

**SLEET, District Judge**

**I. INTRODUCTION**

On May 17, 1999, Honeywell International, Inc. (“Honeywell”) brought this action against Hamilton Sundstrand Corporation (Sundstrand) alleging that Sundstrand’s manufacture and sale of the APS 3200 infringes its 4,380,893 and 4,428,194 patents (the “‘893 patent” and “‘194 patent,” respectively). The patents-in-suit relate to technology for an airplane auxiliary power unit (“APU”). An APU is a small gas turbine engine, usually placed in the tail section of an airplane, that generates electricity for use while the aircraft is on the ground or in flight. An APU also provides compressed air for both starting the aircraft’s main engine and environmental control of cabin air. The ‘893 and ‘194 patents cover a method for controlling surge, which is an aerodynamic phenomenon in which the air being drawn into the APU reverses direction and can damage the engine.

A jury trial was held between February 5 and February 16, 2001. On February 16, 2001, the jury returned a verdict finding that: 1) Sundstrand infringed five claims of the ‘893 patent under the doctrine of equivalents, 2) Sundstrand infringed Claim 4 of the ‘194 patent under the doctrine of equivalents, 3) Sundstrand’s patent infringement was willful, 4) the patents-in-suit were valid and 5) Honeywell was entitled to price erosion damages in the amount of \$45,000,000 and reasonable royalty damages in the amount of \$1,578,065.

During the course of the trial, both parties properly moved for judgment as a matter of law pursuant to Rule 50 of the Federal Rules of Civil Procedure -- Sundstrand moved for judgment as a matter of law at the close of Honeywell’s case-in-chief, Honeywell moved for judgment as a matter of law at the close of Sundstrand’s case-in-chief. The court reserved judgment on all JMOL motions. Following the jury’s verdict, both parties filed post-trial motions. Presently before the court is 1) Honeywell’s renewed motion for judgment as a matter of law on the issue of literal infringement of

Claim 4 of the '194 patent, 2) Sundstrand's renewed motions for judgment as a matter of law, or alternatively, for a new trial under Rule 59 of the Federal Rules of Civil Procedure, on the issues of liability, validity and willfulness, and 3) Honeywell's motion for treble damages, attorney's fees, costs and expenses, and pre-judgment interests. The following is the court's decision on all pending post-trial motions.

## **II. STANDARD OF REVIEW**

### **A. Judgment as a Matter of Law**

Under Rule 50 of the Federal Rules of Civil Procedure, a court should grant a motion for judgment as a matter of law only where "there is no legally sufficient basis for a jury to find for [the non-moving] party." *See* Fed. R. Civ. P. 50. Thus, in order to prevail on a renewed motion for JMOL following a jury trial, the moving party "must show that the jury's findings, presumed or express, are not supported by substantial evidence or, if they were, that the legal conclusions implied [by] the jury's verdict cannot in law be supported by those findings." *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1348 (Fed. Cir. 1998) (quoting *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893 (Fed. Cir. 1984)). In order to determine whether a legally sufficient basis in fact exists, the trial court must consider all the evidence in a light most favorable to the non-movant, must draw reasonable inferences favorable to the non-movant, must not determine the credibility of witnesses, and must not substitute its choice for that of the jury. *See Odetics, Inc. v. Storage Tech. Corp.*, 185 F.3d 1259, 1269 (Fed. Cir. 1999) (citations omitted). If, after this analysis, substantial evidence exists to support the jury's verdict, then the motion for JMOL must be denied. *See id.*

The essential question in deciding a motion for judgment as a matter of law is whether the evidence the jury could have believed in reaching its verdict was substantial enough to support its

findings. *See Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1573 (Fed. Cir. 1986). Thus, the question is not what the court might have believed, but what the jury could have reasonably determined. *See Dawn Equip. Co. v. Kentucky Farms, Inc.*, 40 F.3d 1009, 1014 (Fed. Cir. 1998) (“the inquiry is whether a reasonable jury, given the record before it viewed as a whole, could have arrived at the conclusion it did.”).

### **B. Motion for a New Trial**

Under Federal Rule of Civil Procedure 59(a), “a new trial may be granted to all or any of the parties and on all or part of the issues 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.” Fed. R. Civ. P. 59(a). The decision to grant or deny a new trial is within the sound discretion of the court. *Allied Chemical Corp. v. Daiflon, Inc.*, 449 U.S. 33, 36 (1980). Moreover, the standard for grant of a new trial is less rigorous than the standard for grant of judgment as a matter of law in that the court need not view the evidence in the light most favorable to the verdict winner. *Lifescan Inc. v. Home Diagnostics, Inc.*, 103 F. Supp. 2d 345, 350 (D. Del. 2000) (citations omitted). Among the most common reasons for granting a new trial are the following: (1) the jury's verdict is against the clear weight of the evidence, and a new trial must be granted to prevent a miscarriage of justice; (2) newly discovered evidence exists that would likely alter the outcome of the trial; (3) improper conduct by an attorney or the court unfairly influenced the verdict; or (4) the jury's verdict was facially inconsistent. *Id.*

Finally, the court is particularly mindful that it must not substitute its own judgment of the facts and the credibility of witnesses for those of the jury, but rather, that it should grant a new trial on the basis that the verdict was against the weight of the evidence only where a miscarriage of

justice would result if the verdict were to stand. *See Williamson v. Consolidated Rail Corp.*, 926 F.2d 1344, 1352 (3d Cir. 1991); *EEOC v. State of Delaware Dept. of Health and Social Services*, 865 F.2d 1408, 1413 (3d Cir. 1989).

### **III. DISCUSSION**

#### **A. Honeywell’s Motion for Judgment as a Matter of Law**

1. Whether Honeywell is Entitled to Judgment on Literal Infringement of Claim 4 as a Matter of Law?

Honeywell moves for a judgment as a matter of law reversing the jury’s findings that the APS 3200 did not literally infringe Claim 4 of the ‘194 patent. Honeywell argues that it entitled to judgment as a matter of law because it met its burden of proving a prima facie case of infringement by establishing at trial that Sundstrand’s APS 3200 surge control system literally infringed Claim 4 of the ‘194 patent. Honeywell further contends that in response to its prima facie case of infringement, Sundstrand failed to present evidence, which would support Sundstrand’s contentions of non-infringement.

Literal infringement of a claim occurs when every limitation recited in a claim appears in the accused device, i.e., when “the properly construed claim reads on the accused device exactly.” *KJC Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1358 (Fed. Cir. 2000). At trial, Honeywell had the burden of proving literal infringement by a preponderance of the evidence that the APS 3200 includes each and every element found in Claim 4 of the ‘194 patent. *See Southwall Technologies, Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1575 (Fed. Cir. 1995). The court must emphasize that on a JMOL motion, this burden is especially high. *See LNP Eng’g Plastics, Inc. v. Miller Waste Mills, Inc.*, 77 F. Supp. 2d 514, 547 (D. Del. 1999). The court may grant JMOL in favor of the party

bearing the burden of proof only where 1) the movant has established its case by evidence that the jury would not be at liberty to disbelieve and 2) the only reasonable conclusion is in the movant's favor. *See id.*

Because the parties dispute whether there is substantial evidence to support the jury's verdict that the APS 3200 does not literally infringe Claim 4 of the '194 patent, the court will first set forth the claims of the '194 patent and then describe the evidence presented at trial.

a. Claim 4 of the '194 patent

Claim 4 of the '194 patent states:

A method of utilizing a compressor of a gas turbine engine to power pneumatically-operated apparatus having a variable inlet air flow demand, the compressor having adjustable inlet guide vanes, said method comprising the steps of:

- (a) interconnecting a supply duct between the compressor and the pneumatically-operated apparatus;
- (b) flowing discharge air from the compressor through said supply duct to the pneumatically-operated apparatus;
- (c) maintaining an essentially constant minimum supply duct flow rate, despite fluctuations in the flow rate of air received by the pneumatically-operated apparatus, by exhausting air from said supply duct in response to variations therein of the value of a predetermined, flow-related parameter, the flow rate of air exhausted from said supply duct being related to the magnitude of said parameter value variations in both a proportional and time-integral manner, said maintaining step including the steps of providing an outlet passage from said supply duct, positioning in said outlet passage a surge bleed valve operable to selectively vary the flow of air outwardly through said outlet passage, generating an integral control signal in response to said variation in said flow-related parameter, generating a proportional control signal in response to said variations in said flow-related parameter, and simultaneously utilizing said integral and proportional control signals to operate said surge bleed valve; and

- (d) adjusting the relationship between the magnitudes of said integral and proportional control signals and the magnitudes of said parameter variations as a function of the position of the inlet guide vanes.<sup>1</sup>

b. Honeywell's Evidence Supporting Infringement

Honeywell argues that at trial, it presented substantial, competent evidence that Sundstrand's APS 3200 surge control system literally infringed Claim 4 of the '194 patent. According to Honeywell, this evidence took the form of the testimony of Honeywell's technical expert, Gerard Muller, stipulated facts, and admissions by Sundstrand's own witnesses and documents.

Honeywell's expert, Gerard Muller ("Muller"), is an expert in the design and application of gas turbine engines and compressors. At trial, Muller testified that elements 4(a) & (b) were literally present in Sundstrand's APS 3200. *See* Transcript of Trial, Feb. 5-Feb. 16, 2001 ("Tr.") at 640. As to element 4(c), Muller testified that the APS 3200 also literally maintains a constant minimum flow rate in the supply duct by using a flow-related parameter, called delta P over P or DELPQP, to control the amount of air that is exhausted from the aircraft. He also stated in regard to element 4(c) that the rate of air sent from the supply duct in the APS 3200 is related to variations in a proportional and time integral manner. *See* Tr. 641-652. Finally, Muller testified that as to element 4(d), the APS 3200 also used the position of inlet guide vanes ("IGV") to adjust "the actual relationship of the proportional and integral controllers as it relates to the flow parameter, . . . which is another way of saying, . . . [it] adjusts these values to accommodate for the fact that there is a variation – that there is a part of the flow control where it – there is no chance for surge, and the lower part of the flow curve, where there is the possibility of surge, referred to as high flow and low flow." Tr. 656-57.

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<sup>1</sup>Claims 4(a) & (b) are not at issue. Thus, the court will only discuss Claims 4(c) & 4(d).

c. Sundstrand's evidence of no literal infringement

At trial, Sundstrand relied primarily upon the testimony of its technical expert, Francis G. Shinskey ("Shinskey").<sup>2</sup> Shinskey is an expert in the field of surge control with over 40 years of experience. At trial, Shinskey explained the differences between Claim 4 of the '194 patent and the APS 3200. In direct contradiction to Muller's testimony Shinskey identified the key distinctions between the accused device and the patents-in-suit as: "the difference in the flow-related parameter, as I said DELPQP is not a flow-related parameter [as in element 4(c)], and secondly, there is the element D of the Claim 4 [that is] completely absent from the APS 3200." Tr. at 1408.

In further elaborating the differences between the accused product and element 4(c), Shinskey testified that the APS 3200 lacks a flow -related parameter and, therefore, does not satisfy element (c)'s requirement of measuring a flow-related parameter. In defining DELPQP, which Sundstrand identifies as a "Static Pressure Parameter," Shinskey explained that: "There is no flow meter in the APS 3200 used for surge control. The measurable variable used for surge control in the APS 3200 is a combination of the differential pressure taken across the diffuser, which is an integral part of the compressor and the pressure that is measured at the discharge of the compressor." Tr. 1356. Shinskey went on to explain that "[t]he DELPQP measurement is really a composite measurement. It includes compression ratio along with flow." Tr. 1357.

Shinskey also explained that the APS 3200 does not literally infringe element 4(d) of the '194 patent because it does not use inlet guide vane position in the same way as the patent. As to IGV position, Shinskey testified that,

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<sup>2</sup>In addition to the testimony of Shinskey, Sundstrand engineer John Szillat ("Szillat") also stated that the APS 3200 did not literally infringe elements 4(c) & 4(d) of the '194 patent.

[i]n the case of the APS 3200, IGV position has a completely different function [from the patented invention]. Its function is to lock out the P and I controller from even moving the bleed valve. And the way in which it does it is to – through the bleed select logic is to throw a switch disconnecting the P and I controller. And finally, the results are completely different. The result of the use of IGV position in the patent is to be sure that the surge controller operate[s] at a safe set point at all conditions of IGV position, whereas in the – the result in the case of the APS 3200, is to insure that when we are an in the high flow condition, the surge controller, the P and I controller does not operate the bleed valve. So all three are different.

Tr. 1401.

d. Whether JMOL is warranted in this case?

Honeywell asserts that it is entitled to JMOL because none of Sundstrand’s defenses to infringement provide a legally sufficient basis to support the conclusion that the APS 3200 does not literally infringe Claim 4 of the ‘194 patent. In support of this contention Honeywell makes three arguments: first, that in claiming that the APS 3200 did not literally infringe Claim 4, Sundstrand’s expert asserted that elements 4(c) & 4(d) had to be performed simultaneously; second, that Sundstrand’s expert conceded that the APS 3200 did in fact use a flow-related parameter, DELPQP; and third, that Sundstrand’s expert claimed there was no literal infringement based upon an interpretation that was rejected by the court as a matter of law when it construed the claim. The court will address these arguments in turn, and then will turn to whether there was substantial evidence presented at trial to support the jury’s verdict.

The court finds Honeywell’s argument that Sundstrand’s evidence was legally insufficient to support a conclusion of non-infringement to be unpersuasive. Even considering that Shinskey said at one point that, “I believe that claim C and claim D must both apply at the same time,”<sup>3</sup> Tr. 1407-

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<sup>3</sup>Sundstrand characterizes this statement as a “nonresponsive answer to a question that he apparently misheard.” *See* D.I. 280 at 18. Whether Shinskey heard the question, or made a misstatement is irrelevant because the statement simply goes to the credibility of Shinskey’s

08, this does not render Sundstrand's entire case legally insufficient. Although Shinskey may have made this statement, it is clear that his opinion as to why the APS 3200 did not literally infringe each element of Claim 4 of the '194 patent did not depend on this statement. *But see LNP Eng'g Plastics*, 77 F. Supp. 2d at 549 (holding that a patentee was entitled to JMOL where the thrust of the defendant's non-infringement argument was that it did not infringe the patents at issue because it was practicing the prior art). Specifically, before making this statement, Shinskey explained in detail why the APS 3200 did not infringe each individual element of Claim 4(c) & (d). Moreover, it is not disputed that the court properly instructed the jury that a finding of infringement did not depend upon simultaneous performance of the elements of the patents.

As to Honeywell's second argument, that no reasonable jury could have concluded that the APS 3200 did not use a flow related parameter, the court finds that there is substantial evidence in the record from which the jury could conclude that the use of DELPQP did not literally infringe the patent. The thrust of Honeywell's argument is that they are entitled to judgment as a matter of law because Sundstrand's experts conceded that DELPQP is a flow-related parameter. Although Sundstrand's witnesses did at times indicate that flow is a component of the Static Pressure Parameter, *see e.g.*, Tr. 1581-82, there is also evidence in the record where Sundstrand's witnesses opined that DELPQP cannot be considered a flow-related parameter, *see e.g.*, Tr. 1356-1358. Based on the evidence presented at trial, the jury could have reasonably determined that the APS 3200's use of DELPQP did not literally infringe the patents.

Honeywell also argues that it is entitled to judgment as a matter of law because Sundstrand

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testimony. In deciding a motion for JMOL, the court cannot assess the credibility of witnesses. *See Lucas Aerospace, Ltd. v. Unison Indus, L.P.*, 899 F. Supp. 1268, 1272 (D. Del. 1995).

relied upon claim construction language that the court rejected. In particular, Honeywell contends that Shinskey's non-infringement testimony improperly imported the limitation of the "set point" into element 4(d), despite the court's interpretation to the contrary.<sup>4</sup> The court also finds this argument to be unpersuasive. As the court has already explained, although Shinskey when speaking specifically about Claim 4(d), did use the term "set point," *see* Tr. 1400,<sup>5</sup> Sundstrand's non-infringement contentions did not rely upon this claim interpretation.

Finally, in light of the evidence presented at trial, the court finds that there was substantial evidence from which a reasonable jury could conclude that the APS 3200 did not literally infringe elements 4(c) & 4(d) of the '194 patent. Sundstrand presented substantial evidence, through its expert, Shinskey, which explained that because the parameter used in the APS 3200, DELPQP, was "really a composite measurement, [which] includes compression ratio along with flow," Tr. 1357, it did not literally infringe the flow-related parameter described in Claim 4(c) of the '194 patent. Regarding Claim 4(d), Sundstrand also brought forth evidence that the APS 3200 did not literally used IGV position in the same way at the patent. *See* Tr. 1401. Based on this evidence, the court concludes that there was substantial evidence to support the jury's verdict. Therefore, Honeywell's motion for judgment as a matter of law on the issue of literal infringement of Claim 4 of the '194 patent is denied.

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<sup>4</sup>The court has the power and obligation to construe as a matter of law the meaning of language used in a patent claim. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc). In keeping with this duty, the court issued an Order on Claim Construction on February 14, 2001. D.I. 252.

<sup>5</sup>Shinskey stated that "The function that is performed in the patent is to take the IGV position and adjust the set point of the controller . . . ." Tr. at 1400.

2. Whether Honeywell is Entitled To Judgment As a Matter of Law on Damages?

In a footnote, Honeywell also argues that the court should enter judgment as a matter of law that Honeywell is entitled to price erosion damages of over \$71 million, rather than the \$45 million awarded by the jury, and that the appropriate reasonable royalty rate is 12 percent rather than the 7.5 percent awarded by the jury's verdict. The sole basis for this motion seems to be that Honeywell put forth substantial evidence on damages and that Sundstrand allegedly did not present meaningful evidence in response. Sundstrand characterizes this JMOL motion on damages as "half-hearted" and argues that Honeywell asks the court to re-weigh the evidence and overturn the jury's verdict. The court agrees. At trial, Sundstrand adduced evidence from which a jury could reasonably conclude that Honeywell's price erosion claims were overstated and that its royalty rate was unreasonably high. Based on the evidence presented at trial, the court concludes that there was substantial evidence from which a reasonable jury could conclude that Honeywell was entitled to \$45 million in price erosion damages and a reasonable royalty rate of 7.5 percent.<sup>6</sup> Therefore, Honeywell's motion for judgment as a matter of law on damages is denied.

**B. Hamilton Sundstrand's Motion for Judgment as a Matter of Law On Liability**

1. Whether Sundstrand is Entitled to Judgment as a Matter of Law, or Alternatively, to a New Trial, on Infringement Under the Doctrine of Equivalents?

In its motion, Sundstrand argues that it is entitled to judgment as a matter of law because there was no legally sufficient basis for the jury to have found that the APS 3200 infringes either of the patents-in-suit under the doctrine of equivalents. In support of its motion, Sundstrand first argues

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<sup>6</sup>See also discussion *infra* Section III.C.2. (addressing Sundstrand's Motion for Judgment as a Matter of Law on damages).

that the jury's verdict cannot stand because Honeywell's equivalence argument impermissibly disregards the content of the patents' claim language. In addition, Sundstrand argues that it is entitled to judgment as a matter of law because Honeywell failed to support its equivalence claim with particularized testimony.

A device that does not literally infringe a claim may nonetheless infringe "if there is equivalence between those elements of the accused product and the claimed elements of the patented invention." *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21 (1997). Infringement under the doctrine of equivalents must be established on a limitation-by-limitation basis. *Id.* at 29 ("doctrine of equivalents must be applied to the individual elements of the claim, not to the invention as a whole"). Moreover, the court is mindful that it must take a "special vigilance against allowing the concept of equivalence to eliminate completely" the individual elements of the patented invention. *Id.* at 40.

An element of an accused device is equivalent to an element of the patented invention if the differences between them are insubstantial. *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. at 39; *Zelinski v. Brunswick Corp.*, 185 F.3d 1311, 1316-17 (Fed. Cir. 1999); *Dawn Equip. Co. v. Kentucky Farms Inc.*, 140 F.3d 1009, 1014 (Fed. Cir. 1998). Alternatively, the accused product infringes under the doctrine of equivalents if the element in the accused device performs substantially the same function in substantially the same way to obtain the same result as the claim limitation. *See Warner-Jenkinson*, 520 U.S. at 39; *Zelinski v. Brunswick Corp.*, 185 F.3d at 1316-17; *Dawn Equip. Co. v. Kentucky Farms Inc.*, 140 F.3d at 1016. Whether the former, the "insubstantial differences" test, or the latter, the "triple identity" test is applied, the essential inquiry remains the same: "Does the accused product or process contain elements identical or equivalent to each claimed

element of the patented invention?” *Warner-Jenkinson*, 520 U.S. at 40.

A determination of infringement under the doctrine of equivalence is a factual matter normally reserved for a fact finder. *Sage Products, Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1423 (Fed. Cir. 1997). Although infringement under the doctrine of equivalents is generally considered a question of fact, that does not in and of itself preclude directing judgment in favor of the accused infringer. There is a triable issue of fact only if the evidence is such that a reasonable jury could resolve the question in favor of the patentee. *Dawn Equip. Co. v. Kentucky Farms Inc.*, 140 F.3d at 1017 (reversing district court and granting judgment for defendant where devices were not substantially the same) (citing *Warner Jenkinson*, 520 U.S. 39 n.8)). Finally, just as with literal infringement, the patentee must prove by a preponderance of the evidence that each element of the patent, or its substantial equivalent, exists in the accused device. *See Lemelson v. United States*, 752 F.2d 1538, 1551 (Fed. Cir. 1985)

With this legal background in mind, the court now considers the issues presented by the parties: whether Honeywell’s infringement contentions ignored the limitations of the ‘893 and ‘194 patents and, therefore, impermissibly expanded the scope of the claims, and whether Honeywell has satisfied specific evidentiary requirements. The court will address these issues in turn.

a. Whether the Jury’s Finding of Equivalence is Precluded as a Matter of Law?

In *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, the Supreme Court urged district courts, in appropriate circumstances to give serious consideration to directing judgment (e.g., in response to a motion for summary judgment or JMOL) on the issue of equivalence under the doctrine of equivalents, and in fact stated that district courts “are obliged” to do so “[w]here the evidence is such that no reasonable jury could determine two elements to be equivalent.” 520 U.S. 17, 39 n.8 (1997).

Thus, if Honeywell's theory of equivalence would vitiate a claim, there can be no infringement under the doctrine of equivalents as a matter of law. *See id.*

According to Sundstrand, the jury's finding of infringement under the doctrine of equivalents in this case is precisely the kind of result the Supreme Court and the Federal Circuit have urged district courts to guard against when patent cases are tried to juries. Sundstrand claims that it is entitled to judgment as a matter of law because the jury's finding of equivalence in this case depends on disregarding the specific terms of what the patent claims require and how the accused product works. Thus, Sundstrand is not merely challenging the evidentiary or factual sufficiency of the evidence, but rather, claiming as a matter of law that the APS 3200 falls outside of scope of equivalents and, therefore, a finding of equivalence is not even a permissible option.

Sundstrand alleges that at trial, Honeywell's equivalence arguments completely ignored the content of the claim limitation that specifies a particular role for inlet guide vane position in controlling surge. Specifically, Sundstrand charges that Honeywell reduced the comparison of the APS 3200 and the patented claims "to the gross simplification that inlet guide vane position 'is used in the operation of the surge control system.'" D.I. 275 at 11. The sole basis for Sundstrand's argument seems to be that "[t]he differences between the Honeywell patents and the APS 3200 are real and substantial. The surge control system claimed by the patents adjusts the flow rate to be maintained based on the position of the inlet guide vanes. The APS 3200 makes this adjustment based on air temperature instead. This is undisputed" D.I. 275 at 3.

At the outset, the court must emphasize that whether the APS 3200 uses temperature alone to adjust the flow rate is without doubt, in dispute. A quick review of the case docket clearly belies any contention that it is undisputed that the APS 3200 uses only air temperature to adjust the flow

rate. In January of 2001, the court denied Sundstrand's motion for summary judgment concerning infringement because there were genuine issues of material fact that prevented the court from ruling as a matter of law. *See* D.I. 185. At the summary judgment stage of this action, the parties clearly disputed whether the use of temperature in the APS 3200 was an additional input to the use of IGV position, or if it was a substitute for IGV position. In light of this dispute, the parties proceeded to trial. At trial, both parties presented competent evidence in the form of expert opinion testimony that supported their respective positions. Ultimately, the jury determined that Honeywell had proved by a preponderance of the evidence that the use of temperature in the APS 3200 was not a substitute for, but rather, an addition to, the use of IGV position input to control surge that is claimed in the patents.

The court is not unwilling to fulfill its duties with "special vigilance" as directed by the Supreme Court in *Warner-Jenkinson* by guarding against findings of equivalence that ignore the specifics of what the patent claims require. The court also cannot forget, however, its mandate in deciding a JMOL motion -- that it may not substitute its own judgment for the jury's opinion where the jury's verdict is based on substantial evidence. *See Odetics, Inc. v. Storage Tech. Corp.*, 185 F.3d at 1269. Upon review of the trial record, the court finds that Honeywell's doctrine of equivalents contentions did not consist merely of the oversimplification that inlet guide vane position is used in the APS 3200. Rather, in making its equivalence contentions, Honeywell set forth competent evidence from which a jury could reasonably conclude that the way the APS 3200 uses inlet guide vane position is insubstantially different from the way inlet guide vane position is used in the patent claims.

For example, Honeywell introduced evidence at trial from which a jury could conclude that the flow-related parameter used by the APS 3200, DELPQP, was a direct function of inlet guide vane

position.<sup>7</sup> In particular, Honeywell's expert, Muller, when questioned on cross-examination in response to the question stated: "Well, the calculation of DELPQP is a measurement of two static pressures?" Tr. 708.

It would appear that way. But in a rigorous way, but in a rigorous way, I think that we have to look at this and say when you say DELPQP has no relationship to IGV position, well, as I've been discussing throughout the day, it in fact does in a strong one in fact. In fact, it's part and parcel of how the entire compressor is equaled. DELPQP is a value, basically the result of a division process that has occurred resulting from the change in pressure divided by the pressure at the discharge of the compressor. The division which generates this value, which we call DELPQP, well, the change in pressure and the discharge pressure as, especially the change in pressure, is a result of change in flow. And as we know from the earlier description, the only way you can have a change in flow in the compressor is by changing the IGV, the position of the IGV valves. So in the IGV position – so following it through, as the IGV position changes, it changes the flow, which changes the value of pressure, divided by the pressure, which generates DELPQP which is a function of, in the end, the change in the IGV position.

Tr. at 709. Honeywell has also shown that it elicited admissions from Sundstrand's witnesses which also support this position. Specifically, Alan Gruebel, a Sundstrand engineer, admitted that in the APS 3200, "the position of the inlet guide vanes may affect the parameter Delta P over P." Tr. at 1742-43. In addition, Shinsky, Sundstrand's expert, also stated that in the APS 3200 IGV position "affect[s] the flow and compression ratio at which surge would occur." Tr. at 1562. Shinsky described DELPQP as a composite parameter that is related to both flow and compression ratio. *See* Tr. at 1583. In light of this testimony, the court finds that Honeywell's equivalence arguments do not vitiate the claim terms. Therefore, they are not legally insufficient.

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<sup>7</sup>Muller further explained that the surge set point used in the APS 3200, which Sundstrand maintains is a function only of temperature, is also affected by flow, which Muller maintains is a function of inlet guide vane position. Tr. at 735-737 (explaining that the surge set point is "obtained from this flow curve, from this flow curve which is generated as we vary the IGV angles from minimum to max").

b. Whether Honeywell Supported Its Equivalence Claim With Particularized Testimony?

Sundstrand also maintains that it is entitled to judgment as a matter of law because Honeywell failed to support its equivalence argument with particularized testimony and linking argument. Specifically, Sundstrand argues that Honeywell's function-way-result equivalence argument is overly broad and general. In addition, Sundstrand also asserts that Honeywell's counsel failed to provide a linking argument explaining why its evidence established equivalence in his summation on infringement. The court will address each of these arguments in turn.

Infringement under the doctrine of equivalents must be established with "particularized testimony and linking argument." *Lear Siegler, Inc. v. Sealy Mattress Co.*, 873 F.2d 1422, 1426 (Fed. Cir. 1989). Thus, "[g]eneralized testimony as to the overall similarity between the claims and the accused infringer's product or process will not suffice." *Texas Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1567 (Fed. Cir. 1996); *Lucas Aerospace Ltd.*, 899 F. Supp. at 1280. The thrust of this requirement is to "ensure that a jury is provided with the proper evidentiary foundation from which it may permissibly conclude that a claim limitation has been met by an equivalent." *Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1188 (Fed. Cir. 1998). In light of this requirement, the court finds helpful this court's reasoning in *Lucas Aerospace*, which stated that, "[i]n essence, *Lear Siegler, Inc. v. Sealy Mattress Co.* adds no substantive requirements to prove infringement, but 'merely requires that a patentee prove all elements of his case . . . , with respect to the doctrine of equivalents.'" *Lucas Aerospace Ltd.*, 899 F. Supp. at 1280 (quoting *Malta v. Schulmerich Carillons, Inc.*, 952 F.2d 1320, 1328 (Fed. Cir. 1991)). In other words,

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.

*Texas Instruments*, 90 F.3d at 1567.

The court must again emphasize that under the Supreme Court's decision in *Warner-Jenkinson*, infringement under the doctrine of equivalents may be established either through the triple identify test or through the insubstantial differences test; and, therefore, there is no "particular linguistic formula" required for an equivalents case. *Id.*, 520 U.S. at 40. *See also CFMT Inc. v. Steag Microtech Inc.*, 14 F. Supp. 2d 572, 591 (D. Del 1998) ("the court does not believe that there should be a strict formula for evidence needed to support a case alleging infringement under the doctrine of equivalents."). Thus, the court must deny Sundstrand's motion for JMOL, if Honeywell presented particularized testimony in support of either a triple identity or insubstantial differences analysis.

Upon consideration of the trial record, the court finds that Honeywell supported its doctrine of equivalence infringement contentions with sufficiently particularized testimony under either test. First, the court finds that testimony about the equivalent function, way and result of the elements in the patents and the APS 3200 was more than sufficient to meet the standards set by *Lear Seigler*. *See e.g.*, Tr. at 620-22, 633, 654, 693-94, 697-99, 701-02, 703, 705-07, 744, and 755 (comparing the function-way-result of the APS 3200 and Claim 4(d) of the '194 patent); Tr. at 620-22, 633, 654, 667-68, 669, 689, 690, 694, 700-01, 703, 729, 744, and 750-51 (comparing the same as to elements 8(f) and 19(g) of the '893 patents). Moreover, Honeywell's expert, Muller also provided particularized testimony in support of the argument that the related elements of the APS 3200 were insubstantially different than the single elements of each claim not present through literal

infringement. *See* Tr. at 636-658 (describing how the APS 3200 infringes every claim of Claim 4 of the ‘194 patent); 660-672 (describing same as to claim 8 of the ‘893 patent); 674, (describing the same as to claim 10 of ‘893 patent); 675-676 (describing same as to claim 11 of ‘893 patent); 682-690 (describing same as to claim 19 of ‘893 patent); and 691-692 (describing same as to claim 23 of the ‘893 patent).

Thus, despite Sundstrand’s argument to the contrary, the court finds that Honeywell did not merely present generalized testimony as to the overall similarity between the claims and the accused device. *See e.g., Texas Instruments*, 90 F.3d at 1567-68 (explaining that expert provided “merely generalized testimony as to overall similarity” and there was “no discussion of whether or how the way” part of the triple identity test was met); *Malta v. Schulmerich Carillons, Inc.*, 952 F.2d at 1327 (explaining that an expert’s “offhand and conclusory statements . . . are not particularized evidence”). In addition, the court finds that Honeywell’s equivalence arguments were not legally insufficient. *See e.g., CFMT, Inc. v. Steag Microtech, Inc.*, 14 F. Supp. 2d at 591 (explaining that the plaintiff’s expert did not “spend any time” specifically discussing the doctrine of equivalents, but instead, the plaintiff chose to focus its efforts on a theory of literal infringement); *Lifescan, Inc. v. Home Diagnostics, Inc.*, 103 F. Supp. 2d at 361 (holding that the expert failed to explain how the defendant’s device operated in an equivalent manner to one of the patent claims). Rather, the court finds that Honeywell presented substantial, sufficiently particularized testimony comparing the elements of the APS 3200 to the elements of the patents-in-suit.

Sundstrand also argues that Honeywell’s counsel did not adequately discuss the doctrine of equivalents in his closing argument. Thus, Sundstrand contends that he failed to provide sufficient linking argument to explain why Honeywell’s evidence established equivalence. Upon consideration

of the record, *see* Tr. at 2548-57, the court finds that Honeywell’s counsel sufficiently addressed the issue of infringement under the doctrine of equivalents such that it cannot be said that the jury was “put to sea without guiding charts.” *Lear v. Sieglar, Inc. v. Sealy Mattress Co.* 873 F.2d at 1426; *CFMT Inc.*, 14 F. Supp. 2d at 590.

Therefore, the court will deny Sundstrand’s motion for judgment as a matter of law on the issue of infringement under the doctrine of equivalents because it finds that the jury’s verdict was based on substantial evidence.

2. Whether Sundstrand is Entitled to a New Trial on the Issue of Infringement Under the Doctrine of Equivalents?

Sundstrand also argues that it is entitled to a new trial on infringement under the doctrine of equivalents for the same reasons it offered in support of its motion for judgment as a matter of law. In addition, Sundstrand argues that the court should grant its motion for a new trial because of the court’s ruling on proposed jury instructions relating to equivalence and because of the court’s claim construction of Claim 4(d) of the ‘194 patent.

As the court has explained in denying Sundstrand’s motion for JMOL on the issue of infringement under the doctrine of equivalents, the jury’s verdict was supported by substantial evidence. For these same reasons, the court does not find that the verdict was against the clear weight of the evidence.<sup>8</sup> In determining that the verdict was not against the clear weight of the evidence, the court finds that it is not “quite clear that the jury has reached a seriously erroneous result,” *Lafate v. Chase Manhattan Bank*, 123 F. Supp. 2d 773, 788 (D. Del. 2000), nor is the court

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<sup>8</sup>The court is aware that a new trial may be granted even when judgment as a matter of law is inappropriate, that is, even if the verdict is supported by substantial evidence. *See Roebuck v. Drexel Univ.*, 852 F.2d 715, 735 (3d Cir. 1988).

left with the “firm conviction that a mistake has been committed” at trial. *See Railroad Dynamics v. A. Stucki Co.*, 727 F.2d 1506, 1512 (Fed. Cir. 1984). Therefore, the court will deny Sundstrand’s motion for a new trial.

Second, as to Sundstrand’s claim that it is entitled to a new trial because the court gave erroneous jury instructions, the court will again deny Sundstrand’s motion. A new trial on the ground of erroneous instructions is permissible only when it is clear that an error in instructions as a whole was such as to have misled the jury. *See New Idea Farm Equip. Corp. v. Sperry Corp.*, 916 F.2d 1561, 1567 (Fed Cir. 1990). Moreover, a new trial due to an alleged erroneous instruction may be given where the error is fundamental or may cause a miscarriage of justice. *See Wagner v. Fair Acres Geriatric Center*, 49 F.3d 1002, 1018 (3d Cir. 1995). In evaluating a motion for a new trial due to an alleged legal error in jury instructions, the court must determine 1) whether an error was in fact committed, and 2) whether the error was so prejudicial that denial of a new trial would be “inconsistent with substantial justice.” *Lafate v. Chase Manhattan Bank*, 123 F. Supp. 2d 773, 785 (D. Del. 2000). In doing so, the court should examine the jury instructions as a whole, not just specific provisions in isolation. *Id.*

In this case, the specific challenges that Sundstrand makes were considered and rejected by the court after hearing argument on the issue. *See* Tr. at 2184-85 (considering Sundstrand’s request to further amend the jury instructions). Upon review of the record, the court finds that Sundstrand has not demonstrated that the court’s instructions were erroneous as a matter of law. Although Sundstrand claims that the court erred in instructing the jury on equivalence, it has not demonstrated how the court’s alleged errors in instructing the jury caused the jury to be misled or confused. For these reasons, the court will deny Sundstrand’s motion for a new trial based on alleged erroneous

equivalence instructions.

Finally, the court is also not persuaded that Sundstrand is entitled to a new trial because of the court's construction of Claim 4(d) of the '194 patent. Sundstrand relies on the arguments made in its claim construction briefs in support of its motion for a new trial. The court has already considered these arguments, and concludes that Sundstrand has failed to raise a valid basis for reconsideration of the issue. Therefore, the court will deny Sundstrand's motion for a new trial.<sup>9</sup>

3. Whether Sundstrand is Entitled to Judgment As a Matter of Law On Invalidity Under the On Sale Bar?

The jury found that the patented inventions were not on sale prior to the critical date of February 19, 1980. Sundstrand contends that evidence in the record demonstrates that Honeywell sold an APU incorporating the surge control logic covered by the patents-in-suit before the critical date. Thus, Sundstrand argues that it is entitled to judgment as a matter of law because the jury's verdict was not supported by substantial evidence.

Section 102(b) of the Patent Act prohibits granting a patent for an invention that was "on sale" in the U.S. more than one year before the patent application date. 35 U.S.C. § 102(b). The "critical date" in a Section 102(b) inquiry is defined as exactly one year before a patent application is filed. The on-sale bar applies when two conditions are satisfied before the critical date of one year before the filing date of the application: 1) a product embodying the claimed invention is the subject of a commercial offer for sale; and 2) the claimed invention is ready for patenting. *See Pfaff v. Wells*

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<sup>9</sup>Sundstrand also argues that Honeywell's assertion of equivalence is barred by the Federal Circuit's decision in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558 (Fed. Cir. 2000) (en banc), cert. granted, 121 S. Ct. 2519, (U.S. Jun 18, 2001) (NO. 00-1543). As both parties correctly point out, the court has already considered and rejected this argument on summary judgment, D.I. 187, and reconsideration, D.I. 223. Therefore, the court will not address this issue again.

*Electronics, Inc.*, 525 U.S. 55, 67 (1998). A claimed invention is ready for patenting if it is reduced to practice or if there is “proof that prior to the critical date the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention.” *Id.* Whether an invention was on sale more than one year before the patent’s application date is a question of law for the court to decide based on underlying factual determinations. *See Abbot Lab. v. Geneva Pharm., Inc.*, 182 F.3d 1315, 1317 (Fed. Cir. 1999), *cert. denied*, 120 S. Ct. 796 (2000); *Ferag AG v. Quipp Inc.*, 45 F.3d 1562, 1566 (Fed. Cir. 1995). The goal of Section 102(b) is to prevent inventors from exploiting the commercial value of an invention while deferring the beginning of the statutory period. *Ferag AG*, 45 F.3d at 1566. At trial, Sundstrand bore the burden of establishing that Honeywell had violated the on sale bar by clear and convincing evidence. *See Pfaff v. Wells*, 525 U.S. at 66-67.

Sundstrand argues that it is entitled to judgment as a matter of law because Honeywell signed contracts with both Boeing and Airbus to sell an APU known as the 331 APU in 1978 before the critical date. Upon consideration of the trial record, the court finds that judgment as a matter of law is not warranted. Honeywell presented substantial evidence from which a reasonable jury could conclude that the products offered for sale in the Boeing and Airbus contracts were not products which embodied the subject matter claimed in the ‘194 and ‘893 patents. In particular, Honeywell offered evidence that the contracts cited by Sundstrand did not contain sufficiently specific reference to Honeywell’s patented surge control inventions. *See* Defendant’s Trial Exhibit (“DTX”) 37 and 168. Honeywell also presented evidence that three pre-critical date drawings identified by Sundstrand did not themselves constitute commercial offers for sale, *See* DTX 37, 38 and 39.

Honeywell also presented evidence at trial from which a reasonable jury could conclude that

the patented inventions were not ready for patenting prior to the critical date. Honeywell presented evidence that the documents at issue were not sufficiently specific to enable one of ordinary skill to practice the Honeywell inventions. *See* Tr. at 2313-19 and 1795. *See also e.g.*, Tr. at 1781-82 (inventor Stokes describing DTX 38, “I wouldn’t call [the document at issue] a final configuration); Tr. at 1536 (Sundstrand’s expert Shinskey discussing DTX 38: “a final configuration as described here, that doesn’t mean that the job is done and that this product will work when it’s in the field”). In addition, Honeywell presented evidence that the patented surge control systems were still undergoing development after February 19, 1980. Thus, the inventions could not have been ready for patenting prior to the critical date. *See e.g.*, Plaintiff’s Trial Exhibit (“PTX”) 35, 39 and 40.

In light of the evidence presented at trial, the jury could have reasonably concluded that Sundstrand did not establish that Honeywell violated the on sale bar by clear and convincing evidence. Moreover, considering that Sundstrand had the burden of proving its case by clear and convincing evidence, the court cannot conclude that Sundstrand established that Honeywell violated the on sale bar by evidence that the jury would not be at liberty to disbelieve, nor can the court conclude that the only reasonable conclusion would be in Sundstrand’s favor. *See LNP Eng’g Plastics*, 77 F. Supp. 2d at 547. Therefore, the court will deny Sundstrand’s motion for judgment as a matter of law on this issue.

4. Whether Sundstrand is Entitled to Judgment As a Matter of Law On Invalidity Because the Patents Were Anticipated and Obvious?

The jury found that the patents-in-suit were valid over the prior art. Sundstrand argues that it is entitled to judgment as a matter of law because prior art references and the testimony of its expert, Mr. Shinskey, establish that prior art references anticipated and rendered obvious the ‘893

and ‘194 patents. Sundstrand identified these prior art references at trial as Warnock (1976), DTX 147, Kempe (1963), DTX 5, White (1972), DTX 6 and the reprint of Fallin (1968), DTX 19 in Shinsky (1978), DTX 146. *See* Tr. at 1425-1527. The court will address the issues of invalidity due to anticipation and obviousness separately.

a. Anticipation

A claim is anticipated if each and every limitation is found either expressly or inherently in a single prior art reference. *Celeritas Techs., Ltd. v. Rockwell Int’l Corp.*, 150 F.3d 1354, 1361 (Fed. Cir. 1998), *cert. denied*, 525 U.S. 1106 (1999). Accordingly, invalidity by anticipation requires that the four corners of a single, prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation. *Advance Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000). The prior art need not state the elements of the claim in identical language. *See Proctor & Gamble Co. v. Nabisco Brands, Inc.*, 711 F. Supp. 759, 762 (D. Del. 1989). Anticipation is a question of fact. *See In re Graves*, 69 F.3d 1147, 1151 (Fed. Cir. 1995). The defendant bears the burden of proving invalidity due to anticipation by clear and convincing evidence. *See Helifex Ltd. v. Blok-Lok Ltd.*, 208 F.3d 1339, 1346 (Fed. Cir. 2000).

At trial, Honeywell introduced evidence that none of the four prior art references advanced by Sundstrand disclosed each element of the challenged claims such that one skilled in the art could practice the invention. For example, Honeywell offered evidence that none of the prior art references made reference to APUs or to any application to the aerospace industry. *See* Tr. at 1612-23, 1617, 1660-61, 1664-65. In addition, Honeywell cross-examined the defendant’s expert, Shinsky as to each of the four references and elicited testimony from which a reasonable jury could conclude that

the patents were not anticipated by the prior art. Finally, Honeywell presented evidence that none of the prior art references advanced by Sundstrand addressed the “unique ability for the load compressor to operate under a continuous minimum flow condition regardless of the surge bleed valve’s position.” Tr. at 2293-94. In light of the evidence presented at trial, a reasonable jury could conclude that Sundstrand failed to demonstrate by clear and convincing evidence that any of the prior art references it advanced anticipated the patents-in-suit.<sup>10</sup>

b. Obviousness

Section 103 prohibits the granting of a patent “if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103(a). The ultimate determination of whether an invention would have been obvious under 35 U.S.C. § 103(a) is a legal conclusion based on underlying findings of fact. *In re Kotzab*, 217 F.3d 1365, 1369 (Fed. Cir. 2000). To determine the question of obviousness, the court should look to: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Riverwood Int’l corp. v. The Mead Corp.*, 212 F.3d 1365, 1366 (Fed. Cir. 2000) (citing *Graham v. John Deer Co.*, 383 U.S. 1, 17 (1966)). “Such secondary considerations as commercial success, long felt but unsolved needs, [and] failure of others” [to

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<sup>10</sup>Sundstrand also argues that it is entitled to judgment as a matter of law because Honeywell’s defense to anticipation (and obviousness) relied upon improper claim construction. The court is not persuaded by this argument. First, as Honeywell correctly points out, assuming that Honeywell did rely upon improper claim construction, Sundstrand did not properly raise the issue at trial by objecting to Mr. Muller’s supposed claim construction. Second, the court finds that Mr. Muller did not engage in claim construction, but instead, that he explained why the prior art references disclosed a surge control system that met the limitation at issue.

invent] are also relevant to the obviousness inquiry. *Ryko Manu. Corp. v. Nu-Star, Inc.*, 950 F.2d 714, 716 (Fed. Cir. 1991).

Obviousness may not be established using hindsight. *See Kahn v. General Motors Corp.*, 135 F.3d 1472, 1479 (Fed. Cir. 1998). In determining obviousness, the invention must be considered as a whole and the claims must be considered in their entirety. *Id.* at 1479-80. Moreover, when obviousness is based on a combination of two or more particular prior art references, there must be a showing of a suggestion or motivation to combine the teachings of those references, though it need not be expressly stated. *Riverwood* at 1366.

At trial, Honeywell presented evidence that no combination of the prior art references upon which Sundstrand relied rendered the patents-in-suit obvious because they did not discuss a surge control system that maintained an essentially constant minimum flow rate. *See e.g.*, Tr. at 2311-12. In addition, Honeywell presented evidence of secondary considerations that would support a jury verdict of nonobviousness. *See e.g.*, Tr. at 910, 970-71, 1223-35, and 1303-04 (relating to commercial success of the patented invention).

Upon consideration of the evidence presented at trial, the court finds that the jury's finding that the patents-in-suit were valid and were neither anticipated nor rendered obvious by prior art to be supported by substantial evidence. Therefore, the court will deny the defendant's motion for judgment as a matter of law on the issue of validity.

C. **Hamilton Sundstrand’s Motion for Judgment as a Matter of Law as To Issues Pertaining to Damages and Willfulness**

1. Whether Sundstrand is Entitled to Judgment as a Matter of Law Limiting the Damages Award to \$150,000 Due to the Availability of a Non-infringing?

Sundstrand next argues that it is entitled to judgment as a matter of law limiting Honeywell’s damages to \$150,000 because a non-infringing alternative was available during the infringement period. Thus, Sundstrand contends that the jury’s damages award was not based on substantial evidence.

Sundstrand maintains that the availability of an acceptable non-infringing alternative would preclude Honeywell from recovering price erosion damage. In order to be an acceptable non-infringing alternative, the substitute product must have the advantages of the patented product. *C.R. Bard, Inc. v. Boston Scientific Corp.*, 250 F.3d 761, 2000 WL 915241, at \*3 (Fed. Cir. July 7, 2000) (unpublished) (citing *Stryker Corp. v. Intermedics Orthopedics, Inc.*, 96 F.3d 1409, 1418 (Fed. Cir. 1996)). Moreover, to be an acceptable non-infringing substitute, the product or process must have been available or on the market. *Grain Processing Corp. v. American Maize Prods. Co.*, 108 F.3d 1392, 1997 WL 71726, at \*2 (Fed. Cir. 1997) (unpublished). In this case, there is no dispute that the alleged non-infringing design was not on the market. The parties are in dispute, however, as to whether an acceptable non-infringing alternative was available.<sup>11</sup>

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<sup>11</sup>The critical time period for determining availability of an alternative is the period of infringement for which the patent owner claims damages; this period is known as the “accounting period.” *Grain Processing Corp. v. American Maize-Products Co.*, 185 F.3d 1341, 1353 (Fed. Cir. 1999). According to Sundstrand, the existence of a non-infringing alternative prior to February 3, 1999 would preclude Honeywell from recovering price erosion damages, and the existence of a non-infringing alternative prior to May of 1993 would cap Honeywell’s ability to recover reasonable royalty damages.

A non-infringing alternative is only available during the accounting period if the infringer had all of the necessary equipment, know-how, and experience to [use the alternative] whenever it chose to do so during the time of infringement. *See Grain Processing Corp. v. American Maize-Products Co.*, 185 F.3d 1341, 1354 (Fed. Cir. 1999). “When an alleged alternative is not on the market during the accounting period, a trial court may reasonably infer that it was not available as a non-infringing substitute at that time.” *Id.* at 185 F.3d 1353. Also, the mere fact of switching to a non-infringing product years after the period of infringement does not establish the presence of a non-infringing substitute during the period of infringement. *See id.* 185 F.3d at 1348 and 1353.

The accused infringer has the burden to overcome the inference raised when a substitute design is not on the market by showing that the substitute was available during the accounting period. *See id.* at 1353. “Mere speculation or conclusory assertions will not suffice to overcome the inference.” *Id.* As the Federal Circuit Court of Appeals explained in *Grain Processing v. American Maize Products*,

After all, the infringer chose to produce the infringing, rather than non-infringing, product. Thus, the trial court must proceed with caution in assessing proof of the availability of substitutes not actually sold during the period of infringement. Acceptable substitutes that the infringer proves were available during the accounting period can preclude or limit lost profits; substitutes only theoretically possible will not.

*Id.* Finally, the court notes that the existence of a non-infringing substitute is a question of fact. *See Grain Processing Corp.*, 185 F.3d at 1352; *Minnesota Mining and Manufacturing Co. v. Johnson & Johnson Orthopaedics*, 976 F.2d 1559, 1577 (Fed. Cir. 1992).

In support of its claim that a non-infringing alternative was available, Sundstrand offered the testimony of Sundstrand engineer, John Szillat. Szillat testified that in the fall of 2000, he conducted tests confirming that the high flow/low flow logic was not necessary under actual flight conditions.

*See* Tr. at 1880-81, 1882-83, 1888-91, DTX 1485. Thus, Szillat explained that Sundstrand had modified the software code for the control logic of the APS 3200 to eliminate the high flow/low flow logic that Honeywell argues infringes its patents. Szillat further testified that he believed that Sundstrand could have made this modification in 1993. *See id.* at 1883. Szillat also admitted that in September of 2000, he was asked by trial counsel to look at the question of potential alternatives to the current high flow logic that was being used in the APS 3200. *See* Tr. at 1880.

In further support of its claim that a non-infringing alternative was available, Sundstrand also offered evidence of the substitute design's implementation by pointing to an Airbus test flight of the substitute design and the fact that Federal Aviation Administration (FAA) approval was imminent, with actual implementation set to occur in April or May of 2001. Finally, Sundstrand offered evidence that this substitute design would have been an acceptable alternative. *See* Tr. at 1890-1891.

In response to Sundstrand's claim that a non-infringing alternative existed, Honeywell argued that Sundstrand was not capable of implementing the alternative design in 1993, or at any time prior to the expiration of the accounting period. Honeywell presented evidence that the putative non-infringing alternative was not available because it had not been finalized, approved, or implemented. *See* Tr. at 1902-03. For example, Honeywell attempted to demonstrate that an alternative design was not available by calling into question Airbus' supposed acceptance of the alternative design. *See* Tr. at 1924. In further support of its argument that the alternative design was not available, Honeywell offered evidence that Sundstrand had attempted to address a problem identified as the "double solution" problem up through the year 2000. *See* PTX 916; Tr. at 1962-63. According to Honeywell, the infringing high flow/low flow inlet guide vane test had been included in the APS

3200's surge control logic in order to solve this “double-solution” characteristic of DELPQP. *See* Tr. at 1930.

In light of this evidence, the court finds that a reasonable jury could find that Honeywell offered testimony which would demonstrate that the alternative design was still in development and, thus, not available. Technology which is still in development during the accounting period is not considered to be an available alternative. *See e.g., Kaufman Co. v. Lantech, Inc.*, 926 F.2d 1136, 1142 (Fed. Cir. 1991) (explaining that an alleged substitute that was “immature and more expensive than the patented technology during the time of infringement cannot have been an acceptable non-infringing substitute”); *Cf. Minnesota Mining*, at 976 F.2d at 1578 (affirming lower court finding that difficulty in developing a non-infringing alternative, which was admittedly done for the purposes of litigation, was evidence that a non-infringing substitute was not available).

The jury also could have reasonably determined that a non-infringing alternative was not available because Honeywell challenged the credibility of Sundstrand engineer, John Szillat. In his testimony, Szillat conceded that he did not work at the company until 1998, and that he “really [did not] know what was done prior to when [he] worked on the 3200 as far as what alternatives had been considered.” Tr. at 1921. In light of this admission, a jury could reasonably conclude that Sundstrand had failed to establish that it had the capability to produce a non-infringing alternative and that Szillat’s claim was speculative at best. *Cf. Minco Inc v. Combustion Eng’g, Inc.*, 95 F.3d 1109, 1119 (Fed. Cir. 1996) (explaining that “testimony that an infringer might have been able to design around a patent does not, in itself, defeat a claim for lost profits”). In addition, Honeywell challenged whether the alternative design was available as early as 1993 by demonstrating that the search for a non-infringing alternative was motivated in part by the suggestions of a trial attorney late

in the year of 2000. *See* Tr. at 1968-69. *But see Grain Processing*, 185 F.3d at 1354 (affirming district court finding that a non-infringing alternative was available, because the evidence demonstrated that the defendant did not have to ‘invent around’ the patent, but rather, all it had to do was switch to using the available non-infringing alternative).<sup>12</sup>

2. Whether Sundstrand is Entitled to Judgment as a Matter of Law, or in the Alternative, a New Trial, On the Issue of Price Erosion Damages?

Sundstrand next argues that it is entitled to judgment as a matter of law on damages because the evidence offered by Honeywell in support of its price erosion claim was legally insufficient. Sundstrand also argues that it is entitled to a new trial on the issue of price erosion damages. The court will address these arguments separately.

a. Judgment as a Matter of Law

The Patent Act provides for “damages adequate to compensate for the infringement but in no event less than a reasonable royalty for the use made of the invention by the infringer.” *Minco Inc.*, 95 F.3d at 1118 (citing 35 U.S.C. § 284). Adequate damages can include lost profits due to diverted sales, price erosion, and increased expenditures caused by infringement. *Id.* (citing *Lam, Inc. v. Johns-Manville Corp.*, 718 F.2d 1056, 1065 (Fed. Cir. 1983)). Lost profits as a result of price erosion are compensable damages that stand on the same ground as damages caused by lost sales. *Micro Motion, Inc. v. Exac Corp.*, 761 F. Supp. 1420, 1430 (N.D. Cal. 1991) (citing *Lam*, 718 F.2d at 1065)). In most price erosion cases, a patent owner has reduced the actual price of its patented product in response to an infringer's competition. *Id.* (citing *Yale Lock Mfg. Co. v. Sargent*, 117 U.S.

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<sup>12</sup>In the alternative, Sundstrand argues that it is entitled to a new trial because the jury’s verdict was against the clear weight of the evidence. In light of the trial record described above, the court is not persuaded by this argument. Therefore, the court will also deny Sundstrand’s motion for a new trial.

536, 553 (1886)). A price erosion claim can also be sustained by a patent holder who proves that he would have increased his prices had the infringer not been in competition with him. *See id.* (citing *Kalman v. Berlyn Corp.*, 914 F.2d 1473, 1485 (Fed Cir. 1990); *TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 902 (Fed. Cir. 1986)).

In order to show “but for” causation and entitlement to lost profits, a patentee must reconstruct the market to show, hypothetically, “likely outcomes with infringement factored out of the economic picture.” *Crystal Semiconductor Corp. v. Tritech Microelectronics Int’l, Inc.*, 246 F.3d 1336, 1355 (Fed. Cir. 2001) (citing *Grain Processing Corp. v. American. Maize-Prods.*, 185 F.3d 1341, 1350 (Fed. Cir. 1999)). Such market reconstruction, although hypothetical, requires “sound economic proof of the nature of the market.” *Id.* Although damages may not be based on speculation, they need not be proved with unerring precision either. *See Minnesota Mining*, 976 F.2d at 1579 (citations omitted). In proving damages, the patentee may use a wide variety of reconstruction theories where the patentee has presented reliable economic evidence of “but for” causation. *See Crystal Semiconductor*, 246 F.3d at 1355. With these principles in mind, the court turns to whether the jury’s damages award was supported by substantial evidence.

In its motion for judgment as a matter of law, Sundstrand maintains that the evidence offered by Honeywell in support of its claim for price erosion damages was too speculative, and thus, the jury’s price erosion award should be reversed. Sundstrand claims that the evidence presented at trial was legally insufficient because first, Honeywell relied on the faulty premise that absent competition from Sundstrand, it would have enjoyed a sole source position in the market; second, the testimony of Gregory Albert, Honeywell’s product line director, cannot support its price erosion claims because his statements were conclusory and constituted unsupported lay opinion; and third, Honeywell’s

damages expert, Julie Davis, assumed that price erosion occurred, but did not offer any market study or other evidence from which the jury could reasonably determine the level of pricing that Honeywell would have applied absent competition from Sundstrand.

First, the court recognizes that in a two-supplier market, it is reasonable to assume, provided the patent owner has the manufacturing and marketing capabilities, that the patent owner would have made the infringer's sales absent infringing competition. *See State Indus Inc. v. Mor-Flo Indus Inc.*, 883 F.2d 1573, 1578 (Fed. Cir. 1989). Thus, a patent owner's initial burden can be met by showing the existence of a two-supplier market. *See Polymer Indus. Prod. Co. v. Bridgestone/Firestone, Inc.*, Nos 00-1271, 00-1299, 2001 WL 253259, at \*5 (Fed. Cir. Mar. 13, 2001) (citing *SmithKline Diagnostics, Inc. v. Helena Labs. Corp.*, 926 F.2d 1161, 1165 (Fed. Cir. 1991)). At trial, Honeywell presented evidence that it operates in a two supplier market. *See* Tr. at 427, 852, 1154. In addition, two of Sundstrand's witnesses also gave testimony indicating that Honeywell and Sundstrand operate in a two-supplier market. *See e.g.*, Tr. at 1310-11. In particular, Sundstrand's expert on damages, Dennis Staats, in describing the APU market admitted that "To some extent it is a two supplier market. And I agree on the concept of [a] two supplier market for a certain piece of it." Tr. at 2015. In light of the record, the court finds that the jury could have reasonably concluded that Honeywell operates in a two-supplier market.<sup>13</sup>

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<sup>13</sup>At the close of evidence, the court gave the jury the following instruction which was agreed upon by the parties prior to trial:

If you conclude that Hamilton Sundstrand and Honeywell are the only two suppliers in the market for the products in question, you may reasonably infer that any amount of lowered prices that Honeywell has shown was caused by Hamilton Sundstrand's sales of its APUs and services. However, this inference can be rebutted by other evidence in the record concerning Honeywell's prices.

Tr. at 2461.

Second, Sundstrand argues that the testimony of Gregory Albert, Honeywell's product line director, was too speculative. At trial, Honeywell offered testimony from both a fact witness, Albert, and an expert witness, Davis, who testified that economic concessions granted to 14 airline customers were caused by Sundstrand's infringing competition. In claiming that the Honeywell made price concessions due to infringing competition, Albert identified fourteen contracts and testified that "[i]n every one of these 14 cases, we have made concessions, economic concessions, to those customers as a result of the competition with Hamilton Sundstrand." Tr. at 875. Honeywell also offered the testimony of its Aerospace President, Steve Loranger, who testified that the APU market changed when Sundstrand entered into it in the early 1990s as "it became necessary to start significantly discounting the maintenance service costs . . . ." Tr. at 355-56. Although Sundstrand characterizes the evidence offered by Honeywell regarding price concessions as speculative, the court is not persuaded by this argument because Albert's testimony was based on his personal knowledge and experience. An award of damages for price erosion can be based on the testimony of a patent owner. See *Kalman v. Berlyn Corp.*, 914 F.2d at 1485 (citing *TWM Mfg Co. v. Dura Corp.*, 789 F.2d 895, 902 (Fed. Cir. 1985)); *Tenax Corp. v. Tensar Corp.*, Civ. No. G-89-424, 1991 WL 218508, at \*9 (D. Md. Apr. 3, 1991) (explaining that a fact witness on damages could testify that prices were reduced due to infringer's competition, where witness testified upon his personal knowledge and involvement); *Micro Motion, Inc. v. Exac Corp.*, 761 F. Supp. at 1431 ("[t]he testimony at trial of Micro Motion managers responsible for its pricing decisions uniformly supports the proposition that Micro Motion would have increased prices had Exac not been in the market."). Based upon the trial record, the court finds that Honeywell's evidence concerning price concessions was not too speculative. Thus, Honeywell's claim for price erosion damages were legally sufficient

to support the jury's damages award.

Finally, Sundstrand challenges the testimony of Honeywell's damages expert, Julie Davis. First, Sundstrand charges Davis with solely relying on information from Gregory Albert, whose testimony the court has already explained was not too speculative to support an award for price erosion damages. Moreover, Davis testified that she did not rely solely on Albert, rather she stated that, "[e]ach of my footnotes describe exactly how I determined what the prices would have been and they don't necessarily rely on Mr. Albert's opinion." Tr. at 1180. Next, Sundstrand argues that Honeywell's claim for price erosion damages is legally insufficient because Davis allegedly failed to conduct a market study. At trial, Davis was asked on cross-examination about whether she conducted a market analysis consistent with the methods described in *Intellectual Property Infringement Damages, a Litigation Support Handbook*, by Russell Parr. Tr. at 1179 (referring to DTX 1672). In response, Davis stated that she did not follow the suggestions of Mr. Parr, but rather, she "chose to make a more detailed analysis of all the APUs involved in the case." Tr. at 1180. Considering that a patent owner has "significant latitude" in proving its damages, *Grain Processing*, 185 F.3d at 1350, the court finds that Davis was not required to conduct the type of market analysis described by Parr. In this case, Honeywell presented ample evidence at trial describing Davis' methodology. See Tr. at 1096-1156. In light of this evidence, the jury could have reasonably concluded that Davis' methodology and testimony on damages were not faulty and were adequately supported.<sup>14</sup> *But see e.g., Crystal Semiconductor*, at 246 F.3d at 1357-58 (affirming district court's

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<sup>14</sup>The court also notes that the jury could have also reasonably doubted the credibility of Sundstrand's expert on damages, Mr. Staats. In fact, in his summation, Sundstrand's counsel admitted that Staats had in fact made an error in his analysis. See Tr. at 2634 (stating about Staats, "And he blew it in that one respect.").

denial of price erosion damages where the expert used a benchmark methodology that was unreliable because it compared two markets that were significantly different).

b. Motion For A New Trial

Sundstrand also moves for a new trial on the damages issue. Sundstrand argues that it should be granted a new trial because the verdict was against the clear weight of the evidence. Also, Sundstrand argues that it is entitled to a new trial due to the court's exclusion of testimony from its witness, Karl Johanson and the court's acceptance of Davis's expert opinion. Finally, Sundstrand claims that the court gave an erroneous instruction on whether the jury could consider Honeywell's sole source market position. The court will address these issues in turn.

First, the court finds that the jury's damages award was not against the clear weight of the evidence. As the court has already explained, both sides set forth competent evidence on the damages issue. Thus, the court sees no reason to substitute its own judgment of the credibility of the facts and witnesses for that of the jury. Therefore, the court will deny the defendant's motion for a new trial on the basis that the damages award was given against the clear weight of the evidence.

Next, the court will address Sundstrand's challenges to its evidentiary rulings concerning Johanson and Davis. Sundstrand suggests that a new trial is warranted due to the limitations the court placed on the testimony of Karl Johanson. Sundstrand proposed to offer Johanson's testimony for the proposition that Sundstrand also granted concessions to customers, even on "sole source" products. The court excluded Johanson's testimony pursuant to Rule 26(e)(2) of the Federal Rules

of Civil Procedure.<sup>15</sup> The court based its ruling on the following facts: 1) Honeywell had made a request for related documents in its first request for document production and Sundstrand did not comply because they did not believe the information was relevant, *see* Tr. at 1277; 2) Honeywell filed a 30(b)(6) notice and identified possible sole source information as a category in Topic 16,<sup>16</sup> *see* Tr. at 1279; 3) at the deposition of 30(b)(6) witness Johanson, Sundstrand limited the subject matter of Topic 16 to the APS 3200, *see* Tr. at 1279; 4) Sundstrand later determined the information was relevant,<sup>17</sup> *see* Tr. at 1282; and 5) even though Sundstrand determined that sole source market information was relevant, they failed to comply with any of Honeywell's earlier request for related documents.

Although the facts described above demonstrate that Sundstrand indeed did not seasonably amend its prior responses to discovery, Sundstrand maintains that the court erred because it had provided additional corrective information at Johanson's 30(b)(6) deposition. Sundstrand further

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<sup>15</sup>Fed. R. Civ. P. 26(e)(2) reads:

A party is under a duty seasonably to amend a prior response to an interrogatory, request for production, or request for admission if the party learns that the response is in some material respect incomplete or incorrect and if the additional or corrective information has not otherwise been made known to the other parties during the discovery process or in writing.

<sup>16</sup>Topic 16 describes:

Any and all offers, proposals, and negotiations regarding the terms of any agreement regarding aftermarket sales, including but not limited to repairs, overhauls, replacements, replacement parts, spare parts and maintenance service agreements, whether or not the sale of the APU and/or the agreement regarding aftermarket sales was ultimately executed. Tr. at 1279

<sup>17</sup>Sundstrand asserts that this information became relevant when they first received information on Honeywell's damages methodology. The court notes that on cross-examination, Sundstrand took issue with Ms. Davis valuation methodology because she did not rely on sole source agreement. *See* Tr. at 1280.

argues that Honeywell should have moved to compel discovery of sole source information. Upon considerations of Sundstrand's motion for a new trial, the court finds that it did not err in excluding Johanson's testimony. Pursuant to Federal Rule of Civil Procedure 37(c),<sup>18</sup> the court determined that Sundstrand would not be allowed to use this information at trial because Honeywell was prejudiced by Sundstrand's failure to comply with rule 26(e)(2). Although Sundstrand disagrees with the court's ruling, the court was well within its discretion in excluding this information. *See Newman v. GHS Osteopathic, Inc.*, 60 F.3d 153, 156 (3d Cir. 1995). Moreover, errors in judicial rulings or in the conduct of the court warrant a new trial where the error or conduct was prejudicial. *See Medtronic Inc. v. Intermedics Inc.*, 799 F.2d 734, 740 (Fed Cir. 1986). Sundstrand posits that Johanson's testimony would have had a "profound impact on trial, particularly in view of Honeywell's position that it would not have granted any of the concessions it claimed 'but for' Hamilton Sundstrand's competition." D.I. 276 at 18 n.4. The court finds, however, that it is not clear that Johanson's testimony would have had a profound impact, especially in light Mr. Albert's testimony that Honeywell sometimes grants some concessions for other reasons. *See e.g.*, Tr. at 882-83 (describing launch concessions which are offered when a new aircraft is introduced in the marketplace). Thus, the court concludes that Sundstrand has also not demonstrated that the exclusion of Johanson's testimony was prejudicial.

Sundstrand also argues that the court erred in allowing Davis to testify because she was not qualified to testify as an expert under Federal Rule of Evidence 702 or 703. In particular, Sundstrand

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<sup>18</sup>Fed. R. Civ. P. 37(c) reads:

A party that without substantial justification fails to disclose information required by Rule 26(a) or 26(e)(1), or to amend a prior response to discovery as required by Rule 26(e)(2), is not, unless such failure is harmless, permitted to use as evidence at a trial, at a hearing, or on a motion any witness or information not so disclosed.

alleges that Davis has no specific expertise in the aerospace industry and that she relied solely on information provided to her by Mr. Albert. The court will deny Sundstrand's request for a new trial on this issue because the court did not err in admitting Davis as an expert. First, it is clear that Davis was qualified to testify as an expert in this case. Davis is the worldwide co-partner in charge of the intellectual property valuation practice at the international accounting firm of Arthur Andersen. She has been retained as many as 60 times as an expert on damages in intellectual property cases. *See* Tr. at 1093-1095. *But see Crystal Semiconductor*, 246 F.3d at 1355 (explaining that district court found that damages expert was not qualified because he had minimal specialized academic credentials and minimal experience with patent damages). In addition, as the court has already explained, price erosion damages can be supported by the testimony of a patent owner. In light of this fact, the court found that Davis met with the requirements of Federal Rule of Evidence 703.<sup>19</sup>

Finally, Sundstrand argues that it is entitled to a new trial because Honeywell's counsel made a misrepresentation to the jury, and his misrepresentation was exacerbated by the court's erroneous instruction on this issue. The court granted Sundstrand's motion for summary judgment on the issue of Honeywell's failure to mark the '194 and '893 patents. This ruling precluded Honeywell from recovering damages for infringement alleged to have occurred prior to February 3, 1999, the date of

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<sup>19</sup>FRE 703 reads:

The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence in order for the opinion or inference to be admitted. Facts or data that are otherwise inadmissible shall not be disclosed to the jury by the proponent of the opinion or inference unless the court determines that their probative value in assisting the jury to evaluate the expert's opinion substantially outweighs their prejudicial effect.

actual notice to Sundstrand. *See* D.I. 184. In his opening statement, Honeywell’s counsel referred to the precluded damages. *See* Tr. at 198-199 (“We should be able to go back to May of 1993 to recover damages. But that’s not the way it’s going to work in this case. . . .”). Sundstrand objected and alerted the court that it intended to submit a curative amendment to the appropriate jury instruction. *See* Tr. at 244. Sundstrand then submitted a proposed revised jury instruction; on February 14, 2001, Honeywell agreed to Sundstrand’s instruction.<sup>20</sup> Sundstrand alleges that Honeywell later misconstrued their proposed amendment to the instruction in an effort to confuse the jury. In other words, Sundstrand contends that the use that Honeywell subsequently made of the instruction differed from its intention in proposing the instruction. Sundstrand objected and then proposed another amended instruction. The court overruled Sundstrand’s objections and rejected the second proposed revision to the instructions. *See* Tr. at 2185. The court subsequently charged the jury with the agreed upon curative instruction. *See* Tr. at 2459-60.<sup>21</sup>

As the court has already explained, a new trial on the ground of erroneous instruction is permissible only when it is clear that an error in the instructions as a whole was such as to have misled the jury. *See New Idea Farm Equip. Corp. v. Sperry Corp.*, 916 F.2d at 1567. As previously

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<sup>20</sup>The relevant instruction, Joint Instruction 5.3, initially read: “You are instructed that Honeywell may only recover for alleged acts of infringement that occurred on or after February 3, 1999.” The agreed to curative Instruction 5.3 read: “You are instructed that Honeywell may only recover for alleged acts of infringement that occurred on or after February 3, 1999. There was some reference during the trial to rulings that I made before the trial began, setting February 3, 1999 as the starting date of any proof of damages. You are not to consider any possibility that Honeywell may have incurred damages prior to that date, and your finding of damages, if any, should not be influenced in any way by conjecture about Honeywell’s prices or concessions in transactions that occurred prior to February 3, 1999.”

<sup>21</sup>Sundstrand asserts that the court “subsequently charged the jury *without any curative text.*” D.I. 286 at 21 (emphasis added). The court notes that this statement is inaccurate, as the court did read the agreed upon curative instruction.

noted, in evaluating a motion for a new trial due to an alleged legal error in jury instructions, the court must determine 1) whether an error was in fact committed, and 2) whether the error was so prejudicial that denial of a new trial would be “inconsistent with substantial justice.” *Lafate v. Chase Manhattan Bank*, 123 F. Supp. 2d at 785.

The court finds that a new trial is not warranted in this case because Sundstrand has not demonstrated that the instruction the court read was erroneous or, even if it was, that it was prejudicial. The court read the curative instruction proposed by Sundstrand word for word. Moreover, a party who requests an instruction cannot complain if the instruction, or one substantially like it, is given.” *Tuttle v. Equifax Check*, 190 F.3d 9, 16 (2d Cir. 1999) (citations omitted). Therefore, the court will deny Sundstrand’s motion for a new trial based on the charge that the court’s jury instructions were erroneous.

3. Whether Sundstrand is Entitled to Judgment as a Matter of Law, or in the Alternative, a New Trial, On Willfulness?

Sundstrand argues that it is entitled to judgment as a matter of law because the evidence is legally insufficient to support the jury’s finding that Sundstrand willfully infringed. In the alternative, Sundstrand moves for a new trial on the issue of willfulness. The court will first address Sundstrand’s motion for judgment as a matter of law, then it will turn to Sundstrand’s motion for a new trial.

a. Judgment as a Matter of Law

Sundstrand argues that the court should overturn the jury’s verdict because Honeywell’s willfulness contentions were incorrect under the applicable law and because the evidence offered in support of Honeywell’s willfulness contentions was insufficient as a matter of law.

First, Sundstrand argues that Honeywell “effectively reversed the analysis . . . on this point, arguing that all it needed to prove is that Hamilton Sundstrand employees knew that the Stokes patents existed, and then Hamilton Sundstrand needed to prove that it had a reasonable basis for acting as it did in the face of that knowledge. . . . This is not the law, nor should it be the law.” D.I. 286, at 29. Thus, Sundstrand claims the jury’s finding of willfulness in this case was inappropriate because the employees who worked with the APS 3200 were not aware of the patent, and those who had encountered the patent neither suspected infringement nor had any reason to do so. Sundstrand argues that to trigger the alleged infringer’s duty to exercise due care in the face of knowledge about the patent, the patent owner must show that the accused infringer both knew about the patent and understood that the patent raised a potential infringement problem. In support of its argument, Sundstrand cites to *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 628 (Fed. Cir. 1985). However, the Federal Circuit in *Stryker Corp. v. Intermedics Orthopedics, Inc.*, clearly rejected any claim that actual notice requires both knowledge of the patents and knowledge of a problem of infringement. 96 F.3d 1409, 1415 (Fed. Cir. 1996). The accused infringer in *Stryker Corp.* also cited to *Shatterproof Glass* in arguing that in order to have actual notice, the infringer had to know of the patents and understand the potential related infringement problems. *See id.* In rejecting the accused infringer’s arguments, the *Stryker* court described the argument as “flawed,” and explained that the infringer’s reliance on *Shatterproof Glass* was misplaced. *See id.* In light of *Stryker Corp.*, the court finds Sundstrand’s claim that actual notice requires both knowledge of the patent and knowledge of the potential for infringement to be unpersuasive.

Second, Sundstrand contends that the jury’s finding of willful infringement was not supported by substantial evidence. Sundstrand argues that Honeywell based its willfulness

contentions on evidence that certain Sundstrand engineers and lawyers were made aware of the patents-in-suit when these patents were cited as prior art during the prosecution of six patents between 1986 through 1992. Sundstrand contends that this is insufficient to show meaningful notice, or that Sundstrand acted deliberately and intentionally. Sundstrand also contends that the six patents were not related to the APS 3200. Thus, there is no evidentiary basis for the jury to conclude that they would have provided notice of the patents-in-suit. Finally, Sundstrand also states that the testimony of Alan Gruebel, an APS 3200 controls engineer involved with the surge control logic during its formation, established that none of the Sundstrand employees who worked with the APS 3200 had knowledge of the six prior art references that referred to the Stokes patent.

Upon consideration of the record, the court finds that there was substantial evidence in the record to support the jury's finding of willfulness. Although Sundstrand claims that Honeywell's case is based on the fact that a handful of Sundstrand employees knew of the patents, but did not know of the potential for infringement, the court finds that the jury could have reasonably concluded that Sundstrand willfully infringed the patents-in-suit. In total, Honeywell offered evidence that more than a dozen Sundstrand engineers and lawyers had notice of the Honeywell patents by the early 1990s.

Honeywell offered evidence from which a jury could reasonably conclude that certain Sundstrand engineers who worked on the APS 3200 learned of the Honeywell surge control patents during the time that the APS 3200 was in development. For example, Honeywell offered evidence that Bill Treece, Sundstrand's director of engineering, and the chief engineer for the Sundstrand APU operation, wrote a memorandum to Sundstrand's patent attorney "requesting legal advice regarding potential patent infringement by competitor[s]," and that memorandum "includ[ed] reference to the

‘194 patent.’ *See* PTX 206 at 2. Honeywell also presented evidence that Alan Gruebel’s immediate manager, Steve Lampe, received a memorandum from Sundstrand’s patent attorney that included reference to the ‘194 patent. *See* PTX 206 at 4. Gruebel testified that Lampe had some input into the APS 3200 surge control design. *See* Tr. at 1719.

Honeywell also offered evidence that Harold Williamson, senior attorney on Sundstrand’s patent counsel staff had communications with Sundstrand engineers that contained references to the ‘914 patent. *See* PTX 206 at 1-4. In addition, Honeywell presented evidence that Sundstrand’s outside patent counsel knew about the Honeywell surge control patents. For example, Honeywell introduced evidence that Sundstrand’s counsel, William Van Santen, acknowledged that he had a copy of the ‘194 patent and had disclosed that patent to the Patent Office in 1988 as being pertinent to one of Sundstrand’s surge control patent applications. *See* Tr. 783-86, 796-97, PTX 216. Honeywell also offered evidence showing that it was Van Santen’s practice to review patents he disclosed to the Patent Office. *See* Tr. at 781-82.

Honeywell also presented evidence that Sundstrand engineers had knowledge of and examined Honeywell’s surge control system during its development of the APS 3200. For example, Honeywell introduced evidence which showed that Sundstrand had access to a document which discussed the operation of Honeywell’s APUs. *See* Tr. at 529-30; PTX 65. This document was forwarded to four Sundstrand engineers who were working at the time on developing the control system for the APS 3200. *See* Tr. at 529. Honeywell also offered evidence that Sundstrand engineers knew about some aspects of Honeywell’s patents. For example, Peter Suttie, project engineer for the control system of the APS 3200, testified that he “liked” certain aspects of the Honeywell design. *See* Tr. at 530.

In light of the record, the court concludes the jury's finding that Sundstrand willfully infringed the patents-in-suit was supported by substantial evidence. Therefore, the court will deny Sundstrand's motion for judgment as a matter of law.

b. Motion for A New Trial

Sundstrand first argues that the jury's verdict of willful infringement is against the clear weight of the evidence. In light of the evidence presented at trial, the court finds that contention to be unpersuasive. Sundstrand further contends that it is entitled to a new trial because the court erroneously charged the jury on the issue. As a result of the court's alleged erroneous instruction, Sundstrand argues that the court effectively determined that any infringement would be willful.<sup>22</sup> According to Sundstrand, the court erred by not including its proposed instruction, which would have included language on the duty to investigate.<sup>23</sup> Sundstrand argues that by not giving the jury its

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<sup>22</sup>The relevant part of the court's instruction on willfulness reads:

If you find that Hamilton Sundstrand infringed any of the claims of Honeywell's patents, and that such claims are valid, then you must further determine if the infringement was willful. Willful infringement requires proof that under the totality of the circumstances the accused infringer had actual knowledge of the patent and had no reasonable basis for believing that its product or process did not infringe the patent or that the patent was invalid. In defense, the infringer may rely on an opinion of counsel, that the patent is invalid, unenforceable, or not infringed if the infringer obtained the opinion promptly, if the opinion is competent, and if the reliance is in good faith. Honeywell must prove the willfulness of any infringement by clear and convincing evidence. If you find Honeywell has proven that Hamilton Sundstrand knew about the patent and did not exercise due care to determine whether or not it was infringing the patent, you may find that Hamilton Sundstrand's infringement was willful. Once a party obtains knowledge of a patent, it has an affirmative duty to exercise due care not to infringe the patent. Tr. 2468-69

<sup>23</sup>Sundstrand proposed the following:

In determining whether Hamilton Sundstrand had knowledge of the patents before [the relevant date], you should consider which of Hamilton Sundstrand's employees have been shown to have had information relating to the patents before that date and whether or not those employees were themselves engaged in activities related to the company's alleged

proposed instruction, the court did not inform jury that it could consider the context in which the individual employees came to know of the patents, or whether those employees appreciated the potential relationship between the accused device and the patents. Sundstrand further states that the jury was left to conclude that the duty to investigate was triggered because a handful of Sundstrand's employees and certain lawyers encountered the Stokes patents in a context wholly unrelated to the APS 3200. In essence, Sundstrand asserts that "[b]y not clarifying the meaning of corporate 'intent' in these circumstances, the Court's instruction misstated the contours of the willfulness doctrine, and it did so to Hamilton Sundstrand's prejudice." D.I. 276 at 37.

In rejecting Sundstrand's proposed instruction, the court found that Sundstrand had failed to provide sufficient legal support for the proposition that there need be a particularly sufficient connection between Sundstrand employees who knew of the patents and the infringing APS 3200. *See* Tr. at 2359. Furthermore, the court instructed the jury that willfulness is to determined under the totality of the circumstances. In looking at the totality of the circumstances, the jury would have necessarily looked at the context of the employees knowledge about the patents. Considering the lack of legal support for Sundstrand's proposed instruction and considering that the jury was instructed to determine willfulness under the totality of the circumstances, the court finds that it did not commit error in instructing the jury on willfulness. *See Lafate v. Chase Manhattan Bank*, 123 F. Supp. 2d at 785 (explaining that the court must determine first, whether an error was in fact

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infringing conduct at that time. For you to find that Hamilton Sundstrand had knowledge of the patents before February 3, 1999, Honeywell must show that the employees of Hamilton Sundstrand who you may find were aware of the patents had at that time a sufficient connection to the alleged infringement so that they would have a basis to cause Hamilton Sundstrand to consider the patents in connection with its decision-making about the allegedly infringing product. D.I. 276, at 37

committed, and second, whether the error was prejudicial, in deciding if a new trial is warranted).

**D. Honeywell’s Motion for Treble Damages, Attorneys Fees, Costs and Expenses and Prejudgment Interest.**

Honeywell argues that the court should treble the jury’s actual damages award and award it attorney’s fees and costs. Honeywell further argues that it is entitled to prejudgment and post-judgment interest on the jury’s damages award.

1. Whether Honeywell is Entitled to Enhanced Damages, Attorney’s Fees, and Costs?

When there is a finding of willful infringement, 35 U.S.C. § 284 gives the court discretion to increase the damages up to three times the amount found. A patentee is entitled to up to treble damages upon a finding of wilfulness. *See* 35 U.S.C. S 284; *Read Corp. v. Portec, Inc.*, 970 F.2d 816, 826 (Fed. Cir. 1992). A finding of wilfulness, however, does not mandate enhanced damages, much less treble damages. *See Cybor Corp. v. FAS Techs, Inc.*, 138 F.3d 1448, 1461 (Fed. Cir. 1998) (citing *Modine Mfg. Co. v. The Allen Group, Inc.*, 917 F.2d 538, 543 (Fed. Cir. 1990); *Read*, 970 F.2d at 826. “Rather, ‘[t]he paramount determination [for enhanced damages] . . . is the egregiousness of the defendant's conduct based on all the facts and circumstances.’” *Electro Scientific Indus., Inc. v. General Scanning, Inc.*, 247 F.3d 1341, 1353 (Fed. Cir. 2001) (citation omitted). Thus, enhancement of damages is within the discretion of the district court and is informed by the totality of the circumstances. *See State Indus., Inc. v. Mor-Flo Indus., Inc.*, 948 F.2d 1573, 1576 (Fed. Cir. 1991).

The Federal Circuit has identified a number of factors to consider when deciding whether to enhance damages. These facts include: (1) evidence that the infringer deliberately copied the ideas or designs of the patentee; (2) evidence that the infringer knew of the other’s patent, investigated

the scope of the patent, and formed a good-faith belief that it was invalid or that it was not infringed; (3) evidence of the infringer's behavior as a party to the litigation; (4) evidence of the infringer's size and financial condition; (5) evidence as to the closeness of the case; (6) evidence regarding the duration of the infringer's conduct; (7) evidence showing remedial action by the defendant; (8) evidence regarding defendant's motivation for harm; and (9) evidence as to whether the defendant attempted to conceal its misconduct. *See Read*, 970 F.2d at 826-29.

Upon consideration of the parties' submissions and the *Read* factors, the court finds that enhanced damages are not warranted in this case under 35 U.S.C. § 284. Although the evidence was sufficient to support the jury's finding of willfulness, the court finds that the evidence was not strong enough to warrant enhanced damages. Honeywell supports its willfulness argument by citing a broad range of circumstantial evidence, however, there was little direct evidence which evinced the sort of a culpable mindset that would make enhanced damages appropriate in this case. *But see e.g., SRI Int'l, Inc. v. Advanced Tech. Laboratories, Inc.*, 127 F.3d 1462, 1465-67 (Fed. Cir. 1997) (affirming district court's award of treble damages where memoranda and letters from the infringer's engineers stated that "we probably are infringing"). Also, the court finds that Sundstrand defenses although ultimately unsuccessful, were not frivolous and were litigated in good faith. Moreover, Sundstrand mounted a substantial challenge to Honeywell's infringement contentions. The issue of infringement was a close case. *See e.g., C.R. Bard, Inc. v. Medtronic, Inc.*, No. 96-589-SLR, 1999 WL 458305, at \*14 (D. Del. June 15, 1999). The court also finds that enhancement is inappropriate because, although the jury found that Sundstrand's infringement was willful, there is evidence that Sundstrand was partially motivated by economic pressure in the form of customer dissatisfaction. *See e.g., DTX 1602; Read*, 970 F.2d at 827. Therefore, the court finds that enhancement of damages

is inappropriate in this case.

For these same reasons, the court declines to find that this case is an “exceptional case” under 35 U.S.C. § 285. Section 285 provides that “in exceptional cases [the court] may award reasonable attorney fees to the prevailing party.” Thus, the court will deny Honeywell’s motion for attorney’s fees and costs.

2. Whether Honeywell is Entitled to Prejudgment and Post-judgment Interest?

Prejudgment interest should ordinarily be awarded absent some justification for withholding such an award. *General Motors Corp. v. Devex Corp.*, 461 U.S. 648, 657 (1983). The United States Supreme Court stated that the award of prejudgment interest reflects the Patent Act’s provision of complete compensation for the patent owner. *General Motors Corp. v. Devex Corp.*, 461 U.S. 648, 655 (1983). Thus, a court should award prejudgment interest unless it has some justification for withholding such an award. *Id.* at 657. Generally, prejudgment interest extends from the date of infringement to the date of judgment.

In this case, Honeywell seeks prejudgment interest on its reasonable royalty damages award and on its price erosion damages award. The court will grant Honeywell’s motion for prejudgment interest on the reasonable royalty award. *See e.g., Joy Tech., Inc. v. Flakt, Inc.*, 954 F. Supp. 796, 808 (D. Del. 1996) (awarding prejudgment interest on a reasonable royalty award).

The court will, however, deny Honeywell’s motion for prejudgment interest on price erosion damages. At trial, Honeywell’s expert, Julie Davis, testified to the jury that she included prejudgment interest in her damages calculation. Tr. at 1153. In light of this testimony, the court finds that the jury reasonably would have included prejudgment interest in its damages award. *See Graco Children’s Prods., Inc. v. Century Prods. Co.*, No. Civ. A. 93-6710, 1996 WL 421966, at \*35

(E.D. Pa. July 23, 1996) (denying motion for prejudgment interest where prevailing party included prejudgment interest as a part of the damages calculation it presented to the jury).

Finally, Honeywell also seeks post-judgment interest pursuant to 28 U.S.C. § 1961, which states that “[i]nterest shall be allowed on any money judgment in a civil case recovered in a district court.” The court will also grant Honeywell’s motion for post-judgment interest.

#### **IV. CONCLUSION**

For the foregoing reasons, the court finds that the jury’s verdict was supported by substantial evidence. Therefore, the court will deny Honeywell’s motion for judgment as a matter of law on the issue of literal infringement of Claim 4 of the ‘194 patent and Sundstrand’s motions for judgment as a matter of law on the issues of liability, wilfulness, and damages. In addition, the court finds that a new trial is not warranted on any issues and, therefore, will deny Sundstrand’s motions for a new trial on all issues. In addition, the court finds that Honeywell is not entitled to enhanced damages or attorney’s fees and costs. Finally, the court finds that Honeywell is entitled to post-judgment interest, and prejudgment interest on its reasonable royalty damages, but not prejudgment interest on its price erosion damages. The court will issue an order in conjunction with this opinion.

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

HONEYWELL INTERNATIONAL INC., )  
and HONEYWELL INTELLECTUAL )  
PROPERTIES, INC., )  
 )  
Plaintiffs, )  
 )  
v. )  
 )  
HAMILTON SUNDSTRAND )  
CORPORATION, )  
 )  
Defendant. )

Civil Action No. 99-309 GMS

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**MEMORANDUM OPINION**

September 27, 2001  
Wilmington, Delaware

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

HONEYWELL INTERNATIONAL INC., )  
and HONEYWELL INTELLECTUAL )  
PROPERTIES, INC., )  
 )  
Plaintiffs, )  
 )  
v. )  
 )  
HAMILTON SUNDSTRAND )  
CORPORATION, )  
 )  
Defendant. )

Civil Action No. 99-309 GMS

**ORDER**

For the reasons stated in the court's Memorandum Opinion of this same date, IT IS  
HEREBY ORDERED that:

1. Honeywell's Motion For Judgment as a Matter of Law on the Issue of Literal Infringement is DENIED;
2. Sundstrand's Motion For Judgment as a Matter of Law and For a New Trial on Issues Pertaining to Liability is DENIED;
3. Sundstrand's Motion for Judgment as a Matter of Law and For a New Trial on Issues Pertaining to Damages and Willfulness is DENIED;
4. Honeywell's Motion for Treble Damages, Fees, Cost, and Interest is DENIED in part and GRANTED in part;
  - a. Honeywell's Motion for Treble Damages and Attorney's Fees and Costs is DENIED;
  - b. Honeywell's Motion for Prejudgment Interest on Price Erosion Damages

is DENIED; and

- c. Honeywell's Motion for Prejudgment Interest on Reasonable Royalty Damages and Post-judgment Interest is GRANTED.

Date: September 27, 2001

Gregory M. Sleet  
UNITED STATES DISTRICT JUDGE