

# United States Court of Appeals for the Federal Circuit

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**LIBERTY AMMUNITION, INC.,**  
*Plaintiff-Cross-Appellant*

v.

**UNITED STATES,**  
*Defendant-Appellant*

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2015-5057, 2015-5061

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Appeals from the United States Court of Federal  
Claims in No. 1:11-cv-00084-CFL, Judge Charles F.  
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Decided: August 26, 2016

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Before PROST, *Chief Judge*, NEWMAN, and STOLL, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* STOLL.

Opinion concurring in part, dissenting in part filed by  
*Circuit Judge* NEWMAN.

STOLL, *Circuit Judge*.

The United States appeals the decision of the Court of Federal Claims that ammunition rounds used by the United States Army embody the claims of Liberty Ammunition, Inc.'s U.S. Patent No. 7,748,325 without authorization, violating 28 U.S.C. § 1498. The Government argues that the trial court erred in construing several claim terms and that, when these terms are construed correctly, the Army rounds do not embody the claimed invention. We agree with the Government that the trial court erred in two of its claim constructions because those constructions are unsupported by the intrinsic record. Because Liberty cannot prevail under the proper claim constructions, we reverse the decision of the trial court and hold that the Government does not practice the asserted claims of Liberty's patent in violation of § 1498.

Liberty cross-appeals the trial court's disposal of its breach of contract claim based on a non-disclosure agreement ("NDA") signed by the named inventor of the '325 patent and an Army official. The trial court denied this claim, holding that no enforceable contract ever formed between the parties. We affirm because we find no clear error in the trial court's factual determination that the Army official did not have authority to enter into an NDA on behalf of the Government.

## BACKGROUND

### I. *The '325 Patent*

Liberty is the assignee of the '325 patent, issued July 6, 2010, and “directed to a projectile structured to be discharged from a firearm and designed to overcome the disadvantages and problems associated with conventional firearm projectiles such as, but not limited to lead or steel jacketed projectiles.” '325 patent col. 2 ll. 34–38.

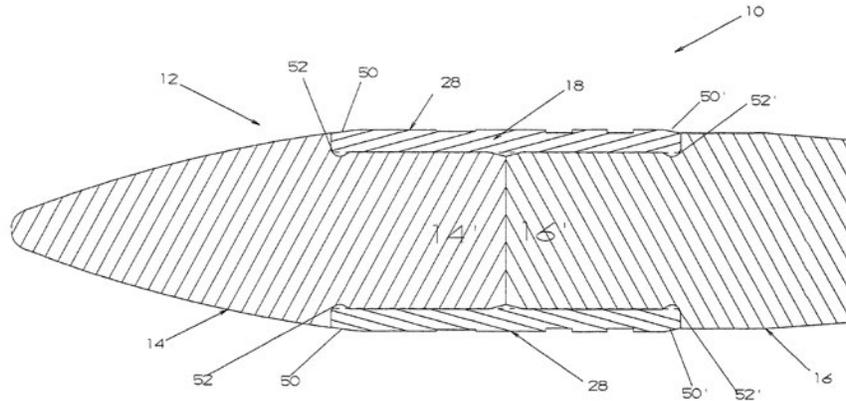
The '325 patent grew out of the U.S. military’s “Green Ammunition Program,” or “Green Bullet” initiative, of the 1990s through 2000s. '325 patent col. 1 ll. 15–30. This initiative developed in response to concerns that lead-based ammunition was polluting military training ranges throughout the United States. The program sought to eliminate lead from military ammunition, particularly the Army standard-issue 5.56 mm round,<sup>1</sup> the M855. Around the same time as the Green Bullet initiative, the Army began receiving reports from soldiers that two of its standard-issue lead-based rounds—the M855 and the M80—were not exacting the desired lethality in soft-tissue targets, such as humans or animals. Reports indicated that these bullets would cause “through-and-through” hits when striking at certain angles. Through-and-through hits are those in which a projectile completely passes through a soft-tissue target. When a projectile fails to lodge in a soft target’s tissue, incapacitation of the target is compromised. The '325 patent sought to address this problem with the conventional Army rounds in addi-

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<sup>1</sup> This opinion, consistent with the art, uses the term “projectile” to refer to what is commonly known as a bullet, without any casing. For a bullet provided with a ready-to-fire cartridge case, we reference the entire unit as a “round.”

tion to providing a lead-free design. *Id.* col. 2 ll. 12–19, col. 3 ll. 1–7, col. 5 ll. 9–30.

Figure 1 of the '325 patent, reproduced below, illustrates a preferred embodiment of the claimed projectile.



In this embodiment, an interface 18 “is disposed in interconnecting relation to both the nose portion 14 and the tail portion 16.” ’325 patent col. 4 ll. 63–64. The connection of nose 14 and tail 16 by the interface 18 can be fixed or removable, with either configuration allowing for separation of all three components when the projectile strikes certain targets, such as soft-tissue targets. *Id.* col. 5 ll. 9–30. This interface design “eliminates the use of lead and the provision of an outer jacket,” such as a traditional full metal jacket, which completely surrounds a projectile. *Id.* col. 2 ll. 39–40.

The ’325 patent specification describes that the invention’s design “significantly reduce[s] the area of contact of the projectile body with the rifling or interior surface of the barrel of the firearm,” *id.* col. 2 ll. 43–45, which means there is “a reduced contact area as compared to conventional projectiles,” *id.* col. 1 ll. 65–66. *See also id.* col. 2

ll. 4–6 (“[T]he design and structuring of a proposed projectile would result in a contact area thereon which would be significantly less than a traditional jacketed lead bullet.”). The reduction in contact area, the specification explains, “results in significantly reduced bore friction and heat buildup” and, thus, “barrel performance is improved during sustained fire of the firearm thereby increasing the barrel life and reducing the occurrence of fouling.” *Id.* col. 7 ll. 6–9.

At issue in this appeal are independent claims 1 and 32, which recite:

1. A projectile structured to be discharged from a firearm, said projectile comprising:

a body including a nose portion and a tail portion,

said body further including an interface portion disposed in interconnecting relation to said nose and tail portions, said interface portion structured to provide controlled rupturing of said interface portion responsive to said projectile striking a predetermined target,

said interface portion disposed and dimensioned to define a *reduced area of contact* of said body with the rifling of the firearm, said interface portion maintaining the nose portion and tail portion in synchronized rotation while being fixedly secured to one another by said interface portion whereby upon said projectile striking said predetermined target said interface portion ruptures thereby separating said nose and tail portions of said projectile.

32. A projectile structured to be discharged from a firearm, said projectile comprising:

a body including a nose portion and tail portion,

said body further including an interface portion disposed *intermediate opposite ends* of said body in interconnecting relation to said nose and tail portions, said interface portion structured to provide controlled rupturing of said interface portion responsive to said projectile striking a predetermined target, said interface portion maintaining said nose portion and tail portion in synchronized rotation while being fixedly secured to one another by said interface portion whereby upon said projectile striking said predetermined target said interface portion ruptures thereby separating said nose and tail portions of the projectile; and

said exterior surface of said interface portion disposed and structured to define a primary area of contact of said body with an interior barrel surface of said firearm.

*Id.* col. 7 l. 57 – col. 8 l. 5, col. 9 l. 55 – col. 10 l. 16 (disputed claim terms italicized).

## II. *Liberty Discussions with the Army*

PJ Marx, named inventor of the '325 patent, met with various Army personnel to demonstrate ammunition he had developed related to the projectile claimed by the '325 patent. One such meeting occurred at Fort Benning on February 17, 2005, between Mr. Marx and Lieutenant Colonel Glenn Dean,<sup>2</sup> serving as Chief of Small Arms for the U.S. Infantry Directorate of Combat Development

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<sup>2</sup> Lt. Col. Dean was a Major when he met with Mr. Marx in 2005, but had achieved the rank of Lieutenant Colonel by the time of trial.

(“DCD”). DCD works with the Army infantry to determine its equipment needs and, in turn, works with private industry to develop and source desired equipment. Lt. Col. Dean, as Chief of Small Arms at DCD, developed requirements for arms acquisitions, including ammunition. As part of his role in developing suitable acquisition requirements, he met with industry representatives, like Mr. Marx, to see what they had available to sell and to keep apprised of new technology under development.

Mr. Marx and Lt. Col. Dean signed an NDA before discussing Mr. Marx’s ammunition. After the agreement had been signed, Mr. Marx discussed his “EPIC” projectile prototype, which the parties agree is similar to the projectile claimed by the ’325 patent. Mr. Marx left fifty loaded EPIC rounds and one standalone EPIC projectile with Lt. Col. Dean at the conclusion of their meeting at Ft. Benning. Ultimately, the Army tested ten of those rounds in non-standard weapons with poor results. Mr. Marx, disappointed that the Army conducted tests using non-standard weaponry, requested that the Army return the remaining rounds, after which substantive communication between him and DCD, including Lt. Col. Dean, ceased.

### III. *The Present Suit*

In February 2011, Liberty sued the Government. Liberty first claimed that the Army’s use of the M855A1 5.56 mm (.223 caliber) and M80A1 7.62 mm (.308 caliber) rounds, which respectively succeeded the M855 and M80 rounds, practiced claims of the ’325 patent without a license from Liberty in violation of 28 U.S.C. § 1498.<sup>3</sup>

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<sup>3</sup> 28 U.S.C. § 1498 waives the Government’s sovereign immunity and provides a remedy “[w]henver an invention described in and covered by a patent of the United States is used or manufactured by or for the

Liberty also claimed that the Army's use of the M855A1 and M80A1 rounds breached various contracts the Army entered into with Mr. Marx, including the NDA discussed above between Mr. Marx and Lt. Col. Dean.

The trial court conducted a *Markman* hearing and issued a claim construction order construing fifteen disputed claim terms. *Liberty Ammunition, LLC v. United States*, 111 Fed. Cl. 365 (2013). Relevant here, the trial court construed the claim 1 term "reduced area of contact" to mean "the area of contact between the interface and the rifling of the firearm is less than that of a traditional jacketed lead bullet of calibers .17 through .50 BMG," *id.* at 375; and the claim 32 term "intermediate opposite ends" to mean that "the interface is positioned between or in the middle of the opposite ends of the forward end of the nose portion and the trailing end of the tail portion," *id.* at 380.

After holding a bench trial, the trial court issued an opinion finding that the Government practiced independent claims 1 and 32, claims 2–3, 7–11, 18–20, 22, 25, 28–31, which depend from claim 1, and claims 38–41, which depend from claim 32. *Liberty Ammunition, Inc. v. United States*, 119 Fed. Cl. 368, 390, 392 (2014) (*Trial Ct. Op.*). The trial court also found all asserted claims valid over

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United States without license of the owner thereof or lawful right to use or manufacture the same." 28 U.S.C. § 1498(a); *Astornet Techs. Inc. v. BAE Sys., Inc.*, 802 F.3d 1271, 1277 (Fed. Cir. 2015). "Although this court has noted that a section 1498 action and a title 35 action are only parallel and not identical, the principles of claim construction and reading claims on accused devices and methods are the same for either type of action." *Lemelson v. United States*, 752 F.2d 1538, 1548 (Fed. Cir. 1985) (citing *Motorola, Inc. v. United States*, 729 F.2d 765, 768 (Fed. Cir. 1984)).

the prior art raised by the Government and it entered a damages award in Liberty's favor. *Id.* at 392–98, 406. The trial court found against Liberty on its breach of contract claims, holding that the Government was not bound by the NDA signed by Lt. Col. Dean and Mr. Marx because Lt. Col. Dean lacked the authority to bind the Government. *Id.* at 403–06.

The Government appeals several claim constructions the trial court entered, the trial court's holding that the asserted patents are valid, and the trial court's damages award; Liberty cross-appeals the trial court's damages award and its holding that the NDA signed by Lt. Col. Dean and Mr. Marx is not enforceable. We have jurisdiction under 28 U.S.C. § 1295(a)(3).

## DISCUSSION

### I. *Government Appeal*

The Government challenges several of the trial court's claim constructions, which we discuss in turn below.

The “ultimate interpretation” of a claim term, as well as interpretations of “evidence intrinsic to the patent (the patent claims and specifications, along with the patent's prosecution history),” are legal conclusions, which this court reviews de novo. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). “Subsidiary factual determinations based on extrinsic evidence are reviewed for clear error.” *Info-Hold, Inc. v. Applied Media Techs. Corp.*, 783 F.3d 1262, 1265 (Fed. Cir. 2015) (citing *Teva*, 135 S. Ct. at 841).

Claim construction seeks to ascribe the “ordinary and customary meaning” to claim terms as they would be understood to a person of ordinary skill in the art at the time of invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). “[T]he claims themselves provide substantial guidance as

to the meaning of particular claim terms,” *id.* at 1314, and therefore “the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms,” *ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1088 (Fed. Cir. 2003). But “the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips*, 415 F.3d at 1313. Indeed, the specification is “the single best guide to the meaning of a disputed term” and “[u]sually, it is dispositive.” *Id.* at 1315 (quoting *Vitronics*, 90 F.3d at 1582). Thus, claims “must be read in view of the specification, of which they are a part.” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996)).

#### A. “Reduced Area of Contact”

Claim 1 recites an “interface portion disposed and dimensioned to define a *reduced area of contact* of said body with the rifling of the firearm.” ’325 patent col. 7 ll. 65–67 (emphasis added). The trial court construed the claim term “reduced area of contact” to mean “the area of contact between the interface and the rifling of the firearm is less than that of a traditional jacketed lead bullet of calibers .17 through .50 BMG.” *Trial Ct. Op.*, 119 Fed. Cl. at 390–91. The Government argues that the construction should explicitly include the M855 round as a baseline traditional jacketed lead bullet because the M855 is the only prior art projectile explicitly named in the specification. Specifically, the Government urges construing the term as: “the area of contact between the projectile and the rifling of the firearm is less than that of a traditional jacketed projectile, which includes the M855.” The trial court rejected this limitation as too restrictive, relying instead on the specification’s statement that the invention is enabled for “all calibers generally ranging from .17

through [.]50 BMG.” *Id.* at 391 (alteration in original) (quoting ’325 patent col. 2 ll. 27–28).

We begin our analysis by recognizing that the term “reduced area of contact” is one of degree, as it necessarily calls for a comparison against some baseline. Terms of degree are problematic if their baseline is unclear to those of ordinary skill in the art. We especially take caution when presented with terms of degree following the Supreme Court’s decision in *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120 (2014), which instructs that a claim must “inform those skilled in the art about the scope of the invention with reasonable certainty” to meet the definiteness requirement of 35 U.S.C. § 112, ¶ 2, *id.* at 2129. While our post-*Nautilus* cases indicate that terms of degree are not “inherently indefinite” in light of the Supreme Court’s decision, we have recognized that claims having terms of degree will fail for indefiniteness unless they “provide objective boundaries for those of skill in the art” when read in light of the specification and the prosecution history. *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370–71 (Fed. Cir. 2014), *cert. denied*, 136 S. Ct. 59 (2015).

As the trial court correctly noted in this case, “[t]here are no clues within Claim 1 itself as to what the area of contact has been reduced *from*.” *Trial Ct. Op.* 119 Fed. Cl. at 390 (internal quotation marks omitted). The ’325 patent specification, however, saves the term “reduced area of contact” from indefiniteness. The Background of the Invention section first narrows the ambiguity by disclosing that the patent’s proposed projectile has “a reduced contact area as compared to conventional projectiles.” ’325 patent col. 1 ll. 65–66. The question then becomes: What constitutes a conventional projectile? Again, the specification guides. Discussing the industry need for a projectile capable of “assum[ing] various densities while distinguishing the weight of the projectile from its size,” the Background of the Invention

identifies the M855 round as a specific conventional projectile that the invention seeks to improve upon:

Currently, NATO 5.56 mm M855(SS109) projectiles comprise a steel/lead core placed in a copper jacket which weighs 62 grains. Ideally, an improved projectile could be proposed and developed having the same physical dimensions but having an increased weight, of for example 107 grains or a 72 percent weight increase. In order to achieve the same weight utilizing the conventional jacketed lead projectile a significant change in the length of the projectile would have to be assumed.

'325 patent col. 1 ll. 35–43. This is the specification's only mention of a specific conventional projectile, strongly suggesting that the M855 round is the point of comparison for the claims. Indeed, Liberty itself embraces the view that the patentee intended for the invention claimed in the '325 patent to improve upon the M855 round. *See* Liberty Op. Br.<sup>4</sup> 4, 8 (having sequential fact sections entitled “Background: The Army’s M855 Standard Rifle Round – Its Deficiencies and the Quest to Replace It”; and “The '325 Patented Solution”).

Given the specification, the M855 round is the proper baseline for the claim limitation “reduced area of contact,” at least for 5.56 mm projectiles. In other words, one of skill in the art would appreciate the M855 round as the standard for determining whether a 5.56 mm projectile's area of contact has been reduced, as required by the claim limitation. We also recognize that the specification mentions the M855 round in conjunction with NATO. Indeed, at the time the '325 patent application was filed, the

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<sup>4</sup> “Liberty Op. Br.” refers to the first brief Liberty filed in this case, which responded to the Government's opening brief and introduced Liberty's counterclaims.

M855 round served as the 5.56 mm standard-issue round for NATO and the Army. *Trial Ct. Op.*, 119 Fed. Cl. at 375–77. Relying on the reference to NATO in the specification, we conclude that one of skill in the art would have looked to the NATO standard-issue round of corresponding caliber at the time of the '325 patent to establish the baseline projectile. For a 7.62 mm projectile, this was the M80 round. *Trial Ct. Op.*, 119 Fed. Cl. at 375–76.

We therefore construe the term “reduced area of contact” to mean “the area of contact between the interface and the rifling of the firearm is less than that of a conventional jacketed lead projectile, which derives from the corresponding caliber NATO standard-issue round as of October 21, 2005,” which we specifically note is the M855 round for 5.56 mm projectiles and the M80 round for 7.62 mm projectiles.

The trial court’s construction to the contrary is incorrect because it does not properly capture the specification’s discussion of conventional projectiles, as discussed above. The trial court was correct to note that “the specification recites ‘a reduced contact area as compared to conventional projectiles.’” *Trial Ct. Op.*, 119 Fed. Cl. at 390 (citing '325 patent col. 1 ll. 65–66). There is, however, no reason to link, as the trial court did, the specification’s mention of conventional projectiles with its later discussion of enabling all calibers, which are distinct concepts. The correct link is the one we have drawn between the specification’s discussion of the NATO standard-issue M855 round and the mention several lines below of a conventional jacketed lead projectile, which harkens back to the M855. '325 patent col. 1 ll. 34–43.

We also note that the trial court’s implicit determination that claim 1 satisfies the definiteness requirements of § 112 ¶ 2 under its construction does not comport with our

decision in *Interval*.<sup>5</sup> Claim 1 would not be definite had the trial court's construction been correct because there would not be a sufficient objective boundary around the term of degree "reduced area of contact." It is true that the trial court did objectively limit the claim language by including the ".17 through .50 BMG caliber" guidepost in its construction. This standard is objective in the sense that it defines a set range of calibers from which the baseline projectile may be drawn. Yet, even after limiting the field of baseline projectiles according to the trial court's construction, a multitude of candidates for the conventional baseline projectile would remain for each caliber within that range, making the claim indefinite under *Interval*.

The trial court's failure to properly apply the exacting "objective boundaries" standard from *Interval* is well-illustrated by the parties' application of the trial court's construction. Together, the parties' experts examined a vast number of different 5.56 mm projectiles as baselines for the accused M855A1 round, twenty-six in total. Yet,

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<sup>5</sup> While the trial court did not specifically rule on definiteness, the Government argued that a construction not specifically designating a baseline for the "reduced area of contact" limitation would be indefinite under § 112 ¶ 2. See Government's *Markman* Brief, Joint Appendix ("J.A.") 140; Transcript of Government's Argument at *Markman* Hearing, J.A. 925–27. The trial court, adopting a construction which did not include a specifically designated baseline, nevertheless found that the Government practiced claim 1 of the '325 patent. *Trial Ct. Op.*, 119 Fed. Cl. at 392. Because only a valid claim may be infringed, *Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1580 (Fed. Cir. 1983), the trial court necessarily determined that the claim, as it construed it, satisfied § 112 ¶ 2 and was valid.

Liberty's expert did not include the accused M855A1 round's predecessor—the M855—among the seven baselines that he tested, despite the M855 round being the only prior art projectile described in the '325 patent and his own testimony that there is no reason not to use the M855 round for the baseline. For the accused M80A1 round, the experts examined fifteen 7.62 mm baseline projectiles, four coming from Liberty's expert and eleven from the Government's expert. Although Liberty's expert did include the accused M80A1 round's predecessor—the M80—as an M80A1 baseline in his expert report, he later acknowledged that his test of the M80 projectile was flawed. *Trial Ct. Op.*, 119 Fed. Cl. at 392 n.36. He did not retest the M80 and did not testify about the comparison between the M80A1 and the M80 at trial. *Id.*

Based on his testing, Liberty's expert found that the accused Army projectiles had a reduced area of contact as compared to “a number”—but not all—of the tested baselines. *Trial Ct. Op.*, 119 Fed. Cl. at 392. The trial court found these mixed results sufficient to show that the accused projectiles satisfy the “reduced area of contact” limitation. But a term of degree cannot be definite when construed in a manner that lends itself to this sort of scattershot infringement analysis because “a term of degree fails to provide sufficient notice of its scope if it depends ‘on the unpredictable vagaries of any one person’s opinion.’” *Interval*, 766 F.3d at 1371 (quoting *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1350 (Fed. Cir. 2005), *abrogated on other grounds, Nautilus*, 134 S. Ct. at 2127).

Turning to whether the accused projectiles read on claim 1 as properly construed, it is undisputed that the accused projectiles have an increased contact area when compared to the M855 and M80, respectively, based on the evidence presented at trial. An Army engineer involved in the development of the accused projectiles testified that the Army purposefully designed the projec-

tiles to have a greater area of contact than their predecessor M855 and M80 projectiles. Indeed, the test results from the Government's expert showed that the accused projectiles had a greater area of contact than their predecessor M855 and M80 projectiles. *See Trial Ct. Op.*, 119 Fed. Cl. at 391.

We find it telling that Liberty did not test the accused M855A1 projectile against the predecessor M855 projectile and did not present testimony at trial comparing the area of contact of the accused M80A1 projectile with the predecessor M80 projectile. It is important to note that while the trial court's construction did not limit the baseline projectile to the M855 and M80, these rounds remained in play after the *Markman* hearing because they were within the scope of the trial court's construction. Liberty knew that the Government was testing against the M855 and M80 projectiles and had ample opportunity to rebut the Government's expert's findings for these projectiles, but failed to do so. Liberty's own expert testified that there is no reason not to use the M855 round as the baseline projectile, but that he chose not to include it among the twenty-six rounds that he tested. He also testified that he did not retest the M80 projectile after admittedly miscalculating the area of contact in his expert report. *See id.* at 392 n.36. With no evidence in its favor, we find that Liberty cannot carry its burden of showing the accused projectiles meet the "reduced area of contact" limitation and hold that the Government does not practice asserted claim 1, which includes this limitation, or the claims that depend from claim 1. *See Lemelson*, 752 F.2d at 1551 (explaining that in cases brought under § 1498 "[i]t is . . . well settled that each element of a claim is material and essential, and that in order for a court to find infringement, the plaintiff must show the presence of every element or its substantial equivalent in the accused device").

### B. “Intermediate Opposite Ends”

Claim 32 recites “a body including a nose portion and tail portion, said body further including an interface portion disposed *intermediate opposite ends* of said body.” ’325 patent col. 10 ll. 1–3 (emphasis added). The trial court construed the claim term “intermediate opposite ends” to mean “that the interface is positioned between or in the middle of the opposite ends of the forward end of the nose portion and the trailing end of the tail portion.” *Trial Ct. Op.*, 119 Fed. Cl. at 389. The Government argues that the construction should be further limited, in relevant part, “such that the interface does not extend all of the way to the front or to the end of the projectile.” The trial court rejected this limitation, relying on our decision in *Lucent Technologies, Inc. v. Gateway, Inc.*, 525 F.3d 1200 (Fed. Cir. 2008). *Trial Ct. Op.*, 119 Fed. Cl. at 390. The trial court interpreted *Lucent* to mean that because “including” precedes the term “intermediate opposite ends,” the claimed interface may cover more than just the middle portion of a round. *Id.* In other words, the trial court concluded that so long as the interface was positioned, in part, between the forward end and the trailing end of the projectile, it did not matter if the interface was also positioned outside of that prescribed area.

We conclude that the Government’s proposed construction is fully supported by the plain claim language and specification. While the open-ended term “including” does precede “intermediate opposite ends,” our prior decisions have warned against using terms such as “comprising,” or “including,” as “weasel word[s] with which to abrogate claim limitations.” *Dippin’ Dots, Inc. v. Mosey*, 476 F.3d 1337, 1343 (Fed. Cir. 2007) (quoting *Spectrum Int’l, Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1380 (Fed. Cir. 1998)). The trial court’s refusal to limit the projectile’s interface so that it does not extend all of the way to the forward or trailing ends of the projectile goes against this admonition and significantly diminishes the “intermedi-

ate opposite ends” limitation, almost to the point of rendering it a nullity.

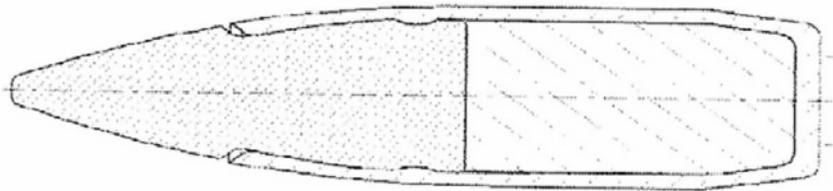
The very essence of the “intermediate opposite ends” limitation is to define a precise position for the interface: between the nose and tail ends of the projectile. The trial court’s construction chips away at this precision by permitting an interface that is not only between the opposing ends, but also outside that position to read on the claim language. As such, the construction is broad enough to cover a traditional full metal jacket surrounding the entire projectile, a fact which Liberty’s counsel acknowledged and embraced at oral argument. Oral Argument at 17:32–20:24, *available at* <http://oralarguments.cafc.uscourts.gov/default.aspx?fl=2015-5057.mp3>. This understanding, however, contradicts the ’325 patent specification, which unequivocally distinguishes the claimed invention from projectiles with such a jacketed design. ’325 patent col. 1 ll. 62–63 (“[I]mproved projectile would preferably involve a proposal which eliminates the use of a jacketed projectile.”), col. 2 ll. 39–40 (“[T]he projectile of the present invention eliminates the use of lead and the provision of an outer jacket.”), col. 6 ll. 63–64 (“[I]t is emphasized that the projectile body[] is not jacketed as in conventional copper jacketed projectiles.”), col. 7 ll. 39–44 (“[S]tructural and operative features of the projectile[], including the cooperative components of the nose portion[], tail portion[] and interface[], overcome many of the disadvantages and problems normally associated with conventional firearm projectiles through the provision of a non-jacketed structure and the elimination of lead.”).

The trial court erred in its application of *Lucent*. In *Lucent* we held that when open-ended terms like “including” or “comprising” introduce a claim element(s), “*other elements* may be added” to the claimed element(s) and the resulting structure might still read on the claim at issue. *Lucent*, 525 F.3d at 1214 (emphasis added). An earlier case, *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d

1367 (Fed. Cir. 2005), illuminates when the principle we discussed in *Lucent* applies. The patent at issue in *Gillette* claimed a razor “comprising” a first, second, and third razor blade. *Id.* at 1369. We held that this claim does not necessarily exclude a razor that has a fourth blade in addition to a first, second, and third blade. *Id.* at 1374.

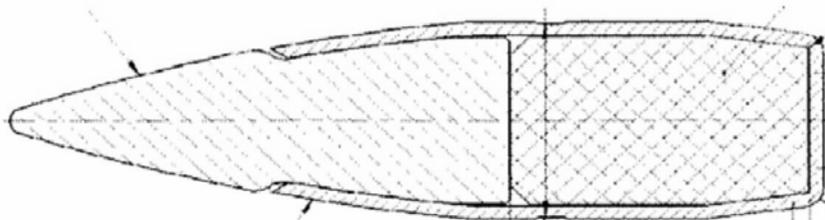
The factual scenario described in *Gillette* and applied in *Lucent* is readily distinguishable from the one before us now. The Government’s construction of “intermediate opposite ends” does not prevent, as *Lucent* and *Gillette* caution against, the claimed projectile from including additional non-claimed structural elements. Instead, the Government’s construction gives proper meaning to a structural element that is claimed—the projectile interface. We therefore construe the term “intermediate opposite ends” to mean “the interface is positioned between the front end and the rear end of the projectile body such that the interface does not extend all of the way to the front end or to the rear end of the projectile.”

Under this construction, it is apparent that the accused Army rounds do not meet the “intermediate opposite ends” limitation. The accused M855A1 projectile, depicted in the trial court opinion’s principal findings of fact section and reproduced below, includes an interface that extends to, and covers, the rear end of the projectile.



*Trial Ct. Op.*, 119 Fed. Cl. at 383. The trial court described the M855A1 as comprising “a steel nose ogive with an exposed tip, a tail portion containing a copper slug,

and a surrounding thin jacket that connects the nose and tail.” *Trial Ct. Op.*, 119 Fed. Cl. at 383 (footnote omitted). This explanation that the jacket surrounds a projectile with an exposed tip adds to what is already made clear by the figure: only the front end is exposed and the rear end is covered by the jacket. The accused M80A1 projectile incorporates a similar interface.



*Id.* at 384.

On these facts, the accused projectiles cannot satisfy the “intermediate opposite ends” limitation. Liberty has acquiesced to the trial court’s factual findings, so we need not remand for any further factual determinations. *See Liberty Op. Br. 4 n.1.* With the “intermediate opposite ends” limitation not met by the accused projectiles, we conclude that the Government does not practice asserted claim 32, which includes this limitation, or the claims that depend from claim 32. *See Lemelson*, 752 F.2d at 1551.

Because the accused Army rounds meet neither the “intermediate opposite ends” limitation nor the “reduced area of conduct” limitation—one of which appears in all asserted claims—we hold that the Government has not violated Liberty’s patent rights under § 1498. Accordingly, we do not address the “controlled rupturing” construction challenged by the Government, as we need not decide more than is necessary to dispose of the case regarding

the '325 patent. For the same reason, we do not address the Government's invalidity argument or either party's challenge to the trial court's damages award, which we hereby vacate.

## II. *Liberty Cross-Appeal*

Liberty argues the M855A1 and M80A1 Army projectiles exploit technology protected by the NDA that Lt. Col. Dean signed when he met with Liberty's representative, Mr. Marx, in 2005. The trial court held that there is no enforceable agreement between the parties because it found that Lt. Col. Dean did not have the requisite authority to enter the NDA on the Government's behalf. We find no clear error in the trial court's factual determination regarding Lt. Col. Dean's lack of authority and affirm that the NDA is not enforceable.

A Government agent must have actual authority to bind the Government to a contract. *Trauma Serv. Grp. v. United States*, 104 F.3d 1321, 1325 (Fed. Cir. 1997). Although apparent authority—which exists when an agent with no actual authority holds himself out to have such authority to another's detriment—can generally bind a principal, the Government is immune to actions of its agents who merely possess apparent authority. Our past cases have elaborated on the precept that there must be actual authority for an agent to bind the Government:

It is a well recognized principle of procurement law that the contracting officer, as agent of the executive department, has only that authority actually conferred upon him by statute or regulation. . . . The government is not bound by its agents acting beyond their authority and contrary to regulation. A contractor who enters into an arrangement with an agent of the government bears the risk that the agent is acting outside the bounds of his authority, even when the agent

himself was unaware of the limitations on his authority.

*CACI, Inc. v. Stone*, 990 F.2d 1233, 1236 (Fed. Cir. 1993) (internal citations omitted); *see also H. Landau & Co. v. United States*, 886 F.2d 322, 324 (Fed. Cir. 1989) (“[A]pparent authority will not suffice to hold the government bound by the acts of its agents.”). Liberty recognizes this limit on Government contracting authority and does not contend that Lt. Col. Dean possessed apparent authority to enter the NDA. Rather, Liberty asserts Lt. Col. Dean possessed actual authority.

Actual authority may be either express or implied. *Salles v. United States*, 156 F.3d 1383, 1384 (Fed. Cir. 1998) (citing *Landau*, 886 F.2d at 324). On appeal, Liberty does not argue that Lt. Col. Dean had express actual authority to enter the NDA, but only that he had implied actual authority. An employee of the Government has implied actual authority to enter an agreement only when that authority is an “integral part of the duties assigned to [the] government employee.” *Landau*, 886 F.2d at 324 (internal quotation marks omitted). Authority is integral “when the government employee could not perform his or her assigned tasks without such authority.” *Flexfab, LLC v. United States*, 62 Fed. Cl. 139, 148 (2004), *aff’d*, 424 F.3d 1254 (Fed. Cir. 2005). Determination of one’s authority to enter an NDA is a question of fact that we review for clear error following a bench trial. *See Monarch Assur. P.L.C. v. United States*, 244 F.3d 1356, 1362 (Fed. Cir. 2001); *City of El Centro v. United States*, 922 F.2d 816, 819–21 (Fed. Cir. 1990); *see also Moriarty v. Glueckert Funeral Home, Ltd.*, 155 F.3d 859, 864 (7th Cir. 1998); *In re Nelson*, 761 F.2d 1320, 1322 (9th Cir. 1985).

The trial court’s determination that Lt. Col. Dean did not have implied actual authority is not clearly erroneous. As the Chief of Small Arms of DCS, Lt. Col. Dean testified that he met “literally on a weekly basis” with representa-

tives from industry interested in pitching a product or idea to the Government. J.A. 10129 l. 21. Although many of the representatives with whom he met marked their materials confidential, Lt. Col. Dean also testified that he signed “very few” NDAs. J.A. 10131 l. 3. He clarified this statement to mean that he signed fewer than five NDAs in over two years working for the DCD at Fort Benning. *Id.* ll. 4–5. The infrequency with which Lt. Col. Dean signed NDAs supports the notion that Lt. Col. Dean could perform his tasks as Chief of Small Arms without signing NDAs. Thus, there is support for the trial court’s determination that signing NDAs was not integral to Lt. Col. Dean’s position.

Liberty agrees that whether authority is integral to one’s position is the correct legal standard for implied actual authority and that the trial court recited this standard. Liberty argues instead that the trial court misapplied the standard by looking to evidence that went to express actual authority rather than implied actual authority. Although the trial court did consider some evidence more probative to show Lt. Col. Dean’s lack of express authority, it also considered Lt. Col. Dean’s testimony regarding the relatively small number of NDAs he signed. *Trial Ct. Op.*, 119 Fed. Cl. at 404. This evidence alone is sufficient to support the trial court’s conclusion that Lt. Col. Dean lacked implied actual authority to bind the Government to an NDA with Liberty under the clearly erroneous standard of review we apply for this issue.

#### CONCLUSION

For the foregoing reasons, we hold that the trial court erred when construing the “intermediate opposite ends” and “reduced area of conduct” claim terms and reverse its holding that the Government practiced the asserted claims of the ’325 patent and vacate its award of damages. We affirm the trial court’s holding that Liberty cannot

prevail on its breach of contract claim because the trial court's determination that Lt. Col. Dean lacked the requisite authority to enter an NDA on the Government's behalf is not clearly erroneous.

**REVERSED-IN-PART, VACATED-IN-PART,  
AFFIRMED-IN-PART**

COSTS

No costs.

# United States Court of Appeals for the Federal Circuit

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**LIBERTY AMMUNITION, INC.,**  
*Plaintiff-Cross-Appellant*

v.

**UNITED STATES,**  
*Defendant-Appellant*

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2015-5057, 2015-5061

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Appeals from the United States Court of Federal Claims in No. 1:11-cv-00084-CFL, Judge Charles F. Lettow.

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NEWMAN, *Circuit Judge*, concurring in part, dissenting in part.

The court today holds that the United States is not contractually bound by a nondisclosure agreement signed for the “United States Government, Department of Defense,” by Lieutenant Colonel (then Major) Glenn Dean,<sup>1</sup> in his position as Chief of the Small Arms Branch of the Directorate of Combat Development, United States Infantry. The purpose of the agreement was to receive disclo-

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<sup>1</sup> To conform with the government’s usage, we use the rank of Lt. Col., without the precision of earlier or later rank at any given time.

sure of proprietary information concerning the new ammunition invented by Mr. P.J. Marx.

Lt. Col. Dean testified in the Court of Federal Claims that he was the United States official responsible for this subject matter, and that he had signed “about five” nondisclosure agreements in that role as Chief for small arms development. My colleagues hold that the United States is not bound by this agreement, finding that Lt. Col. Dean had no authority, either express or implied, to sign such agreements. There is no evidentiary support for this holding; indeed, even now the United States does not appear to have criticized or reprimanded Lt. Col. Dean, despite the government’s insistence that he acted improperly and that his contractual promise is meaningless.

Law and precedent establish that Lt. Col. Dean’s implicit authority sufficed to provide a valid nondisclosure agreement. The government’s position is not only contrary to law and precedent—it is also untenable as a matter of the integrity of government practice.

On the merits of the issue of infringement of the Liberty Ammunition U.S. Patent No. 7,748,325 (the ’325 patent), I agree with the court that the claims are not literally infringed by the Army’s design of rounds in which the base of the projectile is completely “jacketed” by the interface.

#### THE NONDISCLOSURE AGREEMENT

Several nondisclosure agreements were signed by various government representatives in order to receive Mr. Marx’s technology. This case focuses primarily on the agreement signed by Lt. Col. Dean for the Department of Defense.<sup>2</sup> The government argues, successfully, that Lt.

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<sup>2</sup> The U.S. Special Forces Command representative also entered into a nondisclosure agreement with Mr.

Col. Dean had no authority to enter into a nondisclosure agreement, and therefore that the agreement was void. The government's position appears to be that it is entitled to disclose outside the government and use Mr. Marx's proprietary information without obligation or license.

In brief background: Mr. Marx developed experimental ammunition in response to the Army's announced request for industrial assistance to develop improved ammunition and to comply with the "Green Ammunition Program" to remove lead on environmental grounds. Witnesses testified that early attempts to resolve these concerns by substituting tungsten for lead were expensive and ineffective. The record shows multiple failures until receipt and review of the Marx technology provided the successful direction.

Mr. Marx, in undisputed testimony, explained that he was directed to Lt. Col. Dean at the Directorate of Combat Development (DCD) by the Project Management Engineer for the Green Ammunition Program. Trial Tr. at 351, ll. 1–3, *Liberty Ammunition v. United States*, 119 Fed. Cl. 368 (2014) (Dkt. 76). Mr. Marx testified that the Project Management Engineer stated that while he lacked the authority to sign an NDA, Lt. Col. Dean was authorized to execute such agreements. *Id.*

Prior to meeting with Lt. Col. Dean, Mr. Marx requested information on the government's "procedure for receiving proprietary information," and asked if the government had a "standard agreement of nondisclosure." Trial Tr. at Ex. 5 (Dkt. 74) (Email exchange between Maj. Glenn Dean and P.J. Marx (November 18, 2004)). Lt. Col. Dean assured Mr. Marx that "[w]e'll protect and secure

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Marx. This Command awarded Marx a development contract for other projectiles. Such projectiles are not here at issue.

anything you mark as proprietary information” and that if Mr. Marx had a nondisclosure agreement, “we can have anyone who would be in contact with specifics sign.” *Id.*

After Lt. Col. Dean executed the “Bilateral Non-Disclosure Agreement” on behalf of the “United States Government, Department of Defense,” *id.* at Ex. 3, Mr. Marx provided the technical description, test information, and fifty sample rounds of his new ammunition. After receiving this information, Lt. Col. Dean reported to other Army research divisions that the Marx projectile is a “very promising technology that lines up well with our lethality improvement effort.” *Id.* at Ex. 8 (Email from Maj. Glenn Dean (Feb. 17, 2005)).

Lt. Col. Dean testified in the Court of Federal Claims that the Directorate of Combat Development is the “lead combat developer for all infantry and soldier systems.” Trial Tr. at 46, ll. 5–6 (Dkt. 74). He testified that his assignment as Chief of the Small Arms Branch is to identify and develop new and improved technologies, and to work in collaboration with private industry. *Id.* at 48. However, the government now argues, and my colleagues agree, that Lt. Col. Dean had neither express actual authority nor implicit actual authority to sign the nondisclosure agreement.

Precedent distinguishes among actual authority, implied actual authority, and apparent authority of government representatives. The panel majority recognizes that authority of government officials “is generally implied when such authority is considered to be an integral part of the duties assigned to a government employee,” *H. Landau & Co. v. United States*, 886 F.2d 322, 324 (1989), “when the government employee could not perform his or her assigned tasks without such authority,” *Flexfab, LLC v. United States*, 62 Fed. Cl. 139, 148 (2004), *aff’d* 424 F.3d 1254 (Fed. Cir. 2005). In *H.F. Allen Orchards v. United States*, 749 F.2d 1571, 1575 (Fed. Cir. 1984), the

court explained that “[a]lthough apparent authority will not suffice to hold the government bound by the acts of its agents, implied actual authority, like expressed actual authority, will suffice.” *See also Fifth Third Bd. of W. Ohio v. United States*, 402 F.3d 1221, 1235 (Fed. Cir. 2009) (government representative had implied actual authority, and bound the government); *Phila. Suburban Corp. v. United States*, 217 Ct. Cl. 705, 707 (1978) (government is bound when the signing government official has implied authority or ratification).

The record contains extensive evidence that the receipt and protection of proprietary information from the private sector was integral to Lt. Col. Dean’s position as Chief of the Small Arms Branch. He testified that he met “literally on a weekly basis” with industry representatives with a product or idea related to small arms. Trial Tr. at 129, l. 21–130, l. 3 (Dkt. 74) (“I mean literally on a weekly basis would have some company, contractor, person who had a good idea, a product they wanted to sell, who would come into my office . . . and give us their pitch on here’s our great idea and here’s why the U.S. Army should buy it and here’s why you specifically should give us a requirement to allow the PM to buy our product.”).

Lt. Col. Dean estimated that these industry meetings alone consumed eight hours each week. *Id.* at 130, ll. 8-9. He testified that he served as the “user representative” in evaluating technology needs, the possibilities of new technologies, and deciding whether they would benefit soldiers in the field. *Id.* at 48. He testified that he had signed nondisclosure agreements in the past. *Id.* at 66, l. 3. When asked if he had ever refused to sign a nondisclosure agreement, Lt. Col. Dean responded “Not to my knowledge.” *Id.* at 66, l. 5. Lt. Col. Dean also testified that it was “common” to receive proprietary information. *Id.* at 130, ll. 21-23. Other Directorate witnesses testified to the “policy” of the Small Arms Branch “to protect the privacy of the information provided” by industry repre-

sentatives. Trial Tr. at 500, ll. 13–15 (Dkt. 76). No witness identified any other individual or entity with the authority to enter into nondisclosure agreements related to the Small Arms Branch responsibilities. *See, e.g.*, Trial Tr. at 131, l. 25–132, l. 1 (Dkt. 74) (Testimony of Lt. Col. Dean) (“[T]he business development activity was—I never saw a contracting officer involved with that.”). Despite this extensive record, and no contrary evidence, the government’s position is that this agreement, by the officer of the United States charged with the responsibility of advancing small arms development, is worthless—and my colleagues on this panel agree.

The majority holds that because Lt. Col. Dean signed less than five nondisclosure agreements over his two years at the Directorate, he lacked authority to bind the government to a nondisclosure agreement with Liberty. Maj. Op. at 23. Does this mean that if an industry representative offers information under a nondisclosure agreement, and the government official agrees and signs the agreement, the industry representative must inquire how many nondisclosure agreements that official had previously signed, and then guess how many would be needed to support the official’s asserted authority?

The Court of Federal Claims relied additionally on Lt. Col. Dean’s lack of formal “contracting officer” status. A contracting officer “obligate[s] the Government to an expenditure of appropriated funds.” 48 C.F.R. §§ 1.602, 2.101. Nondisclosure agreements need not incur expenditure; the issue here is disclosure of information, not expenditure. Lt. Col. Dean testified that contracting officers were “never” involved in proprietary business development meetings with industry. Trial Tr. at 131, l. 25–132, l. 1 (Dkt. 74). Also, precedent establishes that lack of a contracting officer’s signature on a contract with the government does not foreclose a breach of contract claim if implied authority was present. *Phila. Suburban Corp.*, 217 Ct. Cl. at 707.

Thus I must, respectfully, dissent from the court's ruling that the government is not bound by the nondisclosure agreement signed by its representative.

#### LIABILITY

The Court of Federal Claims held the '325 patent valid, and infringed by the A1 modifications of the M855 and M80 projectiles. My colleagues hold that the patent is not infringed. I agree that the patent is not infringed by these A1 projectiles, for it was undisputed that the entire base of the A1 projectile is enclosed or "jacketed," unlike the claimed '325 projectile. The '325 claims require that the metal interface does not enclose the base of the projectile. Thus I join the court's ruling of non-infringement.

There was evidence that the Marx invention showed the way to the design of the M855A1. Dr. Newill, who was the "Technical Lead" of the Green Ammunition Program, a few months after receiving the Marx technology advised the Army that the problems of both lethality and the environment had been solved, referring to the A1 modification. At trial, Dr. Newill could not point to any laboratory documentation of independent origin of the concepts embodied in the Marx projectile. Trial Tr. at 1466, ll. 18–20 (Dkt. 84). Liberty points out that there were no entries in any government Laboratory Notebooks (required by Army Regulation 27-60), and no drawings or sketches or other evidence of conception. *Id.* at 1463–66. Mr. Campion, who reviewed the Marx information for the Special Services Command, confirmed that Marx led to this breakthrough, testifying that "[t]hey've been developing the green round for 17 years now." Trial Tr. at 999, ll. 7–8 (Dkt. 80). The government did not contradict these witnesses.

These aspects warrant resolution in connection with the disclosure conditions and to determine the consequences of any breach of the nondisclosure contract. I

would remand for this purpose. I respectfully dissent from my colleagues' disposition of this aspect.