



The Arsenal Act: Context and Legislative History

Daniel H. Else
Specialist in National Defense

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Summary

The Arsenal Act (10 U.S.C. §4532) requires the Secretary of the Army to have all supplies needed by the Army to be made in government-owned factories or arsenals if this can be accomplished “on an economical basis.” It also grants the Secretary the authority to “abolish any United States arsenal that he considers unnecessary.” This broad mandate, and even broader authority, has led some observers to question whether the Department of the Army is abiding by either the spirit or the letter of the law in awarding development and procurement contracts. Others have expressed concern that the seeming unilateral authority to abolish arsenals could place them at a disadvantage should the Department of Defense (DOD) seek to close military installations.

Federal arsenals, those government-owned industrial sites that have produced the engines of war for the United States Army virtually since the birth of the nation, exist and operate under the jurisdiction of the Secretary of the Army. They, along with their naval counterparts in the form of federally owned shipyards, have sustained the military services for more than two centuries.

The two sections of the act were written approximately seven decades apart and are grounded in the events of their time. The authority to abolish dates to the era just prior to the Civil War, when the arsenals functioned not only as the nation’s principal source of military arms, but also helped to nurture and sustain the country’s early commercial industrialization. It was a period when the arsenals were beginning to experience competition in satisfying the Army’s needs.

The requirement to have Army supplies made in U.S.-owned factories or arsenals dates to the years immediately following the conclusion of World War I, when Congress, realizing that the United States faced increasing global responsibilities at a time of much-reduced defense appropriations, moved to ensure the continued existence of this “in-house” industrial base. Nevertheless, the statute does not define “supplies,” nor does it spell out what is meant by making supplies “on an economical basis.”

The Department of the Army has promulgated policy for the implementation of the authority to produce supplies, embodying it in Army Regulation (AR) 700-94, *Army Industrial Base Policy*, of December 2004. AR 700-94 assigns the responsibility for deciding whether a given article is to be manufactured at a government-owned facility or contracted to a commercial vendor to the Assistant Secretary of the Army for Acquisition, Technology, and Logistics (ASA(ATL)). It also requires the Commanding General of Army Materiel Command (AMC) and the individual Program Executive Officers (PEOs) and Program Managers (PMs) to provide the Assistant Secretary with the analyses needed to make that decision.

This report describes the roles of the federal manufacturing arsenals during the years surrounding the enactment of the two sections of the Arsenal Act, one as part of the Army Appropriations Act for 1854, and the other within the Defense Act of 1920, also known as the Army Reorganization Act of 1920, and provides historical context. The report also shows the change in language between the sections’ original enactment and today, and it provides details on the Army’s policy in implementing the manufacturing sourcing portion of the statute.

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Introduction

In 1794, Congress granted President George Washington the authority to establish national arsenals to arm of the new United States Army with domestically produced weapons. In 1853, Congress gave the Secretary of War (the predecessor to the Secretary of the Army) the authority to abolish any arsenal that he deemed to be unnecessary. In 1920, Congress again stepped into the operation of the nation's weapons factories by requiring the Secretary of War to have all of the supplies needed by the Army to be produced in government-owned factories or arsenals, so long as it could be done on an "economical basis." These latter two provisions still exist in today's United States Code in the form of what is called the Arsenal Act.

The great bulk of materiel used by today's Army is manufactured by private corporations, encouraging some to question the statute's efficacy. Others have expressed concern that the act could place the arsenals at a disadvantage should DOD to look to base closures as a means to reduce defense spending.

The terms "arsenal" and "armory" have often been interchangeable through the decades since the nation was founded. Both have been used to describe manufacturing sites, supply centers, repair depots, and other military facilities. Nevertheless, this report will focus on those industrial arsenals that have been instrumental in providing the materials of war for the Army since the last years of the 18th century. It is to these installations that the Arsenal Act (10 U.S.C. §4532) is directed.

The Role of Arsenals in Supplying the Army

Unlike England, France, and Germany, the United States has never sponsored private manufacturing establishments that specialized in the design and production of heavy munitions. Instead of relying upon a Vickers-Armstrong, a Schneider-Creusot, or a Krupp, the country from its beginning followed the policy of assigning responsibility for Army munitions supply to a special government agency, the Ordnance Department of the Army.¹

¹ Constance McLaughlin Greene, Harry C. Thomson, and Peter C. Roots, *United States Army in World War II, The Technical Services: The Ordnance Department: Planning Munitions for War* (Washington, DC: Office of the Chief of Military History, Department of the Army, 1955), p. 3.

Figure I. Springfield, MA, Arsenal

Circa 1920



Source: Library of Congress Collection, Prints and Photographs Division, Call No. LC-D4-73083.

During the Revolutionary War and through the first few years of the country's existence, the Army depended almost exclusively on foreign manufacturers for arms. Desiring to break this reliance on foreign supply, Congress authorized President George Washington in 1794 to establish a federal manufacturing arsenal at Springfield, MA. By the end of 1795, the arsenal had produced its first 295 muskets.² Within a few years of the end of the War of 1812, five federal arsenals, specializing in particular products they offered, were in operation. Springfield and Harpers Ferry, VA, manufactured small arms (primarily muskets and pistols). Watervliet, NY, produced artillery equipment and ammunition. Watertown, MA, fashioned artillery gun carriages and small arms. Frankford, PA, fabricated ammunition. Two more facilities were built after the mid-nineteenth century, Rock Island, IL, specializing in artillery recoil mechanisms, and Picatinny, NJ, mixing artillery ammunition, propellants, and explosives, while Harpers Ferry was destroyed at the beginning of the Civil War and never rebuilt.

² *Planning Munitions for War* contains a detailed history of federal arms manufacturing through World War II.

Figure 2. Burning the Arsenal at Harpers Ferry, VA, April 18, 1862



Source: Library of Congress Collection, Prints and Photographs Division, Call No. LC-USZ62-134477.

The six surviving factories, along with a number of Department of the Navy shipyards, formed the core of a federally owned and operated 19th century military production complex.³

These Army arsenals, under the command of Ordnance Department officers or, for some periods prior to the Civil War, civilian superintendants, were typically manned by a small cadre of military personnel and a large number of skilled civilian “artificers.” Production, not innovation, was the strength of the arsenal system. Although the Ordnance Department was officially tasked with responsibility to design weaponry after 1834, new models of all types were normally

brought to the Department by entrepreneurs or commercial companies for testing and evaluation. If the evaluators found the prototype worthy, it would be adapted for military use, standardized for manufacture, and placed into production either at an arsenal or on contract at a commercial firm under the close supervision of Ordnance officers. During the decades immediately prior to the Civil War, the arsenals collaborated closely with small arms manufacturers, making the technical expertise of arsenal artificers available to help nurture the nation’s fledgling precision gauge and machine tool industries.

As industry evolved in the United States during the mid-19th century, competition between commercial enterprise and the government arsenals to supply the Army’s needs became more intense. Several attempts to privatize arms production were made prior to the Civil War, culminating in a provision written into the Army Appropriations Act for 1854, addressed below, that gave the Secretary of War the explicit statutory authority to abolish any arsenal that he deemed unnecessary or useless. Nevertheless, both the Chief of Ordnance at the time, Colonel Henry K. Craig, and the Pierce Administration’s Secretary of War, Jefferson Davis, resisted any further move toward commercialization, arguing that the continued use of government manufacturing facilities “guaranteed constant improvement in models and enabled the Ordnance Department to check not only on the quality of contractors output but also on their prices.”⁴ Federal arsenal production was not again seriously threatened until the late 1960s.⁵

³ The Department of the Navy established its own industrial complex in the form of six shipyards constructed at about the same time. These were located, running from north to south along the Atlantic seaboard, at Portsmouth (Kittery, ME), Charlestown (Boston, MA), Brooklyn (New York City, NY), Philadelphia (Philadelphia, PA), Washington (Washington, DC), and Norfolk (Portsmouth, VA).

⁴ *Planning Munitions for War*, p. 19.

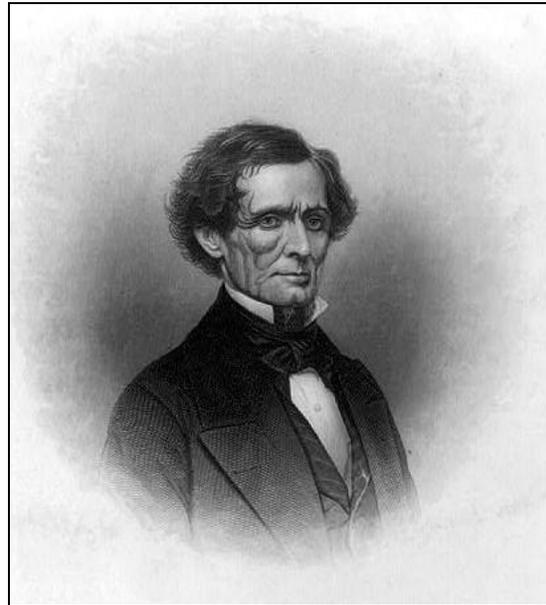
⁵ Among the original manufacturing arsenals, the Springfield and Watertown Arsenals in MA were closed in 1968, and the Frankford, PA, Arsenal closed in 1977. The arsenals in Watervliet, NY, Rock Island, IL, and Picatinny, NJ, remain open.

The War Department relied on a steady stream of military equipment, principally manufactured in its arsenals, to satisfy the needs of a very small peacetime Army. During war, the Department resorted to contracting with private enterprise to supply a “surge” capacity for the duration of the emergency. Even after industrialization took hold, the peacetime Army of the 19th century did not present a market of sufficient size to attract the attention of the manufacturing concerns that focused on serving a rapidly expanding civilian sector. Growing public confidence in the ability of American industry to adapt quickly to any situation, plus the lengthy tenure of relatively conservative Chiefs of Ordnance, encouraged a complacency in the development of arms for the Army during the latter half of the century.⁶

By the first decades of the 20th century, the roles of Congress and the Chief of Ordnance had reversed from those held a half-century earlier. Though appropriations for arms were modest, Congress became a champion of arsenal production. On the other hand, Brigadier General William B. Crozier, senior Ordnance officer from 1901 through 1918, routinely protested this policy, arguing that concentrating on federal manufacturing, while it might be less costly than contracting to civilian industry, could hamper efforts to expand production rapidly in the event of future emergency.

Figure 3. Jefferson Davis

Secretary of War, 1853-1857

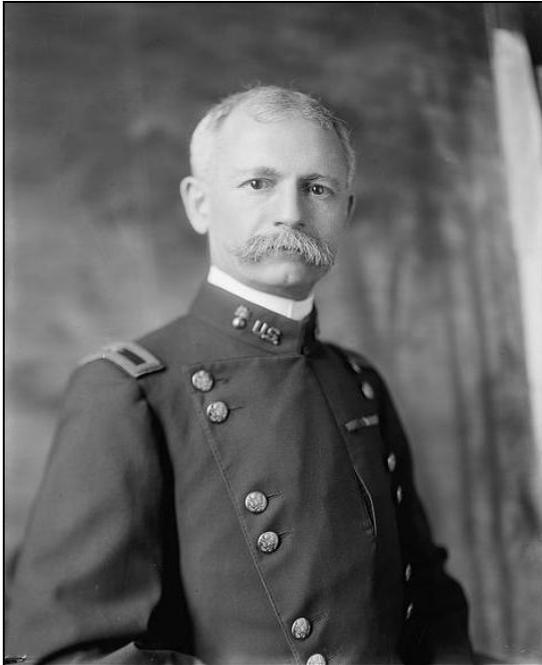


Source: Library of Congress Collection, Prints and Photographs Division, Call No. LC-USZ62-89800.

⁶ In the 54 years between 1864 and 1918, only five Army officers served as Chief of Ordnance, averaging almost 11 years in office. Two chiefs, Brigadier General Steven Vincent Benet, Sr. (1874 – 1891), and Major General William Crozier (1901 – 1918), each held the post for 17 years.

**Figure 4. Brig. Gen. William B. Crozier,
USA**

Chief of Ordnance, 1901-1918



Source: Library of Congress Collection, Prints and Photographs Division, Call No. LC-DIG-hec-15300.

Though presaged by the experience of an unprecedented mobilization during the Civil War, the first truly industrial war effort for the United States began in April 1917 with the U.S. entry into World War I. The demands of creating and supplying an army of a size sufficient for the fields of France resulted in an industrial mobilization of unprecedented magnitude and speed. Nonetheless, the mobilization effort was so badly orchestrated by the Army's Ordnance Department (weapons manufacturing) and Quartermaster Department (transportation) that by December 1917 the chiefs of both had been sacked and military supply and procurement responsibilities had been vested in a new civilian-managed wartime Division of Purchase, Storage, and Traffic.

The civilian side of the industrial mobilization proved similarly difficult. Too many contracts, concluded too quickly, contributed to the supply logjams that proved the Army departments' undoing. When the Armistice was declared on November 11, 1918, many of those contracts were abruptly cancelled, precipitating litigation that lasted

for decades. Private industry returned to civilian production as soon as possible, leaving the task of supplying the postwar Army largely to the traditional arsenal system.

Nevertheless, the immediate post-war period proved to be one of considerable stress at the arsenals within the Ordnance Department. Although the Defense Act of 1920 stipulated that the Secretary of War would have needed Army supplies made by federally owned factories and arsenals, the large stockpiles of munitions and other materials remaining in war's aftermath made procurement almost moot for the foreseeable future.⁷ Appropriations and personnel strengths plunged. For Fiscal Year (FY) 1920, Congress appropriated \$20.8 million for ordnance. By FY1923, appropriations amounted to \$6.9 million.⁸ Personnel strengths saw similar contractions, with the number of military personnel assigned to the Ordnance Department dropping from 10,597 in 1919 to 3,087 in 1922. The number of civilians employed by the Department saw a similar decline. Though numbers for 1919 and 1920 are not available, the Department employed

⁷ The specific provision regarding federal production of war materials was introduced during debate on March 10, 1920, as a committee amendment to the bill. As agreed to by the House, the language read in part, "He [the Secretary of War] shall cause to be manufactured or produced at the Government arsenals and Government-owned factories of the United States all such supplies or articles needed by the War Department as said arsenals and Government-owned factories are capable of manufacturing or producing: *Provided*, That the cost of manufacturing or producing such articles or supplies at said arsenals and Government-owned factories shall not exceed the cost if purchased in the open market" "Army Reorganization Bill," House debate, *Congressional Record*, March 10, 1920, p. 4156.

⁸ Appropriations are stated in current, or then-year, dollars. Figures are taken from *Planning Munitions for War*, Table 1, p. 41.

more than 14,000 civilians in 1921. By the next year, almost half had been let go, and civilian end strength stood at 8,119. This combined military and civilian workforce continued to shrink over the next several years.⁹

Thus, impacts of both the nation's rapid, mid-19th century industrialization and the post-World War I contraction of the defense industrial base were captured in contemporary legislation and continue to reverberate in what is now the Arsenal Act.

The Arsenal Act

The act itself consists of only two subsections.

10 U.S.C. §4532. Factories and arsenals: manufacture at; abolition of

(a) The Secretary of the Army shall have supplies needed for the Department of the Army made in factories or arsenals owned by the United States, so far as those factories or arsenals can make those supplies on an economical basis.

(b) The Secretary may abolish any United States arsenal that he considers unnecessary.

The statute is a combination of two different provisions of law, enacted nearly 70 years apart, that were eventually combined into a single provision during the early 1950s when the United States Code took its current form.

Subsection (a), which requires the Secretary of the Army to have departmental supplies manufactured in government factories and arsenals to the extent that they can be manufactured “on an economical basis,” first appeared in statute in the Defense Act of 1920. Subsection (b) originated in the Army Appropriations Act for 1854. The language of both sections has remained essentially unchanged since their enactment.

The Army Appropriations Act for 1854

In 1853, only a few years after the conclusion of the Mexican War, federal arsenals were managed by military superintendents, and congressional debate on arsenals centered on whether or not to revert to civilian management, an arrangement that had been abandoned in 1840. At the time, the federal arsenals were assisting the machine tool and manufacturing industries to refine their skills and enter into competition with foreign manufacturers of both military and civilian goods. Nevertheless, during floor debate in the House on February 1, 1853, Representative Willis Arnold Gorman, chair of the Committee on Military Affairs, proposed an amendment to the Army Appropriation Bill on behalf of the committee stating that “That the Secretary of War be, and he is hereby, authorized to abolish such of the arsenals of the United States as, in his judgment, may be useless or unnecessary.” Mr. Gorman offered to explain the amendment to the chamber, but the Members present suggested that no explanation was needed.¹⁰ The amendment was subsequently

⁹ Ibid., Table 3, p. 44.

¹⁰ Rep. Willis Arnold Gorman, “Army Appropriations Bill,” House debate, *The Congressional Globe*, February 1, 1853, p. 460.

adopted by the House, survived conference, and was enacted. In slightly altered form, it can be found in 10 U.S.C. §4532(b).¹¹

Notwithstanding this new authority, Secretary of War Jefferson Davis, who took office in March 7, 1853, and his Chief of Ordnance expressed a strong desire to preserve the manufacturing capabilities of the arsenals in order to provide competition to the private sector.

The Defense Act of 1920

In 1920, the emphasis was somewhat different. The experience of World War I and its aftermath had led some in Congress to conclude that retention of a certain minimum level of surge manufacturing capacity within the federally owned industrial base would help in wartime mobilization. Given the massive stocks of war material left over from the recent conflict, apparent remoteness of renewed conflict, and the small size of the postwar Army, arsenal managers, the War Department, and Congress expressed concern that arsenals might not be able to generate sufficient work to maintain a core of manufacturing skills and industrial capacity to respond to an emergency. Hence, the reorganization of the Army embodied in the Defense Act of 1920 included the creation of a permanent Assistant Secretary of War and his appointment as the individual charged with responsibility for procurement of all military supplies and for the regulation of the federal arsenals. Emphasis in congressional debate focused on the need to render the arsenals as efficient as possible in the manufacture of high-quality military goods. This is reflected in the language seen in subsection (a) of the current law.¹²

Notwithstanding the language of the statute, the paucity of Army appropriations over the next several years rendered the statute of minimal economic importance. The following section discusses Army policy on implementation of the Arsenal Act in the current operation of its arsenals.

Arsenal Operations

Except for wartime emergency, the War Department (predecessor to the Department of the Army) did not place significant reliance on private industry to provide military arms and ammunition until after World War I. The first decades of the 20th century saw significant military reform as Congress created the General Staff system and reorganized both the Army and the War Department before and after U.S. involvement in World War I. Two of those reforms, included in the act of 1920, had a direct impact on Army supply.

The first of these created a permanent Assistant Secretary of War, designating him as the chief procurement official for the Army. The second stipulated that arsenals and factories be used for the manufacture of Army supplies, as noted above.

¹¹ The Secretary of War and the Department of War were reconstituted as the Secretary of the Army and Department of the Army when the National Security Act of 1947 (P.L. 80-235) took effect.

¹² The bill, also referred to as the “Army Reorganization Act,” was taken up in the 66th Congress, 2nd Session, as H.R. 12775.

The policy for implementing this provision of the Arsenal Act is outlined in detail in the current Army Regulation (AR) 700-94, *Army Industrial Base Process*, dated December 14, 2004. Paragraph 3-7 quotes 10 U.S.C. §4532(a), noting that the statute does not define the term “supplies,” but suggesting that the term’s definition in 10 U.S.C. §101(a)(14), “‘supplies’ includes material, equipment, and stores of all kinds,” is broad enough to preclude the arsenals, whose production capacity is finite, from being able to provide for all the Army’s considerable supply needs. The Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT)), is tasked in the regulation by the Secretary of the Army with determining which supplies the arsenals can and should manufacture. This authority extends to selecting those Army-required items that will be subject to a “make (by the arsenals) or buy (from commercial manufacturers)” analysis.¹³

AR 700-94 goes on to provide policy on the use of the government-owned industrial base. Paragraph 5-1 begins by stating, “The intent of the Army-owned industrial base is to be postured to support the force structure with efficient, economical, practical, responsive, multifunctional, environmentally responsible, and compliant facilities.”¹⁴ Nevertheless, paragraph 5-2 states that, “The Army will rely on the private sector for support of defense production to the maximum extent practical. When market research and ICA (independent cost analysis) confirms that the private sector is either inadequate or unavailable to reliably provide critical materiel needs, an essential nucleus of Government-owned facilities may be established or retained.”

Chapter 2 of AR 700-94 assigns the following responsibilities:

1. ASA(ALT) is responsible for deciding “whether Army materiel or its components should be made in an arsenal or bought from the private sector in those cases where the PEO [program executive officer] and AMC [Army Materiel Command] disagree (Para. 2-1(j), p. 3).
2. Commanding General, Army Materiel Command (AMC) is responsible for
 - a. managing government-owned, government-operated (GOGO) production installations (para. 2-8(d), p. 5);
 - b. analyzing whether to make or buy under the authority of 10 U.S.C. §4532, including the preparation of the analysis for AMC managed items and coordination with the applicable PEO/PM [program manager]. For PEO/PM managed items, he is responsible for providing the “make” estimate for Army materiel and/or its component that is potentially more economically manufactured at an arsenal and providing this analysis to the applicable PEO/PM early in the acquisition life cycle to avoid disruption of program milestones (para. 2-8(d)(4), p. 5).
 - c. exercising command and control over Army government-owned, contractor-operated (GOCO) production installations (para. 2-8(e), p. 5).
 - d. Develop and implement a phase down of ownership plan for Army-owned production installations in coordination with applicable PEOs/PMs (para. 2-8(f), p. 5).

¹³ The regulation also stipulates that the Arsenal Act is not applicable to depot level maintenance and repair activities.

¹⁴ AR 700-94, p. 12.

3. Program Executive Officers (PEOs) and Program Managers (PMs) are tasked with
 - a. assessing the ability of the industrial base to support the life cycle requirements for assigned programs and ensuring that an independent cost analysis is conducted when a potential problem exists. PEOs and PMs are to rely on the private sector to the maximum extent possible unless core depot-level maintenance and repair or Army-owned factories are more economical (para. 2-11(a), p. 6).
 - b. performing the “make or buy” analysis under the authority of 10 U.S.C. §4532. PEOs and PMs are to prepare the analysis for PEO/PM managed items in coordination with AMC early in the acquisition life cycle so as not to disrupt program milestones (AMC is to furnish the “make” estimates). PEOs and PMs review “make or buy” analyses for AMC managed items that are part of the PEO’s/PM’s life cycle management responsibility. They are responsible for submitting these analyses to ASA(ALT) for a decision when they and AMC disagree on whether to manufacture items at arsenals or source procurement to a commercial vendor (para. 2-11(e), p. 6).

Conclusion

Federal manufacturing arsenals have supported the Army and the nation virtually since their births. Among other functions, the arsenals have designed and manufactured military arms and supplies, nurtured the country’s early industrialization, and provided competition to private enterprise. The sophistication evident in arsenal facilities has evolved along with the nation’s industrial base, sometimes leading, often trailing commercial industry in technological development, particularly during the years prior to World War I.¹⁵

Congress has provided statutory guidance for the operation and continued existence of the arsenals in legislation now consolidated in 10 U.S.C. §4532. The statute gives the Secretary of the Army the authority to “abolish” any arsenal that he considers unnecessary.

It also requires the Secretary of the Army to have the supplies needed by the Department of the Army made at factories and arsenals owned by the United States, so long as this production can be carried out “on an economical basis.” Yet, this section fails to define “supplies,” or to explain what is meant by an “economical basis.”

The Department of the Army interprets the Arsenal Act in AR 700-94, *Army Industrial Base Process*, and lays out policy for its implementation. The ASA(ALT) retains the authority to decide whether a given article shall be manufactured in a federal facility or by a commercial supplier. To make that decision, he relies on AMC and the individual PEOs/PMs to assess the relative merits of the two choices and perform the analyses necessary to provide a basis for the decision. While the statute appears to emphasize the use of arsenals for supplying the Army, AR 700-94 directs

¹⁵ The authors of *Planning Munitions for War* discuss at length an inherent technological conservatism within the Ordnance Department that was strong during the latter half of the 19th and the early decades of the 20th centuries. See Chapter 1, “Origins and Growth to 1919.”

PEOs/PMs “to rely on the private sector to the maximum extent possible unless ... Army-owned factories are more economical.”

Author Contact Information

Daniel H. Else
Specialist in National Defense
delse@crs.loc.gov, 7-4996