“MUSKETS FOR THE USE OF THE UNITED STATES”:
PHILADELPHIA’S GUNSMITHS DURING THE WAR FOR INDEPENDENCE

by

Matthew Skic

A thesis submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Master of Arts in American Material Culture

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Matthew Skic

Approved: __________________________________________________________
Ann K. Wagner, M.A.
Professor in charge of thesis on behalf of the Advisory Committee

Approved: __________________________________________________________
J. Ritchie Garrison, Ph.D.
Director of the Winterthur Program in American Material Culture

Approved: __________________________________________________________
George H. Watson, Ph.D.
Dean of the College of Arts and Sciences

Approved: __________________________________________________________
Ann L. Ardis, Ph.D.
Senior Vice Provost for Graduate and Professional Education
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ABSTRACT

There has been a long tradition of studying American-made firearms that have connections to the War for Independence. This thesis makes an important contribution to that body of scholarship by uniting analysis of the key artisans, their products, and working life experience to reveal the emerging nation’s abilities to produce arms. Focusing on the gunsmiths of Philadelphia has allowed for greater detail to be presented compared to previously published firearms collector encyclopedias and gunsmiths dictionaries. This thesis argues that Philadelphia’s concentration of craftsmen, skills, and craft knowledge and the presence of the Pennsylvania and Continental governments sustained the importance of the city’s gunsmiths in the production and maintenance of muskets and bayonets for the entirety of the War for Independence. The War and its supply demands changed and expanded work opportunities for Philadelphia’s gunsmiths and established long-term relationships between the smiths and the United States Government. In the cases of John Nicholson and Joseph Perkin, their work during the War led to their leadership in the Federal Armory system of the young nation.
INTRODUCTION

On the morning of July 4, 1788, hundreds of Philadelphia’s artisans and craftsmen, joined by government officials, local clergy, the city militia, and instrumental bands, assembled near the intersection of South and Third Streets in preparation for a large parade. Thousands of spectators waited with anticipation as they lined up along the parade’s projected three mile route: north on Third Street, west on Callowhill Street, south on Fourth Street, and west on Market Street. Twelve years after the adoption of the Declaration of Independence, a celebration of the revolutionary act of the Continental Congress proved secondary to another, more recent development. On June 21, 1788, New Hampshire ratified the Constitution, the ninth state to do so. That ratification officially replaced the Articles of Confederation with a new, three branch federal system of government. Two weeks later, at half past nine o’clock, as the bells of Christ Church tolled and cannons discharged rounds from ships anchored in the Delaware River, “THE GRAND FEDERAL PROCESSION began to move.”

Many of the artisans who marched in the Procession supported the cause of the Revolution with their labor and skills during the lengthy struggle. Francis Hopkinson, the calculating organizer of the Procession, composed a detailed description of the

event and specified the names of the key participants from each group of craftsmen. Included among the names are Lewis Prahl and Jacob Eckfelt, who marched with the blacksmiths, whitesmiths, and nailers, and John Nicholson and Joseph Perkin who conducted the gunsmiths’ participation in the Procession. During the struggle for independence, these four men, and a few others whom Hopkinson did not name, shared the experience of being government contractors who produced and repaired muskets and bayonets to arm the soldiers of Pennsylvania and the Continental Army. On that July day in 1788, these four men, along with the hundreds of other craftsmen who marched, received public recognition for their material contributions toward the establishment of a new nation.²

During the War for Independence (1775-1783), the city of Philadelphia served not only as an epicenter of activity, but also as a supply hub for the American war effort. On February 4, 1777, Robert Morris, who provided a large amount of capital in support of the Revolution, wrote a letter to John Hancock that described Philadelphia's centrality during the War. He wrote, “You will consider Philadelphia, from its centrical situation, the extent of its commerce, the number of its artificers, manufactures and other circumstances, to be to the United States what the heart is to 

the human body in circulating blood.”3 With a population of over 33,000 people in 1775, Philadelphia was the largest city in British North America.4 (Figure 1) As Morris noted, the city had a high concentration of craftsmen and artisans, from rope and sail makers to tailors, blacksmiths, and gunsmiths. Throughout the War, apart from about nine months of British occupation, many of city’s artisans worked to provide clothing, accoutrements, ammunition, and arms for the Continental Army and supporting local militias.


Industrious Philadelphians often responded to governmental calls for material support. Committees and departments operating under the authority of the Pennsylvania Committee of Safety and the Continental Congress mediated the relationship between craftsmen and the armed forces. City craftsmen entered into agreements with these governmental bodies and transitioned from being civilian producers to government contractors, makers of military supplies. By engaging in such agreements, craftsmen took a gamble. Not only did they stake their political allegiance to a cause with an unknown outcome, but they also risked their business and their
livelhood to provide critical material support to the unfolding American Revolution. The four identified musket and bayonet makers who later marched in the Grand Federal Procession in 1788 made such decisions.

The story of Philadelphia’s gunsmiths during the War for Independence is the focus of this thesis. Between 1775 and 1783, the city’s gunsmiths obtained contracts to produce and repair whole flintlock firearms, musket parts, and affiliated bayonets. Other city craftsmen, including blacksmiths, a cutler, and even a watch and clock maker, also became involved in gunsmithing. The small arms industry operated in the city for the entirety of the War, only disrupted during the British occupation period from September 1777 to June 1778. A number of surviving examples of muskets and bayonets with connections to Philadelphia-based manufacturers or repairers, including marked examples, have inspired the questions that guide this project. Who were the gunsmiths that engaged in military production? What types of work did they perform? What happened to these gunsmiths after the War?

In order to understand more about Philadelphia’s gunsmiths who became involved in military small arms production, this thesis relies on the examination of documentary sources and material culture. Sources such as newspaper advertisements, receipts, letters, petitions, the records of the Continental Department of the Commissary General of Military Stores, and the minutes of the Pennsylvania Committee of Safety have been crucial to contextualizing the gunsmiths’ experiences. Census records, tax lists, probate records, church records, and letters help to fill in their personal backgrounds. These documents have been coupled with the detailed analysis of marked, surviving examples of muskets, bayonets, and other arms made by Philadelphians such as John Nicholson, Thomas Palmer, Lewis Prahl, Samuel Coutty,
Jacob Eckfelt, and Joseph Perkin. These objects provide evidence for their contributions during the War, revealing networks of production and suggesting the skills, training, tools, and techniques that Philadelphia’s gunsmiths employed. Such material analysis reevaluates and moves beyond the existing identification of small arms and helps to place these objects in historical context.

When considered together, this source material indicates the central role Philadelphia’s gunsmiths played in the manufacture and repair of muskets and bayonets during the War for Independence. Before the War broke out, a few Philadelphia gunsmiths began to produce military muskets for civilian customers in preparation for armed conflict. Once the War began in 1775, the Pennsylvania Committee of Safety coordinated a plan to produce muskets and bayonets that hinged on the work of the city’s gunsmiths. Labor shortages, material scarcity, inflation, and the British occupation limited production capabilities. Following the British occupation, the Department of the Commissary General of Military Stores relied on Philadelphia’s gunsmiths to repair and assemble muskets and bayonets. One gunsmith, Joseph Perkin, became superintendent of the Continental Armory from 1779 to 1781. Other gunsmiths completed repair contracts through to the War’s conclusion in 1783. Some of that work carried over into the years after the War. This thesis argues that the combination of Philadelphia’s concentration of craftsmen, skills, and craft knowledge and the presence of the Pennsylvania and Continental governments sustained the importance of the city’s gunsmiths in the production and maintenance of muskets and bayonets for the entirety of the War for Independence. The War and its supply demands changed and expanded work opportunities for Philadelphia’s gunsmiths and established long-term relationships between the smiths and the United States
Government. In the cases of John Nicholson and Joseph Perkin, their work during the War led to their leadership in the Federal Armory system of the young nation.

The deepest roots for this thesis are found in Carl Bridenbaugh’s classic work, *The Colonial Craftsman*. A short but sweeping book that provides a good overview of the nature and significance of early American urban and rural craftsmanship, Bridenbaugh’s generalizations have encouraged deeper study of artisans. This thesis follows up on that tradition, making use of the increased availability and accessibility of primary source material and nuanced attention to material culture.

Few historians have analyzed urban, middle class, non-combatants and their role during the War for Independence. This thesis seeks to build upon existing scholarship by addressing one particular set of craftsmen and their navigation of the war-time manufacturing environment. Historians who have addressed this segment of the population tend to focus on political culture. A notable example is Charles Olton’s *Artisans for Independence: Philadelphia Mechanics and the American Revolution*. Olton argues that middle class artisans drove the revolutionary decisions in the city. Similarly, Steve Rosswurm’s studies provide more details about the radicalism of the city’s residents and the role the “lower sorts” played in Philadelphia’s democratic institutions.

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Inspirational to this thesis, both Olton and Rosswurm suggest how the War motivated material production in the city. Olton recognizes the significance and transformative effects of military-related industry on Philadelphia’s craftsmen by stating that the War led to “the expansion of several manufacturing enterprises, particularly ship-building, textiles, and weapons-making. In some cases demand was so strong that it may have temporarily altered the traditional organization patterns of the city.” 8 Rosswurm also recognizes the central role Philadelphia’s craftsmen played in the production of war goods “for various government entities and regions.” 9 However, a more nuanced examination is beyond the scope of both of those studies. This thesis seeks to fill that void by recognizing, in greater detail, the manufacturing contributions of Philadelphia’s gunsmiths to the American war effort.

The domestic production of military goods during the War for Independence is a topic that has received some scholarly treatment. Such works, discussed below, typically focus on the role of state and Continental governments in coordinating manufacturing. Other works have discussed the role of the merchant class in such coordination. 10 It is well known that the Continental Army and American militias relied on a variety of sources for small arms, including existing domestic stores,

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8 Olton, 81.
imported foreign arms, captured weapons, and domestically produced arms. In a recent treatment of American weapons production, Robert F. Smith’s dissertation, “‘A Veritable . . . Arsenal’ of Manufacturing: Government Management of Weapons Production in the American Revolution,” exposes the successes of bureaucratic systems in the organization of manufacturing efforts. Smith argues that “the Continental government managed military stores production, provided private manufacturers with education and oversight, and supported private contractors with resources.”

His assertions about the success of government coordination responds to earlier claims about the negative aspects of bureaucracy and its hindrance of effective supply streams. An earlier dissertation by David Salay, “Arming for War: The Production of War Material in Pennsylvania for the American Armies during the Revolution,” responds to generalizations about American reliance on French material support and the overall failure of American manufacturing during the War. Through his study of the small arms, shoe, gunpowder, and iron industries in Pennsylvania,


Salay discovered American production successes and claimed that the war effort depended on both domestic and foreign production.\textsuperscript{13}

The craftsmen who became military contractors play a secondary role in Smith’s and Salay’s understandings of domestic production during the War. However, both historians provide useful background information for this project. Smith’s analysis of the Department of the Commissary General of Military Stores has been helpful in understanding the establishment of the Continental Armory in Philadelphia. Salay devoted his third chapter to weapons production and describes the Pennsylvania Committee of Safety’s coordination of manufacturing. He addresses the contributions of a few gunsmiths, such as John Nicholson and William Dunwick, whom this thesis features, but misses key details and other craftsmen. At nearly forty years old, Salay’s chapter on weapons production in Pennsylvania can be revised and expanded, specifically in regard to Philadelphia, based on the reexamination of documentary evidence and material culture. In contrast to Smith and Salay, this thesis makes a new contribution to the historiography of weapons production during and immediately following the War for Independence by contextualizing Philadelphia’s gunsmiths and their work with biographical information, the analysis of surviving arms, and their post-war circumstances.

This thesis also engages with collector scholarship by offering revisions and additions to encyclopedias of surviving arms and Revolutionary Era gunsmith

references published over the past century. Current collectors and amateur historians have been valuable resources in sharing their collections and comprehensive knowledge of surviving firearms and technical data. Untapped primary sources and previously unpublished arms are featured in this thesis due in large part to the increasing accessibility of online source material and the speed of internet communication. The three chief resources in the study of surviving examples of American made and repaired firearms from the War for Independence are Robert M. Reilly’s *United States Martial Flintlocks*, George D. Moller’s *American Military Shoulder Arms, Vol. I*, and Bill Ahearn’s *Flintlock Muskets in the American Revolution and other Colonial Wars*. These books have been helpful in locating surviving muskets and bayonets made and repaired in Philadelphia, as have older references by George Neumann, Warren Moore, and Harold Peterson. However, the limited analysis of gunsmiths present in these sources opened the opportunity for further research. In response, this thesis offers more complete and accurate context to surviving arms and the smiths they are connected to. For example, Joseph Perkin’s


English roots, his work in Philadelphia, his connection to the Rappahannock Forge in Virginia, and his return to Philadelphia in 1778 are presented here, together, for the first time. Previously unpublished details about Thomas Palmer, Joseph Perkin, John Nicholson, and Lewis Prahl also add to the novelty of this project. By concentrating on Philadelphia, this thesis offers detail and precision not found in most collector scholarship. As a result, it makes a valuable contribution to this body of literature.

This thesis begins with a chapter that introduces and familiarizes the reader with flintlock firearms, 18th century gunsmithing techniques, and the significance of military muskets. The terminology and processes presented in that opening section will be referenced throughout this thesis. Chapter Three focuses in on the story of Thomas Palmer, a Philadelphia gunsmith active before and during the War. His manufacture of muskets for George Washington and John Cadwalader just before the War broke-out foreshadowed military arms production in the city during and after the conflict. The fourth and fifth chapters address Philadelphia’s gunsmiths during the War for Independence. While Chapter Four discusses the leading role of the city’s gunsmiths in the Pennsylvania Committee of Safety’s arms production plans, Chapter Five presents the story Joseph Perkin as an entry point into the manufacturing efforts of the Department of the Commissary General of Military Stores in Philadelphia. The sixth chapter investigates the legacy of Philadelphia’s gunsmiths after the War’s conclusion. It connects their work during the War with the governmental and productive networks they engaged in as the independent United States of America developed a novel governmental system and organized a new Federal Armory plan.

Philadelphia’s master gunsmiths of the Revolutionary Era experienced changes in so many aspects of their individual businesses, not just orders and materials, but
partnerships, affiliations, new specialization, and challenges to be leaders and shapers of a national defense. Parts of their stories are presented here in this thesis for the first time. For example, Chapter Three prefaces and frames this study by introducing gunsmithing in Philadelphia just before the War began. It draws on details found in previously uninvestigated newspaper advertisements, indenture documents, and surviving arms. The strength of Chapter Four relies on a comprehensive review of the minutes and notes of the Pennsylvania Committee of Safety to reveal the gunsmiths’ relationship with that government body. Chapter Five presents a more complete and accurate biography of Joseph Perkin in order to understand how and why he became the first Superintendent of Harpers Ferry Armory at the turn of the 18th century. The history of the city’s gunsmiths sheds new light on the many changes wrought by the War for Independence.
Chapter 2

A BRIEF INTRODUCTION TO FLINTLOCK FIREARMS

Before discussing Philadelphia’s gunsmiths and their production and repair of muskets during the War for Independence, it is first necessary to understand how flintlock firearms worked and how they were made. This chapter serves as a point of reference to help the reader gain a general sense of the materials and processes that Philadelphia’s gunsmiths worked with on a daily basis during the War. It begins with a technical discussion of the three major components of an 18th century firearm, the flintlock mechanism, the barrel, and the wooden stock, followed by a description of gunsmithing practices from the period. Due to their relevance to this thesis, this chapter concludes with a discussion of muskets and their military significance.

The Flintlock Firearm and its Components

The term “flintlock” refers to the type of mechanism that provided the ignition of gunpowder needed to fire a gun during the 18th century. Also known as a firelock, a flintlock functions based upon the sparking relationship between flint and steel. Figure 2 depicts an example of a late-18th century flintlock mechanism. The cock (A) of the lock secured a sharp piece of flint that, upon pulling the trigger, struck the “L” shaped steel hammer (B), modernly known as the frizzen or battery, which covered the priming pan (C). This action created sparks that showered into the priming pan filled with gunpowder. Once the gunpowder ignited, the explosion in the pan sent flames through a small touch hole on the side of the barrel, depicted in figure 3 (A). This
ignited the main charge of gun powder in the breech which, in turn, propelled the projectile out of the barrel. (Figure 3, B) Flintlock technology dominated European and American gun production from the mid-1600s until the mid-1800s. 17

Figure 2 Pattern 1777 Short Land musket lock (exterior), Benjamin Willets (contractor), Birmingham, England; 1777-1780. Steel, iron. 1982-18 The Colonial Williamsburg Foundation, Museum Purchase. Note the cock (A), hammer (B), priming pan (C), and hammer spring (D).

17 For a concise history of the flintlock, see Peterson, 25-35.
Figure 3  Detail of fusil, John Nicholson, Philadelphia, Pennsylvania; 1773-1776. Walnut, steel, iron, brass. 19487a Courtesy West Point Museum Collections, U.S. Military Academy. Note the touchhole (A) and breech (B).

The complex flintlock mechanism, also referred to as the “lock,” incorporates approximately ten distinct parts. On the interior of the lock, seen in figure 4, the main spring (A), bridle (B), tumbler (C), sear (D), and sear spring (E) work together to control the movement of the cock. Screws secure each of these components to the lock plate (F) and the entire lock is fastened through to the stock of the gun typically with two or three screws. The tumbler, which is attached to the cock, features three notches
that correspond to full cock (ready to fire), half cock (a “safety” position), and rest. These positions are illustrated in figure 5.

Figure 4  Pattern 1777 Short Land musket lock (interior), Benjamin Willets (contractor), Birmingham, England; 1777-1780. Steel, iron. 1982-18 The Colonial Williamsburg Foundation, Museum Purchase. Note the main spring (A), bridle (B), tumbler (C), sear (D), sear spring (E), and lock plate (F).
Figure 5    Pattern 1777 Short Land musket lock (exterior and interior), Benjamin Willets (contractor), Birmingham, England; 1777-1780. Steel, iron. 1982-18 The Colonial Williamsburg Foundation, Museum Purchase. From top to bottom, the images show the lock in its three positions: at rest, half cock, and full cock.

A flintlock requires three steel springs to function. The main spring, located on the interior of the lock plate, places tension on the tumbler which causes the movement of the cock. (Figure 4, A) Also on the interior of the lock, the sear spring places tension on the sear, a piece that catches on the three notches of the tumbler and moves when the trigger is pulled. (Figure 4, D & E) The third spring, on the exterior
of the lock plate, controls the hammer. (Figure 2, D) This spring keeps the hammer in place as it covers the pan to protect the priming powder and secures the hammer after it is forced open by the strike of the flint. It also generates enough resistance when the hammer is struck by the flint for the creation of sparks.

Made of iron, the barrel is essentially a long metal tube or pipe open only at one end through which the projectile passes when the gun is fired. (Figure 6, A) Barrels during the 18th century fit into two broad categories: smoothbore and rifled. A smoothbore refers to a barrel that has an even or smooth surface on its interior, called the bore. These types of barrels came in various diameters, also known as the caliber of the firearm. Smoothbore barrels could be loaded with a single lead ball, smaller shot such as bird and buck shot, or a combination of the two. Smoothbore arms of the period included military muskets, fusils, and fowling pieces. In contrast, a rifle features a barrel that incorporates grooves that run the length of the bore. When fired, the helix grooves guide a tight-fitting, patched lead ball out of the muzzle of the barrel with a consistent spin. This spin promoted accuracy, much like when a quarterback throws a football.18

The stock is the wooden substrate of the gun to which all metal parts including the lock and barrel attach. (Figure 6, B) The stock also serves as the way for the user to shoulder the gun when shooting and as a way to prevent the user’s hands from touching a hot barrel after repeated firings. Typically made of walnut, American

gunsmiths of the period also stocked firearms with cherry and maple. These woods had sufficient density and strength to balance considerations of weight and durability. A heavy gun could be difficult to shoulder and fire, while a lightweight wooden stock could be subject to breakage. Walnut’s rich color also met European aesthetic tastes, contrasting with the bright metal hardware of the gun. This aesthetic style bears similarity to furniture of the period that consists of a complement in color between the wood and mounted hardware. To this day, walnut continues to be a favored wood for gun stocks.

Figure 6 Musket, Pennsylvania; 1775-1776. Walnut, steel, iron, brass. 80.100 Courtesy, State Museum of Pennsylvania, Pennsylvania Historical and Museum Commission. Note the barrel (A) and the walnut stock (B). The barrel is fastened to the stock with iron pins. Also visible are the ramrod, brass hardware (including side plate), and cock of the lock.

Gunsmithing in the 18th Century

When creating a gun, smiths made the barrel first. This involved heating and re-heating a long, rectangular piece of iron called a skelp in a forge, hammering it in a grooved barrel anvil or swage, and welding the tube closed around a mandrel. The gunsmith repeated this welding process along the length of the barrel since only a small portion of the barrel could be sealed at one time. This created a seam at the bottom of the barrel. (Figure 7) Once the gunsmith finished the tube, the interior of the barrel needed boring. Boring created a uniform surface in the tube and allowed the gunsmith to establish the barrel’s caliber. Gunsmiths used a boring machine or bench that rotated cutting bits of graduated sizes to complete this process. Once the gunsmith fixed other imperfections on the interior of the barrel by hammering on the exterior, he then employed a sandstone grindstone and steel files to even out and remove tool marks from the exterior of the barrel. A gunsmith could then add rifling to the interior of the barrel with a rifling bench. Adding rifling to a barrel is a repetitive process that required time and precision to complete. Graduated rifling bits carved out the helix grooves in small amounts with each pass through the bore. Due to the nature of such work, rifles often commanded higher prices than most smoothbore guns of the period. Lastly, to plug one end of the barrel, the gunsmith added screw threading and screwed in a separately made breech plug.20

In the 18th century, gunsmiths made the barrel and most of the parts of the lock out of wrought iron. With a reduced carbon content, wrought iron’s “pliant nature” allowed it to be easily worked by hammering when heated. It also provided the required strength for mechanical parts and resistance to repeated stress from the ignition of gunpowder.²¹ The brittleness of cast iron made it unsuitable for use on gunlocks or barrels. Gunsmiths used steel only for parts that required its properties, such as the hammer and three gunlock springs. Steel is both harder and more resilient.

than wrought iron, but it was also more expensive in the period. Steel can “hold an extremely keen edge and withstand abnormal wear, tension, or flexing.”  

A flintlock’s hammer needed to be hard and able to endure repeated flint strikes. The gunlock springs needed steel’s flexibility. Steel itself is an alloy of iron and carbon. It contains more carbon than wrought iron, but less than cast iron. To make steel, carbon is introduced to iron and heated at high temperatures so that the carbon penetrates the iron. The intense heat needed to produce steel contributed to its greater expense.  

The collection of small steel and iron parts which composed the lock necessitated precise work to make them function effectively as a unit. In general, lock making involved heating and hammering to shape and weld each individual iron piece. Bending the steel springs required considerable heat in the forge. Gunsmiths pre-made iron swages to assist in the shaping of a cock or lock plate. Otherwise, the pieces could be hammered freehand. (Figure 8) Archaeologically excavated unfinished lock parts from the 18th century have revealed this shaping process. Gunsmiths employed a combination of steel files to clean and flatten parts of the lock. (Figure 9) Smiths case hardened most lock parts, especially plates. Case hardening involved adding carbon to the surface of a lock with intense heat in the charcoal of the forge, as a measure to

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23 Lewis, 14-16.

prevent rust, protect against wear, promote a higher polish, and provide a slippery surface for the action of the tumbler and the cock.\textsuperscript{25}

\begin{center}
\textbf{Figure 8} A didactic tool used by the blacksmiths at the Anderson Public Armory in Colonial Williamsburg to illustrate the forging of a musket cock. Photo by the author.
\end{center}

\textsuperscript{25} Thank you to Master Gunsmith George Suitor, Apprentice Gunsmith Eric Von Aschwege, and Master Blacksmith Ken Schwarz, all of the Colonial Williamsburg Foundation, for teaching me about case hardening.
Stock making followed the more labor intensive metal working processes. Stocking began with a roughly sawn board, approximating the desired shape. Working with planes, chisels, and braces, the stock maker removed wood to make channels for the barrel and ramrod, a void for the interior mechanism of the lock and lock plate, and spaces for premade metal hardware, also known as furniture. Hardware included a trigger guard, butt plate, side plate, wrist escutcheon, and ramrod pipes. Depending on the quality of the gun and the desires of the customer, gunsmiths made furniture out of cast and sheet brass and silver. Decorative carving and inlaid metal wire increased the aesthetic quality of gunstocks.
All of this work required a gunsmith’s shop to have a variety of tools and equipment, much of which blacksmiths, whitesmiths, and other metal workers also used in their shops during the period. The forge and bellows served as the focal point of a gunsmith’s workshop, surrounded by anvils, hammers, swages, files, pliers, and mandrels, as well as wood working tools. Other specialized gunsmith’s tools included boring and rifling benches and pan borers, which carved out the depression for the priming pan.26

The Military Musket

During the War for Independence, flintlock muskets paired with socket bayonets to serve as the primary weapon for both European and American soldiers. Muskets fit into a category of firearms known as shoulder or long arms. As the name suggests, this type of weapon is fired from the shoulder, as opposed to pistols which are held in the user’s hand. Other types of shoulder arms include rifles and fowling pieces. Civilians used those types of arms for hunting and sporting. However, fowling pieces and rifles were also used in military contexts during the War for Independence.

Even though the accuracy of rifles surpassed that of smoothbore muskets, muskets had advantages for military use. First, gunsmiths could make muskets faster and cheaper than rifles to arm large bodies of troops. Rifling the bore of a barrel was both laborious and time consuming. Second, muskets took less time to load. A trained soldier with a musket could load and fire his weapon about three to four times per minute. Even an expert rifleman could only load and fire about one round per minute. To ensure a tight-fitting ball that would spin out of the barrel, a rifle needed to be

26 Gill, 46.
loaded with a ball wrapped in a greased patch that had to be wedged down the barrel with the ramrod. This lengthened the loading process. Third, with some exceptions, rifles of the period did not have provisions to attach a bayonet. A socket bayonet that attached to the muzzle or end of the musket’s barrel, allowed a soldier to fire his weapon with the bayonet on. A soldier could also protect himself in hand-to-hand combat or against cavalry men on horseback. The bayonet extended the musket’s length and allowed the firearm to double as an edged weapon.

When loading a musket, the soldier went through five essential steps. First, he pulled the cock to the “half cock” position. This position acted as a “safety” since a tug on the trigger would not cause the cock and flint to engage the hammer. At half cock, the soldier could also have enough space to pour a small amount of powder into the priming pan, the second step. Once the soldier primed the pan, he closed the hammer to prevent that powder from falling out. The third step involved pouring gunpowder down the muzzle of the barrel followed by a lead musket ball and wadding. In the fourth step, the soldier drew his ramrod and packed the materials tightly in the breech of the barrel. After withdrawing the ramrod from the barrel and placing it back in its channel, the soldier took the fifth and final step to bring the cock to the “full cock” position, aim the musket, and pull the trigger. The flint strike of the steel hammer set off a rapid chain reaction which ignited the main charge and launched the musket ball. The usage of pre-made paper cartridges expedited the loading process for soldiers. Cartridges contained the necessary amount of gun powder for priming the pan and loading the main charge in the barrel. With the lead musket

27 Patches in the period were typically greased with lard or tallow.
ball wrapped in the bottom of the cartridge, the soldier sent the ball down the barrel along with the paper, which served as wadding.

A document known as a “manual of arms” regulated a soldier’s handling and usage of a musket, especially the loading process. Each European army had their own distinctive manuals during the 18th century. During the War for Independence, Americans also developed a few military manuals and used the British “Manual Exercise” drawn up in 1764. Major General Friedrich Wilhelm Augustus, Baron von Steuben introduced his manual of arms, based on Prussian exercises, to the Continental Army at Valley Forge in 1778 and helped the American army increase its professionalism. Manuals of arms promoted military regulation, essential to command and control on the battlefield.

By the time of the American Revolution, British military muskets had a long, wide-spread existence in North America, especially following the French and Indian War (1754-1763). Although the details and specifications of British muskets changed throughout the 18th century, their overall appearance remained consistent. Their characteristic features included brass furniture, a walnut stock, a gooseneck cock, and a .76 caliber barrel pinned to the stock. Popularly known today as “Brown Bess” muskets, the most common British muskets of the period were “Land Pattern” muskets, meant for use by troops on land, rather than by marines or seamen. A shortened barrel, from 46 to 42 inches, reflected the major change in appearance of British Land Pattern muskets, implemented on guns made after 1768.28 “Short Land

28 According to Erik Goldstein, 42 inch barrels had been used for Dragoon and Marine or Militia muskets for decades prior to 1768, see Erik Goldstein and Stuart Mowbray, The Brown Bess (Woonsocket, RI: Mowbray Publishing, 2010), 92.
Pattern” and “Long Land Pattern” designations serve as a way for modern students of these arms to differentiate between earlier and later muskets. By mid-century, Land Pattern muskets were paired with socket bayonets characterized by a triangular blade, a reinforcement ring at one end of the socket, and blades between 16 and 17 inches in length.29 French and other European muskets also played significant roles during the War for Independence. The characteristics of those firearms will be discussed as needed later in this thesis.

By explaining components and stages in firearms design and assembly, this overview reflects the diversity of the craft knowledge and production contemporary to the subject of this thesis. Gunsmithing necessitated technical acumen and careful work. A properly functioning musket and bayonet levelled serious consequences during the battles of the War for Independence. A firearm of poor quality or workmanship could prove detrimental to battlefield success. The American war effort relied on American gunsmiths to produce and maintain the most essential combat tool for its soldiers. Philadelphia’s gunsmiths played a vital role in that crucial work.

Chapter 3

“AS GOOD AND AS HANDSOMELY FITTED UP AS ANY MADE IN AMERICA”: GUNSMITHING IN PHILADELPHIA, 1770-1775

Philadelphia’s main thoroughfare, Market Street, bustled in the late-18th century, just as it does today. Workshops, taverns, stores, and houses lined the broad street. Market stalls, as the name suggests, sold Delaware Valley produce and merchants offered the finest wares from England unloaded at the city’s wharves. Between Fourth and Fifth Streets, Thomas Palmer, a gunsmith, plied his trade. On March 31, 1773, an advertisement printed in *The Pennsylvania Gazette* declared Palmer’s products and services: “HAS for SALE, a quantity of well-made RIFLES, of different Lengths and Sizes of bores, which he will insure to the Purchasers, to be as good and as handsomely fitted up as any made in America . . .” He also offered potential customers fowling pieces, custom work, and repairs. To catch readers’ attention, Palmer paid for the inclusion of an image of a flintlock gun printed above his advertisement, mimicking a shop sign. (Figure 10) Palmer situated himself and his shop near the city’s commercial center to attract the business of elite Philadelphians and others from outside the city who desired guns for hunting and sporting and wanted requisite repairs and accessories.

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While a history of gunsmithing in Philadelphia is beyond the scope of this study, it is necessary to preface the analysis of gunsmiths’ roles during the War for Independence with a brief discussion of the active craftsmen just prior to the conflict. Primary source information concerning Philadelphia’s gunsmiths before the War for Independence has been difficult to find. The lack of known surviving account books limits the modern historian’s understanding of the details of the trade, the craftsmen, their products, and their customers. However, the relatively well-documented case of Thomas Palmer serves as a lens through which to understand the situation of Philadelphia’s gunsmiths just prior to the War. Using his newspaper advertisements as entry points, the first section of this chapter provides a glimpse into Palmer’s gunsmithing business. The second section analyzes Palmer’s involvement in the
production and repair of muskets in both public and private capacities surrounding the outbreak of the War. Filling orders for muskets for both George Washington and John Cadwalader and the Philadelphia Associators, Palmer’s work foreshadowed the changing roles of the city’s gunsmiths as producers and repairers of military arms during the years of the War for Independence.

**Thomas Palmer**

Thomas Palmer likely learned the gunsmithing trade from his father, William. When William Palmer died around 1771, Thomas and his two brothers used a newspaper ad to sell their father’s property, a 56 acre plantation in the Northern Liberties. The property contained a “large stone house, and 2 stone shops, the one a smith, and the other a carpentershop.” Thomas used the smith shop on the estate for gunsmithing as early as 1770. In this shop, Thomas made “rifles and other guns,” smith bellows, and even owned a machine for “for cutting the screws on the brass elbows for the fire engines.” Because of his own work as a gunsmith, William may have taught his son these metal working skills. A September 17, 1761 advertisement in *The Pennsylvania Gazette*, provides evidence for William Palmer’s occupation. The ad informed readers that the “Shop of William Palmer, Gunsmith of Philadelphia” had been robbed. William offered a 20 shilling reward for anyone who could capture the


thief who stole guns, including “a very neat Fowling piece,” and clothing.\textsuperscript{33} The advertisement does not list the location of his shop, but this may indeed be Thomas’ father. At some point between the years 1770 and 1773, probably since his Father’s plantation sold, Thomas Palmer relocated his shop to downtown Philadelphia to attract a larger customer base.

Four fulltime gunsmiths, including Palmer, are documented in the Provincial Tax List for the City of Philadelphia in 1774.\textsuperscript{34} William Dunwick worked at the corner of Second and Spruce Streets in the Dock Ward and offered for sale “Rifles, smooth bored bullet Guns, Fowling Pieces of all kinds, military Fire Arms on the best construction, with and without Bayonets.”\textsuperscript{35} John Nicholson also worked in the Dock Ward. Born in England about 1737, Nicholson acquired the skills of the trade before immigrating to North America.\textsuperscript{36} Henry Deabarear, who had his shop on Second Street in Mulberry Ward, performed both “gun work and spring lancet making.” He sold “guns and gun barrels, also a great assortment of gun locks, and pistols for

\textsuperscript{33} “TWENTY SHILLINGS Reward,” \textit{The Pennsylvania Gazette} (Philadelphia, PA), September 17, 1761, accessed November 18, 2015, Accessible Archives.

\textsuperscript{34} This number of active gunsmiths was developed based on cross referencing newspaper advertisements from 1773-1775 and the “Transcript of the Provincial Tax, City of Philadelphia 1774.” Not all of the occupations of the men listed in the tax list are known. The tax list is from \textit{Pennsylvania Archives}, series 3, XIV, 221-303, digital image, Fold3.com; Carl Bridenbaugh rightly points out that the tax list does not account for “the entire class of master craftsmen” in the city, see Bridenbaugh, 96.


 holsters and the pocket.”37 About 52 master metal smiths, including gunsmiths, blacksmiths, whitesmiths, and coppersmiths, worked in Philadelphia in 1774.38 One British observer noted that by 1775, Philadelphians had “made great advances in most of the British manufactures here, such as making most kinds of hardware, clocks, watches, locks, guns, flints, glass, stoneware, nails, paper, cordage, cloth, etc. etc.”39 These four gunsmiths were part of the city’s cosmopolitan identity.

Economically situated among the city’s “middling sort” as “independent businessmen,” the craft experiences of Philadelphia’s master gunsmiths likely mirrored other gunsmiths in New York City, Boston, and Charleston.40 In contrast, the populations of smaller cities and towns had little need for more than one or two full time gunsmiths.41 The 1774 tax list shows that none of Philadelphia’s gunsmiths owed taxes for owning acreage, horses, or cattle. They operated their businesses on a small scale, made use of and honored lines of credit, and purchased imported parts to supplement their own work. As shown in their advertisements, both Palmer and

37 “THIS NOTICE IS GIVEN,” The Pennsylvania Gazette (Philadelphia, PA), September 15, 1773, accessed November 18, 2015, Accessible Archives.

38 Bridenbaugh, 85.

39 Patrick M’Robert quoted in Bridenbaugh, 141-142.


41 Gill, 21; However, there were exceptions, including in York, PA where 12 gunsmiths are known to have worked just after the War for Independence, see Fennimore, 197.
Deabarear performed other types of metal work to generate increased income and attract a wider customer base.

Although few details are known about their shop organization, we can reasonably assume that these gunsmiths employed journeymen, took on apprentices, and made agreements with indentured servants to complete the work they advertised. Their staffs probably remained small.42 Auxiliary workers could provide valuable labor for a master gunsmith. Palmer owed £3 for the ownership of two servants as stated in the 1774 tax list.43 Those two servants may have been Frederick Klette and David Scotts, whose passages from London Palmer agreed to fund in exchange for their labor. Palmer also agreed to provide them with “two compleat suits of apparel one whereof to be new” upon the expiration of their terms.44 Nicholas Linch, an indentured servant and a “Brass founder by trade,” is known to have run away from Palmer in July 1775.45 He likely used his skills to cast brass furniture for firearms in the master gunsmith’s shop. John Nicholson took on an 18 year-old indentured servant from London in June 1773 named Richard Trusted for a three year term of servitude. When Trusted ironically ran away a few months before the conclusion of his term,

42 Bridenbaugh, 129.


Nicholson described him as a “Gun-stocker.” Klette, Scotts, Linch, and Trusted were four of roughly 630 indentured servants who worked in Philadelphia in 1775. Following the outbreak of the War for Independence, Philadelphia’s gunsmiths became increasingly concerned with expanding their production capabilities and advertised for both journeymen and apprentices. That topic will be discussed in the next chapter.

Products and Customers

According to his 1773 advertisement, Palmer said he made both fowling pieces and rifles. However, no known examples of Palmer-made rifles or fowling pieces survive. Palmer’s rifles may have had some similarity to the famous Pennsylvania rifles made by gunsmiths in Lancaster and other counties of central and western parts of the province. These have octagonal barrels featuring helix rifling, slender stocks and locks, carved stocks, wooden and brass patch boxes, and bores ranging from about .40 to .60 caliber. Palmer offered his rifles in “different lengths and sizes of bores.”


Such variation allowed the customer to choose a gun that fit his height, strength, and desired usage.

Palmer promoted his fowling pieces specifically based on the approval of the “Gentlemen of this City.”49 This style of gun was often considered an object of leisure used by gentlemen. (Figure 11) Featuring a smooth bore, fowling pieces suited hunters and sportsmen for water fowl, birds, and small game, as their name suggests. Philadelphians could also purchase imported fowling pieces either through custom orders or from shops owned by merchants who competed with local gunsmiths. In 1773, Philadelphia merchant Nicholas Brooks imported and advertised “very neat fowling pieces.”50 Most imported fowling pieces came from England, specifically Birmingham and London, which had a well-regulated gun making industry that produced high quality arms. Arms scholar Henry J. Kauffman contends that English gunsmiths made the finest fowling pieces in the world during the late-18th century, desirable for their high quality locks and fashionable aesthetics. Imported English examples, Kauffman points out, influenced the fowling pieces that American gunsmiths produced in their shops.51


51 Kauffman, The Pennsylvania-Kentucky Rifle, 102; For a pictorial overview of 18th century American fowling pieces, see, Tom Grinslade, Flintlock Fowlers: The First Guns Made in America (Texarkana, TX: Scurlock Publishing Co., 2005).
Figure 11  *Portrait of James Lewis*, attributed to Charles Willson Peale, Virginia; 1772-1775. Oil on canvas. *1991-1173 The Colonial Williamsburg Foundation. Partial gift of Miss Alice Dulany Ball, Mr. Francis Mallory Ball, and Mrs. Emma Matilda Ball Papp.* Lewis holds a fowling piece and displays the fruits of a hunt in the bottom left corner. Note the gun’s fanciful brass side plate.
Philadelphia’s gunsmiths faced competition from high quality imported arms, but they also benefited from importation. City merchants imported both whole guns and parts. For example, in April 1773, merchant Daniel Benezet advertised for sale “Long and short rifle gun barrels, Fowling pieces & musket do.” imported from London, Bristol, and Holland.\(^{52}\) Gunsmiths could use imported parts, such as barrels and locks, in their own work to save production time and labor. City residents turned to local gunsmiths and other related craftsmen for repairs and maintenance of their guns, imported or not.\(^{53}\) Customers may have also brought a purchased barrel or lock to a gunsmith to have him complete the necessary parts to make a functional gun. The fowling piece stolen from William Palmer’s shop in 1761 featured “a double Bridle Lock, Maker Name Wilson,” suggesting that Palmer was either in the process of repairing this English made gunlock or was using it to complete an order for a customer. Richard Wilson’s gunsmithing firm in London existed for more than a century, beginning in the 1730s. A number of Americans from the period owned Wilson made guns, including George Washington.\(^{54}\)

A surviving fusil, or light weight musket, marked by John Nicholson provides evidence of the use of imported parts by Philadelphia’s gunsmiths during this period. The fusil’s 40 ¼ inch, .63 caliber barrel is engraved “NICHOLSON PHILAD\(^{5}\)” on its

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\(^{54}\) Ahearn, 137-138.
top side near the breech. (Figure 12) While the walnut stock and cast brass furniture may have been made in Nicholson’s shop, the barrel and the lock have British origins.55 The barrel is marked with a crowned “P,” the proof mark of Birmingham, England.56 Birmingham had a well-developed gunmaking industry that specialized in both military firearms and commercial guns and parts meant for trade with Great Britain’s colonies.57 The lock on this fusil is a British commercially-made example featuring foliate engraving on the plate and cock.58 (Figure 13) The initials “JR” engraved in a cypher on the escutcheon plate point to its owner.59

55 A scientific test of a wood sample can confirm the American origins of the stock.


58 The lock has comparable features to other known British commercial examples. The author has not seen the interior of the lock to see if there are any marks that confirm this inference.

59 Moller erroneously calls this fusil a “British Style Pennsylvania Committee of Safety musket,” see Moller, American Military Shoulder Arms, Vol. I., 124-125.
Figure 12  Detail of fusil, John Nicholson, Philadelphia, Pennsylvania; 1773-1776. Walnut, steel, iron, brass. 19487a Courtesy West Point Museum Collections, U.S. Military Academy. “NICHOLSON PHILAD” is engraved on the barrel.

Figure 13  Detail of fusil, John Nicholson, Philadelphia, Pennsylvania; 1773-1776. Walnut, steel, iron, brass. 19487a Courtesy West Point Museum Collections, U.S. Military Academy.
Without a surviving account book, it is difficult to develop a broad understanding of who engaged the work of Thomas Palmer prior to the War for Independence. However, advertisements and personal receipts provide clues about his customers. If his claims are honest, Palmer’s advertisements indicate the “Gentlemen of this City” approved of his work, as did “some of the best Judges within the three Provinces.”

John Cadwalader was one such gentleman. A member of one of the wealthiest families in Philadelphia, Cadwalader purchased guns from Palmer in both 1773 and 1774. A receipt dated October 16, 1773 in Cadwalader’s papers at the Historical Society of Pennsylvania shows that Palmer made two “strate [straight] rifles” for Cadwalader’s “friends in Maryland” at £6/14/0 each. The next spring, Cadwalader ordered two for himself, this time with “swiveld” locks at £15 each. He may have looked to Palmer’s work during this period of non-importation in Pennsylvania as an alternative to ordering firearms from Great Britain.

A straight rifle refers to a specific type of gun that Palmer advertised in The Pennsylvania Gazette. On March 16, 1774, Palmer marketed his production of “all sorts of SHOT GUNS, such as straight Rifles, Cocking pieces, Fuzees, &c. in the best


61 Thomas Palmer Receipt, October 26, 1773, folder 1, box 11, series 2 (General John Cadwalader Papers), collection 1454, Historical Society of Pennsylvania; Thomas Palmer Receipt, March 22, 1774, folder 1, box 11, series 2, collection 1454, Historical Society of Pennsylvania.

and neatest Manner.” Palmer classified the straight rifle as a shot gun, or a gun meant to fire bird or buck shot. Different from a fowling piece, a straight rifle featured a barrel bored with straight rifling or grooves. The straight grooves allowed for the versatility of shooting a single lead ball or multiple pieces of shot, like a smoothbore, but offered increased accuracy when firing a tight-fitting, patched ball. Compared to the helix grooves of other rifles, straight grooves made loading a patched ball easier. Perhaps John Cadwalder and his friends appreciated such versatility.

With the funds to do so, Cadwalader bought himself two enhanced variations of the guns with swiveled locks. In other words, straight rifles featuring the latest English development in gunsmithing at the time. A swiveled lock refers to a flintlock whose main spring is connected to the tumbler by way of a small steel “link.” This additional piece was thought to promote the lock’s quicker action because it reduced the friction between the main spring and the tumbler. In reality, the difference in effectiveness was negligible. Similar to rollers on the hammer or hammer spring, swiveled locks were the most recent technological updates to gunsmithing in the early 1770s and required intricate work to fabricate the small parts. The hefty price of £15


64 Thank you to master gunsmith George Suitor of the Colonial Williamsburg Foundation for assisting my understanding of straight rifles; George Suitor, email message to author, February 10, 2016.

65 A diagram of a swiveled lock is shown and described in J.N. George, English Guns and Rifles (Harrisburg, PA: Stackpole, 1947), 116-117.

66 This author originally interpreted “swivled lock” to refer to a swivel breech gun with two over-under barrels and one lock, allowing the user to have two loads ready to fire, one after the other, see George Shumway, Rifles of Colonial America, Vol. I
each speaks to Cadwalader’s wealth and the luxury firearms he purchased. It is unknown what combination of parts Palmer used to construct these complex guns. He probably employed both imported parts, perhaps the lock, and parts that he himself fabricated.

Studies of the furnishings of Cadwalader’s home on south Second Street, particularly the surviving ornately carved mahogany chairs, pole screens, and card tables, document his material wealth. The £30 he spent on two rifles compares with some of the other finer objects he owned. For example, Cadwalader paid Charles Willson Peale £25/4/0 to paint the family portrait of himself, wife Betsy, and daughter Anne in 1772, a work which Peale “greatly admired.”

(Figure 14) In 1770 and 1771, Cadwalader paid cabinetmaker Thomas Affleck for a grouping of unfinished mahogany furniture, to be ornately carved later by James Reynolds, Nicholas Bernard, and Martin Jugiez. In observing the finished furniture, Silas Deane noted that it “exceeds anything I have seen in this city or elsewhere.”

The amounts recorded paid

(York, PA: George Shumway, 1980), 232-233. However, Ed Flanagan corrected this error and pointed out the existence of swiveled lock guns, a British development of the early 1770s. On the same receipt from Palmer, John Cadwalader also purchased “a new hammer & hammer spring with a swivel” for £0/15/0. This item may refer to a roller on the hammer spring, see George, 115-117. At this time, it is difficult to say for certain whether the use of the words “swivel” and “swiveld” on Cadwalader’s receipt refer to an actual swivel lock or a roller lock, both new inventions contemporary to the receipt.


to Affleck were £11 for an unfinished mahogany desk, £16 for two commode sofas, and £12 for a bedstead.\textsuperscript{69} Once carved, the amount Cadwalader spent on these particular pieces of furniture, roughly equates with the price he paid for each rifle. Palmer’s swiveled lock straight rifles were top tier luxury objects. Palmer probably sold few guns at this price point due to their prohibitive costs for a customer.

\textsuperscript{69} Wainwright, 44.
Figure 14  Portrait of John and Elizabeth Lloyd Cadwalader and their Daughter Anne, Charles Willson Peale, Philadelphia, Pennsylvania; 1772. Oil on canvas. 1983-90-3 Philadelphia Museum of Art. Purchased for the Cadwalader Collection with funds contributed by the Mabel Pew Myrin Trust and the gift of an anonymous donor.
Musket Making

The rising political tensions of the 1760s and early 1770s expanded work opportunities for Palmer. While continuing his business making and repairing hunting and sporting arms for the city’s residents, regional customers, and travelers through Philadelphia, Palmer took on a new role in the production of military style muskets and bayonets in 1774 and 1775. This second section analyzes Palmer’s production for George Washington and John Cadwalder and the Philadelphia Associators during these years.

Asked to take command of a few of the “independent companies” of militia in northern Virginia, Colonel George Washington also had the job of securing supplies to outfit the volunteers, including muskets, drums, flags, and gorgets. In Virginia, voluntary militias called “independent companies” formed following the announcement of the Continental Association, a political boycott of the importation of British goods established by the First Continental Congress in the fall of 1774. These companies served “as the strong arms of the county committees of safety” and enforced the terms of the boycott.70 Most of these companies formed between September 1774 and June 1775. In need of military style muskets, Washington turned to the skilled craftsmen of Philadelphia.

Working through an agent named William Milnor, a merchant in Philadelphia, George Washington ordered a set of muskets from Thomas Palmer in 1774.71 After he

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inquired about obtaining muskets in Philadelphia for use by the Prince William County Independent Company, Washington received a letter from Milnor, dated November 29, 1774 stating that Thomas Palmer could “make one hundred by May Next, and [John] Nicholson says he can make the like Number by March, they both agree in the price at 3.15 this Currency.” Upon checking with William Grayson, leader of the Prince William Company, for his approval of the order, Washington requested 40 muskets and bayonets. For an unknown reason, Milnor engaged Palmer, rather than Nicholson, to meet the order. After agreeing to the order in January, Palmer promised to have it completed by April 1775. He finished the order on schedule. Grayson and Washington contemplated how the muskets could be transported from Philadelphia to Virginia that April.

Palmer patterned the muskets he made for the Prince William Company after a specific type of gun made in London by the Wilson gunsmithing firm. When Milnor approached Palmer with Washington’s request, Palmer had already agreed on a separate musket order from John Cadwalader for the Philadelphia Associators. That

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order will be discussed later. However, Milnor noted that Palmer used a “Jersy Musquet” as the pattern for the Cadwalader order and suggested that Washington’s muskets could be based on the same type of gun. Milnor advised Washington that Benjamin Shreve, a hatter in Alexandria, Virginia, had such a “Jersy Musquet” that Washington could view and make his decision about its suitability.74 “Jersy Musquet” refers to a collection of muskets made by the Wilson gunmaking firm in London on contract for New Jersey provincial troops during the French and Indian War. Wilson had two such contracts with the colony. A few examples of muskets and lighter-weight fusils from those orders survive. They are engraved on the top of the butt plate “NEW=JERSEY” and marked by the Wilson firm.75

A musket made by Palmer, which survives in the collection of the Museum of the American Revolution, meets the specifications of Washington’s order and has a provenance that relates it to northern Virginia. It may be one of the guns the colonel ordered in 1775. This musket features a light weight walnut stock, a .69 caliber barrel, brass furniture, and a probable British commercially-made flat lock plate with foliate engraving.76 (Figure 15) The top of the barrel is engraved “PALMER PHILADA” and


75 Ahearn, 146-147.

76 The lock appears to be original to the musket and is likely of British commercial manufacture. The interior of the lock is apparently stamped “S. Homer,” but this author has not personally viewed the interior of the lock. This stamping may relate to a “B. Homer” stamp present on a few pistols and long arms from the period. It has been suggested that this is the stamping of a British gunsmith, see Samuel E. Smith and Edwin W. Bitter, Historic Pistols: The American Martial Flintlock 1760-1845 (New York: Scalamandre Publications, 1985), 34-37.
the brass wrist or escutcheon plate is engraved “№ 23.” (Figures 16 & 17) This musket underwent restoration work in the early 1980s. Surviving examples of Wilson-made New Jersey muskets feature similar light weight stocks and barrel calibers. The fact that this musket is numbered gives it a strong connection to Washington’s order. Washington wrote to Milnor about the muskets stating that “I should think it would be an advantage to have them numbered.” Before completing the order, Palmer sent one example musket to the Virginians to see if it met with approval. Perhaps due to its light weight, William Grayson wrote that the men had “different opinions” about the gun, but left it up to Washington to decide whether to change the specifications. Found in Alexandria, Virginia in the early twentieth century, this musket entered the collection of the Museum of the American Revolution in 2010.

77 Of particular note, the restorer lengthened the barrel from about 36 inches to 42 3/8 inches. Evidence suggested that the gun had been shortened; Object file (2010.02.0045), Museum of the American Revolution.


Figure 15  Detail of musket, Thomas Palmer, Philadelphia, Pennsylvania; 1775. Walnut, steel, iron, brass. 2010.02.0045 Photograph taken by the author, used with permission from the Museum of the American Revolution.

Figure 16  Detail of musket, Thomas Palmer, Philadelphia, Pennsylvania; 1775. Walnut, steel, iron, brass. 2010.02.0045 Photograph taken by the author, used with permission from the Museum of the American Revolution.
Engraving on the brass wrist plate, also known as the escutcheon.
A musket in the collection at Cliveden, the Chew family mansion in the Germantown section of Philadelphia, bears striking similarity to the musket at the Museum of the American Revolution. This gun has not been published before. Engraved “PALMER PHILAD” on the top of the barrel, the musket features a light weight walnut stock, a commercially-made British, foliate engraved lock plate, a .69 caliber barrel, and a brass escutcheon plate engraved “N=0 24.” (Figures 18, 19, & 20) The engraved work on both muskets’ wrist plates and barrels appear to have been done by the same hand. The brass furniture is all of the same pattern. The major difference is that the lock plate and cock of the Cliveden musket are rounded and in better physical condition. This gun has a long history of being at Cliveden, perhaps since the Battle of Germantown in 1777, for which the mansion served as the focal point. Because of this musket’s provenance, it is unlikely that it was part of Washington’s order for 40 muskets and bayonets from Palmer. However, it may have been part of an order placed by John Cadwalader.

Figure 18  Detail of musket, Thomas Palmer, Philadelphia, Pennsylvania; 1774-1775. Walnut, steel, iron, brass. NT 73.55.13.2 Courtesy of Cliveden, a Historic Site of the National Trust for Historic Preservation.

Figure 19  Detail of musket, Thomas Palmer, Philadelphia, Pennsylvania; 1774-1775. Walnut, steel, iron, brass. NT 73.55.13.2 Courtesy of Cliveden, a Historic Site of the National Trust for Historic Preservation.
Figure 20  Detail of musket, Thomas Palmer, Philadelphia, Pennsylvania; 1774-1775. Walnut, steel, iron, brass. NT 73.55.13.2 Courtesy of Cliveden, a Historic Site of the National Trust for Historic Preservation.
Cadwalader procured muskets for the Philadelphia Associators. Like the “independent companies” of Virginia, the Philadelphia Associators increased their activity following the announcement of the Continental Association in 1774. However, the roots of the Associators began in 1747 with the formation of the Pennsylvania Military Association, an “all-volunteer enterprise pledged to defend Pennsylvania.”

The Association re-formed in times of conflict, such as the French and Indian War, to meet the military needs of the province. Pennsylvania’s political leadership, filled with pacifist Quakers, opposed a government sanctioned military organization. Unlike other colonies, it had no militia law before the War for Independence. Philadelphians, including Benjamin Franklin, led the way in forming this volunteer organization which, by 1774, served as “the only legitimate military leadership in the colony.”

John Cadwalader took command of the Third Battalion of the Philadelphia Associators.

Cadwalader ordered 100 muskets from Thomas Palmer in 1774. As stated previously, Palmer patterned the guns he made for Cadwalader after a Wilson-made New Jersey contract musket. Therefore, the muskets ordered by Washington and Cadwalader must have been similar. By May 27, 1775 Palmer finished part of the


82 Seymour, xiii.

83 Seymour, 131 and 200-201.

order, as Cadwalader paid him £280 for 70 muskets and bayonets for use by his battalion’s light infantry company. That equates to £4 per musket and bayonet. These muskets may have been numbered on their wrist plate, as the Cliveden musket is. On February 1, 1776, Colonel Cadwalader delivered a set of “Palmer Muskets” to Sergeant John Harris to be issued out to the Associators. A list of names of Associators on the back of that receipt denotes who received the guns followed by a number. While “N=0 24” is not listed, this notation suggests that the muskets were indeed numbered, to keep track of who received them.

Thomas Palmer’s work for Washington and Cadwalader may have been the first time he fabricated military style muskets. However, Palmer had previous experience with the repair of military arms. The City of Philadelphia kept a small stockpile of small arms, likely British Land Pattern muskets and bayonets, before the War for Independence. In 1771, the Provincial Assembly of Pennsylvania raised and appropriated £15,000 to update and fix the defense of Philadelphia. This included the construction of a fort at Deep Water Island, also known as Mud Island, on the Delaware a few miles south of the city. This fort later became known as Fort Mifflin and served as the scene of an intense battle during the War for Independence. The

85 Light Infantry Company Receipt, May 27, 1775, folder 1, box 21, series 2 (General John Cadwalader Papers), collection 1454, Historical Society of Pennsylvania; Palmer was also paid a second time, see Light Infantry Company Receipt, March 7, 1776, folder 2, box 21, series 2 (General John Cadwalader Papers), collection 1454, Historical Society of Pennsylvania.

86 Light Infantry Company Receipt, February 1, 1776, folder 3, box 21, series 2 (General John Cadwalader Papers), collection 1454, Historical Society of Pennsylvania.

assembly hired and paid Thomas Palmer and William Dunwick to clean and repair the province’s small arms.\textsuperscript{88} In 1774, the assembly granted just over £394 for further work by the gunsmiths.\textsuperscript{89} This example illustrates that the city’s gunsmiths did more than just civilian work before the War. Such experience provided them with a familiarity of military arms and established their reputation with political contacts.

As the subsequent chapters will discuss, a number of Philadelphia’s gunsmiths followed a similar path to Palmer and transitioned from being civilian producers to military contractors. Thomas Palmer provided services to the Pennsylvania Committee of Safety. John Nicholson and William Dunwick made contributions to both Pennsylvania’s and the Continental Congress’ arms production and repair efforts. Other city craftsmen with appropriate skills, such as blacksmiths, a cutler, a watch and clock maker, and even joiners involved themselves in various gunsmithing capacities. As other historians have previously suggested, the consequences of the War for Independence expanded opportunities for gunsmithing in Philadelphia.\textsuperscript{90} This thesis, however, will explain in greater detail, based on the interpretation of primary source evidence that corrects and adds to prior scholarship, who became involved and the work they did as military contractors in the city during the War.

\textsuperscript{88} In 1771, the assembly paid Palmer £55/9/6 and Dunwick £52/15/9, see “Votes of Assembly 1771,” \textit{Pennsylvania Archives}, series 8, VIII, 7080, digital image, Fold3.com.


\textsuperscript{90} Olton, 81.
Chapter 4

“THE INDUSTRY OF OUR INGENIOUS GUNSMITHS”: WORKING FOR THE PENNSYLVANIA COMMITTEE OF SAFETY

On November 4, 1775, nearly seven months after the battles at Lexington and Concord, the Continental Congress resolved that the Revolutionary governments of the thirteen provinces should “set and keep their gunsmiths at work, to manufacture good fire locks, with bayonets.” The Congress recommended that the firelocks be “made with a good bridle lock, ¾ of an inch bore, and of good substance at the breech, the barrel to be 3 feet 8 Inches in length, the bayonet to be 18 Inches in the blade, with a steel ramrod, the upper loop thereof to be trumpet mouthed.” These recommendations deviated slightly from a previous resolution, dated July 18, which suggested that the provinces should encourage the manufacture of muskets with 42 inch barrels. However, both recommendations approximated the dimensions and features of British Land Pattern muskets. By the time Congress passed these resolutions, Pennsylvania’s Committee of Safety already established their own musket and bayonet manufacturing plan. Philadelphia’s gunsmiths took the leading role in its implementation.


92 Journals of the Continental Congress, 1774-1789, 2:190 (July 18, 1775).
As the government center and largest city in Pennsylvania, Philadelphia and its gunsmiths played a significant role in military arms production and standardization during the early years of the War for Independence. The city’s gunsmiths produced pattern muskets for other counties of the province, had their own quota of muskets to make for the Pennsylvania Associators and the regiments of soldiers being raised by the state, and took teaching and assessment roles regarding arms making. With many different tradesmen involved, the Committee of Safety and the gunsmiths themselves coordinated networks and specialization of production. At times, however, the gunsmiths struggled to produce enough quality arms to meet the demands of contracts. To promote efficiency and large scale production, the Committee established the Pennsylvania Gunlock Factory in the city. Labor shortages, material scarcity, inflation, and the British occupation limited production capabilities for both the individual gunsmiths and the Factory. Beginning in 1775, Philadelphia’s gunsmiths transitioned from being civilian craftsmen to government contractors, crucial to the military supply production system for the emerging state.

The Pennsylvania Committee of Safety

Established to defend the “Lives, Liberties, and Property” of the people of Pennsylvania from an invasion by British troops, the Pennsylvania Committee of Safety addressed military arms production from its beginning. Recorded in the minutes of the first day it convened, June 30, 1775, the Committee’s fourth resolution established a province-wide quota for the production of firearms. With a planned total of 4,500 “stand of arms,” each county had its own quota prescribed to it.\(^{93}\) The

\(^{93}\) Upon recognizing Pennsylvania’s Associators in 1775, the Provincial Assembly calculated that about 4,500 men would be on active duty at any one point, see Bruce
Committee charged the City and County of Philadelphia to produce 1,500 arms. Less populated counties had lower quotas, including 300 for Bucks, 500 for Chester, and 600 for Lancaster. Along with firearms, the Committee required the production of matching numbers of cartridge boxes and knapsacks. The sixth resolution gave Philadelphia’s gunsmiths a specific role in the implementation of this plan: the making of pattern muskets. It stated, “That the Firelocks to be provided as aforesaid, be of one Bore, with Steel Rammers, well fitted to the same, and that Patterns of the said Firelocks, Rammers and Bayonets, be immediately made in the city of Philadelphia, and sent to the different Counties.”

The Committee provided further specifications regarding the muskets that the city’s gunsmiths were to produce. The minutes record that the muskets should have 44 inch barrels, a “bore of sufficient size to carry 17 Balls to the Pound,” and a sixteen inch bayonet. In terms of ball diameter in inches, or caliber, the Committee wanted muskets to be loaded with musket balls of about .65 caliber. The musket’s barrel


95 Minutes of the Provincial Council of Pennsylvania, 10:282 (July 3, 1775).

96 Ezekiel Baker, a British gunsmith famous for the development of a short military rifle, created a chart converting “balls to the pound” to fractions of an inch, see Ezekiel Baker, Remarks on rifle guns: being the result of sixty years’ practice and observation (1835; repr., Huntington, WV: Standard Publication, 1957), index; Thank you to George Suiter, master gunsmith at the Colonial Williamsburg Foundation, for suggesting this source to me; Moller is incorrect in stating that “17 balls to the pound” refers to a .75 caliber bore, see Moller, American Military Shoulder Arms, Vol. I, 121.
bore needed to be slightly bigger than the ball size to account for the build-up of powder residue after multiple firings. Therefore, the committee recommended that the gunsmiths build muskets with barrel bores measuring about .69 caliber. To contextualize this specification, the standard caliber of French infantry muskets of the period was .69, while the British standard was .76. The gunsmiths themselves may have consulted on developing these specifications.

John Nicholson and Lewis Prahl, a blacksmith, made pattern guns for the several counties of Pennsylvania and fellow gunsmiths in Philadelphia. Nicholson delivered 28 muskets and bayonets to Robert Towers, the recently appointed Commissary of Military Stores for Pennsylvania on September 11, 1775, for storage at the State House, now known as Independence Hall. Four days later, the Committee ordered that Nicholson be paid £158/15/0 for the muskets, 11 of which were to be sent to the Province’s various county commissioners as pattern guns for their gunsmiths.97 It is unclear if Nicholson had assembled all of these guns between July and September, or if he had some on hand already that met the required specifications. In November, the Committee of Safety engaged in an agreement with gunsmith Sebastian Keely to make 100 muskets for the province, delivering at a rate of six complete guns per week. The Committee tasked Lewis Prahl with providing a pattern gun for Keely to use to complete the order.98 Nicholson’s and Prahl’s pattern guns served as the Committee’s attempt at standardization, a necessity especially in regard to the production and issuing of ammunition.

97 Minutes of the Provincial Council of Pennsylvania, 10:333 and 335 (September 11 and September 15, 1775).

98 Minutes of the Provincial Council of Pennsylvania, (10:399 (November 9, 1775).
While little information is known about John Nicholson prior to the War, he seems to have been a well-established gunsmith in Philadelphia. The earliest known reference to the native Englishman in Philadelphia is found in the indenture record of Richard Trusted from 1773 discussed in the previous chapter.99 He also received mention in George Washington’s musket order for the Prince William Independent Company. When seeking gunsmiths to fulfill the Colonel’s request in late 1774, William Milnor inquired about the work of Nicholson. Nicholson promised quicker work than Palmer, stating that he could finish 100 muskets by March 1775, two months before Palmer said he could complete the same number. However, Milnor gave the order to Palmer.100 This choice may have had to do with his perceived superiority of Palmer’s products. On February 21, 1775, Milnor wrote to Washington asking if the Colonel wanted to expand the musket order with Palmer, at a new price point of £4 per gun. Milnor took care to note that Nicholson and William Dunwick could also complete an additional order for the original price of £3/15/0, but according to information he received, “they will neither be so punctual, not have it in their Power to finish them so well” as Palmer.101 Later that year, Nicholson became the first gunsmith to deliver new arms to the Committee of Safety.


Before he made a pattern gun for Sebastian Keely, German born Lewis Prahl became the first gunsmith of the city to enter into a contract with the commissioner of Philadelphia County for the production of muskets to meet the county’s quota. Prahl lived in the Northern Liberties of Philadelphia where he plied his trade as a blacksmith. By the 1760s, nearly 9,000 German speakers called the city of Philadelphia home, many of them recent immigrants.102 When he scribbled his signature, Prahl referred to himself by his German name Ludwig, though most government documents list his Anglicized name, Lewis. Following the Committee of Safety’s call for musket production, Prahl put his metal working skills to use. While it is unknown whether Prahl had made or repaired guns previously, blacksmithing and gunsmithing overlapped in both skills and tools.103 On October 23, 1775, Joseph Fox, the Commissioner of Philadelphia County, informed the Committee of Safety that he had previously contracted with “Lewis Prahl, gun smith, for the making of one hundred and fifty Firelocks” to begin to meet the city’s quota of 1500 muskets. However, by that point, Prahl had completed none. At about the same time, Prahl had been providing supplies, probably swords, to a hussar company outfitted by the Continental Congress.104 With more than one order to fulfill, he promised to deliver


103 Gill, 17-18.

24 muskets by October 28th and subsequently twelve each week until he reached the agreed upon number.105

Apart from Nicholson and Prahl, it seems that the other city gunsmiths shared a reluctance to participate in production during 1775. On October 7th, the Committee of Safety ordered that their appointed Master at Arms, Edward Chamberlain, reach out to the gunsmiths in the city and county “who are capable of making Fire Arms & Gun Locks, and desire them that are out of employ to attend this board.” Four gunsmiths applied, all from townships outside the city.106 That does not mean all the gunsmiths within the city limits were already engaged in production for the Committee. Joseph Fox, the Master of the Carpenters’ Company and a man familiar with the city’s craftsmen, struggled to recruit artisans to complete the desired work.107 With no other contracts agreed upon, the minutes of the Committee of Safety reflect that “Mr. Fox was ready and desirous to employ persons to make the number of firelocks required by the vote of the assembly, but could not get workmen to undertake to make them.”108

With still unfolding consequences following the battles at Lexington, Concord, and Bunker Hill earlier that year, some of the city’s gunsmiths may not have been interested in getting involved. Wartime embargos and a British naval blockade also

105 Minutes of the Provincial Council of Pennsylvania, 10:379-380 (October 23, 1775). One known musket barrel marked by Prahl survives in a private collection.

106 Minutes of the Provincial Council of Pennsylvania, 10:358 and 375-376 (October 7, 1775 and October 21, 1775).


limited the availability of materials, but did not cripple the city’s supply lines. Thomas Palmer, already employed to make guns for the Philadelphia Associators, may have just been busy. Additionally, the monetary terms for the contracts may have not been worth the effort. To remedy the situation, after a petition from Fox, the Committee of Safety agreed to advance the commissioners of Philadelphia County £500 “in order to forward the making the 1500 firelocks for this county.”109 Whether or not these funds encouraged smiths to get involved is open to speculation, but by the beginning of 1776 more began to produce.

A variety of Philadelphia craftsmen involved themselves in gunsmithing for the Committee of Safety. However, not all of them produced complete arms like Prahl or Nicholson. A few craftsmen specialized in making locks, others in gun barrels, and still others in bayonets. At this point in time, the Committee of Safety began soliciting for individual workmen and parts. In the Committee’s memorandum book, the secretary wrote a note “to send for lock makers Dennicke [William Dunwick], Gouger [Thomas Goucher], and Nicholson.” The next day, the Committee tasked Samuel Morris with enquiring “of [Thomas] Palmer if any gun locks in his hands.”110

One non-gunsmith who became involved in the trade because of the War was Thomas Goucher. Before the War, he worked as a cutler in a shop located on Fourth Street near Market Street at the “sign of the Scythe and Sickle.”111 On January 17, 109 Minutes of the Provincial Council of Pennsylvania, 10:381 (October 25, 1775).


1776, the Committee requested that Joseph Fox deliver Goucher, William Dunwick, and Samuel Kinder £50 each for the completion of 35 muskets. Robert Towers received the completed arms from the three men on February 13th. It seems that these three craftsmen worked together to make the arms, each producing individual parts.

Although the Committee called Goucher a lock maker, they relied on him more as a gun barrel maker. The Committee paid him for “disclosing his art of boreing and grinding gun barrels.” In February 1777, the Committee of Safety also agreed to pay Goucher 28 shillings per piece for 300 gun barrels that he had completed, and 30 shillings for each additional barrel he made. Later that year, a thief stole nine new gun barrels from the shop of Edward Lane in Providence Township, just outside the city, “belonging to the States . . . part of them stamped T.G.” The presence of the stamp first suggests that Goucher made these barrels and it further suggests that Goucher marked his work. Marking the barrels may have been a method for Goucher to verify the completion of an order to the Committee of Safety, or it may be a holdover from Goucher’s previous working practices.

112 Minutes of the Provincial Council of Pennsylvania, 10:458 and 496-497 (January 17 and Feb 27, 1776).
113 Minutes of the Provincial Council of Pennsylvania, 10:615 (June 25, 1776).
115 “BROKE open,” The Pennsylvania Gazette (Philadelphia, PA), September 10, 1777, accessed August 6, 2015, Accessible Archives; A musket barrel stamped “TG” survives in a private collection, it is perhaps a Goucher product.
Henry Voigt, a watch and clock maker, manufactured gun locks. Born about 1743, Voigt developed his metal working skills in Saxe Gotha, in central Germany, before immigrating to Philadelphia. Voigt involved himself with the Committee of Safety as early as 1775. In 1792, Voigt recalled that “from a Zeal to serve his Country in her distress, he manufactured Gears and Gunlocks for the Army of the United States.” While Voigt may have exaggerated his “Zeal” following the successful conclusion of the War, his professional training working steel as a watch and clock maker probably facilitated his transition to less-complicated gun lock making. The forge, files, and hammers Voigt already had in his shop could be used to make the necessary springs and small parts of a gun lock. In the memorandum book of the Committee of Safety, a note was written on February 17, 1776 to inquire why “Voight [sic] has not made more Gun Locks than he has.” The Committee seemed to be getting frustrated with his production, or lack thereof.


119 Four musket locks marked “Voigt” survive. Three include dates. Three of the musket locks are in private collections. The fourth is in the collection of the Museum of the American Revolution. All of the Voigt markings are stamped on the lock plate, see Ahearn, 155-157 and Moller, American Military Shoulder Arms, Vol. I, 125-126.
Another type of specialization involved the casting of brass. Used for musket furniture such as trigger guards, butt plates, and ramrod pipes, the Committee of Safety provided brass to craftsmen on more than one occasion. For example, John Nicholson and William Dunwick relied on Benjamin Town, a coppersmith, to cast such furniture. The Committee of Safety provided Town with the brass to complete the castings and deliver the parts to the gunsmiths. Samuel Parker completed a similar job for Lewis Prahl. The Committee facilitated these transfers of parts and materials, tracking their investment in the production in their minutes and therefore preserving these important records.

While engaged in work for the Committee of Safety, the city’s gunsmiths continued selling muskets and tools to civilian customers. For example, Thomas Palmer offered gun accessories for sale in the summer of 1775, including “Touch-hole Prickers and Pan Brushes, being very necessary and convenient to those who use guns, for keeping the lock, &c. in compleat order.” Government contracts and orders certainly occupied a good portion of gunsmiths’ time and energy, but other customers bought firearms as well. Benjamin Chew, who had been appointed Chief Justice of the

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120 Minutes of the Provincial Council of Pennsylvania, 10:496-497 (February 27, 1776); For confirmation of Town’s occupation, see Record of Indentures of individuals bound out as apprentices, servants, etc., and of German and other redemptioners in the office of the Mayor of the city of Philadelphia, October 3, 1771, to October 5, 1773, (Lancaster, PA: The Pennsylvania-German Society, 1907), 178-179, Internet Archive; A brass-barreled pistol marked with Benjamin Town’s name supposedly survives.

121 Minutes of the Provincial Council of Pennsylvania, 10:493 (February 23, 1776).

Province of Pennsylvania in 1774, sought out John Nicholson in February 1776 to buy a musket and bayonet. He paid Nicholson £4/10/0. Chew’s lack of support for the war effort led to the loss of his government positions and his forced exile to New Jersey in 1777 and 1778. Chew may have purchased the firearm to meet the Philadelphia Associators’ musket ownership requirement.

Three out of the four master gunsmiths listed in the 1774 Philadelphia Tax List worked for the Committee of Safety. Henry Debarear is not known to have made any contributions. While Nicholson’s work has already been discussed, Thomas Palmer both repaired arms and made rifles. The Committee paid Palmer £25/19/3 and Jacob Baldwin £4/12/0 for repairing muskets belonging to the 1st Pennsylvania Battalion. In 1776, Palmer delivered 40 rifles to Robert Towers who then passed the firearms on to Colonel Timothy Matlack for use by the 5th Battalion of the Philadelphia Associators, a unit composed of riflemen Apart from his work with Thomas Goucher and Samuel Kinder, the commissioners of Chester County employed William Dunwick to make muskets and bayonets to meet the county’s prescribed quota of 500 stand of arms. He also made muskets to contribute to Philadelphia County’s


124 Not much else is known about Henry Debarear.

125 Minutes of the Provincial Council of Pennsylvania, 10:503 (March 4, 1776); Jacob Baldwin’s pre-war occupation is currently unknown.

126 Minutes of the Provincial Council of Pennsylvania, 10:633 (July 6, 1776); Seymour, 201.

127 Minutes of the Provincial Council of Pennsylvania, 10:356 (October 6, 1775).
All of these gunsmiths gained new roles as fabricators and repairers of military arms.

Proving and Inspection

With the volume of muskets being produced in Philadelphia and the surrounding counties, the Committee of Safety also made provisions for the inspection and proving of muskets. When Robert Towers received complete muskets for use by the province, he needed to ensure their quality. The Committee appointed Towers, a skinner from the city, to his position in August 1775, at a salary of £50 per year. Towers became busy almost immediately, so much so that he complained about it a few months later. He wrote, “I have not spent one Hour in a Day in my own House, or about my own business since the 5th of July last, but have been constantly employed, (Sundays not excepted,) in collecting, receiving, making up & delivering Military stores, Arms & Ammunition, Proving Guns, and inspecting firelocks, Powder &c.”

The Committee also selected Thomas Palmer and John Nicholson to supplement Towers’ duties and “examine and Value” firearms collected from those who did not serve in the Philadelphia Associators. This task suggests how the governmental body valued their craft knowledge.

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128 Minutes of the Provincial Council of Pennsylvania, 10:443 (January 3, 1776).

129 Minutes of the Provincial Council of Pennsylvania, 10:301 (August 11, 1775); Towers is listed as a “Skinner” in the 1774 Philadelphia Tax List, Pennsylvania Archives, series 3, XIV, 248, digital image, Fold3.com; “Skinner” refers to someone who prepares animal hides for sale, see Oxford English Dictionary.


131 Minutes of the Provincial Council of Pennsylvania, 10:633 (July 5, 1776).
Proving ensured the quality and safety of a barrel by loading and test firing it with an over loaded charge of gunpowder and musket ball. It was often done with two or three times the amount of gunpowder necessary for a normal load.\textsuperscript{132} Once fired, the inspector checked the barrel for cracks, imperfections, and any other signs of its weakness. The Committee gave Towers specific orders about proving barrels and noted how those that passed the test should be marked. An October 27, 1775 resolution stated “That Mr. Towers be directed to prove all the Muskets made in this City for the Provincial Service, and to Stamp such of them as are proof, with the letters P; and that a copy of this Minute be handed to the County Commissioners, who are to notify the Smiths they contract with for said Muskets, of this Resolve, and that none of their Guns will be receiv’d or paid for by this Board, but such as have been so proved and Stampt as aforesaid.”\textsuperscript{133} A resolution on March 2, 1776 reiterated that the proved muskets were “to be stamp’d with the letters P.P.” However, the resolution also directed Towers to provide gunsmith Matthias Keely with powder to prove the 100 muskets he made for the province.\textsuperscript{134} These directives suggest that both Towers and individual gunsmiths proved and stamped muskets.

\textsuperscript{132} After the War for Independence, Quartermaster of the United States War Department Samuel Hodgdon wrote specific instructions on how to prove musket barrels. He recommended using an amount of gunpowder equal to the weight of the musket ball, see Eli Whitney papers, Yale University Library, microfilm roll 5, 798.

\textsuperscript{133} Minutes of the Provincial Council of Pennsylvania, 10:383 (Oct. 27, 1775).

\textsuperscript{134} Minutes of the Provincial Council of Pennsylvania, 10:502 (March 2, 1776); An additional example is that the Committee of Safety provided William Dunwick with powder to prove musket barrels on October 5, 1775 and January 3, 1776.
A small number of late-18\textsuperscript{th} century muskets of a variety of patterns with American provenance survive, stamped with “PP” on their barrel or on their stock. There is a lack of consistency in the markings and it is difficult to determine their authenticity or their connection to the Pennsylvania Committee of Safety due to a lack of provenance. The stamps could have been added at a later date.\textsuperscript{135} However, with the knowledge that both individual gunsmiths and Robert Towers proved and stamped muskets, finding inconsistency in the markings is not unreasonable. One good example of a musket stamped “PP” on both its stock and barrel survives in the collection of the State Museum of Pennsylvania in Harrisburg. (Figures 21 & 22) The musket is the subject of an article by Bruce Bazelon and John B. Trussell in \textit{Man At Arms} magazine.\textsuperscript{136} Its flat lock plate and cock and crude barrel and stock suggest it is a product of American gunsmith based on British Land Pattern muskets. The authors point out that its .73 caliber bore roughly equates to the “17 Balls to the Pound” specification, but the gun is about three inches shorter than the Committee of Safety’s directions. Based on these features and its markings, this musket may well be an early-War product of a Pennsylvania gunsmith.

\textsuperscript{135} This author has personally observed five different muskets featuring “PP” stamps. Four of these muskets are in private collections.

\textsuperscript{136} Bazelon and Trussell, 16-19.
Figure 21  Detail of musket, Pennsylvania; 1775-1776. Walnut, steel, iron, brass.  
80.100 Courtesy, State Museum of Pennsylvania, Pennsylvania Historical and Museum Commission. Note the “PP” proof mark stamped at the breech of the barrel.

Figure 22  Detail of musket, Pennsylvania; 1775-1776. Walnut, steel, iron, brass.  
80.100 Courtesy, State Museum of Pennsylvania, Pennsylvania Historical and Museum Commission. Note the “PP” proof mark branded in the walnut stock.
Problems and Prices

The labor of forging barrels and the intricacy of making gunlocks taxed the capabilities of Philadelphia’s gunsmiths and related craftsmen. From the beginning of the Committee of Safety’s involvement in the coordination of musket production, some members voiced concerns about the province’s production capabilities and even sought alternatives. One member suggested pikes or long shafted spears. Dr. Benjamin Franklin may have been the source for the suggestion because on July 4, 1775 the Committee requested him to bring a model of a pike to their next meeting.\textsuperscript{137} The committee approved of the pattern and ordered two smiths to make pikes. The Committee even went so far as to recommend pikes for use by the Philadelphia Associators. The colonels of the city’s battalions received the following recommendation:

when the Spirit of our People supplies more Men than we can furnish with Fire Arms, a deficiency which all the Industry of our ingenious Gunsmiths cannot suddenly supply, and our Enemies having, at the same time they were about to send regular Armies against undisciplined and half armed Farmers and Tradesmen, . . . The use of Pikes in one or two rear Ranks is recommended to the Attention & consideration of our Battalions. Every Smith can make these, and therefore the Country may soon be supplied with plenty of them.\textsuperscript{138}

This option may have seemed feasible on paper, but the Committee still needed gunsmiths to arm Pennsylvania’s soldiers.

In 1776, the gunsmiths of Philadelphia registered complaints with the Committee of Safety regarding the strains that musket production had put on their

\textsuperscript{137} Minutes of the Provincial Council of Pennsylvania, 10:283 (July 4, 1775).

\textsuperscript{138} Minutes of the Provincial Council of Pennsylvania, 10:314 (August 24, 1775).
businesses and livelihoods. One problem involved price inflation. For example, the price of the most important material to gun making, iron, surged in 1776, reaching new heights by the end of the year.\textsuperscript{139} Musket contracts based on 1775 prices of materials such as coal, iron, and steel, and tools needed adjustment to match these rises. Sixteen gunsmiths, led by Thomas Palmer, signed a petition on November 16, 1776 for the adjustment of musket prices, to be reflected in contracts, because “the Costs of Materials, Workmanship, &ca., amount to double the sum they did in the year 1775.”\textsuperscript{140} (Figure 23) Palmer, Prahl, Voigt, Nicholson, and Dunwick, among others, signed the petition. (Figures 24) A few weeks later, Samuel Kinder and James Walsh, “gunlock makers” who had signed the November petition, also lodged their own complaint. They noted that “Files are now double what they have been and some treble; Vices, double; Steel, scarce any to be found good.”\textsuperscript{141} The price for a musket made in Philadelphia in 1775 ranged from £4/0/0 to about £5/13/0 per. (Table 1) By 1776, the gunsmiths quoted a price of £6/7/6 per, about a 50 percent increase.\textsuperscript{142} Before finishing contracts or engaging in new ones, the gunsmiths expected to be paid for their work.

\textsuperscript{139} Bezanson, 165.

\textsuperscript{140} “Expenses of Gun Making, 1776,” November 16, 1776, Pennsylvania Archives, series 2, I, 645, digital image, Fold3.com; The original document exists in the collection of the Museum of the American Revolution; Two gunsmiths named James Walsh signed the document, one a “lock maker,” the other a “stocker.” They may be father and son.

\textsuperscript{141} Quoted in Arcadi Gluckman, United States Muskets, Rifles and Carbines (Buffalo, NY: Otto Ulbrich Co., 1948), 43.

Figure 23  “An Estimate of the Cost of Materials necessary for making Guns; Showing the advanced Prices of Materials and Workmanship Since the Year 1775,” Philadelphia, Pennsylvania; 1776. 2012.02.02 Photograph taken by the author, used with permission from the Museum of the American Revolution.
Figure 24  Detail of “An Estimate of the Cost of Materials necessary for making Guns; Showing the advanced Prices of Materials and Workmanship Since the Year 1775,” Philadelphia, Pennsylvania; 1776. 2012.02.02

Photograph taken by the author, used with permission from the Museum of the American Revolution. The signatures are of gunsmiths Thomas Palmer, Ludwig Prahl, Henry Voigt, John Willis, John Nicholson, William Dunwick, James Walsh (lock maker), James Walsh (stocker), James Taylor, Samuel Parker, Francis Clark, Samuel Kindred, Thomas Miles, Jacob Baldwin, John Pollard, and John Handlin.
Table 1    Musket Prices in Philadelphia, 1774-1777

<table>
<thead>
<tr>
<th>Year: Gunsmith, Order, Number</th>
<th>Price per musket (£/s/d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1774: Thomas Palmer, George Washington order, 40 muskets and bayonets</td>
<td>3/15/0</td>
</tr>
<tr>
<td>1775: Thomas Palmer, requests higher price for any additional muskets ordered by Washington</td>
<td>4/0/0</td>
</tr>
<tr>
<td>1775: Thomas Palmer, John Cadwalader order, 70 muskets and bayonets</td>
<td>4/0/0</td>
</tr>
<tr>
<td>1775: John Nicholson, paid by Committee of Safety (COS) for 28 muskets</td>
<td>about 5/13/0</td>
</tr>
<tr>
<td>1775: John Willis and Benjamin Town contract with COS, 200 muskets</td>
<td>4/5/0</td>
</tr>
<tr>
<td>1775: Gunsmiths quote price in petition to COS</td>
<td>4/5/0</td>
</tr>
<tr>
<td>1776: John Nicholson, Benjamin Chew order, 1 musket and bayonet</td>
<td>4/10/0</td>
</tr>
<tr>
<td>1776: Gunsmiths quote price in petition to COS (made with parts procured from PA Gunlock Factory)</td>
<td>6/7/6</td>
</tr>
<tr>
<td>1776: Gunsmiths quote price in petition to COS (made with parts procured from other sources)</td>
<td>7/10/0</td>
</tr>
<tr>
<td>1777: Supreme Executive Council promises to pay this price to gunsmiths for each musket and bayonet they deliver to the PA Gunlock Factory</td>
<td>5/10/0</td>
</tr>
</tbody>
</table>

Finding and Keeping Labor

Although only the names of master gunsmiths and some journeymen occupy the discussions of weapons production in the minutes of the Committee of Safety, other workers helped to make large scale production possible. Before the War, gunsmiths did not have obligations to complete large scale orders for muskets. Instead, 

143 The prices recorded in this table represent calculations by the author based on primary documents. In some cases, the author divided the total amount paid to the gunsmith by the number of muskets he delivered to determine the price of the individual firearm.
the American colonies typically turned to the commercial gun trade in England when in need of great amounts of military arms.\textsuperscript{144} Faced with increased demands for their work, Philadelphia’s gunsmiths needed to supplement their labor force. No known apprentice or journeymen advertisements from the five years before the War for Independence involving the city’s gunsmiths exist. However, advertisements placed by gunsmiths for both apprentices and journeymen increased after 1775, correlating with augmented weapons demands. These newspaper advertisements, along with petitions for exemptions from military service for workers engaged in weapons production, provide evidence for gunsmiths’ increased concerns over their labor force.

Already possessing skills, journeymen proved to be valuable to master gunsmiths. Busy working to fulfill orders by George Washington and John Cadwalader, Thomas Palmer sought such skilled assistance. He placed an advertisement in \textit{The Pennsylvania Gazette} looking to hire two or three journeymen gunsmiths at “good Wages.”\textsuperscript{145} If Palmer hired the desired journeymen, they may have worked with him a short while only to help complete an order. Palmer found himself in need of journeymen again in the spring of 1776. This time he looked for specialists. He advertised for both someone “skilled in Stocking Muskets and Rifles” and a “Gunlock Filer, that can make Musket Locks.”\textsuperscript{146} Journeymen blacksmiths

\textsuperscript{144} New Jersey’s orders for muskets and fusils from the Wilson gunsmithing firm in the 1740s and 50s are good examples, see Ahearn 146.


\textsuperscript{146} “EXTRAORDINARY Wages,” \textit{The Pennsylvania Gazette} (Philadelphia, PA), March 6, 1776, accessed October 20, 2015, Accessible Archives.
could be valuable too. Thomas Goucher advertised for “Two or Three Journeyman Blacksmiths” in 1776. Goucher desired blacksmiths who knew how to “take Care of a fire to forge Musket Barrels.” He also noted that he could supplement blacksmith’s prior knowledge by teaching them the methods to forge, weld, and grind barrels.\footnote{\textit{“WANTED,”} \textit{The Pennsylvania Gazette} (Philadelphia, PA), May 22, 1776, accessed October 20, 2015, Accessible Archives.}

Thomas Palmer sought to engage in sub-contracting to increase his production efficiency, as an alternative to expanding his workshop. In an advertisement from 1776, he specifically inquired about skilled workers who would be willing to “work Piece work” and deliver completed parts, specifically gunstocks and gun locks.\footnote{\textit{“EXTRAORDINARY Wages,”} \textit{The Pennsylvania Gazette} (Philadelphia, PA), March 6, 1776, accessed October 20, 2015, Accessible Archives.} Sub-contracting could be a feasible option in an urban environment with a substantial number of skilled craftsmen in both metal and woodworking trades having workshop access. Furniture makers and other craftsmen had already engaged in such networked production before the War.

For apprentices, gunsmiths sought boys about 14 years of age. The metal working involved in making muskets required upper body strength. Whether wielding a hammer, filing, turning a grindstone, or operating a barrel borer, gunsmithing had many physical demands. Pubescent boys had the potential to keep up with those demands. Goucher wanted an “apprentice lad” to assist with barrel work.\footnote{\textit{“WANTED,”} \textit{The Pennsylvania Gazette} (Philadelphia, PA), May 22, 1776, accessed October 20, 2015, Accessible Archives.} Thomas Palmer advertised for a “well disposed LAD, as an Apprentice, about 14 or 15 Years
of Age.” It is unclear if the War altered the terms of such apprenticeships, but it would be the master’s responsibility to clothe, feed, teach, and be generally liable for the well-being of an apprentice for at least a few years. By the period of the American Revolution, the terms of craft apprenticeships varied, with a good portion of terms shorter than the traditional seven years. In his study of apprenticeship in colonial Philadelphia, Ian M.G. Quimby pointed out that the age of an apprentice at the time he or she entered a trade had a relationship with the length of time they served. Boys typically ended an apprenticeship at age 21. Therefore, a 14 year old gunsmith’s apprentice during the War may have been signed to a 7 year indenture.

No evidence has yet been found documenting black workers, free or enslaved, involved in musket production in Philadelphia during the War. However, their significant presence in the city is worth noting. Between 200 and 300 free Africans lived in Philadelphia in 1775. More than twice that number of enslaved Africans lived in the city. As the gunsmithing trade expanded during the War, black craftsmen surely had some involvement, either directly or indirectly.


154 There is some evidence of African Americans working in the gunsmithing trade in Pennsylvania after the War for Independence, see “25 Dollars Reward,” Philadelphia Gazette (Philadelphia, PA), November 25, 1800, accessed April 1, 2015, America’s Historical Newspapers.
Gunsmiths also had to deal with runaway workers. John Nicholson advertised two runaway indentured servants in 1776. Nicholson, himself an Englishman, controlled two servants from “Old England,” Richard Trusted and John Davis. As noted previously, Trusted had been indentured to Nicholson since 1773 and ran away in January 1776. Davis, “by trade a Plain-maker [wood working planes], but may pass for a Gun stocker,” followed the next month. Davis and Trusted may have been disgruntled, sought better opportunities, or struggled with their loyalties because of their master’s involvement in producing arms to be used against Great Britain. Trusted may have been found and returned to Nicholson based on a list of men eligible for service in the Philadelphia Associators, compiled in July 1777, which includes his name. The list labels Trusted as excused from service due to his work at the Pennsylvania Gunlock Factory, a facility discussed later in this chapter. Thomas Palmer’s indentured brass founder, Irishman Nicholas Linch, ran away as well. Like journeymen, these indentured servants arrived with craft skills to offer, reducing the time needed to spend on training. Seeking their return, Nicholson and Palmer must have valued their skills and labor enough to invest in paying for their passage to North America and supporting their livelihood in their new home. However, by 1776, fewer


and fewer craftsmen in Philadelphia took on indentured servants compared to the middle of the century. The investment had lost much of its financial appeal.\textsuperscript{158}

At the same time, the demands of military service taxed the workforce that Lewis Prahl employed. On four different occasions between 1776 and 1777, Prahl showed concern with his workmen being recruited into militia and Continental service. In order to meet his contracts and operate one of the larger manufactories of arms, Prahl at one point employed at least 16 workmen.\textsuperscript{159} In June 1776, Prahl requested that Alexander Greentree and William Fetter be discharged from the Fifth Pennsylvania Battalion, under the command of Colonel Robert McGaw, due to their employment in Prahl’s “Gun making business.” The Committee of Safety followed through with the discharge request.\textsuperscript{160} Taking notice of the needs of both the military and manufacturers, the committee resolved “That no person at present employed in any Branch of the Manufactory of small Arms, should be suffered to leave that necessary business, and every officer of the Militia is requested to pay proper attention to this Resolve.”\textsuperscript{161} In another case the following year, Prahl petitioned the Continental Congress to discharge Stephen Smith and John Bay from the Eleventh Pennsylvania Regiment and an independent rifle company attached to the regiment. Prahl’s petition stated that he had been “making Fire Arms for the use of the

\textsuperscript{158} Salinger, 66-69.
\textsuperscript{160} Minutes of the Provincial Council of Pennsylvania, 10:600 (June 12, 1776).
\textsuperscript{161} Minutes of the Provincial Council of Pennsylvania, 10:644-645 (July 15, 1776).
Continental Army, and is at present much in want of skillful workmen. Both “well skilled,” Prahl valued Smith and Bay and wanted their involvement in gun making to continue. Congress granted the discharges. Later that year, he also requested that 16 of his workmen be exempt from service in the Philadelphia Associators. It is unknown whether the Supreme Executive Council, Pennsylvania’s new constitutional governing body, granted his request.

**John Nicholson’s Factory Plan**

In a significant act that conveyed his experience and trade expertise, John Nicholson proposed a plan for a large scale firearms production facility to be erected in Pennsylvania. He submitted this proposal to the Committee of Safety on June 4, 1776. The plan broke down the gun making process into six sections and called for the erection of ten buildings and thirteen forges. It is unclear if the Committee implemented any of Nicholson’s plans. However, just a month earlier, the Committee of Safety established the Pennsylvania Gunlock Factory in Philadelphia, to be discussed in the next section of this chapter. When the Gunlock Factory moved out of the city, it expanded its operation. Some of Nicholson’s recommendations may have


164 Salay, 106.
been heeded.\textsuperscript{165} In order to provide the reader with the best sense of the scope of Nicholson’s plan, a full transcription is included below.

First.- There must be a convenient place for erecting a Mill for boaring and grinding barrels, to be under the directions of Mr. Tomlinson, or some other barrel maker, & shops fit to forge barrels in, with 3 or 4 forges.

Second.- A Shop to contain three forges for forgeing Locks, with a good sett of tools to each, and a shop or shops to contain forty Lock filers, with a good sett of tools to each, suitable to the part of the Lock they have to file, with a forge for every ten Lock filers to harden & temper the Springs, mend tools, & case harden, &c.

Third.- A shop or shops for ten Gun stockers, with each man a sett of tools.

Fourth.- A Casting Shop, & proper tools for a Brass founder to Cast the mounting, & a shop to finish ditto in.

Fifth.- A Shop with two forges to forge Bayonets and Steel Ramrods, & works erected at the Mill for grinding and polishing ditto.

Sixth.- A forge for making Swivals, trickers, Pins & Springs for the Ramrods, &c.

Seventh.- A Small Shop for putting the Guns together in, near the Stocking Shop.

N.B- It will be necessary to get all the files & Brass that can be got, as them Articles are become very scarce, and to provide a file Cutter to cut the files over Again. It will be likewise Necessary to have a Clark that understands Something of the hardware business, in order to provide things as they may be wanted.\textsuperscript{166}

\textsuperscript{165} Salay, 106.

\textsuperscript{166} This transcription is based on the transcription in “Plan for Carrying on a Gun Factory, 1776,” June 4, 1776, Pennsylvania Archives, series 1, IV, 767-768, digital image, Fold3.com.
As an addendum to his plan, Nicholson stated that he would serve as superintendent and dictated his terms. He requested a salary of £300 per year, a house for his family, and £5 for every 100 guns made under his inspection. He also requested funds for two apprentices and three servants. The only other person that Nicholson specifically mentioned in his plan is Joshua Tomlinson. Tomlinson advertised himself in The Pennsylvania Gazette as a gun barrel making expert working in or near Lancaster earlier that year. In June 1776, he sought out two or three journeymen and an apprentice to assist in the manufacture of gun barrels at his shop at Gulph Mills on the Schulykill River near Conshohocken. John Nicholson served as a point of contact for men interested in filling the positions.

Nicholson may have based his ideas of specialization in manufacturing on the commercial gun industry in Great Britain or on elements of its Ordnance System of Manufacture. This system functioned based on the contracting of gunsmiths to make individual parts for military muskets following patterns supplied by the British Board of Ordnance. The Board contracted with lock makers, barrel makers, and gun furniture makers who turned over the parts they made to the Tower of London for inspection. Separate contractors then used the stockpiled, inspected, and accepted parts to assemble whole muskets on an as needed basis. Nicholson’s later involvement as a contractor...


170 Goldstein and Mowbray, 6-7
contractor for the Continental Department of the Commissary General of Military Stores and his consultant work at the Springfield Armory in 1799 may have been informed by his ideas of specialization written down in 1776.

**The Pennsylvania Gunlock Factory**

In an attempt to increase arms production levels and pace, the Committee of Safety developed a plan to centralize production with a factory to specifically manufacture gun locks. This plan was quite a speculative undertaking. Intricate gunlocks and barrels that took time to forge, bore, grind, and file hampered production in 1775. On February 9, 1776 the Committee sought Benjamin Rittenhouse to superintend the operation. Benjamin, and his more famous brother David, were both scientific and mathematical instrument makers who worked in Philadelphia County. A number of their instruments and clocks survive, marked with their names. Benjamin agreed to the idea of superintending the Factory and soon moved into the city to establish the operation. The Committee promised him a salary of £250 per year. During their March 6th meeting, the Committee appointed Major Samuel Meredith, Captain John Wilcocks, Captain Richard Peters, and Peter DeHaven to “superintend and conduct the provincial Manufactory of Gun Locks in this city.” The facility is modernly referred to as the Pennsylvania Gunlock Factory. During its operation in the

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172 *Minutes of the Provincial Council of Pennsylvania*, 10:481 and 495 (February 9 and 26, 1776).

173 *Minutes of the Provincial Council of Pennsylvania*, 10:506 (March 6, 1776).
city between March and December 1776, the Factory was located on Cherry Street between Third and Fourth Streets.174 (Figure 25) The Committee later moved the facility to the banks of the French Creek, west of Philadelphia.


An interesting consideration about these appointments, including that of Rittenhouse, is that none of these men were gunsmiths themselves. However, Rittenhouse certainly had technical acumen, especially familiarity with steel springs, gears, and brass work, useful to the manufacture of gunlocks. Other historians have called Dehaven and Rittenhouse gunsmiths, but in reality these men and their three other colleagues only coordinated and ran the Factory, promoting its productive and financial efficiency.\textsuperscript{175} No primary evidence says that they themselves were gunsmiths or that their hands actually made the locks at the factory. They may have been appointed simply as prominent citizens who supported the American war effort.

Production and repair were the main activities of the Factory. In the first public notification of the Factory’s establishment, the superintendents stated that “all smiths who are already acquainted with the lock business . . . will be employed” and “A person well acquainted with forging Gun Locks will meet with encouragement.”\textsuperscript{176} The Factory bought copper and brass scrap for the mounting of firelocks and accepted broken and dirty arms for cleaning and repair. Gunsmiths could also purchase locks, barrels, and furniture from the facility to assemble muskets.\textsuperscript{177} Robert Towers sent locks in storage at the State House over to the Factory, either for repair or mounting on guns. Gunsmiths who delivered completed barrels to the Factory would be paid 24

\begin{flushright}
\textsuperscript{175} Robert F. Smith has erroneously called them gunsmiths, see Robert F. Smith, 55; Salay, 104.
\textsuperscript{176} “In Committee of Safety, March 6,” The Pennsylvania Ledger (Philadelphia, PA), April 13, 1776, accessed April 2, 2016, America’s Historical Newspapers.
\end{flushright}
shillings per barrel. Advertisements for supplies were placed in both the city’s German and English language newspapers to maximize reach.

The Factory also served as a teaching facility for gunlock making. One public advertisement stated that the Factory was to “serve as a school for promoting the knowledge of this necessary business throughout the province, all journey man smiths, clock makers, and other persons, who have been accustomed to filing and working iron or brass, will be instructed in the said business gratis, and receive adequate wages for their labor.” Apprentices would also be accepted. Benjamin Rittenhouse may have been involved in this teaching. However, no list of employees survives from the Factory’s period of operation in Philadelphia.

The Pennsylvania Gunlock Factory existed for only ten months in Philadelphia. When the British Army threatened the city following the Continental Army’s disastrous retreat through New Jersey in the fall of 1776, Pennsylvania’s Supreme Executive Council ordered the operation to be evacuated and reestablished elsewhere. The minutes for December 13, 1776 record that the Council directed Peter Dehaven “to procure Waggons to carry the tools belonging to the Gunlock Factory, and such arms as want repair, to some convenient place, not more than 30 miles from

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178 Minutes of the Provincial Council of Pennsylvania, 10:782 (November 9, 1776).


Philadelphia, there to erect the Factory.”\textsuperscript{181} With a new location near Phoenixville on the French Creek, Dehaven oversaw an expansion of the Factory’s capabilities. In January 1777 he reported to the Supreme Executive Council that he had 19 men under his supervision working “in the Gun Way” repairing arms. Dehaven also hoped to “make som New ones.”\textsuperscript{182} A July 1777 return of men eligible for service in the Philadelphia Associators lists 15 men who worked at the Factory and did not have to serve.\textsuperscript{183} However, the Factory on the French Creek did not last long either.

The British invasion of Pennsylvania in September 1777 forced the Factory to move again, this time to Hummelstown, northwest of Lancaster.\textsuperscript{184} The invading army destroyed the iteration of the Factory on the French Creek that same month.\textsuperscript{185} As historian Robert F. Smith has noted, with all of this movement, the Factory’s production declined while its costs rose. The Supreme Executive Council even offered to sell the Factory to the Continental Congress.\textsuperscript{186} The Congress declined and the


\textsuperscript{182} Peter Dehaven to Council of Safety, January 3, 1777, Pennsylvania Archives, series 1, V, 155, digital image, Fold3.com.

\textsuperscript{183} Thank you to Matt White for suggesting this avenue of research, “Muster Rolls Related to the Associators and Militia of the City of Philadelphia,” July 1777, Pennsylvania Archives, series 6, I, 35-356, digital image, Fold3.com.


Council closed the Factory for good by 1778. The Pennsylvania Gunlock Factory has received numerous mentions in American gun scholarship regarding the War for Independence. However, it made a limited contribution to Pennsylvania’s weapons production during the War due to its persistent instability.

**The British Occupation of Philadelphia**

The British Army, under the overall command of General William Howe, entered Philadelphia on September 26, 1777 following the defeat of the Continental Army at the Battle of Brandywine fifteen days earlier. On the day of the battle, the Supreme Executive Council, worried about its “doubtful” outcome, ordered residents to close their shops and stores. The Council specified, “except those only where workmen are employed in making or repairing the Public arms.” The Council and the Continental Congress soon fled the city to meet elsewhere. Thousands of residents also fled, many of them males over 18 years of age. It is estimated that 21,767 residents remained in the city, 17,285 of whom were women, children, and adolescents. Some of the Philadelphians involved in gunsmithing for the American war effort did stay in the city, while others left. Most returned soon after the British left the city.

The occupation halted American gun production and repair in the city. Henry Voigt left and moved to Reading and did not return to Philadelphia until the War’s end.

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187 Robert F. Smith, 56.
189 Tinkcom, 134.
Thomas Palmer closed his shop on Market Street and did not resume his business until 1782. It is unclear what most gunsmiths who contracted with the Committee of Safety did while the British occupied Philadelphia. Those who stayed faced a situation filled with animosity and distrust. The American Revolution pitted neighbor against neighbor, but the occupation magnified this relationship for the Philadelphians who supported American independence. Spies and soldiers looked for rebels, administered oaths of allegiance, and confiscated property. American-supporters had similarly undermined loyalists and neutral parties before the occupation.

Lewis Prahl’s recollection of the occupation provides a glimpse of what it was like for a gunsmith to remain in the city. He recalled this time period after the War’s conclusion and specifically wrote to the United States House of Representatives on two occasions in 1790 and 1803 seeking redress for his loss of property. Immediately after the occupation, his Northern Liberties property had been assessed for £298/7/0 worth of damages. Prahl’s petition to the House stated that he had “a considerable number of Musket barrels, Bayonets &ca. on hand nearly finished for the United

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190 Voigt witnessed the payment of a militia substitution in Reading, PA on April 10, 1778, see “Muster Rolls and Papers Relating to the Associators and Militia of the County of Berks,” Pennsylvania Archives, series 5, V, 262, digital image, Fold3.com.

191 “THO: PALMER Gun Smith,” The Pennsylvania Gazette (Philadelphia, PA), March 27, 1782, Accessible Archives; There is no known evidence of Palmer’s gunsmithing work in support of the American war effort following the occupation.

192 Tinkcom, 140.

States which he buried and endeavored to hide from the Enemy.” However, an unknown informant alerted the occupiers of Prahl’s hidden arms. Prahl wrote, “his House Shop and Dwelling place was so strictly searched that these Arms were discovered and taken away by the English.” Apparently, the British had offered to pay Prahl to complete the arms, but he refused and they confiscated his shop. The Secretary of War, to whom the House of Representatives deferred for a decision, did not provide Prahl with compensation. While we cannot confirm the accuracy of Prahl’s account, his petition provides a valuable understanding of the trying times the occupation posed for a Philadelphia gunsmith.

When the British Army evacuated the city on June 18, 1778, many American supporters returned shortly thereafter. A one week period of martial law ensued, followed by the return of the Supreme Executive Council from Lancaster. Both government representatives and residents came back to a damaged city filled with suspicion and clouded with stench from sickness and dead bodies. In order to persecute residents who supported the British during the occupation, a “Patriotic Association” began to meet in July 1778. Historian Steven Rosswurm wrote that members “pledged to disclose everything they knew about Tories.” The majority of membership was composed of men of the “middling” economic class including a large


196 Tinkcom, 143.
number of artisans.\textsuperscript{197} Three gunsmiths who contracted with the Committee of Safety are listed in the group’s roll book. Thomas Goucher, John Nicholson, and Thomas Palmer.\textsuperscript{198} These three men likely had anti-Tory leanings, but the extent to which they participated in rounding up British sympathizers for trial is unknown. This dramatic situation provided little stability for the residents of Philadelphia.

Following the closing of the state gun factory and the evacuation of the British in 1778, the State of Pennsylvania ceased to coordinate small arms production. Their coordination efforts ran into high costs in both personnel and infrastructure. For the remainder of the War, the Department of the Commissary General of Military Stores, which operated under the authority of the Continental Congress, took on the lion’s share of military arms production and repair. This department had its headquarters in Philadelphia.

Philadelphia and its gunsmiths certainly played a significant role in military arms production during the early years of the War for Independence. However, these gunsmiths represent only one part of the American effort to manufacture the material necessary to wage war with Great Britain. Each colony-turned-state coordinated their own accumulation of arms during the first few years of the War. Private gunsmiths contracted with state Committees of Safety to produce military muskets that interpreted Congressional specifications. Like in Pennsylvania, Massachusetts gunsmiths manufactured large amounts of arms, as did those in Virginia, Connecticut

\textsuperscript{197} Rosswurm, \textit{Arms, Country, and Class}, 154.

\textsuperscript{198} “Patriotic Association Attendance Book,” 1778, #Am.238, Historical Society of Pennsylvania.
and Maryland.\textsuperscript{199} As the two largest and most populated provinces, both Pennsylvania and Virginia implemented plans for small arms-specific manufactories, Virginia’s being in Fredericksburg. However, both met limited success.\textsuperscript{200} Continental coordination of arms repair during the latter half of the War, supplemented by the importation of French muskets and bayonets, promoted greater efficiency in the arming of American soldiers. Philadelphia’s gunsmiths helped to facilitate that effort.


\textsuperscript{200} Gill, 39-41.
Chapter 5

JOSEPH PERKIN AND THE CONTINENTAL ARMORY

On October 19, 1775, John Strode of Virginia solicited the skills and knowledge of Philadelphia’s gunsmiths with an advertisement in The Pennsylvania Evening Post. Strode, a native Pennsylvanian who had been managing the ironworks and mills of James Hunter on the Rappahannock River, just north of Fredericksburg, targeted his recruitment effort at “a gunsmith, a complete artist, able to take charge of a shop, and twenty-four hands under his care and direction.” He also wanted gunlock smiths, stockers, a file cutter, and men who knew how to weld, bore, and grind gun barrels.201 Hunter, a wealthy merchant and planter of Scottish birth, entered the iron production business just before the outbreak of the War.202 Once the conflict began, he planned, with Strode as his foreman, to produce muskets and other arms for use by troops being raised in Virginia.203 The province did not organize this venture, though it


did encourage Hunter to produce muskets and bayonets. Hunter’s Rappahannock Forge represented a private enterprise and operated until 1782, only interrupted by the British invasion of Virginia in 1780-1781. At the infancy of the operation, Strode’s 1775 advertisement may have recruited Joseph Perkin, a gunsmith who had recently moved to Philadelphia, to come to Virginia. Perkin became instrumental in the early success of the factory as a manger of arms production. However, Perkin returned to Philadelphia in 1778 and took on a larger role as superintendent of the Continental Armory the following year.

About a year after the British evacuation of Philadelphia in June 1778, the city became a hub of arms production and repair for the Continental Army. The Department of the Commissary General of Military Stores, which operated under the authority of the Continental Congress’ Board of War, established a small arms factory in the city in late 1779. Different from the ill-fated Pennsylvania Gunlock Factory, this facility became known as the “Continental Armoury” or the “United States Armoury.” The Armory in Philadelphia resulted from an effort to consolidate American weapons production and repair organized by the Military Stores Department. Previous failures by the state governments to manufacture enough muskets and bayonets to keep their Continental regiments supplied and increased importation of arms from France encouraged this plan for centralization. In his

204 Brown, 311-313.

205 “Department of the Commissary General of Military Stores” is the term Smith uses in his dissertation and will be used here. For short, this office will also be referred to as the Military Stores Department.
dissertation, Robert F. Smith chronicles the operations of the Military Stores Department and briefly discusses the Continental Armory.\textsuperscript{206}

Guided by newly discovered biographical details about Joseph Perkin, this chapter adds to Smith’s study and investigates the Philadelphia gunsmiths who led and supported the Armory during its three years of existence, from 1779-1781.\textsuperscript{207} It explains how the Armory operated, which gunsmiths became involved, and how it served as one part of network of supply factories operated by the Military Stores Department, known by arms historians as the “Philadelphia Supply Agencies.”\textsuperscript{208} Philadelphia’s gunsmiths became crucial to the Continental Armory’s operation. While a few smiths worked at the factory, others assisted it as contractors who received and delivered arms components and assembled, cleaned, and repaired muskets. Once the Commissary General of Military Stores ceased the operation of the Armory in 1781, the city’s gunsmiths continued to perform small arms repairs on contract with the Military Stores Department through to the War’s conclusion in 1783. By studying the records of the Department, which record repair work, payments, and transfers of raw materials, individual gunsmiths can be linked to the specific work they engaged in. Equipped with skill and experience from their participation in musket production during the early years of the War, Philadelphia’s gunsmiths, led by Joseph


\textsuperscript{207} “Joseph Perkin” has also been referred to as “Joseph Perkins.” Spelling his name without the “s” more accurately reflects the way he signed his name on documents and the guns he made or repaired.

\textsuperscript{208} Moller, American Military Shoulder Arms, Vol. I, 138-140.
Perkin, served as critical workers within the Philadelphia Supply Agencies. They repaired thousands of muskets for use by soldiers of the United States in the last few years of the War for Independence.

**Joseph Perkin**

Arms historians of the Revolutionary and Federal Eras have developed an interest in Joseph Perkin’s gunsmithing due to his leadership at Rappahannock Forge in Virginia, the Continental Armory in Philadelphia, and his later superintendence of the Harpers Ferry Armory. Surprisingly, these historians have only scratched the surface regarding his background information and have not presented an accurate timeline of his work. Recently uncovered primary source material at the Moravian Archives in Bethlehem, Pennsylvania and in the papers of the Military Stores Department add to and correct previous treatments of Perkin’s identity, origin, and geographic whereabouts. These discoveries contextualize Perkin’s leadership at the Continental Armory in Philadelphia and are best presented in the following biographical summary.

Joseph Perkin’s gunsmithing roots lie in England. Baptized on February 12, 1737 in Handsworth, Staffordshire, he grew up outside of the city of Birmingham. His father, John Perkin, was a gunlock filer in West Bromwich, a small town just to the west of Handsworth. Joseph may have learned to be a gunsmith from his father.

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210 “Mid-18th century Birmingham Gunmakers & their apprentices,” Birmingham Gun Museum,
or from another Birmingham area smith as an apprentice. Specialization defined the gunsmithing trade in Birmingham. Each smith’s shop served a purpose in a network of production. Certain smiths made gunlocks or barrels, filed requisite parts, or assembled firearms for their living, rather than producing entire guns in their shops.212 Some of Birmingham’s smiths worked as cogs in the British Ordnance System of Manufacture producing parts for military arms. Perkin’s notoriety as an expert with gun locks during the War for Independence stemmed from his youthful experience in the trade around Birmingham.

In his late twenties, Joseph Perkin moved south to the Moravian community in Bristol, England where he worked in the “Gun Lock Trade.” Although raised in the Church of England, Perkin moved to the community before 1766 with, as one brother in the community described, “a real mind to be possessed by our Saviour’s holy Humanity and Blood.”213 Centered in what is now eastern Germany, the Moravian Church engaged in missionary work that reached England, North America, and the Caribbean during the 18th century. The community in Bristol, England was founded in

http://www.birminghamgunmuseum.com/media/Mid_18th_Century_Birmingham_Gunmakers_and_their_apprentices.pdf.


212 Hayward, 227.

213 Thank you to Dr. Scott Paul Gordon who suggested Perkin’s presence at the Moravian community in Bristol, England; Jonathan Barry and Kenneth Morgan, eds., Reformation and Revival in Eighteenth-Century Bristol (Bristol, UK: Bristol Record Society, 1994), 127.
Bethlehem, Pennsylvania and Salem, North Carolina served as the two headquarters of the church’s efforts in British North America. Based on the idea of Radical Piety, or strict individual religious practice, the Moravians established these settlements as organized communities that emphasized craft industry. The Moravian populations in both England and Pennsylvania, where Perkin later moved, remained small throughout the century.215

The Bristol Single Brethren Choir-House Diary contains entries that mention “Br. Perkin” and track his activity in the community. For example, the April 1, 1766 entry records an apprenticeship agreement between Perkin and “Br. Waters” for Waters’ son John to be “bound for seven years to learn the Gun Lock Smith Trade” and to be taken care of at his master’s expense.216 The entries in the diary stop in the spring of 1767, but Perkin’s gun lock making and shop are mentioned on five different occasions. Archives for the Moravian Church in Philadelphia record that Joseph Perkin had entered the Moravian Church in Bristol, confirming that “Br. Perkin” in the Choir-House diary is the same man.217

Perkin moved to North America in the early 1770s. Merritt Roe Smith in

Harpers Ferry Armory and the New Technology: The Challenge of Change suggested

214 Barry and Morgan, 110.
216 Barry and Morgan, 129; It is unclear if Perkin honored the full contract of this apprenticeship as he moved to North America by 1771.
217 Mss., PhA: Catalog of the Moravian Community in Philadelphia, 1781, Moravian Archives, Bethlehem, PA.
that Perkin came to America “around 1774,” but he provided no footnote for this information.\textsuperscript{218} Subsequent historians have relied on Roe Smith’s short analysis of Perkin to understand his background. Records from the Moravian Church in Philadelphia, dating to 1785 when Perkin belonged to the congregation there, indicate that he arrived in America by way of New York City on September 17, 1771.\textsuperscript{219} (Figure 26)  

\textsuperscript{218} Roe Smith, 38.  

\textsuperscript{219} Mss., PhA: Catalog of the Moravian Community in Philadelphia, 1785, Moravian Archives, Bethlehem, PA; Arms historian Frank M. Sellers first speculated that Joseph Perkin worked in New York, but he appears to have speculated without supporting evidence, see Frank M. Sellers, \textit{American Gunsmiths: A Source Book} (Highland Park, NJ: The Gun Room Press, 1983), 235; According to a listing in the November 25, 1773 edition of \textit{The New-York Journal}, a “Mr. Parkins, Gunsmith” arrived in New York City that year on a merchant vessel named \textit{Samson} from London. There is a possibility that this is Joseph Perkin, see “With Captain Coupar,” \textit{The New-York Journal} (New York, NY), November 25, 1773, accessed December 21, 2015, America’s Historical Newspapers; While the merchant vessel and its port of origin are unnamed in the previous article, “Captain Coupar” refers to Henry Coupar who captained the \textit{Samson} during the early 1770s and made routine trips between London and New York City, see “For London,” \textit{The New-York Journal} (New York, NY), July 30, 1772, accessed December 21, 2015, America’s Historical Newspapers.
Perkin seems to have continued his work as a gunsmith soon after his arrival in New York City. An advertisement in *Rivington’s New York Gazetteer* from September 16, 1773 states that a thief stole a fowling piece “with a lock made by Perkins of New-York.”\(^{220}\) This may refer to Joseph’s work. In addition, a surviving fusil carried by Abraham Rose of Suffolk County, New York during the War for Independence is engraved “PERKIN” on the lock plate within a banner. The barrel is a British import, but is engraved “ALLEN feet” on the top side.\(^{221}\) Two gunsmiths named Allen worked in New York in the early 1770s. Jacob Allen had his shop on Maiden Lane and


\(^{221}\) Ahearn, 124-125.
Thomas Allen left New York to work in England in 1775.\textsuperscript{222} The experienced Perkin may have worked with one of the Allen gunsmiths during this period.

As a recent immigrant, Perkin probably had limited means to establish his own shop. Thus, he may have worked as a journeyman. He likely brought his tools with him during his migration, a valuable part of his identity as a craftsman. Perkin only lived in New York for a few years, but little is known about his time there. Future evidence may add more substance to these tantalizing details.

When Perkin relocated to Rappahannock Forge in late 1775, he came from Philadelphia rather than directly from New York. He apparently moved to the largest city in North America sometime before then.\textsuperscript{223} Between 1771 and 1775, it is difficult to track Perkin’s whereabouts. The only known detail of his personal life from this period is that he married his first wife Clara McRoy in 1773.\textsuperscript{224} The location of their marriage has not yet been found. At this point in his life, Perkin fell away from the Moravian Church.\textsuperscript{225} The fact that Perkin strayed from his religion limits the


\textsuperscript{224} Catalog after 1782, mss., PhA- Philadelphia Catalogs and Early Diaries 1747, 54-56 etc 50E, Moravian Archives, Bethlehem, PA.

\textsuperscript{225} Joseph Perkin to Nathaniel Seidel, February 6, 1779, mss., PhB: Philadelphia Varia and Letters 50E, Moravian Archives, Bethlehem, PA.
possibility of finding him in the detailed and historical valuable Moravian records from either Philadelphia or New York during the early 1770s.226

Perkin’s expertise in all the aspects of gunlock work made him particularly useful at Rappahannock Forge. John Strode reflected on Perkin’s time in Fredericksburg after the gunsmith’s death in 1807. In a letter to Henry Dearborn, then United States Secretary of War, Strode described his “Honest friend” as a “usefull ingenious man. I kept him chiefly at Gunlocks.”227 On the other side of the town, the province established the Fredericksburg Gun Manufactory. Colonel Fielding Lewis oversaw that operation. He updated his cousin George Washington about the factory’s progress on February 4, 1776: “we have been mostly imploy’d in repairing Old Gunns since we began and had only one Gunn Lock maker who has instructed many others who begin to be very expert.”228 Perkin may have been this unnamed instructor due to his expertise and proximity to the manufactory.229

226 Virginia did not have an established Moravian congregation during this period; Perkin did not appear in any of the records of the Moravian congregation in New York City from the period that the author examined.

227 Strode to Dearborn, February 12, 1807 Office of the Secretary of War, Letters Received, NARA; On one surviving Rappahannock Forge musket ,“IP” is marked on the interior of the lock plate. This author has not confirmed that fact, see Eby, 149; Perkin’s presence at Rappahannock Forge is confirmed in “Store Ledger #3, Falmouth, VA 1774-1791,” microfilm M-1144.5, 202, Rockefeller Library, Colonial Williamsburg Foundation.


229 Thank you to Matthew Webster of the Colonial Williamsburg Foundation for discussing the Fredericksburg Gun Manufactory with me; Perkin’s connection to the Fredericksburg Gun Manufactory is speculative.
Not only did Perkin make gunlocks, but with extensive experience on both sides of the Atlantic, he also served in a leadership capacity at Rappahannock Forge. In 1781, Perkin described his own work at the manufactory, emphasizing his instruction and shop organization:

That your memorialist has been useful by instructing in the Art of making small Arms & constructing works for that purpose that in the year 1775 he was engaged to go to Virginia to construct & superintend a Manufactory on the falls of Rappahannock for making small Arms & that he did construct the well known Hunters Factory & instructed in the different Branches of making guns & other small Arms with success for the space of three years.230

Strode and Perkin must have worked closely with each other to recruit other workers and establish a system of production which considered the layout of the shop spaces and specialization of labor. Gunsmith Frederick Klette, who had completed his indenture under Thomas Palmer in 1775, also came down to work with Perkin at Rappahannock Forge.231 In regard to firearms, Hunter’s forge produced muskets, pistols, and wall guns, a few of which survive. (Figures 27 & 28) Perkin’s hands and knowledge certainly influenced their manufacture, but more research may reveal details about his involvement.


231 Eby, 110 and 194-195; Klette apparently remained in Virginia after the war, one rifle that he made survives in a private collection, see Shumway, Rifles of Colonial America, Vol. II, 534-537; “Frederick Klet,” October 21, 1772, Records of Indentures, 1771-1773, Philadelphia, PA, Microfilm 307, Downs Collection, Winterthur Library.
Figure 27  Detail of musket, Rappahannock Forge, Fredericksburg, Virginia; 1775-1781. Walnut, steel, iron, brass. 2010.02.0046 Photograph taken by the author, used with permission from the Museum of the American Revolution. Note “RAP^4 FORGE” engraved on the lock plate.

Figure 28  Detail of musket, Rappahannock Forge, Fredericksburg, Virginia; 1775-1781. Walnut, steel, iron, brass. 2010.02.0046 Photograph taken by the author, used with permission from the Museum of the American Revolution. Note “I HUNTER” engraved on the barrel for James Hunter.
In a petition to the Continental Congress from 1781, Perkin reflected that “his bad state of Health Obliged him to” leave Virginia and the Rappahannock Forge and “return to Philadelphia” in October 1778. Perkin became a widower when his wife Clara died that August. It is currently unknown if Clara came with him Joseph to Virginia, but her death may have contributed to his desire to return to Philadelphia.

The Continental Armory

Soon after his return to Philadelphia, the Continental Congress’ Board of War appointed Perkin as superintendent of the Continental Armory. Perkin took the post on March 1, 1779. William Henry II, a fellow Moravian and son of the Superintendent of Arms and Military Accoutrements for the Continental Army, attempted to recruit Perkin to work with him at Christian Spring, a Moravian settlement near Nazareth, PA, and “instruct him in the gun lock making trade.” Perkin did not follow Henry’s request and instead decided to stay in Philadelphia due to the combination of the job opportunity as superintendent and his relationship with Wilhelmina Heumann, a 30

232 Joseph Perkin to Continental Congress, Feb. 27, 1781, Memorials Addressed to Congress 1775-88, vol. 8, Papers of the Continental Congress, 142, digital image, Fold3.com; It has been previously suggested that Perkin came to Philadelphia in 1781, see Roe Smith, 38.


year old native German and member of the Moravian Church in the city. Wilhelmina and Joseph, then a 42 year old widower, married in June 1779. Perkin’s three years of work at Rappahannock Forge provided him with the experience of conducting large scale weapons production, now to be implemented in Philadelphia. Since no known receipts for arms repairs directed by Perkin at the Continental Armory date to before 1780, the first year of his superintendence may have involved establishing the Armory, hiring workers, and preparing the space for production.

The roots of the Continental Armory in Philadelphia go back to early 1777 when George Washington appointed Lieutenant Colonel Benjamin Flower to be the first Commissary General of Military Stores. (Figure 29) This appointment signaled a reorganization of the American arms supply system, which had previously been left up to individual provinces, exemplified by the Pennsylvania Committee of Safety. According to Robert F. Smith, the Department of the Commissary General of Military Stores served as “the chief agent of Congress’ oversight of domestic manufacturing,” coordinating “all military stores production and procurement.”

Flower first worked with the Continental Congress’ Board of War to establish a network of ordnance or artillery production in Philadelphia and Carlisle, Pennsylvania. Flower appointed Jonathan Gostelow, a cabinetmaker turned artillery officer, to be Commissary of Infantry Stores, who began to coordinate the repair of

235 Catalog after 1782, mss., PhA- Philadelphia Catalogs and Early Diaries 1747, 54-56 etc 50E, Moravian Archives, Bethlehem, PA.


237 Robert F. Smith, 9-10.
small arms, muskets, and bayonets by March 1777 in Philadelphia.238 When the British Army threatened Philadelphia in December 1776, the Continental Congress escaped to Baltimore and convened there until late February of 1777. At about the same time George Washington appointed Flower to his position, the Board of War also recruited Carlisle gunsmith Thomas Butler to be Armorer of the United States.239 The Board requested that Butler move to Philadelphia to begin his work at an armory building under the direction of Flower.240 This armory, funded and operated under the authority of the Continental Congress, was an entirely separate operation from Pennsylvania’s Gunlock Factory discussed earlier.

238 Robert F. Smith, 83-84.


240 Board of War to the Executive Committee, January 25, 1777, Letters of Delegates to Congress, volume 6, January 1, 1777-April 30, 1777, Library of Congress; Robert F. Smith, 203.
Thomas Butler’s short-lived armory prefaced the Continental Armory of post-occupation Philadelphia. While Butler did coordinate some work at the building, located on Water Street, in the spring and summer of 1777, the British capture of Philadelphia forced Butler’s evacuation of the city and the desertion of the
operation.\textsuperscript{241} It appears that the occupation army employed the abandoned building for their own benefit. An advertisement placed in \textit{The Pennsylvania Ledger} on November 18, 1777 references “the King’s Armoury in Water-street,” suggesting its repurposing.\textsuperscript{242} Butler worked in exile in Carlisle during this period. Carlisle became an arms repair and manufacturing center as a result of the occupation.\textsuperscript{243} However, in April 1778, the Continental Board of War investigated and dismissed Butler due to his inefficiency as Armorer.\textsuperscript{244}

Soon after the British evacuation of the city, the Military Stores Department regenerated their operations in Philadelphia. The Department supported 11 distinct weapons related facilities from its headquarters at Carpenter’s Hall.\textsuperscript{245} George D. Moller has termed these operations the “Philadelphia Supply Agencies.” This network included two small arms assembly and repair factories: the Continental Armory and the “French Factory.” The Continental Armory operated in a building on Water Street

\textsuperscript{241} “Wanted two or three Gunlock Filers,” \textit{The Pennsylvania Evening Post} (Philadelphia, PA), July 19, 1777, accessed February 20, 2016, America’s Historical Newspapers; Butler moved the operations to Easton and then to Carlisle, see Robert F. Smith, 204.

\textsuperscript{242} “If the Gentlemen,” \textit{The Pennsylvania Ledger} (Philadelphia, PA), November 19, 1777, accessed February 20, 2016, America’s Historical Newspapers.


\textsuperscript{244} Robert F. Smith, 204; \textit{Journals of the Continental Congress, 1774-1789}, 10:366 (April 18, 1778).

close to the city’s wharfs, perhaps the same building Thomas Butler used in 1777.\textsuperscript{246} Other facilities of the Philadelphia Supply Agencies made cartridges, cannon ammunition, files, leather accoutrements, and ordnance. The Brass Foundry, superintended by James Byers, cast brass furniture for small arms and worked in tandem with the Armory.\textsuperscript{247}

Unlike the Continental Armory, the “French Factory” represented a privately funded venture by two French gunsmiths, Pierre Penet and Julian Couleaux.\textsuperscript{248} The name suggests that the facility just worked with French arms, but its workers also repaired and assembled brass mounted and pinned barrel firelocks, typical of British Land Pattern muskets.\textsuperscript{249} In actuality, the name references its French leadership and funders. It served a similar function to the Armory, chiefly as a repair facility, and received material support from the Military Stores Department.

Repair work at the Armory involved muskets of various origins and patterns, reflecting the arms carried by Continental soldiers. American, British, French, German, and Dutch muskets and parts came under the purview of the Philadelphia

\textsuperscript{246} Merchants worked out of the building on Water Street, “late the Continental armory,” see “Campbell & Kingston,” \textit{Independent Gazetteer} (Philadelphia, PA), October 18, 1783, accessed February 20, 2016, America’s Historical Newspapers.

\textsuperscript{247} Moller, \textit{American Military Shoulder Arms, Vol. I}, 138-140 and 150-151.

\textsuperscript{248} Robert F. Smith, 255.

\textsuperscript{249} Journal of Military Stores (March 1780-March 1781), May 24, 1780, Military Stores Received and Delivered at Philadelphia, Numbered Record Books, RG 93, National Archives, digital image, Fold3.com; British Land Pattern muskets have their barrels attached to their stocks with iron pins. Barrels of French infantry muskets are fastened to their stocks with iron bands visible on the exterior of the gun.
armorers. Many of these muskets had come from the war front in need of repair. Others had recently arrived on ships from France. While imported French muskets and parts began arriving in America early on in the War, the alliance between France and the United States, formalized in February 1778, increased importation. In 1777, just before the alliance became official, 60,000 French arms, mostly muskets, arrived in American ports. Nearly 50,000 more arrived over the next six years. Thousands of parts, including musket locks, came as well.250

The majority of these muskets were of older French patterns from the 1760s. By the 1770s, the French Army began phasing out these older arms with newer versions, creating a surplus. Unlike British muskets from the same time period, French infantry muskets made according to patterns of the 1760s featured iron furniture and .69 caliber barrels attached to slender walnut stocks with iron bands. (Figures 30 & 31) Even though these imported muskets were a boon to the Continental Army, many arrived in poor condition.251


251 Robert F. Smith, 2.
Figure 30  Pattern 1763 musket and bayonet, Royal Manufactory at Maubeuge, Maubeuge, France; 1763-1766. Walnut, steel, iron. 2008-124A The Colonial Williamsburg Foundation, Museum Purchase. The Friends of the Colonial Williamsburg Collections Fund. Note the distinctive iron bands that secure the barrel to the walnut stock.

Figure 31  Detail of Pattern 1763 musket and bayonet, Royal Manufactory at Maubeuge, Maubeuge, France; 1763-1766. Walnut, steel, iron. 2008-124A The Colonial Williamsburg Foundation, Museum Purchase. The Friends of the Colonial Williamsburg Collections Fund. Note the shape of the cock as compared to British Land Pattern muskets. The small “US” stamp was probably added on after the War for Independence.
Joseph Perkin oversaw the intake of thousands of parts and damaged muskets and the output of assembled or repaired arms. According to Robert F. Smith’s calculations, workers at the Armory repaired 5,577 muskets and “manufactured” an additional 9,659 between March 1780 and August 1781.\footnote{Robert F. Smith, 150.} Manufacturing involved assembling muskets from prefabricated parts and making additional parts as necessary rather than making whole guns, lock, stock, and barrel.

Involved in a network of production, the Armory received deliveries of parts from the Brass Foundry and private manufacturers. The Military Stores Department facilitated these transactions. For example, in a six month period in 1780, Perkin received 1,384 new bayonets made by private Philadelphia blacksmiths to pair with muskets being assembled or repaired at his facility.\footnote{Journal of Military Stores (March 1780-March 1781), March-August 1780, digital image, Fold3.com.} The armorers themselves also made bayonets. Perkin received hundreds of gunstocks and gun stock splices to repair damaged forestocks from Henry Fraley, a Germantown carpenter, to replace and repair damaged guns.\footnote{Journal of Military Stores (March 1780-March 1781), August 1 and October 23, 1780, digital image, Fold3.com; Henry Fraley Parcel, Germantown, PA, 1775, Mapping West Philadelphia, accessed April 5, 2016, http://www.archives.upenn.edu/WestPhila1777/view-parcel.php?pid=2045; Samuel Fitch Hotchkin, Ancient and Modern Germantown, Mount Airy and Chestnut Hill (Chestnut Hill, PA: P. W. Ziegler & Company, 1889), 317, Google Books.} The Brass Foundry provided cast brass musket furniture including trigger guards, side plates, heel plates, and ramrod pipes. From a different source,
Perkin received iron furniture, including the distinctive barrel bands, for “m[usket] mounting” of French pattern arms.255

To complete all of these repairs, the Armory employed a large workforce. In 1780, 29 men worked there in a variety of roles.256 Two of these men, John Meggs and Peter Lessley, worked at the Pennsylvania Gunlock Factory in 1777.257 Perkin had a clerk named James Smith to help him with coordinating the operation and bookkeeping. James Walsh and Jacob Baldwin, who petitioned the Committee of Safety in 1776 about rising costs for gunsmiths in the city, plied their trade there. The Armory even employed a British prisoner named Francis Wigstead and English gunsmith Thomas Lawrence.258 All of these men received both pay and rations for their work. While most of their specific duties in the Armory are unknown, the operations were probably specialized to maximize efficiency. For example, Assistant Commissary General Samuel Hodgdon ordered that a “Serjeant Jones” be transferred

255 Journal of Military Stores (March 1780-March 1781), June 19, 1780, digital image, Fold3.com


258 “Continental Line Artillery Artificers 1777-1783,” Pennsylvania Archives, series 5, III, 1128, digital image, Fold3.com; It is currently unclear which of the two James Walsh gunsmiths worked at the Armory; “WHEREAS Thomas Lawrence,” The Pennsylvania Packet (Philadelphia, PA), November 22, 1783, accessed January 10, 2015, America’s Historical Newspapers.
from an artillery company to work in the Armory under Perkin as a gun stocker.\textsuperscript{259} The operation may have looked similar to what John Nicholson envisioned in 1776.\textsuperscript{260} Necessary repair work on muskets included replacing broken or missing parts, refacing worn down hammers with steel, splicing or replacing broken gunstocks, and assembling muskets from captured, imported, or surplus parts. Such a large workforce allowed the Armory to repair thousands of muskets during its existence.\textsuperscript{261}

Perkin himself had the role of coordinating this operation. His previous leadership at Rappahannock Forge provided him with experience to build on. It is currently unknown how many workers Perkin oversaw in the production of arms in Virginia. His workforce in Virginia likely included enslaved and paid workers, as it is known that James Hunter owned about 260 slaves in 1782.\textsuperscript{262} Some of those slaves may have worked under Perkin between 1775 and 1778. While John Strode remembered that Perkin worked chiefly on gunlocks in Virginia, Perkin oversaw all aspects of production and repair in Philadelphia. He also had other duties assigned to

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\textsuperscript{259} Samuel Hodgdon to Joseph Perkin, April 28, 1780, Letters Sent by Samuel Hodgdon and by Benjamin Flower, March 22-December 30, 1780, Supply Records, Numbered Record Books, RG 93, National Archives, digital image, Fold3.com

\textsuperscript{260} Robert F. Smith, 149.

\textsuperscript{261} Samuel Hodgdon to Joseph Perkin, June 17, 1780, Letters Sent by Samuel Hodgdon and by Benjamin Flower, digital image, Fold3.com.

\textsuperscript{262} Norman Schools, \textit{Virginia Shade: An African American History of Falmouth, Virginia} (Bloomington, IN: iUniverse, 2012), 12; Hunter placed an advertisement in the July 4, 1777 issue of \textit{The Virginia Gazette} calling for skilled workers including “Negro Tradesmen” to labor at his manufactory, see the advertisement reproduced in Goldstein, “To Drive Through Cap and Skull of a British Dragoon: Signed American Cavalry Swords of the Revolutionary War,” 87.
him by the Military Stores Department. In one instance, Samuel Hodgdon ordered Perkin to appraise a delivery of French arms on board the Continental frigate Confederacy. For his superintendence, Perkin received one meal and 10 dollars per day. Depreciation of Continental currency encouraged Perkin to petition the Board of War for a pay increase, resulting in a 30 dollar per diem pay rate by late 1779.

Of the 1,384 new bayonets supplied to Joseph Perkin at the Continental Armory between March and August 1780, 811 came from Jacob Eckfelt by way of the Military Stores Department. Born about 1743, Eckfelt worked as a blacksmith “at the sign of the sickle” in his shop on “fifth street between Arch Street and Market Street” opposite the Christ Church Burying Ground. Before the War, Eckfelt specifically advertised his manufacture of sickle and scythe blades to local farmers, but by the early 1780s he turned his attention to making bayonets. A number of Eckfelt marked bayonets survive in public and private collections. However, since

263 Samuel Hodgdon to Joseph Perkin, May 30, 1780, Letters Sent by Samuel Hodgdon and by Benjamin Flower, digital image, Fold3.com


267 Probably earlier too. The 1776 mention of “Jacob Acfield” in the minutes of the Pennsylvania Committee of Safety probably refers to Jacob Eckfelt, see Minutes of the Provincial Council of Pennsylvania, 10:525 (March 26, 1776).
Eckfelt also made bayonets after the War, it is difficult to determine their date of construction. Surviving examples provide evidence that Eckfelt made bayonets modeled after British patterns. Eckfelt stamped his name on bayonets on the underside of the blade near the shoulder. (Figure 32) Other Philadelphia blacksmiths made bayonets for the Military Stores Department including Adam Myrtelus, William Rose, and Samuel Holmes.

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268 Schmidt, 48.
Lists of tools at the Armory in the Journal of Military Stores for March 1780 through March 1781 suggest the type of work the armorers engaged in. The most comprehensive list is included in the entry for December 14, 1780. The list indicates that the men at the Armory engaged in the repair, assembling, cleaning,
restocking, and stamping of muskets. Hand saws, draw knives, a variety of planes, and braces suggest restocking work. Swages for rammers, sling swivels, cock jaws, and pans promoted the uniformity of forged metal parts. (Figure 33) The armorers used mandrills to forge and shape barrels and borers to clean and smooth out their interiors. Therefore, not only did Perkin receive deliveries of prefabricated musket parts, he also oversaw the manufacture of steel and iron components including locks and gun barrels. The list also includes over 158 steel files, a tool frequently used by gunsmiths to shape and clean metal surfaces. Files were particularly useful to tune and finish gunlock parts.

Figure 33  A recreated cock swage used by the blacksmiths at the Anderson Public Armory in Colonial Williamsburg to shape musket cocks. Photo by the author.
Workers at the Armory also stamped and branded muskets. Apart from
gunsmithing tools, Perkin received “US” stamps and “copper brands US” to mark
muskets as the property of the United States on their stocks, lock plates, and barrels.270
The practice of marking firearms of Continental soldiers began in 1777 when the
Continental Congress ordered that “all Arms and Accoutrements belonging to the
United States Recommitted shall be stamped and marked with the Words United
States” in a measure to combat theft.271 Encamped at Morristown, NJ, General
Washington implemented Congress’ directive.272 According to Moller, “the earliest
markings were wood brands.” “UNITED:STATES” and “U.STATES” branding can
be seen in the stocks on a number of surviving muskets.273 The deliveries of “US”
stamps to the Continental Armory in 1780 indicates the beginning of the stamping of

270 Journal of Military Stores (March 1780-March 1781), August 19 and December


272 Bob McDonald, “‘The arms and accouterments belonging to the United States
shall be stamped …’ Markings on Continental Army Muskets,” accessed April 5,
accouterments-belonging-to-the-United-States-shall-be-stamped-Markings-on-
Continental-Army-Muskets.

273 Moller, American Military Shoulder Arms, Vol. I, 162; It has been speculated that
“UNITED:STATES” brands pre-date “U.STATES” brands, see Bob McDonald, “‘The
arms and accoutrements belonging to the United States shall be stamped …’ Markings
on Continental Army Muskets,” accessed April 5, 2016,
http://www.scribd.com/doc/181283657/Bob-McDonald-The-arms-and-accouterments-
belonging-to-the-United-States-shall-be-stamped-Markings-on-Continental-Army-
Muskets.
metal components, specifically the lock plate and breech, with this further abbreviated designation.274

A musket in the collection of the West Point Museum at the United States Military Academy exhibits both the construction and markings that exemplify the types of repair work executed at the Continental Armory in Philadelphia. It provides evidence for the simplification of muskets parts in order to save material costs and hasten production. While it cannot be proven, this gun may have been assembled during the War at the Armory. The musket features a pattern 1740 British Land Pattern lock, made by contractor Edward Jordan of Birmingham in 1747. (Figure 34) Its barrel also has a British origin, bearing both proof and view marks. (Figure 35) The top side of the barrel is engraved “K^S OWN REGT,” denoting its usage by the British 4th Regiment of Foot.275 Employing a captured lock and barrel, the rest of the musket is American made. Large, serif “US” stamps are included on the breech and lock plate, juxtaposed with the nearby British markings. The stock is also branded “U.STATES” near the end of the trigger guard.


275 Goldstein and Mowbray, 14, 15, 17, and 50.
Figure 34  Detail of musket, Edward Jordan (lock), Birmingham, England; 1747 (lock). Walnut, steel, iron, brass. *998 Courtesy West Point Museum Collections, U.S. Military Academy.* Note that the lock is a pattern 1740 British Land Pattern example. The “US” mark on the lock plate denotes its usage by American troops. The lock has been attached to an American-made walnut stock.
Figure 35  Detail of musket, Edward Jordan (lock), Birmingham, England; 1747 (lock). Walnut, steel, iron, brass. 998 Courtesy West Point Museum Collections, U.S. Military Academy. Note the juxtaposition of the “US” stamp and British inspection marks at the breech of the barrel. The top of the barrel is also engraved “K^S OWN REGT” denoting its former usage by the British 4th Regiment of Foot.
The identifying features of the walnut stock include its lack of provision for a brass wrist escutcheon and the fact that the stock was made to fit a brass heel or butt plate that has a curved “thumbnail” tang, unlike British Land Pattern muskets.

(Figure 36) These changes simplified the look of the gun. They eliminated unnecessary parts, slightly reduced the amount of brass required, and reduced the size of the mold needed for the butt plate. The rest of the brass furniture on this musket follows British patterns. The furniture may have come from the Brass Foundry in Philadelphia, which delivered large quantities of brass musket furniture to the Armory. Other muskets that have similar features, including the distinctive butt plate, and “US” markings survive. They reflect a combination of American and European parts and have probable connections to the Continental Armory.

Arms scholars have attributed an “IP” brand found on musket stocks that date to the late-18th century to be the mark of Joseph Perkin, used during his superintendence of the Continental Armory and his other repair work during the latter years of the War for Independence. This speculation is based on circumstantial evidence rather than documentary proof. However, Perkin also repaired muskets in Philadelphia after the War making it difficult to determine if he ever employed the mark during the conflict. Apart from receiving specified “US” stamps and brands at
the Armory, Perkin also received “9 Copper Brands” from the Brass Foundry on July 12, 1780.\textsuperscript{277} Without specifications as to their design, these brands could have been “US” brands or something else, perhaps “IP.” This is purely speculation, but Perkin certainly inspected a lot of arms during his superintendence. Whether or not he used a mark such as a brand during the War cannot be proven at this time.\textsuperscript{278}

In 1781, Samuel Hodgdon, the newly appointed Commissary General of Military Stores, decided to cease operations at the Armory to cut the costs of his department. Colonel Benjamin Flower had been struggling with illness since 1778 and died on April 28, 1781. As Flower’s deputy, Hodgdon officially took the reins of the Department, having already been effectively in control.\textsuperscript{279} Rising operational costs, particularly in feeding and paying about 30 Armory workers and a superintendent, encouraged the closure. Perkin himself suffered from the Department’s lack of funds and noted to Congress in February 1781 that he had received no pay in seven months. His rations also diminished.\textsuperscript{280} Perkin’s petition foreshadowed Samuel Hodgdon’s ultimate decision. The Department paid Perkin as superintendent at least until April 9,

\begin{itemize}
  \item \textsuperscript{277} Journal of Military Stores (March 1780-March 1781), July 12, 1780digital image, Fold3.com.
  \item \textsuperscript{278} Ahearn, 129-130; Moller, \textit{American Military Shoulder Arms, Vol. I}, 150.
  \item \textsuperscript{279} Robert F. Smith, 97-98.
\end{itemize}
1781. By May, he had entered into a gunsmithing partnership with Samuel Coutty. (Figures 37 & 38) An April 6th entry in the Journal of Military Stores represents the last mention of the Armory in the Department records. The Armory must have closed that month. Isaac Cox, who apparently owned the building, “formerly occupied by the public as an armoury,” offered it for rent in 1782. A merchant firm moved in the following year. The other entities of the Philadelphia Supply Agencies continued to operate through 1783.

281 Joseph Perkin Payment, April 10, 1782, Record of Money Received and Disbursements, digital image, Fold3.com.


283 Journal of Military Stores (March 1781-September 1784), April 6, 1781, Military Stores Received and Delivered at Philadelphia, Numbered Record Books, RG 93, National Archives, digital image, Fold3.com.

Perkin and Coutty,

At the corner of Second and Spruce-streets, Philadelphia,

BEG leave to acquaint their Friends and the Public in general, that they carry on the GUN and PISTOL making in all its branches, where gentlemen may be supplied with Guns and Pistols of the neatest and best quality, on the shortest notice and most reasonable terms.

They also blue and brown Gun Barrels in the neatest manner.

N. B. A small quantity of Ship Musquets to sell.

**Contracting with the Military Stores Department**

Even though the Continental Armory closed in 1781, firearms repair work did not come to a halt in Philadelphia. Instead, the work load shifted to private contractors. Engaging the city’s gunsmiths to complete necessary repairs proved to be less expensive for the Military Stores Department than running the Armory operation. Just as Jacob Eckfelt delivered hundreds of bayonets, private gunsmiths had been delivering repaired arms to supplement the work of the Continental armorers. Joseph Perkin, John Nicholson, William Dunwick, Samuel Coutty, and James Walsh all participated in the repair of muskets for the United States after the Armory closed.
Nicholson, the most prolific contractor, repaired muskets, bayonets, rifles, and pistols. He engaged in “repairing Muskets for the use of the United States” and “cleaning publick arms” as early as 1780. Along with the repairs, Nicholson also cleaned and stamped muskets with “US” on their lock plates and barrels. A portion of Nicholson’s work is documented in the Military Stores Department’s “Daybook of Military Stores” for Philadelphia which covers the years 1781 and 1782.

In a one year period, from July 1781 to July 1782, Nicholson made 25 different deliveries of repaired, cleaned, or stamped muskets and bayonets. While the totals of each delivery varied, they ranged from 6 to 100 muskets and bayonets per. In total, Nicholson delivered 677 repaired muskets and their requisite bayonets. The timing of each delivery also lacked regularity, suggesting that Nicholson transferred the completed arms as he finished them rather than accumulating a stock pile of repaired arms. The Military Stores Department then forwarded the muskets and bayonets to the Continental Army. Storing arms required space that Nicholson probably could not afford to give up in his shop. Although we do not know what his shop looked like or how many journeymen or apprentices he employed during this period, Nicholson probably prioritized work space over storage space.

Nicholson’s musket repair work resembled that of the previously discussed Continental armorers. It included restocking, assembling muskets from pre-made parts, replacing furniture, and fixing broken metal parts and stocks. To complete this

work, the Military Stores Department provided Nicholson and his shop workers with premade parts. Records of these parts transactions reveal that Nicholson mostly repaired muskets with pinned barrels and brass furniture (i.e. British Land Pattern muskets). To a lesser degree, he also repaired muskets with iron furniture and barrels attached to the stock with iron bands, typical of French infantry muskets. Most of the cast brass furniture that Nicholson received came from the Brass Foundry.\textsuperscript{286} It is unclear who made the iron furniture and parts such as cocks, rammers, and barrel bands along with replacement steel hammers and springs that the Military Stores Department provided to Nicholson. One could speculate that they were probably French imports or taken from guns beyond repair.

While making these deliveries, Nicholson also continued his private business in his shop on Front Street. Nicholson advertised in \textit{The Pennsylvania Journal} in October and December of 1781 that he sold “Long Duck Guns” or fowling pieces and “Small Arms for Shipping, such as muskets, short ditto for tops or close quarters, Blunderbusses with or without swivels, Pistols with ribs or without, Cutlasses, &c.”\textsuperscript{287} Nicholson purchased unwanted and damaged guns, such as “ship muskets,” rampart muskets, “buccaneer muskets,” carbines, pistols, bayonets, and “ship swords” from the Military Stores Department in December 1781.\textsuperscript{288} He probably repaired these arms

\textsuperscript{286} Moller, \textit{American Military Shoulder Arms, Vol. I}, 140.


\textsuperscript{288} Daybook of Military Stores (July 1781-September 1782), December 26, 1781, Military Stores Received and Delivered at Philadelphia, Numbered Record Books, RG 93, National Archives, digital image, Fold3.com; The Military Stores Department had been selling unwanted small arms, specifically advertising to outfit “Vessels of War”
and retailed them. His concentration on advertising weapons meant for use on ships speaks to Philadelphia’s privateering and shipping activity at the time. By 1783, he had opened up a different workshop on Water Street, using his Front Street address solely as his dwelling.\(^{289}\)

Other Philadelphia gunsmiths shared a similar relationship with the Military Stores Department that Nicholson experienced. No longer Superintendent of the Armory, the Department provided Joseph Perkin and his partner Samuel Coutty parts to complete musket and bayonet repairs. Perkin and Coutty began delivering repaired arms by 1782. (Figures 39 & 40) On his own, Coutty had been doing contracting work since 1780.\(^{290}\) The two gunsmiths also bought up excess parts to use in their business located at the corner of Second and Spruce Streets. Perkin and Coutty made and sold

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\(^{290}\) Samuel Coutty Payment, December 18, 1780, Record of Receipts and Disbursements, Commissary General of Military Stores Department March 1780-October 1781, Various Books of Samuel Hodgdon, Supply Records, Numbered Record Books, RG 93, National Archives, digital image, Fold3.com; Little information is known about Samuel Coutty prior to 1780.
both shoulder arms and pistols. William Dunwick made deliveries of repaired arms in 1781, but by October returned a large number of parts to the Department. For an unknown reason, he did not engage in any further contracts with the Military Stores Department during the War. When the Armory closed, former employee James Walsh continued to do contract work.

Figure 39  Pistol lock (exterior), Joseph Perkin and Samuel Coutty, Philadelphia, Pennsylvania; 1781-1785. Steel, iron. Collection of Bob Nittolo.


293 Moller includes a table titled “Summary of Known repairs by 1780-1785 Continental Contract Armorers” in Moller, American Military Shoulder Arms, Vol. I, 152-53. He does not specifically list his source material to come up with these numbers. I took a more specific approach to my calculations by focusing in on the Journal of Military Stores and the Daybook of Military Stores.
Notably absent from the records for the repair of muskets and bayonets is Lewis Prahl. However, Prahl produced large quantities of horsemen’s swords for the Military Stores Department during the later years of the War. Sometime before May 1777, Prahl entered into an agreement with Colonel Benjamin Flower to produce 1000 horseman’s swords and deliver two dozen each week.\footnote{Samuel Hodgdon paid Prahl as a “Sword Maker” in 1781 as he made deliveries of horsemen’s swords throughout} Samuel Hodgdon paid Prahl as a “Sword Maker” in 1781 as he made deliveries of horsemen’s swords throughout the War.

\footnote{“Representation of Lewis Prahl,” May 22, 1777, \textit{Pennsylvania Archives}, series 2, III, 90, digital image, Fold3.com; If Prahl made consistent deliveries, he would have finished the contract in about 42 weeks.}
that year.\textsuperscript{295} Many of the swords he and his workers repaired and assembled in 1781, some with blades provided by the Department, went directly to the 4\textsuperscript{th} Continental Light Dragoons.\textsuperscript{296} No receipts or entries in Department records document his repair of muskets between 1780 and 1783.

Non-gunsmiths also engaged in the repair of muskets and bayonets. Ludwig, or Lewis, Fohrer, a blacksmith who lived on Apple Tree Alley near Fifth Street, delivered 375 repaired muskets and bayonets to the Military Stores Department between July 1781 and July 1782.\textsuperscript{297} He repaired both British and French pattern muskets.\textsuperscript{298} Thomas Elton, a cabinet maker, and Isaac Johns, a joiner, teamed up to assemble muskets from parts provided by the Department.\textsuperscript{299} Their woodworking


\textsuperscript{296} Journal of Military Stores (March 1781-September 1784), June 18 and 21, 1781, digital image, Fold3.com; By January 1781, this combined cavalry and infantry unity was re-designated the 4\textsuperscript{th} Legionary Corps, see Robert K. Wright, Jr., \textit{The Continental Army} (Washington, DC: United States Army Center of Military History, 1983), 346-347.

\textsuperscript{297} “ALL Persons,” \textit{The Pennsylvania Packet} (Philadelphia, PA), June 1, 1784, accessed December 10, 2015, America’s Historical Newspapers.

\textsuperscript{298} Daybook of Military Stores (July 1781-September 1782), July 1781 to July 1782, digital image, Fold3.com.

skills came into use not only for the fabrication and repair of gunstocks, but also in the construction of arms chests.\textsuperscript{300}

The relationship between the Military Stores Department and Philadelphia’s gunsmiths involved the transfer of materials, parts, damaged arms and repaired arms back and forth between the two parties. Gunsmiths received routine payments for their work, recorded in dollars on some receipts and in pounds on others. It is unclear if the gunsmiths signed formal contracts with the Department, or whether they made verbal agreements.\textsuperscript{301} Contract work kept these gunsmiths busy though they still maintained their normal shops as well. Some of them had experience with large scale production during their involvement with the Committee of Safety before the occupation of Philadelphia. However, instead of making muskets from scratch, assembling and repairing allowed the gunsmiths to complete the necessary work on a greater volume of arms during the latter years of the War.

Following the War’s official conclusion in 1783, the productive roles played by the city’s gunsmiths continued as the Military Stores Department dealt with a major surplus of arms. Joseph Perkin and John Nicholson in particular took on significant roles of leadership in the production and repair of muskets for the use of the United States. Realizing the gunsmiths’ involvement in arms repair during the War for Independence provides context for the governmental and craft networks they engaged in after the War’s end.

\textsuperscript{300} Daybook of Military Stores (July 1781-September 1782), August 2, 1782, digital image, Fold3.com.

\textsuperscript{301} Large document contracts were made in the 1790s, for example the Abijah Peck Contract, October 9, 1798, Helen and Edward Flanagan Collection.
Chapter 6
“FEDERAL ARMOURY”: PHILADELPHIA’S GUNSMITHS AND THE YOUNG UNITED STATES

When Philadelphia’s gunsmiths participated in the Grand Federal Procession on July 4, 1788, they spared no expense in demonstrating their trade. A team of four horses pulled a 14 foot long, ornamented, flatbed carriage labeled “Federal Armoury” on each side. This vehicle was so large that a group of gunsmiths could stand on top of it while the horses pulled them along the parade route. Along the way, they demonstrated their trade. If the blacksmiths’, whitesmiths’, and nailers’ float provides any indication, the gunsmiths may too have placed an operational forge on their carriage.302 The gunsmiths probably displayed filing, forging, and stocking for the thousands of curious, excited on-lookers. It must have been quite a sight to behold, blanketed with a cacophony of sound.303 Veteran smiths John Nicholson and Joseph Perkin stood on the float and oversaw the demonstrations. (Figure 41) The gunsmith’s was one of many extravagant floats that passed by the city’s residents. Benjamin Rush

302 “A machine drawn by nine horses, representing the Federal Blacksmiths, Whitesmiths, and Nailers manufactory, being a frame of 10 by 15 feet, and 9 feet high, with a real chimney extending 3 feet above the roof, and furnished for use” quote from “Grand Federal Procession,” The Pennsylvania Gazette (Philadelphia, PA), July 9, 1788, accessed July 31, 2015, Accessible Archives.

recalled that “the Procession gave universal pleasure. Never upon any occasion during the late war did I see such deep seated joy in every countenance.”

Figure 41 The Pennsylvania Gazette, Philadelphia, PA; July 9, 1788, Courtesy, Accessible Archives.

304 Quoted in Waldstreicher, 104.
The Grand Federal Procession marked another moment of transition for Philadelphia’s gunsmiths. When the War for Independence began in 1775, the city’s gunsmiths, individually and in small partnerships, entered into roles as government contractors working for the Pennsylvania Committee of Safety in the production of military arms. The British occupation temporarily halted such production in the city. Once the British Army left, the Department of the Commissary General of Military Stores relied on some of the same gunsmiths to repair and produce thousands of muskets and bayonets to keep the Continental Army supplied. The War’s conclusion led to a decline in opportunities for the gunsmiths to contract for the repair of military arms. However, the foundation of a new governmental system in the late 1780s, symbolized by the Procession, preceded the establishment of the Federal Armory system. With their recent experience in contract work and in the leadership of large scale weapons production and repair during the War, John Nicholson and Joseph Perkin played significant roles in the new armory organization. Through their leadership in arms inspection, teaching duties, and Perkin’s superintendence at the New London and Harpers Ferry Armories in Virginia, the United States Department of War selected both Perkin and Nicholson as veteran gunsmiths to guide the nascent weapons production system.

Early Federal Era arms production has received extensive scholarly treatment. George Moller’s multi-volume study of American military shoulder arms promotes a good starting point for the study of firearms just after the War for Independence.305

However, Peter Schmidt’s first volume of *U.S. Military Flintlock Muskets* represents an even more comprehensive study of both surviving arms and government records of the Federal Era.\(^{306}\) Schmidt’s work is especially valuable due to his inclusion of many transcribed primary documents. Merritt Roe Smith’s study of Harpers Ferry Armory remains the best treatment of that facility, its beginnings, and the people who worked there.\(^{307}\) The last chapter of Robert F. Smith’s dissertation provides helpful background information regarding the bureaucratic structure of the Military Stores Department during both the period of the Articles of Confederation and then following the adoption of the Constitution. He highlights the continuity of the system structure and personnel over the two decades following the War. The system established during the War laid a “foundation for the Constitutional government’s military stores policies.”\(^{308}\) This thesis is indebted to the above cited scholars and references their studies. With a narrower focus, it provides a detailed investigation of Philadelphia’s war-time gunsmiths’ professional experiences with military arms and their adjustments to the emerging early national economy and culture. Careful study of the Military Stores Department’s records and correspondence reveal these details.

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\(^{308}\) Robert F. Smith, 275.
Repairs Continue

Since the disbanding of the Continental Army soon after the Treaty of Paris left the new United States without an active military force to supply, thousands of muskets, bayonets, and parts remained in storage. Many of these arms were recent French imports. Philadelphia storage houses held the largest amount of surplus arms while Carlisle, Pennsylvania, West Point, New York, and Springfield, Massachusetts also stored significant quantities.309 Samuel Hodgdon’s reign as Commissary General of the Military Stores Department continued after the War. Still headquartered in Philadelphia, Hodgdon relied upon the city’s gunsmiths with whom he had previously contracted to maintain the Department’s surpluses during the 1780s. Contract work served the most cost effective way to manage and maintain the stores. With a Congress struggling to find both funding and ways to cut spending, the facilities of the Philadelphia Supply Agencies, such as the Brass Foundry and cartridge making laboratories, ceased operations before 1785. The Military Stores Department engaged in fewer repair contracts with Philadelphia gunsmiths by the middle of the decade as a result of its diminished operations.310

On December 29, 1783, Samuel Hodgdon agreed with John Nicholson and Joseph Perkin on an arms repair contract larger in scale than any contract they had engaged in during the War. The two gunsmiths fulfilled the agreement the following year, representing the last major arms repair contract several years before the 1788 formation of the constitutional government. The arrangement stipulated that the repairs “be done in a Compleat workmanlike manner at two shillings [Pennsylvania]

currency each.” Hodgdon agreed to pay Nicholson and Perkin for each delivery of 1,000 muskets and bayonets they made.311 They promptly began their work. Nicholson and Perkin made their first delivery in February 1784, evidenced by their receipt of payment of £100 on February 5th.312 They made eleven subsequent deliveries between February and September 1784 amounting to the repair of 11,587 muskets and payments totaling £1,158/14/0.313 These deliveries represent the first time that Nicholson and Perkin completed a contract together. Their relationship made particular sense because at this point in time their shops were located just a block away from each other near the Dock Creek.314

Nicholson’s and Perkin’s impressive accomplishment of completing this many repairs over a period of nine months depended on the decent condition of the muskets and assistance from auxiliary workers. Each payment noted in Samuel Hodgdon’s record books specified that Nicholson and Perkin engaged in the “cleaning Stamping


312 Perkin and Nicholson Payment, February 5, 1784, Record of Money Received and Disbursements, October 1781-October 1788, digital image, Fold3.com.

313 Their last payment for this contract is recorded on September 6, 1784, see Perkin and Nicholson Payment, September 6, 1784, Record of Money Received and Disbursements, October 1781-October 1788, digital image, Fold3.com; Their last delivery also came on September 6, 1784. Their July 10, 1784 delivery totaled 587 muskets, see Journal of Military Stores (March 1781-September 1784), July 10 and September 6, 1784, digital image, Fold3.com.

314 White, 53 and 58.
& Repairing” of these arms. Removing rust, fixing metal parts and wooden stocks, and stamping muskets with “US” reflected work that Perkin and Nicholson had been doing for the Military Stores Department since 1780. Some of the muskets probably required more work than others that were in good shape or just needed to be stamped after a brief visual inspection. Variations in musket condition promoted the contract’s quick completion. The frequency of deliveries show that Perkin and Nicholson averaged over 1,200 repairs and stampings per month, but it is unclear how they divided the work and the payments. A contract of this scale needed a large workforce to complete it. Samuel Coutty, who entered into a partnership with Perkin in 1781, still worked with him in 1785. Journeymen and apprentices must have assisted both gunsmiths. While specific information about these workers has not been found, they made it possible for Perkin and Nicholson to make consistent deliveries.

A few surviving muskets provide potential material evidence for Perkin’s and Nicholson’s relationship in the repair and stamping of arms in 1784. As mentioned in the previous chapter, arms scholars have attributed a large “IP” brand found on surviving French pattern arms marked as United States property to be an inspection mark used by Joseph Perkin. The same “IP” brand is also found on a few French pattern muskets that feature a similarly sized “IN” brand in their stocks. (Figures 42 &

315 Quartermaster General's Department, May 28, 1784, Papers of the War Department, Roy Rosenzweig Center for History and New Media, George Mason University, http://wardepartmentpapers.org/document.php?id=409.

316 This was calculated from 11,587 muskets divided by 9 months of work.

317 Perkin and Coutty Payment, May 18, 1785, Record of Money Received and Disbursements, October 1781-October 1788, digital image, Fold3.com.
43) “IN” may stand for John Nicholson. One such musket is in the collection of the Colonial Williamsburg Foundation. The pattern 1763 musket made at the Maubeuge Armory epitomizes the types of arms imported by the thousands from France during the War. With many of these muskets in storage, Perkin’s and Nicholson’s return of iron barrel bands to the Military Stores Department show that they worked on French pattern arms in 1784. The presence of both an “IN” and an “IP” brand on the same musket provides provisional evidence that Perkin and Nicholson treated some of the same weapons, although it is not known in what regard. Perkin and Nicholson may have branded muskets they worked on during this contract to demonstrate that the guns had passed their inspection. Alternatively, the brands could have been added at different times because both gunsmiths repaired and inspected arms in Philadelphia through to the 1790s. However, there is no other evidence of such a close relationship between Perkin and Nicholson on a repair contract besides the one completed in 1784, thus it is likely that the marks date to that era.

Figure 42  Detail of pattern 1763 musket and bayonet, Royal Manufactory at Maubeuge, Maubeuge, France; 1763-1766. Walnut, steel, iron. 2008-124A The Colonial Williamsburg Foundation, Museum Purchase. The Friends of the Colonial Williamsburg Collections Fund. Note the “IP” brand near the butt of the stock which may be an inspection mark of Joseph Perkin.

Figure 43  Detail of pattern 1763 musket and bayonet, Royal Manufactory at Maubeuge, Maubeuge, France; 1763-1766. Walnut, steel, iron. 2008-124A The Colonial Williamsburg Foundation, Museum Purchase. The Friends of the Colonial Williamsburg Collections Fund. Note the “IN” brand near the butt of the stock which may be an inspection mark of John Nicholson.
During the 1780s, Perkin’s and Nicholson’s personal businesses continued as well, though more evidence of Perkin’s work survives. The 1785 Philadelphia Directory lists Perkin as a “gunsmith and shopkeeper” and Nicholson as an “ironmonger and gunsmith.” The directory names only four gunsmiths specifically, but at least three others are known to have been active.\(^{319}\) The gunsmiths sold parts, took repair jobs, and received orders from civilian customers for hunting and sporting arms. (Figure 44) They also fabricated guns. For example, Moravian Bishop John Ettwein in Bethlehem, Pennsylvania engaged Joseph Perkin in a high status commission to make a rifle for his friend Henry Laurens of South Carolina, former President of the Continental Congress. Laurens asked Ettwein in September 1787 “to give direction to your best Gunsmith to make for me as Neat, Light and good a Rifle barreled Gun as he can afford for five Guineas, with Mould &c.”\(^{320}\) Guineas being gold coins worth £1/1/0 each. Ettwein looked to Perkin to complete the order, proclaiming him to be “a very good gunsmith” who “will do his best to give satisfaction.”\(^{321}\) With a budget of five guineas, Perkin had resources to make a high quality rifle to meet Laurens’ request. Laurens’ offering of payment in gold guineas not only showed his wealth and status as a gentleman, but may have also encouraged Perkin to prioritize this order over work for which he would receive paper money or...

\(^{319}\) White, 53, 54, 56, 58, and 74.


less valuable coin. See figures 45, 46, and 47 for another example of Perkin’s work from this period.

Figure 45  Detail of fowling piece, Joseph Perkin, Philadelphia, Pennsylvania; c.1785. Walnut, steel, iron, brass. *Collection of Tom Grinslade.*

Figure 46  Detail of fowling piece, Joseph Perkin, Philadelphia, Pennsylvania; c.1785. Walnut, steel, iron, brass. *Collection of Tom Grinslade.*
A significant ingredient of Perkin’s business economics during the 1780s was his use of parts purchased and received from the Military Stores Department in combination with parts of his own manufacture. Perkin purchased both parts, such as barrels, and damaged guns to repair or from which to gather parts. For example, Perkin bought a single brass pistol barrel from the Military Stores Department on May 13, 1784 and also purchased brass pistol barrels from the Department two years.

322 Cash Received of Joseph Perkin, April 11, 1782 and February 20, 1788, Record of Money Received and Disbursements, October 1781-October 1788, digital image, Fold3.com.
earlier. He may have used one of these barrels for a pistol he made for his employer-turned-customer Samuel Hodgdon instead of taking the time and effort to cast his own brass barrel. This pistol, which survives in a private collection, is engraved on the top of the barrel “I · PERKIN PHILAD” and on the butt cap “SAMUEL HODGDON.” The lock plate is also engraved “I · PERKIN” below the pan. It has been suggested that Perkin made this pistol around 1785. With so many surplus arms in the city it made economic sense for Perkin to gather parts from the Military Stores Department to augment his gunsmithing business. As mentioned in the previous chapter, John Nicholson had been doing this since before the end of the War.

Between 1785 and 1790, the city’s gunsmiths experienced reduced opportunities for government contracts. The Military Stores Department, due in large part to the struggles of the nation’s Confederation government, offered few prospects

323 Journal of Military Stores (March 1781-September 1784), May 13, 1784, digital image, Fold3.com; Cash Received of Joseph Perkin, April 11, 1782, Record of Money Received and Disbursements, October 1781-October 1788, digital image, Fold3.com.


325 Three fowling pieces, believed to have been assembled in the 1780s, are known to survive with Perkin’s name engraved on the tops of their barrels. Each of these barrels bears a proof mark. Two of the marks are British and one has not been identified. Perkin may have used the Military Stores Department as the source for these barrels. The author has personally examined only one of these fowling pieces and they will require further study to understand more about their authenticity and Perkin’s work during this time period, see Grinslade, 192 and 193 and “REV WAR ERA JOSEPH PERKINS PHILADELPHIA MADE FOWLER,” Spring 2014 sale, James D. Julia, accessed April 5, 2016, http://jamesdjulia.com/item/2413-358/.
for the city’s gunsmiths during those five years.\textsuperscript{326} The Department only engaged in a few small scale contracts with Perkin and Coutty, Nicholson, Lewis Prahl, and Jacob Eckfelt. This presented a significant challenge to the gunsmiths who had become accustomed to consistent contract work over the previous five years. The consistency of work orders had increased the number of craftsmen involved in the production and repair of military arms, structured working relationships, and refined craft skills.

By the end of the decade, even the well-established Joseph Perkin sought other employment opportunities. Perkin petitioned Pennsylvania’s Supreme Executive Council in 1787 and offered to repair “public arms” in the city and county of Philadelphia. These arms, meant for the state militia, represented surpluses from the War. Perkin received the contract and other gunsmiths took note.\textsuperscript{327} Samuel Coutty, Samuel Lehman, and Abraham Morrow, a gunsmith who moved from Carlisle, Pennsylvania to Philadelphia just after the War, sought out their own claims for the same position.\textsuperscript{328} Morrow’s petition to the Supreme Executive Council, which survives at the Historical Society of Pennsylvania, states, “the work, it being so extensive, that its out of the power of one person to do it.”\textsuperscript{329} The tone of Morrow’s

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\textsuperscript{326} Robert F. Smith, 319.
\textsuperscript{328} “Minutes of the Supreme Executive Council of Pennsylvania,” February 8, 1788, \textit{Pennsylvania Archives}, Colonial Records, XV, 384, digital image, Fold3.com; No evidence has been found for Morrow’s presence in Philadelphia before the conclusion of the war, but he is known to have worked as a gunsmith in Carlisle, see Ridner, 136.
\textsuperscript{329} Abraham Morrow to the Supreme Executive Council, January 17, 1788, Gratz ALS, Historical Society of Pennsylvania.
\end{flushright}
petition suggests his envy of Perkin’s well-established professional network. It is likely that Morrow received part of the work as he continued to repair arms for the Pennsylvania Militia along with John Nicholson in the early 1790s.330

A New Government

The gunsmiths’ participation in the Grand Federal Procession symbolized their contributions to the American victory in the War for Independence, but it also represented a hope that the new Federal government would revive their trade. Repairing and assembling military arms for the Continental and Confederation governments provided economic opportunity for the gunsmiths. Those opportunities dwindled along with the capacity of the Military Stores Department. Government contracts did not just have economic significance. As David Waldstreicher has pointed out about craftsmen and the Grand Federal Procession, craftsmanship and its products also served as “a source of patriotic identity for the laborers.”331 The city’s gunsmiths may have felt a patriotic connection to work completed for the government in support of their country. Labeling their processional carriage “Federal Armoury” made the statement that the city’s gunsmiths depended on government contracts to sustain their trade. Historian Simon P. Newman contends that even though many of the craftsmen who participated in the Procession “were ready and willing to celebrate the ratification of the constitution, their support of the new system of government was clearly conditional, and they spelled out some of these conditions on the banners they


331 Waldstreicher, 106.
carried.” After a few years of diminished opportunity, the city’s gunsmiths sought renewed prospects under the order of a new governmental system.

The War Department, created under the new constitutional government, took over the direction of production and repair of arms for the use of the United States. Following the inauguration of the Washington administration in 1789, the new President appointed Henry Knox to the position of Secretary of War. Knox, an accomplished artillery officer from the War for Independence, had been Secretary of War since 1785 during the existence of the Confederation government. Samuel Hodgdon continued his coordination of military stores under Knox during that period and also worked for him after the establishment of the new War Department.

During Washington’s and Knox’s leadership, the War Department began to reorganize Federal stores of arms and develop plans for an armory system. This process started with the assessment of existing muskets and bayonets. Finished by December 16, 1793, an inventory recorded the muskets and bayonets both fit and unfit for service. Philadelphia, West Point, New York, Springfield, Massachusetts, and New London, Virginia held the largest numbers of arms, with many unfit for service. Congress also authorized a plan “for the erecting and repairing of Arsenals and Magazines” in the following year that allocated funding for the creation of up to four national armories. President Washington selected the existing operation at

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332 Newman, 42.

333 For more on the bureaucratic structure of the War Department, see Robert F. Smith, 319-320.

334 For the actual numbers, see Schmidt, 11-12.

335 Quoted in Roe Smith, 28.
Springfield and the creation of a brand new facility at Harpers Ferry in Virginia to be the two sites of the national armories. Regional arsenals at Philadelphia and Pittsburgh, which focused on the repair, maintenance, and storage of arms and accoutrements, would support the two armories.\textsuperscript{336} The “Federal Armoury” Philadelphia’s gunsmiths had foreshadowed in 1788 came to fruition, at least on paper. Over the next fifteen years, veteran gunsmiths John Nicholson and Joseph Perkin, armed with experience and skill from the previous war, took on important roles in the plan’s practical implementation. As well-established, professional leaders in their trade, Nicholson and Perkin contributed to the establishment of the Federal armories at Springfield and Harpers Ferry.

The Federal government put the work of Philadelphia’s gunsmiths to the test during Major General Arthur St. Clair’s campaign in the Northwest Territory in 1791. Following a few defeats at the hands of Native warriors the previous year, President Washington, Secretary Knox, and General St. Clair developed an offensive strategy in Native territory that placed greater reliance on newly raised Federal troops. Supplies for these troops came from Philadelphia, organized by Samuel Hodgdon. Joseph Perkin, Abraham Morrow, and John Nicholson selected 2,534 muskets out of the stores in Philadelphia to be cleaned, packaged and delivered first to Pittsburgh and then on to the frontlines in what is today the state of Indiana. On November 2, 1791, Native warriors led by Chief Little Turtle battered St. Clair’s force, now famously known as “St. Clair’s Defeat.” The United States Congress investigated the reasons for the defeat and looked into Hodgdon’s supply effort. Hodgdon gathered his own

\textsuperscript{336} Robert F. Smith, 323-324.
evidence to show his diligence in performing his duty and asked Perkin, Morrow, and Nicholson to comment on the condition of the arms they supplied. Their reports stated that they selected “the best Charlevilles musketts” in Philadelphia.\textsuperscript{337} Accounts from the frontlines confirmed the arms’ quality and working condition. This episode provides a glimpse into the direct, significant role contractors held in regard to military conflict. They could be held accountable for their work.\textsuperscript{338}

With renewed funding and a fresh organizational structure, Federal contracting opportunities rose for Philadelphia’s gunsmiths and related craftsmen during the 1790s. Some of the same men who contracted for repairs and fabrication of parts during the War continued their work during this period. These craftsmen delivered parts, inspected arms, and made repairs to the thousands of muskets and bayonets in the city’s Federal arsenal coordinated by Samuel Hodgdon in his new role as Intendent of Military Stores. The previously mentioned December 1793 inventory showed that the arsenal held 11,434 muskets fit for service, 1,482 damaged muskets, and 100 damaged bayonets.\textsuperscript{339} Arms historian Peter A. Schmidt transcribed National Archives records that reveal the thousands of musket parts in storage in the city. The records also document the subsequent deliveries of parts and repairs to and from Philadelphia.

\textsuperscript{337} This refers to French infantry muskets made at the Charleville Armory in northern France.

\textsuperscript{338} This episode is described in Arthur M. Schlesinger and Roger A. Bruns, eds., \textit{Congress Investigates: A Documented History, 1792-1974} (New York: Chelsea House Publishers, 1983), 3-101; The testimonies of Perkin, Morrow, and Nicholson can be found on page 59.

\textsuperscript{339} Schmidt, 11.
gunsmiths and other craftsmen on contract between 1795 and 1800. For example, Henry Fraley delivered gunstocks. Lewis Prahl and William Rose, Sr. made steel ramrods. Jacob Eckfelt and Rose made, repaired, and inspected bayonets. John Nicholson and his son of the same name repaired arms. The War Department paid the elder Nicholson as “Inspector of Small Arms” in Philadelphia and charged him with the proving and inspection of musket barrels from about 1794 until 1801. In 1801, the War Department shifted operations in the city to the recently built Schulykill Arsenal, a facility meant for the storage and repair of military equipage. Nicholson worked with a new generation of contractors and arsenal employees to complete the necessary arms maintenance.

341 Schmidt 48-49.
343 Schmidt, 25; William Simmons to Timothy Pickering, April 14, 1795, Papers of the War Department, Roy Rosenzweig Center for History and New Media, George Mason University, http://wardepartmentpapers.org/document.php?id=13547; William Simmons to Samuel Dexter, January 2, 1801, Papers of the War Department, Roy Rosenzweig Center for History and New Media, George Mason University, http://wardepartmentpapers.org/document.php?id=13547; Eli Whitney papers, Yale University Library, microfilm roll 1, 531; Samuel Hodgdon wrote specific instructions on how to prove musket barrels, see Eli Whitney papers, Yale University Library, microfilm roll 5, 798.
**Springfield and Harpers Ferry**

The War Department also directed John Nicholson to share his knowledge and decades of experience in the trade at Springfield and help prepare the Armory to expand its production capacity. Peter Schmidt’s research first suggested Nicholson’s teaching role at Springfield. Schmidt found evidence in Eli Whitney’s recollections of Nicholson. The veteran gunsmith had inspected Whitney-made muskets in 1800 and declared them to be “specimens of the best workmanship.”345 Eli Whitney remembered that “About the same time that your memorialist established his establishment [1797-1798], the armories of the U. States began to be put into operation. Mr. Nicholson, an experienced English Gunsmith, who had resided for some years in Philadelphia was sent to the Armory at Springfield to instruct them how to proceed in the executions of the work.”346

Before Nicholson’s arrival, the operation at Springfield chiefly dealt with the assembly, cleaning, and repair of mostly French pattern small arms, employing the stockpiles left over from the War. While large numbers of parts existed in Springfield’s stores, other components came from Philadelphia. However, Congress’ plan of 1794 called for the Federal armories to be facilities that fabricated new small arms. Schmidt claims that expanding the production capabilities at Springfield was a long, slow process, “fostered by someone with experience.”347 That person was John Nicholson. Over 20 years earlier, he introduced a gun manufactory plan to the

345 Schmidt, 127; Eli Whitney papers, Yale University Library, microfilm roll 1, 531.

346 Quoted in Schmidt, 56; Eli Whitney papers, Yale University Library, microfilm roll 5, 793.

347 Schmidt, 56.
Pennsylvania Committee of Safety and had extensive experience working with French pattern muskets between 1780 and 1784. He may have assisted the Springfield armorers and their superintendent David Ames to understand efficient gunsmithing methods.\textsuperscript{348} However, the details of Nicholson’s role at Springfield are unknown. His teaching at the Armory correlates with the facility’s commencement of the production of muskets made mostly of parts fabricated in Springfield in 1799.\textsuperscript{349}

Meanwhile, in 1798, Secretary of War James McHenry appointed Joseph Perkin to erect and superintend the new Harpers Ferry Armory at the confluence of the Potomac and Shenandoah Rivers in Virginia. Perkin had been serving as superintendent of the Federal arsenal at New London, Virginia since 1792. That arsenal functioned as a Continental repair facility southwest of Lynchburg during the War and struggled with efficiency after the War’s conclusion. In need of better leadership and organization, Samuel Hodgdon selected Perkin to remedy the situation. Perkin accepted the position and travelled back and forth between there and Philadelphia, finally settling down in New London, along with his wife Wilhelmina and their three young children in late 1794.\textsuperscript{350} Perkin coordinated repair operations and advertised to recruit “a number of sober industrious men, well skilled in the GUN

\textsuperscript{348} This is conjecture and will require further research.


\textsuperscript{350} Joseph Perkin to Samuel Hodgdon, December 11, 1794, Papers of the War Department, Roy Rosenzweig Center for History and New Media, George Mason University, http://wardepartmentpapers.org/document.php?id=12679.
Philadelphia gunsmith William Dunwick, who seemed to be having trouble with his own business, also moved down to New London to work under Perkin. The arsenal struggled to achieve efficiency standards even with Perkin’s presence. The War Department made the ultimate decision to cease the operation and transfer both tools and personnel to Harpers Ferry. Perkin oversaw the transfer and began to work on his new assignment.

Today, the most famous aspect of Perkin’s legacy is his role as the first superintendent of Harpers Ferry Armory and supervisor of its initial production runs. Merritt Roe Smith’s study of the Armory adequately conveys Perkin’s role there and will only be summarized here. Perkin drew craftsmen from both New London and

351 “WANTED a number of sober industrious men,” Virginia Herald (Fredericksburg, VA), December 19, 1793, accessed January 12, 2016, America’s historical Newspapers.


353 “About fifteen men were here [New London Arsenal] employed, as I passed through, repairing old arms and furnishing up others; and indeed, from the slovenly manner in which they keep their arms, I should imagine that the same number must be constantly employed all year round. At one end of the room lay the musquets, to the amount of about five thousand, all together in a large heap, and at the opposite end lay a pile of leathern accoutrements, absolutely rotting for want of common attention. All the armories throughout the United States are kept much in the same style” from Isaac Weld, Jr., Travels through the States of North America (London: John Stockdale, 1799), 211, Google Books.

354 Roe Smith, 37-62; Recalling 1798, Eli Whitney wrote, “Mr. Perkins an Englishman who had been thoroughly bred to the manufacture of arms in his native
Philadelphia to work at Harpers Ferry. He also recruited highly skilled German-heritage gunsmiths from both Pennsylvania and Maryland as armorers in a production system that relied on smiths who completed individual tasks such as lock filing and barrel forging by hand with “few managerial constraints.”

Perkin led the design of the United States Model 1803 rifle, the “first regulation rifle to be manufactured at the government armories.” (Figure 48) Perkin died during his superintendence of the Armory in 1806. When Joseph Barry wrote an early history of Harpers Ferry in 1903, he noted that he spoke with elderly residents of the town who had personally interacted with Perkin. They remembered the English-born Moravian as an “amiable, unsophisticated man” with a “simplicity of dress and deportment.”

His previous experience and long-standing relationship with the War Department provided him with the resume necessary to lead the new armory.

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355 The introduction of mechanical techniques at Harpers Ferry would come later, Roe Smith, 65.

356 Roe Smith, 56.


358 Robert F. Smith, 326.
Most members of the generation of Philadelphia gunsmiths who made significant contributions to American small arms production and repair during the War for Independence passed away during the first two decades of the 1800s.\textsuperscript{359} Estate administration papers, wills, and probate inventories reveal details about their financial standing at the ends of their lives. Probate inventories provide a wealth of information about debts and material possessions, but only two relevant gunsmiths’ examples have been located, Samuel Coutty’s from 1794 and John Nicholson’s from 1807.

Both inventories reveal the lives of men who had accumulated relatively great wealth as master craftsmen. Factors such as personal management of credit, family size, work quality and reliability, and the awarding of government contracts contributed to the gunsmiths’ variation in wealth. Coutty possessed objects such as “2 Mohogany Dining Tables . . . £6/0/0,” an “18 day clock . . . £10/0/0,” and “1 old

\textsuperscript{359} Death dates include: Lewis Fohrer- 1784, Samuel Coutty- 1794, Joseph Perkin-1806, John Nicholson- 1807, Lewis Prahl- 1808, Thomas Palmer- c.1811, and Jacob Eckfelt- 1818.
riding chair and harness . . . £7/10/0” amounting to a total estate of £298/11/0.\textsuperscript{360} John Nicholson’s long career of arms production and government contracting provided him the means to acquire expensive furniture to fill the rooms of his home. Evaluators, including the then elderly gunsmith Thomas Palmer, totaled his estate to be $968.28. He owned movables such as “1 Mahogany Chest of Drawers . . . $6,” “1 Mahogany Sofa . . . $25,” and an “Old Clock . . . $24.”\textsuperscript{361} Nicholson’s ownership of a mahogany sofa, a rather luxurious furniture form of the period, points to his wealth.\textsuperscript{362} With a career similar in length to that of Nicholson, experience with government contracting, and the superintendence of Harper’s Ferry under his belt, Joseph Perkin’s wife Wilhelmina estimated his estate to be worth just less than $2000 in 1807.\textsuperscript{363}

Philadelphia’s gunsmiths became accustomed to government contract work during the eight years of the War for Independence. Although the War’s conclusion led to a decline in contract opportunities, a few of the gunsmiths benefited from the introduction of the new constitutional government and War Department’s 1794 armory plan. John Nicholson and Joseph Perkin developed relationships with the three iterations of the United States government that lasted into the early-19\textsuperscript{th} century, stemming from their war-time work. Their leadership roles in the young nation’s

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armory system contributed to their individual wealth at the ends of their lives. The story of Philadelphia’s Revolutionary Era gunsmiths is an important part of the early histories of the first Federal armories at Springfield and Harpers Ferry.
Chapter 7
CONCLUSION

There has been a long tradition of studying American-made firearms that have connections to the War for Independence. This thesis makes an important contribution to that body of scholarship by uniting analysis of the key artisans, their products, and working life experience to reveal the emerging nation’s abilities to produce arms. Focusing on the gunsmiths of Philadelphia has allowed for greater detail to be presented compared to previously published weapons encyclopedias and gunsmiths dictionaries. Attempting to be comprehensive or useful as quick reference texts, those works have not devoted enough attention to particular collections of craftsmen, grouped together based on geography or other relationships, and their role in arming the American war effort. These craftsmen deserve increased attention because people of middling means have often been neglected in historical narratives of the Revolutionary Era or lumped as one statistical category. However, craftsmen did not simply contribute to demographic data or political acts, but they expressed their patriotic and personal identities during the conflict through their contributions of labor and skill. Material culture, in this case flintlock muskets and other firearms, can often serve as the entry point to discover their important and diverse stories.

The narrative of Philadelphia’s gunsmiths during the War for Independence is one of sustained significance. The city’s gunsmiths involved themselves in the production and maintenance of muskets and bayonets for the entirety of the War, only interrupted by the British occupation. Pennsylvania’s government and the Continental
Congress operated in close proximity to the gunsmiths. As a result, the smiths developed relationships as some of the first military contractors who worked for the United States.

The War wrought change that directly affected Philadelphia’s craftsmen. The gunsmiths witnessed an expansion of their trade that kept them in almost constant employment. Although opportunities started to decrease after the War’s conclusion, the establishment of the constitutional government brought about renewed work prospects. With almost two decades of experience producing and repairing muskets for the United States, John Nicholson and Joseph Perkin took on new roles as leaders within the Federal Armory system of the newly independent nation. They were able to capitalize on war-time experience and connections. A key step to understanding the work of Nicholson and Perkin during the nascent periods at Harpers Ferry and Springfield is to study these gunsmiths’ origins, specifically their work during the War for Independence.

This thesis brings the legacy of Philadelphia’s Revolutionary Era gunsmiths to the surface of the history of arms production in the United States. The foundations of the Federal Armory system originated in Philadelphia when Thomas Palmer began to produce military muskets, John Nicholson contracted with the Pennsylvania Committee of Safety, and Joseph Perkin superintended the Continental Armory. Although the city’s gunsmiths of the Revolutionary Era all died before the beginning of the War of 1812, the next generation of Americans put the national defense system they helped establish to the test.

As with any project, there are plenty of details left to be discovered and interpreted. The English origins of John Nicholson and Joseph Perkin are significant to
their individual stories. More searching through records across the Atlantic may uncover details about their personal introductions to gunsmithing. Further work on the import firearms trade in Philadelphia in which Thomas Palmer participated may lead to greater understanding of gunsmithing in America before the War. This project started with a goal of researching the experience of military contractors during the War for Independence. The historiography of the War would benefit from more studies of military suppliers in Philadelphia and beyond. Who made uniforms, canteens, cartridge pouches, shoes, and saddles? Who supplied the Continental Navy? How did Pennsylvania’s gunsmiths of the state’s western counties, famous for making rifles, contribute to the war effort? Untapped resources and increased internet accessibility have assisted this thesis and will certainly promote the success of future analysis of contractors. Just as historical objects served as a portal to the past for this project on gunsmiths, the study of material culture in future scholarship will be crucial.

Newly discovered biographical details and much more factual evidence of the professional lives for these gunsmiths has resulted in this complex, layered understanding of the transition from colonial defenses to nascent national offensive capabilities in the United States. This thesis provides a response to historians who have studied the War for Independence and Federal Era as distinct entities on a linear timeline. In reality, these two short time periods are linked. The memories and experiences of the men and women who endured and participated in the War and lived in the newly independent nation demonstrate that connection. Philadelphia’s Revolutionary generation of gunsmiths are just one small group within a larger story of nation making.
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*The Virginia Herald.* Fredericksburg, VA. America’s Historical Newspapers.


Appendix A

APPROXIMATE LOCATIONS OF PHILADELPHIA’S GUNSMITHS
1772-1785

1. The Continental Armory- “Water-street, below Walnut-street” (*The Independent Gazetteer*, October 12, 1782)


3. Williams Dunwick- “the corner of Second and Spruce streets” (*The Pennsylvania Journal*, March 15, 1775)

4. Jacob Eckfelt- “Fifth street, about Halfway between Market and Arch streets, opposite the Church Burying ground” (*The Pennsylvania Gazette*, May 17, 1775)

5. Lewis Fohrer- “the upper end of Apply tree alley, near the Old Lutheran Church” (*The Pennsylvania Packet*, June 1, 1784)


7. Samuel Kinder- “near the New Market in Second street” (*The Pennsylvania Gazette*, November 5, 1778)


16. James Walsh- “Fourth-street, between Market and Chestnut-streets” (*The Pennsylvania Packet*, February 4, 1779) *It is currently unclear which of the two James Walsh gunsmiths this refers to.*
Appendix B

IMAGE PERMISSION DOCUMENTS

Library of Congress- Map of Philadelphia: Figures 1, 25, 49

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Dear Mr. Sklce,

This message is in response to your Ask a Librarian inquiry.

The map available on the link [https://www.loc.gov/item/gm71002155](https://www.loc.gov/item/gm71002155) is in the public domain. You do not need permission to use an image of it. We do appreciate a line crediting the Geography and Map Division, Library of Congress in your publication.

If we can be of additional assistance do not hesitate to contact us again.

Sincerely,

Cynthia Smith
Reference Specialist
Geography and Map Division
202-707-4742
FREEMAN’S- Portrait Miniature of Col. Flower: Figure 29

Museum of the American Revolution- Multiple Images: Figures 15, 16, 17, 23, 24, 27, 28

Photo Permissions

Matthew Skic
Hello Michelle, I hope all is well! I was up in Phoeni...
Bob Nittolo Collection- Musket Lock: Figures 39, 40

Matthew Skic
Mar 30

Hello Bob, I hope your spring is starting off well. Since my thesis will be done...

Matthew Skic
Mar 30

I just realized that I forgot to attach the photos:

to me

Bob Nittolo
Mar 30

Hi Matt, good to hear from you. At least you are almost THERE. Good luck. Please let the attributes on the photos reflect my name as follows: collection of Bob Nittolo. Also use this note as permission to use my name and photos as you see fit. This note is used as a disclaimer for you and your representatives for any and all liability.

You and your representatives are free and clear of any and all legal issues in the use of the photos. (Muskets for Use of the United States).

Keep in touch if you are free some time this summer please contact me and we will do lunch.

Cheers, Bob

Sent from my iPad

Private Collection- Bayonet Detail: Figure 32

Matthew Skic
Mar 30

Hello, How are you? I hope your spring is starting off well. A previous...

to me

Matthew Skic
Mar 30

have my permission to use the photo of the attached Eckfelt bayonet in this thesis.

Sincerely,

Matt Skic

Hi Matt, Use this email going forward. Private collection is fine for the caption. Hope all is well.

Sent from my iPhone

Peter Schmidt Collection- Rifle: Figure 48

Peter Schmidt
Mar 30

This email is to give you permission to use any of the photos you took while viewing my collection.

Please give credit to the collection of Peter A. Schmidt.

Best regards, Pete

Wow

Sent from my iPhone
Moravian Archives- Document: Figure 26

Photo Permission

Matthew Siko:
Hello Tom, I am interested in using the attached photo block during my visit.

Tom McCloskey
Mar 30

Greetings Matthew,

Thank you for your message. Please feel free to include this in your thesis without a permission-to-publish statement. We request that you cite the membership catalog as it appears in the collection:


Also here's a quick transcription:

<table>
<thead>
<tr>
<th>Name</th>
<th>geboren</th>
<th>Wibe</th>
<th>Religion</th>
<th>woherstammt</th>
<th>in Land gekommen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joseph Berns Eiskammel</td>
<td>1777</td>
<td>17 Februar</td>
<td>Deutsche</td>
<td>1773</td>
<td>1773, 17 September nach H. Vort. lebt. MTG</td>
</tr>
<tr>
<td>Wilhelmine geb. Heymann</td>
<td>1789</td>
<td>14 Februar</td>
<td>deutsche</td>
<td>1779</td>
<td>1779, als ein Kind.</td>
</tr>
</tbody>
</table>

I hope this helps. Please let me know if you have any questions. Good luck with your thesis!

Best regards,

Tom

West Point Museum- Multiples Images: Figures 3, 12, 13, 34, 35, 36

Photo Permissions

Matthew Siko:
Dear Lee, I hope all is well up north! Have you been able to visit your home...

Matthew Siko:
On Feb 6, 2010 at 10:47 PM, Matthew Siko <mats76@gmail.com> wrote >...

Matthew Siko:
On Mar 8, 2010 at 10:48 PM, Matthew Siko <mats76@gmail.com> wrote >...

Lee, Lee (39) USA (NCO) <Lee.Jensen@us.army.mil>

Mr. Matthew Siko,

You are hereby authorized to publish the five photographs requested in your email of this date, of WHFL 18037a, the Nightstand Ball and WHFM 08958, an American re-staged 1840s musket. This permission is extended on a one time, world wide basis. The credit line should read: "Courtesy West Point Museum Collections, U.S. Military Academy.""

Endorsed to a permission sheet for photography, which I do not think you filled out previously since it is relatively new. If you did, let me know. It probably went to the Registrar. If not please fill it out and send it in.

West Point Museum:
ATTN: WHFM-PLM (Jensen)
2110 South Post Road
U.S. Military Academy
West Point, NY 10996

Sincerely,

Lee D. Jensen
Curator of Arms and Armor
West Point Museum.
Tom Grinslade Collection- Fowling Piece: Figures 45, 46, 47

perkins fowler

189

tugrinslade@aol.com

Mar 30

Matt you have my permission to use the pictures that you took at Baltimore of the perkins fowler also to attribute the fowler to the Tom Grinslade collection good luck Tom

State Museum of Pennsylvania- Musket: Figures 6, 21, 22
Philadelphia Museum of Art- Cadwalader Portrait: Figure 14

Dear Matthew,

Thank you for your email.

You are welcome to use the image for your project. Simply acknowledge the Museum accordingly.

The image you requested will arrive via Wells Fargo. Please use the information below when creating the caption for the work:

Charles Willson Peale
Portrait of John and Elizabeth Lloyd Cadwalader and Their Daughter Anne
1772
Oil on canvas
Philadelphia Museum of Art, Purchased for the Cadwalader Collection with funds contributed by the Mabel Pew Myrtin Trust and the gift of an anonymous donor, 1983-90-3

Please let us know if you have any questions or if we can be of further assistance.

Best,

Richard Sieber
Librarian for Special Services

The Colonial Williamsburg Foundation- Multiple Images: Figures 2, 4, 5, 11, 30, 31, 42, 43, 44
Winterthur Library- Wyke Tool Catalogue: Figure 9

Edward and Helen Flanagan Collection- Pistol: Figure 38

PERMISSION TO PUBLISH

We grant to Matthew Skic and the University of Delaware permission to publish in Matthew Skic’s thesis, Muskets for the Use of the United States, Philadelphia’s Guerillas Dying the Revolutionary War, the material listed below.

American Pistol signed County

Ownership of this object to be designated as follows

COLLECTION OF Edward and Helen Flanagan

Signature(s) of Owner(s) Edward Flanagan

Date: 31 Mar 2016
Cliveden/National Trust for Historic Preservation- Musket: Figures 18, 19, 20

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Multiple Images: Figures 7, 8, 10, 33, 41