

Combat Elegance: Edward Lindner, his Carbines, and the Amoskeag Manufacturing Company

By William Ray Cresswell

THE AMOSKEAG COMPANY

When machinist Ed Richardson was called into Agent Ezekiel Straw's office in March 1860, he had little inkling of the new direction that he and the Amoskeag Manufacturing Company (AMC) in Manchester, New Hampshire, would take within the next year. Nor could he have foreseen what impact this direction would have on preserving the Union in the upcoming Civil War.

Ed's day started simply enough: report to work, operate the machinery in his care—adjusting as necessary—and count out and turn in his required production at day's end. But today he was called into Mr. Straw's office. Expecting, he recalled later, that he "simply wanted to make some repairs about the machinery," he suddenly found himself face to face with presidential candidate Abraham Lincoln. Shyly, he apologized for his "begrimed" face and hands. Lincoln, however, was not deterred. "Young man," Lincoln assured him, "the hand of honest toil is never too grimy for Abe Lincoln to clasp." After a long, hearty handshake, Richardson found himself giving Mr. Lincoln an extensive two-hour tour of the Amoskeag facilities (Blood, 194).

A year later, Mr. Lincoln would be inaugurated as President of the United States. Shortly after, on April 12, raging cannon fire at Fort Sumter in South Carolina would signal the start of the Civil War: the cataclysmic resolution to the issues of states rights, preservation of the Union, and slavery.

By 1861, the Amoskeag Manufacturing Company was thirty years old. Having been founded by a group of entrepreneurs, including Samuel Slater, in 1825 and incorporated in 1831, the Amoskeag grew steadily as a textile manufacturer. Located primarily on the east bank of the Merrimack River, the mill complex would dominate the American textile industry by the end of the nineteenth century. By the early twentieth century, Amoskeag would become the world's largest textile manufacturer, producing some 500 miles of cloth per day.

EZEKIEL STRAW

This growth can be attributed not only to the founders of the company but also to the man they hired as a temporary replacement for their ailing engineer in 1838. Ezekiel Straw (see Figure 1) more than proved his worth, being



hired on as a permanent engineer six months later. Straw laid out many of the streets, utilities, and buildings of what would become the City of Manchester, incorporated in 1846.

It was soon evident that, although he was trained as an engineer, Straw had considerable business sense and an inner drive that would enable Amoskeag to pursue new business interests and meet any challenge head on. Agents needed to be versatile and knowledgeable in all the operations of their facility. The corporate records indicate that he was involved in all facets of the mill operations, from ordering small, custom-made parts for the machine shop (complete with sketches), to authorizing bill payments and creating business reports for the corporate offices in Boston.

A glimpse into Straw's personality is revealed in his 1859 diary. Most of the entries are laconic accounts of weather conditions, business trips, and meetings. But a few—carefully worded in the lexicon of a business manager/engineer—relate the tale of a group he called the "Up River Pirates." This was a group of landowners located north of Manchester, in Hooksett along the Merrimack River. Their intention was to control the flow of water downstream such that the Amoskeag Company would be coerced into paying them monetary satisfaction. Their plot would have succeeded



Figure 1. Ezekiel A. Straw, Engineer and Agent of the Amoskeag Manufacturing Company (Author's collection).

except for one thing: AMC had the law on its side because it owned all the water flow rights in the area. Straw had the miscreants arrested and the subsequent trial found in favor of Amoskeag. Shortly afterward, Straw was at the Goffs Falls train station about to get onto the car for Boston when he was accosted by one of the accused, Joe Mitchell. Mitchell claimed that Shaw and Amoskeag owed him money because of his income losses during his arrest and trial. He then threatened to sue him and the company. With a “—I hope he will.” Straw firmly concludes his entry. Doubtless that also ended the matter.

THE MACHINE SHOP

The Amoskeag Company needed a machine shop as soon as it was founded. The shop grew with the company. In the ensuing years, it would produce textile machinery for AMC as well as other textile mills. The first large machine shop, built in 1840, was built where the University of New Hampshire Manchester is now located. The “new shop” was built in 1848 immediately west of the old one, closer to the Merrimack. The shop complex would also produce architectural ironwork, decorative fencing, tools, steam engines, fire engines (1857-77), and locomotives (1849-57). Essentially, the shop was innovative and talented enough to succeed at any task it attempted.

It has been said that the machine shop was Straw’s favorite department of the company. His office was located near it, and in 1877, the first telephone line at AMC connected the shop with his office.

With the onset of war, employment and shop activity increased rapidly as AMC began war material production. Ed Richardson found himself actively involved in the burgeoning hustle and bustle of the shop. William W. Wade, experienced spring and heat treating specialist, William C. Pickersgill, chief draftsman and engineer (who shepherded the various tools and gages into production), Carlos C. Clark, noted gunsmith and inventor recently hired from Lamson, Goodnow, and Yale (L. G. & Y.), W. C. Hazleton, master bayonet and ramrod maker, and R. C. Eastman, master machinist, pattern maker, and assembly foreman—all performed their tasks admirably in this newly challenging environment.

Besides pursuing contracts for musket and carbine production, Amoskeag also produced some 600 McKay sewing machines for companies providing shoes for Union soldiers. When parts were needed for the initial class of monitors, AMC’s giant lathe produced the huge ring upon which the turret revolved.

The story of the Amoskeag Company’s foray into musket production has been ably told elsewhere. Essentially, after an abortive attempt to produce an acceptable copy of the 1861

Springfield Rifle Musket, AMC opted to purchase machines and tools from L. G. & Y. and joined with that company and Colt in producing the Model 1861 Special Contract Rifle Musket. AMC made 27,001 muskets per U. S. Government orders, plus about 1500 others for state militias (Edwards, 53).

However, the first contract was, in retrospect, inauspicious: an order for two Army cook wagons for General John C. Fremont, shipped September 1861, for a total price of \$1050.00 (Hay, 11).

EDWARD LINDNER AND WAR PRODUCTION

An August 1861 office visit helped direct Amoskeag’s path toward musket manufacture. In Ezekiel Straw’s scrapbook of musket manufacturing notes and correspondence, a brief note states:

Sarson & Roberts (letterhead)

11 Platt St.,
New York

August 14, 1861

The above named parties were here this day in company with Mr. Lindner in reference to the making of guns. They have a contract with the Govt. for 25,000 of the “Springfield Rifles” and profess themselves ready to bargain with us for 10,000 or the whole—They state that the barrels can be obtained from Pittsburgh, Pa., finished, for less than \$2.00 ea. (AMC Musket Production).

This was actually an exploratory mission on their part. There was no contract yet. Sarson & Roberts would finally receive one on December 26, 1861. But Edward Lindner already had a patented breechloading mechanism and an elegant-looking carbine design that must have appealed to Straw.

Straw may already have known Lindner, either personally or by reputation, as he was an avid firearms enthusiast. One of his diaries holds a well-worn newspaper article claiming that Ohio-made smoothbore muskets were just as accurate as the new rifle muskets. He may have retained it as a challenge—a sort of goal to exceed.

Lindner’s credentials were certainly impressive. His list of patents included a breechloader, a semiautomatic mechanism, and an artillery shell:

- 11,197 Gas Operated Revolver, 1854
- 14,819 Mechanically Operated Breech Loading Fire-Arm, 1856 (a variation uses a gas-operated piston to open the breechblock)
- 1415 (England) same as 14,819 (Patents for Inventions)
- 17,287 Needle Fire Cartridges
- 17,382 Gas Operated Magazine Rifle, 1857

- 1966 (England) Screw-thread Rack & Pinion Breech Mechanism
- 23,378 Breechblock Mechanism 1859 (made at AMC)
- 32,949 Artillery Shell with Expanding Fins, 1861
- 37,173 Airgun, Needle Fire with Pump Handle in Grip
- 3275 (England) Sealed Interrupted-Thread Breech for Cannon, 1863
- 2512 (England) Sliding Interrupted-Thread Breechblock for Centerfire or Needlefire Rifle, 1865 (Patents)
- Claimed to have originated the idea for the Parrott Rifle (Disputed in article in the “United States Service Magazine, 1865)
- Developed an interrupted thread breechloading cannon, built at AMC

In any case, Lindner’s appearance at the Amoskeag would result in a November 6, 1861 contract to provide “400 carbines and 40,000 special Lindner cartridges,” (a .574 caliber Minie ball with combustible wrapper) at \$25 per gun. His agent, Samuel Smith, located in Washington, D. C., had secured the contract for him. This contract stipulated that these be delivered in 8 days for issue to Colonel Thornton F. Brodhead’s First Michigan Cavalry (McAulay, 115). Records indicate that these carbines were assembled with a mixture of in-house and externally supplied parts. Between September and November 1861, Amoskeag received 500 barrels from Trenton Iron Works, and 539 locks from William Hahn of New York City (Moller, Lindner Papers).

His breechloader was cleverly designed, yet attractive in appearance—in keeping with the Victorian Era practice of producing products that not only functioned properly but were pleasing to the eye as well. Its slender stock with its artfully blended curves was set off nicely by its carefully shaped lock and polished barrel (Figure 2).

Incidentally, there is some variation among Type I Lindners regarding the latch handle. Some feature a handle with a locking pin assembly (Figure 2), and some use a handle with a plain latch (Figure 3). There is some speculation that the plain latches are identical to those used on earlier 1861 production carbines in Austria, and therefore would be found on the first production run from AMC (Moller). Another theory is that the latches were initially the locking type and were later improved to a simplified version—perhaps based on field experience—in an attempt to reduce assembly time and part costs.

Its breechblock design however, was ingenious: a rotating collar releases the spring-loaded breechblock, allowing it

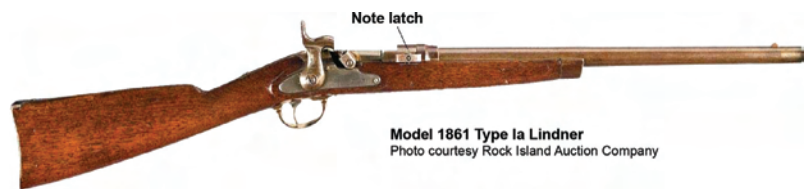


Figure 2. First Model or Type Ia Lindner with locking latch. Note: The above designation “Type Ia” is the author’s nomenclature to differentiate this type from the Type I with plain latch or “Type Ib”.



Figure 3. First Model Type Ib with plain latch.



Figure 4. Type I Carbine with Breechblock in open position (Photo courtesy Antiqueguns.com).

to tip upward for loading (Figure 4). Once loaded, the breechblock is snapped down and the collar is rotated clockwise to secure it into place. The unique feature of this breechblock is that Lindner solved the problem of effectively containing the firing gasses. A beveled lip at the front of the



Figure 5. Breechblock marking on M1861 Type I Lindner Carbine. (Photo courtesy Antiqueguns.com).

breechblock engages a chamfer at the rear of the barrel. Because it is threaded, the collar pulls the breechblock forward on closing to engage the barrel chamfer. Few other breechloaders of Lindner's era were that effective.

Markings on this First Model 1861, or Type I, carbine are typical of the period. The breechblock is marked "Edward Lindner's/Patent/March 29, 1859" in three lines (See Figure 5). It reads from the right side on some pieces and the left on others. The lock is unmarked, except for single or double-digit numbers stamped inside on the tumbler bridge and/or hammer. Certain major parts of individual carbines have been found marked with "///" assembly marks, indicative of parts lots controlled for dimensional fit—a typical practice of that time. The inspector's mark "GKJ", in block letters adjacent to the sling ring, stands for George K. Jacobs (see Figure 6). A small "J" will normally appear on the rear of the barrel, immediately in front of the locking collar.



Figure 6. M1861 Type I Lindner "GKJ" Inspector's Marking. (Photo courtesy Antiqueguns.com).

This apparently is an additional stamp by Jacobs as a proof mark (Whisker, 87).

Sighting is accomplished with a small two-leaf rear sight mounted on the breechblock tang, and a block-based blade at the muzzle.

Many of the muskets and appendages made at Amoskeag are similarly marked. Jacobs' script "GKJ" in an oval cartouche appears on the muskets. Unfortunately, none of the carbines or muskets is serialized. This makes tracing of their provenance an extremely difficult task.

COMBAT CAREER

The models produced in 1861 and 1863 are generally considered First Model or Type I carbines. These were the only type to actually participate in recorded combat, and with only two units.

Major S. K. Stebbins received 391 carbines at Washington Arsenal on November 27, 1861. The First Michigan Cavalry fought in the Shenandoah Campaign against General Thomas "Stonewall" Jackson and J. E. B. Stuart. General Brodhead was mortally wounded at Second Manassas (August 28–30, 1862). The unit's Lindners were turned in for Sharps carbines that November.

Meanwhile, Colonel William Maynadier had issued another contract November 4, 1862, indicating the government would purchase "all the carbines made after his [Lindner's] plan which he can deliver up to the first of December next" at \$20 each (Whisker, 87). This purchase amounted to 501 carbines, which were issued to the 8th West Virginia Mounted Infantry. The delivery was arranged by Maynadier per a letter he wrote April 8, 1863 to West Virginia's Governor, H. K. Pierpont (Moller).

West Virginia had seceded from Virginia in 1861 and was admitted as a Union state June 20, 1863. This lesser-known theater of the war was actually a hotbed of battles and skirmishes.

The 8th West Virginia Mounted Infantry (later the 7th West Virginia Cavalry) fought in several engagements including White Sulphur Springs (August 26–27, 1863) and Droop Mountain (November 6, 1863). These battles were instrumental in pushing the Confederate forces out of West Virginia. Relics have been found at both these battle sites as well as an encampment site at Beverly, West Virginia, indicating these carbines were indeed issued and used in battle (Lowry).

Yet the question remains: how effective were these carbines?

One indication of their effectiveness may be that they were turned in by the First Michigan Cavalry for Sharps

carbines barely a year after issue. However, the 7th West Virginia Cavalry retained theirs throughout the war. These Lindners may have contributed to the Union successes in West Virginia. But, according to John McAulay's *Carbines of the U. S. Cavalry 1861-1905*, only 41 of the original 501 remained in 1864. No records have yet surfaced to indicate their actual effectiveness in combat.

But there were apparently some reports, perhaps best summarized by Lt. Colonel Hagner's October 10, 1863 letter to Amoskeag, advising them to delay delivery on their next batch of carbines, due to possible cancellation. His enigmatic reason, "I hear they do not answer and suppose therefore that the time will not be extended," does not adequately explain why these carbines were unacceptable (Correspondence, 126).

Inspection and field test of an actual Type I Carbine surfaces several concerns that may yield clues to Hagner's comment: The collar latch handle can easily unscrew and either fall off the carbine or break, thus rendering the weapon useless for any further combat. The stock area beneath the breechblock can readily become a collection point for spilled powder, dirt, or debris that could jam or damage the breechblock or collar. Unlike the Sharps carbine, the Lindner requires tools to enable proper field disassembly. Sometimes even a simple screwdriver can be difficult to find in emergencies. Cleaning would also be complicated: the breechblock should be removed to permit proper cleaning of barrel, stock and action. The wood stock, although attractively shaped, might not be tough enough in combat—it could be easily broken near the breechblock or wrist areas.

The author's field test experience indicates that the Lindner Carbine is capable of being loaded and fired with reasonable rapidity—perhaps three or four rounds per minute under normal range conditions. The accuracy is typical of most carbines of this period, tending to yield 2-3" groups at 50 yards about 3" above the point of aim (the sights being designed for 300 yard combat ranges).

In brief, the Lindner is a very well-made elegant weapon. But it is perhaps better suited for sporting purposes than combat. And doubtless many served on after the war as recreational pieces.

OTHER LINDNER PRODUCTION

Concurrent with the Lindner Carbine production was a separate program: modification of existing rifle muskets into breech loaders. The Shop records show Lindner's involvement in altering contract weapons as well as personal guns:

AMC Intermediate Ledger #135, 1862 Extracts:

April 7	For 3 Gun barrels & stock & labor altering to breech loading and sent to Mr. Gonklin Gun Maker, Bloomington, Illinois	
May 10	3 bands, 3 springs, 1 swivel For Springfield Rifle Musket Pattern @ 1.00	
May 31	1 Gun barrel for Springfield pattern	2.50
	2¼ days on Hunting Gun	5.63
	Hardware	4.53
	20 ft Pine for Box	2 .40
	1½ # Sqr steel	\$0.25 .38
	Amt paid on 2 boxes "Guns"	1.76
	Express paid on gun	1.00
June 28	2 days spent on hunting gun	5.00
	Alter'n on 1 Rifle Musket to breech	8.00
	Loading new arrangement	
	Boxing & Packing	1.00
October 24	3% Tax "U. S." on 500 Carbines sent away in Sept	15.00
	25 26½ days Labor Ruf & Shaffer	50.75
	Hardware on alter'n Guns by Ruf	1.00
Nov 26	26½ Days Labor	47.75
	Hardware on Carbines (Lead t. for Carbines)	12.10
	Amt paid for Stock & Labor altering 1000 Carbines	1255.00
Dec 27	Altering 400 Rifles*	1875.00

*This last item may refer to the Mississippi Rifle Conversions performed in the Fall of 1861.

Volume 15, 1861-62 Extracts:

Page 171:	Col. E. Gosslin, Boston (Sept 20, 1861)	
	\$84.00 Altering 4 rifles, shipping Sept 21	
211	Oct 31, 1861	
	Wm. Read & Son, \$29 pd for gun nipples	
242	Nov 16, 1861	
	CA Luce	
	Bill enclosed against Louis Stern for altering 50 Carbines amtg to \$287.50	
298	Jan 6, 1862	
	James Woodruff, Springfield, Ill	
	I will alter 2 "Musketoons" to breech loading, and will forward them by Mr. Katzenmayer. I will also show & offer for trial, a new carbine with my breech loading arrangement made at these works.	
	—Edward Lindner per J. D. Watson	

In addition, Lindner wrote to Governor F. H. Pierpont of West Virginia and later, Governor A. J. Roseman regarding the disposition of his Carbines with West Virginia troops and his willingness to train them in the proper use of these weapons (Lowry, Records).

Lindner was certainly active during the Civil War. His correspondence indicates he lived at various times in New York, Washington, D. C., and Europe promoting his inventions and pursuing contracts for rifle and carbine modifications with various governments.

After his Civil War activities ended in America, Lindner moved back to Germany, where he died February 17, 1870.

THE SECOND MODEL, NEW AND IMPROVED?

Despite the apparent lack of success in the field, Lindner's elegant little carbine was to be given yet another chance to prove itself. The Government authorized AMC to produce another model, incorporating their recommendations. Hagner conferred frequently with AMC—according to Straw's testimony at a hearing in 1868—stressing that as many parts as possible were to be interchangeable with the standard production Special Model 1861 Rifle Musket currently in production, and that the stock at the breechblock area needed strengthening (Moller).

Examining a Type I and a Second Model or Type II carbine will readily reveal where and how these changes were made. The Type II stock is a shortened version of the musket stock, the lock is a standard musket production assembly, as are the trigger assembly, buttplate, and nose cap. The trigger bow and sling swivel assembly was evidently quickly modified by compressing the swivel in a vice, producing the desired "D" shape for the carbine sling ring. Much of the hardware used was taken directly from the musket production line (See Figure 7).

The breechblock, barrel, and locking collar differ greatly from the First Model, or Type I. Instead of a carefully milled and machined part with a built-in 1861 Rifle Musket-style nipple bolster with cleanout screw, the Type II breechblock is a cast part, minimally finished, with a simpler built-in nipple bolster. The Type I collar is a machined part with a separately assembled latch handle, whereas the Type II is a casting with an integrated cast handle and no latch pin. Operation of the Type II breechblock and collar is somewhat stiff when compared with that of the Type I.

The Type II sights are essentially unchanged, with the exception that the rear sight is a scaled-down musket style mounted on the barrel ahead of the locking collar.

Amoskeag made 6,000 of these carbines. Because of the delays created by the various requests for improvements and design changes, the Government refused to accept these pieces when they were finally presented for sale. The unit price of \$17 would have resulted in \$102,000 for Amoskeag. But the war was winding down in 1864 and other, more successful weapons were available.

Amoskeag pursued this refusal decision through various court hearings and actions, culminating in a decision by the U. S. Supreme Court in 1873 (*Amoskeag Mfg Co v. US*, 84 U.S. 592) that found in favor of Amoskeag. The Court agreed that the production delays were caused by, and agreed to, by the Government and therefore the action was remanded to the Court of Claims for settlement (US Supreme Court).

Later, in June 1883, the Supreme Court of New Hampshire in *Clark, Adm'r v. Amoskeag Manufacturing Company*, the Court determined that the claim by H. S. Clark for royalties of \$3.00 per carbine [for a total of \$18,000] was valid and that AMC should pay Lindner's estate this past due sum (New Hampshire Supreme Court).

But what of the 6,000 carbines? They were sold to the French on November 12, 1870 "to an agent of the French government" (Supreme Court of New Hampshire). According to Jean Beaudrieu's *American Arms of National Defense 1870-71*, the French determined these now 5,999 carbines to be "too dangerous" for their use and auctioned them at Bayonne in 1873 (Moller). Many of these carbines later appeared on the surplus market, with Francis Bannerman Sons, Inc. offering them for \$10.00 each in their 1927 catalog (Bannerman, 71).



Figure 7. Type II Lindner Carbine, note sling ring at rear of trigger bow (AMC photo).

Tables A and B tabulate the various dimensions and hardware used in the production of both models, as shown below:

DIMENSIONS AND HARDWARE COMPARISONS OF LINDNER TYPE I AND II CARBINES

Table A: Dimensions (shown in inches unless otherwise noted)			
Dimension	Type I	Type II	Notes
Bbl Length	20	19 3/8	
Stock Length	2" 3 1/2	2' 6 3/8	
Stock LOP	13 1/2	13 1/2	Length of Pull identical
Breech Block Length	3.093	3.778	Front edge to tang lip
Breech Block Hex Diameter	1.63	1.28	
Bbl/Breech Block Collar Diameter	0.983	1.263	Inside Diameter at locking land
Collar Process/Workmanship	Machined, locking pin in handle	Cast, simplified handle, 2 piece assembly	Type II is permanent assembly
Collar Latch Handle attachment	5/16 x 18 thd.	Swaged into place	Type Ib staked into place
Collar Thread	1" x 4 per inch	same as Type I	
Breech Block Marking	Varies, reads from right or left	Reads from left	Marking direction varies on Type I parts, possibly standardized on Type II
Breech Block Inside (chamber) length	2.28	2.767	Cartridge area, not nipple flash chamber
Breech Block Length Overall	3.895	4.620	As above
Open Breech Block clears Collar by	5/16	1/16	Type II has tighter clearance
Breech Block process/workmanship	Machined Part, smooth function	Cast Part, partially finished, stiff operation	Type I has nipple bolster cleanout screw, eliminated on Type II
Receiver Tang Length	4.564	4.471	Tang houses Breech Block Spring
Buttplate Tang length	1.480	2.139	Type I is model-specific, Type II is Musket part w/US mark
Barrel Mounting	2 screws	2 screws	Screw escutcheons simplified on Type II
Rear Sight	2 leaves, tang mounted	3 leaves, barrel mounted	Type II leaves marked for ranges, similar to musket type
Trigger Guard plate length	7 1/2	7 1/2	Type II uses modified musket assembly
Nose Cap	Unique to model	1861 Musket part	
Lock Length/Width	4.75 x 1.10	5.45 x 1.30	Type I is model specific, Type II is AMC musket part. Type I has side Sling Ring, secured by 2 lock screws.
Nipple	Musket #10	Musket #10	
Bbl Inside Diameter	0.599	0.600	Measured at lands

Table B: Fastening Hardware (W = Woodscrew)

Hardware	Type I	Type II	Notes
Bbl Screws	F = 1/4-24 x 5/16 R = 1/4-24 x 5/8	F = 1/4-24 x 1/2 R = 1/4-24 x 5/8	Type II has larger head F = Front, R = Rear
Lock Screws	F = 10-32 x 1 3/4 M = 10-32 x 1 3/4 R = 10 x 1/2 W	F, M, R = 10-24 x 1 5/8	Type II uses more standardized hardware F = Front, M = Middle, R = Rear
Breech Tang Screws	F = 10-32 x 2 1/4 R = 10 x 3/4 W	F = 10-24 x 2 1/8 R = 10 x 7/8 W	
Trigger Guard Screws	10 x 3/4 W (2)	10 x 7/8 (2)	Type II uses standard Musket part, sling ring (modified from swivel) at guard
Buttplate Screws	1/4 x 1 1/4 W (2)	5/16 x 1 (2)	Type I is model specific. Type II is AMC musket hardware, cut to length

CONCLUSION, AND A CHALLENGE

Much still remains to be learned about Edward Lindner, the man, and his inventions. His biographical information remains elusive, except for a few items. We know he was originally a German. His letters and patent applications indicate he was very intelligent, with a remarkable command of the English language.

His carbines and rifle conversions are rare and wonderful examples of his inventiveness and craftsmanship. His other ideas and inventions reflected the technology of his time, and yet some were prophetic of designs that would appear decades later. Some of his designs, for example his semiautomatic rifles, were limited by their reliance on percussion caps and paper cartridges; they would have benefited from brass cartridges. Who knows what possibilities would have ensued had circumstances permitted these elements to coincide?

But there remains yet a challenge.

Amoskeag records indicate that the Type II carbine was internally considered a "Model of 1864" (AMC, Musket Correspondence). Most of its parts, as noted in the above charts, do not interchange with those of the Type I. Therefore, could we consider the possibility of changing this "Type II" designation to that of Model 1864, or Pattern 1864?

There are a couple of subtle differences evident when comparing one Type I carbine with another. One has a latch with locking pin assembly, which could be considered a Type Ia. The other has a plain latch without the locking pin; this could be known as a Type Ib. Could "Type Ia" and "Type Ib" be used in place of the commonly accepted "Type I" or "First Model" designations? These more precise designations would help differentiate these models more clearly for collectors.

The story of the Amoskeag-built Lindner Carbines is a fascinating one. We are fortunate that so many records—both formal and informal—exist to document their production. But then the research trail can become frustrating when it becomes clearly evident that not every question will be readily answered. Sometimes, as many collectors and researchers know, the answer to one question may open up a path of many more questions.

The Lindner, in all its elegance and delicacy, appears to have been a failure in combat—simply because evidence does not exist to prove otherwise. Production was low, and nearly 50% of those actually issued to troops were turned back in barely a year afterward. Many of the remaining carbines were apparently replaced through attrition in the field by other models. Yet these carbines, with their ingenious breech-block mechanisms and linkage to a unique inventor, have remained desirable collector items for many years. It appears that these cleverly designed firearms will yet remain valuable collectibles for future generations of enthusiasts.

BIBLIOGRAPHY

Amoskeag Manufacturing Company records at Manchester Historic Association:

- Amoskeag Machine Shop, Intermediate Ledger #315
- Cash Book #290
- Correspondence for Supplies & Equipment Sales, Volume 13, 1859-64
- Correspondence for Supplies & Equipment Sales, Volume 15, 1861-62
- Day Book, #280
- Ezekiel A. Straw, Diary, 1859
- Ezekiel A. Straw, Musket Manufacturing Correspondence

Bannerman, Francis. *Bannerman Catalogue of Military Goods, 1927*. Northbrook, DBI Books, Inc. 1980 (reprint).

Blood, Grace Holbrook. *Manchester on the Merrimack*. Manchester: Manchester Historic Association, 1975.

Edwards, William B. *Civil War Guns*. Gettysburg, Thomas Publications, 1997.

Hay, Warren H. "U.S. Amoskeag." *The Gun Report* June 1968: 8-17.

McAulay, John D. *Carbines of the Civil War 1861-1865*. Union City, Pioneer Press, 1981.

McAulay, John D. *Carbines of the US Cavalry 1861-1905*. Lincoln, Andrew Mowbray Publishers, 1996.

Moller, George. Lindner Papers Collection. October 13, 2008.

Patents for Inventions. London, Love & Malcomson, Ltd., 1905.

Whisker, James B., Daniel D. Hartzler, Larry W. Yantz. *U.S. Civil War Carbines*. Rochester, Tom Rowe Books, 2001.

Amoskeag Mfg Co v. US 84 US 592. US Supreme Court. <http://supreme.justia.com/us/592/case.html>. 10/10/2007.

Clark, Admr v Amoskeag Manufacturing Company June 1883. Supreme Court of New Hampshire. http://www.ipmall.fplc.edu/bosted_resources/unfair_competition/unfcmp_18.htm. 3/20/2003.

OTHER SOURCES

"A New Gun". *The United States Service Magazine*. Vol. III, No. I, January 1865.

Antique Guns Inc., www.Antiqueguns.com. 7/31/2006.

Lowry, Terry. West Virginia State Archives and History Library. Email Re: Lindner Letters. February 26, 2008.

Mowbray, Stuart C., Jennifer Heroux, editors. *Civil War Arms Makers and their Contracts*. Lincoln, Andrew Mowbray Publishers, 1998.