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FEATURE COMMENT: Developing, Marketing And Enforcing Intellectual Property In The Federal Market: Lessons From *Liberty Ammunition*

A decision recently released by the U.S. Court of Federal Claims represents both a victory and a cautionary tale for innovators aiming to develop and sell technology to the Federal Government. *Liberty Ammunition, Inc. v. U.S.*, 2014 WL 7465773, (Fed. Cl. Dec. 19, 2014, reissued Dec. 31, 2014). In *Liberty Ammunition*, the Court awarded compensation for patent infringement in the form of a reasonable royalty plus interest, which could total over $100 million over the life of the patent. The case highlights a number of lessons for developers and Government contractors, and for federal procurement and intellectual property (IP) policy.

Liberty's Efforts to Develop the Next Generation Small Caliber Ammunition for the Army—In the late 1990s, the Army became concerned about the lethality of its standard .22 caliber ammunition, the M855 and the similar but larger M80. Unless a round hits a critical internal organ or bone, it might pass entirely through the enemy's body without killing or incapacitating him, allowing the soldier to return fire. In addition, the lead in these slugs caused ground water pollution at military training sites. This led the Army to initiate a Green Ammunition Program to develop lead-free rounds to replace the M855 and M80.

In response to these design objectives, P.J. Marx developed and prototyped lead-free rounds designed to fragment in soft tissue, thereby increasing lethality and incapacitation. His Enhanced Performance Incapacitative Composite (EPIC) prototype rounds comprise a steel penetrator, a copper rear section or "slug," and an intermediate copper sleeve-like interface connecting the penetrator and slug. The copper interface is designed to disintegrate upon striking soft tissue, causing the tip and slug to separate from each other.

In the fall of 2004, the inventor initiated meetings with Lt. Col. Glenn Dean, chief of small arms for the U.S. Army Infantry Directorate of Combat Development, and Paul Riggs, director of the Green Ammunition Program. Dean executed a nondisclosure agreement (NDA) requiring the disclosed information and prototypes to be held in confidence within the Government. Slip Op. at 7. Dean subsequently contacted personnel at the Army and Special Operations Command (SOCOM) regarding the EPIC prototype's potential as an alternative ammunition for the program. In March 2005, he forwarded EPIC rounds to the U.S. Army Marksmanship Unit for testing, which produced promising results.

Concurrently with Marx's work, Phase 1 of the Army's Green Ammunition Program focused on the development of tungsten rounds. On May 11, 2005, the Army announced at an industry day conference that it would no longer consider industry input on replacement designs and would instead team with Alliant Techsystems Inc. (ATK) as the Army's Phase II development contractor. This announcement led Marx to try to generate interest in the EPIC design elsewhere.

In June, he met with Thomas Campion, a contractor at SOCOM. Campion executed an NDA, and Marx provided Campion prototype EPIC rounds as well as data about the bullet's design. Campion proceeded to e-mail technical and performance data and descriptive brochures regarding the EPIC rounds to others at SOCOM. SOCOM was sufficiently impressed to award a company formed by Marx, Liberty Ammunition LLC, a Small Business Innovation Research (SBIR) Program contract to evaluate and modify the EPIC. Charles Marsh, a

Navy employee who worked closely with Campion, executed an additional NDA.

On Oct. 21, 2005, Marx filed a patent application for a three-component projectile capable of controlled fragmentation, comprising a steel penetrator, copper slug and deformable interface section. The invention was assigned to Liberty, and Patent 7,748,325 (the '325 patent) eventually issued on July 6, 2010. As issued, the patent has only two independent claims. Claim 32 focuses on the three-element design enabling the tip and slug to separate upon contact with soft tissue. Claim 1 is similar, but contains the additional limitation of varying diameter so as to reduce the area of contact between the round and the gun barrel. This is intended to reduce wear on the barrel and its rifling.

While the patent was pending, the Army and ATK proceeded with Phase II of the Green Ammunition Program. Throughout 2005, ATK submitted the ammunition redesigns known as Concept A and Concept B, which feature a similar three-component bullet comprising an exposed nose, a copper slug and a "reverse jacket." Like the EPIC interface component, the reverse jacket holds the nose and slug together and will deform on impact, but it encases the entire slug rather than just the area where it meets the nose. However, the October 2005 testing performed on these rounds yielded mixed results and poor performance ratings. Slip Op. at 8.

In spring 2007, ATK released Concepts L, L2 and L3. It began production on the L3 around the same time that Liberty was awarded its SBIR contract. The Army adopted the L3 and designated it the M855A1 Enhanced Performance Round. After successful fielding in Afghanistan in 2010, the M855A1 replaced the M855 as the Army's standard-issue .22 caliber ammunition. Slip Op. at 13. As of 2013, more than one billion rounds of M855A1 had been produced. ATK and the Army have incorporated the same enhancements into the M80 replacement, designated M80A1, which has not yet been fielded. The M80A1 employs the same steel penetrator, copper slug and reverse copper jacket that ruptures upon striking a soft target as the M855A1, but it has larger dimensions.

On Feb. 8, 2011, Liberty filed suit in the COFC alleging that the M855A1 and M80A1 infringe the '325 patent, and that the Government breached three NDAs by disclosing confidential information to potential vendors. In an amended complaint, Liberty also alleged unfair competition under the Lanham Act and state law, but the court dismissed those claims for lack of jurisdiction. Slip Op. at 14, citing *Liberty Ammunition, Inc. v. U.S.*, 101 Fed. Cl. 581, 586–92 (2011).

The COFC Ruling—*Breach of Non-Disclosure Agreements*: The Court had to address several distinct legal theories. Liberty's breach of contract claims stem from the three NDAs that Department of Defense personnel and contractors executed in connection with the evaluation of the EPIC design and prototypes. The Tucker Act, 28 USCA § 1491, waives sovereign immunity for claims arising out of any express or implied contract with the U.S., and grants jurisdiction to the COFC.

The Government challenged the contract claims on the ground that the NDAs did not bind the Government because none of the personnel who executed the NDAs had actual authority to do so. Typically, a Government contractual obligation arises only if there is actual authority—such as a contracting officer's warrant; apparent authority will not suffice. It is a long-standing legal principle that a person entering into an agreement with the Government assumes the risk of confirming that the person who purports to act for the Government has the authority to do so. Slip Op. at 39, citing *Fed. Crop Ins. Corp. v. Merrill*, 332 U.S. 380, 384 (1947). Authority itself can be express (i.e., granted by the Constitution, a regulation or statute) (see id., citing *Roy v. U.S.*, 38 Fed. Cl. 184, 188 (1997)) or implied (the "authority is considered to be an integral part of the duties assigned to [those] Government employee[s]" (id., citing *H. Landau & Co. v. U.S.*, 886 F.2d 322, 324 (Fed. Cir. 1989)).

None of the Government signatories had express authority. "Implied actual authority" is a doctrine so narrow as rarely to be of use, and it proved unavailing to Liberty. There was no evidence that execution of NDAs was "integral to" Dean's or Marsh's duties. Slip Op. at 40. The other contracting parties were found to be civilian contractors without any potential authority to bind the Government.

Liberty argued that the contracts were "institutionally ratified" by the Army and SOCOM because they "received the benefit from an otherwise unauthorized contract." The Court held that receipt of benefit was insufficient to support ratification; rather, the agreements would have to be ratified or affirmed by a superior with authority to enter such contracts.

Slip Op. at 42, citing *Digicon Corp. v. U.S.*, 56 Fed. Cl. 425, 426 (2003). Because no official with the power to ratify the NDAs was aware of and accepted those documents, the Court held that the NDAs were invalid as Government obligations, and it denied the breach of contract claims. Slip Op. at 42.

Pendant Non-Contractual Claims: Liberty also claimed trade secret misappropriation by the Government; however, because the misappropriation of trade secrets is a tort, the COFC noted that it lacked the jurisdiction to hear such claims under the Tucker Act unless the claim specifically derived from contractual duties of the Government. Slip Op. at 38, citing *Demodulation, Inc. v. U.S.*, 103 Fed. Cl. 794, 813 (2012). Having held the underlying NDAs invalid as Government obligations, the Court determined that it had no jurisdiction over the misappropriation claim. While there might be jurisdiction for certain related tort claims against the Government under the Federal Tort Claims Act, 28 USCA Ch. 171, 28 USCA § 2671 et seq. and 28 USCA § 1346(b) (FTCA), jurisdiction would be in the district courts.

Infringement of Liberty's '395 Patent: Section 1498 of title 28, U.S. Code gives the Federal Government special qualified rights with respect to U.S. patents and establishes special remedies for patent holders when the Government fails to meet its obligations. The Government enjoys a statutory compulsory, but royalty-bearing license to practice a patent. The license covers not only use by Government officials, but also use by any company that has the Government's "authorization and consent" to practice a patent for purposes of supplying the Government. That authorization is normally conferred by a standard clause in procurement contracts (e.g., Federal Acquisition Regulation 52.227-1, Authorization and Consent).

The statutory license is subject to the obligation to pay reasonable compensation. If a contractor fails to negotiate a license and royalty with the patent holder, the patent holder cannot sue the contractor for infringing Government sales in district court; its sole remedy is a suit against the Government in the COFC for reasonable compensation in the form of a royalty plus interest. In general, the legal standards and defenses in a § 1498 suit are the same as in district court patent actions.

However, no injunction against infringement is possible, since the Government and any contractors it authorizes are entitled to practice the patent. There are other differences between a § 1498 action and an infringement suit, including the unavailability of enhanced damages for willful infringement and a differing standard of proof on some issues. Whether the Government or the contractor ultimately bears the cost of an award against the Government will depend on the existence and scope of a patent indemnity provision in the contract.

A threshold issue for the COFC was whether the next-generation bullets adopted by the Army embody an invention claimed by the '325 patent. In the typical commercial patent case, this would be called the question of "infringement." However, since the Government enjoys a compulsory statutory royalty-bearing license, a very strict semanticist might say that the Government's potential error is not infringement of the patent, but failure to negotiate and pay a reasonable royalty for use of the technology. As more liberal semanticists, we will adopt the phrasing used by the Court, referring to this question as the "infringement" issue.

As to Claim 32, the Government conceded that its rounds satisfied all the claim limitations but one. The Government interpreted the words "intermediate opposite ends" as precluding the interface component from enclosing the projectile, and it argued that an embodiment that encloses the end portion (the "reverse jacket") contradicts the meaning of "intermediate opposite ends." Slip Op. at 20–21. The Court rejected this reasoning, finding that "intermediate opposite ends" means that the interface must cover "at least" the middle portion of the round, but it is not limited to covering only the middle portion. Slip Op. at 20–22. Under this construction, the Court held that the Army rounds literally infringe Claim 32, and thus also literally infringe on all dependent claims.

As to Claim 1, testimony indicated that the Army rounds exhibited a "reduced area of contact" with the gun barrel, as compared with other jacketed .22 caliber rounds. The Court thus held that the Army ammunition also literally infringes Claim 1. Slip Op. at 24.

Validity: Novelty and Non-Obviousness: The Government also argued that the '325 patent is invalid for lack of novelty. It claimed that two prior art references (the *Leussler* '416 patent and the *Nosler* '420 patent) anticipate each and every limitation of the '325 patent. The Court rejected this argument, pointing out that neither the *Leussler* nor *Nosler*

patents contains the "controlled rupturing" limitation described in the '325. In contrast, both the *Leussler* and *Nosler* patents describe an expanding or "mushrooming" penetrator, which the Court found to be quite distinct from the fragmentation described by the '325 patent. The Government also raised an "inherent anticipation" argument based on the assertion that the predecessor rounds also rupture or break upon hitting an enemy combatant. The Court was unconvinced because the frequent lack of rupturing was a key reason for the redesign effort. "[T]he M855's inconsistency and ineffectiveness in combat was one of the principal shortcomings to be addressed by the Defendant's Green Ammo [and] Lethality program." Slip Op. at 27.

The Government's contention that the '325 patent is invalid for obviousness under 35 USCA § 103 fared no better. The Government cited 10 prior art references, but it failed to show why a person of ordinary skill in the art would have combined the relevant elements from those specific references "*in the way the claimed invention does*." Slip Op. at 28, citing *ActiveVideo Networks*, 694 F.3d 1312 at 1328 (Fed. Cir. 2012) (emphasis in original). In working backward from the '325 patent claims to compare them against the prior art, the Government expert relied on "impermissible hindsight." In other words, he engaged in a "part-by-part" analysis, prohibited by the U.S. Court of Appeals for the Federal Circuit's holding in *Princeton Biochemicals, Inc. v. Beckman Coulter, Inc.*, 411 F.3d 1332, 1337 (Fed. Cir. 2005). Slip Op. at 29. The invention is not an "obvious" extension of prior art if knowledge of the asserted patent is required in order to identify and combine the relevant prior art. Finally, the Court concluded that the record of "secondary considerations" (i.e., the long-standing need for the lead-free rounds with enhanced lethality, and the proven success of the M855A1 and subsequent acclaim for it) further substantiated a finding of non-obviousness. Slip Op. at 31.

Reasonable Royalty: Having found infringement and validity, the Court proceeded to determine a "reasonable royalty," calculated by multiplying the reasonable compensation base (Government purchases of infringing articles) by a "reasonable royalty rate" that would have resulted from a "hypothetical negotiation." Here, the reasonable compensation base was the number of M855A1 rounds ordered by the Government since the issuance of the '325 patent. Liberty argued for a baseline royalty rate based on estimated cost savings of the patented technology when compared to "best available alternatives." Slip Op. at 34. After considering expert testimony, the Court arrived at a baseline rate of $.05 per round. This was then reduced to account for production, development and commercialization costs, as well as hypothetical negotiation considerations—such as whether the patentee would be willing to take a smaller royalty if the product was not fully developed, or if the infringer would be willing to pay more for a readily commercialized invention. Slip Op. at 36. The final royalty rate is $0.014 per round. Slip Op. at 37.

The Army ordered over 1.1 billion M855A1 rounds over the 34 months from the issuance of the patent through April 2013. At a rate of 1.4 cents per round, that reasonable compensation base yields a royalty of $15.62 million, before the addition of "delayed compensation" damages or interest. Further, the patent remains in effect through Oct. 20, 2027. Sales of the M855A1 will certainly continue, and the volume of royalty-bearing sales may rise when the M80A1 round is in full production. If the total average rate of ordering for both models remains the same as it has been for the M855A1 alone, total royalties will exceed $95 million over the life of the patent.

Lessons for Contractors—The *Liberty Ammunition* decision illustrates that protecting and enforcing IP vis-à-vis Government customers requires a different approach than it does in the commercial market.

When dealing with a Government customer, patent protection assumes greater importance because of the difficulties in relying solely on trade secret protection. Whereas in the commercial world contractual restrictions such as NDAs are the main basis for protecting trade secrets, such contractual restrictions may be difficult to establish or enforce against the Government.

To deter violations of trade secrets by the Government, invoke the Trade Secrets Act rather than rely on NDAs. Most Government officials, realizing they lack authority, refuse to sign NDAs. If they do sign, the documents are likely to be unenforceable. Instead of relying on NDAs for federal agencies, a contractor should invoke the Trade Secrets Act, 18 USCA § 1905 (TSA) and make sure that all proprietary information is marked, to put the Government on notice of what is covered.

If the U.S. Government is a significant potential customer, know the remedies and procedural requirements of § 1498. It is important to understand these provisions from both a plaintiff and a defense perspective, since a technology company must be prepared not only to assert its own IP, but to defend against allegations of infringement of third-party IP. In the latter case, the fact that a § 1498 suit is brought against the U.S. does not let the contractor off the hook, since indemnification of the Government is often an issue. Failure to follow proper procedures and invoke available defenses can be costly for a company—and, potentially, its law firm.

If it becomes necessary to enforce a trade secret based on a non-contractual theory, the owner must resort to district court. Although the TSA is a criminal law and does not include a private civil remedy, injunctive relief may be sought through the Administrative Procedure Act, 5 USCA § 552. See *Conax Florida Corp. v. U.S.*, 625 F. Supp. 1324 (D.D.C. 1985). A violation of the duty imposed by the TSA and by state trade secret law could also be the foundation for tort claims for money damages. *Jerome Stevens Pharms., Inc. v. FDA*, 402 F.3d 1249, 1252 (D.C. Cir. 2005); *Kramer v. U.S. Dep't of the Army*, 653 F.2d 726, 729 (2d Cir. 1980).

The FTCA generally subjects the Federal Government to tort claims based on state law. There are important exclusions for certain intentional torts; most notably, one that excludes any theories relying on misrepresentations by the Government. 28 USCA § 2680(h). That exclusion has sometimes led to the dismissal of FTCA suits related to misappropriation of proprietary data. See *RQ Squared, LLC v. U.S.*, 2011 WL 830285 (W.D. Mo. March 2, 2011). But in *RQ Squared*, the plaintiff failed to invoke the TSA, relying instead on an alleged "joint venture" relationship, which the court held could only be created on the basis of Government representations or agreements. In contrast, the TSA and state trade secret law establish a duty to protect information that is not contingent on a Government representation or agreement, and can support a tortious disclosure claim that avoids the misrepresentation exception.

Lessons for Federal Procurement or IP Policy?—The Federal Government has explicit policies to foster small business participation in procurement, including set-aside awards, agency goals for volume of small business awards, and requirements of subcontracting plans for large prime contractors. Policies favoring small businesses also extend to research and development (R&D), as witnessed by the SBIR Program, which offers small businesses funding and somewhat more favorable IP rules than are available for large R&D contractors.

Despite these written policies, many small independent developers believe that the cards are stacked against them, that the Government prefers to do business with the big boys, and that they are perpetually at risk of having the fruits of their efforts misused or misappropriated by the Government or large prime development or production contractors. Unfortunately, the sequence of events that led to the *Liberty Ammunition* decision does nothing to dispel that perception, even though there is nothing in the court's opinion to suggest that anyone in the Army acted in bad faith, sought personal gain or acted other than in what they perceived to be the Army's best interest.

To observe that the design of small caliber rounds is of great importance to the Army is a gross understatement. The design directly affects the effectiveness of weapons and the number of U.S. casualties, not to mention hundreds of millions of dollars in taxpayer funds. In that context, it is hardly a surprise that the Army would elect a development strategy of partnering with a large, highly capable company with long experience in munitions. But it is certainly also in the Government's interest to encourage small as well as large innovators to work on technology of interest and bring it to the Government.

Therefore, it is worth considering whether there is anything that the Army could have done differently here, or that any agency might do differently in future procurements. For example, the customer might continue to be open to industry input throughout the development cycle. If the agency has a contractual development partner, it could encourage that partner to subcontract with a company such as Liberty for potential licensing and technology transfer. In developing new .22 caliber rounds, the Army might have benefited from Liberty's further technical input; in the end, it still had to pay a large sum for Liberty's IP, despite not getting that additional help.

Likely, ATK was not liable to indemnify the Army for infringement because of standard indemnity clause language that makes the Government respon-

sible for infringement that necessarily results from a Government-approved specification. However, when the Government is on notice of a specific third-party invention that may be useful, it could shift the risk to the prime contractor by expressly excluding the relevant patent from the exception, thereby making its infringement subject to indemnity. This would force the prime development contractor to mobilize its patent counsel to determine whether the patent is infringed, whether there is a non-infringing alternative that is at least equivalent in performance to the patented technology, or whether it is appropriate to negotiate a license. The customer's interest is in getting the best technology, which might be the licensed product rather than a work-around.

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