68]

While these documents themselves are not testimonial, nevertheless, in order to protect the "defendant's rights" of cross-examination regarding whether the machine was in "good working order" the Court recognizes the right that a defendant has to cross-examine the coordinator, the new solution operator, the lab tech, and Draeger tech, behind the documents. By using the word "perceives," the Court appears to be clearly saying that the defendant's right to have the witness is entirely subjective to the defendant. Moreover, they are envisioning that, such a right being subjective, the flood gates may open. For example in a routine blood and drug case, the defendant may simply request a trial and the hospital and lab witnesses must be subpoenaed as part of the state's case. They therefore offer the suggestion that the court consider "*bene esse* depositions or video conferencing technology to reduce the burden on the State or any independent testing laboratories."[69]

Oddly, the Court says "issuance of a subpoena will suffice." The mere issuance of a subpoena cannot, of course, protect the right of confrontation unless the witness shows up. Perhaps the Court just took it for granted that once a subpoena is properly issued, the witness would show up. But what if he or she does not? In that Ertco-Hart case from Monmouth County,[70] a clear issue arose regarding whether a non-Ertco-Hart certification could substitute for the Ertco-Hart one required by *Chun*. The defendant subpoenaed a witness from the substituted company. When the witness did not appear, the municipal court held that footnote 47 had been satisfied by the mere issuance of the subpoena. That case is now on appeal at the Appellate Division, and perhaps this issue will be addressed there differently.

Forthwith?

As technology pervades every part of life today, it should not be surprising that it has come of age in the courts too. However, *Chun* tells us that the state may be restricted, in great detail, in its use of technology. The role of the gatekeeper of evidence that comes into the courts remains one of the Judiciary's chief functions. The Court did not bow to the inherent pressure caused by the state's decision to implement the Alcotest statewide before there was a clear judicial approval of the technology. Instead, the Court urged the state to halt implementation, which it did, stopping at 17 of the 21 counties until after *Chun* was decided. The Court did not flinch at the fact that stayed sentences mounted as it took the time necessary to have the machine tested in the crucible of the adversarial system.

Although one side or the other can complain about parts of *Chun,* the ruling stands for much more than its parts. It stands as a bulwark against the arbitrary use of technology by the state to convict defendants.

Yet it is only a bulwark if the conditions imposed are respected. Attached to *Chun* was the Court's order. Much of it commanded the state to comply with its provisions "forthwith," but that was two-and-a-half years ago. As this magazine goes to press, the firmware has not been revised. Defendants have not been given access to a centralized database of digital data. Draeger training has stopped. Judges and lawyers are still forced to do multiple calculations to correct for a doubled tolerance code purposely written into the firmware by the state without authority.

The NJSBA moved before the Court at three months after the order, and then again at one year. However, in both instances the Court declined to hear the motions. ⚖

Endnotes

1. 194 N.J. 54 (2008).
2. 370 N.J. Super. 341 (Law Div. 2004).
3. *Chun*, 194 N.J. at 64-56.
4. *But see Foley, supra*.
5. *Chun*, 194 N.J. at 135.
6. *State v. Holland* is on appeal from the Monmouth County Law Division unpublished ruling excluding a reading based upon this issue.
7. *Chun*, 194 N.J. at 65.
8. *Chun*, 194 N.J. at 74.
9. *Chun*, 194 N.J. at 79. Emphasis added.
10. 409 N.J. Super. 246 (Law Div. 2009).
11. *Filson* at 12.
12. 410 N.J. Super. 482 (App. Div. 2009).
13. *Ugrovics*, 410 N.J. Super. at 490.
14. *Urgrovics*, 410 N.J. Super. at 489.
15. *Urgrovics*, 410 N.J. Super. at 490.
16. *Ibid*.
17. *Chun*, 194 N.J. at 80-81.
18. Special Master Report at 242.
19. 2010 N.J. Super. LEXIS 113 (App. Div. 2010)
20. *Schmidt*, 2010 N.J. Super. LEXIS 113 at 14.
21. *Chun*, 194 N.J. at 81-82.

22. *Schmidt*, 2010 N.J. Super. LEXIS 113 at 14.
23. *Chun*, 194 N.J. at 81-82.
24. *Chun*, 194 N.J. at 148.
25. *Chun*, 194 N.J. at 82.
26. *Chun*, 194 N.J. at 89.
27. Special Master's Report at 234.
28. NJSBA Amicus Brief in *Chun* at page 6.
29. *Chun*, 194 N.J. at 90. Emphasis added.
30. *Chun*, 194 N.J. at 84.
31. 194 NJLJ 6 (April 7, 2008).
32. April 29, 2008 AG Memo, page 5.
33. Docket A5683-08T4, unpublished, filed 9/15/09.
34. App. Div. Unpublished, decided Aug. 31, 2010, Docket a-5247-08T4.
35. *Chun*, 194 N.J. at 98.
36. *Chun*, 194 N.J. at 100.
37. *Chun*, 194 N.J. at 104.
38. *Chun*, 194 N.J. at 105.
39. *Chun*, 194 N.J. at 108.
40. *Chun*, 194 N.J. at 108-109.
41. *Chun*, 194 N.J. at 110.
42. *State v. Downie*, 117 N.J. 450 (1990); *Romano v. Kimmelman*, 96 N.J. 66 (1984).
43. *Chun*, 194 N.J. at 116.
44. *Chun*, 194 N.J. at 116.
45. Chun, 194 N.J. at 120.
46. 411 N.J. Super. 492 (App. Div. 2010).
47. *Ibid* at 499.
48. *Chun*, 194 N.J. at 128.
49. Special Master Report at 227-228.
50. 2009 N.J. Super. LEXIS 158, (Law Div. 2009).
51. *Chun*, 194 N.J. at 123.
52. 407 N.J. Super. 100 (App Div 2009).
53. *Pollock*, 407 N.J. Super. at 107.
54. *Chun,* 194 N.J. at 131.
55. *Chun,* 194 N.J. at 132.
56. *Chun,* 194 N.J. at 133.
57. *Chun,* 194 N.J. at 133 p107.
58. *Chun,* 194 N.J. at 133.
59. *Chun,* 194 N.J. at 134.
60. *Chun*, 194 N.J. at 145.
61. App. Div., unpublished, decided Aug. 31, 2010, Docket a-5247-08T4.
62. *Chun*, 194 N.J. at 135.
63. *Chun*, 194 N.J. at 148.
64. *Chun*, 194 N.J. at 145.
65. 541 U.S. 36 (2004).
66. *Chun,* 194 N.J. at 148.
67. *Ibid.*
68. *Chun*, 194 N.J. at 144. Emphasis added.
69. *Ibid.*
70. *State v. Holland, supra.*

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