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EDITION

PRECISION ARMS WORKSHOP

AND THE AMERICAN GUNSMITH ARCHIVE

A TECHNICAL JOURNAL OF CRAFT, REPAIR & RESTORATION

03

ARCHIVE ISSUE NUMBER

INSIDE THE ARCHIVE

REMINGTON 513T

THE WAR ON GUNS • A GUNSMITH HAS GOTTA HAVE VISES • RUGER NO. 1 MODIFICATIONS • DOWNCHAMBERING A RIF...

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 159

DIGITAL ARCHIVE EDITION

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FROM THE ARCHIVE

The War On Guns

BY AMERICAN GUNSMITH EDITORS MARCH 2017

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Arming Yourself Against Gun Control Lies Dr. John Lott is likely familiar to readers here. An economist having held research and teaching positions at UCLA, Yale, Stanford, University of Chicago, Wharton, and Rice, Lott has long been known for his very dense, data-filled pro-gun argument. The War On Guns is no different.

His previous research as published in *More Guns, Less Crime*, *The Bias Against Guns*, and *Straight Shooting: Firearms, Economics and Public Policy* were published in 1998, 2003, and 2006, respectively. This new text updates current information and trends in the decade since. Starting with “Changes in Public Perception” Lott details how public perception based on opinion polls is indicating increased pro-gun feeling among the general American public.

This despite “Academic ‘Experts’ And Media Bias” showing how the general media’s reporting remains unbalanced against guns and gun owners, as Lott reported in *The Bias Against Guns*. The interesting part is, in ad-

dition to the general public’s increasing positive outlook on guns, economists and criminologists generally share this view based on Lott’s survey results.

Lott continues with chapter-long analysis of current trends and data, looking into “Why Licenses, Regulations, and Background Checks Don’t Help”, “Police and Gun Ownership”, “How Does the U. S.

Compare to Other Countries”, “Do Countries with More Guns Have Higher Homicide Rates?”, “Does Australia Show That Gun Control Works?”, “Mass Public Shootings: The Myths Debunked”, “Bathtubs and Motor Vehicle Regulations”, “Background Check Myths”, “Stand Your Ground Laws”, and “Background Checks on Private Gun Transfers.” As you’d expect from a doctor of economics with a substantial research background, Dr. Lott documented this work well. Pp. 223-303 covers notes and references.

This a timely and well-researched update to Lott’s previous works.

FINISHING

Remington 513T

Working on Remington's classic .22 target rifle.

BY GARY YEE MARCH 2017

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Recently, a colleague at Trinidad State Junior College asked me to reblue his old Remington 513 bolt action rifle, the target version in Remington's line of .22 LR bolt action rifles that included the Model 510, Model 511, Model 512 (tubular magazine fed), and Model 514 (single shot). Apart from the worn bluing, this beautiful rifle was missing the magazine catch that needed replacing. Starting with the progenitor of this line, the Model 510 was introduced in 1939 as an inexpensive, single shot, bolt action rifle.

The receiver started as flat stock that was punched out, then formed and welded at the bottom. All these rifles have some slight variation in parts. As Remington's mid-priced .22 target rifle, the 513T was a step up from the lower-end Remington Model 521T. Remington's top of the line Model 37 was the company's response to the Winchester Model 52. Produced from 1940 to 1967, production was discontinued when Remington introduced its 580 series. There was an early version and a later version of the 513T.

Besides the magazine lock, the later model 513s may be distinguished by the dovetail cut in the barrel for the front sight. The earlier model's front sight base was secured by two screws. The 513 worked on here is an early model taking two machine screws for the magazine catch. Note, if you work on these you won't find the serial numbers on the receiver since they were stamped on the bottom of the barrel and is hidden by the stock.

Disassembly To disassemble the rifle, remove the magazine and open the action to ensure that it is empty. You may want to remove the rear sight to protect it from being damaged during the disassembly process. Additionally, any possible interference of the Rear Sight (115) with the removal of the Bolt (228200) is eliminated. To remove the rear sight, undo the thumb screw that secures it to the sight base. Set the rear sight aside in a safe place where it won't be damaged.

Two screws secure the magazine guide plate to the stock. It is only necessary to remove only the Take Down Screw (393, closer to the

muzzle) to dismount the barreled action from the Stock (21305). The bolt must be cocked before it is disassembled. You can tell if it is cocked if the red painted Safety Indicator (128) protrudes from the rear of the Bolt Sleeve (6). Opening the action naturally cocks it. With the action open, push the safety forward into the off position.

Pull the Trigger (29) to the rear and withdraw the bolt out from the receiver. To disassemble the bolt, examine the Bolt Sleeve (6) which is secured in place by the Bolt Sleeve Pin (17922) and find the side that has a beveled edge for the bolt sleeve pin. The bolt sleeve pin is slightly mushroomed so it comes out on the beveled side. After that, the bolt sleeve may come off, revealing the Safety Indicator (128) and the Main Spring (19809).

Lift both of them out of the bolt to reveal the Main Spring Plunger (58) which may also be removed. Removing the Firing Pin Cam Pin (17934) allows

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Above center: Knocking out the Bolt Sleeve Pin with a punch. Note the padded vise jaws made of cork and plywood to prevent scratching, the Bolt Handle (297) and Firing Pin Assembly (212) to be removed. This leaves the left and right extractors, extractor springs, and extractor pins (32, 34, 35, and 17571, respectively) in the bolt. The extractor pins are driven out from the bottom, allowing the extractors and the springs to be removed.

Note how the left extractor has a distinct hook to it and how the right supporting extractor is less pronounced. Do not confuse the two. This finishes the disassembly of the bolt sub-assembly. Turn the rifled action up-

side down. In front of the Trigger Assembly (892) is the Trigger Cush- Right and ion Spring (491). You will see a large screw or the Trigger Cushion Spring Screw (492) and two smaller screws (493), one in front and the other behind the trigger cushion spring screw.

You need remove only the trigger cushion spring screw to remove the trigger cushion spring. Removing the other two screws will require you to readjust the trigger pull and this creates more work for you later. Time is money so don't remove them unless your customer wants you to readjust the trigger pull. The next item is the Safety Lever (251). Time spent examining the actual safety will

reveal that the safety acts against a plunger and spring that is mounted in the trigger assembly.

Note the positions of the two detents and safety stop on the Safety (499) and prevents further rotation. To remove the safety lever, unscrew the Safety Screw (252) and lift the safety lever off the receiver. Now, push the safety down into the receiver where it may be allowed to fall out. Study the trigger assembly and its relation to the Receiver Insert (595) and note how the Sear fits between the Ejector (330) and the zinc-casted receiver insert. Memorizing this or

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Above center: Assembled Safety (499) and Safety Lever (251). taking a picture of it will be helpful when you reassemble the receiver. Remove the Ejector Screw, then the sear pivot screw from the receiver. Using a punch, drive out the Trigger Pin (98). Note that one side of the trigger pin has been beveled for ease of reassembly. Once the trigger pin is out, push up on the trigger assembly to free the sear from the receiver. The trigger assembly may now be removed.

You may remove the trigger plunger (438) and trigger plunger spring (500) from the trigger. No further disassembly of the trigger assembly is recommended. By moving the receiver insert, the ejector should fall out of the receiver. If you remove the receiver Below center: Ejection Port view of the Ejector (330) and the Receiver Insert (493) in proper

position. insert now, you may now remove the two screws for the Magazine Lock (107) and separate it from the receiver extension.

On the newer 513s, the magazine lock is held by a single wood screw that is screwed into the stock, lowering production costs for Remington. The barrel is secured into the receiver by two pins which, if driven out, allows the barrel to be pulled out of the receiver. Early model 513Ts have a front sight ramp and front sight that is secured by two screws and the later ones have a dovetail in the barrel that holds the front sight assembly. Removal completes the detailed disassembly of the rifled action.

The receivers were stamped out from flat steel stock that were heated and folded over a mandrel. Bolt Reassembly Install the hooked

left extractor and spring onto the left side of the bolt. Secure that with the pin. Next, install the right extractor and spring onto the bolt. Drop the firing pin in the bolt body. Slide the bolt handle onto the bolt and insert the cam pin with the beveled end going toward the bolt handle. Installing the other way binds the bolt handle.

The bolt handle should be position such that when it is rotated upwards, the cam pin pulls the firing pin rearward and when bolt handle is rotated down, the cam pin may be manually pushed forward. The main spring plunger goes in with the opening facing towards the back. This allows for movement of the safety indicator. Place the safety indicator on top of the main spring plunger and then the main-spring over that. If you put the bolt assem-

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bled into a padded vise, it will be easier to push the bolt sleeve over the bolt and compress the mainspring. Remember which side of the bolt sleeve has the beveled edge and keep that side up while you reinstall the bolt sleeve. This will make it easier for you to insert the bolt sleeve pin and complete the reassembly of the bolt assembly. Receiver Reassembly Put the safety into the receiver with its stem (the part that prevents overrotation of the safety) facing down.

Holding it in place, place the safety lever thumb side up over the safety and secure the assembly with the safety screw. It helps to mount the receiver in a padded vise. Using a screwdriver inside the frame, push outward against the bottom of the safety and then line up and drop in the safety lever. Next, insert the trigger plunger spring into the trigger as-

sembly. Insert the trigger assembly into the receiver and check to ensure that the plunger is engaging the safety.

Now, secure the trigger assembly in place by driving in the trigger pin. The ejector goes in next with the two holes in the bottom of the ejector lining up with the corresponding holes in the receiver. Lay the ejector against the inner left side of the receiver. Swing the sear over and align the sear hole and the rear hole of the ejector. Insert the receiver extension into the receiver and screw the receiver extension screw down through the ejector and receiver extension to hold them in place.

Check the sear hole with the rear hole of the receiver extension and the receiver itself and secure them with the screw. The magazine catch (for the old model) may now be installed followed by the trigger cushion spring. Some tips with this bolt. The bolt

must be cocked prior to inserting it into the receiver. This is indicated by the safety indicator's tip which is (or should be) painted red and protruding from the hole in the bolt sleeve. If it isn't cocked, put the bolt body into a padded vise.

I use corkcovered wood to protect it but two pieces of wood will work the same. While the bolt body is secured in the vise, rotate the handle up to cock it. After the bolt is cocked, push the safety forward, depress the trigger and push the bolt in. When it is fully forward, release the trigger to secure the bolt in the receiver. Gunsmithing Issues For extraction problems, clean the chamber first.

Also check to see if its been dry fired too often without a protective snap cap, peening metal over where the firing pin has repeatedly struck the barrel. Do not deburr it

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as that would be removing the metal. Rather, use a Tom Menck .22 Chamber Ironing Tool (Brownells #590-000-022) to swage and restore the metal as close as possible back to its original position. Next, remove the extractors and clean the hooks. The left hook may need a bit of sharpening to ensure that it has a good purchase on the cartridge. Clean the extractor slots on the bolt and check the springs. Bent springs should be replaced before reinstalling the extractor.

If your Remington has feed issues, check the magazine body for dents. Compare the feed lips against a fresh magazine to ensure that they are at the correct angle. You may have to tweak them slightly with pliers to adjust them. Push down on the follower to see how smoothly it rides inside the magazine. If it doesn't spring back up quickly, the magazine spring may be bent or worn. Finally, check the bolt. If the sear is not dropping to release the firing pin, remove the trigger assembly and test its free play.

Place it in the ultrasonic or other parts cleaner and use the solvent to flush out any dirt and grease. Oil before reinstalling. You may also want to clean the other parts of the firing mechanism. If the safety isn't engaging,

check that the safety has been properly installed. Check the safety spring and plunger for free movement. Check the safety's notches for sharpness. This part should not wear down but who knows what abuse the gun suffered before reaching your hands.

Before we finish, let's briefly discuss adjusting the trigger cushion spring. The rear screw is the trigger stop screw. Screw that down until it touches the bottom of the trigger. When the trigger is in the fired position, the trigger should touch the trigger stop screw the moment the sear disconnects from the firing pin notch. The front screw adjusts the trigger weight, turning in to tighten face to ensure there are no burrs that would interfere with the feeding process. For misfires, clean the bolt assembly.

An ultrasonic bath speeds up the process by loosening the buildup but detailed cleaning is still necessary afterwards. You should also check the firing pin and make sure the tip is not damaged. Check the movement of the firing pin within the bolt that it doesn't hang up. Finally, check the mainspring by comparing the length against a new one.

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230 Barrel 401 Barrel, SA Grade 2 Barrel
Lock Pin 231 Barrel Plug Screw 22830 Bolt
816 Bolt Assembly 297 Bolt Handle
Assembly 6 Bolt Sleeve 17922 Bolt Sleeve Pin
308 Butt Plate 25110 Butt Plate Screw 330
Ejector 331 Ejector Screw 32 Extractor, Left
34 Extractor, Right 11371 Extractor Pin 35
Extractor Spring 2646 Firing Pin Assembly
17931 Firing Pin Cam Pin 343 Front Sight
(Redfield) 15649 From Sight insert 522 Front
Sight Ramp Screw, SA Grade 130 Front Sight
Ramp Screw 5 Front Swivel Assembly 232
Front Swivel Base 233 Front Swivel Base
Screw 113 Front Swivel Screw 1010
Magazine Assembly, Complete, 6 2170
Magazine Assembly Complete, 10 2105
Magazine Guide Plate 17577 Mag Guide Plate
Screw 596 Magazine Lock (wood fit) 107
Magazine Lock (old style) 19636 Magazine

Lock Screw 22250 Magazine tack Screw
19809 Main Spring 58 Main Spring Plunger
115 Rear Micrometer Sight, Complete 548
Rear Sight, SA Grade 22560 Rear Swivel
Screw Assy 371 Receiver 228 75 Receiver
Insert, Front 595 Receiver Insert, Rear 564
Receiver Sight Disc 199 Safety 128 Safety
Indicator 251 Safety Lever 252 Safety Screw
Remington 513T (Speci ications subject to
change without notice) 83 Sear 84 Sear Pivot
Screw 86 Sear Stud 20070 Sling Strap
Assembly 20215 Sling Strap Assembly 1"
25573 Sling Strap Assy/Mount 21305 Stock
Assembly, Complete 21293 Stock Assembly,
SA Grade 20895 Stock Swivel Assembly 393
Take Down Screw 17569 Take Down Screw
Est.

29 Trigger 892 Trigger Assembly 822 Trigger
Assy Complete 491 Trigger Cushion Spring
493 Trigger Cushion Adjusting Screw 492
Trigger Cushion Spring Screw 19474 Trigger
Guard 17577 Trigger Guard Screw 98 Trigger
Pin 16360 Trigger Spring 438 Trigger Spring
Plunger 12 Trigger Takeup Pin 25 Trigger
Takeup Spring (clockwise) increases the trig-
ger pull and turning outward (counter clock-
wise) lightens it.

Conclusions In the decades of production, Remington made hundreds of the 500series .22 LR's and many of them are still used today. They will be around until their barrels are worn. Even then, it's not rocket science to fit anew barrel. All most need is a thorough, regularly-scheduled cleaning to ensure they will continue to render many more years of problem-free service. AG

MACHINING

A Gunsmith Has Gotta Have Vises

BY DICK MAHEU MARCH 2017

ORIGINAL PP. 9-13

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If I have a gunsmithing vice, it would be the number of vises I own. I suppose I could be accused of overkill when it comes to bench and machine vises in my workshop, however, I will explain (justify?) my reasons for having so many and how and why I utilize each and every one of them. Gunsmithing books seem to only touch lightly on the subject of vises and then move on to more heady subjects.

It's unknown who fashioned the very first vise out of iron, but many have come since that enterprising soul laid out his plans and put them to device. It's safe to say that Adam and Eve, or whatever other cavemen you prefer, found they could secure or steady something simply by putting it between two heavy rocks to deal with it. Today, we are greatly privileged to have a vast array of vises to choose from for our gunsmithing work from a variety of sources.

Where I can remember, I will list the sources where I procured my vises. I'm sure that many excellent gunsmiths over the years have done all of their work with possibly only one or two bench vises in their shops. I personally like to make things easier for myself and find different sizes and shapes of vises satisfy my needs quite well. I have owned well over 40 various vises, although many of those have come and gone due to moves, downsizing, and such.

Main Bench Vise I have had several main bench vises over the years but this current one is my all-time favorite. I purchased it at an indoor second hand shop in 2003 for \$40 and it is the best \$40 I ever spent. First off, it is super rugged and heavy duty for a medium-size vise and strong enough to remove barrels from guns. It is an old Craftsman 5160 with 3" jaws and sees the most duty on the main work bench in my shop. I've owned bigger Wilton machinist vises that were not as rugged.

You won't find these very often because they get handed down and nobody turns them loose. If you come across one, scarf it up at any price. You'll be glad you did. I also have a small rotary vise I found at an old tool shop for \$1.00. It has two sizes of jaws (1.5" and 2.5") and rotates 360 degrees. It is a great little vise for small work and sees a lot of use in my shop. General Utility This General vise sees the second most use in my shop, usually to cut off pins or shape apart.

I paid \$10 for it at a yard sale many years ago and modified it so I can use it as a solid upright vise that won't rotate on the ball. By taking the through bolt out of the ball, it becomes a rotating vise again. It has 3" jaws with Vgrooves.

A GUNSMITH HAS GOTTA HAVE VISES CONTINUED

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The mini vise next to it is over 100 years old! I paid \$1.00 for it at an antique shop many years ago and it is great for working on real small pins and delicate small parts. Similarly, I have a Shop Fox utility vise which I've mounted on a small utility drill press that I use mostly for cleaning up parts with a wire wheel brush. It has 3 1/8" smooth jaws and cost me around \$20. I rarely do any actual drilling with this drill press. I also have a Lakeside utility vise.

This is an old vise that was made in Belgium probably close to a 100 years ago. I bought it at a garage sale around 12 years ago for \$3.00. It was broken at some point and someone did a very good repair on it with brazing. It has three-inch jaws and also a pair

of saddle-type pipe jaws. It may have come back from World War II with a G. I. I generally use it to hold parts or such that need to cure or dry as it is out of the way of my main bench.

I have a love and fascination for old tools and try to revive them and put them to use. If these old tools could talk, what Parrot Vise I have owned several Parrot vises over the years. Brownells calls their version a Multi-Vise (#080-000- 0 1 9 W B.) Mine has 3.5" jaws and can be set up vertical or 90 degrees right or left. It is very utilitarian and gets a lot of use in my shop.

The model I use is a Shop Fox H3302 purchased from Grizzly Industrial (grizzly.com), for around \$55 complete with the side-swing tilting jaws. A bargain in my estimation. Heavy Duty Vises You see these rotary vises just about everywhere for sale at various prices but they always seem to have 5" or 6" jaws. Mine has serrated 4" jaws and I prefer it over the larger rotary vises. This is the second one I have owned and the first one was my main bench vise for 15 years.

I generally use this one to set up scopes, glass a story they would tell! bedding, or other tasks requiring mounting a rifle in a vise. It can be set to what ever angle you want. It also has two other sets of jaws 180 degrees from the main jaws consisting of a 1 1/4"

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X 1 7/8" set of Vjaws (smooth) and a small set of pipe jaws. It pays dividends when you need it. I paid \$50 for it at Grizzly several years ago. There again, another bargain. I also have a Wilton, a heavy duty mechanic's vise with 6" jaws for the heavy handed jobs. I don't use it much but picked it up at a tool place on sale dirt cheap so figured it was a good investment. If I remember right, I only paid \$35 for it. I have a set of neoprene Vgroove jaws for it that are non-marring.

Drill Press Vises My Gibraltar drill press vise is my main drill press, having 3" jaws and rotating 360 degrees. I mounted it on an X-Y table for drilling work. It has Vgrooves on one of the jaws which come in very handy for drilling round stock. I bought it at Enco (use-enco.com, along time ago. Ial so have a Shop Fox compound drill press vise with 3 1/8" smooth jaws mounted on my number two drill press.

It has X-Y travel and I have indexed it for bolt jewellery in a jewellery jig of my design, one I plan to feature in a future article. It also sees

other occasional work from time to time. At the start of my gunsmithing career, I had only one drill press and it served my needs just fine until one day it broke down right in the middle of a very important job for a very good client. I was boondoggled to say the least! From that time on, I have always had at least two heavy-duty drill presses.

For no more than they cost, it is a sage investment. Finally, I have a flat drill press vise, although that's not what I use

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it for. I have it mounted to a secondary work bench with sticky back felt on the 4" jaws and use it exclusively for work on pistol slides. Being flat, it allows good access to the slide and keeps it perpendicular to the top of the jaws for precise work. I paid only \$10 for mine and have owned several of these over the years. I also have a smaller model of this vise. Another well-worth investment to consider. Angle Vise This is one of the better ideas I have had in the past decade or so I have owned it.

It is a cheap angle vise (\$20) with 3 1/2" jaws mounted on a 8" x 6 1/4" x 1" heavy steel plate. The whole thing weighs 24 pounds. The purpose was to have a portable angle vise I could use on a work bench and be

heavy enough on it's own to not move when working apart in it, and does this quite well. A good idea and worthwhile investment. Give it some thought. Drill-Mill Vises I have had these three vises going on 40 years.

The larger one is a Craftsman with 2 1/2 " jaws, the toolmaker's vise has 2 3/8" jaws, and the Palmgren 1 1/2" jaws. These can be mounted on a drill press, milling machine, or simply used on the bench. I often mount the little Palmgren in another drill press vise for small drilling or other work. I probably have less than \$40 in them total. In addition to these vises, I have a mill clamp vise. These come in various sizes and are utilized to clamp work for milling in the milling machine.

I also have a heavy-duty mill vise, which is a good quality, heavyduty, four-inch milling vise and I have a substantial investment into it. If you own a milling machine as I do, then you know it's a quality, precision machine and you want a good precise vise to do your milling on. Enough said about that. Specialty Vises I'll start with my barrel vise that I made 45 years ago that has served me well all these years. It has 7 3/4" x 6" x 1" jaws with a 1 1/4" through hole.

I have it mounted on a 7 3/4" x 5 3/4" x 1/4" steel plate, mounted on two 3/4" industrial plywood bench tops with a lot of weight on the bench. The secret to this barrel vise is not its size but the strength and weight of the bench it's mounted on! I have

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many different size aluminum barrel inserts I have made for this vise over the years. They work well with rosin to prevent slippage. Another unique, specialty unit is a brass oval vise I picked up at a garage sale for 50 cents! I have no idea what it was originally used for but it works great for stoning hammers and triggers. I have it mounted on a 5.5" length of 1.5" angled aluminum. It's on a 3" x 1.5" brass plate with mounting holes. The round base is 2" in diameter and the top is 1.5" in diameter.

The top piece has a center mounted 1/4" threaded screw to tighten it down. A neat little vise that actually could be easily made. Finally, I have several utility clamp vises in various sizes and shapes that can either be

used as is or mounted in a regular vise for a myriad of work projects. What they were originally used for I have no idea, but they will work well for you in your shop as they have in mine. I usually pick these up for a \$1 or less. A real bargain.

Vise Jaws As I come to the end of this article, it would not be complete without showing a sampling of the many vise jaws I have. Most of them have been cut with a hacksaw from regular aluminum angle metal obtained just about anywhere, such as Lowe's, Home Depot, hardware stores, etc. It comes in various sizes so pick up the sizes you need for your vise jaws. After cutting, square up the ends on a disc sander and smooth on a wire wheel brush.

I use some of them as is, and on others I glue either leather pads with contact cement or use sticky back felt for padding, which can be had at craft stores or Wal-Mart. I hope this article has given you some ideas for your workshop needs. Each one of these vises is used on-going in this man's workshop. I don't have a large investment involved and some of them may be considered on the relatively cheap side of foreign manufacture (China, etc.) but they all get the job done.

As always, I welcome comments, feedback, and suggestions on my articles. Enjoy the trade, strive to learn more each day, and treat your customers with respect. AG

HISTORY

Ruger No. 1 Modifications

Here are the must-have modifications and improvements for Ruger's No. 1, especially the Tropical Rifle variant.

BY RAY ORDORICA MARCH 2017

ORIGINAL PP. 14-16

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The grand old Ruger No. 1 has been with us since 1967 and has had just about every cartridge known to man chambered in its barrel along the way. There have been many different versions of the gun over the past 50 years of its production but none more serious in appearance than the (1-H) Tropical Rifle version in the classic "African" calibers. The Tropical Rifle most closely imitates the fine English single-shot rifles from over a century ago.

It has a Farquharson-style lever, Henrylike U-shaped groove in the forend, a heavy barrel, usually great wood, and classic lines as much as can be had in a production piece. But since its introduction nearly 50 years ago exactly nothing has been done to the Ruger No. 1 to improve it. Does that mean I think there's something wrong with the No. 1? Maybe not with all of Ruger's versions, but I do on the Tropical Rifle. For a rifle designed for serious use against heavy game it has quite a few things wrong with it.

Some of them are easy to fix. Other problems are difficult, short of rebarreling. The basics of the rifle are sound. It has a falling-block action, is stronger by far than just about any other rifle design out there, has simple and rugged parts, sound wood in a

pleasing design, and easy maintenance. It also has some of the worst sights known to man.

On these serious rifles—and by "serious" I mean of caliber larger than .30—one of the biggest problems is Ruger's lousy and thoroughly inadequate recoil 1 Tropical Rifle in .450/400-3" Nitro Express was entirely too light for its power. There were some other problems with it. The author fixed some and left the rest alone. He thinks that after 50 years, some factory upgrades are overdue for this fine rifle. One obvious problem is the unsightly gap under the rib. pad.

One would think that if Ruger asks \$1400 for this rifle they could afford to stick on a decent recoil pad. I acquired a No. 1 in .400 Jeffery, one of an earlier production run, some time back and have shot it a bit. The .400 Jeff, officially known as the .450/400 Nitro Express, slings a 400-grain bullet at 2150 fps. That horsepower requires a rifle that weighs about nine pounds or even more for fast handling under fire and to keep recoil down to a reasonable level.

My Ruger weighs eight pounds, which is far too light. Fortunately, Ruger took note of this, and the later versions of this rifle in this caliber have a heavier barrel. With the heavier-barrel version you still have the option of adding more weight if you want it.

Instead of asking the factory for a rebarrel job, I filled the bolt hole in the stock under the pad with number 7 1/2 lead shot. To my surprise, a full pound of shot went in, which I capped with a cork wad to prevent rattling.

The result is a nine-pound rifle that feels great under recoil, though the muzzle lifts more than I'd like. The overall balance is not bad, but with the weight moved rearward the muzzle rises drastically. Of course I replaced the pad with a decent one by Pachmayr. Next up is that neat rib on top that holds the iron sights and also acts as the scope-ring base.

I am not going to discuss scopes on the No. 1 because scopes work just fine if you need them, but the iron sights—which I prefer on this kind of rifle—are just plain no good. Let's first take a look at the rib. What's that hole under it? Why can we see so much daylight under the rib? Take it off and you'll find it's supported by two pins stuck into the barrel along with the three screws. The rib-to-barrel fit on my rifle was not all that good.

In fact, there was lots of tension in the rib, which bent slightly when it was off the gun. I took it off to try to fill in the ugly hole under it but

RUGER NO. 1 MODIFICATIONS CONTINUED

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This is how the rib of the No. 1 ought to look, with no gap beneath it and a forward-slanted Express-type sight. I haven't yet solved that problem to my satisfaction. I tried to drill some holes under the rib to give traction to my filler, whatever I chose to use. However, the rib is extremely hard, which it needs to be so it can resist the forces imposed by the scope attachments, so I was unable to drill it. I tried to fill the slot with epoxy but it didn't work well.

I still don't know how to dispense with the slot under the rib. One solution is to make a cus- There's a full pound of #7 1/2 shot under it. tom rib, which would not need to be hardened if you don't plan to scope the rifle. Next are the sights. The rear one folds and has a huge white diamond in its face. My recent tests indicated that in bright light the Ruger's normal rear sight gives serious aiming errors because of all the glare, much of it from the large white triangle.

The factory rear sight gives the choice of a U-notch or a square-bottom one. I didn't care for either so I took off the blade (don't lose those tiny screws!), filed a vee-notch in it, ground off the inside edges of the blade's support to match the vee, and put the origi-

nal blade in backwards, with er support to prevent it cutting me as I raised and lowered the blade.

This simple modification gave me a decent rear sight on the rifle, and it still has some degree of adjustment for elevation, which the optional Ruger Express sight does not give. My alteration to the rear sight made the front bead easier to see and with no glare to the rear sight the shots now go where the sights look. Ruger makes an upright vee-type Express sight that fits the slot for the original sight. I prefer one that slants forward and the only way I know to get that is to make one myself.

The end result would be a solid, clean vee with no elevation adjustment but I have found that what I did to the original sight is plenty good enough for now. I believe an aperture rear sight would be too far forward to work well on the No. 1. Aperture sights need to be close to the eye, not way out there, so that's pretty much not an option here. That front sight would be a whole lot better, easier to see in all light, and far better protected with a proper hood over it.

Ruger apparently had a design for a hooded front sight on the early No. 1 but it never went into production. So Ruger has never offered a hood for this rifle and we don't know why. The design makes it hard to put one on because of the gouges cast in the side of the front sight base. Some sort of Sshaped hood might work but then you'd have to come up with away to retain it. There are many ways to do that but why doesn't Ruger do this themselves? the white diamond hidden against the support.

This gave me an acceptable rear sight in the form of a wideangle vee. I rounded the outer edges of there ar sight's out- I have one final complaint about what is basically a dangerous-game rifle. Once you've fired a shot, you want that empty brass to get completely out of the gun and get out quickly. Ruger makes the No. 1 with an ejector and it always works unless you intentionally disable it. But each and every ejected fired case on this rifle banged into the tang safety's front end and stopped dead

RUGER NO. 1 MODIFICATIONS CONTINUED

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That big white diamond causes glare in certain lights. Note the vee-notch already cut into the sliding insert. That was an improvement, but it got better. 1. The white lines could be filled with something black. in the race. Each and every empty case should have gone zinging over my shoulder as it was ejected. The safety cannot be pushed rearward out of the way to the “on” position once the rifle has fired.

You must first open the action and cock the hammer, which means the front leg of the safety blocks ejection every time. That’s fine if you’re on the range and you want to keep your brass out of the dirt, but it’s not fine for a serious rifle. My solution for this was to disassemble the rifle, remove the safety button, and cut off the front end of it, bevel it to

look decent, slap some cold blue on it, and put it back together. This simple modification is all that was needed.

Now the empties go flying properly on ejection. The only problem is there’s now a hole in front of the safety button where debris can enter and I don’t know how to fix that. While I was inside the Ruger’s guts I cleared away some metal that was hindering the easy operation of the safety. This was no big deal, and many of these rifles won’t have that problem, but mine did. That’s pretty much it.

I could complain that the lovely buttstock wood is not matched by the forend, or that there’s too many words stamped into the barrel, but the rifle works well as it now is. However, I believe it’s time for Ruger to step up and take a hard look at the No. 1 and

make some of what I consider to be necessary corrections, at least on the serious-caliber Tropical version.

The No. 1 is not listed in the most recent Ruger catalog but is mentioned on the Ruger website as being available in, “...select, limited-edition models each year.” Though none of the current selection of seven calibers is worthy of the Tropical Rifle designation, hopefully Ruger will pay attention to some of my suggestions, upgrade it, and make the future No. 1 Tropical Rifles worthy of special promotion. AG Far Ruger apparently began production of the No. 1 with provisions for a hood but abandoned the idea.

Have you ever seen a hood on ANY Ruger rifle? Why not?

PEOPLE & COMPANIES

Downchambering A Rifle Barrel

If a cartridge or chamber size reduction is warranted, here's what you'll need for secondary barrel refitting and chambering.

BY NORMAN E. JOHNSON MARCH 2017

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Perhaps you won't find the word "downchambering" in the dictionary or as a commonly used gunsmithing term, yet this is precisely that which will be undertaken here. In this somewhat unusual gunsmithing endeavor, the rifle barrel chamber will have been downsized from 6.5-284 to .260 Remington. The reason for this change was sound enough. While the 6.5-284 is a fine long range target and hunting cartridge, it is highly erosive and recoil is quite pronounced.

The .260 Remington yields more than double the barrel life with reduced recoil. Though accuracy is quite comparable with these two cartridges, the smaller .260 Remington cartridge costs less for both cartridge cases and loaded ammunition, and it is more readily available to the shooter. Revision Up Close As such a cartridge transformation is made, many precise measurements must be taken.

Where a larger cartridge is being rechambered to a smaller one, the entire larger chamber section must be removed to the shoulder. This normally requires the larger chamber cut off at the shoulder datum line or where the case head of the smaller case would permit reamer clean up. It is important to double check all

measurements before beginning the work. It is an absolute requirement to have enough remaining barrel shoulder at the receiver ring juncture after forming the barrel tenon.

For this particular rechambering I went from a Model 700 Remington to a Model 112 Savage with 0.863" x 1.50" x 20 thread per inch. Most rifle barrels have a major diameter of sufficient length for this to be accomplished rearward of the barrel taper. In the revision being made Here the 6.5-284 case is being replaced by the .260 Remington.

The barrel must be shortened by 1.740" here. 740" to accommodate the downchambering process from 6.5-284 to .260 Remington. here, the 6.5-284 chamber was cut to the case datum line involving a length of 1.640 inches. The tenon cut for the new barrel thread left a full 1.240 inch shoulder for a safe and solid barrel-to-receiver joint. For this work, a Bartlein 416 stainless with 1:8 twist and Number 5 contour was used. This is a size between a varmint and sporter weight, suitable for both target and hunting.

ON REMOVAL OF THE OLD CHAMBER THE BARREL WAS PRECISELY CENTERED IN THE

DOWNCHAMBERING A RIFLE BARREL CONTINUED

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5-284 to .260 Remington. More than enough shoulder will remain. lathe in preparation for turning, threading, and chambering. The barrel is faced and precisely turned to diameter. Here the Savage 112 receiver has a 20 TPI pitch with a full 0.750 thread purchase beyond the interspacing recoil lug. On fitting any replacement barrel to a Savage 110 style receiver for switch-barrel use, I seldom use the Savage barrel lock nut headspacing system.

I pre-headspace the barrels via the barrel shoulder against the interfacing recoil lug for a most solid and precise barrel-to-receiver joint. The barrel would be going on a rifle that has two other barrels. As the threading process nears completion, the receiver is tried onto the barrel until there is a smooth

fit of the threads. The chamber is then reamed while the barrel remains positioned in the lathe.

Here too, the receiver is turned onto the barrel with the Go headspace gauge in place to determine the remaining depth to 260 Remington in the downchambering process. 260 Remington. Note tape on the reamer flutes as a means of determining approximate maximum depth. cut the chamber. Carelessly reaming a chamber beyond headspace is a mistake that should never happen. Always hand ream the last few thousandths of a chamber in attaining final headspace.

There were a hundred once-fired Nosler custom cases in .260 Remington available from a different chamber. These cases, along with

the Go headspace gauge, were virtually interchangeable, so things were working out nicely. Finishing Touches and Testing In keeping with tradition at my test range, load evaluation would be in my arena. Following barrel polishing and stamping, handloading and testing were next.

Following leade polishing and a brief shoot-clean routine, a number of loads were tested, including factory ammunition. All went well and accuracy was most excellent. The 1:8 rifling twist would stabilize bullets from under 100 grains to over 142 grains. Barrel length versus velocity is a factor to be considered when downchambering a

DOWNCHAMBERING A RIFLE BARREL CONTINUED

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5-284 to .260 Remington. Note how much was cut off the barrel for chambering transition. Barrel thread pitch from 16 to 20 TPI is required in going from the 700 Remington to 112 Savage action. Note absence of typical Savage headspacing nut as direct barrel shoulder is used. The recoil lug is not shown. Above center: Downchambering from 6.5-284 to .260 Rem. with new barrel in place on Model 112 Savage rifle. Shown is the cut-off chamber making this procedure possible. 242".

Precision here is paramount to best accuracy barrel, as was done here. Expansion ratio, a function of barrel length and chamber (car-

tridge) volume, play apart in this equation. This effect on a modern-day centerfire rifle 260 Rem. on a Savage Model 112 single shot rifle. Upper left group is eight shots. 120 grain Berger bullets were used for the groups. 5-284 to .260 Rem. with Sightron scope shows a well-balanced, older Savage Model 112 rifle suitable for sporter or target.

Talley Picatinny mounts are used to attach this scope. cartridge will involve about 25 feet per second/inch of barrel shortening, so an expected velocity loss of approximately 50 FPS was shown here, which is quite negligible. The resourceful handloader is usually able to compensate for this difference while

not courting excessive chamber pressures. Conclusion Downchambering a rifle barrel can be a most practical alternative for many a target or hunting rifle.

Following careful measurements, it becomes a routine gunsmithing procedure at a modest cost. Magazine alteration is normally not required with typical hunting cartridges. The revision can be akin to having anew rifle, so further encouragement shouldn't be necessary. AG

PISTOLS

Kart Barrels

Installing a quality aftermarket barrel in 1911 handguns. Kart's EZ Fit can help save time.

BY ROBERT K. CAMPBELL MARCH 2017

ORIGINAL PP. 20-22

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The object of a number of projects, the 1911 lends itself well to producing accurate and reliable handguns with proper attention to detail. Over the years I have enjoyed generally good results with a variety of 1911 barrels, including those from Bar-Sto, Nowlin, and the inexpensive Roto. The only barrel I've encountered that was actually worn out was in an old GI .45. The rest either met with corrosion or the owner simply wished to upgrade accuracy.

Until recently, my experience with Kart barrels had been limited but I installed one in a project gun with good results. I used a Kart EZ Fit barrel and I was interested in how much time would be saved compared to complete custom fitting and what the results would be. Kart's instructions indicated it is possible to fit the barrel in about sixty minutes. I admit that claim made me skeptical. Perhaps someone fitting a custom barrel at the Kimber or Springfield custom shop working with the same gun every day, maybe.

It made for an interesting test. The first thing was setting the barrel in the slide to check for fit. As expected, it needed fitting. The barrel bushing was sized using emery cloth with a "shoe shine" motion. This alone took a solid hour. However, the EZ

Fit barrel saved time in having lower lugs that are precut and with a link pin already installed. This made fitting the hood to the slide the next step. I didn't need to do anything to the width of the hood other than shortening it ever so slightly.

The barrel hood and slide need to be mated up for proper fit and lockup. As I chose to use a National Match bushing that was waiting for a project, this took a bit longer. If the sides of the hood are too wide, the barrel's motion will force it onto the lower lug. If the hood is jammed tight, the locking lug does not rise correctly. They may jam against the slide stop pin. Improperly fit lower lugs may cause the barrel to tilt to one side or the other at the hood.

To verify lug contact, use heavy marking fluid, a Sharpie, sight black, or smoke the parts to indicate which parts on the barrel are rubbing or engaging more than the other and what needs to be filed to raise the barrel. Observe the hood carefully as it goes into battery. If the contact pads are uneven, the barrel hood will show a tilt to one side or the other. This occurs as the barrel attempts to go into battery. I also mark the lower lugs to verify contact with the slide stop as the barrel goes into battery.

This contact may cause the barrel to hit the slide stop, preventing it from going into battery and leaving a mark on the lower lugs. The pads are carefully filed down a little at a time and the barrel checked for tilt. As this is done, the slide stop contacts the lower lugs just slightly. Eventually, we have the three contact point lock up that is desirable for accuracy. The barrel is held tightly by the raised portions or pads on the top of the barrel and the locking lugs on the lower part of the barrel.

The lower lugs press against the slide stop and the barrel hood also exerts pressure. It may also be necessary to shorten the barrel hood as the fit became tighter. Anyone not completely familiar with the function of the 1911 should not fit a precision barrel—or, I should say, attempt to fit a precision barrel. This isn't the first gunsmithing project to be undertaken.

Kart's approach of securing a good lockup is different, however, as long as the locking lugs and the barrel bushing are tight and fitted well, the pistol should be accurate. All points must be accurate. Tight and well-fitted locking lugs are good but the barrel bushing must also be snug. By the

KART BARRELS CONTINUED

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This is the newest version of the Kart. same token, the barrel bushing may help if properly fitted but the barrel must also be match grade for proper results. The lock up points must be understood. There are four lockup points on the barrel: Locking lugs, barrel bushing, sides of the hood, and the bottom lugs. Let's begin with a quality, match-grade barrel—in other words, oversized. The barrel hood is larger than the breechface opening and must be fitted.

When filing, be certain of having 0.003" clearance on each side and that the hood remains parallel to the breechface sidewalls. Straightforward, but this still requires some attention to detail. The barrel extension is also longer than on drop-in barrels and must be measured with a hood gauge and properly shortened. Carefully cut the barrel on a lathe until the hood is about 0.003 longer than the hood-gauge measurement. At this point, the handwork comes in.

Carefully file the barrel until the unit slides into the lugs with no excess movement for a good, tight fit. The rear cut controls upward

motion and must be carefully inspected during fitting. Place the upper lugs in the slide slots, then carefully and slowly tap the bottom lugs with a brass hammer. Tap toward the muzzle for proper fit, allowing the barrel to move more fully into contact in the locking recess. Mark or smoke the barrel and file where it's rubbed off.

Be certain your strokes are perfect, with metal filed away and moved evenly. You wish to reach a point where the barrel rests in its locking lugs without springing away from the locked position when pressed into place. In short, the barrel must be properly fitted and also perfectly centered in the slide. I find binding on the slide stop less common with modern barrels, but it can happen.

This is especially true of extended slide stops for some reason; I suppose they are a bit larger overall to support the added weight of the gas-pedal-type slide lock. The hood must be centered and the bottom lug must not bind on the slide stop, but must ride smoothly

against it and square properly. There has been some confusion concerning the proper length of the link.

Once the barrel lower lugs are properly filed and smoothed with a proper fit to the slide stop, measure the length from the link-pivot hole to the area that has been polished. Next, measure the area between the two holes of the swinging link. These measurements must be the same. If not, the link will not fit properly.

When using a larger diameter slide stop, this measurement becomes critical, however, I have had to use oversized slide stops on occasion (usually one from Chip McCormick) with off-specification 1911 pistols in order to ensure proper function and to snug up certain caliber conversion units. It's important to understand the relationship between link length and barrel/locking lug to slide-stop measurements to do this. When the upper assembly is placed on the pistol and checked for smoothness and

KART BARRELS CONTINUED

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45 gives excellent accuracy with the Kart barrel. function, any drag will normally be from the lower lug against the slide stop. This is addressed by filing and smoothing. As for the barrel bushing, normally a fitted bushing comes with the barrel. When using a tight National Match bushing, fit the bushing to the barrel. An improvement in accuracy is always realized when fitting a tight bushing. The bushing is oversize in inner dimensions and the barrel is turned to achieve a good fit.

A fitted bushing works best with pistols that are already pretty accurate but won't make up for a sloppy pistol. The Kart responded well to a tight National Match bushing. The Kart's accuracy is excellent and this pistol gave good results. When surplus military pis-

tols were more common, the reason for replacement of the barrel was corrosion and wear and tear. Today, the main reason for barrel replacement is increased accuracy potential. The Kart barrel is a different type to fit.

Perhaps "easy fit" is over stressed. To do the fitting right and to achieve good results the barrel must be fitted properly and carefully. As an example, I examined a .38 Super Kart barrel that had not been fitted correctly. Misunderstanding the process and perhaps due to haste, the owner had simply filed the bumps away until they were flush with the body of the barrel rather than taking time to fit the barrel and removing only what was needed.

The results were not a great improvement over the original commercial barrel he had replaced. The amount of improvement in fitting the barrel for accuracy is often in direct proportion to the time spent fitting the barrel. Accuracy is a qualitative expression that attempts to describe the measured degree of precision an instrument exhibits. When measuring the accuracy of a time piece, for example, it's possible to ascribe a true value since that value is known.

The true value of an accurate handgun will probably never be measured. Nevertheless, the skilled gunsmith can always improve on any handgun—even one that is already accurate. AG

METALWORKING

Reader Forum

BY AMERICAN GUNSMITH EDITORS MARCH 2017

ORIGINAL PP. 23-24

Serial Number Conflicts I read “Ithaca Model 49” in the July 2016 issue where you stated that serial numbers were not required before 1968. However, in the November 2016 Reader Forum a reply to a question on a Springfield Model 67H sort of guessed it was 1933. Checking with the all-knowing Google, serial numbers on all firearms were not mandatory until 1968. Rocky Giordano From author Mark Hollensen. Serial numbers were not mandatory prior to the Gun Control Act of 1968 but some companies used them anyway.

The absence of a serial number normally means the gun was manufactured prior to the 1968 GCA but isn't a guarantee. Any guns that did have serial numbers on them manufactured prior to the GCA of 1968 do have some records of manufacture as the manufacturers used the serial number to gauge the year(s) they were made. So in the case of the Model 67H, if it has a serial number the manufacturer probably had a date period of when that particular gun was made.

Therefore, a date of manufacture or range of dates are on file with that particular manufacturer. That said, some manufacturers kept dates when their guns were made even if they didn't have serial numbers. They can provide a “date range” as to when they made a particular make/model firearm. In that case, the manufacturer can provide a series of dates that these unserialized guns were made, such as between 1933 and 1938 when their model XYZ made.

The absence of a serial number makes it impossible to know exactly which year a particular gun was made during the manufacturing years, however, there are times that a manufacturer will make a change to a gun during a given period and you can sometimes determine if it was an earlier or later model. Sako Finnwolf VL63 I am

working on a Sako Finnwolf VL63, their out-of-production lever action in .308. I have it apart and need a parts source. The hammer hinge area is broke and I need a replacement.

Steve Young (aka Nate Kiowa Jones) Steve's Gunz, “Rossi 92 Specialists” Contact Beretta USA, of which Sako is now a component, at BerettaSupport.com or If you want to contact Sako in Finland they can be reached at 358/10-830-5200 or online at Sako.fi. Finally, request Brownells' complimentary Gun Parts Source List. M1 Carbine I have a M1 Carbine in my shop to refurbish. Judging by the wear marks on the bolt and action parts, it appears to have seen little use.

The bore is pristine and the finish is great, except on the muzzle end of barrel and front sight which has surface rust due to lack of attention during non-use. I have it cleaned and ready to remove the front sight and rust approximately 12" from muzzle to forend. The finish appears to be matte black but more of a charcoal shade. My intent is to match and blend the finish after removing the rust. My research yielded much and I found that finishes were often blended during production due to limited supply.

Matte finishes I have found require air-brush or spraying. I have a sprayer I purchased decades back for painting autos but have not used it in this application. Also, I have not sprayed an auto since the “van craze” of the 1970s! My research yielded no aerosol can applications. Any advice? Also, I've been enjoying your novels I found online at goo.gl/vo FCCN. Hugh Thompson Author Paul Mazan responds. It sounds very much like your Carbine has been Parkerized rather than blued.

If memory serves, many M1 Carbines that went in for rework after WWII were Parkerized if they had to be refinished. When I worked for Brownells I had asked

the folks at Birchwood Casey if they could come up with a cold Parkerizing solution like their cold blue but they were never able to do it. Actually matching the color is going to be tough and you may well have to refinish the whole gun. The only thing I can suggest is to try Baking Lacquer in Parkerizing Gray from Brownells (#083-046-806AQ).

It retails at around \$20 and can sometimes be found on sale but if the colors don't match closely, you can always paint the whole barrel and receiver. Before placing an order for that, try bluing it with Oxpho Blue. On some alloys the first coats are more gray than blue. As I think about this project I suspect you're going to have as much trouble matching the texture as you are matching the color.

I think your newly finished areas are going to be smoother and more shiny than the original unless you bead blast the area first. All told, the amount of work it will take to match the color and texture may make it easier to just strip and refinish the entire barrel and receiver. That gives you the option of bluing it as they were originally finished. I have a Rockola M1 Carbine that is most definitely blued, not Parkerized Thank you for the kind words on the books. I am glad you enjoyed them.

I am in the middle of two more at the moment. One is a cop novel, for want of a better description, and the other is a WWI story of my grandfather's experiences that I started for the family. They're available at goo.gl/vo FCCN. Remington 770 I have a Remington 770 chambered in 7mm Remington Magnum (SN M7176xxx) with a broken bolt. Apparently, someone dropped it before I acquired it and snapped off the bolt “throw.” Their attempted fix was welding it back on without taking the bolt apart, which destroyed it.

THE PROBLEM IS THAT THIS IS THE SERIES

READER FORUM CONTINUED

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of Remington 770 that was reputed to fire if closing the bolt with enough force and the rifle was recalled and reconfigured so that the new bolt assembly does not fit. Martin Wade Marten Firearms Training, LLC Too much tinkering and damage to the bolt has happened. It's very doubtful the factory will send you anew bolt, the fitting of which they very much prefer be accomplished by factory service personnel.

Call Remington customer service, even though we fear the rifle is beyond warranty benefits. Flobert Rifle I recently came across my saved short article copy from your Reader Forum in the July 1999 issue which addressed the subject rifle. Do you now have more updated information? I own one in .22 caliber with a 20inch octagonal barrel, serial number E37XX. I am particularly interested in the history, value range according to condition, and anything else you might be able to provide. Thomas M.

Mc Neill Submit a question or letter to the Reader Forum column by addressing an email to or posting a letter to American Gunsmith, Alexandria, VA 22310. Send subscription questions to Commence by directing your browser to "Flobert Rifle." You will soon see it should be referred to as a Parlor Gun existing for little more than in-home target games.

Regardless, continue your further education by contacting the NRA Museum (NRAmuseum.org), and request copies of

any historical data they might provide, if you are willing to pay the cost. Next, pick up a copy of the Blue Book of Gun Values and explore its out-of-production section. The serial number of your gun leans toward extreme age or quite early in production. Either way, locating and securing replacement parts could be very difficult.

The same is true of ammo. With the exception of .22 BB Cap or .22 CB Cap, Floberts were chambered for what have become obsolete European cartridges. Double Barrel Shotgun I have a double barrel shotgun of uncertain origin with a broken firing pin. On the left barrel is stamped "G. ZABALAY Cia S. A" and "MADE FOR RICHLAND ARMS CO-MADE IN SPAIN" on the right barrel. The cover over the firing pin is in a disk in the front of the receiver. It has three holes in a triangle that are 0.2295 center to center.

I have tried a Brownells disk tool for the three pins but it's too big. Is there anyway to know if this is a right or left hand thread? I don't have access to much information on this shotgun and don't like computers much so I don't get on them often. Morris Froelich Might be a good idea if you overcame your distaste of computers. We used one to discover Richland Arms went bye-bye in 1983. Hopefully, they laid out certain requirements the gun had to meet in placing the order with G.

Zambalay and the mystery threads are U. S. Standard. If so, the "rightly tightly, lefty loosy" principle applies. We suggest approaching a machine shop, show them your Brownells tool, and request a copy made to accommodate the measurements you have taken. Prior to removing the disk we recommend injecting warm penetrating oil into the union between the disk and the receiver. A day or two later, apply heat to the disk.

In doing so, do not overheat the receiver to avoid negating any heat treatment it underwent during original manufacture. Browning .22 Pump I have my father's Browning .22 Magnum pump. It's still in great condition but has lost the inner magazine tube assembly. The gun is out of production and parts are seemingly near impossible to find. Any insight on where to have such a piece made?

Shane Townsend If you must have a custom part made, contact a member of the American Custom Gunmakers Guild (acgg.org), ACGG members can be searched and found from the member website. However, before going that route, it will likely be easier and cheaper to first exhaust aftermarket sources. Among many others, Brownells lists aftermarket sources specializing in Browning guns and include them in their Gun Parts Source List. AG

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