14-1764, 14-1791

United States Court of Appeals for the Federal Circuit

KONINKLIJKE PHILIPS N.V., PHILIPS ELECTRONICS NORTH AMERICA CORPORATION,

Plaintiffs-Appellants,

v.

ZOLL MEDICAL CORPORATION,

Defendant-Cross Appellant.

Appeal from the United States District Court for the District of Massachusetts
Case No. 1:10-CV-11041-NMG, Judge Nathaniel M. Gorton

REPLY BRIEF OF DEFENDANT AND CROSS-APPELLANT ZOLL MEDICAL CORPORATION

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May 11, 2015

CERTIFICATE OF INTEREST

Counsel for Defendant-Cross Appellant ZOLL Medical Corporation certifies the following:

1. The full name of every party or amicus represented by me is:

ZOLL Medical Corporation

2. The name of the real party in interest represented by me is:

ZOLL Medical Corporation

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party represented by me are:

Asahi Kasei Holdings U.S., Inc.
Asahi Kasei Corporation

4. The names of all law firms and the partners or associates that appeared for the party now represented by me in the trial court or agency or are expected to appear in this court are:

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Respectfully submitted,

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I. INTRODUCTION

Philips's Response Brief fails to engage the critical flaws in the verdict that ZOLL has challenged on appeal. Philips's infringement case on the "waveform" patents was premised on an overbroad interpretation of the term "discharging" that even the District Court observed was inconsistent with the intrinsic record. The specification expressly describes the therapeutic discharge of a "defibrillation shock" as something distinct from a non-therapeutic energy delivery (e.g., a "test pulse"). Yet despite agreeing that "discharging" does not encompass "every possible delivery of energy," the District Court ultimately provided no guidance on that point in the claim construction provided to the jury. Philips does not offer any meaningful defense of that decision.

The verdict on direct infringement and validity of Philips's "waveform" and "self-test" patents also fails for lack of supporting evidence. Philips strains but ultimately fails to identify any evidence that ZOLL *itself* performed each limitation of the asserted claims, including actual treatment of a "patient." Similarly, Philips's efforts to prop up the validity of its claims fall short as they are based entirely on conclusory expert statements and unfounded, post hoc speculation about what the jury might have inferred from Philips's non-evidence. None of this is adequate to sustain a verdict for Philips on any of these points.

II. ZOLL DOES NOT INFRINGE THE WAVEFORM METHOD CLAIMS UNDER THE CORRECT CONSTRUCTION OF "DISCHARGING"

Philips says nothing about the District Court's determinations that (1) the "discharging step" was "not intended to describe every possible delivery of energy from the energy source," and (2) the patentee had "equated" the "discharging step" with a defibrillating "shock" in the intrinsic record. A82; *see* ZOLL Br. at 15. These determinations were correct, yet the District Court erred in failing to instruct the jury on the proper scope of this term over ZOLL's objections. A168:18-23. Philips took full advantage of that error when arguing infringement of the waveform claims. As shown below, a construction of the "discharging" step that encompasses any possible delivery of energy is contrary to the intrinsic record.

A. Philips's Claim Construction Arguments Are Without Merit

1. The Claim Language Confirms That The "Discharging Step" Requires Delivering An Electrotherapeutic Shock

Philips does not challenge the District Court's ruling that the preamble language—"methods of delivering electrotherapy"—is limiting. Instead, Philips makes the straw-man argument that "the claims include other steps, such as 'charging the energy source,' which shows that the preambles do not require delivering an electrotherapeutic shock in every step." Philips Resp. at 36. But ZOLL never argued that *every step* requires an electrotherapeutic shock—only that the "discharging" step does.

The parties agree that the "overall method of applying electrotherapy" is "achieved through all of the claimed steps." *Id.* The "discharging" step is the *only* step that is directed to delivering an electrotherapeutic shock to the patient. For example, as Philips notes, claim 51 of the '454 patent recites the steps of "charging," "discharging," and "monitoring." *Id.* Only the "discharging" step can deliver an electrotherapeutic shock. This is clear from the claim language itself: "*discharging* the energy source across the electrodes *to deliver electrical energy to the patient in a waveform*." A376 at 14:51-52.[1] Simply put, the "electrical energy" recited in the "discharging step" delivers the "electrotherapy" recited in the claim preambles. Were this not so, then *no* step in Philips's claims would require an electrotherapeutic shock. That would be nonsensical.

2. The Specification Distinguishes A "Defibrillation Shock" From A Non-Therapeutic "Test Pulse"

The specification also clearly characterizes the discharging step in distinguishing the prior art "Kerber" reference:

> [Kerber] … describe[s] an external defibrillator that administers a test pulse to the patient *prior to administering the defibrillation shock*. The test pulse is used to measure patient impedance; the defibrillator adjusts the amount of energy delivered by the shock in response to the measured patient impedance.

[1] Internal citations and quotations are omitted and emphases are added unless otherwise noted.

A371 at 3:13-18. The specification thus plainly distinguishes between two types of pulses: a "test pulse" used to "measure … impedance," followed by a shock that performs the actual "defibrillation." *Id.* The patentee distinguished Kerber as measuring impedance during a test pulse rather than the defibrillation shock. *Id.*

Philips now attempts to rewrite the specification by proposing a new and different basis for distinguishing Kerber than what the patentee proposed: "[t]he distinction lies not between types of pulses, but between charging and discharging." Philips Resp. at 37. Philips does not cite the specification or Kerber for this distinction, but instead points to a *different* article cited in a *footnote* of Kerber that is nowhere referenced in Philips's patents. *Id.*; A20354 at n.5 (citing A20364). This "charging cycle" theory is not mentioned in Kerber itself, which describes its impedance measurement as occurring "***instantaneously*** before the shock was delivered." A20354.

Philips resorts to mining the footnotes of Kerber because the patentee never raised the "charging cycle" distinction Philips now advances. Philips cannot retroactively rewrite its patent to encompass subject matter that the patentee disclaimed. *See Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 978-79 (Fed. Cir. 1999) (patentee bound by statements made in intrinsic record distinguishing prior art; whether reference was distinguishable on different basis was "irrelevant").

This Court should reject Philips's attempt to stretch the "discharging" step to encompass non-therapeutic test pulses.

3. The Intrinsic Record Equates "Discharge" With "Shock"

Philips also misunderstands the significance of Figure 3 of the '905 patent (and accompanying text), which equates the term "discharge" with an electrotherapeutic shock during which the "monitoring" step occurs. *See* ZOLL Br. at 18. Philips does not engage this argument but instead responds with a *non sequitur*: "[t]he 'electrotherapeutic shock' in Figure 3 is not complete until the discharge in the second phase ends." Philips Resp. at 38. That assertion simply has no bearing on the claim construction dispute.

Philips likewise misses the point of the prosecution history. In distinguishing the Bell reference, the patentee again equated "discharge" with "shock," as the District Court noted. A9186-87; A82; *see* ZOLL Br. at 18-19. The patentee also emphasized the temporal distinction between Bell and the claimed invention: in Bell, the energy level is determined "*prior* to delivery of the shock," whereas in the claimed invention, it is determined "*during* discharge." A1986 (emphasis in original). It is irrelevant that Bell also involved manual selection of an energy level. *See Am. Piledriving, Inc. v. Geoquip, Inc*., 637 F.3d 1324, 1336 (Fed. Cir. 2011) (where patentee distinguishes prior art on multiple grounds, each ground may count as disclaimer).

4. ZOLL Did Not Waive Its Claim Construction Challenge

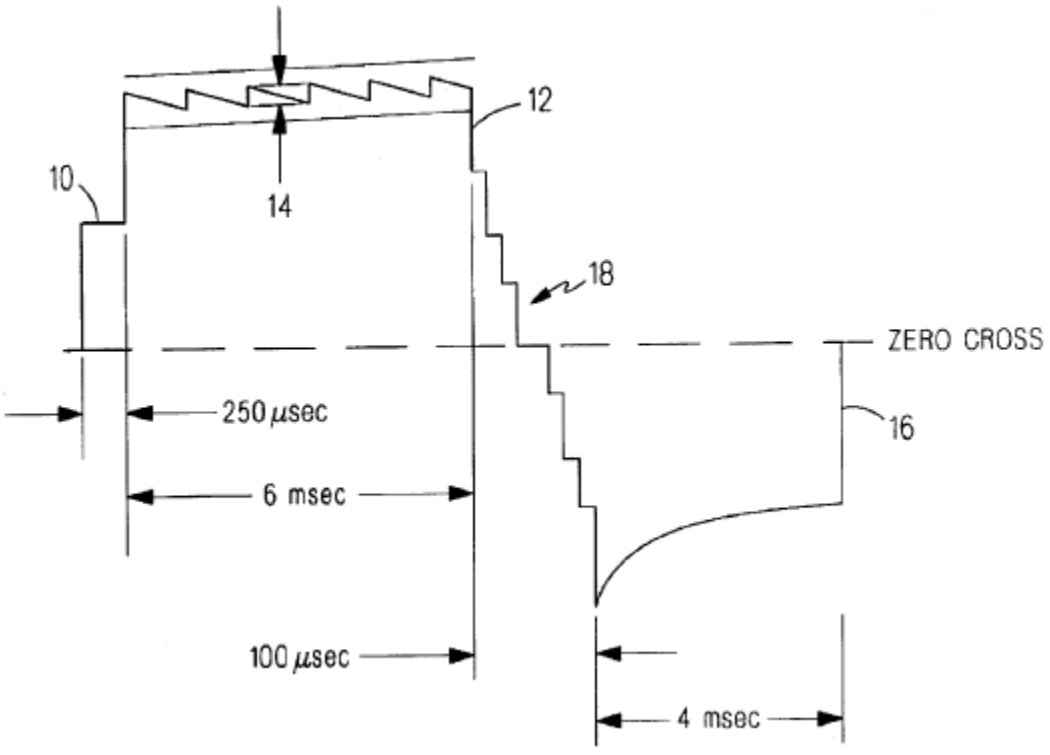
Finally, Philips erroneously argues that ZOLL waived its claim construction challenge. Philips Resp. at 35-36. ZOLL argued before the District Court that the "discharging step" means "the electrotherapeutic shock, not a test pulse to measure patient impedance." A5835. It is immaterial that ZOLL has focused its appellate arguments on the affirmative part of that construction, since (according to Philips's own patents) a test pulse is by definition not an electrotherapeutic shock. Thus, the two parts of that construction are simply two sides of the same coin. *See, e.g.*, *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004) (no waiver of claim construction argument despite different formulation on appeal; "[w]hile the two formulations employ somewhat different language, they embody the same concept."). Unlike *Digital-Vending Serv., LLC v. Univ. of Phoenix, Inc.*, 672 F.3d 1270 (Fed. Cir. 2012), cited by Philips, ZOLL is not advancing a claim construction on appeal that was "substantially different in scope from the construction it sought below." *Id.* at 1274.

In any event, ZOLL specifically objected to the District Court's jury instructions for failing to include the explanation that "discharge is equated with shock and the discharge step does not describe every possible delivery of energy from [the] energy source," as the District Court had acknowledged in its claim

construction order. A168:18-23; A82. ZOLL thus unquestionably preserved the argument that the discharging step refers to delivering an electrotherapeutic shock.

B. ZOLL Does Not Infringe Under The Correct Construction Of The "Discharging" Step

There can be no meaningful dispute that ZOLL does not infringe under a proper construction of "discharging." As demonstrated earlier (*see* ZOLL Br. at 5-7), the impedance measurement that Philips accuses of performing the "monitoring" step indisputably takes place during a distinct, *non-therapeutic* sensing pulse (item "10" below) that occurs *before* ZOLL's actual defibrillation waveform:



A14776.

Philips nevertheless argues that ZOLL's sensing pulse—which precedes, and is used to determine, the schedule for the electrotherapeutic shock—could itself qualify as an electrotherapeutic shock. Philips Resp. at 39-40. Philips ignores that delivery of ZOLL's defibrillation waveform does not begin until ***after*** impedance is determined during the sensing pulse, which determination is, in turn, used to select a delivery schedule for the actual electrotherapeutic shock. Philips's own expert agreed:

> Q. So in summing up, Zoll's products in this case **[1]** determine impedance during a sensing pulse, **[2]** use[] that to pick a schedule, and **[3]** it is that schedule that is then used to deliver the rectilinear biphasic defibrillation waveform?
>
> **A. Yes.**

A1733:22–A1734:1; ZOLL Br. at 19-20. Thus, it is undisputed that ZOLL's defibrillation waveform begins only *after* ZOLL's sensing pulse has concluded and *after* patient impedance has been determined. In the waveform method claims, in contrast, the electrical parameter is measured *during* the delivery of the "waveform." A376 at 14:51-52 ("discharging … to deliver electrical energy to the patient in a *waveform*").

The parties' experts likewise agreed that ZOLL's sensing pulse "does not have enough energy" to defibrillate a patient "under any scenario." A1726:3–5; A1730:14–A1731:7; A1731:19–A1732:1; *see also* A2430:17–A2431:24. Philips

argues that this is because "[n]o 250 μsec snippet of a waveform … will be therapeutic on its own," Philips Resp. at 40, yet this obscures the fundamental fact that ZOLL's sensing pulse is no arbitrary "snippet" of a defibrillation waveform. Rather, the sensing pulse precedes, and is used to *determine*, the defibrillation waveform, which is the actual electrotherapeutic shock. ZOLL's sensing pulse and electrotherapeutic shock are thus undeniably distinct.

Finally, none of the ZOLL documents Philips cites indicate that ZOLL's sensing pulse is an electrotherapeutic shock. These statements (many from informal promotional materials) actually confirm that ZOLL's defibrillators select the delivery schedule for the electrotherapeutic shock *after* the sensing pulse is completed. *See* A8432-33 (impedance calculated while all resistors are engaged; for high impedance patients, the "equipment resistors are disengaged for the *entire shock*"); A12740 ("[t]his impedance measurement is then used to select the appropriate waveform schedule"); A7974 (measure impedance before selecting "'schedule' for use in delivering the rectilinear biphasic defibrillation waveform"). Notably, the earliest ZOLL documentation—dating well before Philips's patents issued—clearly characterized ZOLL's sensing pulse as non-therapeutic and distinct from the "defibrillation waveform." A14789 at 4:16-35.

Given the absence of evidence that could satisfy Philips's burden of proving infringement under the proper claim construction, judgment of non-infringement is

warranted. At minimum, the case should be remanded to consider non-infringement under the proper construction.

III. PHILIPS IS UNABLE TO MUSTER ANY EVIDENCE OF DIRECT INFRINGEMENT BY ZOLL

A. There Is No Evidence That ZOLL Directly Infringed The Waveform Method Claims

In its JMOL opposition in the District Court, Philips argued that ZOLL's manufacture and sale of defibrillators constituted acts of direct infringement of the waveform method claims. A5893. As ZOLL explained in its Opening Brief, Philips's argument contravened this Court's settled precedent. ZOLL Br. at 21-22. Philips has now abandoned that argument. Philips Resp. at 31-33. Accordingly, the only remaining issue on direct infringement is whether there is any evidence that ZOLL itself performed every step of the waveform method claims, including delivering electrotherapy to a "patient." There is none.

The first piece of "evidence" Philips cites is testimony concerning certain clinical trials, Philips Resp. at 31 (citing A1953:3-9), but Philips fails to mention that those trials took place more than six years before Philips filed suit. The testimony in question addressed Trial Exhibit 2779, a ZOLL marketing document from *2000*. A1952:3-11; A18988. Philips quotes testimony from ZOLL's CEO about the reference in this document "to clinical trials that Zoll ran." A1953:3-9; Philips Resp. at 31. However, those clinical trials were conducted in *1999 and*

earlier. A18989. Because Philips did not sue ZOLL until 2010, those clinical trials were conducted many years before the six-year recovery limitation period of 35 U.S.C. § 286. Philips cannot uphold the direct infringement judgment by relying on clinical trials that are non-actionable as a matter of law. *See Standard Oil Co. v. Nippon Shokubai Kagaku Co.*, 754 F.2d 345, 348 (Fed. Cir. 1985) (infringement suit "properly dismissed" where "[n]o act … within the six years prior to suit is complained of" and therefore "no recovery" could be had "[b]y reason of § 286").

Philips's other "evidence" of ZOLL's direct infringement fares no better:

- Philips cites a document referring to undated clinical trials conducted by third-party doctors. A14565-69. There is no evidence that those clinical trials were conducted either within the six-year recovery limitation period or by ZOLL itself. Philips did not even elicit any testimony about this document at trial.
- Philips mischaracterizes testimony by a ZOLL witness, who answered affirmatively when asked whether ZOLL's products were "being used on humans." A2484. Caregivers obviously use ZOLL's products on patients, but the witness was never asked whether *ZOLL* uses defibrillators on patients.
- Philips points to emails that "imply[] the defibrillators have been used on people" (Philips Resp. at 33), but this argument similarly misses

the point, as the emails nowhere indicate that *ZOLL* defibrillated patients.

- Finally, Philips cites to irrelevant ZOLL tests that "used a resistor"—*not* a patient. Philips Resp. at 32-33; A13304.

In short, Philips failed to meet its burden of proving that ZOLL itself used the waveform method claims during the recovery limitation period.

B. Philips's Attempt To Rewrite The '212 Patent Claims Should Be Rejected

ZOLL does not make, use or sell defibrillators with "electrodes in electrical communication with the exterior of a patient," as required by the asserted claims of the '212 patent. A451 at 7:61-62; ZOLL Br. at 23-26; *see supra*, Section II.A. Philips responds by rewriting the claims to encompass defibrillators with electrodes that merely have the "capability" of being in electrical communication with a patient. Philips Resp. at 34. Philips's argument fails because the asserted claims are not drawn to "capability."

Philips relies on *Intel Corp. v. ITC*, 946 F.2d 821 (Fed. Cir. 1991), but that case is inapposite. In *Intel*, the asserted claims were expressly drawn to capability: "[b]ecause the language of claim 1 refers to 'programm*able* selection means' ... the accused device, to be infringing, need only be capable of operating in the [claimed] mode." *Id.* at 832 (emphasis in original). Here, however, the asserted claims of the '212 patent are *not* drawn to capability (i.e., connect*able* to a patient), but instead

require electrodes that are actually "*in* electrical communication" with a patient. A451 at 7:61-62.

This Court has rejected similar attempts to stretch *Intel*'s "capability" construction to claims that are not expressly drawn to capability. For example, in *Cross Med. Prods. v. Medtronic Sofamor, Inc.*, 424 F.3d 1293 (Fed. Cir. 2005), the asserted claim was directed to a surgical fixation device that included an anchor seat having an "interface operatively joined to [a] bone segment." *Id.* at 1299. Relying on *Intel*, the district court granted summary judgment of infringement, reasoning that the accused device "need only be capable of operating in the infringing mode." *Id.* at 1309-10. This Court disagreed, observing that in *Intel*, the claim was expressly drawn to capability, whereas the claim-in-suit did "not require that the interface be merely 'capable' of contacting bone; the claim has a structural limitation that the anchor seat be in contact with bone." *Id.* at 1311. Because the defendant itself did not make, use or sell "an apparatus with an anchor seat in contact with bone," the Court held that the defendant did not directly infringe as a matter of law. *Id.* at 1312.

Similarly here, the structural limitation of "electrodes in electrical communication with the exterior of a patient" is absent until a caregiver puts the device in contact with a patient. This does not render the claims "nonsensical," as Philips suggests. Philips Resp. at 34. It simply means that there can be no direct

infringement until use by a caregiver, just as in *Cross Medical*, where there could be no direct infringement until use by a surgeon. The judgment of direct infringement of the '212 patent should be reversed.

C. Philips Failed To Prove ZOLL Directly Infringed The Self-Test Method Claims

1. Philips Failed To Prove That ZOLL's Product Testing Satisfied The Claims

In its Opening Brief, ZOLL identified six specific steps of the self-test method claims that Philips failed to prove ZOLL itself performs. ZOLL Br. at 28. In its Response Brief, Philips focuses on ZOLL's product testing, but points to no evidence that ZOLL's testing included any of those steps. Philips Resp. at 24-28. For example, Philips points to no evidence that ZOLL's testing is performed "automatically"; in a "periodic" manner; using a first and second "periodic schedule"; or "without human intervention." *See* ZOLL Br. at 28. Philips's failure to address these deficiencies is reason enough to reverse the District Court's denial of ZOLL's JMOL motion.

Philips does not identify any evidence sufficient to support a finding of direct infringement. First, Philips refers to a lengthy document summarizing testing on the R series product *performed by third-party Underwriter Laboratories at its own facility*. Philips Resp. at 25; A13615-19. This document provides no evidence that ZOLL itself performed the claimed self-test methods on all accused products.

Moreover, although the document mentions a test done "on [a] defibrillator supplied with an automatic wake-up self-test" feature (A13775-76), it does not describe whether the *test* was performed manually or automatically, or whether it met any of the other steps ZOLL has identified as missing.

Philips next attempts to rely on the *ipse dixit* of its expert, Dr. Efimov, as evidence of direct infringement. Philips Resp. at 25. But Dr. Efimov never mapped ZOLL's product testing against each and every step of Philips's self-test method claims. A jury verdict cannot be sustained based on mere conclusory expert testimony. *See Krippelz v. Ford Motor Co.*, 667 F.3d 1261, 1268-69 (Fed. Cir. 2012) (reversing denial of JMOL due to conclusory expert testimony).

Philips also relies on testimony concerning the supposed importance of self-testing, as well as testimony that ZOLL makes sure that all of the features of its devices are working properly. Philips Resp. at 26-27. But that testimony says nothing about whether ZOLL itself performed product testing on the accused self-test features, and if it did, *how* ZOLL tested those features and whether ZOLL's testing included each and every step of the asserted method claims. Again, Philips cites no evidence that ZOLL itself performed product testing that is "automatic," "periodic," having a first and second "periodic schedule," or done "without human intervention." Nor is it reasonable to blindly infer that ZOLL performed these steps. Philips needs "more than speculation and conjecture" to sustain the jury

verdict. *Phillip Adams & Assoc., LLC v. Dell Computer Corp.*, 519 F. App'x 998, 1004, n.10 (Fed. Cir. 2013).

Finally, Philips's argument that "Zoll never stated that it does not test the periodic self-test feature," Philips Resp. at 26-27, ignores that it was *Philips's* burden to establish direct infringement. *Medtronic, Inc. v. Mirowski Family Ventures, LLC*, 134 S. Ct. 843, 849 (2014). If it were so self-evident that ZOLL performed each step of Philips's self-test method claims, then Philips "should have [had] no difficulty in meeting its burden of proof." *Mirror Worlds, LLC v. Apple Inc.*, 692 F.3d 1351, 1362 (Fed. Cir. 2012).

2. Philips Did Not Establish Direct Infringement Under *SiRF*

As this Court recently reaffirmed, manufacturing and selling a product capable of performing a patented method are not acts of direct infringement. ZOLL Br. at 22-23; *see Ericsson, Inc. v. D-Link Systems, Inc.* 773 F.3d 1201, 1221-22 (Fed. Cir. 2014) ("[N]one of our decisions have found direct infringement of a method claim by sales of an end user product which performs the entire method, and we decline to do so here[.]"). Because this Court has foreclosed the argument that Philips presented to the District Court, Philips now argues that it established that ZOLL activates its defibrillators prior to shipment and that the defibrillators therefore perform the self-test method claims "*during shipment*." Philips Resp. at

30 (emphasis in original). That argument, which Philips failed to present to the District Court, completely lacks evidentiary support.

Philips relies on a single statement in a 190-page manual for one accused product line (the R series) that "the Code Readiness indicator may show a red 'X'" when the device ships from ZOLL. *Id*. From this statement, Philips speculates that there must be some cases in which the indicator "may also show a green [checkmark]," which supposedly implies that "the self-test feature is active and infringing" during shipment. *Id*. No witness ever mentioned or endorsed this infringement theory at trial; it is mere post-trial attorney argument, based on speculation and conjecture. In any event, the document itself provides no support for Philips's infringement-during-shipment theory, but rather confirms that ZOLL's defibrillators ship without battery power: the shipper must "[r]emove the battery pack from the unit," and "[p]ack the unit with its cables and battery in the original containers (if available) or equivalent packaging." A12256.

Philips's assertion that the self-test method claims "require no participation by an end user" (Philips Resp. at 29) is likewise inconsistent with the evidence. For example, the operator's guides confirm that ZOLL's defibrillators require the user to affirmatively provide connection to a power source (or insert the battery), and also require connecting the electrode cables to the device. *E.g.*, A12143-49; A7055, steps 4 and 5; A10891. Indeed, Philips conceded to the jury that operation

of the self-test functionality required at a minimum that the user install the battery. A5266:11-16. Because end-user involvement is required for ZOLL's products to perform the accused self-test functionality, Philips's attempt to analogize to *SiRF* and to distinguish *Ericsson* fails.

IV. ZOLL ESTABLISHED INVALIDITY OF THE ASSERTED CLAIMS OF THE SELF-TEST PATENTS

A. Claim 43 Of The '374 Patent Is Anticipated By VIVAlink

Philips does not challenge ZOLL's anticipation case for claim 43 of the '374 patent except for one element: the "fail-safe visual display." Specifically, Philips contends that the VIVAlink reference either lacks disclosure of the claimed "fail-safe visual display," or (apparently in the alternative) that VIVAlink's disclosure of this element is not enabled. Yet Philips fails to identify any actual evidence that could support a finding of no anticipation on either of these grounds.

Philips's only "evidence" directed to the purported validity of claim 43 is the conclusory (and facially inadequate) statement of Philips's expert that VIVAlink "does not disclose fail-safe visual display." A5096:1-2. Lacking actual evidence of validity, Philips devotes substantial space in its brief describing its expert's testimony on *infringement* of claim 43 (Philips Resp. at 42-43), along with attorney argument providing a new construction of the term "fail-safe visual display" (Philips Resp. at 43-46). None of this constitutes evidence of no anticipation by VIVAlink.

Philips's other arguments confirm that VIVAlink anticipates claim 43. For example, Philips contends that the "critical feature" of the fail-safe display is "the ability … to show a red X [i.e., an indication of failure] even when the component controlling the display provides no power." Philips Resp. at 43; *see also id.* at 44 (Philips engineer: "fail-safe" means the indication of failure "will still appear" even when "there's no power applied"). This is *exactly* what VIVAlink discloses: a "visual signal" of failure that "will remain indefinitely," even when "the batteries are exhausted." A18680. And although Philips now attempts to import into the claim term other features disclosed in the '374 patent (e.g., a "shutter" and "AC signal" power, *see* Philips Resp. at 42-43), none of these features is found in claim 43.

Philips also suggests a different, more convoluted interpretation for the term "fail-safe visual display." This interpretation imagines a hypothetical situation—unmentioned at trial or in the '374 patent itself—in which a self-test is unsuccessful in detecting that failure is imminent, and then the product actually fails shortly thereafter. Philips posits that the "fail-safe" limitation should be construed as requiring a display that would indicate failure under these circumstances. Philips Resp. at 45. This proposed construction is a post-trial concoction from Philips, as the claim itself includes no such limitation on the scope of the "fail-safe visual display." Indeed, at trial, Philips's expert testified that

the status indicator used in the disclosed embodiment of claim 43 only had to "display[] the results of the *last complete test*" (A1830:18-19); there was no requirement to indicate failure based on any event that may have occurred since the time of the last test. Nor was such a requirement applied to the accused ZOLL product as part of Philips's infringement case. Indeed, the testimony of Philips's expert on infringement at most showed only what happens when battery power is restored, not what happens when a battery dies. A1885:3–A1886:25; *see also* A1894:11–A1895:3. Of course, the "fail-safe" limitation must be applied "the same way for both invalidity and infringement." *See Amgen Inc. v. Hoechst Marion, Inc.*, 314 F.3d 1313, 1330 (Fed. Cir. 2003).

Moreover, the teachings of VIVAlink demonstrate why the strained hypothetical posed by Philips's counsel makes no sense. VIVAlink runs a periodic battery test designed to alert on low power situations ***before*** the battery completely runs out. A18680 ("microprocessor will automatically check the condition of the battery … every 24 hours"). Thus, the visual failure signal of VIVAlink would already be displayed in the situation posed by Philips—and that visual signal would "remain indefinitely," even after "the batteries are exhausted." *Id.* The "fail-safe" limitation of claim 43 requires nothing more.

Finally, Philips's attack on the enablement of VIVAlink fails for lack of evidence. Philips does not contest that it had the burden of proving lack of

enablement (*see* Philips Resp. at 46), yet it did not present any actual evidence that one of ordinary skill could not make or use the prior art disclosure without undue experimentation. The burden of proving lack of enablement cannot be met by merely pointing to the length of a reference (e.g., "very, very short," *see* A5095:22). Moreover, although Philips only argues lack of enablement with respect to the "fail-safe display," Dr. Efimov did not offer any opinion regarding the enablement of that feature in VIVAlink. A1885:3–A1886:25; A1894:11–A1895:3; A5095:16–A5096:7.

Because VIVAlink clearly discloses a fail-safe visual display, this Court should hold claim 43 anticipated as a matter of law.

B. Claim 7 Of The '460 Patent Is Anticipated By Wiley

The sole issue that Philips disputes regarding the invalidity of claim 7 of the '460 patent is whether Wiley discloses two schedules for self-testing (for example, one self-test performed daily, and another performed hourly). As shown in ZOLL's brief, Wiley unambiguously discloses self-testing on two schedules (ZOLL Br. at 35-36) and Philips presents no contrary evidence.

Philips concedes that Wiley performs a battery of self-tests at a "preselected time" each day, "such as 4:00 a.m." Philips Resp. at 47. As Wiley explains, this "autotest" routine is initiated daily when the main CPU determines that the clock matches the daily "autotest time." A14932 at 7:14-20.

But Philips then pretends that other tests in Wiley do not exist. Philips labors to characterize a key passage of Wiley as disclosing only an "hourly CPU power-up function" and not a "CPU self-test." Philips Resp. at 48 (citing A14931 at 6:11-20). Yet the very next two lines after Philips's citation expressly disclose the "power-up self tests" upon which ZOLL relies:

> [A]t a selected time every hour … a 'COLD START' signal [is provided] to the main CPU 111, powering up the CPU. … [A]fter power-up of the main CPU 111, the CPU performs its standard ***power-up self tests*** ….

A14931 at 6:15-22. These "power-up self tests" are performed immediately after the CPU powers up every hour—and it is only after these self-tests are completed that the defibrillator proceeds to check if this is the one hour out of every twenty-four hours to initiate the "autotest" routine with the *other* self-tests. A14931 at 6:62-66; A14932 at 7:17-20. Philips offers neither evidence nor explanation for why this second set of hourly self-tests does not fully satisfy the "second periodic schedule" element of claim 7.

The only other argument Philips advances (though never raised at trial) is that the "logic" of claim 7 requires all self-tests to be performed after the power system is turned on, and thus the "power-up self tests" of Wiley can be disregarded as occurring before the CPU is powered on. Philips Resp. at 49. But Philips never requested that the District Court construe claim 7 to require any particular order of steps, and of course the jury was not itself permitted to add such a requirement to

the claims. *See Mformation Techs. v. Research In Motion Ltd.*, 764 F.3d 1392, 1398 (Fed. Cir. 2014) (unless expressly recited in claim, steps of patented method "are not ordinarily construed to require" a specific order). In any event, even if claim 7 required a particular order, the Wiley patent would satisfy that requirement, as it expressly provides that the "standard power-up self tests" are performed only "***after*** power-up of the main CPU 111." A14931 at 6:15-22.

Because Wiley clearly discloses self-tests on both a "first" and "second periodic schedule," this Court should hold claim 7 anticipated as a matter of law.

C. Claims 42, 67 and 68 Of The '374 Patent Are Obvious

Philips also fails to present any evidence that could support a finding of non-obviousness for the method claims of the '374 patent based on ZOLL's PD1400 or Spacelabs's First Medic 610 defibrillators combined with known automation technologies. ZOLL demonstrated in its Opening Brief that defibrillators with self-testing features were known in the prior art, including self-tests that run automatically when a user pushes a button to manually power on the defibrillator. ZOLL Br. at 37-38. ZOLL also demonstrated that those of skill in the art knew how to use simple, widely available electronics to provide for automated periodic execution of tasks, such as a self-test to be run once per hour or once per day. *Id.* at 39-40. Philips does not dispute either of these factual propositions.

ZOLL also presented evidence that it was obvious to add this known timing circuitry to a defibrillator to automate periodic self-testing—an unremarkable alternative to the tedious task of manually pressing a button on a periodic schedule. *Id.* at 38-40; *see also* A2886:8-20 (automating existing self-tests required "minimal" effort). Philips responds that this combination would be "difficult" (Philips Resp. at 52), yet presents no evidence to support such an argument. Philips relies on expert testimony describing the "complexity" involved in deciding which periodic schedule (e.g., daily, weekly, or monthly) to assign to each of the various self-tests. Yet that purported "complexity" has nothing to do with the self-test method claims, as those claims nowhere require a "proper balance" in selecting schedules that specifically account for "power-consumption issues." Philips Resp. at 52-53.

Contrary to Philips's suggestion, this case bears no resemblance to *Leo Pharm., Ltd. v. Rea,* 726 F.3d 1346 (Fed. Cir. 2013). In that case, various references and teachings had been around for "decades" without anyone combining them to create the claimed chemical pharmaceutical compound with "surprising results." *Id*. at 1356. Here, the undisputed evidence at trial was that timing components for automating periodic self-tests existed in "the late '80s" (A2845:1-22; *see also* A2882:13–A2883:9), and by 1992, there were "several firms" that were incorporating this technology into defibrillators. A17304; *see also* Philips

Resp. at 54 (other companies working on "automatic, periodic self-test before-power-on feature" by 1992). Nothing about these facts undermines the unrebutted testimony of ZOLL's expert that incorporating timing circuitry into defibrillators presented no difficulty for those of ordinary skill.

Oddly, Philips attempts to make up for its lack of evidence of non-obviousness by rehashing its arguments against anticipation. *See, e.g.*, Philips Resp. at 50 (arguing ZOLL "identified no [anticipatory] prior art"), 53-54 (same), 54 (arguing self-test method claims "predate" Wiley and Vivalink); *see also id.* at 50-51 (distinguishing power-on self-test defibrillators per prosecution history).[2] Of course, it is no answer to a charge of obviousness to point out that no single prior art reference contains all of the elements of the claim.

D. Secondary Considerations Do Not Save Philips's Self-Test Claims

Philips relies heavily on arguments regarding secondary considerations in the hopes of overcoming the strong evidence that it was obvious to automate periodic self-tests in a defibrillator. Philips Resp. at 51, 55-58. These arguments are unavailing for at least three reasons.

[2] In a footnote, Philips asks this Court to take judicial notice of certain features of the "Eikefjord" patent (cited during prosecution but never entered into evidence), which Philips contends undermine ZOLL's proposed obviousness combination. Philips Resp. at 53 n.15. This disputed "fact" is clearly not an appropriate subject for judicial notice. *See In re Kahn*, 441 F.3d 977 (Fed. Cir. 2006) (denying request for judicial notice where fact in question was not undisputed).

First, as a threshold matter, secondary considerations can have dispositive impact "only in a close case where all other proof leaves the question of invention in doubt." *Dow Chem. Co. v. Halliburton Oil Well Co.*, 324 U.S. 320, 330 (1945); *Agrizap, Inc. v. Woodstream Corp.*, 520 F.3d 1337, 1344 (Fed. Cir. 2008) (reversing denial of motion for JMOL of obviousness; even "substantial evidence" of secondary considerations "cannot overcome … a strong prima facie case of obviousness"). As shown above, this is hardly a "close case" given the unrebutted evidence of prima facie obviousness presented at trial.

Second, Philips presents no response whatsoever to the secondary evidence of *obviousness* that ZOLL raised in its Opening Brief. Philips completely ignores ZOLL's strong evidence of "simultaneous invention," effectively conceding that VIVAlink and Wiley fully disclosed the self-test method claims within a few *months* of Philips's claimed priority date. *See* ZOLL Br. at 43. This evidence is a powerful objective indicator of obviousness, as it has long been recognized that when competitors in a field "independently" arrive at the same combination "within a comparatively short space of time," it is most likely "the product only of ordinary mechanical or engineering skill and not of inventive genius." *Concrete Appliances Co. v. Gomery*, 269 U.S. 177, 185 (1925); *Geo. Martin Co. v. Alliance Mach. Int'l LLC*, 618 F.3d 1294, 1305-06 (Fed. Cir. 2010) ("[i]ndependently made, simultaneous inventions" are "strong evidence" of obviousness). This is also

consistent with Philips's undisputed admissions at trial that there was nothing "unexpected" or "surprising" about the self-test method claims (A4012:1-3; A4012:7-8).

Third, with respect to the alleged evidence of secondary considerations of non-obviousness that Philips cites, Philips falls far short of satisfying its burden to establish any nexus to its self-test method claims. Philips cites a handful of trial testimony excerpts regarding self-tests generally or the supposed importance of periodically performing self-tests. *See, e.g.*, Philips Resp. at 55-57. But Philips fails to connect this testimony to the ***automation*** of periodic self-tests required in claims 42, 67, and 68. *See, e.g.*, A2037:21-23 (testifying about importance of "self-test" functionality generically); A1352:8–A1353:21 (self-tests should be "routine"); A1354:20-1355:2 (self-tests should be "repeated").

Philips's own witnesses admitted the existence of significant other factors that allowed Heartstream to market a public-access defibrillator—factors that had nothing to do with the self-test method claims. *See, e.g.*, A2022:18-A2024:5 (marketing focus on segments like airlines that had been ignored by competitors); A2026:15-2027:16 (multiple features "pitched" to customers, including voice prompts and lightweight form factor); A1828:20–A1829:3 (self-test functionality was "of course not the only [component]" that enabled the public-access defibrillator). The HeartStart product was not proclaimed "disruptive" by Forbes

because of automated self-testing, but rather because it was available "over-the-counter" at a reduced "cost," and included "voice instructions" to "guide people without any medical training." A12732; A12715. Even Philips's CEO admitted that although the patents had "seemed" important at the time they acquired them, the actual customer feedback focused on other factors: "small," "beautiful," "easy to use." A2021:23–2022:17.

Philips likewise fails to establish "copying" by others. It cites to litigation with Cardiac Science (Philips Resp. at 57), but without identifying evidence that the self-test method claims were asserted (much less found infringed) in that case. Philips also points to the accused ZOLL products (Philips Resp. at 51, 57), but again offers no evidence that these were developed by copying Philips products or patents. *See Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004) ("Not every competing product that arguably falls within the scope of a patent is evidence of copying."). Contrary to Philips's characterization, ZOLL's CEO never testified that the automation of periodic self-testing was what "allowed [ZOLL] to enter the public-access defibrillator market." Philips Resp. at 51. ZOLL's CEO simply testified that it "makes sense" to automate and indeed was aware of others that had been automating periodic self-tests in defibrillators before Heartstream. A1943:6-21. That testimony actually strengthens a conclusion of obviousness.

In sum, the automation of existing periodic self-tests in a defibrillator presents a classic case of obviousness. The Court should thus hold the self-test method claims obvious as a matter of law.

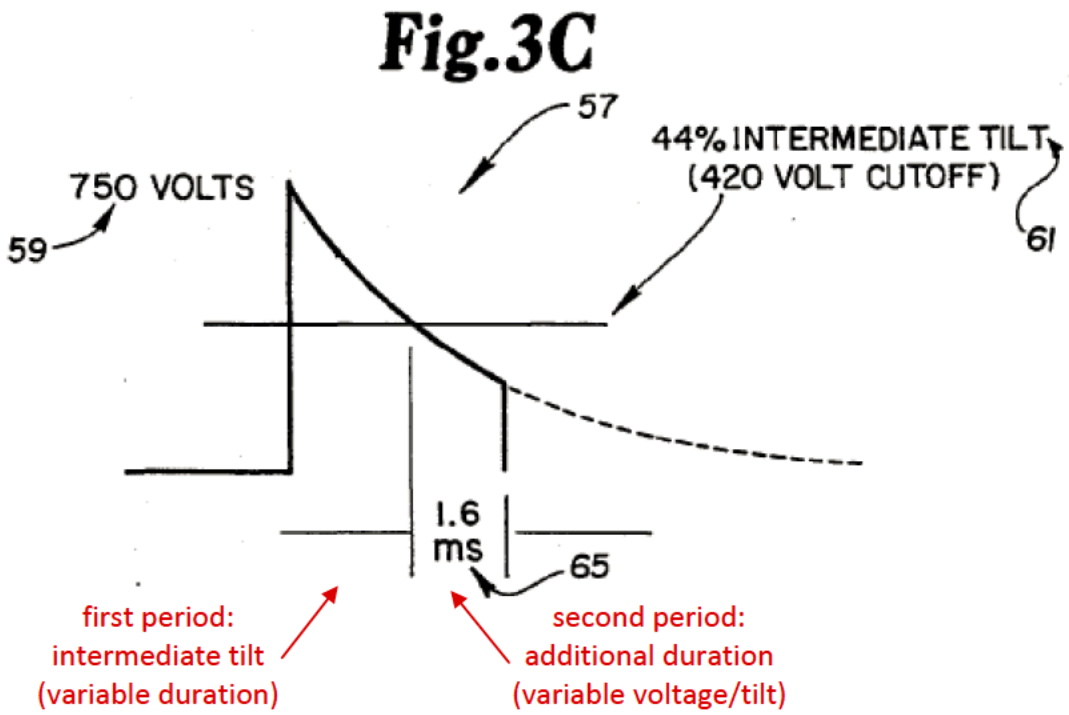
V. ZOLL ESTABLISHED INVALIDITY OF THE ASSERTED CLAIMS OF THE '905 PATENT

Finally, Philips fails to identify any meaningful support for a finding of no anticipation with respect to claims 4 and 8 of the '905 patent. Philips persists in arguing that ZOLL's compelling evidence of anticipation by Kroll should be disregarded because certain aspects of that reference are allegedly "preset" or "fixed." But this phantom "non-fixed" requirement appears nowhere in the claims or the District Court's claim construction, and is therefore not a valid basis for distinguishing Kroll. *See DDR Holdings, LLC v. Hotels.com*, 773 F.3d 1245, 1254 (Fed. Cir. 2014).

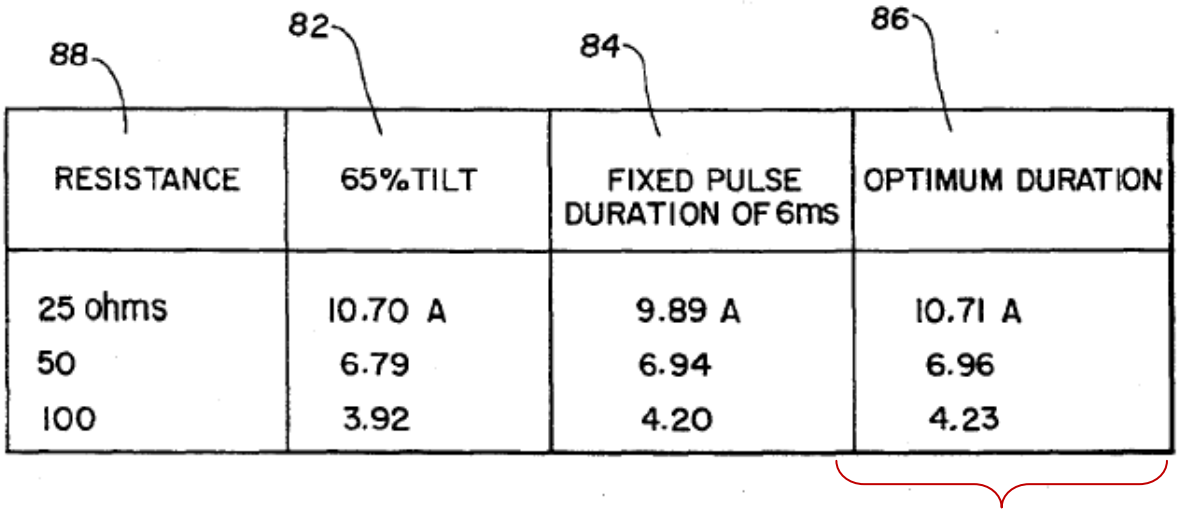
Philips argues that this "non-fixed" requirement is implicit in the "shaping" limitation of claim 4, but that limitation was never construed in such a manner—indeed, it was never construed at all—and Philips fails to offer any justification for such a construction now. To the contrary, this interpretation is inconsistent with how Philips applied the term "shaping" at trial with respect to infringement: Philips argued that ZOLL's products could perform "shaping" even though the ZOLL waveform incorporated a "fixed duration" as well as an "essentially constant" current in its first phase. A1637:1-6; A1676:3-12; A18991; A14560.

In any event, even if claim 4 required a "non-fixed" waveform, the undisputed evidence shows that Kroll satisfies such a requirement. Philips argues that Kroll discloses an "entirely preset waveform," pointing in isolation to two aspects of that waveform that Philips contends are "fixed." Philips Resp. at 59. Yet the point of Kroll was to ***combine*** these two aspects in a way that would create a ***non-fixed*** result—an approach that even Philips's expert conceded would result in "some differences" in the waveform depending on whether the patient had "high impedance" or "low impedance." A5049:23-25; A17385 at 6:41-59 (Kroll waveform varies by "tak[ing into] account" resistance differences "from patient to patient," and is therefore "superior" to both "fixed-tilt" and "fixed-duration" approaches).

Kroll itself illustrates how the first and second phases of its waveform vary as a result of both the electrical parameter voltage ***and*** time:



A17379 at Fig. 3C; A5042:7-19; A17387 at 9:13-17 (first phase duration is sum of "interval corresponding to an intermediate tilt [voltage] of 44%, plus a fixed time interval [] of 1.6 ms"). For example, high-impedance patients will take a longer time to arrive at the desired voltage for the first portion of the first phase, resulting in a delayed start point for the second portion, which then delivers a relatively smaller voltage drop with lower current overall. *See id.*; A5049:23–25; A17381 at Fig. 6:



88 RESISTANCE	82 65% TILT	84 FIXED PULSE DURATION OF 6ms	86 OPTIMUM DURATION
25 ohms	10.70 A	9.89 A	10.71 A
50	6.79	6.94	6.96
100	3.92	4.20	4.23

Kroll's "optimum duration" waveform results in different current values for various patient impedances (25, 50, 100 ohms)

All of these factors—including both voltage and time—thus contribute to a variable first phase endpoint, which (as Philips indicated at trial) also determines the second phase initial parameters for purposes of the "shaping" step. A1636:21-25; A5049:7-11; ZOLL Br. at 45-47. Philips does not identify any contrary evidence.

Finally, for claim 8's additional "current" limitation, Philips does not dispute that Kroll inherently discloses current given the well-known proportional relationship between voltage and current. ZOLL Br. at 48. Instead, Philips contends that ZOLL's expert addressed only "monitoring" current and not "shaping" current as an "initial parameter" of the second phase. Philips Resp. at 60 (citing A2649:14-22). But Philips ignores the full context of ZOLL's expert

testimony, which makes clear that the "monitoring" in Kroll is directly connected to the determination of the "initial parameter":

> And what's left over from this [first] positive phase for voltage, that gets flipped around completely to determine the voltage for the negative [second] phase. And so by deciding when to stop the first phase, I am determining the initial parameter of this next phase…. So the initial parameter … for that next phase is determined by what I was monitoring that initial phase for.

A2649:1-13. In other words, monitoring to determine when to "flip" from the first to second phase has the ultimate effect of also "determining the initial parameter of this next [second] phase"—including both initial current ***and*** voltage in light of their "proportional" relationship. A2649:1-22. Accordingly, Philips's final argument fails.

VI. CONCLUSION

ZOLL requests that this Court reverse the District Court's judgments of:

(1) ZOLL's direct infringement of the asserted claims of the '905, '454, '212, and '460 patents, and claims 42, 67-68 of the '374 patent; and

(2) no invalidity of the asserted claims of the '374, '460 and '905 patents.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on May 11, 2015, ZOLL's Principal and Response Brief was filed electronically using the CM/ECF system and served via the CM/ECF system on counsel for Plaintiff-Appellant as follows:

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CERTIFICATE OF COMPLIANCE

1. This brief complies with the type-volume limitation of Federal Rule of Appellate Procedure 32(a)(7)(B) or FRAP 28.1(e). The brief contains 6,969 words, excluding the parts of the brief exempted by Federal Rule of Appellate Procedure 32(a)(7)(B)(iii).

2. This brief complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) or FRAP 28.1(e) and the type style requirements of Federal Rule of Appellate Procedure 32(a)(6). The brief has been prepared in a proportionally spaced typeface using Word 2010 in size 14 Time New Roman font.

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