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STERLING ARMS DOUBLE SHOTGUN

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ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 181

DIGITAL ARCHIVE EDITION

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SAFETY & COMPLIANCE

SOUM: M16/M4

BY AMERICAN GUNSMITH EDITORS JANUARY 2019

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The Department of Defense reported finding a small number of M16/M4 weapons that potentially could have an unintended discharge while manipulating the selector. TACOM (U. S. Army Tank-automotive & Armaments Command) issued a Safety Of Use Message (SOUM #18-004) about unintended discharges on M4A1s that had been through the Product Improvement Program, occurring after the operator pulled the trigger with the selector switch between the Semi and Auto detents.

The weapon did not fire when the operator pulled the trigger and instead fired when the selector was moved further. The problem has been thought to be due to a “stack up” of differing tolerances from new parts. SOUM: M16/M4 This potential mechanical problem is uncommon. The Army converted 259,000 M4s to M4A1s in the past three years and initially found 881 with this problem and more found later.

TACOM released an updated Function Check (SOUM #18-005) that easily determines if a M16/M4 (or AR-15) exhibits this problem.

Ensure the weapon is unloaded and perform a Function Check: Pull the trigger while on Safe (nothing should happen), rotate to Semi and pull the trigger (hammer should fall), hold the trigger down while racking the charging handle (hammer remains cocked) and then release and pull the trigger (hammer should fall.) For military weapons, rotate to Auto or Burst and check the full auto or three-round burst as usual.

If that passes, continue by moving the selector lever to the Semi position, then move the selector between detents (such as Semi and Auto) and pull the trigger. The hammer should drop when the trigger is pulled and the selector is off Safe. If the hammer drops, repeat by re-cocking the hammer and slightly repositioning selector between settings again. If hammer doesn't drop, move the selector in either direction. It should not drop. These additional steps will determine if a particular firearm is affected.

If the Function Check is passed, there is no need to change Immediate Action. The old Department of Army Immediate Action procedure (“SPORTS”) was replaced in 2016 with an improved procedure described in Training Circular 3-22.9, which is a very good training manual, can be distributed without restriction, and is available for free download. References still using SPORTS or other variations are out of date. An Immediate Action amendment is unnecessary if the Function Check passed.

Confirming correct mechanical function is an administrative action. SPORTS was replaced as a less effective approach than the new Immediate Action procedure in TC 3-22.9. Taking a tangled “immediate” six-step procedure and adding another step defies the point of immediate action. This low percentage mechanical problem only occurs while manipulating the selector.

Immediate Action is only necessary after attempting to engage targets, meaning the weapon was already set to discharge and there is no need to manipulate the selector while performing it.

SHOTGUNS

Sterling Arms Double Shotgun

Yes, they really made one. Here's how to work the Sterling Arms Corporation side-by-side 12 gauge double shotgun.

BY MARK R. HOLLENSEN JANUARY 2019

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Wait a minute. What? A Sterling Arms double barrel you say? It sure is. But what really is a Sterling Arms Corporation shotgun? When it was first brought to me, it appeared to be in decent shape. The barrels were tight and the top lever still had a right angle to it when the gun was closed. I looked it over some and then began doing some research on it. It was a 12 gauge with 30" barrels and the wood was checkered.

All of the serial numbers matched and the only wording stamped on the barrel set was "Projectile Steel". I quickly learned that there was little information available pertaining to the Sterling Arms Corporation. Actually, none with that brand name. Searches kept bringing me to pistols. With nothing to go on, I began cataloging the shotgun and making mental notes on how it was constructed. The shotgun is known as a "trade name" gun and is essentially a Fulton Arms shotgun.

Unfortunately for this old shotgun the screws have been damaged by previous entries into the gun. At first, the lockup re-

sembled a Winchester Model 21 but other parts in the gun told me that it wasn't. I saw some similarities to the Baker guns, the L. C. Smiths, and even the Liege double guns but none fit the mold precisely. With nothing to go on, I completely disassembled the shotgun as it needed a firing pin anyway.

With all of the parts removed, I was able to start looking for "like parts" one-by-one and then I finally found out just exactly what a Sterling Arms Corporation side-by-side 12 Gauge shotgun was. Simply put, a Fulton. What is not clear is why nothing has been written about the Sterling Arms Corporation, at least that I could find. I'm sure there is something out there that discusses what the Sterling Arms Corporation is and how long they were in business, but as of this writing, I was unable to locate it.

With that said, I did find some literature about "trade name" shotguns and that information, although it excludes any mention of the Sterling Arms Corporation, led me to believe that this shotgun fits into this category. Photographs of this shotgun,

along with the parts removed (all of them) make this shotgun nearly the identical twin of the Fulton Arms Double Barrel Hammerless shotgun. Essentially, it is a trade name shotgun. A check for serial numbers and dates led me nowhere.

Mainly because there is no mention of the Sterling Arms Corporation anywhere except stamped on the left side of the receiver. Some say that L. C. Smith serial numbers are correct for these models but I have not seen corroborated evidence of that statement. This particular shotgun is more than likely an early model as the serial starts with a 1 and is a five digit number (17,XXX). What I do know is that I have it in the shop now and decided to do some research on the shotgun itself.

In most cases, I refrain from disassembling any firearm just to peek inside. However, with so little known about this particular shotgun—and the Fultons themselves—it seemed logical that a closer look was in order. My goal here is to provide information all in one place that I had to gather, to help a fellow gunsmith out when one comes

STERLING ARMS DOUBLE SHOTGUN CONTINUED

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into the shop, be it in a state of disrepair, missing parts, or in a plastic baggie in need of reassembly. Furthermore, this information should help determine whether or not it is logical for the owner to have it repaired, keep it as a family heirloom, a parts gun, or repurpose it to that of the proverbial wall hanger. I can tell you that much has been written about the L. C.

Smith shotguns and that led me to information about the Fulton Arms Company, along with a number of other trade name companies that were in business from the 1880s to the 1930s. Just know that not one shred of information was located I have not yet found an actual schematic. (by me) detailing the history of the Sterling Arms Corporation. I did run across a photograph listing the parts but no actual schematic. I guess some good news here is that there still are some parts available for this model shotgun.

I was able to find what I needed from the Numrich Gun Parts Corporation (GunParts-Corp.com, and they have many detailed views (photographs) for many of the parts listed on their website. Since those photos can be seen on their website, I decided to include photos not specifically shown on their website in this article for a little more clarity. Inspection and Disassembly As with any older generation shotgun you may see in your shop, always inspect the barrels very closely and carefully.

Look inside with a light for any bulges, dents, or cracks as you will often find them. Also check to make sure the shotgun does not have Damascus twist steel barrels as you do not want your customer to shoot those guns either. Always tell the customer if there are dents, dings, and cracks found and especially when a bulge is found. Tell them that they should not shoot the shotgun anymore as it is just too dangerous to find out how much shooting life is left in a gun with damaged barrel(s).

Finally, check the chambers. There were many a shotgun made in the old days with 2 1/2" or 2 5/8" chambers and these should never be shot with modern ammunition in the incorrect length for the specific chambers. Serious harm can result. Don't even tell the customer that they may be okay if they want to shoot it a couple of times as you don't need that lawsuit when the gun lets go. Just be careful and really check the gun you have in your shop.

The customer wanted to shoot this shotgun and I had to be the bad guy and tell him not to fire it under any circumstance, as both barrels had dents and one small crack on top of a dent. Enough of that. Let's get started on disassembling this shotgun. I always recommend that you function test any firearm prior to taking it apart, just to be sure that it is in proper working condition. So begin by always opening them up and visually inspecting the cham-

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bers to ensure there are no live or stuck rounds in the chambers. Once you are certain that the shotgun is unloaded, begin disassembly by closing the action and removing the forend by pulling downward at the front of the forearm. It is held to the barrel set by a flat spring and hook assembly and will just pop off when pulling it off correctly. Next, open the top lever as if to load the shotgun. While hanging onto the barrels, lift them out of the receiver as you open the gun.

This completes the disassembly for routine cleaning and light lubrication. Also shown are the rear ends of the sears. Moving on to the full disassembly, I cannot stress enough the mandatory need to have the correct sized screwdrivers on hand prior to disassembling any gun, especially doubles. If you don't have them, get them or make them. If not, take

the gun to a qualified gunsmith. There are two main issues that seem to be an epidemic when it comes to double guns.

One is the fact that so many people have disassembled (or attempted to disassemble) these fine firearms with the wrong tools (screwdrivers and punches) and another is that for some reason Far The safety slide engages with the bar and automatically sets the safety to the ON position when unloading/reloading the shotgun. It also shows the top lever assembly from the bottom or inside of the frame. these poor old working beauties have dings, dents, and bulges in one or both of the barrels.

Just once I would like to see an old shotgun of history come in without chewed up screw heads or dented/bulged barrels! They are out

there to be sure but they are the exception. What I am getting at is that even though the information here can help you disassemble and reassemble this shotgun, you really should take a good tool assessment first and then combine your tool assessment with whether or not you should be opening up the shotgun in front of you or not based on your skill level. I'm just sayin'.

In most cases, there is little or no need to take a shotgun down this far. The intent here is to provide accurate information and identification of some of the working parts in this shotgun. Disassembling an obsolete firearm can and will lead to damaged or broken parts—parts that may no longer be available. So save the old beauty from a needless death. If it works, leave it alone. Practice on guns that are ruined already and not on pristine guns.

STERLING ARMS DOUBLE SHOTGUN CONTINUED

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The top lever coupler interlocks with the locking bolt when installed in the receiver. Far The Fulton shotguns had this type of locking system. Moving on, with the forend and barrels removed, you'll need to release or drop the internal hammers. First, depress the top lever trip (found under the locking bolt). It is best to hold the top lever wide open while depressing the trip with a small scribe or tool, then lowering the top lever so that it is straight and in-line with the receiver tang.

Now, using a piece of scrap wood, place it over the breech face covering both firing pin holes, move the safety to the off position, then pull both triggers to lower both ham-

mers and take the tension off of the hammer. Two wood screws secure the iron to the forend. Be careful not to break the forend when removing the iron as it pivots into the wood stock. mainsprings. The wood serves to protect the firing pins and you should never dry fire a double gun without quality snap caps installed as you risk breaking them.

With that accomplished, turn the receiver/buttstock over and remove the trigger guard screw located at the rear. Once it is out, unscrew the trigger guard from the receiver. Now turn the receiver/buttstock upright. With your weak hand, hold the top lever open and to the right just enough to ac-

cess the top tang screw under it. Carefully loosen and remove this tang screw and pull it out. With those items removed, turn the receiver back over and remove the rear trigger plate screw that was under the trigger guard.

Remove the front trigger plate screw. As you do, the trigger assembly attached to the plate will be under spring pressure, dropping down and forward. Remove the bottom plate/trigger assembly from the receiver. Now lift the receiver upward, forward, and out of the buttstock. Once you do, you will see two coil springs still in the stock. These coil springs are the sear springs and you should remove them so you don't lose them as the

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A good cleaning was needed on this old double. buttstock can be set aside for now. There is no need to remove the butt plate unless refinishing the stock. If you need to disassemble the safety assembly, you can do that now. Turn the receiver over and the auto safety slide bar can be lifted out of the groove it rides in. This slide bar engages the safety button (places the safety in the ON position) each time you open the gun via the top lever to load it.

The top lever (coupler) pushes this bar back and engages with the safety button. With the bar out, you can remove the safety button and assembly by first removing the screw that secures the safety spring to the receiver. Once the screw and This assembly is held in the receiver by the same pin that captures the hammers. spring are out, remove the small screw from the right side of the safety button and lift it out of the receiver. The sears can now be removed.

I recommend that you scribe an “R” and “L” on them prior to removal to note the right and left sides. Carefully remove the top screws located on each side of the receiver. These screws can be very tight so go carefully. To remove the hammers, remove the two lower screws located on each side of the receiver. Again, these can be tight so go slow.

You will find that these two screws are cap screws that hold along receiver pin in the receiver and the long pin inside secures both hammers and the cocking lever to the receiver. The hammers will be under some coil spring pressure, so you can use your weak hand to press up on the bottom of each hammer while inserting along drift pin that nearly matches the hole diameter in the receiver. A scribed “R” and “L” on each hammer helps with reassembling in the same location.

Tap the pin punch in until one of the hammers can be removed. As the hammers are pulled out, you will see a V-shaped detent mainspring “cap” and the coil mainsprings attached. Just pull them down and out of the receiver. After one hammer is removed, reinsert the long pin punch into the hole where the first hammer was removed from and drift the pin in the frame out the other side. This will allow you to capture the cocking lever and remaining hammer.

After the frame pin has been removed, back the drift punch out and release the second hammer for removal along with the mainspring cap and mainspring. Continue removing the pin punch until the cocking lever is released and can be removed. Underneath of the cocking lever you will see a coil spring and the bottom of the trip. Pull the coil spring out with pliers. Using soft-

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There are no firing pin return springs in this model, although it would have benefited from them as the breech barrels come into contact with the firing pins after firing and is the source of many broken firing pins. The sum and identification of the parts in this shotgun helped to make a positive identification of it. Jawed pliers, grasp the slot screw head of the trip and wiggle it and the barrel-shaped trip out of the receiver. You do not need to remove the screw in the bottom of the trip; just pull it out.

It should be noted here that if you are removing or replacing the firing pins you do not need to remove the top lever to access them, however, the hammers must first be removed. To access the firing pins after the hammers have been removed, remove the two remaining middle screws located on each side of the receiver. These are also very tight and care must be used not to damage the screw heads. Once removed, the firing pins can be pulled out with a magnet or dumped out. There are no firing pin return springs.

Parts sources say that the firing pins and hammers are interchangeable for either side, however, the sears come in left or right sides only. To complete the disassembly of the receiver, remove the top lever. Turn the receiver over and unscrew the large headed screw that holds the lever in place. Once out, use a brass punch to gently tap or drift the top lever shaft out through the top lever washer and then the top lever coupler.

Once the top lever is pushed completely out of the receiver, lift the coupler out of the locking bolt lug area. Once removed, the top lever coil spring can be pulled out of the receiver. To get the bolt out, take your time and work it out of the frame. Use a small brass punch from the front of the receiver slot and push the locking bolt out. Take note as to how it goes back in place. This completes the disassembly of the receiver.

To disassemble the triggers from the bottom plate, begin by removing the two small set screws from each trigger. These screws are essentially trigger stop screws that prevent the triggers from falling lower into the trigger plate assembly. They will be tight, so be careful here. Once they are both removed, drift the pin that holds both triggers in the "trigger bridge" out. This will allow you to remove the triggers from the bottom plate.

Next, drift the small pin out that retains the safety stud in the same "trigger bridge". Note that the safety stud has a notch at the top of it and the wider portion of the notch should face the front of the trigger plate when reassembling. Once the safety stud has been removed, and if needed, you can remove the trigger bridge by taking out the two screws that hold it to the frame assembly.

You will see that you cannot remove the trigger bridge screw from the bottom of the trigger plate without first removing the rear

trigger so you can access it. That is why you need to remove the triggers first. Also, Fulton schematics reference a V-spring trigger spring but this shotgun did not have one and I am not certain that it ever did. Reassemble in reverse. To disassemble the forend, remove the two wood screws that secure the forend iron to the forend wood.

Carefully tap the forend iron upward at the rear to separate it from the wood without force. Then lift the iron out of the forend. To remove the forend iron spring, remove the small screw that holds a flat spring putting pressure on the forend spring hook. Then drift the small pin punch out that secures the hook to the iron. The ejector located on the forend iron is last and is held in place by a slotted head screw. Remove the screw and the ejector (plate) will come off.

This completes the disassembly of the forend. Turning to the barrel assembly, the barrel ejector and cocking hook are removed by a set screw located on the left side of the barrel lug. On this particular shotgun, the head has been worn off (smooth) so it could not be removed. If the ejector or extractor needed repair, this pin or damaged screw would have been drilled out to remove the parts and subsequently replaced with a new or replacement screw.

But since that was not the case here, I decided to leave that assembly alone. This completes disassembly of the Sterling Arms shotgun.

STERLING ARMS DOUBLE SHOTGUN CONTINUED

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Reassembly Tips Essentially, you will reassemble the shotgun in reverse. You may encounter some nuances as you put it back together, so I figured I would list some of those here. When reassembling the top lever and locking bolt assembly, you will benefit from inserting the locking bolt into the receiver with the trip, trip coil spring, and cocking lever removed. If they are still in place, push the locking bolt in. From the other side, depress the trip until the locking bolt comes forward, past and over the trip.

While here, when reassembling the top lever, bolt coupler, washer, coupler spring, and top lever screw, take your time. It is best to install the spring, bolt, and coupler first; the top lever can then be inserted into the coupler. You will have to finesse this assembly. Be careful not to force the top lever into the receiver during reassembly or you could damage the top of the receiver. Take your time and it will go into place if you work slowly.

When installing the hammers, especially when you are installing brand new mainsprings, there will be spring pressure on the hammers that you will need to contend with. Typically, you can use a small Ctype clamp with wood or other nonmarring protection to apply pressure to the bottoms of the hammers, compressing the hammer springs so you can get the receiver pin started.

Once you have captured one ham- Sterling Arms Double Shotgun Part Dimensions Part Dimensions Sear Coil Springs (2) 1" x 0.185" (0.085" wire diameter) Top Lever Coil Spring (1) 1.250" x 0.240" (0.063" wire) Hammer Main Coil Springs (2) 0.750" x 0.325" (0.070" wire) Cocking Lever Receiver Pin (1) 1.300" x 0.140" Cocking Lever/Trip Coil Spring (1) 0.500" x 0.370" (0.040" wire) Firing Pins (2)

0.740" x 0.245"; 0.128" (small end) Firing pin retainer screws (2) 0.455", 8-32 threads; Cocking Lever pin cap screws (2) 0.170", 8-32 threads; Sear retainer receiver screws (2) 0.290", 8-32 threads; Top Lever Retainer Screw (1) 0.295", 0.382" (head), 4-40 threads mer with the frame pin, move to the other side of the receiver with along like-sized pin punch so you can capture the cocking lever assembly first.

Drift the frame pin holding the first hammer over enough to capture the cocking lever and assembly. Pull the pin punch out, install the second hammer and mainspring assembly, compress the mainspring, and re-insert the pin punch. Drift the frame pin already holding the first hammer and cocking lever assembly in place across so you can capture the final hammer assembly. Your slave pin punch will just come out as you tap the frame pin into place. Replace the two frame cap screws as these hold the pin in the frame.

All other assemblies go together pretty straight forward. When you reassemble the receiver and bottom plate to the stock, begin by replacing the two sear coil springs into the stock. Work the receiver into place. Next, add the bottom metal by inserting the two bottom metal tabs into the bottom of the receiver, then tilt the trigger/bottom plate assembly down. Go easy here as the safety stud can get into the way of the safety assembly in the receiver during reassembly.

Once the bottom plate is nearly in place, the last bit will be under spring pressure so hold the bottom plate in place while replacing the front then the rear bottom metal plate screws. Do not tighten them yet. Turn the receiver back over first and re-install the top frame screw that resides

underneath of the top lever and tighten it. Turn the receiver back over and fully tighten the bottom metal screws.

The remaining reassembly and placement of parts is pretty much straightforward if you follow the above disassembly instructions. Parts Identification With so many parts either no longer available or continuing to disappear, I felt it important to list certain parts by name and size in order to help you either identify parts you may already have in your shop inventory or to aid you in making them if necessary.

These parts and their dimensions were taken from just this one shotgun so they could differ from trade gun to trade gun but I doubt they will as the Fulton Shotgun is the pattern gun. This was a great opportunity to record some measurements and photographs for some of the parts. With so many of the trade shotguns out there you will more than likely have one cross your bench in need of inspection, function testing, or repairs.

Always discuss with your customer the associated costs of doing this type of work on firearms that are not truly collectible or that do not have a significant dollar value. Even if it can be placed back into firing condition, the discussion needs to focus on whether the shotgun you have in the shop at that time is safe to use, even casually.

The last thing you want is a customer saying after being hurt is, "The gunsmith said it was operational." Be clear and let them know that although the shotgun is operating or functioning properly, that doesn't mean you give them your blessing to go run some ammo through it. It's just not worth it—for the customer or you. Hopefully you will find some value in this article, if for nothing else than having some parts photos and measurements! AG

PEOPLE & COMPANIES

Parker Brothers Shotguns, Part One

Among the most classic of American-made shotguns, Parker Brothers guns are premium shotguns that can be had for a reasonable price... if you know what to look for.

BY PAUL MAZAN JANUARY 2019

ORIGINAL PP. 10-13

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From 1868 until 1934 when Remington took control of the company, and then until 1938 when the last Parkers were made by Remington, one of the world's finest shotguns was made in the USA. Having gotten a taste for gun making during the Civil War for the Union, Connecticut entrepreneur Charles Parker decided to go into the gun making business. His goal wasn't just to make another shotgun but to make the best shotgun in the world.

The fact that he succeeded is born out by the price a Parker Brothers gun still demands today. It was never a gun made and priced for the average guy. It was always a luxury item, even in the lowest grades. Perhaps the most interesting part of the story is that every gun was handmade. Every part was forged in house, filed, and hand fitted to the gun it would become part of. There was no automated assembly line and no concern for interchangeability of parts.

When you bought a Parker, you bought an individual work of art. From the very first step in the process when the work order came down to the factory, parts for the gun were handpicked and would stay with that gun until it was complete. For example, for each size of receiver the workman had to choose barrel blanks and a buttstock within a certain weight range to ensure that the gun would balance perfectly when finished.

The parts, once chosen, were numbered and stayed with the An example of the external upgrades of the models as they increase in price and detail. Top, is a Trojan, Middle a VH and Bottom a GH. gun through each step of its assembly. From the barrel shop to the stock shop everything traveled together. Under the skin, all Parkers were made exactly the same way. From the economy model Trojan to the one-of-a-kind gun made for the Tzar of Russia, every gun was hand built by craftsmen.

Internally, the gun you bought was made exactly the same way as the most expensive gun in the line. Yours may not have elaborate checkering on a spectacular Circassian walnut stock or hand cut floral engraving but inside the receiver every part was handmade and hand fitted into the very best mechanical device the craftsman could turn out.

Rigidly inspected at every stage of production until it passed the strictest standards, every finished gun faced final inspection by the head of the department and it is said few guns passed on the first inspection. The production method was time consuming, inefficient, and expensive but the result more than justified the price and the gun became a legend.

PARKER BROTHERS SHOTGUNS, PART ONE CONTINUED

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From top to bottom area Trojan (the least expensive model), a VH, and a GH. So, what does all this have to do with you? Well, what if I told you that you could buy a used genuine Parker shotgun for about the same price as a brand new double? Sound impossible? That is what I thought, however, there are generally a number of Parker shotguns out there for sale and prices range from around \$500 to the astronomical.

You are not going to get one of the high grade guns at the lower end of the spectrum but you can get a gun that was built to the Even the plain Trojan with no other embellishment is marked with the company name. same standard as the most expensive gun in the line. Why? Because Parker collectors have no interest in any gun that has been modified. If the barrels have been cut, a recoil pad added, or the stock cracked, the serious collector doesn't want anything to do with the gun.

These days when \$800 is considered "affordable" and \$1000 to \$1500 "moderately" priced, you can regularly find Parkers in the Trojan, P, V, and Ggrades with barrels cut to 22-28 inches in that price range because the collectors don't want them. When I started Cowboy Action Shooting and was looking for a shotgun I discovered that I could have a Parker or a Stoeger for about

PARKER BROTHERS SHOTGUNS, PART ONE CONTINUED

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On the rib the company name and the type of steel is marked and preceded and followed by the “flaming arrow”. Center the same price. I ended up with a Parker Trojan for \$600 that has never failed me. Now with the barrels cut the guns will have cylinder or IC chokes depending on how far they were cut but for Cowboy shooting or hunting doves, pheasants over dogs, quail, or most upland game taken within 25 yards that is all you need with today’s modern shells. Admittedly it is not a duck or goose gun anymore.

A word of caution is necessary. Many of the Parker guns were made with Damascus or twist steel barrels. These barrels can be beautiful with interesting patterns in the metal but they are not safe to shoot modern smokeless powder shells in. Any twist or Damascus barrels, no matter how great the condition, is safe with smokeless loads and are strictly a black powder proposition. Even light smokeless loads develop a much higher-pressure spike right after ignition than a black powder load so, please, don’t do it!

Fortunately, the two lowest grades of Parker were not made with Damascus barrels. The Trojan and the VH were only offered with fluid steel barrels so the gun you can afford should be fine, just have it checked as you would any used gun by someone qualified to give you the all clear before you shoot it. You have probably noticed I keep talking about double or side-by-side shotguns. That is because that was all that Parker made with the exception of a single barrel trap gun.

Bottom As parts were made and fitted to the gun they were marked with the serial number of the gun they were made for and fitted to.

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They never made over and unders, pumps, or semi autos. For the entire history of the firm the double in side-by-side configuration was their specialty. They even made doublebarreled trap and skeet guns but with the one exception of one single barrel trap model, it was double or nothin' if you wanted a Parker and it still is today. During its entire existence Parker produced approximately 200,000 guns.

After Remington bought the company and took over production the Parker was still made by hand and about 5,000 were produced before production was shut down for good in 1938. Parkers were still offered by Remington as late as 1940 but they disappear from the catalog after that.

Like so many of the independent gun makers, the Great Depression forced the sale of the company to a large manufacturer that had an extensive line of various types of guns to sustain it and the demands of the government during WWII brought an end to luxury products. There have been some Parker reproductions made in recent years but they have always been high grade guns marketed to people that are extremely well off. The economics of the Parker make it unlikely we will ever see the lower grades reproduced.

At least we won't see them in the hand made and fitted quality of the original. The lowest priced Parker took eight weeks to manufacture! As I said, the manufacturing

process they used was not efficient or rapid. They were in the business of selling quality, not quantity.

If you tried to build that gun today and your average salary for the craftsmen and women that hand made the gun was \$52,000 a year or \$1000 per week, you would have \$8000 in labor alone in the price of the gun in the eight weeks it took to make it. By the time you add in materials, overhead, and salaries of everyone else in the company that have to be paid, along with a margin for profit, you could easily double or triple that before you got a retail price.

A plain Trojan at \$16,000-\$24,000 is simply not going to sell. So, if you're in the market for the finest shotgun ever produced in the U. S. you might consider what a bargain \$800-\$1200 (depending on condition) for a Parker Trojan really is. Identifying Real Parkers People have been making and marking guns with the Parker name ever since the age of the hammered doubles. Many inexpensive Belgianmade hammer doubles are on the used gun market marked as Parkers and can fool a person that doesn't know what to look for.

However, it's really easy once you know a couple of things. First is that all guns made by Parker were marked "Parker Bros." on both sides of the receiver. The guns are also marked on the rib between the barrels and are usually printed "Parker Bros. Makers, Meriden Conn" followed by the kind of steel used for the barrels.

The Trojans will be marked "Trojan Steel", the Vmodels "Vulcan Steel", Dmodels marked "Titanic Steel" and the makers identification on the rib will be preceded and followed by a mark referred to as a feathered arrow. There are sometimes variations in these markings but the markings are always present except in extremely early guns and on the A-1 specials. The guns are serial numbered in four places.

On the trigger guard extension, the left side of the locking lug, the top of the forend iron, and the left side of the water table. As a matter of fact, most of the internal parts are numbered to the gun as well but you are not likely to have a seller willing to let you disassemble the gun so you can check. Directly under the serial number on the water table is a letter denoting the grade of the gun followed by an "E" if the gun has automatic ejectors.

The fake Parkers made in Belgium will have Belgian proofs on the bottom of the barrels. The one you are looking for will be an oval with the letter E over LG and a star. The oval may or may not have a crown on it. In either case, that mark tells you the gun was made in Belgium and passed the Banc D'Epreuves Des Armes a Feu De Liege (Proof House for Firearms of Liege) black powder proof test. That is the definitive proof the shotgun is not a true Parker Brothers-made gun. AG

FINISHING

Rust Bluing

A classic finish, rust bluing provides the best custom gun color. Here's how to do it right.

BY RAY ORDORICA JANUARY 2019

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The old Lugers had it. The Mannlicher Schönausers did, too. Most early British high-grade bolt-action rifles and all double rifles had it, as did all British shotguns and quite a few made in the United States. The early Winchester factory employed many old-world craftsmen and my old 1873 Winchester, which I sold long ago to my old friend Ross Seyfried, had it too. I'm talking about rust bluing. The lustre of a proper job of rust bluing, once seen, ruins the discerning eye for all other types of bluing.

Nothing can compare with that look. I'm going to tell you here how I do it and give a few secrets to achieving it—or bungling it—in your own shop. The job is essentially simple but some care must be used along the way. The first step is to get the item to be blued immaculately clean. Once you've got all your filing, polishing, engraving, border-lining, or whatever into it, the part will be covered with all kinds of invisible grease. This comes from gun oil, your hands, your cat, and even falls from the sky.

Whatever the source, it's on there and you've got to get it off. One of the best ways is to first wipe the part with a degreaser, such as gasoline or alcohol. (Don't use your best vodka. Save that for when you bungle the job and have to start entire-

ly over.) This initial wipe-down ought to be followed by using a good metal cleaner like Brownells Dicro-Clean 909. For degreasing longer parts I use a steel boiling tank, obtained awhile back from Brownells, which I used to use for common hot-dip bluing.

This long tank, useful for barrels, barreled actions, and the like, can be placed on two of your kitchen stove's burners (ask your wife first) to be heated. Suspend the parts in the cleaning solution (or after rusting, in the boiling water) with wires to keep the parts off the bottom, which might contain crud from previous jobs (that really ought not to be there but sometimes is) and also might get the parts too hot from direct contact with the outside metal. For smaller parts I use a dedicated roasting pot.

Don't handle the parts directly with your bare hands once the metal is thoroughly clean. The next step is to impart very fine-grain rust evenly onto them. That's the key to making this a simple and repeatable job. In order to do that you need a solution to start the metal rusting evenly and a humid atmosphere to continue it. Rusting Solution In the very old days, stories surfaced of gun barrels being left in the men's urinal to rust. I don't think they were true stories but you never know.

The trick is to get the clean steel to start to rust evenly and quickly. The best and fastest initial rust is achieved by a quick wiping with a rag dampened with some arcane mixture of stuff that will "bite" the steel and begin to rust it on contact. The best mixture I've used in days of yore was the old Niedner solution consisting of mixing hydrochloric and nitric acids with a quantity of iron nails dissolved in the mix, then diluted somewhat with distilled water.

Back at Mom's house in southern Michigan I had a friend in the jewelry business and he had these acids on hand. I acquired what I needed and then followed exactly the instructions for making Niedner's juice. I mixed the acids in the correct proportions, outdoors, in a crockery bowl. Use EXTREME caution or you can lose an eye or a lung! Then I dissolved the correct amount of iron nails (brads bought at the hardware store and degreased in gasoline) No need to find, transport, and mix powerful acids.

Just get a bottle of Classic Rust Blue and have at it. The author has found this compound to work fully as well as the original Niedner mixture he made up and used two decades ago. And why not? It has the same ingredients. That's the floorplate from his .416 Taylor, about ready for bluing.

RUST BLUING CONTINUED

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My damp-box, a takeoff on a design by John Bivens, is made of scrounged plywood. The front door has four hinges and two simple screen-door catches. The door ought to fit snugly to avoid loss of the generated moisture. The vertical construction allows for placement of long shotgun and rifle barrels for maximum evenness of rusting. Above center: Inside the box we see the heart, which is the controlled-heat pot at the bottom.

This pot, donated by my mother, was a frying or roasting pot with a dial to regulate the heat. I simply fill it with tap water and set the dial to the right spot (learned after lots of testing) to produce water on the verge of, but not actually, boiling. The pot is fitted with a perforated lid, salvaged from a big fruitcake, which keeps the water in the pot and lets the steam out. Note the light bulb. Its cord runs through a hole in the side of the box which allows the bulb to be raised or lowered as needed.

If the box gets cold, or for long sessions that might produce too much moisture, the bulb is a great and fast way to get rid of excess humidity. It heats up the atmosphere which augments the rust process. The bulb cord is hung over a dowel and can be easily adjusted for height. Small parts are put on the shelves, which are loose and have room at back and front for circulation.

Iron wire comes in handy for hanging parts. and then diluted the evil solution the correct amount the correct way with distilled water before putting it to work. Niedner's solution worked to absolute perfection. With that juice I rust blued my engraved .416 Rigby; my Cogswell & Harrison 20-bore's barrels; the barrels, trigger guard and top lever of my 12-bore Hollis; all of my famous custom engraved .458 with my fox friend on the floorplate; and my #21 engraved Linebaugh .45 revolver.

I did those all at the old home place in Michigan. Then I moved to Illinois, having taken a job with DBI Books as one of two top editors. I carried the super-juice with me in a brown bottle. At Mundelein I stored that bottle of intense poison away from my cats and dog in the unheated garage, where it froze and broke and went into the ground. Fast forward 23 years and I needed to do some more rust bluing, this time on my .416 Taylor (which I'm engraving) and a few parts from my Westley 10-bore.

Not knowing any local jewelers with supplies of nasty acids, I looked around for alternative rusting juices. I had some stuff I'd used on my percussion Hawken rifle to brown its barrel. It worked okay on the Hawken but didn't work well

RUST BLUING CONTINUED

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I don't generally use the small lower shelf but it's handy if you want to rest a barreled action on it. The tapered plugs are driven into barrels to seal them and used as handles. Smaller plugs like the one on the right are fine for big-bore rifles. I used that one on my engraved .416 Rigby. There's lots of room for the damp atmosphere to get around the shelf in front and back. when boiled for turning steel blue. What to do? My search led me once again to Brownells. Lo!

They had Niedner's original formula available all mixed and ready to go. This is their Classic Rust Blue. I got some. It worked. It worked extremely well, in fact. No need to

risk life and limb mixing nasty concentrated acids and dissolving hardware-store nails. So now we have a bottle of Brownells Classic Rust Blue and we've wiped it very sparingly onto the clean steel to begin the controlled rusting process. What next?

Well, pilgrim, you've got to either wait for damp weather to make the parts continue to rust or create a damp environment that you can control and stick the parts in there to continue the rusting process. Back in Michigan I did much of my rust bluing during the winter. Lower-Michigan winters are

not known for their high humidity. I needed a damp-box to go along with my original Niedner's rusting solution.

Humid Atmosphere Some years back a gentleman named John Bivins had a story Far I poked a hole that would accommodate the plug and then closed that large hole off with a simple door. Works like a champ. Here's the door open. The cord comes out a lot farther, as needed. You can make your damp-box as crude as this one or really do a fine job if you feel the need. I coated everything inside and out with good varnish to keep the wood from absorbing moisture and falling apart.

RUST BLUING CONTINUED

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published in Rifle magazine about making and using a device called a damp-box. (November-December 1974, Rifle, "The Damp-Box"). I built myself one, following Mr. Bivins' guidelines, out of 3/8" plywood with suitable bracing as needed. I made it a little over five feet tall by a foot square, give or take a bit, with a hinged door and some movable shelves inside. The moisture I bought this roasting pan just for this task. Be sure to keep such things clean and dedicated to bluing.

Don't cook a chicken in it between jobs. was provided by an electric pot my mother had no more use for. This sizeable vessel holds the water and has a built-in heating element with a thermostat to control the temperature. I fashioned a ventilated top for the pot and placed it in the bottom of my damp box. This device generated controlled Thanks, Mom! After some experimentation I arrived at the

correct setting for the heat dial. Then bluing became easy, repeatable, and darned near automatic.

It also keeps parts from falling into the pot. If you can't find a similar pot to heat water, a tin can on a hot plate with a good thermostat would do. humidity but sometimes the humidity would rise as the temperature dropped, with the result being too much moisture that could settle out as water spots on the cold steel. To fix that I used another trick from Bivins' old article. I hung a light bulb inside (40 watts, not an LED). This dries and heats the air, and I usually keep the light bulb on during a job.

The light bulb's cord runs through a small hole in the side and then hangs over the big dowel. Raising or lowering the bulb is thus easy. I make sure I keep its heat away from parts hung or stacked in the box to avoid hot spots on the metal. By being careful, watch-

ing closely, and after considerable experimentation I am able to control the atmosphere in the damp box nicely.

I never measured the relative humidity, though it must be close to what Bivins measured in his box: 70-80 percent humidity and with the added heat of the 40watt light bulb, around 80-90 degrees temperature. One needs to experiment with the heat setting on the hot water and with the light bulb's placement to get the desired very fine rust. The Job So now we've got a damp-box and a bit of the nasty fluid that begins the rusting process.

We know how to get the metal clean and how to dampen, not soak, the parts with the bluing solution. How do we proceed? Barrels are hung vertically in the damp-box and small parts go on the top shelf. Typically the parts are left in the humid atmosphere for a few hours, commonly about four.

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I used Classic Rust Blue, which is essentially Niedner's old formula all mixed up for you. Clean the parts, coat them lightly with the Brownells solution and place them in the rusting box. A few hours later take 'em out and boil them in the small pot. This turns the rust black, as seen here. Let the parts cool and then use something like the pictured #4/0 steel wool, previously degreased in gasoline, to wipe off the dull blackness.

The parts are then coated again with the bluing solution and the process repeated until you get the desired rich black finish. This is somewhat tedious but not at all difficult. They take on at first a light rusting, which ought to be very fine in texture. If it's too coarse you've got either too much humidity or not enough heat in the box. The next step after the rusting session in the box is to boil the parts in distilled water.

At Mom's place I used water from our well, which was mighty clean and pure, actually the best water I've ever experienced. I suggest distilled water, never common tap water. The additives in most tap water will screw up the bluing. This boiling turns the rust black, leaving a soft velvety coating on the steel. That soft, black-turned rust has to be gently removed.

Folks like Bivins and his information source, the Niedner Rifle Corporation, recommended the use of a very fine wire wheel to cut off the surface coating. However, I've always used #4/0 steel wool to do that job. The steel wool is, of course, degreased with gasoline before use. Once the parts are all "carded" back to the slightly-darkened steel, the parts are recoated with Classic Rust

Blue and placed in the box for another four hours or so. Then boiled, carded, recoated, and rusted again.

The steel color quickly gets darker and eventually arrives at the desired deep, rich, rust-blued look. Shotgun barrels will take on the final blue faster than harder rifle barrels or bolt handles, but be patient and you'll eventually get what you want. When it's all done (i.e., when you're happy with the result), give the part a final boil after the last "carding" but don't card it again. Oil the part. You're done. The final result is a bluing job that is unbeatable for beauty and endurance.

Once you try this you'll never go back to hot-dip bluing, unless you're forced to do so. If something contaminates the job along the way you might get streaks or spots where the bluing won't take. Instead of continuing with the process I recommend starting over from clean steel. If you get a horrendous mess for any reason, such as unknown or missed contamination along the way, you may have to redo the job. This means removing all the bluing off down to bare steel again.

Be sure to retain all sharp edges all along the job. That's one reason I never liked the wire-wheel approach. Even with extreme caution a power tool can easily round a critical sharp corner. Good luck, and don't give up. I mentioned in my intro that some "gunsmiths" (hardly worthy of the title) have botched this job badly. There are degrees of botch.

One guy I knew in Alaska wanted to get the job done quickly, so instead of using damp air and gentle repeated applications of the rusting agent this fellow used a caustic atmosphere in his damp box and too-strong acid in his mix. The result was that his guns looked blued all right, but had significant, fairly-deep pitting all over all their surfaces. The pitting was even but made the surface of the gun noticeably rough and cheap-looking. Yuck. Rust bluing must not be rushed if you want to achieve a high-quality job.

Be sure to plug any barrels you blue so the rusting solution and the humidity will not enter the bores. I made a set of tapered soft wood plugs for shotgun and rifle barrels. They worked well. This got bluing on the front edges of the barrels but not down inside. The plugs were also convenient handles. I've never rust blued a rifle with a tiny barrel, like a .22 LR, so have no experience with how best to plug them. A tapered wood plug would do the job but would not do for a handle.

I'm sure the clever gunsmith can solve that one. As with any new gunny procedure you want to learn, I recommend trying this on junk gun parts before you tackle that old Rigby or ancient Model 70 your uncle gave you. Rust bluing is not a difficult procedure, just a bit picky. It's extremely satisfying when you get it just right.

One further tip: If you want the best look on screw heads and other tiny parts, polish 'em to bright steel and then heat-blue them to a lovely deep blue with a propane torch, a handy water container to stop the process instantly, and a little skill. Good luck. AG

METALWORKING

Enhancing Action Rigidity With A Scope Base

As we mount a heavy barrel to a rifle receiver, resultant suspension leverage can actually flex or spring the action. A good, one-piece scope base adds rigidity to action.

BY NORMAN E. JOHNSON JANUARY 2019

ORIGINAL PP. 19-21

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It has been proven that even a short section of horizontally suspended railroad track will have a finite flex or bend to it. As I pondered these phenomena I wondered just how much measurable flex or springing there may be in the action of a rifle produced by a horizontally-suspended, heavy rifle barrel. This prompted me to accomplish a series of pretty convincing tests. This was done with a magnetically mounted dial indicator spanning the length of a rifle receiver as a means of testing for flex or springing.

The tests were performed both with and without a one-piece scope base and a method of controlled flexing of the rifle receiver. I began by strengthening the attachment of the one-piece Picatinny base by replacing the existing 6-48 base screws with 8-40 screws and adding two extra screws in the process. The base couldn't be attached more solidly short of bonding it in place.

Subsequent tests for action flexing or bending were monitored. The added central action screw was both used and removed during further action flex testing procedures, both with and without the scope base screws tightened down. The fundamental dynamics of the test involved placing a barreled action horizontally in a good, sturdy bench vise with a means of variable controlled flex testing.

With the rifle barrel solidly immobilized in a vise, a dial indicator was placed in position, suspended on an arm spanning rearward the entire length of the horizontal rifle receiver, thus enabling a reading to accurately indicate the smallest amount of downward flexing movement in the rifle receiver. The principles used in testing action flex or movement in this way are pretty straight forward.

A 16-inch length of steel rod, the exact size of a rifle bolt, is placed about two inches into the receiver bolt hole retained by horizontal friction. Any changes in action flex are shown on the dial indicator. A 10-pound barbell weight is then carefully slid in increments over the rod from the receiver outward. As any changes in action flex take place they are seen on the dial indicator. I performed initial tests with the scope base screws loosened at one end.

Then, the weight was moved outward in consistent increments, with the measurement on the dial noted and recorded. I used a marker on the rod as a means of uniformly positioning the barbell weight. The sequence of testing is less important as long as things are controlled uniformly. In my initial testing I removed both the barbell weight and the steel rod and tightened all six of the scope base screws securely. The steel rod was replaced and the aforementioned stress tests repeated. The

ENHANCING ACTION RIGIDITY WITH A SCOPE BASE CONTINUED

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Six larger 8-40 base screws replaced the four 6-48 screws as normally used on this receiver. The Near Manufacturing (NearMfg.com, scope base had the six pre-drilled screw holes for 8-40 screw application. Receiver required the addition of two holes and enlarging the existing holes to 8-40 size, a very worthwhile procedure. results proved to be consistent.

The amount of measurable action flex or springing is essentially linear movement and will vary with the type of rifle action tested, or type and method of scope base used, and/or action screw quality or arrangement. For example, a solid, cylindrical action like

the single-shot Remington 40X or Savage Models 12 and 112 compared with those rifles with magazine cutouts like the Winchester Model 70 or Ruger Model 77 will shot a marked difference.

In conducting these tests, barrel shoulder to receiver axial preload must be at normal full torque and the barrel must not extend beyond the dial indicator reads zero with rod in bolt hole. This included loosening and tightening of the base screws and repositioning the barrel weight. Few actions would be totally immune to some measurable flexing in these tests.

Addition of a one-piece scope base proved conclusively that reduction in receiver flexing takes place, which is further reduced with a properly-applied central action screw and pillar. beyond the vise jaws. We are merely demonstrating here that a flex or bend does indeed occur more readily in some actions, particularly those with magazine cut out. The method I have used here readily proves this.

Central Action Screw Support Some might argue against the merits of adding a central action screw as a means of improving overall action rigidity and resultant accuracy. While I may not be the forerunner



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M. O. target scope to the solid aforementioned one-piece scope base on the Winchester Model 70 Stealth II rifle receiver. Early accuracy tests that followed were eye opening. The measures that added rigidity to the overall action showed a very worthwhile improvement. of this modality it has enabled me to enhance and improve accuracy in a wide variety of rifle actions, including rigid receivers like the Remington Model 40X and Savage Models 12 and 112.

I have made the addition of a third action screw and well-placed pillar in a number of magazine-style rifles as well and all have shown at least some improvement in rigidity and resultant accuracy—some surprisingly so. In any case, accuracy has never worsened. This had encouraged me to convert a good many repeater style actions to single-shot status, replete with loading

ramps. In most instances accuracy has been noticeably improved. This will be covered in more detail in a subsequent article.

Conclusions Not surprisingly, the less obvious things we do can sometimes make a significant improvement in rifle accuracy. Though this may be particularly noticeable in the more accurate rifles where the difference in groups are more prominent, it stands to help the varmint hunter or even the longrange, big-game hunter as well. AG 30 caliber Magnum cartridge. A Krieger 1 in 10 twist barrel was used, along with the following loads.

Two groups on the left measure 0.390" and 0.289" fired with 168 grain Berger bullets and 45 grains of XMR 4064 powder. Two groups on right were fired with a 168 grain Sierra pushed by the same propellant charge. Upper (10 shot) group measures 0.375" and the lower right is 0.450".

MAINTENANCE & REPAIR

Mystique Means Money

Learning what make your business and services unique—and what to avoid—can prove profitable.

BY BILL SMITH JANUARY 2019

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Let's look at mystique. We all recognize it when we see a bottle of good wine or a pretty girl advertising it. Mystique is hype to sell a product and selling a product makes money. This immediately begs the question: Do gunsmiths have mystique? You can damn well bet your broken pin punch they do! All you have to do is understand it and then take advantage of it. So, where is it? What is it? How can I find mine? When I do find it, how can I make it work for me?

Read on, uninformed one, and be glad you did for your life will be enhanced. First, we have to back up a bit and take a look at who we are and what in particular a gunsmith is. We are made up of people who helped cause—and are still causing—the Industrial Revolution. America is a land of individualists and good mechanics who often make good inventors. However, the need for good mechanics and inventors is shrinking.

The best supply of mechanics frequently came from the farms where one had to learn to fix to improvise and improve tools and machinery simply because they had to—thus the phrase, “Necessity is the mother of invention.” Things have changed. The individual is becoming more the corporate conformist. He doesn't repair much around the house because he has lost the knowledge of how to use tools.

Schools no longer have shop classes; not necessary, so we're told, for today if anything breaks he uses the Internet (or perhaps the Yellow Pages) to find someone to fix it—provided he can still read. So his

gun won't work and in he comes as it is another one of those tools he owns but doesn't know how to fix. He sees, perhaps for the first time, tools and machinery next to other guns ready to be repaired or improved, along with other people who will talk to him.

He gets to actually talk to the guru who understands his problem. He has just been given a shot of “gunsmith mystique” and he will not recover. It won't do to tell him to “take two of these and call me in the morning.” The mystique that he has just been exposed to is the equivalent of falling in love. He stares in amazement at all the parts and tools and guns laid out on your bench. He doesn't quite believe what he sees for he doesn't understand it. All part of the mystique. If he's a gun guy, he's hooked.

This is good for both of you. You have another customer and he becomes a shooter or hunter once again because you fixed his gun. You have become the magician; the genie. The truth is that this is all you have to sell. As Abraham Lincoln once said, “A lawyer's time and advice are his stock in trade.” The same can be said for gunsmiths as their stock in trade is their time and, like lawyers, that time includes knowledge.

So, now you have injected (hopefully painlessly) another customer with mystique and if the proper dosage was used this customer will spread the overflow of it to his gun owning buddies. This is good, inexpensive advertising for you. A thought just struck me: Too bad one can't bottle this

mystique. Or can you? I persistently stress quality of work, business personality and, above all, knowledge. That knowledge comes with experience but you have the ability to add to your store of knowledge from every job you do.

The gunsmith trade will be around for as long as guns exist. The qualified gunsmith will be around a lot longer because he knows what job security is. Believe me, this is as good as putting it in a bottle! Mystique Downside In every location in the country there are many unlicensed “private” gun dealers. These people do not have an FFL and never will but are constantly buying and selling guns for a profit—at least they're trying (or claiming) to earn a profit. They are not collectors; they just buy to sell.

While I could spend a lot of time questioning the justice of the legitimate gunsmith and gun dealer getting a license, keeping records, and running an established shop, these “out of the trunk” dealers keep on going. Gun shows are full of them and they never have to undergo a BATF inspection. It isn't right but what can we do and would we want to do anything? Sooner or later these “dealers” will wind up in your shop, especially if you have marketed your mystique well. They have a junker that they want repaired.

You quote on it and it can be anything from a reblue job to anew stock or parts. The very first thing you are likely to hear is, “I can't make any money on this gun if it is going to cost that much to repair.” Your answer is—or should be—“So?”

SHOTGUNS

Reader Forum

BY AMERICAN GUNSMITH EDITORS JANUARY 2019

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From the pictures of the barrels, I'm guessing this shotgun was made for the old brass hulls. Should you hang the barrels up by a string, you can perform a bell- Beware the gun nut who starts collecting and brings you gun after gun over a period of time. He pays cash (or uses a credit/debit card that confirms the funds in real time) as all gunsmith customers do—or should. At some time or other he will have two or three (or more) guns in your shop.

As they are ready to be picked up, he comes in smiling, looks at the guns, and asks how much. He fumbles in his wallet and says, "Damn, I thought I had more money. Can I type test on them. Lightly tap the suspended barrels with a hammer along the full length. If the tone changes anywhere along the length of either barrel, consider the gun unsafe to shoot. This would indicate an internal crack at the point in the barrel where the tone was noticeably different.

However, if both barrels ring the same tone throughout their entire length, I'd recommend shooting only with black powder loads in 2 3/4-inch brass hulls. This makes for more cleaning immediately after shooting, however, 2 3/4-inch shotshells in plastic hulls loaded with smokeless powder wouldn't be safe. I have seen old guns like this using correctly-loaded ammunition outperform modern guns. PS, Thank you for "Fitting Tombstone Grips" by RK Campbell in the October issue. Daniel P.

Horn Wolsey, SD 57384 Army M4 Fix We at Military.com have learned U. S. Army weapons officials have figured out the cause and fix for a dangerous glitch in the selector switch of M4 and M4A1 carbines that could cause the weapon to fire unintentionally. We previously reported that about 3,000 Army M4 and M4A1s had failed new safety inspections begun after the ser-

vice's Tank-automotive and Arwrite you a check?" Right then, even if you have the brains of an empty 12 gauge hull, you respond you don't take checks.

A frequent trader may make for a great customer, perhaps even warranting a discount for volume work. A known, reliable customer can be trusted to pay by check. Not everyone entering your shop fits these descriptions. Don't let your effort to build your mystique cost you. Oh, and don't ask me how I know. AG maments Command (TACOM) sent out a Safety-Of-Use Message to all branches of the U.

S. military, advising units to perform an updated functions check on all variants of M16s and M4s after a soldier experienced an unexplained, unintended discharge. After more than 50,000 weapons were checked, TACOM officials discovered the cause of the glitch and halted the inspections, TACOM spokesman R.

Slade Walters told Military.com. "After receiving a significant number of reports from the field and an average failure rate of about 6 percent of the weapons inspected, we ended the inspections and have determined that the cause of the problem is a tolerance stack of the internal firing components. Each individual part conforms to the tolerance requirements, but when the multiple parts get stuck together in 6 to 9 percent of the weapons, those tolerances create that condition.

Modifying internal components fixes the problem. "Most failures occurred in M4A1s. The M4A1s that had been converted from M4s suffered 2,070 failures out of 23,000 inspected, a 9 percent failure rate. Out of about 16,000 original M4A1s inspected, 960 suffered failures, a 6 percent failure rate. Less than one percent of the 4,000 M4s checked failed the updated functions check. And

READER FORUM CONTINUED

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less than one percent of the 8,500 M16A2s checked failed the test as well. The Marine Corps also uses the M4 carbine, but the service said in June that its weapons were passing the new functions check.” The glitch-testing started when a Fort Knox soldier’s M4A1 selector switch became stuck in-between the semi and auto settings. When the soldier pulled the trigger, the weapon failed to fire. The soldier then moved the selector switch and the weapon fired, the TACOM message states.

The M4A1 is now the Army’s primary individual weapon. The service is converting M4 carbines to M4A1s through the M4 Product Improvement program. The M4A1 has been used by special operations forces for about two decades. It features a heavier barrel and a full-automatic setting instead of the three-round burst setting on standard M4s. The Army said that all new M4A1s being issued are being checked for the selector glitch and corrected as needed.

TACOM officials also could not explain why the glitch had not shown up in the past. “It was just a weird fluke,” Walters said. “In the number of rounds that have gone through those models in the number of years those models have been available, it’s like a winning-the-lottery kind of fluke. And the fact that we discov-

ered it is just one of those things.” We’ve added to this report from Military.com in The Editor’s File on page two of this issue.

While this has been identified with a small number of Department of Defense firearms, there is a possibility it could be found in other AR-15 firearms, especially because the cause of the problem is believed to be due to new parts added with the Product Improvement Program and a “stack up” of differing tolerances of different parts. The TACOM suggested additions to the standard Function Check area worthwhile addition to check all AR-15 firearms.

While this has only been found with a small percentage of weapons, the additional Function Check steps can be done within a minute and will provide reassurance that there are no mechanical issues with the safety/selector on your customer’s AR-15 firearms. Anti-Tank Rifle I noted your interesting Editor’s File reviewing The Anti-Tank Rifle in the November 2018 issue. I was a U. S. Marine Gunner on the 75mm recoilless anti-tank rifle from 1952-1954.

That rifle shot rounds that would penetrate 11 inches of armor plate, weighed 167 pounds, and was shot from a tripod. Norman E. Johnson AG

SEARCHABLE ISSUE RECORD

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