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Katherine C. Epstein

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THE OTHER VISIBLE HAND: NATIONAL SECURITY AND INTELLECTUAL PROPERTY IN THE UNITED STATES BEFORE WORLD WAR I

by Katherine C. EPSTEIN

Associate Professor of History
Rutgers University-Camden

S'appuyant sur l'étude du cas du développement des torpilles, cet article met en évidence et analyse la tension entre les enjeux de sécurité nationale et les intérêts, en matière de propriété intellectuelle, des industriels de la défense aux États-Unis avant la Première Guerre mondiale. Il suggère que cette tension représente une part inexplorée de l'histoire du «privilège du secret d'État», et que sa compréhension peut aboutir à une reconsidération de puissants récits de l'histoire américaine d'aujourd'hui.

INTRODUCTION

In May 2011, the U.S. Supreme Court handed down its decision in *General Dynamics Corp. v. United States*, the facts of which were as follows. In 1986, General Dynamics and McDonnell-Douglas, two major defense contractors, agreed to build a stealth airplane for the US Navy called the A-12 Avenger. In 1991, the Pentagon cancelled the contract on the grounds that the contractors had not met various deadlines, and it argued that the contractors should return some \$1,35 billion in payments already made. The contractors retorted that the reason they had failed to meet deadlines was that the government had refused to share its “superior knowledge” on stealth

aircraft necessary to complete the project expeditiously, and they argued that the government owed them an additional \$1,2 billion to cover their costs. After classified information about stealth aircraft was disclosed without authorization during discovery, the Pentagon invoked the “state secrets privilege” to stop discovery and to avoid sharing any further information with the contractors or the courts. The Supreme Court unanimously ruled that the courts’ lack of access to the relevant evidence due to the government’s assertion of the state secrets privilege required the courts to leave both parties where they stood at the time the suits began: the government would not get its money back, and the contractors would not get additional money¹.

¹ *General Dynamics Corp. v. United States*, 563 US 478, 2011. See also L. Denniston, “Argument Preview: A Look at ‘State Secrets’”, SCOTUSblog, 14 January 2011, <http://www.scotusblog.com/2011/01/argument-preview-a-look-at-state-secrets/>.

The “state secrets privilege” was formally established in the famous 1953 Supreme Court case of *United States v. Reynolds*, decided at a time of high Cold War tensions. In that case, the widows of a B-29 flight crew which crashed on an experimental flight sued the Air Force for negligence and requested the accident report so that they could make their case. The government countered that disclosure of the accident report to either the widows or the courts would compromise state secrets, and the Supreme Court upheld its claim. The privilege has been used repeatedly in the ongoing “war on terror”, another period of heightened national-security concerns, to block requests to disclose evidence in cases involving detainees suspected of terrorism and the National Security Agency’s wire-tapting efforts².

In this article, I wish to trace an unexplored aspect of the history of the state secrets privilege. The privilege exists to control what one scholar has termed “the fundamental category of National Security Information”—that is, information deemed sensitive for reasons of national security³. I propose that this category was established before World War I, not during the early Cold War, as *Reynolds*’ date and much historical work would suggest. In addition, I argue that an over-looked cause of the category’s establishment was friction between the government and defense contractors over advanced weapons technology—much as occurred in the 2011 *General Dynamics* case. To illustrate these claims, I shall use as a case study one of the

most advanced weapons of its day at the turn of the century: the automobile torpedo.

1. THE US NAVY AND THE TORPEDO

The modern self-propelled torpedo was invented in 1866 by an expatriate British engineer named Robert Whitehead. His invention was at the cutting edge of the technologically possible. The components of Whitehead torpedoes had to be precision-engineered to margins of error out to four decimal places and 0,001–0,0006% of overall sizes⁴. The parts were not only small but plentiful. For instance, whereas the standard rifle used by the U.S. Army before World War I (the 1903 Springfield) contained 90 parts, the standard torpedo used by the U.S. Navy at roughly the same time contained some 500 parts—in the guidance systems alone⁵. By the outbreak of World War I, Whitehead torpedoes could travel at a speed of 45 knots (51 miles per hour) or run 10 000 yards (5,6 miles). To put those numbers in perspective, Glenn Curtiss, the great American engineer, won the premier airplane racing event of 1909 by flying 47 miles per hour for 12,4 miles—and of course he did not have to contend with water resistance⁶. Over a fifty-year period, therefore, the speed of torpedoes had increased roughly by 800% and their range by 5 000%.

² There is a large literature, mostly written by lawyers rather than historians, on the state secrets privilege. A useful entry point is R. M. Chesney, “State Secrets and the Limits of National Security Litigation”, *George Washington Law Review*, 75, n° 5-6, August 2007, p. 1249-1332.

³ P. Galison, “Removing Knowledge”, *Critical Inquiry*, 31, n° 1, Autumn 2004, p. 231.

⁴ A. Casali and M. Cattaruzza, *Sotto i mari del mondo: La Whitehead 1875–1990*, Rome-Bari, Laterza, 1990, p. 48. My thanks to Andrea Ottone for his assistance in translating this work.

⁵ W. Brophy, *The Springfield 1903 Rifles: The Illustrated, Documented Story of the Design, Development, and Production of all the Models of Appendages, and Accessories*, Mechanicsburg, Stackpole Books, 1985, p. 230; Sawyer to Theiss, 20 March 1911, Bu[reau of]Ord[nance] 22997/16, R[ecord]G[rup]74/E[ntry]25/B[ox]1180, National Archives and Records Administration, Washington, DC [hereafter NARA].

⁶ “Curtiss Wins Aeroplane Cup”, *New York Times*, 29 August 1909, p. 1.

The US Navy decided to acquire Whitehead torpedoes in 1891. Instead of buying directly from Whitehead or establishing a government factory, the Navy opted to have a private firm called the E. W. Bliss Company, located in Brooklyn, build them under license. Although not without friction, the Navy's purchase of Whitehead torpedoes from the Bliss Company was fairly straightforward, because it fit in easily with conventional procurement techniques. Traditionally, when governments wanted to procure weapons, they either built them in public-owned factories or bought them as finished products from the private sector; the Whitehead torpedo contracts fell into the latter category.

The situation became much more complicated in 1903, when the Bliss Company produced a torpedo of its own design. It was called the Bliss-Leavitt torpedo, named after the Company and the man who led the design process, the Company's chief engineer, F. M. Leavitt. The Bliss-Leavitt torpedo did not fit into either of the two conventional procurement paradigms: it was not government-designed or -produced, and it was not a finished product but experimental. Moreover, it was a domestically designed weapon with international appeal. Both of these characteristics presented the US Navy with new problems.

The first episode to pose these problems occurred in 1904. In April, the Bliss Company alerted the Navy that its new torpedo was attracting foreign interest.

Anticipating that the Navy might wish to keep the technology to itself, the Company offered to sell the exclusive international rights to the Bliss-Leavitt torpedo to the U.S. government for \$1,5 million⁷. The Bureau of Ordnance declined, on the assumption that it would have to buy too many torpedoes to make the exclusive rights economical⁸. As the Bliss Company pointed out, however, the Bureau had misunderstood the nature of the proposition. The Company's offer was not a conventional lump sum-in-lieu-of-royalties arrangement; instead, it was designed to replace the lost profits the Company could make selling in a global marketplace⁹. The Bureau's incomprehension is not surprising: this was probably the first time the U.S. Navy had received such an offer, since American firms generally imported rather than exported naval technology¹⁰.

To complicate matters further, the changing procurement paradigm obscured the intellectual property rights to the new technology. In the fall of 1905, tests of the first Bliss-Leavitt torpedoes revealed that they were experimental rather than finished products. Their most serious flaw was a tendency to "sheer" off their horizontal course. In the Bureau's judgment, the likeliest explanation for this problem was the torque generated by the torpedo's turbine engine. It began to carry out experiments to balance the turbine at the Naval Torpedo Station in Newport, RI¹¹.

Although an apparently trivial issue, these efforts to solve the "sheer" problem marked a watershed in the relationship

⁷ Bliss Co. to Converse, 21 April 1904, BuOrd 4647/04 with 12865/03, RG74/E25/B575, NARA; Herbert & Micou to Converse, 23 April 1904, BuOrd 4681/04 with 12865/03, *ibid*.

⁸ See Herbert to Sec[retary of the]Nav[y], 26 April 1904, BuOrd 4681/04 with 12865/03, *ibid*.

⁹ Bliss Co. to Herbert & Micou, 27 April 1904, enclosure to Herbert & Micou to Converse, 28 April 1904, BuOrd 4681/04 with 12865/03, *ibid*.

¹⁰ See, e.g., B. F. Cooling, *Grey Steel and Blue Water Navy: The Formative Years of America's Military-Industrial Complex, 1881-1917*, Hamden, Archon Books, 1978, p. 66-82.

¹¹ Gleaves to Mason, 18 March 1905, BuOrd 16279/10.5, RG74/E25/B727, NARA; Davison to Bliss IoO, 15 August 1905, enclosed in BuOrd 18172/7, RG74/E25/B873, NARA; Taylor to Mason, 23 October 1905, BuOrd 17761/55, RG74/E25/B842, NARA; Mason to Gleaves, 10 November 1905, BuOrd 17761/55, B45-131, Naval Torpedo Station records, Newport, RI [hereafter NTS].

between the American state and society with respect to weapons procurement. In tasking naval officers to solve the “sheer” problem, the state was investing directly in the development of experimental products by the private sector—in today’s parlance, the state was collaborating with private industry on research and development (R&D). Perhaps the most insightful student of this fundamental change in the procurement process was William McNeill, who coined the term “command technology” to describe weapons developed in collaboration between state and society¹².

The involvement of multiple parties in the process of invention where previously there had been just one complicated the task of establishing who had invented what, and when. Negotiations for a large new Bliss-Leavitt torpedo contract while experiments on the turbine proceeded in late 1905 forced the Bureau and the Bliss Company to grapple with this complication. Aware now that the Bliss-Leavitt torpedo was experimental, rather than a finished product as originally assumed, and that both parties would have to contribute labor to improving it, the Bureau realized that it needed some new contractual provision to protect its intellectual property rights to, and to control the Bliss Company’s disposition of, its contributions. It should be noted that these two purposes—protecting rights and preventing sales to foreign powers—were both related and distinct. The Bureau’s instructions to the Judge Advocate General on the new contractual clause it envisioned blurred the two purposes¹³. Based on the Bureau’s instructions, the Judge Advocate General drafted a new clause for

the contracts, numbered 19. It prohibited the Bliss Company from exhibiting or selling “any *device* the *design* for which is *furnished* [emphasis added]” by the Bureau. To claim protection for a “*device or design*” invented by itself under Clause 19, the Bureau had to “state to the [Bliss Company] *in writing, at the time when the said device or design is itself conveyed* to the [Bliss Company] by *written* communication from the [Bureau], that the [Bureau] considers that the said *device or design* is embraced within the provisions of this clause [emphasis added]”¹⁴.

The language of the clause was imprecise and left loopholes that either party could exploit. The words “furnished” and “conveyed” did not require the Bureau to have invented (or patented) technology protected under the clause, while the words “device” or “design” might be expanded to include mere principles or ideas as distinct from fully developed inventions. The Bliss Company imagined a nightmare scenario in which the Bureau communicated a clever thought, let the Company do all the hard labor of fleshing it out, and then claimed the intellectual property rights for itself despite having done no real work of invention. By letter, the Bureau explicitly confirmed that the Company’s interpretation of these words was correct, but did not change the contract itself¹⁵. Moreover, to convince the Company to accept the clause, the Bureau went out of its way to assure the Company that its interests were “amply” protected by the notification procedure, which required “prompt” notice in writing to trigger protection under the clause, leaving devices about which the Bureau delayed communicating its intentions

¹² W. McNeill, *The Pursuit of Power: Technology, Armed Force, and Society since A.D. 1000*, Chicago, University of Chicago Press, 1982, p. 278-280.

¹³ Mason to JAG, 16 October 1905, and JAG to Mason, 19 October 1905, JAG 649/3, RG125/E22/B130, NARA.

¹⁴ Clause 19, “Contract for the Manufacture of 300 Torpedoes for the U.S. Navy, Bliss-Leavitt 5-meter, 21-inch, Mark I”, 22 November 1905, B45-131, NTS.

¹⁵ Bliss Co. to Mason, 19 October 1905, BuOrd 17761/52, and Mason to Bliss Co., 21 October 1905, BuOrd 17761/52, copies in Transcript of Record, p. 315-316, *E. W. Bliss Co. v. United States*, 248 U.S. 37, 1918 [hereafter ToR]. Available through the Gale / Cengage Learning database “The Making of Modern Law: U.S. Supreme Court Records and Briefs, 1832-1978”.

or communicated orally unprotected¹⁶. Thus Clause 19 left both parties vulnerable.

Negotiations over the price of the torpedoes revealed a further way, in addition to Clause 19, in which the Bureau might lay claim to the information and technology embodied in the Bliss-Leavitt torpedo. When the Bureau complained that the price quoted by the Bliss Company was too high, the latter retorted that its price had to be higher to reflect the risks of developing experimental technology: “[H]uman foresight is fallible, and many great and unforeseeable expenses may, and no doubt will be encountered and we feel that it is no more than reasonable and just that we should have a fair margin for unforeseen reverses”¹⁷. By paying artificially high prices for the finished product, in other words, the Bureau was subsidizing private-sector R&D work. This indirect responsibility for the Bliss Company’s R&D, on top of direct responsibility for government R&D on the balanced turbine, gave the Bureau two possible avenues to claim a share of the intellectual property rights to the Bliss-Leavitt torpedo.

While the Bureau and the Bliss Company negotiated the contract for 300 Bliss-Leavitt torpedoes in late 1905, the Naval Torpedo Station proceeded with its effort to balance the turbine engine. Led by an officer named G. C. Davison, the Station built an experimental balanced turbine and tested it in May 1906. These tests showed that the principle of the design was practicable, and suggested that it would eliminate the “sheer” problem¹⁸.

The Bureau immediately appreciated the significance of the prospect of placing the balanced turbine in Bliss-Leavitt torpedoes. Although the Bureau’s past contributions to torpedo design had been minor, the Bureau believed that the balanced turbine would make torpedoes with unbalanced turbines “markedly inferior”. The Bliss-Leavitt torpedo would become more attractive to foreign buyers thanks to this government contribution—but the government did not control the exclusive international rights vis-à-vis the Bliss Company, having declined to purchase them in 1904. The Bureau therefore asked the Secretary of the Navy whether there was any way to prevent the Bliss Company from exporting torpedoes containing the balanced turbine¹⁹.

The only possible legal means of export control that occurred to the Secretary was Section 5335 of the Revised Statutes, better known as the Logan Act, which embodied a law passed by Congress in 1799 to restrict the conduct of international relations to professional diplomats²⁰. Although the Logan Act nominally addressed international communications, its original intent was so far from controlling the export of information and products to foreign powers that the Secretary doubted it would apply²¹. Thus, the United States had no laws on the books that addressed the realities of the modern globalized weapons market.

The Secretary had another idea, however. Assuming that Davison was amenable, the Secretary suggested that the Bureau could protect its contributions to the balanced

¹⁶ Mason to Bliss Co., 28 October 1905, BuOrd 17761/59-LS309/131–32, RG74/E25/B842, NARA.

¹⁷ Bliss Co. to Mason, 27 October 1905, BuOrd 17761/60, *ibid.*

¹⁸ Mason to Gleaves, 10 November 1905, BuOrd 17761/55-LS311/346–8, RG74/E25/B842, NARA; Gleaves to Mason, 12 January 1906, BuOrd 17761/93, *ibid.*; Gleaves to Mason, 28 July 1906, BuOrd 17761/109, *ibid.*

¹⁹ Mason to SecNav, 15 September 1906, JAG 649/4, RG125/E22/B130, NARA.

²⁰ J. B. Moore, *A Digest of International Law*, vol. 4, Washington, Government Printing Office, 1906, p. 448–450. Section 5335 can be viewed in *Revised Statutes of the United States*, 2nd ed., Washington, Government Printing Office, 1878, p. 1036. With slightly different wording, the Logan Act was originally dated 30 January 1799 and appears in 1 *Stats at Large of USA* 613.

²¹ Newberry to Mason, 21 September 1906, BuOrd 20113/2, RG74/E25/B982, NARA.

turbine by having Davison patent the device and assign the patent to the government. Davison agreed. He applied for the patent in October 1906, and it was issued, as No.858,266, in June 1907. Its issuance was “very gratifying”, Davison acknowledged, “as the claims were unusually broad, so that the device should be absolutely protected in spite of any attempts to get around it”²².

Like Clause 19, however, Davison’s patent was a pyrrhic victory, reflecting in equal parts the Bureau’s awareness of a problem and its failure to arrive at a solution. First, the very broadness of the claims reflected imprecision in describing the invention, which could leave the patent vulnerable to attack. Second, in publishing the balanced turbine by patenting it, the Bureau imperiled any future claims to the secrecy of the balanced turbine under Clause 19. Thus, where the Bureau had meant to strengthen its contract rights by acquiring patent rights, it had potentially weakened them. Finally, after Davison disclaimed any interest in controlling the foreign patent rights, the Bureau let the Bliss Company buy them—a remarkable turn of events, considering the Bureau’s desire to preserve the secrecy of the balanced turbine from foreign governments and prevent the Bliss Company from selling it abroad²³.

In addition to its mis-steps over the patent, the Bureau also maladroitly executed the notification procedure in Clause 19. On 22 October 1906, the Bureau referred vaguely to the balanced turbine as “an improved propelling mechanism” in a letter to the Bliss Company. On 30 October, a group

of Bureau representatives met at the Bliss Company to witness tests of new torpedoes, where the balanced turbine “was brought up in a general way to give the Bliss Company the idea involved, but without details”. Only in late December, when a Bureau official learned that the Bliss Company was experimenting with its own balanced turbine, did the Bureau get serious about executing the notification procedure necessary to trigger protection under the Clause 19. The Bureau had not notified the Bliss Company in writing that it intended for Clause 19 to cover the balanced turbine until 9 November 1906, and it did not provide a drawing until 9 January 1907²⁴. Thus the Bureau had created a window of anywhere from 18 to 79 days between revealing the existence of the balanced turbine and triggering protection under Clause 19, leaving room for the Company to claim that it had independently come up with its own balanced turbine which the government did not control.

Ironically, as legal concerns over the balanced turbine mounted, new tests indicated that the device did not in fact fix the “sheer” problem. In running Bliss-Leavitt torpedoes with balanced turbines in the spring of 1907, the Bureau found that they still sheered. The Bliss Company discovered the real culprit: the exhaust from the torpedo got mixed up with the propellers, causing partial cavitation, and the solution was to add a bulkhead that redirected the exhaust. Either not appreciating or unwilling to concede the significance of these results, the Bureau would continue to make a legal mountain out of a technological molehill²⁵.

²² Acting SecNav to Mason, 21 September 1906, BuOrd 20113/2, *ibid.*; Davison to Mason, 8 December 1906, B50-158, NTS (contains quotation).

²³ Davison to Mason, 8 December 1906, B50-158, NTS; Bliss Co., “Answer as Amended”, 24 June 1913, ToR, p. 12.

²⁴ Mason to Bliss Co., 22 October 1906, BuOrd 17761/128-LS358/374-5, RG74/E25/B843, NARA (contains first quotation); Mason to Bliss Co., 9 November 1906, BuOrd 17761/128-LS361/231-32, *ibid.*; Gleaves to Mason, 29 December 1906, B50-158, NTS (contains second quotation); endorsement by Mason, 9 January 1907, BuOrd 20361/3, RG74/E25/B1003, NARA.

²⁵ Gleaves to Mason, 18 May 1907, para. 3 and 8, BuOrd 19339/41, RG74/E25/B935, NARA; Bliss Co. to Mason, 17 January 1908, para. 6, BuOrd 17761/342, RG74/E25/B843, NARA.

Meanwhile, a new government torpedo factory and a new piece of torpedo technology laid the foundation for an additional intellectual property rights dispute. In 1907, with the Bliss Company behind on deliveries and a supply crisis in the offing, the Bureau of Ordnance received authorization to establish its own torpedo factory in Newport²⁶. Unsure what kind of torpedo it wanted to build, it asked the Bliss Company what the latter would charge in royalties for the government to build Bliss-Leavitt torpedoes. Second only to the royalty on the whole Bliss-Leavitt torpedo was the royalty on a new piece of technology called the “superheater”, which dramatically increased the speed and range of torpedoes²⁷. The particular model used in Bliss-Leavitt torpedoes had been invented by the great British armaments firm Armstrong, Whitworth & Company (hereafter the Armstrong Company). The Bliss Company gained access to it through an April 1905 agreement with the Armstrong Company, in which Bliss agreed not to contest Armstrong’s American patent applications in return for the right to use Armstrong’s superheater in Bliss-Leavitt torpedoes²⁸. The Bureau would spend the next several years trying to reduce or evade royalty charges on the superheater.

2. REAPING THE LEGAL WHIRLWIND

Its efforts to do so were related to legal developments in eminent domain and patents. Eminent domain referred to the power of the government to seize property for public use in return for compensating the owners. In the US Constitution, the last clause of the Fifth Amendment (known as the “takings clause”) enshrined and limited the federal government’s power of eminent domain by stating that private property could not “be taken for public use, without just compensation”. Into the nineteenth century, the most common type of property to be “taken” was land. As types of property multiplied, to include physical property other than land and non-physical forms of property like corporate shares, so too did the scope of eminent domain²⁹.

An important change in eminent domain law occurred as the Bureau’s dispute with the Bliss Company over superheater rights took shape. In June 1907, the German armaments firm of Krupp had sued William Crozier, the US Army Chief of Ordnance, for infringing Krupp’s American patents for guns and carriages, and it sought an injunction to prevent the government from continuing to violate its patents as well as compensation for the royalties it was owed. The case reached the US Supreme Court in 1911, by which time Congress had passed a new law enlarging the jurisdiction of a court known as the Court of Claims to hear

²⁶ Gleaves to Mason, 15 September 1906, BuOrd 17761/116, RG74/E25/B843, NARA; Mason to SecNav, 17 October 1906, BuOrd 19800-LS358/135–42, RG74/E25/B958, NARA; “An Act Making Appropriations for the Naval Service”, 2 March 1907, 34 *Stat.* 1176 at 1180.

²⁷ Mason to Bliss Co., 9 November 1907, BuOrd 20160-LS412/17–18, RG74/E25/B987, NARA; Bliss Co. to Mason, 25 November 1907, BuOrd 20160/12, *ibid.*

²⁸ A copy of the agreement was not found, but it is dated and described in *E. W. Bliss Company v. United States*, 53 Ct. Cl. 47, 1917.

²⁹ L. M. Friedman, *A History of American Law*, 3rd ed., New York, Touchstone, 2005, p. 124–125, 167–170; M. J. Horwitz, *The Transformation of American Law, 1780–1860*, Cambridge (MA), Harvard University Press, 1977, p. 63–108, 259–261; *idem*, *The Transformation of American Law, 1870–1960: The Crisis of Legal Orthodoxy*, New York, Oxford University Press, 1992, p. 146–148.

claims by patentees against the government or its agents. The Supreme Court held that the new law enabled the government to take intellectual property rights through eminent domain. It was “the purpose of the statute” which enlarged the Court of Claims’ jurisdiction to provide for “the exercise of the power of eminent domain”, by creating a judicial forum in which aggrieved patentees could seek retroactive compensation. The “public nature” of the patents in question—namely their relevance to national security—was clear. Moreover, since the Court of Claims could award compensation for a taking, an injunction as originally sought by Krupp was out of the question: the two forms of legal remedy were incompatible³⁰.

Naval officials watched *Crozier v. Krupp* closely. In 1912, the Navy Department’s Solicitor, who handled matters of civil law, remarked that the extension of eminent domain to intellectual property rights “is of great value to the department in ordinary times and will save it, in times of war, from annoyances of a kind that have reflected discredit on the patriotism of some citizens in times past”³¹. More surprising was the interest shown by the commander of the Naval Torpedo Station, G. W. Williams. In January 1912, he suggested that the Bureau of Ordnance revisit the question of torpedo superheater rights in view of *Crozier v. Krupp*. While recognizing that the patent rights of inventors were protected by laws enacted under specific authorization of the U.S. Constitution (specifically, Article 1, Section 8), Williams submitted: “It is believed that the patent laws were intended for the protection of the inventor and produce, and not for the oppression of the consumer. This would seem to be a reasonable assumption in any case, and in view of the history of the

development of the superheater it is thought that the consumer—in the case at issue, the government—should be exempt from an exorbitant charge as a matter of equity, even should *the right of eminent domain* be held as not applicable to property consisting of patent rights [emphasis added]”.

To explain why the government should be equitably exempt from high royalties, Williams contended that it had subsidized the Bliss Company’s R&D by paying inflated prices for the finished products³².

In describing two legal paths by which the government might claim intellectual property rights when it participated in the work of invention and the technology was sensitive for reasons of national security, Williams’ letter underscored the legal difficulties of the new procurement paradigm. One path was through eminent domain, a well-established legal instrument, albeit one that had not traditionally been applied to intellectual property. The other path, not well established at all, was to claim that indirect subsidies of private-sector R&D entitled the public sector to partial ownership of the finished product. This argument was problematic. For one thing, accounting habits would have made it impossible to put exact dollar figures on the government’s versus the Bliss Company’s contributions: correspondence between the Bureau and the Bliss Company did not distinguish between expenditures on research and development as against expenditures on the final products. For another, the superheater used in Bliss-Leavitt torpedoes (unlike most other parts of the torpedo) had been invented by the British Armstrong, Whitworth & Company, and therefore the US government had not indirectly subsidized its development. In effect, Williams proposed to use

³⁰ *Krupp v. Crozier*, 32 App. D.C. 1 (DC Court of Appeals, 1908); *Crozier v. Krupp*, 224 U.S. 290 (1912); 36 Stat. 851.

³¹ Solicitor to SecNav, 1 October 1912, in DeptNav, *Annual Report of the Navy Department*, 62nd Cong., 3rd Sess., 1912, p. 92.

³² Williams to Twining, 23 January 1912, BuOrd 25562/3, RG74/E25A-I/B198, NARA.

the government's contributions to the rest of the Bliss-Leavitt torpedo as a Trojan horse to attack the Bliss-Armstrong rights to the superheater.

The government used similar and equally problematic arguments to stake its claim to the balanced turbine. In November 1912, the Bureau of Ordnance learned from one of its officers stationed abroad that two executives from a foreign torpedo company planned to visit the Bliss Company, probably to negotiate for Bliss-Leavitt torpedoes with balanced turbines³³. The prospect that the Bliss Company might export the Bliss-Leavitt torpedo caused consternation in the Bureau. One possible way to prevent exportation was to purchase the exclusive international rights it had declined to buy in 1904, but after ascertaining that the Company's asking price remained \$1.5 million, the Bureau again decided against this option³⁴. Another possibility was to use new legislation. Back in 1906, when the Bureau had first asked the Navy Department whether there were any laws that could be used to control the export of sensitive technology, the only option, which was inappropriate, was the 1799 Logan Act. In March 1911, however, Congress passed a measure called the National Defense Secrets Act—not to be confused either with the National Defense Act of 1916, to which it bore only an indirect relation, or with the Espionage Act of 1917, to which it was a direct precursor. The 1917 Espionage Act is famous, but the 1911 National Defense Secrets Act has been mostly forgotten. The 1911 Act read in part:

“[W]hoever... without proper authority, obtains, takes, or makes, or attempts to obtain, take, or make, any document, sketch,

photograph, photographic negative, plan, model, or knowledge of anything connected with the national defense to which he is not entitled; ... or whoever, being lawfully intrusted with any such document, sketch, photograph, photographic negative, plan, model, or knowledge, willfully and in breach of his trust, so communicates or attempts to communicate the same, shall be fined not more than one thousand dollars, or imprisoned not more than one year, or both”³⁵.

The purpose of the 1911 Act, according to the House Judiciary Committee, was “to protect the Nation against spying in time of peace”³⁶. The examples of espionage that the committee's report went on to provide made clear that Congress had in mind a particular kind of information, that bearing on the location of the nation's physical defenses (such as forts), and a particular kind of espionage, traditional state-on-state spying.

The Bureau of Ordnance saw an opportunity to employ the Act in ways different from what Congress had intended³⁷. Instead of traditional state-on-state spying, the Act could be used to regulate the complex public-private nexus that was the international arms market. Instead of information bearing on the location of the United States' physical defenses, it could be used to control scientific and technological information pertaining to advanced weapons. Put differently, the Act could be used to establish a broad category of “national-security information” and to improvise the legal architecture of export control.

Thus the National Defense Secrets Act formed one of the pillars of the government's case against the Bliss Company. In May 1913, the Navy Department asked

³³ Babcock to Twining, 22 November 1912, RG74/E26/B1, bound papers, red volume, NARA.

³⁴ Bliss Co. to Twining, 19 December 1912, BuOrd 27741/1, RG74/ E25A-I/B238, NARA.

³⁵ 36 *Stat.* 1084.

³⁶ House Committee on the Judiciary, Report 1942, 19 January 1911, *Bill To Prevent the Disclosure of National Defense Secrets*, H.R. 26656, 61st Cong., 3rd sess., p. 2.

³⁷ Endorsement by Twining to Solicitor, 26 December 1912, BuOrd 27741/1-1/3, RG74/ E25A-I/B238, NARA.

the Attorney General to seek an injunction forbidding the Bliss Company to sell its torpedoes abroad³⁸. Although the government averred that it had contributed to nine distinct parts of the torpedo, the crux of its case concerned the balanced turbine. It further claimed that the Bureau of Ordnance had conceived the balanced turbine in late 1906 and early 1907 and that the Bureau had “duly informed” the Bliss Company that the rights clause applied. As evidence for its claim to have invented the balanced turbine, the government noted Davison’s patent. The government charged the Bliss Company not only with violating the contracts, but also with violating the National Defense Secrets Act. In sum, the government’s case rested on the three related but distinct pillars of contract, patent, and statute, with the most emphasis placed on the first³⁹.

In April 1914, the judge, Van Vechten Veeder, granted the government’s request for an injunction. For him, the controlling part of the case was Clause 19 of the contract, not the Davison patent or the National Defense Secrets Act (which he rejected on the grounds that the government had formulated its cause of action in such a way as to prevent a court of equity from enjoining a crime). The purpose of Clause 19, according to Veeder, was “to protect the Government in its contributions” to jointly developed technology. He construed the meaning of the word “furnished” narrowly, holding that it did not require designs “furnished” under the clause to meet tests for patentability. While this interpretation eliminated one reason to consider whether the government had done any real work of invention, the need to establish whether the balanced turbine used in Bliss-Leavitt torpedoes actually matched the government’s design brought him right back around to the issue. He dodged the

unpleasant task of trying to understand intricate mechanical details by accepting the government’s claim that the balanced turbine was a “principle” covering a multitude of designs. Accordingly, he ignored contradictory evidence produced by the Company to show that the balanced turbine used in Bliss-Leavitt torpedoes had been designed by the Company between October 1906 and January 1907—the critical window between the government’s first hint of the balanced turbine’s existence to the Bliss Company and its provision of a drawing—and therefore could not be covered under Clause 19. The Bliss Company’s nightmare scenario when it agreed to Clause 19 in 1905 had come to pass: using technology which required little labor to invent and which failed to solve the problem it was intended to solve, the government secured the exclusive international rights to the entire torpedo that it had twice refused to buy at the Company’s asking price⁴⁰.

The Second Circuit and Supreme Court upheld Veeder’s ruling. For the Circuit Court, the case was as much about public policy as about the law of contracts. The heart of its opinion began: “This case illustrates the importance of a great government like the United States having a manufactory of its own for the manufacture of torpedoes and other implements of war which are improved and changed from time to time by the addition of ingenious mechanism which should clearly be kept secret, unless our enemies are to profit equally with ourselves in every improvement which the ingenuity of our army and navy officers may suggest”.

By the same logic, Clause 19 was less a rights clause than a secrecy clause: its purpose was not to assert property rights to the fruits of government labor so much as to prevent foreign nations from acquiring sensitive

³⁸ Roosevelt [Acting SecNav] to Twining, 14 May 1913, BuOrd 27741/6, RG74/ E25A-I/B238, NARA.

³⁹ See the government’s “Complaint as Amended”, 24 June 1913, ToR, p. 1-8.

⁴⁰ A copy of Veeder’s opinion, 14 April 1914, can be found with BuOrd 27741/31, RG74/ E25A-I/B238, NARA.

technology. The Circuit Court wrote that the purpose of the rights clause “is obvious, viz., to keep secret” any device supplied by the government; that the government “should wish her experiments kept secret is too obvious for argument”. The contract should be interpreted not according to the plain meaning of its language, as Veeder and the Supreme Court attempted to do, but “in view of what must have been the intention of the United States”⁴¹.

Veeder’s and the Circuit Court’s opinions reveal strikingly different ways of understanding the issues raised by the Bliss case. In resting its case on the three pillars of the contractual clause, the Davison patent, and the National Defense Secrets Act, the government had offered the courts two distinct conceptual paradigms for interpreting the case. One, selected by Veeder, was to see the case through the lens of property rights and the law of contracts. The other, selected by the Circuit Court, was to see the case through the lens of national security (rather than property) and public policy (rather than law).

Although both of these paradigms produced rulings in the government’s favor, the latter was intrinsically more advantageous to the government—as the government realized. Indeed, the government had emphasized national security precisely because it understood that its contract and property claims were weak. After reviewing the documents provided by the Navy Department in November 1913, the US attorney trying the case wrote to the Attorney General: “[W]e were struck with the idea that in so far as the contracts themselves are concerned, which, as the Navy Department claim, the Bliss Company were about to violate, our evidence in that respect was far from as strong as were

[sic] either anticipated or desired. After a consultation, therefore, it was deemed advisable for us to take two other points of attack, namely, that the Bliss Company should not be allowed to exhibit the torpedo, or any various parts of it, to a foreign government, because it would be a violation of the National defense act [sic]; and because it was absolutely contrary to public policy that a weapon of defense, many of the principal parts of which were suggested, and several of the parts which were designed by the government should be turned in to a weapon of offense, as it would be if the Bliss Company were permitted to show the designs and exhibit the working parts of the torpedo, and demonstrate the action of the torpedo as a whole to a representative of a foreign power [...]. The case is far from as strong as represented [i.e., by the Navy Department] at the time action was requested or as I could wish it to be, but no effort will be spared to bring it to as successful a termination as possible”⁴².

Thus the government deliberately framed the case in terms of national security information and policy rather than intellectual property and contract law because it feared losing on the legal merits alone.

The effect of the courts’ decisions was to reward the government for bad faith, incompetence, or both. The government succeeded in using Clause 19 to secure for free the exclusive rights to the Bliss-Leavitt torpedo that it had been unwilling to purchase at the Company’s asking price, despite the fact that it had flubbed the notification procedure and that the balanced turbine proved irrelevant to solving the sheer problem. “We gave the government an opportunity [actually two] to purchase the universal rights to the torpedo”, a Bliss Company official observed before the

⁴¹ *United States v. E. W. Bliss Co.*, 224 F. 325 (2nd Cir. 1915). The Supreme Court reference is *E. W. Bliss Co. v. United States*, 248 U.S. 37 (1918).

⁴² Youngs to Attorney General, 22 November 1913, DoJ 167037-20, RG60/E112/B1530, National Archives and Records Administration, College Park, MD.

start of the trial, “and it did not take it”⁴³. The visible hand of the national-security state proved a powerful alternative to the invisible hand of the market.

CONCLUSION

The case of the Bliss-Leavitt torpedo demonstrates that the relationship between national security and intellectual property rights in the decades before World War I was a problem that historians have not realized was a problem. Advanced weapons technology, as suggested in different ways by both the Bliss case and the General Dynamics case with which we began, has a dual character: it embodies simultaneously national-security information and property. The boundary between these two categories is by no means self-evident, and the government and its contractors may prefer emphasizing one over the other.

In the decades before World War I, the US government clearly recognized that advanced weapons technology like the Bliss-Leavitt torpedo posed a new problem. The national-security interest in maintaining the secrecy of weapons was old. What was new was the ability of a US firm to sell cutting-edge technology in a global marketplace, and the joint development of that technology by the government and the contractor. Both of these novelties were significant: the former heightened the danger that secrecy would be eroded, while the latter gave both the government and the contractor a claim to own the intellectual property embodied in the technology.

The US government experimented with several different legal strategies to control the technology, some of which conceptualized the technology as property, and others of which conceptualized it as national-security

information. These strategies included the government’s assertion that its direct work on technological R&D and its indirect subsidies for the Bliss Company’s R&D through inflated prices for the finished product entitled it to the intellectual property rights, its insertion of new contractual provisions like Clause 19, its use of patent protection, its contemplated application of eminent domain to intellectual property, and its adaptation of anti-espionage legislation to export control.

The most critical way to interpret the government’s conduct is that the executive branch plotted to steal the Bliss Company’s intellectual property and cynically used claims of national security to cover up its wrong-doing, a ploy which the judicial branch cravenly abetted. This reading is unconvincing, for two reasons. First, it imparts an implausible degree of intentionality and intellectual clarity to the people involved. Although government officials sometimes acted with remarkable intelligence—as in making the conceptual breakthrough that something important enough was changing in the relationship with the Bliss Company to require new contractual protection for the government’s interests—there is also evidence of inexpertise and confusion. The new Clause 19, for instance, left the government as vulnerable as the Bliss Company. Second, the reading is unconvincing because it fails to differentiate among the government’s grounds for claiming ownership of the property rights in the Bliss-Leavitt torpedo, some of which were more legitimate than others. It had helped to invent the balanced turbine, however little and ineffective its help may have been; it had subsidized the Bliss Company’s inventive work by paying inflated prices for the finished torpedoes; and in so doing, it had protected the Bliss Company from market risks. These were reasonable, albeit problematic, grounds on which to claim at least a share of the ownership of

⁴³ Quoted in “Torpedo Decision Held Up”, *Washington Post*, 27 June 1913, p. 6.

the resulting intellectual property, without recourse to the assertion of national-security interests.

That said, aspects of the critical reading are convincing when presented in more qualified form. The government could claim at most to have helped to invent the Bliss-Leavitt torpedo: there was no denying that the Bliss Company had done the bulk of the work itself. Based on only partial assistance, the government claimed the right to control all of the ensuing intellectual property when it came to foreign sales. The lead attorney trying the government's case acknowledged its weakness on the legal merits and deliberately added an appeal to national-security interests as a bulwark. That move can surely be explained in part as legal opportunism, but on balance the evidence suggests that it also reflected a real divide between the government and its contractor. In the Solicitor's comment on the *Crozier v. Krupp* case, and in Williams' remarks on avoiding royalty payments for superheaters, for instance, it is difficult to avoid the conclusion that these officials felt that the state was entitled to the use of private-sector intellectual property on the grounds of public interest, regardless of whether the government had any valid claim to have participated in the creation of the intellectual property. On some basic level, the interests of the government to protect national security and to avoid paying for the use of technology co-invented with the private sector were irreconcilable with its contractor's intellectual property rights, and government officials ignored the latter when convenient.

The story told here has potentially broad significance for how we conceptualize 20th-century US history. Conventionally, the emergence of the permanent national-security state is dated to the early Cold War or

World War II. Before that time, it is thought, a temporary wartime state was improvised when the United States went to war and demobilized soon after. This narrative is compatible with depictions of the United States as an exceptionally liberal nation before the mid-20th century, distinguished by its ability to avoid European-style militarism. The formal establishment of the state secrets privilege in the 1953 case of *United States v. Reynolds* fits this narrative neatly. The US government's invention of the category of national-security information before World War I, however, does not.

Another popular way to think about the expansion of the state's national-security powers is what the historian Mary Dudziak has described as the "pendulum model": "[H]istory is thought to consist in the movement from [wartime to peacetime]... A central metaphor is the pendulum—swinging from strong protection of rights and weaker government power during peacetime to weaker protection of rights and stronger government power during wartime. Moving from one kind of time to the next is thought to swing the pendulum in a new direction"⁴⁴.

The famous 1917 Espionage Act, which enhanced the national-security powers of the government shortly after US entry into World War I, works well with this model. Again, however, passage of its lesser-known direct precursor, the 1911 National Defense Secrets Act, when the United States was nominally at peace does not.

The case of the Bliss-Leavitt torpedo also has implications for our understanding of the military-industrial complex (MIC) and of the history of resistance to the national-security state. Clearly the inter-dependence of the military and industry has offered both sides enormous mutual benefits, which depictions of the MIC as a well-oiled machine rightly emphasize. But awareness of these

⁴⁴ M. Dudziak, *War Time: An Idea, Its History, and Its Consequences*, Oxford, Oxford University Press, 2012, p. 15-16.

benefits should not obscure the existence of tensions within the MIC. As Peter Galison has observed, “[i]ndustry chafes under the restriction of classification”, because “declassification makes it easier and cheaper for industry to produce—and, needless to say, opens the vast civilian and, within the constraints of export controls, the huge foreign military market”⁴⁵. The case of the Bliss-Leavitt torpedo demonstrates that the interests of the military and industry are not automatically aligned when it comes to intellectual property and national-security information. Liberal property norms can conflict with the demands of military preparedness—and this conflict can turn “merchants of death” into unlikely opponents of the national-security state. Eugene Debs’ prosecution under the 1917 Espionage Act fits the familiar narrative of heroic individuals fighting for their civil liberties against the national-security state. The use of the 1911 National Defense Secrets Act against

the Bliss Company, along with the use of the state secrets privilege in the General Dynamics case, may be two data points in a different narrative in which corporate arms dealers fight for profits against the national-security state.

This alternative narrative points to a paradox in what David Edgerton has termed “liberal militarism”⁴⁶. Militarism demands preparedness for and recourse to war, meaning that it demands a permanent national-security state, given that preparedness cannot be improvised in the industrial era. Liberalism demands a technology—rather than manpower—intensive way of war, and it demands that the technology be procured by contract from the private sector and not solely by statist means—meaning that it demands a military-industrial complex. Thus, liberal militarism calls forth a security-oriented state and a profit-oriented private defense sector—two giants perpetually dependent upon and in conflict with each other.

⁴⁵ P. Galison, “Removing Knowledge”, *art. cit.*, p. 243.

⁴⁶ D. Edgerton, “Liberal Militarism and the British State”, *New Left Review*, 185, January-February 1991, p. 138-169.