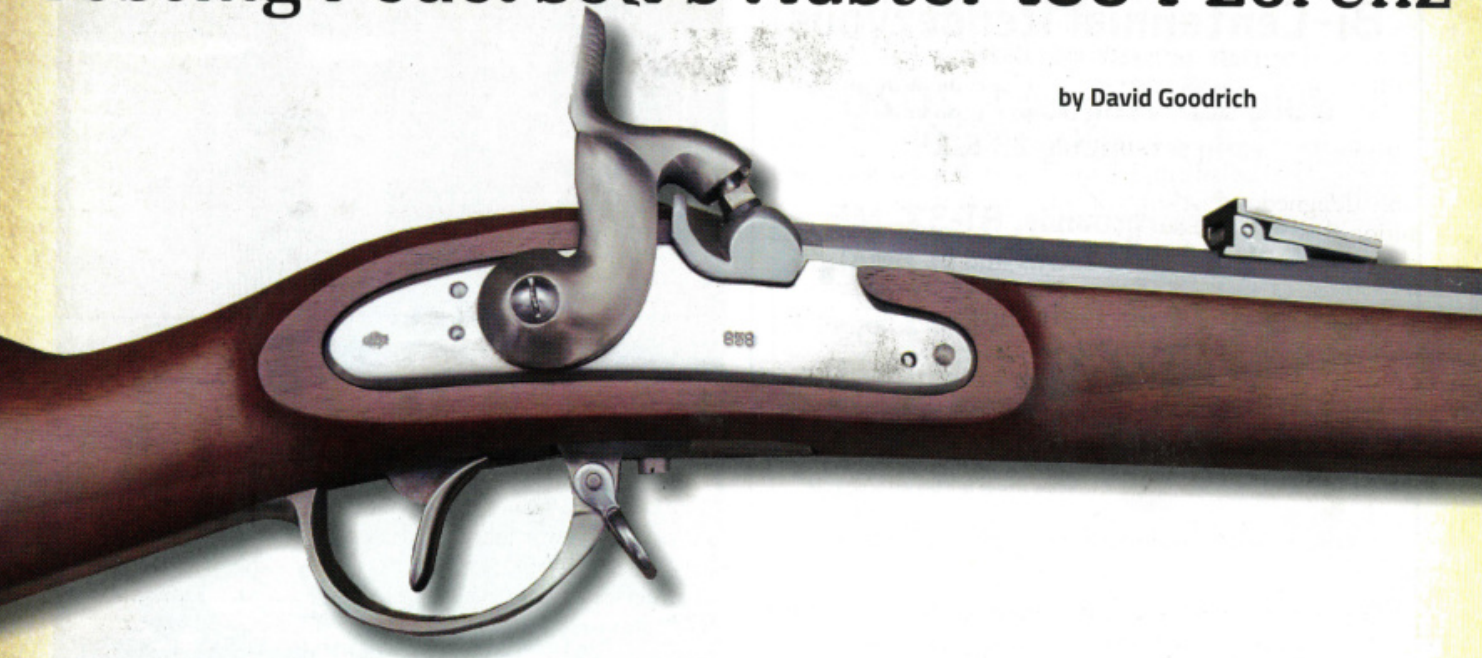


Testing Pedersoli's Muster 1854 Lorenz

by David Goodrich



It was seven o'clock in the morning, Sunday, April 6th, 1862. The men in Company F, of the 61st Illinois Infantry, had finished their breakfast and were attending to simple chores. Camp was being put to order, breakfast cleaned up, and rifles brightened and polished. The morning was bright, quiet, and still, until the soft "PUM" of artillery in the distance came to the camp - first a single shell, then two, then more. What followed was unmistakably the rattle of musket fire as volleys were fired in the distance and the battle begun.

Within seconds, an officer on a hard rode horse arrived in a rush and declared "My God, this regiment not in line yet! They have been fighting on the right for an hour!" Within minutes, the men of the 61st had thrown on their cartridge boxes, and picking up their rifles, formed up. The men marched across Spain Field to the south of their camp and formed into line on the colors, facing the woods at the south side of the field. As they listened breathlessly, the sound of musket fire came ever closer. The battle of Shiloh had begun and the 61st Illinois, armed with their new Austrian rifles, were as of yet unproven in battle.

The Lorenz Muster 1854 rifle was the second most imported weapon of the American Civil War. With nearly 300,000 rifles purchased by the North and the South, only the British Enfield was imported in greater numbers. The Lorenz, or "Austrian Rifle" as it was commonly known, was used most heavily in the western theater of the war.

There are many websites, magazines and books that will tell you the complete history of the Lorenz rifle, so I will not recover that ground here. I encourage you to look that up for yourself. When you do, you will discover that the Lorenz rifle has a double identity. Many will say, and accurately quote soldiers of the period, that the Lorenz rifle was poorly made and terribly inaccurate. They would be right. Others will say the Lorenz rifle was a superior weapon and very advanced for its time - even claiming it was better than the much lauded Springfield Rifle. They would be right as well, though far, far more has been written con-

demning the Lorenz than praising it.

So how did the Lorenz get its bad reputation? There are several reasons why. The rush to acquire weapons by both the North and the South, at the beginning and throughout the war, led to a situation that today would make for a blockbuster movie. Political intrigue, underhanded dealing, smuggling, adventure, and even outright theft, all played a part in bringing the Lorenz to our shores.

When the Lorenz did come to America, it came in many forms. Some rifles were well-made arsenal weapons in fine condition. Others were battlefield pickups and captured weapons from past European conflicts "dumped" on feuding Americans. A well-designed rifle cannot be made to perform to its best capability if it was poorly manufactured or repaired by a less than competent contractor. More importantly, the Lorenz, like the British Enfield, required specific ammunition to perform at its best. The Lorenz rifle was a system, and when that system had all its parts: A well-made and well-maintained rifle, a trained soldier, and proper ammunition - it was a very good rifle. The Lorenz rifle's bad reputation came when one, sometimes two, and even all three parts of the system were missing.

Many of the rifles were so poorly made, or poorly repaired, that their barrels could differ in over a caliber. Proper bullet fit was a requirement for the Minié' bullets of the time to be accurate. A poorly fitting bullet will not shoot well and the rifle using it will never endear itself to the soldier whose life depended on it.

Add to that, many soldiers were not properly trained in the care and use of their rifles. In fact, it is almost a certainty that no officer or NCO in either army ever saw a manual for the Lorenz Rifle. How would one know that the sights were calibrated in schritts instead of yards? More importantly, how would one know that the lowest setting of the sights, 300 schritt, would only be 246 yards? It was no surprise that many untrained soldiers missed their target.

Finally, there is the question of the ammunition. A serious American Civil War enthusiast already knows the nightmare that Quartermasters endured trying to supply units that could be using over a dozen different arms. The Lorenz was a "system" and required specific ammunition. While some correct ammunition was imported from Europe, most soldiers were given ammunition intended for the 54 caliber Mississippi rifle. That ammunition was not only designed to be shot bare, unlike the Lorenz ammunition that was paper patched, the bullets were several thousandths undersize for the Lorenz .547 bore. Accuracy with US ammunition was simply not possible unless you happened to have a non-standard rifle with an undersized bore. The odds were against the Lorenz rifle from the beginning and it is amazing that it worked as well as it did.

The 61st had waited at the edge of Spain Field for only a few minutes when the brown line of Rebels came into view on their right. The regiment, as a whole, fired in order into the advancing troops that were now pressing hard on Union General Prentiss' left flank. The 61st was quickly ordered to fall back to the north side of the field they now fought on and did so in good order. From their new line at the edge of the woods, they fought hard for over an hour, holding back Confederate General Gladden's Alabama Brigade, now fighting from the line they had earlier abandoned.

When the Union line to their right began to give way, the 61st was again ordered to fall back. They were sent to support Richardson's Battery of artillery on the east side of the Corinth road. Lying on a gentle slope to the rear of the cannons, they watched as the opposing forces engaged in ferocious fighting.

When NMLRA board member Rick Weber first asked me if I would do a review of the new Pedersoli Lorenz rifle, I jumped at the chance. The musket shooting lines are filled with Springfields, Enfields, Mississippi and Zouave rifles. The Lorenz is under represented and underappreciated, I think. Without a quality replica readily available, only originals can be used for competition or reenacting. Knowing that Pedersoli most likely intended their primary audience to be international match shooters, I suspected the Lorenz would be built with accuracy in mind and I wanted a chance to shoot it.

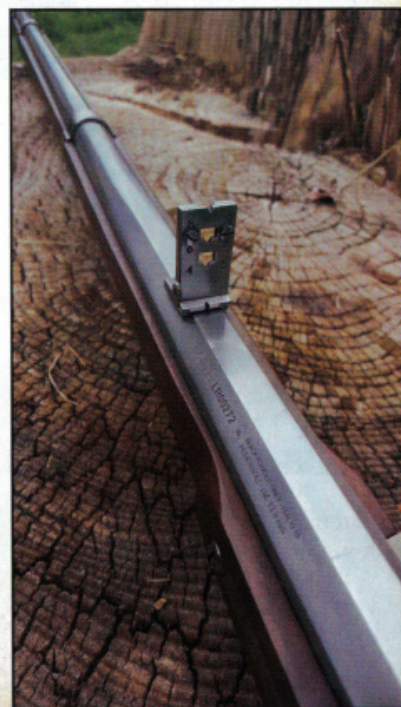
The rifle came quickly from IFG, Italian Firearms Group and was well packed. Included with the rifle was a Minié mould, intended for the 1857 Württembergischen, a rifle that shares the Lorenz .547 bore and has already won gold medals in competition. I was disappointed not to find the mould for the Lorenz compression bullet included in the box. A phone call to IFG and an email exchange with Pedersoli, soon provided me with a compression mould to test, shipped directly to me from Italy.



My first impression of the rifle was very good. The fit and finish are excellent on both wood and metal, giving the Lorenz an overall feel of a well-built firearm. Being delivered "arsenal bright", or un-blued, the metal work had a nice polish and should resist rusting with good care. The edges of the polished metal parts were sharp and defined, showing care was taken in the polishing. The metal parts have not been buffed to death. The wood was a fine piece of American Black Walnut, showing a bit of figure and having a medium chocolate color. Though the majority of the original rifles were made with European Red Birch, I can forgive Pedersoli for choosing walnut for their stock, most non-historical shooters associate birch stocks with low grade rifles. Simply put, walnut sells.

The rifle comes standard with a Pedersoli PMG barrel. PMG is Pedersoli's Precision Match Grade line of cut rifled and lapped barrels. The bore was first checked with a plug gauge and found to be on the tight side of .547, right where I want it. The barrel felt very smooth when running a tightly patched jag down the bore to remove the shipping grease, smoother than most factory barrels. The crown was also nicely cut and very uniform.

The stock shoulders well and gives a good view of the sights with the head held naturally. The sights are quite good and present a sharp sight picture. However, since they are polished factory bright, I would advise smoking them before shooting. Pedersoli includes with the rifle, a tall front blade so the owner can adjust the sight to their load and preferred shooting distance. A nice feature you do not often see.





The Minié bullet mould included for testing cast a 350 grain hollow based bullet that measured .543 as cast in pure lead. But, the diameter really needs to be .547 or .546 for best accuracy. So, a simple hammer swage die was made to "bump" the bullets up to .547. The plug for the bump die was made to match the hollow base, both to ensure it was not damaged, and to uniform the skirt while swaging.



The compression bullets were divided into two groups, sized and unsized. The unsized .546 bullets received a quick dip of the base into melted lube, being careful to not get lube into the compression grooves. Those would be shot naked in the bore like the Minié bullets.



The compression bullet mould cast a .546 bullet at 435 grains in pure lead. While it would work if loaded naked in the bore like a

Wilkinson bullet, I wanted to test the rifle with the original arsenal load using a paper patched bullet. I returned to the lathe and made a die to size the compression bullets down to .540 in preparation for paper patching.



The .540 sized compression bullets were paper patched with two wraps of 9lb onion skin and lubed with tallow to duplicate the arsenal cartridge. Because of the unique design of the compression bullet, simply patching them with two wraps of the correct paper proved to an exercise in frustration. I am sure there is a better way to patch the bullets, but I did not find it. In the end, I assembled full paper cartridge tubes and found that to be a quick and easy solution to the paper patching problem. The addition of the powder tube within the cartridge made wrapping

and lubricating simple. Lubrication was pure tallow, and the cartridges were dipped to the beginning of the ogive of the bullet.



With everything prepared, the first day of shooting went very well. All of the chosen bullets fit and functioned as I had hoped. I started the testing by loading each of the bullets over a starting charge of 50 grains

of Swiss 2F powder, to see where my point of impact would be and to get a feel for how the rifle wanted to be shot.



tallow. The hollow base was left empty of lubricant with only the lube grooves filled.



My first take away, was that the trigger has a great deal of creep, requiring that the trigger be pulled over 3/16" with a five pound let-off before the sear disengaged. That makes holding a proper sight picture very hard and the groups did suffer because of the trigger. A poor trigger is not a deal breaker for me, as most over-the-counter rifles will have a trigger that is not match ready. While this trigger can be easily corrected, I expect better from a rifle with a match grade barrel.

Overall, the groups were not disappointing. Three groups of five shots each, from all three bullets, were less than 3" at 50 yards with no rest. Fouling accumulation was minimal, loading was easy and the stock was very comfortable to shoot prone. I was eager to do some more testing.

At two o'clock, the 61st was once again ordered to move. Taking their position on the left of Union General Hurlbut's line, they relieved a tired regiment that had been holding well for over four hours at a place now remembered as the Peach Orchard. There, as the last line of Federal troops, they fought hard to hold their line. When they had expended their ammunition, they were in turn relieved by another fresh regiment. Filling their cartridge boxes, the 61st returned to their former position supporting the battery. By late afternoon, the fighting lulled and a silence fell over the field of battle. The fighting had been hard, desperate, and relentless. But, the day was not over for the 61st Illinois.

My second outing with the Lorenz began with 25 rounds of each load - this time with measured charges of 50, 55, 60, and 65 grains of Swiss 2F. The rifle gave me groups ranging from 2" to 1.5" at 50 yards from a simple rest. Many of the groups were one hole cloverleaves when I had a good sight picture and a smooth trigger press. The rifle showed a clear preference for the larger charges, with the 65 grain charge providing the tightest groups with all bullets. Loading was effortless with all the bullets and no wiping between shots. The rifle has light recoil, even off the bench, I think due to the shape of the stock and the typical wide and smooth butt plate. I even used a few of my last bullets to give it a try offhand and found the rifle very comfortable to shoot standing, as well.

The sights had been blackened before shooting began, but I carelessly wiped much of it off while loading and shooting during the test. However, I do not think that made too great a difference in group sizes, certainly not as much as the long trigger pull did. It did cause me to have multiple tight groups, sometimes separated by an inch or two, as my sight picture changed.

My third trip to the range was to try some different powders, confirm my previous results, and to send some lead over the chronograph. Again, I tested all three bullets: the Minié, the compression bullet fired naked in the bore, and the compression bullet paper wrapped. The powders used for testing in this session were: Swiss 2F, Swiss 1.5F, and Olde Eynsford 2F. The best charge, by volume of the previous session, was all I tested in each powder. I took care to blacken the sights this time with a small amount of flat black paint to ensure it did not rub off during testing.

Shooting with all three powders back to back showed an interesting thing. The rifle seems to be picky about having

the bullet run home with differing pressures. Simply running the bullet down in the barrel, seating it firmly on the powder, or tapping the ram rod three times, all provided a different point of impact.

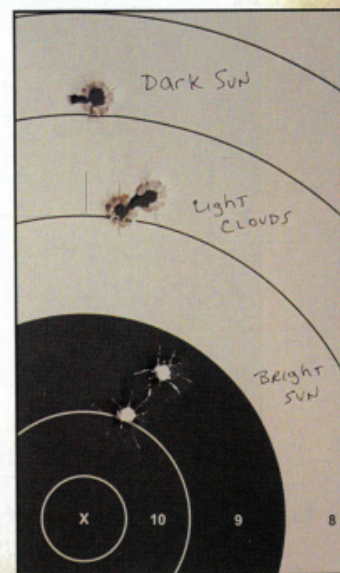
The Minié bullet did not fare as well as I had thought it would, turning in the larger groups of all three. While the bullet may become the accuracy champ with further testing, I think it would require a bit more work to find its best load. It was certainly sensitive to diameter. Three different bullets with diameters within .002 all had very different points of impact.

The compression bullet cartridges were surprising in their ease of loading. Even with a fouled barrel they went down with minimal effort and continued to do so throughout testing. The groups were good, averaging a bit better than the Minié bullets, but provided slightly more recoil due to their increased weight. Not surprising was the fact that the cartridges hit much closer to the point of aim. Recovered paper patches showed that the bullet fit was good, the patches holding together during the trip down the bore, still releasing within four feet of the muzzle, and showed nice cuts from the rifling.

Finally, the naked compression bullets were tested. These were the surprise of the day. They loaded easily, shot round groups, and did not seem to be choosy about seating pressure or of powder type. They just seem to work. After firing nearly sixty shots total with the naked compression bullets, no leading was found in the barrel. I think you could shoot these all day without a worry.

The rifle showed little difference in point of impact or felt recoil with the different powders. The Swiss powders, as expected, provided consistent velocities with light fouling, although I think the 1.5F edges out the 2F for accuracy. The Olde Eynsford had a bit more fouling, but the fouling is much softer than the Swiss powders and running the bullet past the fouling ring for each successive shot was easier. Accuracy with the Olde Eynsford was just as good as the Swiss powders at 25 yards shooting offhand. If I did not want to wipe between shots, which I did not in testing, the Olde Eynsford would get the nod from me.

The front sight, with its rounded top, can make getting a precise sight picture a challenge. I had some excellent groups in the beginning, and with changing light the point of impact moved up to 2 inches at 50 yards. There was some rain rolling in at the end of testing and as the light went from bright sun to medium sun, then dark, you could see the bullet holes moving down the target. I eventually removed a tiny bit of the flat black paint from the top of the front blade and used the sight like a silver bead sight. The bare metal at the top of the blade with the flat black below, worked best for the remainder of testing.



The greatest hindrance to good groups during testing was simply the trigger. Were the rifle mine, it would already be fixed. I had thought that the sights would be an issue, but once I painted them and removed a bit at the top of the front sight, they became easy to use.

The more I shot the Pedersoli Lorenz the more I liked it. While it does not share the trim lines of the Enfield, looking a bit outdated for its time with the heavy trigger guard and full nose cap, it handles very well. The Lorenz shoulders effortlessly and balances perfectly shooting offhand. The barrel loads and cleans easily, telling me that with just a bit more effort, I could get match-winning accuracy out of it.

Chronograph results at 10 feet from the muzzle – 67 grains Swiss 1.5F	
Bullet	Velocity
350 Grain Minie'	1340 fps
435 Grain Compression Bullet – Loaded bare	1230 fps
435 Grain Compression Bullet – From a paper cartridge	1250 fps

I finished my fourth and final round of testing by shooting forty plus shots offhand at 25 yards. I used up the bullets I had cast, using all three bullet types at a black bullseye, just for fun. All the charges were 67 grains of Swiss 1.5F.

The rifle holds well and the silver tip on the black front sight offers a great sight picture, if you hold center on the bullseye. I never wiped between shots and never needed to. The last eight shots of the day were fired with the remaining paper cartridges of mixed powder types and the target was outstanding, showing double and triple shots in ragged holes. I found myself wishing the trigger was better.



During the lull in fighting, the 61st was yet again ordered to fall back. As they did, they realized that they were one of the last units to be recalled. All was quiet during the movement until a sudden and unexpected volley of firing came from behind and a rain of bullets began. The orderly movement to the rear became a rush and Union soldiers headed up the road as quickly as they could. Upon breaking into a field, the 61st saw before them a long line of blue uniforms standing both sides of the Corinth Road, extending out of sight to the left and the right. Those lines of blue, the full unbroken Federal line, had been falling back all day, but were still in the fight!

Taking their position behind the remains of Hurlbut's Division, the 61st turned about and reformed, ready to fight again. Once in place, they heard a tremendous roar from the direction of the Tennessee River, quickly followed by more in succession. The Federal gunboats on the river had joined the battle, and were shelling the ravines south of Pittsburg Landing, halting any pursuit by Johnston's Army of Mississippi. As the 61st stood there listening to the barrage, fresh new soldiers began to come up to the line. The 63rd Indiana, the advance guard of General Don Carlos Buell, had arrived to strengthen the Federal line on the left.

No more fighting would happen that day as Confederate General PT Beauregard believed General Buell and General Lew Wallace would not arrive to reinforce General Grant's lines. Beauregard believed he had won the battle, and he broke off the fight. The morning would tell a different story as an overwhelming force of Federal troops retook the field and sent the Army of Mississippi back to Corinth.

The 61st Illinois Infantry awoke the morning of April 6th 1862, untested soldiers and mere babes in battle. They retired that evening, veterans. They had met the enemy and held their ground so long as orders instructed them to. They were one of the last units to escape the hell that was to become the Hornets' Nest. The 61st Illinois was armed during the battle of Shiloh with the Lorenz Muster 1854 rifle. Their commander, Colonel Jacob Fry, had them drilled with their rifles and marksmanship practice was required. It is no wonder that the 61st liked their "Austrian Rifles" - they certainly served them well in their baptism of fire.

At the end of the American Civil War, when Federal troops were mustered out, a few units were still armed with the Lorenz rifle. Given the opportunity to purchase their rifle for six dollars, records show many soldiers did take their Lorenz rifle home with them after the fighting had ended. They had obviously gained a respect for the "Austrian Rifle" after years of depending on them for their very lives.

This brings us back to the beginning, the Lorenz bad reputation. Was it deserved? To say all Lorenz rifles were inaccurate, poorly made, and little better than a stick, is undeserving, I think. While there were certainly problems with some of the Lorenz rifles as issued in the American Civil War, the problems were not always with the rifle. When trained soldiers, given good ammunition, went into the fray carrying the Lorenz, it proved itself to be a first class rifle.

Had the arms purchasing agents in Europe bought only the quality Lorenz rifles, and the proper ammunition to

use in them, it might have been remembered quite differently today. The Lorenz Muster 1854 rifle played an important part in our history and it deserves to be judged better.

I came into this review interested in the history of the Lorenz and wanting to shoot a rifle I thought deserved to be better represented on the firing line. I came away with a respect for a well-made rifle that was a joy to shoot. Pedersoli has done a great service to shooters, competitors, and reenactors alike with the introduction of a quality Lorenz replica. I find it to be well made and accurate, it should prove to be a winner once they begin to show up on the firing lines. I am impressed enough with the Pedersoli Lorenz, I told IFG I want to keep this one.

Credits and Thanks

Don Dixon for his help in understanding the Lorenz rifle's place in the ACW

Craig Barry for his recommendation of the book "*The Story of a Common Soldier* by Lt Leander Stillwell"

The members of the NSSA and the Civil War Talk Internet forums. Their archives are a treasure trove of information.

<https://civilwartalk.com/forums/>

<https://www.n-ssa.net/vbforum/forum.php>

Gary Van Kauwenbergh – For his excellent translation of the original Model 1854 Lorenz Manual

Balázs Németh – The Cap and Ball YouTube channel, for his previous work in sorting out the Pedersoli Lorenz rifle.

Historical References

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<https://www.battlefields.org/learn/maps/shiloh-animated-map> - American Battlefield Trust's animated battlefield map of Shiloh

Thanks to the members of the Shiloh Battle board of the Civil War Talk forum for their fact checking of my history of the 61st Illinois. MB