

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

VIRGIN ATLANTIC AIRWAYS	)	
LIMITED,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Civ. Action No. 11-61-LPS-CJB
	)	
DELTA AIRLINES, INC.,	)	
	)	
Defendant.	)	

**REPORT AND RECOMMENDATION**

In this patent action filed by Plaintiff Virgin Atlantic Airways Limited ("Plaintiff") against Defendant Delta Airlines, Inc. ("Defendant"), Plaintiff alleges infringement of U.S. Patent No. 7,469,861 ("the '861 patent"). Presently before the Court is the matter of claim construction. I recommend that the District Court adopt the constructions for the disputed terms as set forth below.

**I. BACKGROUND**

**A. The Parties**

Plaintiff is an international airline based in the United Kingdom. (D.I. 1 at ¶ 2)  
Defendant is also an international airline, organized and existing under the laws of Delaware, with its principal place of business in Atlanta, Georgia. (D.I. 1 at ¶ 3) The parties are direct competitors in the global airline marketplace. (D.I. 53 at 4)

**B. The '861 Patent**

The '861 patent is entitled "Seating System and a Passenger Accommodation Unit for a

Vehicle," and was issued on December 30, 2008. (D.I. 43, ex. B)<sup>1</sup> Plaintiff is the sole assignee of the '861 patent. (*See id.*) The '861 patent is based on U.S. Appl. No. 11/394,827 ("the '827 application"), which was filed on March 31, 2006.<sup>2</sup> (*Id.*) The '827 application is a division of an earlier U.S. patent application filed on February 6, 2004, and claims ultimate priority to an application filed in Great Britain on August 9, 2001. (*Id.*) The '861 patent contains twenty-four claims, two of which (claims 1 and 13) are independent.

The '861 patent relates principally to aircraft seating systems. In contrast to the typical rows utilized on most commercial aircraft, the '861 patent discloses a "herringbone" cabin design, by which the passenger seats are oriented at an angle to the aisle (or "longitudinal cabin axis") of the plane. ('861 patent, col. 7:20–27) There are multiple embodiments of such a seating system described and depicted in the '861 patent, but its principal focus appears to be on seating systems that convert to a "substantially flat bed." (*Id.*, col. 7:7–17) As discussed in the background section of the '861 patent, the inventors identified a number of problems with existing airline seats that were designed to convert to beds. For instance, one prior art system disclosed a seat that was capable of reclining backwards to form a substantially flat bed. (*Id.*, col. 2:5–9) However, there were multiple disadvantages with a such a system, including (1) the economic and physical difficulties associated with allowing for sufficient bed space to accommodate the full height of a passenger; and (2) the fact that the seat padding making up the surface of the bed

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<sup>1</sup> The '861 patent appears several times on the docket, including as an exhibit to the parties' Joint Claim Construction Chart. (D.I. 43, ex. B) Further citations will simply be to the "'861 patent."

<sup>2</sup> Only a portion of the prosecution history has been submitted in this case. (*See* D.I. 43, ex. C)

was designed to best fit the body in a sitting position, rather than in a sleeping position. (*Id.*, col. 2:9–18) Other prior art systems disclosed variants of this concept, which often utilized free-standing foot-rests to extend the length of the converted bed surface, and typically involved reclining the seat in a backward direction. (*Id.*, col. 2–3) The use of a reclining seat in combination with such elements still presented challenges, including those previously noted. (*See, e.g., id.*, col. 3:8–12)

The '861 patent is thus directed to a purportedly improved seating system that (as compared to prior art systems) extends the converted bed length, maximizes passenger comfort in the sleeping position, and maximizes cabin space. Each of the claimed seats is able to be converted from a "first sitting position," where the seat is upright, to a "second sleeping position," where the seat has been adjusted to provide a space that accommodates a passenger in a fully reclined position. By angling the seats in the herringbone orientation discussed above, there is a roughly triangular space that is formed behind each seat (*id.*, col. 7:18–19), which can then include a substantially horizontal surface that extends the bed rearwardly, as shown in Figure 1 and elsewhere in the patent. (*See id.*, FIG. 1A (element 47); FIG. 30A (element 912)) Rather than reclining backwards, the seat back tips or swings forward, such that the surface behind the seat back can become part of the substantially flat bed. (*See id.* FIG. 3–5; FIG. 18–19; FIG. 20A–20C; FIG. 30A–30B; FIG. 33A–33C) The bed is depicted as including multiple segments, such as the seat headrest, seat back, foot-rest, and/or the rearwardly extending horizontal surface(s). (*See id.*)

### **C. Procedural Posture**

Plaintiff filed its Complaint alleging infringement on January 18, 2011. (D.I. 1)

Defendant timely answered and filed counterclaims for declaratory judgments of non-infringement, invalidity, and that this is an exceptional case pursuant to 35 U.S.C. § 285. (D.I. 11) The parties have been engaging in discovery, which is set to close August 31, 2012. (D.I. 20 at 2) On March 20, 2012, this case was referred to me to hear and resolve all pretrial matters, up to and including the resolution of case dispositive motions. (D.I. 72)

The parties filed simultaneous opening claim construction briefs on February 6, 2012, and simultaneous responsive briefs on March 5, 2012. (D.I. 53, 54, 65, 66). The Court held a *Markman* hearing on April 10, 2012. (D.I. 79)

## II. STANDARD OF REVIEW

The proper construction of claim terms is a question of law for the Court. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996). The Court should generally give claim terms their "ordinary and customary meaning[,]" which is "the meaning that the term[s] would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (citations omitted). However, when determining the ordinary meaning of claim terms, the Court should not extract and isolate those terms from the context of the patent, but rather should endeavor to reflect their "meaning . . . to the ordinary artisan after reading the entire patent." *Id.* at 1321; *accord Markman*, 52 F.3d at 978 (noting that a patent is a "fully integrated written instrument").

To that end, the Court should look first and foremost to the language of the claims, because "[i]t is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips*, 415 F.3d at 1312 (internal

quotation marks and citations omitted). For example, the context in which a term is used in a claim may be "highly instructive." *Id.* at 1314. In addition, "[o]ther claims of the patent, both asserted and unasserted, can be valuable" in discerning the meaning of particular claim term. *Id.* This is "[b]ecause claim terms are normally used consistently throughout the patent, [and so] the usage of a term in one claim can often illuminate the meaning of the same term in other claims." *Id.* Moreover, "differences among claims can also be a useful guide," as when "the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." *Id.* at 1314–15.

In addition to the words of the claims, the Court should look to the remainder of the patent specification. This written description "may reveal a special definition . . . that differs from the meaning [that a given term] would otherwise possess." *Id.* at 1316. In that case, "the inventor's lexicography governs." *Id.* Even if the specification does not contain a special definition of the term-at-issue, it "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Id.* at 1315 (internal citations and quotation marks omitted). That said, however, the specification "is not a substitute for, nor can it be used to rewrite, the chosen claim language." *SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004). In addition to the specification, a court should also consider the patent's prosecution history, if it is in evidence, because it "can often inform the meaning of the claim language by demonstrating how the inventor understood the invention." *Phillips*, 415 F.3d at 1317 (citations omitted).

Extrinsic evidence, "including expert and inventor testimony, dictionaries, and learned treatises," can also "shed useful light on the relevant art." *Id.* (internal quotation marks and

citations omitted). Dictionaries (especially technical dictionaries) may be useful in this process because they typically provide "the accepted meanings of terms used in various fields of science and technology." *Id.* at 1318. However, the Federal Circuit has cautioned that "heavy reliance on [a] dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification." *Id.* at 1321. In addition to dictionary definitions, expert testimony can be useful "to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field." *Id.* at 1318. Nonetheless, courts must not lose sight of the fact that "expert reports and testimony [are] generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence." *Id.* Overall, while extrinsic evidence may be useful, it is "less significant than the intrinsic record in determining the legally operative meaning of claim language." *Id.* at 1317 (internal quotation marks and citations omitted); *accord Markman*, 52 F.3d at 981.

In utilizing these resources during the claim construction process, courts should keep in mind that "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998).

### **III. DISCUSSION**

Defendant argues that the Court should construe eight terms that appear in the claims of the '861 patent and offers proposed constructions; it further argues that one additional term is not amenable to construction and is therefore indefinite. (D.I. 54) Although Plaintiff asserts

infringement of multiple claims of the '861 patent, all of these terms appear in claim 1, which is reproduced below with the disputed terms highlighted:

1. A seating system for use in an airplane *having* a longitudinal airplane axis with at least one aisle extending in a same general direction as the longitudinal airplane axis, comprising:

a plurality of *seats* arranged in a column adjacent to the aisle to define a longitudinal column axis, each *seat having* a front end and a back end and further including a foot-rest at the front end of the *seat*, a reclinable back rest at the back end of the *seat* and a seat pan positioned between the foot-rest and the back rest, each *seat having* a seat axis extending from the front end to the back end and *having* a first sitting position and a second sleeping position wherein a *substantially flat bed* is formed;

each of the plurality of seats being positioned with the seat axis at a *fixed angle* of between 30 and 60 degrees with respect to the longitudinal column axis for accommodating a passenger with the passenger's feet directed towards the aisle;

each of the plurality of seats *having* an associated rear wall substantially parallel to the aisle and being positioned *behind* its associated seat;

a plurality of screens, wherein each of the plurality of seats is associated with at least one screen, the at least one screen *having* a first end positioned adjacent to the rear wall of the associated seat to form a wall-screen corner and a second end positioned adjacent to the aisle to separate the associated seat from an adjacent seat;

each of the plurality of *seats having* a *substantially horizontal surface* positioned *behind* the back end of the *seat*, the *substantially horizontal surface* being at a fixed height above a floor and extending from the wall-screen corner towards the back end of the *seat*;

each *seat having* a space that is defined by a portion of its associated rear wall, a portion of its associated screen and the back end of the *seat* when in the sitting position; and

wherein, in the second sleeping position, the *substantially flat bed*

is formed with the foot-rest defining a first bed end and *having* an opposite second bed end that extends into the space, the *substantially horizontal surface* being *about the same height* as an *upper sleeping surface* of the *substantially flat bed* to provide *usable space to a passenger* when in the sleeping position.

Plaintiff argues that the "plain and ordinary meaning" should be applied to each of the terms for which Defendant proposed constructions. (*Id.* at 7–15) However, in doing so, Plaintiff contends that none of the nine terms at issue require construction by the Court, because they are "written in plain English and will be easy for a jury to understand." (D.I. 53 at 1)<sup>3</sup>

The Federal Circuit has recognized that a district court is under no obligation to construe "every limitation present in a patent's asserted claims." *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (emphasis in original). However, it has also made clear that a "determination that a claim term 'needs no construction' or has the 'plain and ordinary meaning' may be inadequate when a term has more than one 'ordinary' meaning or when reliance on a term's 'ordinary' meaning does not resolve the parties' dispute." *Id.* at 1361. As such, a court must discern whether there is a "fundamental dispute" between the parties regarding the scope or meaning of a claim term; if there is such a dispute, it is "the court's duty to resolve it" by construing the term. *O2 Micro*, 521 F.3d at 1362; *accord Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, C.A. No. 08-309-LPS, 2012 WL 938926, at \*6 (D. Del. Mar. 13, 2012). The Court will apply these legal principles in addressing the parties' arguments as to each of the terms at issue.

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<sup>3</sup> Plaintiff therefore offered no construction for any of the nine terms at issue. As a result, although courts faced with the task of construing claims typically have at least some competing proposed constructions, here the Court did not have the benefit of weighing different proposals from each party.



**A. "seat"**

Defendant proposes that the term "seat" be construed to mean "[a] structure adapted to support a person." (D.I. 43, ex. A at 1) Although Plaintiff argues that "[t]he plain English word 'seat' does not require construction," Plaintiff notes that if "the Court believes that the term needs to be construed, [Plaintiff] does not object to [Defendant's] construction." (D.I. 53 at 7)

When the parties agree on a proposed construction for a patent term, courts typically adopt that proposal. *See, e.g., Cooper Notification, Inc. v. Twitter, Inc.*, Civil Action No. 09-865-LPS, 2012 WL 528137, at \*3 (D. Del. Feb. 17, 2012) (construing the term "first message" consistent with a proposal agreed to by both sides at the *Markman* hearing). However, two factors weigh against adopting Defendant's proposed construction in this instance.

First, Defendant's proposal is an incomplete description of the "seat" claimed in the '861 patent. As with all of the terms-at-issue, the Court looks first to the language of the claims themselves, which in the case of the claimed "seat" provides considerable detail and context. The claims of the '861 patent are directed to a "seating *system* for use in an airplane"; each seat that is part of that "system" must satisfy several requirements. ('861 patent, col. 48:15–18 (emphasis added)) In particular, each of the plurality of seats that comprises the seating system of claim 1 must, *inter alia*, have (1) a front end; (2) a back end; (3) a foot-rest at the front end; (4) a reclinable back rest at the back end; and (5) a seat pan positioned between the foot-rest and the back rest. (*Id.*, col. 48:21–24; *see also id.*, col. 49:28–32 (describing, in claim 13, seats comprised of similar elements, excluding a foot-rest)) Defendant's proposed definition does not explicitly capture these or many other necessary characteristics of the "seat" that are set forth in the claims.

Second, the parties do not appear to have a "fundamental dispute" or "controversy" as to the scope of the term "seat." *O2 Micro*, 521 F.3d at 1362. At the *Markman* hearing, Defendant's counsel raised a potential controversy relating to this term for the first time, noting that there may be some issue as to whether a seat must consist *exclusively* of a structure adapted to support a person, or whether the nominal "seat" might also include other structures, such as a "screen." (D.I. 79 (hereinafter "Tr.") at 21) In response, counsel for Plaintiff never addressed whether the claimed "screen" may be included as part of the claimed "seat," but instead focused on the abstract possibility that an "armrest" or the "wings on a wingback chair" could be excluded from a definition of "seat" that focused exclusively on passenger support. (Tr. at 28)

As this exchange illustrates, the parties have not articulated a genuine dispute as to the scope of this term. As an initial matter, there is no dispute that the "seat" described in the '861 patent claims includes a "structure adapted to support a person," (*see* D.I. 53 at 7), and thus Defendant's construction adds nothing to either the jury's understanding of this term, or to resolving the purported "dispute." Moreover, any hypothetical concerns about whether "screens" or "armrests" are part of the claimed seat (to the extent they are relevant to any infringement or validity dispute) are addressed by the claim language itself. The claims recite a number of elements that relate to or interact with the "seat," such as a rear wall, a plurality of screens, and a space behind each seat. (*See, e.g.*, '861 patent, claim 1) Some of these elements, such as a footrest, are described solely as being "includ[ed]" in the claimed seat, while others, such as the plurality of screens, are merely associated with the "seats," and thus are properly considered part of the "seating system." (*See generally*, '861 patent, claim 1) Regardless of whether those elements are considered part of the "seat," or are instead merely part of the broader claimed

"seating system," they must each be present in the manner described in the claim. The claim language, which uses nearly 400 words to describe the claimed "seating system," clearly identifies how the various structures are positioned and the manner in which they relate to one another. Under these circumstances, courts in this jurisdiction and elsewhere have declined to adopt a construction for a term, and have simply referred to the claim language and context itself. *See, e.g. Sciele Pharma Inc. v. Lupin Ltd.*, Civil No. 09–0037 (RSK/JS), 2011 WL 4351672, at \*10 (D. Del. Sept. 15, 2011) (declining to construe agreed terms or those as to which there was "no live controversy"); *accord Lyons v. Nike, Inc.*, Civ. No. 09–1183–AC, 2010 WL 5812956, at \*11 (D. Or. Sept. 28, 2010) (noting that claim language "need not" and "should not be construed where the dispute is not genuine" and where the proposed definition seeks to "unnecessarily clarify operation of the" claimed device).

In light of the foregoing factors, the Court declines to construe the term "seat," having determined that the parties have not articulated a genuine, fundamental controversy relating to the scope of this term.

**B. "substantially flat bed"**

Defendant argues that the phrase "substantially flat bed" should be construed to mean "one or more passenger-bearing surfaces disposed coplanarly and contiguously to form a bed for sleeping." (D.I. 54 at 9) Plaintiff argues that no construction is necessary for this term. (D.I. 53 at 7–9)

Claim 1 describes a "seat" that can be converted from a first sitting position into a "second sleeping position *wherein a substantially flat bed is formed.*" ('861 patent, col. 48:26–27 (emphasis added)) After that conversion has been made, "the substantially flat bed is formed

with the foot-rest defining a first bed end and having an opposite second bed end that extends into the space [behind the back end of the seat]." (*Id.*, col. 48:51–54) Claim 13 contains a similar description of the "substantially flat bed," although it does not specify that the foot-rest defines the first bed end (because claim 13 does not require a foot-rest). None of the dependent claims further modifies the description of the "substantially flat bed" from claims 1 and 13.

Turning from the claim language itself to the specification of the '861 patent, the "bed" is first referenced in the Abstract, and is described as including "a plurality of [passenger] bearing surfaces . . . disposed *substantially co-planarly and substantially contiguously* to form a bed for the passenger." (*Id.* at pg. 1 (emphasis added)) The Summary of Invention section of the '861 patent repeatedly echoes this language from the Abstract, describing a multi-surface bed where the surfaces are substantially coplanar and contiguous with respect to one another. (*See, e.g., id.*, col. 4:52–67 (describing "one embodiment of the present invention" as having a bed for a passenger "in which a plurality of [passenger]-bearing surfaces are disposed substantially coplanarly and substantially contiguously to form a bed for the passenger"); *id.*, col. 9:16–39 (describing a bed composed of a "substantially flat second bed surface" in combination with "an auxiliary, substantially flat, passenger-bearing surface" where, in a "second prone position . . . the second bed surface is disposed substantially coplanarly and contiguously with one or more of said auxiliary passenger-bearing surfaces for forming the bed"); *id.*, col. 10:50–52 (describing embodiments where, in the converted position, "the second bed surface of the back-rest element may be disposed substantially coplanarly and contiguously with [the] foot-rest"); *id.*, col. 10:59–63 (describing embodiments where an "infill element extends substantially coplanarly and contiguously with [the] second surface of [the] back-rest element in [the] second prone position

and [the] rear extension surface, thereby to form a substantially flat, extended bed surface"); *id.*, col. 13:31–36 (describing the use of a forwardly pivoting back-rest element that in a prone position "meets one of the extension surfaces to form a substantially continuous surface therewith"))

The '861 patent also includes 39 sheets of Figures; several of those Figures show the claimed seat in a converted, second position where it is functioning as a substantially flat bed. In each of those instances, the multiple surfaces that make up the substantially flat bed appear substantially coplanar and substantially contiguous. (*See id.*, FIGS. 2, 5, 19, 20C, 21B, 30B, 33C) These figures are each described as illustrating the present invention in the "bed mode" or "bed configuration." (*Id.*, col. 16:37–18:21) For instance, in the "bed configuration" of Figure 2, "the rear surface **74** of the back-rest **72** is substantially co-planar with the first and second surfaces **47**, **48**, and with the cushion **67** of the ottoman **65**." (*Id.*, col. 21:20–23) This configuration also has an "infill element **76** [that] is disposed intermediate and substantially coplanarly and contiguously with the rear surface **74** of the back-rest **72** and [the] first surface **74**." (*Id.*, col. 21:30–31) By utilizing these multiple surfaces (the rear surface of the back rest, the first and second surfaces, and the top surface of the ottoman), the invention "provides an extended bed surface for the passenger." (*Id.*, col. 21:32–36)

Figure 5 of the patent is described in similar terms, with the various surfaces that make up the bed being described as "substantially coplanar" and "substantially continuous" with one another, and being "sufficiently strong to support at least part of the weight of a passenger." (*Id.*, col. 24:64–25:5; col. 32:40–47) Thus, the extended, "substantially flat bed surface" illustrated by Figure 5 is formed through the use of multiple surfaces that are oriented "substantially

continuously and substantially co-planarly" with one another. (*Id.*, col. 33:12–17) A similar description also applies to Figures 19 and 30B. (*See id.*, col. 36:32–33 (noting that in the "bed mode," a "substantially flat and continuous sleeping surface" is provided by the multiple surfaces); *id.*, col. 43:7–8 (noting that when the seat is converted, the different portions that make up the bed are "substantially co-planar and form a continuous surface")) Finally, the components of the bed shown in Figure 33C are likewise described as being disposed "contiguously . . . to form a generally flat, substantially continuous surface." (*Id.*, col. 46:54–56)

The '861 patent also discusses the "substantially flat" concept in the context of criticizing prior art systems. One such system included a seat back that was tipped into a fully reclined position to create a bed. The patentee characterized that bed as "not ideal, because the foam or padding on the seat is generally sculptured for use as a seat, whereas for a bed, it is desirable to have a *substantially flat surface*." (*Id.*, col. 2:14–18 (emphasis added)) The patentee repeated this criticism when describing a prior art seating system in which "[t]he primary seat can be reclined such that as the back-rest is reclined, the seat-pan moves forwardly to meet [a] secondary unit to form a continuous . . . sleeping surface." (*Id.*, col. 3:1–5) Yet again, the patentee emphasized that despite the continuity among the components of the bed, this system "also suffers from the disadvantage that the seat cushioning is not specifically designed for use as a bed surface, but is contoured for use principally as a seating surface." (*Id.*, col. 3:15–18; *accord id.*, col. 10:7–12 (contrasting the "contoured first surface adapted to form a back-rest" with the other face of the back-rest element, which has a "layer of foam padding having a substantially flat . . . surface")) Thus, a critical problem with prior art airline seat-to-bed systems was that the seat contouring was ill-suited as a surface on which to recline completely, i.e., in the

"second sleeping position" described in the '861 claims. The creation of a "substantially flat bed," as described in the claims, was clearly meant to remedy this problem.

With the benefit of this guidance from the extensive intrinsic record, the Court can now turn to the parties' proposals. It is clear that the parties have a fundamental dispute as to the meaning of the term "substantially flat bed"—at least as to what it means for the bed in question to be "substantially flat." As such, I am required to resolve that dispute by construing the claim term at issue. *O2 Micro*, 521 F.3d at 1362.

Defendant's proposed definition requires that the "bed" be "disposed coplanarly and contiguously." However, the specification never describes the "substantially flat bed" as composed of *merely* "coplanar" or "contiguous" surfaces. Instead, the '861 patent always includes a qualifying phrase, such as "substantially" or "generally," when referring to such surfaces. (*See, e.g., id.*, col. 9:37; col. 10:51–52; col. 46:35–36) This description is consistent with that of the claim language, which does not claim an entirely or perfectly flat bed; instead, it refers only to a bed that is "substantially" so. Plaintiff argues, therefore, that Defendant's proposed construction would wrongly read the qualifying term "substantially" completely out of the claims. (D.I. 53 at 8; Tr. at 40)

The Court agrees, and finds that such a result would be at odds with the established law. *See, e.g., Circle R, Inc. v. Trail King Indus., Inc.*, 21 F. App'x 894, 898 (Fed. Cir. 2001) (reversing a district court decision that construed the phrase "substantially flat" to mean "entirely flat"); *York Prods., Inc. v. Cent. Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1572–73 (Fed. Cir. 1996) (construing "substantially the entire height" as "nearly the entire height"). The adverb "substantially" is typically defined to mean "to a great or significant extent," or "for the most part;

essentially."<sup>4</sup> The adjective "flat" is typically defined to mean "smooth and even; without marked lumps to indentations" or "having a broad level surface."<sup>5</sup> These ordinary definitions are generally consistent with the patent specification discussed at length above, which depicts and describes seat-to-bed systems with constituent surfaces that are close to, though not entirely, flat. (See '861 patent, col. 9–10; col. 13 (describing multiple embodiments with "substantially flat" passenger-bearing surfaces that are composed of "substantially coplanar[] and contiguous" surfaces)<sup>6</sup> As such, although the patent specification and claims lead to the inescapable conclusion that the claimed "substantially flat bed" must consist of surfaces that are flat *to a great extent*, those surfaces need not be precisely so. (See, e.g., *id.*, col. 33:12–17; 36:32–33; 43:7–8; 46:54–56)

Plaintiff also objects that a definition of "substantially flat bed" that includes the concepts of "coplanarity and contiguousness"—even if it also includes the qualifying language that Defendant's proposal omits—would impermissibly import limitations from the specification into the claims.<sup>7</sup> (D.I. 65 at 5–6) As previously noted, the claim construction analysis requires the

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<sup>4</sup> See <http://oxforddictionaries.com/definition/substantially>; <http://www.wordreference.com/definition/substantially>; see also <http://www.merriam-webster.com/dictionary/substantially> ("being largely but not wholly that which is specified"). Cf. *Circle R*, 21 F. App'x at 898 (citing similar definitions for "substantially"); *York Prods.*, 99 F.3d at 1572–73 (same).

<sup>5</sup> See *Concise Oxford American Dictionary* at 342 (2006).

<sup>6</sup> At the *Markman* hearing, Plaintiff's counsel agreed that the patent used the term "substantially" in a similar way to the term's ordinary meaning—i.e., "to a large extent," "[t]he majority of," "primarily," and "mostly, not insignificantly." (Tr. at 49)

<sup>7</sup> In addition, Plaintiff objects that introducing the mathematical concepts of coplanarity and contiguousness is likely to be confusing to a jury. (D.I. 65 at 4) The Court finds this concern to be overstated, especially in light of the fact that the patentee repeatedly utilized



Court to read the claims in light of the specification, but also to resist using that specification to alter the explicit language of claims. *See, e.g., Phillips*, 415 F.3d at 1323. While this principle is easy to recite, it is sometimes challenging to apply. *See id.* (noting that "the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice").

In this case, the concepts of coplanarity and contiguousness are necessary to reflect the context of the claimed invention. Plaintiff asserts that the disputed phrase consists of just "three simple words," and that importing additional language about the relationship between the constituent surfaces of the claimed bed is akin to rewriting the claims. (D.I. 65 at 4) The Court has no doubt that, in the abstract, a jury could understand what a substantially flat bed is—i.e., a bed that is largely, but not entirely, level and even. But such a definition would be completely divorced from the context of the patent, which is directed to a very particular kind of bed, formed from an airline seat in combination with other surfaces, resulting in a space that is available for a passenger to lie in a prone position. If the specification is to play any role in the claim construction process, it must be to take the words of a claim—many of which have a familiar meaning in the abstract—and ground them in the particular context of the invention. *See, e.g., Tyco Healthcare Retail Servs. AG v. Kimberly-Clark Corp.*, Civil Action No. 06–3762, 2007 WL 2155571, at \*4 n.7 (E.D. Pa. July 24, 2007) (noting that "the Federal Circuit has warned . . . that claim construction should focus not on a term's abstract meaning but rather [on] its use in the patent") (citing cases); *see also Phillips*, 415 F.3d at 1321 (same).

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the concepts of coplanarity and contiguousness to describe the nature of the claimed bed. In any event, the Court finds that both of these concepts must be included in the Court's construction in order to accurately reflect the nature of the claimed invention.

Indeed, as noted above, the specification speaks, time and again, regarding the nature of the claimed "bed." Contrary to Plaintiff's suggestion, a construction that incorporates the patent's repeatedly emphasized concepts of coplanarity and contiguousness is not "cherry-picked from an embodiment related to Figure 19." (D.I. 53 at 8) Instead, it reflects the universal context of the claims, which includes each of the relevant figures illustrating the claimed bed, and the accompanying written description. (*See, e.g.*, FIGS. 2, 5, 20C, 21B, 30B, 33C; Abstract, col. 4:65–67, 9:16–39, 10:50–52, 24:27–36) Under these circumstances, the Court must construe the claimed bed as being comprised of surfaces that are, to a great extent, coplanar and contiguous.

As a final matter, Defendant's proposed definition also requires the claimed bed to be "for sleeping." (D.I. 54 at 9) The Court finds no suggestion in the patent that the claimed bed be "exclusively" for sleeping. As anyone familiar with airline seats can attest, sleeping is only one activity that may be performed in an airline bed; listening to music, reading, or resting are just a few of the activities that can also occur there. So long as the bed is capable of supporting a passenger, then the patent context is properly reflected. At oral argument, Defendant conceded that this addition was not necessary to accurately construe the claim term. (Tr. at 45–46)

In light of the record evidence discussed above, the Court construes the phrase "substantially flat bed" to mean "one or more surfaces capable of supporting a passenger that are, to a great extent, disposed coplanarly and contiguously to form a bed."

### **C. "having"**

In its briefs, Defendant asked the Court to construe the term "having" to mean "possessing." (D.I. 54 at 11) Plaintiff argued that "[t]he plain English word 'having' does not require construction" (D.I. 53 at 10).

The term "having" appears nine times in each of claims 1 and 13 of the '861 patent. Each time this term is used, it connotes an element or aspect of a larger whole. (*See, e.g.*, '861 patent, col. 48:15–16 ("an airplane *having* a longitudinal airplane axis"); *id.*, col. 48:42–43 ("each of the plurality of seats *having* a substantially horizontal surface") (emphases added)) Indeed, the use of the term "having" to connote the inclusion of certain recited elements as components in a larger whole is underscored by language in claim 1, which describes the "seat" as "*having* a front end and a back end and *further including* a foot-rest at the front end of the seat." ('861 patent, col. 48:20–22 (emphasis added)) In other words, the concepts of "having" and "including" are interchangeable.

At the *Markman* hearing, the Court proposed that the term "having" be construed to mean "including." (Tr. at 54) Counsel for both parties agreed with this proposal, (*id.* at 54–56), and therefore the Court construes the term "having" to mean "including."

#### **D. "behind"**

Defendant proposes that the term "behind" be construed to mean "to the rear of the plane formed by the back of the seat." (D.I. 54 at 12) Plaintiff opposes this construction, arguing that the plain and ordinary meaning of this commonly understood word should govern. (D.I. 53 at 10–11)

The term "behind" appears twice in claims 1 and 13, and also appears in multiple dependent claims. In most of those instances, the term is used to describe the position of a "substantially horizontal surface," as in, for example, "each of the plurality of seats having a substantially horizontal surface positioned behind the back end of the seat." ('861 patent, col. 48:42–43) Claims 1 and 13 also use the term to describe the position of a different element:

"each of the plurality of seats having an associated rear wall substantially parallel to the aisle and being positioned behind its associated seat." (*Id.*, col. 48:33–35) Thus, the term "behind" relates to the position of two elements recited in the claims: (1) the substantially horizontal surface; and (2) the rear wall.

At the *Markman* hearing, the Court inquired as to whether there is really any dispute regarding the location of these elements, and thus whether there is any fundamental controversy that defining the term "behind" would resolve. (Tr. at 60, 65) Defendant's counsel replied that certain structures that are offset to the side of the seat (i.e., not within the column of three-dimensional space bounded by the edges of the seat-back and directly to the rear of the seat), should be considered to be "behind" the seat—but suggested that Plaintiff may disagree. (*Id.* at 60) Plaintiff's counsel, to the contrary, appeared to agree that such structures would also be "behind" the seat. (*Id.* at 65) However, Plaintiff's counsel suggested that a related dispute may later arise as to the meaning of this term. (*Id.* at 66) In an abundance of caution, the Court will therefore construe the term "behind."

For context, the Court looks to the specification, which uses the term "behind" several times. Most of these instances refer to elements that are within the three-dimensional space to the rear of the seat that is bounded by the seat-back edges. (*See, e.g.*, '861 patent, col. 46:32–43) But that is not the only way that the term "behind" is used. Figure 1 is described as follows:

[T]wo cabins **20**, **21** are shown in the front portion of the fuselage **12**, a first cabin **20** being located within the nose portion **15** of the aircraft, and a second cabin **21** being disposed *behind* the first cabin **20** . . . .

(*Id.*, col. 18:42–47 (emphasis added)) As Figure 1 makes clear, the second cabin, which is wider

(thus accommodating more seating systems than the first cabin), is still described as being "behind" the first cabin. As such, it appears that the patentee had no intention of limiting the description of "behind" to only those objects located directly behind a given reference point. Instead, the second cabin is to the rear of the geometric plane (i.e., the imaginary two dimensional space that extends infinitely along the horizontal and vertical axes) created by the cross-section of the first cabin. As such, Defendant's proposed construction is consistent with the broader connotations of the term "behind" discussed in the patent.

Plaintiff's principal objection to Defendant's construction is that "it is confusing." (Tr. at 63) In particular, Plaintiff argues that this proposed construction "is likely to cause confusion amongst jurors who might interpret 'to the rear of the plane' to mean 'to the rear of the airplane.'" (D.I. 65 at 7) Moreover, Plaintiff was concerned that Defendant's construction did not account for whether the "plane" was determined "when the seat is upright or lying down." (Tr. at 63) However, in its reply brief, Plaintiff itself suggests how to mitigate any such potential confusion—by specifying that the "plane" in question here is a geometric one, and that the seat should be in its "upright" (or sitting) position when orienting that geometric plane. (D.I. 65 at 7)

In accordance with the foregoing discussion, the Court construes the term "behind" to mean "to the rear of the geometric plane formed by the rear surface of the seat back-rest when the seat is in the first sitting position."

**E. "substantially horizontal surface"**

Defendant proposes that the phrase "substantially horizontal surface" be construed to mean "a planar passenger-supporting surface disposed parallel to the floor of the aircraft." (D.I. 54 at 12) As with all other terms, Plaintiff again argues that the "plain and ordinary meaning"

should govern this term, such that "no construction [is] necessary." (D.I. 53 at 12) Despite Plaintiff's position, it is clear that, as discussed below, the parties have a fundamental dispute as to the scope of this claim that I am required to resolve. *O2 Micro*, 521 F.3d at 1362. To construe this phrase, the Court must address two disputed issues: (1) what is meant by "substantially horizontal"; and (2) whether the surface should be defined as "passenger-supporting."

As to the parties' first dispute, the claims themselves offer limited context for what is meant by "substantially horizontal." The phrase "substantially horizontal surface" appears in claims 1, 9, and 13. Claim 1 provides that each of the seats in the claimed system must have "a substantially horizontal surface" that (1) is positioned behind the back end of the seat; (2) is at a fixed height above the floor; (3) extends from the wall-screen corner towards the back end of the seat; and is (4) about the same height as an upper sleeping surface of the substantially flat bed; (5) in order to provide usable space to a passenger when in the sleeping position. ('861 patent, col. 48:42–46, 54–57) In claim 9, the "substantially horizontal surface" is further described as being "generally triangular or trapezoidal shaped." (*Id.*, col. 49:11–13) The claims of the '861 patent also describe a "space" located to the rear of the back end of the seat when it is in the sitting position, such that the "substantially flat bed is formed with . . . [a] second bed end that extends into the space." (*Id.*, col. 48:47–49) The substantially horizontal surface, which is the only element of the claimed seating system described as being in the claimed "space," thus extends the bed-space available for a passenger to use when that passenger is in the sleeping position. However, this description does not resolve the question of whether, as Defendant proposes, "substantially horizontal" means "parallel to the floor of the aircraft."

The specification does not explicitly define what is meant by "substantially horizontal

surface." This phrase does not appear verbatim in the specification, and none of the elements in any of the thirty-nine figures is explicitly identified as a "substantially horizontal surface."

However, the specification makes clear that a surface that is "substantially horizontal" should be slightly angled to compensate for the typical position of an airplane during flight:

The supporting structure **142** of the seat assembly **140** is configured such that, in flight, with the floor surface **130** at an angle of about 1–3° to the horizontal, the bed surface provided by the seat assembly of the present invention is disposed substantially horizontally relative to Earth. In other words, the seat assembly **140** of the present invention compensates for the slight incline of the aircraft in flight.

('861 patent, col. 33:18–24) Indeed, Figure 2 appears to show a seat that has been converted to a bed that is at a slightly downward angle. (*See id.*, Sheet 3) According to the patent, this downward pitch compensates for the slight angle at which planes typically cruise, resulting in a "substantially horizontal" surface available to a passenger when lying in a prone position.

At the *Markman* hearing, counsel for both parties agreed that the surface in question would be "substantially horizontal" if it was angled within three degrees of the aircraft floor. (*See Tr.* at 70, 74) In other words, while the patent specification describes the bed surface as being disposed substantially horizontally "relative to Earth," the aircraft floor is an analogous and more appropriate point of reference. This is true not only because the "substantially horizontal surface" is described in the claims as being "at a fixed height above a floor," but also because as an airplane rises and descends, the surface's relationship to the aircraft floor will be fixed and steady, while its relationship to Earth could vary. (*See* '861 patent, col. 48:44–45; *Tr.* at 70–71) The Court agrees that the claimed "surface" is "substantially horizontal" if it is positioned at an angle of not greater than three degrees with respect to the aircraft floor.

As to the parties' second dispute, both the claims and the specification confirm that the "substantially horizontal surface" must be capable of supporting at least part of the weight of a passenger. As discussed above, the description of the "substantially horizontal surface" in the claims specifies that this surface must be available as part of the bed-space (i.e., as "provid[ing] usable space to a passenger when in the sleeping position"). As such, that surface must be capable of supporting some part of the reclining passenger (such as the passenger's head or feet).

The specification, while not explicitly defining a "substantially horizontal surface" as passenger-supporting, does disclose that feature for a number of surfaces that fit the description of the claims, i.e., a surface located behind the back end of the seat that provides usable space to a passenger when in the sleeping position. By employing a substantially horizontal surface behind the forwardly reclinable seat back, the seat-to-bed conversion is able to maximize passenger space in a minimum of cabin space. (*See, e.g.*, '861 patent, col. 21:55–56 (noting that "the space . . . behind each seat . . . is thus used to extend the length of the bed surface . . . rearwardly of the seat")) For instance, the patent discloses that "[t]o the rear of [the space behind the seat], [a] supporting structure **42** defines a first, substantially flat, generally triangular surface **47** which, when the seat unit **40** is installed in a cabin . . . extends generally parallel[] to the floor . . . but at a slight incline thereto." (*Id.*, col. 19:64–20:1) This surface "is sufficiently strong to support at least part of the weight of a passenger." (*Id.*, col. 20:8–9 (describing element **47** in FIGS. 1–2A)) A similar horizontal surface is shown in Figures 3–5 as element **147**. As with element **47**, this surface is likewise described as "sufficiently strong to support at least part of the weight of a passenger." (*Id.*, col. 25:4–5) This description contrasts with that of the "ottoman"; rather than being described as supporting only "at least part of the weight of a passenger," the



ottoman is "sufficiently strong to support the [entire] weight of a passenger and can [thus] be used as an auxiliary seat." (*Id.*, col. 25:11–13)

Elsewhere in the specification, this surface is referred to as a "rear extension surface," which is located (consistent with the language of claims 1 and 13) behind the seat back. (*Id.*, col. 13:41–58) This rear extension surface "forms part of the bed surface in the bed configuration." (*Id.*, col. 13:51–52) The specification repeats this same description a fourth time when discussing upper surface **911** of passenger supporting member **912**, as depicted in Figures 29A–30B. (*See id.*, col. 43:5–12 (noting that this surface is used to provide an elongated sleeping space for passengers))

The area located behind the seat was also highlighted during prosecution of the application that ultimately became the '861 patent. In overcoming a rejection based upon U.S. Patent No. 6,059,364 ("Dryburgh"), the patent applicant distinguished Dryburgh on the basis that "[t]here is no space defined to the rear of the Dryburgh [seat] back portion 42 when it is in the seat position such that a substantially flat bed extends rearwardly into that space to extend the substantially flat bed." (D.I. 43, ex. C at 18–19) Although the patent applicant's emphasis was not on the surfaces that occupy this space, the importance of this space in accommodating an improved, extended bed does appear to have been critical to obtaining issuance of the '861 patent. While that extended bed-space was not exclusively designed to support the weight of a passenger, that capability goes to the heart of the invention, which improves on prior art systems by providing a bed that can be extended rearwardly through the use of an auxiliary surface.

At the *Markman* hearing, counsel for Plaintiff argued that after the pending claims were rejected in light of Dryburgh, they were revised to "remove[] the requirement that the bed be

extended by the surface behind it." (Tr. at 76) Plaintiff therefore argues that because the claims were so revised, "the substantially horizontal surface doesn't necessarily need to be passenger supporting because the bed can extend into the space as opposed to the space extending the bed itself." (*Id.* at 77)

However, based on the foregoing discussion, the Court finds that omitting a reference to passenger support would remove any "tether" between the claim language and the specification. *See, e.g., Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1304–05 (Fed. Cir. 2011) (reversing a district court construction for the term "body" that did not limit this element to a one-piece structure, and holding that, although the claim language itself did not restrict a "body" to a particular number of pieces, the term had to be construed to mean a "one-piece body" in order "to tether the claims to what the specifications indicate the inventor actually invented"). Plaintiff is correct that there is no explicit reference to passenger support in the issued claims (as opposed to those at issue in the Dryburgh rejection). But, as discussed above, any fair reading of the specification reveals that "the substantially horizontal surface" (and the other portions of the claimed bed) must be able to support at least part of a passenger in the sleeping position. The Court's construction below thus reflects (1) that the surface behind the seat may have uses other than passenger support; and that (2) partial passenger support is nonetheless a critical characteristic of the claimed surface.

In light of the intrinsic and extrinsic record, the Court construes the phrase "substantially horizontal surface" to mean "a surface, capable of supporting at least part of the weight of a passenger, that is positioned with respect to the aircraft floor at an angle of not greater than three degrees."

**F. "upper sleeping surface"**

Defendant proposes that the phrase "upper sleeping surface" be construed to mean "the surface of the substantially flat bed that is adapted to contact and support a sleeping passenger." (D.I. 54 at 14) Plaintiff argues in response that the Court should not construe this phrase, because there is "no substantive dispute in the case that turns on" its construction, and that the "ordinary English meaning" of this phrase is consistent with the claims, specification, and prosecution history. (D.I. 53 at 15) Plaintiff does not identify the purported "ordinary English meaning."

The phrase "upper sleeping surface" appears in claims 1 and 13; it does not appear in the specification. However, the specification frequently uses the terms "upper surface" or "upper surfaces" to refer to surfaces that face up towards the top of the cabin, as opposed to facing down towards the cabin floor. For instance, the specification notes that:

[T]he seat assembly in accordance with the present invention allows a continuous bed surface to be formed having a length of at least 78–80 inches. In some cases, the bed formed by the *upper surfaces* 911, 918, 921, 929 of the passenger supporting members 912, 914, infill member 915 and rear surface 921 of the back-rest element 922 may have a length in excess of 85 inches (2.16 meters).

('861 patent, col. 43:16–18 (emphasis added); *accord id.*, col. 40:1–6)

At the *Markman* hearing, counsel for Defendant suggested that there may be some dispute as to what constitutes this "upper" surface because of arguments made by Plaintiff in related litigation, and thus asserted that the Court should make clear that this surface is "the top of the bed." (Tr. at 82) Counsel for Plaintiff conceded that this limitation refers to "the top surface of the substantially flat bed," but expressed concern that Defendant may argue that the "upper

sleeping surface" would "only refer to the portions of the sleeping surface that are actually in contact [with a passenger] as opposed to [those that] could be in contact [with a passenger]." (*Id.* at 85) Although the Court finds the prospect of such an argument to be unlikely, it believes that any such concerns are allayed by Defendant's proposal that the surface merely be "adapted" for passenger support and contact. In other words, the concern about such confusion might be greater if the proposed construction was simply for a surface that "contacts and supports a passenger," but that is not the definition that Defendant has proposed. If the top surface of the bed is to perform any function, it must relate to passenger contact and support. Those concepts should therefore be reflected in the Court's construction.

As a final matter, although Defendant's construction is thus generally consistent with the specification, the claimed "upper surface" is not adapted only to support a "sleeping" passenger. Rather, it is adapted to support any passenger who is reclining in the "second sleeping position." It appears from the claim language that the term "second sleeping position" (as well as the term "upper sleeping surface") is used not to indicate that the passenger may only *sleep* in that position (or on that surface), but instead simply to contrast that position (and surface) from those that are utilized when the seat is in the first "sitting position."

For the foregoing reasons, the Court will construe the phrase "upper sleeping surface" to mean the "surface of the substantially flat bed that is adapted to contact and support a passenger in the second sleeping position."

**G. "about the same height"**

Defendant proposes that the phrase "about the same height" be construed to mean "coplanar with the upper sleeping surface of the substantially flat bed." (D.I. 54 at 15) Plaintiff

argues in response that this phrase, like all others, is simply a combination of well-known English words that need not be construed. (D.I. 53 at 14) As discussed below, the parties have a fundamental dispute as to the meaning of the phrase "about the same height." As such, I am required to construe the claim term at issue. *O2 Micro*, 521 F.3d at 1362.

The phrase "about the same height" appears a single time each in claim 1 and claim 13: "the substantially horizontal surface being *about the same height* as an upper sleeping surface of the substantially flat bed to provide usable space to a passenger when in the sleeping position." ('861 patent, col. 48:54–57; 50:10–14 (emphasis added)) The claims thus refer to two different components of the seating system that must be roughly equal in height. The term "height" also appears elsewhere in the claims, and is used to describe the "substantially horizontal surface being at a fixed *height above a floor*." (*Id.*, col. 48:44–45 (emphasis added))

The specification does not use the phrase "about the same height" or "same height" to describe the spatial relationship between any elements; this language appears only in claims 1 and 13. However, the term "about" appears more than a dozen times, and most often connotes an approximate numerical value or range. (*See, e.g.*, '861 patent, col. 34:22 (referring to an "angle of about 49°"); *id.*, col. 38:28 (referring to "an overall bed length of up to about 7 ft")) In like fashion, the specification also refers to the "height" of various elements of the seating system as being a particular vertical length above the floor of the aircraft. (*See, e.g., id.*, col. 20:19–20 (referring to surfaces that are a "predetermined height off the floor . . . of the cabin"); *id.*, col. 25:19–21 (describing rotary bearings as being "disposed at a height above the floor surface . . . approximately mid-way between the floor surface . . . and the first and second upper surfaces"); *id.*, col. 35:60–61 (describing a shelf of a foot-box being "positioned at substantially the same

vertical level as the under-seat-pan")) Indeed, at the *Markman* hearing, counsel for Plaintiff noted that "height [in this context] is measured from the floor." (Tr. at 111)

The reference to the two components of the claimed system being "about" the same height is similar to the requirement that certain surfaces be "substantially" flat or horizontal; the use of this qualifying term appears calculated to convey a characteristic that is somewhat less than entirely present. *See, e.g., Ecolab, Inc. v. Envirochem, Inc.*, 264 F.3d 1358, 1367 (Fed. Cir. 2001) (noting that "like the term 'about,' the term 'substantially' is a descriptive term commonly used in patent claims to 'avoid a strict numerical boundary to the specified parameter'" (internal citations omitted)). This is consistent with the ordinary meaning of the term about, which is defined in this context to mean "approximately." *See, e.g., Concise Oxford American Dictionary*, at 3 (2006).

Although the Court included the concept of "coplanarity" in its construction for "substantially flat bed," this concept seems less well-suited to a proper construction of the phrase at issue here. While, as discussed above, the "substantially flat bed," is invariably described in the specification as being comprised of substantially coplanar and contiguous surfaces, no such context or description is ever used for the phrase "about the same height." Indeed, in its responsive brief Plaintiff demonstrates how "[t]wo surfaces that are coplanar are parallel along the same plane . . . may or may not be [about] the same height." (D.I. 65 at 10–11) A definition that uses coplanarity as a proxy for "about the same height," particularly in light of the way that "height" is described in the claims and the specification, is therefore not appropriate.

For the foregoing reasons, the Court construes this phrase to mean "approximately the same vertical length above the aircraft floor."

#### H. "usable space to a passenger"

Defendant asks the Court to construe the phrase "usable space to a passenger" to mean "a surface adapted to support a passenger for sleeping." (D.I. 54 at 17) Plaintiff counters that this phrase "is written in plain English and does not require construction." (D.I. 53 at 16) As is made clear below, the meaning of this term is clearly in dispute. I am therefore required to resolve that dispute by construing the claim term at issue. *O2 Micro*, 521 F.3d at 1362.

The phrase "usable space to a passenger" appears once in each of claims 1 and 13, which state that the "substantially horizontal surface [is] about the same height as an upper sleeping surface of the substantially flat bed *to provide usable space to a passenger* when in the sleeping position." ('861 patent, col. 48:54–58 (emphasis added)) It does not elsewhere appear in the specification. The usable space is "provid[ed]" by the "substantially horizontal surface," which, as discussed above, is located to the rear of the seat-back, and is capable of supporting at least part of the weight of a passenger. (*Id.*, col. 48:55–57)

The claim language indicates, however, that the "usable space to a passenger" is only one type of "space" discussed in the patent. For example, claim 1 describes how each seat has a "space that is defined by a portion of [the associated] rear wall, a portion of [the] associated screen and the back end of the seat when in the sitting position." (*Id.*, col. 48:47–49) This type of "space" need not be used exclusively for sleeping; at multiple points the specification notes that the space "behind the back-rest element can be used for storing a duvet and/or blanket and one or more pillows." (*Id.*, col. 13:65–14:1; *accord id.*, col. 22:53–23:1) Plaintiff's counsel highlighted this latter type of space at the *Markman* hearing, noting that "[t]he patent specification clearly discloses that space behind the seat can be used for something other than

sleeping." (Tr. at 98) By suggesting that the usable space provided by the substantially horizontal surface needs no further construction, Plaintiff is essentially arguing that this phrase be construed simply to mean "space available for a passenger to use."

However, the Court agrees with Defendant that, in the particular context of claims 1 and 13, the "usable space" in question does not refer to a broader area that is generally made available for use (i.e., for storage) when the substantially flat bed is in the sleeping position. Instead, the claims refer particularly to the space *on or consisting of* the substantially horizontal surface, which can be utilized by the passenger when in the sleeping position. (Tr. at 92–93 (Defendant's counsel agreeing that, as to this claim term, the "surface is the space" and that the space at issue is "bed space" not "air space")) As counsel for Defendant pointed out at the *Markman* hearing, there are a number of different spaces that are available for a passenger to use, such as an overhead bin, or the aisle, or the floor near the seat. (*Id.* at 93–94) Yet the type of "usable space" that is at issue in claims 1 and 13 is not so broadly defined. To the contrary, the claims indicate that it is that kind of space that is created when the "*substantially horizontal surface* [is positioned such that it is] about the same height as [the] upper sleeping surface"—the space making up the surface itself. ('861 patent, col. 48:54–56 (emphasis added))

That understanding of "space" is also consistent with the area that a passenger in the "sleeping position" would most wish to "use." As has been discussed repeatedly herein, it is this type of "usable space" that is truly at the heart of the claimed invention. In describing the problems with the prior art systems, the patentee was not concerned about a lack of space for storing bedding or personal items. Instead, the patentee was focused on creating a space that would "facilitate sleeping" for passengers during a flight by extending the area available to



support a passenger when in the prone or "sleeping" position. (*See, e.g.*, '861 patent, col. 1:64)

For the foregoing reasons, the Court construes this phrase to mean "an area adapted to support a passenger in the sleeping position."

#### **I. "fixed angle"**

In contrast to the other disputed terms, Defendant does not offer a construction for the phrase "fixed angle." Instead, Defendant argues that this phrase is indefinite.

Section 112 of the Patent Act requires that every patent must "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, ¶ 2. This language gives rise to what is generally known as the "definiteness" requirement; if a patent fails to satisfy this requirement, then it is invalid as indefinite. *See, e.g., Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1371 (Fed. Cir. 2008). A claim cannot be found indefinite unless it "is insolubly ambiguous, and no narrowing construction can properly be adopted." *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1319 (Fed. Cir. 2008) (internal citations and quotation marks omitted). "Indefiniteness is a matter of claim construction, and the same principles that generally govern claim construction are applicable to determining whether allegedly indefinite claim language is subject to construction." *Id.* Thus, "[i]f the meaning of [a] claim [limitation] is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, [then] the claim [is] sufficiently clear to avoid invalidity on indefiniteness grounds." *Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001) (citations omitted).

"[B]ecause claim construction frequently poses difficult questions over which reasonable minds may disagree, proof of indefiniteness must meet an exacting standard." *Haemonetics*

*Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 783 (Fed. Cir. 2010) (internal citations and quotation marks omitted). As such, the burden is on the party asserting indefiniteness to "demonstrate by clear and convincing evidence that one of ordinary skill in the relevant art could not discern the boundaries of the claim based on the claim language, the specification, the prosecution history, and the knowledge in the relevant art." *Id.* The question for the Court is therefore whether Defendant has proven by clear and convincing evidence that the phrase "fixed angle"—or more precisely, the term "angle"—is insolubly ambiguous such that the term is not amenable to construction.

Claims 1 and 13 require that "each of the plurality of seats be[] positioned with the seat axis at a fixed angle of between 30 and 60 degrees with respect to the longitudinal column axis." ('861 patent, col. 48:28–30; col. 49:37–39 (emphasis added)) This language provides a reference point for measuring the angle in question—i.e., the longitudinal column axis, which is parallel to the airplane aisle. (*See id.*, FIG. 1; col. 19:27–30, col. 21:38–46)

Defendant asserts that the term "fixed angle" is ambiguous because "the claim does not indicate how the angle is measured." (D.I. 54 at 19) In particular, Defendant argues that this is "because the intersection of two lines creates not one angle, but two possible angles (one acute and one obtuse), rendering the claims indefinite under 35 U.S.C. § 112, ¶ 2." (*Id.*) Plaintiff asserts that this phrase is not indefinite, because "[t]he claims plainly recite 'a fixed angle of between 30 and 60 degrees with respect to the longitudinal column axis.'" (D.I. 53 at 9)

Defendant suggests that a person of ordinary skill in the art would find it "impossible to determine whether a given seating orientation falls within the[se] claims." (D.I. 66 at 10)

However, Defendant cites no evidence or testimony from a person of ordinary skill in the art, and

cites no case where the term "angle" or "fixed angle" was held to be indefinite in this or any other context. Moreover, Defendant's argument appears to be premised on the notion that a person of skill in the art would be confused by the concept of supplementary angles (i.e., whereby an acute angle could also be expressed as a corresponding obtuse angle, such that the two angles sum to 180 degrees).

The Court is not convinced that any such confusion would arise, particularly given that the specification clearly describes (in a manner consistent with the claim language) how to measure the particular angle at issue. Figure 17 illustrates the relationship between the longitudinal column axis and the longitudinal seat axis (which extends from the front to the back of the seat), where each axis is identified by the dashed lines "B-B" and "C-C," respectively. ('861 patent, col. 34:16–21) The specification then makes clear that in that illustration, the seat axis "subtends an angle of about 49° to the notional column axis B-B." (*Id.*, col. 34:21–23) Although the patentee could have just as easily defined this angle in terms of its supplement (i.e., 131°, the angle depicted in blue on page 10 of Defendant's Responsive Brief), that is not how a person of skill in the art should measure the angle, according to the '861 patent.<sup>8</sup>

As the foregoing discussion indicates, the "fixed angle" required by claims 1 and 13 is not "insolubly ambiguous." Moreover, the claim language itself provides all the guidance necessary to measure and define this angle, such that no additional construction or definition is required.

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<sup>8</sup> Put another way, the patent teaches that if a seat is positioned such that the two axes in question form an acute angle between 30 and 60 degrees, then the position of the seat would fall within the scope of the claims. If that type of acute angle was not formed by the intersection of these axes, then the seat's positioning would be outside the claimed scope.

#### IV. CONCLUSION

For the foregoing reasons, I recommend that the Court adopt the following constructions:


1. "substantially flat bed" means "one or more surfaces capable of supporting a passenger that are, to a great extent, disposed coplanarly and contiguously to form a bed"
2. "having" means "including"
3. "behind" means "to the rear of the geometric plane formed by the rear surface of the seat back-rest when the seat is in the first sitting position"
4. "substantially horizontal surface" means "a surface, capable of supporting at least part of the weight of a passenger, that is positioned with respect to the aircraft floor at an angle of not greater than three degrees"
5. "upper sleeping surface" means the "surface of the substantially flat bed that is adapted to contact and support a passenger in the second sleeping position"
6. "about the same height" means "approximately the same vertical length above the aircraft floor"
7. "usable space for a passenger" means "an area adapted to support a passenger in the sleeping position"

This Report and Recommendation is filed pursuant to 28 U.S.C. § 636(b)(1)(B), Fed. R. Civ. P. 72(b)(1), and D. Del. LR 72.1. The parties may serve and file specific written objections within fourteen (14) days after being served with a copy of this Report and Recommendation. Fed. R. Civ. P. 72(b)(2). The failure of a party to object to legal conclusions may result in the loss of the right to de novo review in the district court. *See Henderson v. Carlson*, 812 F.2d 874,

878–79 (3d Cir. 1987); *Sincavage v. Barnhart*, 171 F. App'x 924, 925 n.1 (3d Cir. 2006).

The parties are directed to the Court's Standing Order In Non-Pro Se Matters For Objections Filed Under Fed. R. Civ. P. 72, dated November 16, 2009, a copy of which is available on the Court's website (<http://www.ded.uscourts.gov>).

Dated: April 27, 2012

  
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Christopher J. Burke  
United States Magistrate Judge