IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

Civil Action No. 00-B-272 (PAC)

LASER TECHNOLOGY, INC., a Delaware corporation,

Plaintiff,

v.

NIKON, INC., a New York corporation, and
ASIA OPTICAL CO., INC., a Taiwanese corporation,

Defendants.

DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF THEIR MOTION PURSUANT TO FED. R. CIV. P. 50(b) AND 59 FOR JUDGMENT AS A MATTER OF LAW OR A NEW TRIAL

I. INTRODUCTION

Defendants Nikon, Inc. ("Nikon") and Asia Optical Co. Ltd. ("Asia Optical") (together, "defendants") submit this memorandum of law in support of their motion (i) pursuant to Fed. R. Civ. P. 50(b) renewing their motion for judgment as a matter of law made at the close of plaintiff's case at trial, or in the alternative, (ii) pursuant to Fed. R. Civ. P. 59 for a new trial.

This motion is predicated on four separate grounds. First, the court's claim construction left several key claim terms either undefined or defined in a manner that would render the patents invalid or, at minimum, which left the jury without a clear understanding of how to determine infringement of several of the most important claim elements. For example, claim 8 of the '910 patent (annexed as Exhibit 1) requires, *inter alia*, a specific structure identified as a "precision timing section" which was construed by this Court to mean "a precision timer coupled to the

transmitter and receiver that determines a flight time of laser pulses." The only other detail provided by the construction is that "a separate clock or timer is not required." This construction provided the jury with no guidance as to what structures might constitute a "precision timing section." Moreover, even if the jury had been given some idea of the structures that may constitute a "timer" -- which it was not -- the jury was given no information in the claim construction as to the degree of accuracy or precision required to determine if a timer is a "precision" timer or what structures might distinguish a "precision timing section" from one that is simply a "timing section." The jury's finding of infringement using this claim construction should not stand. If the claim had been properly construed to include the only definition of a "precision timing section" that the patent provides that found in the specification—an "integrating flight time expander" which multiplies the time measurement so that greater precision may be achieved (*see, e.g.,* '910 patent at col. 8, lns. 29-45, 50-52) – there would have been insufficient evidence to support a finding of infringement by the Nikon/Asia Optical Laser 800.

The problems which stem from this improper construction manifested themselves at trial in several ways. In order for the claim to be valid, there would have to be some specific technique for measuring time of flight that would not have been obvious to one of ordinary skill in the art and that was not found in the prior art. Several witnesses at trial testified that, as a general matter, the way laser range finders determine flight time is a known process, understood by one of ordinary skill in the art. The Court's construction of this claim element provides insufficient guidance for someone reading this claim to understand what new technique is claimed by reciting not just a timing section but a "precision timing section."

Similarly, "assigning a pulse value" in claim 11 of the '779 patent (annexed as Exhibit 2), construed by the Court to mean a value identifying "time of flight data" is so broad as to include *any* time of flight data whatsoever. By this definition, any treatment of return pulses by the receiving section of a laser rangefinder would be considered to identify "time of flight" and would render this patent claim invalid as overly broad. It was error for the case to have been submitted to the jury with the claim construction as it was.

Second, the evidence presented by LTI concerning the "automatic noise adjustment threshold" cannot support a finding of infringement under the doctrine of equivalents if the claim construction mandated by this Court had been properly applied. This Court's August 19, 2002 Opinion and Order expressly defined "automatic noise adjustment threshold" as consisting of a feedback loop "composed in part of a diode 316." Nothing in that construction suggests that the absence of a diode like 316 would satisfy a circuit "composed" in part of such a diode. Both LTI's inventor, Jeremy Dunne, and its technical expert, Joseph McAlexander, admitted that the Nikon/AOI Laser 800 circuitry does not include a diode 316 or equivalent structure as part of the Nikon/AOI product's alleged automatic noise threshold adjustment. At trial, LTI resorted to an argument that the entire section of the feedback loop containing diode 316 and all other elements, which the '779 patent specification and prosecution described as the essence of the invention, can be removed and resulting opened electric circuit can be closed (or short circuited) with a simple wire connection and still perform the automatic noise threshold function. In other words, LTI attempted at trial to negate or re-construe the court's construction so as to obviate the need for the entire feedback loop consisting of the diode. No such possible alternate design is suggested or enabled in the patents in suit or in the Court's claim construction and no evidence

that such a circuit could operate was introduced other than LTI's self-serving testimony which contradicted the Court's claim construction. Such a re-construction of the claim, which is the law of the case, after the fact, is not permitted and could only have misled and confused the jurors by leading them to believe that they were free to disregard the Court's claim construction as well.

If the Court's claim construction had been properly applied, without the feedback loop composed in part of a diode, the Nikon/Asia Optical laser range finder could not have infringed claims 18, 25 and 26 of the '779 patent, or any of the claims of the '077 patent.

Third, plaintiff also failed to put on separate proof that any of the claims of the patents in suit were infringed under the doctrine of equivalents and to link any such proof to each of the elements required to prove such infringement. Federal Circuit precedent is unequivocal on this point: a party must put on separate proof as to each and every element to prove infringement by equivalents. It is legally insufficient to rely on the same proof intended to demonstrate literal infringement. Nowhere in plaintiff's case did it attempt to prove separately that the Laser 800 laser rangefinder infringed under the doctrine of equivalents. Even after defendants moved under Rule 50(a) for judgment after plaintiff's case, plaintiff made no effort to come forward with the required proof, thereby waiving any claim it may have had under the doctrine of equivalents. Thus, it was improper for the jury to have been permitted to consider infringement by equivalents of any of the claims at issue, in particular, claims 18, 25 and 26 of the '779 patent; claim 8 of the '910 patent; or any of the claims of the '077 patent as to which only infringement by equivalents was at issue.

Finally, plaintiff's introduction and use of the Bushnell brochure (Exhibit 130) constitutes reversible error. This document was received in evidence purportedly to impeach the credibility of AOI's witness, Doris Lin, but was instead used improperly to show that AOI has a propensity for copying, first the brochure and then LTI's patented technology. This resulted in unfair prejudice to defendants and could only have misled the jury. It was of such major importance to plaintiff that it became a center piece of its closing during which plaintiff repeatedly referred to enlarged copies of the Bushnell brochure and a similar AOI brochure – each several feet in height and width – urging the jury to infer that if AOI copied the brochure, it is likely that AOI copied LTI's technology as well.

If defendants' motion is granted as to any patent claim, the jury verdict in part is based on an unwarranted finding of infringement and should be set aside.

II. ARGUMENT

A. The Applicable Standards Under Fed. R. Civ. P. 50(b) and 59

Fed. R. Civ. P. 50(b), which governs the renewal of a motion for judgment after trial and motions for new trial, provides in pertinent part:

> If, for any reason, the court does not grant a motion for judgment as a matter of law made at the close of all the evidence, the court is considered to have submitted the action to the jury subject to the court's later deciding the legal questions raised by the motion. The movant may renew its request for judgment as a matter of law by filing a motion no later than 10 days after entry of judgment – and may alternatively request a new trial or join a motion for a new trial under Rule 59. In ruling on a renewed motion, the court may:
>
> (1) if verdict was returned:
>
> (A) allow the judgment to stand,
>
> (B) order a new trial, or

(C) direct entry of judgment as a matter of law . . .

In reviewing a motion pursuant to Fed. R. Civ. P. 50(b), the court "shall review all the evidence in the record, construe the evidence and inferences most favorably to the nonmoving party, and refrain from making credibility determinations and weighing evidence." *Tyler v. RE/MAX Mountain States, Inc.*, 232 F.3d 808, 812 (10th Cir. 2000) *citing Reeves v. Sanderson Plumbing Prod., Inc.*, 530 U.S. 133, 147 L. Ed. 2d 105, 120 S. Ct. 2097, 2110 (2000); *see also Deters v. Equifax Credit Info. Servs., Inc.*, 202 F.3d 1262, 1268 (10th Cir. 2000). Judgment as a matter of law is appropriate however "if the evidence points but one way and is susceptible to no reasonable inferences which may support the opposing party's position." *Finley v. United States*, 82 F.3d 966, 968 (10th Cir. 1997), *rev'd on alt. grounds* 123 F.3d 1342 (10th Cir. 1997)(*en banc*). Judgment as a matter of law is appropriate if "there is no legally sufficient evidentiary basis ... with respect to a claim or defense ... under the controlling law." *Mason v. Oklahoma Turnpike Auth.*, 115 F.3d 1442, 1450 (10th Cir. 1997) *quoting Harolds Stores, Inc. v. Dillard Dep't Stores*, 82 F.3d 1533, 1546-47 (10th Cir. 1996), *cert. denied* 519 U.S. 928 (1996).

Fed. R. Civ. P. 59, which governs motions for new trial, provides, in pertinent part:

> A new trial may be granted to all or any of the parties and on all or part of the issues (1) in an action in which there has been a trial by jury, for any of the reasons for which new trials have heretofore been granted in actions at law in the courts of the United States . . .

Motions for a new trial are committed to the sound discretion of the trial court. *McDonough Power Equip., Inc. v. Greenwood*, 464 U.S. 548, 556, (1984); *Hinds v. Gen. Motors Corp.*, 988 F.2d 1039, 1046 (10th Cir. 1993); *Heyen v. United States*, 731 F. Supp. 1488, 1489

(D. Kan), *aff'd*, 945 F.2d 359 (10th Cir. 1991). The party "seeking to set aside a jury verdict must demonstrate trial error which constitutes prejudicial error or that the verdict is not based on substantial evidence." *White v. Conoco, Inc.*, 710 F.2d 1442, 1443 (10th Cir. 1983). Where a jury's verdict is challenged as contrary to the evidence, the court's "inquiry focuses on whether the verdict is clearly, decidedly or overwhelmingly against the weight of the evidence." *Black v. Hieb's Enters., Inc.*, 805 F.2d 360, 363 (10th Cir. 1986).

As demonstrated below, defendants have met the requirements for judgment as a matter of law or, at minimum, a new trial.

B. Inadequate and Erroneous Claim Construction Caused Confusion at Trial and Led the Jury to Reach Unsupportable Conclusions

In August 2002, this Court construed the claims of the three patents in suit, focusing on a relatively few key aspects of the invention. Those claim elements included "a precision timing section" as disclosed in claim 8 of the '910 patent and "assigning a pulse value" in claim 11 of the '779 patent.[1] The constructions imposed in this case ignored the governing principles of claim construction and, in several important instances, were so vague and ill-defined as to create confusion as to what elements the jury had to find to determine if the Laser 800 infringed the claims of the patents in suit. This problem became more acute at trial where, because the

[1]Stated simply, LTI's patented method includes, and its apparatus performs, the following steps: (1) automatically removing noise pulses to an adjustable threshold level of frequency of the noise pulses, using an automatic noise threshold adjustment, so that the range finder can discriminate between actual return pulses and noise pulses; (2) measuring the time of flight of each pulse as it is detected; (3) assigning pulse values to pulses returned from the target to enable comparison of the assigned values of the returned pulses; and (4) comparing the assigned pulse values representative of the return flight time of each pulse immediately upon assignment of the value to previous pulse values to determine matching assigned pulse values.

construction was imprecise, the testimony as to key claim terms—such as what constitutes a "precision timing section" or "time of flight" data—was inconsistent and ill-defined. The jury, confronted with testimony far afield from the actual issues relevant to infringement, could only have been confused and misled as a result. Accordingly, the verdict should be set aside and the patents declared invalid or, at minimum, the claim construction amended and a new trial ordered.

1. "Precision Timing Section"

Several of the key disputed claim elements are contained in claim 8 of the '910 patent. That claim recites a structure:

> A laser range finder apparatus for determining a range to a target based upon a flight time of a pulse toward said target, said apparatus comprising:
>
> a laser transmit section for generating a number of laser pulses for transmission to a target;
>
> a laser receive section for receiving reflected laser pulses from said target;
>
> a precision timing section coupled to said laser transmit section and said laser receive section for determining a time of flight of said laser pulses to said target and said reflected laser pulses from said target;
>
> a central processor section coupled to said precision timing section for determining a range to said target derived from said flight time of said laser pulses to said target and said flight time of said reflected laser pulses from said target; and
>
> a user selectable target acquisition mode switch coupled to said processor for selecting between at least a high sensitivity mode and a low sensitivity receiver mode of operation.

This Court construed a "precision timing section " as follows:

> A precision timer coupled to the transmitter and receiver that determines a flight time of laser pulses reflected from a target. A separate clock or timer is not required.

This Court's claim construction provided no guidance as to the elements of which a "precision timing section" might be comprised. Rather, the construction merely repeated the claim language. The remainder of the construction of claim 8 provides no guidance either, stating only that "a separate clock or timer is not required."

This is a classic example of a claim element that is a statement of a result or function of a structure and which does not teach or disclose the act or element for achieving that result. Claim limitations, which recite a function to be performed but do not teach a structure or materials for performing that function must be construed pursuant to 35 U.S.C. §112, paragraph 6. *See, e.g., Seal-Flex, Inc. v. Athletic Track and Court Construction*, 172 F.3d 836, 850 (Fed. Cir. 1999) ("claim elements without express step-plus-function language may nevertheless fall within 112(6) if they merely claim the underlying function without recitation of acts for performing that function..."); *Isogon Corp. v. Amdahl Corp.*, 47 F. Supp.2d 436, 448-450 (S.D.N.Y. 1998). The next step is to determine the corresponding structures identified in the *specification* which performs that function. The proper construction of a means-plus-function limitation requires interpreting the limitation in light of the corresponding structure, material or acts described in the written description, and equivalents thereof, to the extent that the written description provides such disclosure. *Unidynamics Corp. v. Automatic Products International, Inc.*, 157 F.3d 1311, 1319 (Fed. Cir. 1998):*In re Donaldson Co.*, 16 F.3d 1189, 1193 (Fed. Cir. 1994) (*en banc*).

Whether or not that claim term is properly construed as falling under 35 U.S.C. § 112, paragraph 6, it is impossible to determine the structure of a "precision timing section" without reference to the specification of the '910 patent. A "precision timing section" is not a known specific structure. Indeed, there are any number of timers, clocks, etc., more precise or less

precise. A definition of the term precision cannot be ascertained from the claim, and the components of a precision timing section are not specified in the claim. Instead, the precision timing section is specifically described in the specification at col. 2, lns. 12-15 and lns. 28-41; col. 5, ln. 60 - col. 7, ln. 11. There is no basis in the claim or specification for the precision timing section to be construed to have anything other than all of the elements and functions disclosed in the specification. This is because the claim element merely states a name and a purpose or objective, without providing any guidance as to what are the elements or components of the section.

The first disclosure of a "precision timing section" in the '910 patent specification is simply the words "precision timing section" naming an otherwise unspecified "black box" 34 in the schematic depiction of the system in Fig. 1. This, however, provides no guidance as to what comprises a precision timing section. The specification next discloses that the "precision timing section" includes a clock shown in Figs. 7a, 7b, 7c of the '910 patent. At trial, Jeremy Dunne and Joseph McAlexander each testified that the disclosed precision timing section operates to determine the flight time only by starting the clock when the laser pulse is transmitted to the target and stopping the clock when a pulse, possibly return pulse or possibly noise, is detected. Tr. at 125:6 - 127:2; 907:16 - 24.[2] Therefore, only a clock that starts, stops and restarts is disclosed.

The specification further describes a particular clock, namely a capacitor, that is charged when the pulse is transmitted and that stops charging when a pulse is detected. *See* '910 patent,

[2]All such references to "Tr. at __: __" are to the trial transcript by page and line. The cited pages are annexed collectively as Exhibit 3.

col. 2, lns. 28 - 41; col. 5, ln. 60 - col. 7, ln. 11. This is the only clock described. Therefore, the only guidance from the patent as to what constitutes a "precision timing section" is that it can be a clock that acts like a stop watch which is started and stopped, *i.e.* a chargeable capacitor. "Precision timing section" should have been construed to be limited to such a capacitor. Further, the capacitor disclosed provides the timing but not the desired precision. The specification of the '910 patent (at col. 8 lns. 29-45, 50-52), describes an "integrating flight time expander" which expands the time measurement made by the capacitor, effectively providing a technique for a more precise time of flight determination, thus giving the timing section the claimed "precision." Principles of claim construction do not permit "precision timing section" to mean any time determining system under the sun, but instead one based on the definition in the specification.

The breadth of the claim language and of the Court's claim construction allowed several different interpretations as to what is a "precision timing section" and led to testimony which likely would not have been elicited or even considered relevant by any trier of fact had the correct construction been placed on the claim language. For example, when asked to identify the precision timing section recited in claim 8, by reference to the embodiment shown in the figures in the '910 patent, LTI's Mr. Dunne testified as follows:

> Q: And the precision timing section, embodiment of the precision timing section that you described in the '910 patent, would you be able to point out in the drawing figures of that patent where that precision timing section is depicted?
>
> A: Yes, I would be able to.
>
> * * *
>
> (Referring to Pl. Exh. 2, Figure 1)

Q: . . . So figure 1, is there a particular area where that appears?

A: Yes, it's element element 34.

Tr. at 127:21 - 128:11. It is noteworthy that in Mr. Dunne's testimony, the reference to the precision timing section—element 34—shows it schematically. Elsewhere, Mr. Dunne testified that the actual structure of the precision timing section is shown in Figures 7a, 7b and 7c of the patent which describe the charging of the capacitor. Tr. at 128:17 - 129:24. Those figures represent the only embodiment disclosed in the '910 patent. Thus, to define the claim term "precision timing section", guidance *must* be taken from the specification which describes a clock that starts and stops, *i.e.,* a capacitor that begins charging and stops charging and an integrated flight time expander to provide the precision claimed.

The Court's claim construction, which did not define these necessary elements or functions, led to the eliciting of testimony such as the following from the designer of the accused infringing Laser 800 range finder, Dr. Peter Chien, concerning whether the distance computation in the Laser 800 was "time determined" and other similarly vague paraphrasing of the claim language. The confusion is evident from the testimony of Dr. Chien:

Q: Dr. Chien, your device uses time to calculate distance, does it not?

A: Our distance marker was produced by high frequency oscillator. Distance maker has to do with time.

Q: And I think you just said what I was asking, but let me just ask for a yes-or-no answer. Dr. Chien, the second generation device determines distance based on time.

A: No.

Tr. at 279:2-9.Dr. Chien further testified:

Q: Dr. Chien, range is directly tied to time?

A: Yes.

Q: Now the Asia Optical device assigns values to return reflected pulses based on information relating to the time of flight of those pulses, correct?

A: No.

Tr. at 212:11-16. *See* also 210:20-23. Dr. Chien also testified that

Q: In the second generation laser range finder, are you measuring time of flight to determine range?

A: No.

Tr. at 284:2 - 4. *See also* Tr. at 212:2 - 10; 213:11 - 13; 274:7 - 13. Those questions, and Dr. Chien's answers, paraphrase the claim language "determining a flight time". They do not prove whether the Nikon/Asia Optical Laser 800 has "a precision timing section" and whether it is "determining a flight time." Using a demonstrative exhibit, plaintiff's attorney noted the timing or spacing of the oscillator pulses in the Nikon Laser 800, applied a time value to the oscillator pulses and then said that the Laser 800 was measuring time, *i.e.*, determining flight time. This was after the fact application of time values to arbitrary and regularly spaced frequency pulses. Plaintiff thus confused the issue by reasoning backward from the Nikon/Asia Optical Laser 800 distance measurements to calculate time measurements. *See, e.g.* Tr. at 274:4 – 276:11; Tr. at 278:15 – 279:25.

Adding to the confusion, Mr. McAlexander testified that the locations in the memory array in the Laser 800 are "based upon a time-denominated piece of information." Tr. at 803:16-17. *See also,* Tr. at 919:3-7; 926:1-2; 930:10-11, 931:20-22. McAlexander expressly avoided reference to the claim language "determining a flight time" in the following exchange:

Q: You call these time-denominated slots, but they don't measure any time, do they?

A: I've just stated several times that you cannot get away from the fact its time, so it's measured because it's placed in a specific position at a precise time.

Tr. at 930:15-19. Mr. McAlexander also testified that information stored in the range bins "can only find its way to the bin based upon a particular time of occurrence . . . [a]nd so it is timed information." Tr. at 917:16-17. Such testimony does not prove that the Laser 800 is "determining a flight time."

Elsewhere, referring to his examination of a Bushnell labeled model of the accused Laser 800 rangefinder, LTI's Jeremy Dunne testified:

Q: Could you tell by your external observation of that unit whether it had a precision timing section or circuit for the purpose of measuring flight time of the laser pulse?

A: Yes.

Q: And how did you do that?

A: Because of the master oscillator, master clock, or oscillator, 40 megahertz, represents a precision clock source that was feeding the FPGA, therefore, clocking it, and that represents a precision timing site to measure flight time of the laser pulse.

Q: Did you observe by any observation that time was being measured, or are you doing it by looking at the product and saying, this is the way it probably operates?

A: No. I know that the – let me put it this way: It has a precision oscillator feeding a logic circuit that used as the clocking element for that logic circuit; therefore, from direct observation, a precision timing signal is being used in the logic circuit to clock the signal in from the receiver.

Tr. at 109:25 - 110:22. Showing a completely different understanding of that same claim term, AOI's Dr. Peter Chien testified:

Q: In the second generation device, Dr. Chien, there's a clock, is there not?

A: We have two clocks. Which one you meant?

Q: Well, there is a 40 megahertz clock; is that correct?

A: Yes.

Q: And that – you've referred to that as well as a high frequency free-latching clock?

A: Yes.

* * *

Q: That's a precision timing section, isn't it?

A: No.

Tr. at 211:19 - 212:10. It was obvious to Dr. Chien that a 40 megahertz oscillator, referred to colloquially as a 40 megahertz clock, does not constitute a "precision timing section."

There was additional confusion as to what functions the oscillator performed. Defendants' technical expert, Professor Creusere, testified that there is no clock in the Nikon/Asia Optical Laser 800 which starts when a pulse is transmitted and stops when a pulse is detected. Tr. at 984:5; 990:20 - 25; 1002:17 - 25. Neither Mr. Dunne nor Mr. McAlexander said that the Nikon Laser 800 had such a start-stop clock. Rather, they said that the system oscillator which generates periodic pulses determines the time of flight. *See, e.g.,* Tr. at 110:5 - 22; 923:3 - 7. No technical description of how that is done was supplied and no measurement of time was explained. It was undisputed at trial that the oscillator oscillates; however, it does not measure.

Plaintiff's use of exhibits 76 and 81 -- an instruction sheet from the Nikon Laser 800 and a product information sheet entitled "About Your Buckmasters Laser 800 Rangefinder"-- confused the issue further. LTI repeatedly pointed to statements in those documents such as the statement in Exhibit 81 that the Laser 800 uses "sophisticated circuitry and a high speed 'clock'

. . . to instantaneously . . . calculate the distance by measuring the time it takes for each beam to travel from the range finder to the target and back." Copies of those exhibits are annexed collectively as Exhibit 4. Although these statements were not factually incorrect and the source of the statements was not conclusively established, LTI characterized these as admissions that the Laser 800 determines a flight time and uses a "a precision timing section" to do this. Tr. at 1266:5 - 1267:1. Based on the description of the measuring function in an advertisement and promotional material, the inference is drawn that the claimed precision timing section is present, first a "clock," *i.e.* an oscillator, is not a "timing section." Secondly, the statement says nothing about "precision" of the timing. Time measurement alone tells nothing about its "precision."[3]

In sum, such confusion of the issues resulted from a claim construction that did not provide elements of "a precision timing section" and did not explain how or by what steps one is determining a flight time. The word play of "flight determined," "time-denominated" and other vague terms not in the claims were used as purported evidence of the presence of "a precision timing section" and the performance of "determining a flight time." The Court's construction of claim 8 was incorrect and misleading to the jury as it did not tell them what characteristics they needed to find, and the verdict must be set aside and/or a new trial ordered.

2. Assigning a Pulse Value

[3]Reliance on the defendant's statement incorrectly assumes that performance of the claimed function (measuring time) therefore means that the claimed structure for performing that function (precision timing section) is present as well. This situation -- naming a structure without naming its elements, while reciting its function -- is precisely what § 112, paragraph 6 addresses and requires application of that section. This also shows that the Court's claim construction was not sufficiently definite as to enable a determination of whether the claim element "a precision timing section" is present in the Nikon Asia Optical Laser 800.

Similarly, the claim construction the jury was instructed to apply to claim 11 of the '779 was not specific enough for the jury to conclude that the claim was infringed. Claim 11 provides as follows:

> 11. A method for discriminating between an actual return-reflected signal and associated noise in a signal receiving section of a signal transmitting device, the method comprising the steps of:
>
> transmitting a series of signal pulses to a target;
>
> receiving a number of reflected signal pulses from said target, said reflected signal pulses including both noise and actual return-reflected signal pulses;
>
> assigning a pulse value for each of said reflected signal pulses with respect to said series of signal pulses transmitted to said target;
>
> comparing each of said assigned pulse values with other ones of said assigned pulse values;
>
> continuing to perform said comparing step until a predetermined number of assigned pulse values coincide within a specified precision; and
>
> determining said actual return signal to be represented by said predetermined number of said assigned pulse values.

The element of claim 11 reciting "assigning a pulse value" was construed by this Court as follows:

> "Pulse value means a value identifying time-of-flight data, including noise and signals reflected from the target, that provides information sufficient to permit correlation of the received signal with other received signals to determine which of the received signals represents the actual return or target-reflected signal as opposed to random noise signals."

This method claim has three claim elements which merely state their objective or result without specifying how to achieve that objective. These are classic examples of claim elements that should fall within §112, paragraph 6. But even if they are not construed in accordance with

§112, paragraph 6, in order to understand what "assigning a pulse value" means, one must look to the specification to see how a pulse value is assigned and how the values are compared, *i.e.* the steps performed in assigning and comparing.

The specification is clear that each return pulse is assigned a unique value based upon the determined time of flight so that several different pulse values are assigned as there are several different times of flight. *See* '779 patent at col. 2, lns. 22-29; 40-44. Mr. Dunne confirmed this in his trial testimony. Tr. at 131:18 - 133:5. The specification also provides that in order to enable the comparison of assigned values as or after the values are assigned, those values are placed in a stack. As new assigned values arrive, they are compared to the values that were stored in a stack. The specification discloses no other technique of assigning and comparing pulse values.

"Assigning a pulse value" is not self-explanatory. Nothing in the claim language describes the steps entailed in "assigning" a pulse value. This can be learned only from the specification which describes only one technique for assigning, *i.e.,* assigning a value dependent upon pulse flight time which value is then stored in a stack. *See* '779 Patent, col. 2, lns. 29 - 32. Similarly with respect to the comparing step, the claims as construed by the Court do not explain how the comparison of pulse values is performed. That explanation is provided only in the specification, which states that each new pulse is compared with preceding pulses that were stored in particular value locations in a stack. Col. 2, ln. 61 – Col. 3, ln. 4. Since the claim further recites that one is "continuing to perform that compare a step," consistent with the only explanation one finds in the specification, that element should have been construed that the

comparison is done each time a new pulse comes in, *i.e.* each new pulse is compared with pulses in the stack, and then the next pulse is compared with the pulses in the stack, etc.

Thus, if the claims were properly construed, there is no evidence to suggest that the Nikon/Asia Optical Laser 800 assigns pulse values based on time of flight data obtained from a "precision timing section", that the assignment is of various values based on time of flight, that a comparing step occurs each time a laser pulse is detected or that the comparing step continues to be performed as each new pulse comes in. Even assuming, *arguendo,* that the claim construction was adequate, there was no evidence at trial that pulse values are assigned in the Nikon/Asia Optical Laser 800 based upon time of flight data or based on determination of flight time, that the comparing step takes place each time a pulse is detected or that the comparison continues until a coincidence occurs, laser pulse by laser pulse.[4] Thus, even as construed by the court, there was insufficient evidence to support a finding of infringement.

Accordingly, the jury's verdict of infringement of claim 8 of the '910 patent and claim 11 of the '779 patent should be set aside and judgment entered in defendants' favor or alternatively, the claim should be construed more narrowly and a new trial ordered.

C. The Jury Disregarded This Court's Claim Construction Requiring Diode 316 as Part of the Automatic Noise Threshold Adjustment Circuit

This Court construed the "automatic noise adjustment threshold" of claims 18 and 25 of the '779 patent and all claims of the '077 patent as "a circuit consisting of a feedback loop

[4]To perform this analysis, it is of course necessary for "time of flight" to have been construed precisely and accurately. As demonstrated above, this construction was in error as well.

composed in part of a diode 316 . . . ." That is an essential element for the automatic noise . . . . threshold adjustment and is law of the case.

The Court's claim construction of the "automatic noise threshold adjustment" only permitted a finding of infringement under the doctrine of equivalents. To infringe under the doctrine of equivalents, the Nikon/Asia Optical Laser 800 circuit had to "consist of a feedback loop composed in part of a diode 316." "Nothing in the Court's claim construction suggested that substantially the entire feedback loop could be eliminated or that the diode 316 could be eliminated from the feedback loop. To make its infringement case, in light of the obvious fact that the Nikon/Asia Optical Laser 800 has no diode 316, LTI had to rewrite the Court's claim construction, to eliminate two elements—virtually the entire feedback loop and the diode—both of which the Court mandated be present in order to make an infringement determination under the doctrine of equivalents. If the circuit either could or could not have the diode, then the claim construction has been altered to eliminate the important element "composed in part of a diode 316."[5]

LTI contended at trial that this diode could be entirely eliminated and replaced or "shorted" by a wire, and that the automatic noise thresholding function would still be performed. *See, e.g.,* Tr. at 824:8 - 15; 877:25 - 878:1; 881:8 - 20; 894:10 - 13; 895:9 - 11. Jeremy Dunne testified that the claim could be construed to not require the entire feedback loop. Mr. Dunne testified:

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[5]The feedback loop is required by claims 18, 25 and 26 of the '779 patent and all claims of the '077 patent and provides an essential function, described by LTI's technical expert, Mr. McAlexander, as "establishing a proper threshold based upon the signals that are coming into the output of the comparator." Tr. at 753:11 - 14.

Q: . . . Let's talk about the diode 316 again. There's a risk, isn't there, that there were no diode 316 in the circuit element shown in figure 8 that the currents that charged up the capacitor 324 would run backwards out again through the very path that it had come in unless the diode were there; isn't that right?

A: Well, yes, but I wouldn't exactly describe that as a risk. It would do that, but the circuit would still operate. You would have a different voltage developed to point B3. And the reason for choosing this network and this example is to just give me the value of B3 that could be buffered so that the control elements can then adjust the feedback loop. The – where the – whether the diode 316 is there or not, capacitor 324 is being charged and discharged as the pulse comes in.

Q: If the diode 316 were there – were not there, I beg your pardon, in the system that you've shown otherwise, would the system be able to operate to give you an automatic noise threshold adjustment?

A: Yes, it would.

Q: Just by eliminating the diode 316?

A: Well, you have to put a connection in place of diode 316. If you took 316 out and didn't make the connection—the joining between the missing—the gap, then the circuit would be open looped, *it would not be a feedback loop, and it would not operate,* but you could simply replace 316 with a short circuit, just draw a line through it, and it would operate.

Tr. at 147:9 - 148:10 (emphasis supplied). *See also*, Tr. 152:1 - 20.

Using the composite drawing of Figs. 3 and 8, Mr. McAlexander went even further and simply sketched a wire across the two leads in Fig. 3, short circuiting out and completely eliminating Fig. 8 and the entire feedback loop characterizing this portion of the circuit as unnecessary. Tr. at 828:13 - 829:1. *This is an outright exclusion of two elements mandated by the Court's claimed construction, i.e. the feedback loop and the diode.*

LTI's attempts to re-construe or disregard the Court's construction, even under the guise of an equivalents argument, cannot stand. In determining whether no reasonable jury could find

infringement by equivalents, the range of equivalents cannot be divorced from the scope of the claims. *Vehicular Technologies Corp. v. Titan Wheel International Inc.*, 212 F.3d 1377, 1382 (Fed. Cir. 2000); *Zodiac Pool Care, Inc.*, 206 F.3d 1408, 1416 (Fed. Cir.) *reh'g. denied* 2000 U.S. App. LEXIS 12706 (Fed. Cir. 2000) (*quoting Sage Products*, 126 F.3d at 1425-26). The fact that the claim element of diode 316 as construed by this Court used the words "consisting of" has particular significance. It is axiomatic that "consisting of," when used in claim language, is a term of art signifying restriction and exclusion, and means that the element *must* be present. *Id. citing Parmalee Pharm. Co. v. Zink*, 285 F.2d 465, 469 (8th Cir. 1961); John Landis, *Mechanics of Patent Claim Drafting* 11-13 (1974)). "It is important to ensure that the application of the doctrine, even as to an individual element, is not allowed such broad play as to effectively eliminate that element in its entirety." *Zodiac Pool Care, Inc.*, 206 F.3d at 1416, *quoting Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*, 520 U.S. 17, 29 (1997).

Re-construing a Court's construction to mean its precise opposite negates the Court's claim construction which is law of the case and is not permitted. Under such circumstances, a verdict of infringement under the doctrine of equivalents would reduce the claims to nothing more than "functional abstracts, devoid of meaningful structural limitations on which the public could rely." *Zodiac Pool Care, Inc.*, 206 F.3d at 1416, *quoting Sage Products v. Devon Industries, Inc.*, 126 F. 3d 1420, 1424 (Fed. Cir. 1997), 126 F.3d at 1424.

The *Vehicular Technologies* case, *supra*, is particularly relevant. In that case, the court held that no reasonable jury could find infringement by equivalents in devices that comprised a single spring construction when the claim required the presence of "two concentric springs" as a single spring could not be insubstantially different from two concentric springs since the "two

concentric springs" was a key element of the invention. Similarly, here, the Court's claim construction requires "a circuit consisting of a feedback loop composed in part of a diode 316" so there must be a feedback loop. Plaintiff cannot simply exclude the feedback loop and still maintain that he circuit is insubstantially different. LTI's contention at trial—in effect, rewriting the Court's construction so that no diode 316 is the equivalent of diode 316—is wrong as a matter of law and cannot support a verdict of infringement under the doctrine of equivalents.

The jury however, apparently accepted LTI's argument, failed to appreciate or disregarded that the absence of the diode means that there can be no feedback loop—expressly required by the claims—and found infringement under the doctrine of equivalents. This was clear error and requires that the verdict be set aside.

Finally, the "automatic noise threshold adjustment", whether it be a circuit as in claim 18 or a method as in claim 25, is a statement of objective, namely to achieve an "automatic noise threshold adjustment" without either structure or acts for accomplishing that objective being stated in the claims. The only place one can find either such structure or such acts is within the patent specification and the specification describes a particular comparator and more important here, a particular feedback loop associated with that comparator and that feedback loop being composed in part of a diode 316. Attempting to reconstrue the claim to eliminate the feedback loop as Mr. McAlexander did, and to reconstrue that claim to eliminate the diode 316 from the feedback loop as Messrs. Dunne and McAlexander did, is inconsistent with the specification, the prosecution history and the Court's claim construction. By that logic, the structure and method recited in the claim would be operable not only as recited, but would also be operable without the structure, without the structural elements, and without the particular steps specifically recited, *i.e.*

the claim means what it says and means its opposite. Clearly this is inconsistent with good claim construction and inconsistent with the patent specification.

For the foregoing reasons, claims 18 and 25 of the '779 patent and all of the claims of the '077 patent are not infringed under the doctrine of equivalents and there is no substantial evidence to support a finding of infringement of those claims.

D. Plaintiff Failed to Come Forward With Any Proof Separate From its Case for Literal Infringement to Support its Claim for Infringement Under the Doctrine of Equivalents

The Federal Circuit has expressly held that in order to prove infringement under the doctrine of equivalents substantial identity must be proven with evidence and argument particularly directed to each of the three required elements, *i.e.* the function performed, the means by which the function is performed and the result achieved. The evidence and argument cannot be merely subsumed in the plaintiff's case for literal infringement. *Lear Siegler, Inc.* v. *Sealy Mattress Co. of Michigan, Inc.*, 873 F.2d 1422, 1425-26 (Fed Cir. 1989).

In *Lear Siegler*, the Federal Circuit affirmed the district court's reversal of a jury verdict finding that it was error for the issue of equivalence to be submitted to the jury without delineation through testimony and argument of the elements of equivalence. The court required that each of the three elements of equivalency under the doctrine of equivalents set forth in *Graver Tank and Mfg. Co., Inc. v. Linde Air Products Co.*, 339 U.S. 605, 608 ("function, means and result") has to be proven with "particularized testimony and linking argument." *Lear Siegler*, 873 F.2d at 1426. The court ruled that even where there is evidence and argument on literal

infringement which may also bear on infringement under the doctrine of equivalents, this does not satisfy this requirement for separate proof. *Id.* at 1425.

The requirements set forth by the Federal Circuit in *Lear Siegler* have been reaffirmed by the Federal Circuit in numerous cases. *See Comark Comm. Inc. v. Harris,* 156 F.3d 1182, 1188 (Fed. Cir. 1998); *Texas Instruments v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1567 (Fed. Cir. 1996), *cert. denied* 520 U.S. 1228 (1997); *Malta v. Schulmerich Carillons, Inc.*, 952 F.2d 1320, 1327 (Fed. Cir. 1991), *cert. denied*, 504 U.S. 974 (1992). Most recently, in April 2003, *Apex Inc. v. Raritan Computer, Inc.*, 2003 U.S. App. LEXIS 6321 (Fed. Cir. 2003), the Federal Circuit vacated the district court's grant of summary judgment of non-infringement and remanded the case with the following instruction: "In particular, the district court should provide an analysis under both literal infringement and infringement under the doctrine of equivalents." *Apex*, 2003 U.S. App. LEXIS 6321 at *33-34.

In *Texas Instruments*, the court further clarified the evidentiary requirements a plaintiff must meet in order to prove infringement under the doctrine of equivalents.

> Pursuant to our precedent, a patentee must still provide particularized testimony and linking argument as to the 'insubstantiality of the differences' between the claimed invention and the accused device or process, or with respect to the function, way, result test when such evidence is presented to support a finding of infringement under the doctrine of equivalents. Such evidence must be presented on a limitation-by-limitation basis. Generalized testimony as to the overall similarity between the claims and the accused infringer's product or process will not suffice.

Texas Instruments, 90 F.3d at 1567-1568.[6] These evidentiary requirements assure that the fact-finder does not, "under the guise of applying the doctrine of equivalents, erase a plethora of meaningful structural and functional limitations of the claim on which the public is entitled to rely in avoiding infringement." *Id.* at 1567. Unless these requirements are strictly enforced, the fact-finder has no analytical framework for making its decision and is "put to sea without guiding charts when called upon to determine infringement under the doctrine [of equivalents]," and from determining infringement by simply comparing the claimed invention and the accused device "as to overall similarity." *Malta*, 952 F.2d at 1327, quoting *Lear Siegler*, 873 F.2d at 1426-27.

At trial plaintiff failed to come forward with any evidence to prove infringement under the doctrine of equivalents separate and apart from that offered to prove literal infringement and failed to link its proof to the factors required to prove infringement under the doctrine of equivalents. Plaintiff did this neither in its case-in-chief nor in its rebuttal case after defendants initially moved for judgment as a matter of law under Rule 50(a) on these grounds. For this reason, the jury's verdict of infringement under the doctrine of equivalents should be set aside and judgment of non-infringement be entered.

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[6]Coincidentally, in *Texas Instruments*, the question concerned expert testimony by Joseph McAlexander, LTI's technical expert in this action. The Court found that Mr. McAlexander's testimony that the "conductors" in the accused process and the claimed processes were the "same" and performed the "same function" was merely generalized testimony as to overall similarity and not the particularized testimony regarding equivalency required under *Lear Siegler* to support a finding that any differences were insubstantial. *Id.*

E. Defendants Were Unduly Prejudiced by Plaintiff's Improper Use of the Bushnell Brochure (Exhibit 130)

Plaintiff was permitted at trial to introduce a document (not listed on its exhibit list in the Pretrial Order) for the stated purpose of impeaching the credibility of Asia Optical's Doris Lin. That document, received in evidence over defendants' objection as Exhibit 130 (a copy of which is annexed as Exhibit 5) consisted of a brochure for the Bushnell Lytespeed 400. Plaintiff moved for the admission of these advertising materials in a written motion during trial in which it contended that it needed to introduce the Bushnell brochure, which counsel represented was almost identical to an Asia Optical brochure (attachment 5 to Exhibit 7), simply to impeach Ms. Lin's credibility on this point by showing that she had purportedly copied the brochure. A copy of the pertinent portion of that brochure is annexed as Exhibit 6. Noting that the brochures were almost exact copies and reasoning that credibility is always relevant, the Court permitted the introduction of the Bushnell brochure and received Exhibit 130 "as an impeachment and rebuttal exhibit." Tr. at 509:14 - 518:13.

Thereafter, plaintiff referred to Exhibit 130 and compared it to the Asia Optical brochure (attachment 5 to Exhibit 7), not with respect to Ms. Lin's credibility but as evidence of Asia Optical's propensity to copy, creating the unmistakable inference that if Asia Optical copied the Bushnell brochure, it must have copied LTI's patented technology as well. This became most egregious at closing (Tr. at 1182:23 - 1185:4) when, referring to highlighted enlargements of the product brochures admitted as Exhibits 135 and 136, Mr. Cobb stated:

> And I urge you when you go back into the jury room to take great care and examine these two exhibits early. There will be no doubt of Asia Optical's propensity to copy.

Tr. at 1184:21 - 23.

Such tactics clearly violate Fed. R. Evid. 406 which allows the use of certain evidence to show the routine practice of an organization was, on a particular occasion, in conformity with that routine practice. The rule provides as follows:

> Evidence of the habit of a person or of the routine practice of an organization, whether corroborated or not and regardless of the presence of eyewitnesses, is relevant to prove that the conduct of the person or organization on a particular occasion was in conformity with the habit or routine practice.

Rule 406 does not permit unbridled use of such evidence. More than an isolated instance of such conduct is required to constitute the routine practice of an organization. "To obtain a Rule 406 inference of the routine practice of the business, a plaintiff must show a sufficient number of specific instances of conduct to support that inference. Evidence of the defendant's actions on only a few occasions...are not enough; the plaintiff must show regularity over substantially all occasions or with substantially all other parties with whom the defendant has had similar business transactions." *Mobil Exploration and Producing U.S., Inc. v. Cajun Const. Serv., Inc.*, 45 F.3d 96, 99-100 (5th Cir. 1995); *see also Yumukoglu v. Provident Life & Accident Ins. Co.*, 131 F. Supp. 2d 1215, 1228 (D.N.M. 2001). To the extent copying a brochure is indicative of or relevant to allegations that Asia Optical copied the patented technology – and defendants submit that it is not relevant at all – LTI demonstrated no more than a single instance of purported copying. This is insufficient grounds to have permitted plaintiff to introduce documents into evidence and argue to the jury that Asia Optical has a "propensity to copy."

Introduction of such evidence must necessarily be balanced with the concerns of Rule 403 and should not be permitted where the danger of prejudice substantially outweighs its

probative value. Here, the central issue of the case was whether Asia Optical infringed LTI's patents; a question closely related to copying. The danger that the jury would draw an improper inference from a brochure purportedly copied by Asia Optical that Asia Optical also infringed the patents in suit easily outweighed any slight probative value from the brochure itself. LTI's use of these exhibits and their argument that Asia Optical has a propensity to copy, after Exhibit 130 was admitted purely to impeach Ms. Lin's testimony as to the source of the brochure's text, misled and confused the jury to defendants' detriment on this central issue to such an extent that the verdict should be set aside and a new trial ordered.

IV. CONCLUSION

For all of the foregoing reasons, judgment of invalidity and/or non-infringement by defendants of the '779, '910 and '077 patents is required as a matter of law, or in the alternative, a new trial ordered.

Respectfully submitted this 7th day of May 2003

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CERTIFICATION PURSUANT TO LOCAL RULE 7.1(A)

The undersigned defendants' counsel hereby certifies that on May 6, 2003, co-counsel conferred with counsel for plaintiff in a good faith effort to resolve the issues raised in this motion and were informed that plaintiff would oppose this motion.

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CERTIFICATE OF SERVICE

It is hereby certified that a true copy of the foregoing **DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF THEIR MOTION PURSUANT TO FED. R. CIV. P. 50 AND 59 FOR JUDGMENT AS A MATTER OF LAW OR A NEW TRIAL** was served by hand delivery upon the following this 7th day of May, 2003:

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