



MAR 2012

DIGITAL ARCHIVE
EDITION

PRECISION ARMS WORKSHOP

AND THE AMERICAN GUNSMITH ARCHIVE

A TECHNICAL JOURNAL OF CRAFT, REPAIR & RESTORATION

03

ARCHIVE ISSUE NUMBER

INSIDE THE ARCHIVE

SAVAGE/STEVENS MODEL 512 INSIGHTS

HUNTING IS SAFE! • MOUNTING A SCOUT SCOPE ON A MILITARY MAUSER • MACHINED STOCKS IN CLASSIC CUSTOM RI...

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 099

DIGITAL ARCHIVE EDITION

Preserved for the bench.

This edition presents the original American Gunsmith editorial work in a modern, searchable layout while preserving its issue, author, and source-page history.

ABOUT THIS EDITION

The article text comes from the original issue and has been reflowed for legibility. Obsolete subscription, ordering, association-service, and house-advertising pages are not reproduced.

Original article images appear only where permission has been confirmed. All other image positions remain visibly reserved so approved art can be restored without rebuilding the issue.

Report corrections or rights information to editor@gunsmithmag.com.



AMERICAN GUNSMITH

DIGITAL ARCHIVE EDITION • MARCH 2012

ISSUE RECORD

ORIGINAL DATE	March 2012
VOLUME	Archive volume not stated
ISSUE NUMBER	03
SOURCE ID	ag-c32817c5f460002f8c9b9b87

DIGITAL EDITION

PUBLICATION	American Gunsmith
EDITION	Digital Archive Edition
ARCHIVE STEWARD	Innovation Network LLC
CONTACT	editor@gunsmithmag.com

Editorial fidelity. Article titles, author attribution, issue relationships, source-page references, and article text remain bound to the archive corpus. Layout, covers, navigation, and conversion notes are newly produced for this edition. Historical statements remain part of the original editorial record.

IN THIS ISSUE

Contents

A complete guide to the searchable editorial work preserved from March 2012.

-
- | | |
|--|---|
| 2 Hunting Is Safe!
AMERICAN GUNSMITH EDITORS • ORIGINAL PAGES 2 | 3 Savage/Stevens Model 512 Insights
CHICK BLOOD • ORIGINAL PAGES 3-7 |
|--|---|
-
- | | |
|---|--|
| 8 Mounting A Scout Scope On A Military Mauser
WENDELL DEANER • ORIGINAL PAGES 8-10 | 11 Machined Stocks In Classic Custom Rifles, Part 1
DOMINIC PISANO • ORIGINAL PAGES 11-15 |
|---|--|
-
- | | |
|---|---|
| 16 U. S. Rifle, Caliber .30, M1 Garand Overview
NORMAN E. JOHNSON • ORIGINAL PAGES 16-19 | 20 SHOT Show 2012
AMERICAN GUNSMITH STAFF • ORIGINAL PAGES 20-22 |
|---|---|
-
- | | |
|---|--|
| 23 Reader Forum
AMERICAN GUNSMITH EDITORS • ORIGINAL PAGES 23-24 | |
|---|--|

SAFETY & COMPLIANCE

Hunting Is Safe!

BY AMERICAN GUNSMITH EDITORS MARCH 2012

ORIGINAL PP. 2

Several years ago the National Safety Council (nsc.org) published a report comparing reported injury rates of various activities in blocks of 100,000 participants. Based on their numbers, hunters experienced less than eight incidents via firearm-related injury per block, much safer than the injury rates of ping-pong (15), golf (104), tennis (119), bicycle riding (904), soccer (910) or baseball (2089). Any form of organized shooting range activity, such as a match, is even safer than hunting. Hunting Is Safe!

Data compiled recently by The Centers for Disease Control and Prevention have independently confirmed these numbers. From their web site (cdc.gov/injury/wisqars) the CDC's WISQARS (Web-based Injury Statistics Query and Reporting System) is an interactive, online database that provides fatal and nonfatal injury, violent death, and cost of injury data from a variety of trusted sources.

Researchers, the media, public health professionals, and the public can use WISQARS data to learn more about the public health and economic burden associated with unintentional and violence-related injury in the United States. The National Shooting Sports Foundation tallied the CDC's numbers on WISQARS and reconfirmed what sane people with firearms experience already knew: Shooting and hunting with firearms is safe. In fact, shooting and hunting with firearms is one of the safest recreational activities in America.

The NSSF's report on the CDC's compiled data shows hunting ranks third in safety when compared to 28 other recreational pursuits, ranging from baseball to wrestling. Hunting with firearms has an injury rate of 0.05 percent, which equates to about 1 injury per 2,000 participants, a safety level bettered only by camping (.01 percent) and billiards (.02 percent).

For comparison, golf has an injury rate of 0.16 percent (1 injury per 622 participants), while tackle football topped the list of activities with an injury rate of 5.27 percent (1 injury per 19 participants).

To put hunting's safety standing into perspective, compared to hunting a person is: - 11 times more likely to be injured playing volleyball - 19 times more likely to be injured snowboarding - 25 times more likely to be injured cheerleading or bicycle riding - 34 times more likely to be injured playing soccer or skateboarding - 105 more times likely to be injured playing tackle football 16.3 million hunters took the field last year and approximately 8,122 of them sustained injuries of any kind (50 per 100,000 participants.) The vast majority of hunting injuries—more than 6,600—were tree stand-related.

It's not just in the hunting fields that firearms are being used safely either. The CDC also reports that firearms constitute just 1/2 of 1 percent of all unintentional fatalities in the United States, including those in the home.

FROM THE ARCHIVE

Savage/Stevens Model 512 Insights

Savage overlooks nobody with its line of O/U shotguns. There's one to suit any size scattergunner.

BY CHICK BLOOD MARCH 2012

ORIGINAL PP. 3-7

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1611-P03-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1611-P03-F01

I was once privileged to sit across from the Honorable Richard Beaumont, then Chairman of James Purdey and Sons, during a visit to London. The interview was scheduled to last 20 minutes. The Chairman graciously held up all incoming calls and kept me fascinated for 90 minutes explaining the methods and attention given to the manufacture of Purdey Best double rifles and shotguns.

During that time he mentioned his curiosity about the US preference for the over/under as compared to his countrymen's traditional rapture for side-by-side barrels. I remember him stating, "If the eyes of Americans were positioned one above the other any question of their choice would remain unspoken." Of course, Mr. Beaumont fully recognized and appreciated our likes for the O/U aiming plane and lesser concern over shot group convergence and saw every economical reason for James Purdey and Sons not to ignore it.

Proof of that was in evidence. It was one of Purdey's Best, an O/U made for an American customer, regally awaiting the ar-

rival of its new owner while snuggled on royal purple velvet inside its custom-made English 410. Pictured here is the 12 gauge. It includes five choke tubes. The .410 received for this article had a fixed Modified choke upper and lower barrels to allow the use of steel shot. walnut case. The rust bluing of the barrels knew no depth. It seemed to be infinite.

The metal to wood fit was all but invisible. The gun was perfection and worth the high fivefigures being paid for the privilege of owning it. I'm not attempting to make a direct comparison between the Stevens Model 512 and a Purdey Best. The price alone makes that impossible. Besides, the only gunsmithing firm on this side of the pond allowed to even clean a Purdey was Griffin and Howe who once partially occupied the same building as the original Abercrombie and Fitch on Madison Avenue in New York City.

You, on the other hand, are quite likely to be called upon to service a Model 512. Field Stripping Place the safety switch (27) on SAFE. Open the action by turning the oper-

ating lever (16) to the right. Check to confirm no shells are chambered, put on your eye protection and close the action. The release lever is center located in the underside of the forend (13). While pulling the wood away from the barrels, swing open the lever toward the rear of the gun. Open the action and lift away the barrels.

It won't be necessary to pull on the lever again when reinstalling the forend. Just place the rear of the wood in position and push it toward the barrel. It should snap right into place. Do not use excessive force at any time during field stripping or final reassembly. Detailed Disassembly You must proceed with this as follows: Stock, Forend, Hammer Spring Assembly, Safety, Trigger, Sear, Hammer, Firing Pins and Operating Lever. Savage/Stevens factory guys tell me that this order is vital.

Equally so is to make copious notes or sketches or both as you move along. Reassembly is in exactly reverse order. Advised is the use of a clear plastic bag large enough to en-

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1611-P04-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1611-P04-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1611-P04-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1611-P04-F02

close your hands, any small tooling being employed and the receiver. If the large bag seems a bit much, at least use a number of small plastic ones. Each will contain all the individual parts of an assembly and be magic marked according to content, such as, firing pins, operating lever, safety, etc. As specified, I begin with the stock. The butt pad screws have slotted heads. To prevent damage to the butt pad or screw heads, select a hollow ground driver with a blade width of about 0.210.

Dip the blade in Vaseline before inserting it into the pad and engaging the screw. You only have to back out the top screw and loosen the bottom one. Then rotate the pad down to reveal the back end of the stock. Eight inches down inside is the 11mm hex head stock retaining screw. It's surrounded by a hole too small for a standard 11mm socket and set too deep for my 3/8-inch extension to reach. The latter was easily solved at the local hardware store and the addition of a 12-inch extension to my tool inventory.

The next problem is the socket itself. If forced down far enough to grab the hex head there is a definite danger of splitting the wood and that would mean writing out a check to Savage Arms for anew stock. Luckily, I had been previously clued in by the service 'smiths up in Westfield that they grind down their sockets to fit within the bolt hole. Obviously, I opted to do the same and opted to use my small EMCO lathe.

The outside diameter of the bolt gripping end on my socket measured extension end miked out at 0.670. OK, I had to turn off about end to eliminate stock damage. I also made sure to tap the socket down on my bench top and seat it firmly in the extension. There were several times soon to come I'd want to remove the rig and check my socket reduction progress.

If the socket and extension ever became As expected it is neither easier nor more difficult than any other over/under shotgun to accomplish. separated in the process there was no way I could fish the socket out of

the stock. Fortunately, all went well. Once the bolt was removed, the stock, being tightly fit, required a gentle bump on the bench to encourage its letting go of the receiver. That brings me to the forend. Look inside its barrel channel. The large screw at the front end is one retaining screw (12).

The second retaining screw (14) is located farther back. Beneath the drive is the modified blade driver for spring compression. At the bottom, marked at the stock bolt-head depth, is the hard wood dowel used by the author. Both are backed out to access parts #7 through #11. The latter is the forend latch pin. Like all pins in the Model 512, it is removed right to left and replaced left to right. Next on the list is the hammer spring assembly (34).

You'll need a tool you have probably fabricated previously to tackle this. It's a small blade driver with a notch cut in it large enough to span the hammer but not allow the spring to pass through. Insert the tool between the



ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1611-P05-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1611-P05-F01

front of the upper hammer and its spring. Compress the spring to the rear. Remove the hammer, spring and balance of the assembly. Do the same with the lower hammer. Mark the hammers so you know which belongs up and which belongs down. The lower safety pin (31) keeps many small items captive. Study it and them. Push upward on the safety selector spring with a pair of long nose pliers. Nudge the pin outward and pull upward on the safety/barrel selector (27).

The safety retainer (29) will fall free and be very careful not to lose the upper safety pin (28) when removing the safety. Refer to the schematic. Above the trigger assembly area you'll find three operating lever pins (26). There should be four. All of these pins are the same size but serving different purposes. One retains the upper firing pin, fits through the upper hole in the center post of the receiver and the notch in the firing pin (24).

Another retains the lower firing pin (25) in the same manner and fits through the next hole down in the receiver center post. You can use the fork tool to individually push each firing pin spring back far enough to allow

removal of a retaining pin. Follow that by withdrawing the related firing pin. Mark each pin to differentiate upper from lower. Stick with the trigger assembly area of the schematic. That's where most of the action to come will happen, not the least of which is the trigger itself (35).

I call your attention to how the drawing indicates a separate trigger return spring (38). News Alert! Due to a recent engineering change it's not separate anymore. The trigger and return spring are now as one having been united by the trigger pin (36). So? So when you drift out the pin you'd probably want to apply a finger tip over the spring recess in the trigger if you haven't already taped over it. I did neither, choosing to scrape the ends off a Q-Tip and stuff them in the recess.

As I have done many times over, you'll discover these little balls of cotton on a stick are very handy for things other than cleaning out your ears. With the trigger free and its spring trapped inside, drift out the front (49) and rear (50)

SAVAGE/STEVENS MODEL 512 INSIGHTS CONTINUED

ORIGINAL PAGE 6

guard pins. Remove the guard. Follow it with the trigger and spring. They come out downwards and together. Both right and left sears (42 & 43) are next along with their respective springs. These all should be marked for proper reassembly. If you fail to mark this and manage to get the sears back in where they weren't located in the first place, the individual who owns the 512 isn't going to be happy at all with your work. The hammer retaining pin (41) is actually the fourth top lever retaining pin (26).

Marking the hammers is equal in importance to marking the sears, so be alert. Drifting out the hammer pin instantly involves a couple of very, very fussy parts. They are the selector reel (46) and selector reel spring (47). Getting them out of the shotgun is no problem. Getting them back in is another matter entirely.

The Savage 'smiths tackle this trying task by grabbing the top of the spring with long noses, starting the retaining pin back Schematic Notes The schematic drawing on the following page has been keyed to the areas containing parts involved with the detailed disassembly of the 512. (1) The Forend; (2) The Top Lever; (3) The Safety; (4) The Hammer Assembly; (5) The Firing Pin Assembly; (6) The Trigger Assembly; (7) The Stock. Note the center support in the receiver (15).

The holes in it critically relate to several assemblies as described in the text. *1 Barrel 2 Extractor 3 Extractor Retaining

Screw 4 Front Bead 5 Center Bead 6 Choke Tubes 7 Forend Iron 8 Forend Locking Case 9 Forend Latch 10 Forend Spring 11 Forend Latch Pin 12 Retaining Screw 13 Forend 14 Retaining Screw *15 Receiver 16 Operating Lever *17 Top Lever Lock 18 Top Lever Pin through while pushing the spring down into the receiver and forward toward the breech face.

After detailing this procedure they then told me their best advice is to avoid messing with it at all. I recommend you do likewise. However, I didn't entirely follow their boycott. At the same time I drifted out the hammer pin I replaced it with a slave pin and allowed the two selector problems to remain in the receiver. It worked for me. Why shouldn't it work for you? In fact, I like the idea so much I'm going to buck it up to Savage Arms. Ah, but where is the third #26 pin and what's it up to?

The third pin locates in the receiver center post to the left of and beneath the pin hole for the lower firing pin. This third # 26 pin retains the top lever rod (32). Remove it and you can lift out the operating lever (16). When you do, the top lever lock (17) will fall free. If necessary, and only then, the top lever pin (18) can be removed.

Be prepared before beginning re- 19 Top Lever Pin Long 20 Top Lever Pin Short 21 Top Lever Spring 22 Top Lever Spring Screw 23 Firing Pin Return Springs 24 Firing Pin 25 Firing Pin 26 Top Lever Retaining Pin 27 Safety/Barrel Selector 28

Safety Pin 29 Safety Retainer 30 Safety Selector Spring 31 Safety Pin *32 Top Lever Rod *33 Bottom Plate 34 Hammer Spring Assembly *35 Trigger 36 Trigger Pin moval.

Have a plastic bag over the top lever if and when you remove that pin because parts 19, 20 and 21 will be cleared for take-off and they love to fly. Generally speaking, box lock shotguns, whether over/under or side-by-side, are trickier to work with than side lock models. However, I don't consider the Model 512 to be overly complex.

Be sure to move carefully, be certain of where you have to go as well as what you have to do getting there and, if at all possible, take sharp digital photos of how any assembly, large or small, appeared prior to working on it. If it looks the same and functions the same after you've put it all back together you did it right. If you still have doubts, a test firing will prove you did. On the other hand, such a test can also prove you didn't put it all back together right.

If that's ever the case always retrace your steps before handing the gun back to its owner. AG 38 Trigger Return Spring *39 Left Hammer *40 Right Hammer 41 Hammer Retaining Pin *42 Left Sear *43 Right Sear *44 Sear Spring 45 Trigger Inside Pin 46 Selector Reel 47 Selector Reel Spring 48 Trigger Guard 49 Front Trigger Guard Pin 50 Rear Trigger Guard Pin 51 Stock Assembly * indicates restricted to factory service



ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1611-P07-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1611-P07-F01

Savage/Stevens Model 512 (Specifications subject to
change without notice) 7 5 4 3 6 2 1

RIFLES

Mounting A Scout Scope On A Military Mauser

Adding better sights or an optic is one of the best ways to sporterize an old military rifle. Despite being over a century old, issue Mausers are still great for customization work.

BY WENDELL DEANER MARCH 2012

ORIGINAL PP. 8-10

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1612-P08-F01. Know the rights holder? Please ask them to contact us.
AG-2F8C9B9B87-A1612-P08-F01

Can you put a scope on this? How many times have you heard that question from a customer with an old military surplus rifle in their hopeful hands? Older shooters are more likely to own and want to use these types of rifles since seeing the small open sights becomes more difficult with age. Many younger shooters have grown up using nothing but scopes and don't want to fool around with "obsolete" sighting equipment. So, can we help them?

The old answer used to be, "Yes, but it's gonna cost ya." Drilling and tapping at maybe twenty bucks a hole, bending or welding on anew bolt handle, possibly removing and replacing the barrel depending on what scope mounting jig you have, not to mention the cost of the mounts, rings and scope, add up to some big bucks for an old rifle. Fortunately, today's manufacturers have come up with an ingenious solution to this perpetual problem.

Mounting a scout scope (an intermediate eye relief optic made popular by the scout rifle concept) ahead of the receiver is the

obvious choice. These mounts do not require drilling and tapping of the receiver and the bolt does not need to be altered. The scopes used are typically two to four power in magnification, are light weight and allow the shooter to keep both eyes open for a full field of view. Many hunters swear by them and the late Colonel Jeff Cooper was one of the scout rifle's biggest advocates.

The Simmons scope barely affects the balance of the rifle yet allows for much more precise aiming. My task was to add a scope to a model 98 military Mauser. The rifle was dead stock as from the battlefield. The customer had been shooting it and the headspace was in spec. The barrel looked representative for guns of that type—not very shiny, but not pitted badly or otherwise abused.

From what we could tell, the rifle wanted to shoot since he was getting three and four inch groups at fifty yards even though he could barely see the sights. I decided to use amount made by B-Square (b-square.com). There are other makers, but I've al-

ways been a fan of B-Square products as their products usually do what the company says they will do—work properly without a bunch of filing and grinding. I ordered one from Brownells (# 122-185-610) for less than thirty dollars, including shipping.

As can be seen from the photos, the B-Square kit is simplicity at its best and it comes with all the sizes of Allen and Torx wrenches needed for installation. The original military sights must be removed to install the B-Square mount. These sights are pinned to two "ears" that are part of the barrel and not easily removable. Knock the pin out in either direction with a 1/16-inch punch. The military sights area V-notch rail with a push-button slide underneath to raise and lower for elevation.

It is marked on both sides with graduations of 1-20, indicating elevation in hundreds of meters, common to battle rifles of the day. At its lowest the sight was not far

MOUNTING A SCOUT SCOPE ON A MILITARY MAUSER CONTINUED

ORIGINAL PAGE 9

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1612-P09-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1612-P09-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1612-P09-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1612-P09-F02

No drilling and tapping is required. All torx and Allen wrenches needed to install the mount are included. Put them in a labeled container and save in case you want to reinstall the original sights. All that's needed to remove these parts area small screwdriver and pin punch. off at fifty yards. We tried it set at two and fired factory equivalent loads at two hundred yards. All shots were almost a foot high from point of aim.

That being said, open sights at two hundred yards are an iffy proposition at best with my eyes. One thing about shooting at two hundred yards and beyond is that a good target is essential for success. I like a solid, black bull at least six inches wide. Eight or ten inches wide is not too much. A 25 yard Standard American Pistol Target with its twenty one by twenty four-inch size and five-and-one-half-inch bull is about ideal for two hundred yard open sight shooting.

The large target catches any errant shots and the bull can be seen at that range. With high power scopes things area bit different but for the four power scope we were going to mount on this rifle a good, large bull makes shooting accurate groups much easier. The scope selected was a Simmons Pro Hunter Model 7038 in a 4X32 configuration with a "Trueplex" reticle, 1/4-inch click adjustments at one hundred yards.

It has a black matte finish, weighs just eight ounces and is claimed to be waterproof, shockproof and fog proof. For our

purposes the main feature is that the scope sports a twenty-inch eye relief. This scope is commonly mounted on handguns and I have one a Remington .221 Fireball. It has been in use for some time without any failures or problems, even after the gun was inadvertently dropped onto a hardwood floor one time.

This scope is a no-nonsense hunting tool and I have been impressed at the quality for the price. After the old military sights are removed the mount fits into the ears and is attached by two screws. These two screws are used to true up the scope for windage. A larger Torxheaded screw goes through the top of the mount and tightens to the barrel, locking the mount in place. Also, a similar screw is located in the rear top of the mount and locks that portion of the mount down as well.

The rear screw has a tiny set screw that holds it in place accessible directly from the rear of the mount. These two screws when positioned correctly can help to align the scope for elevation. It's a little tricky since the scope will have to be tested by trial and error because the screws can't be adjusted with the scope mounted. I used a Bushnell Professional Bore Sighter to aid in getting the scope on the paper before we left the shop.

Assuming the scope's reticle is centered in the first place, these features will allow it to be mounted with plenty of adjustment and the scope's reticle to be in the best position

for accuracy. We tested the scope at fifty yards initially with Remington 170 grain Core-Lokt factory ammunition. I did not chronograph these loads but they should be traveling at a nominal 2500 feet per second at the muzzle.

At any rate, I wouldn't want to be standing in front of one and they should be good medicine for whitetail deer within moderate ranges. Three-shot groups were a surprising inch or less. This old rifle shoots very well and the scope allows us to take advantage of that fact. The sight picture is more than adequate and the eye relief is limited, but not critical. I can see the target very well and well enough to hunt with. I was impressed with this old 98 action. It is smooth as can be.

It feeds round nose factory loads like my wife stuffs the ATM machine with my bank card. Lockup is strong and accuracy is good. What more can you ask? The mount came loose after firing about ten rounds. Surprisingly, it wasn't the actual mount screws that hold the mount to the rifle but the ring screws that lock into the Weaver type mount. I know I had these tightened as far as I wanted to go for fear of breaking them, so I was really shocked that they came loose.

I RETIGHTENED THEM WITH MY RANGE SCREWDRIVERS TO CONTINUE SHOOTING

MOUNTING A SCOUT SCOPE ON A MILITARY MAUSER CONTINUED

ORIGINAL PAGE 10

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1612-P10-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1612-P10-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1612-P10-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1612-P10-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1612-P10-F03. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1612-P10-F03

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1612-P10-F04. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1612-P10-F04

and used my bench set after returning home. I didn't use Loctite yet but will if the same thing happens again. It probably would be a good idea to use the blue stuff on all the screws, but this is a work in progress and I wanted to see what this mount will do under different circumstances. The rings have a square cross bolt that goes in a square slot on the mount. There is a little play here so make sure that the ring is pushed forward as far as it will go before tightening.

I got a complete lesson from my grandson on the topic of inertia while we did this. What it amounts to is that the scope wants to remain at rest while the rifle recoils thereby causing the scope to move forward into the mount while the rifle itself recoils to the rear, provided there is a bit of tolerance in the mount

in the first place. That's why the rings must be moved securely forward against the mount to eliminate slop deleterious to accuracy. My customer wants to hunt with this rig. Why?

I guess just nostalgia for the period and respect for the rifle. It is more than capable of doing so but I doubt if he will do more than shoot one deer with it, at least I hope so. There are so many good deer rifles available today it boggles the mind. Why use this old relic with a cobbled together scope mount? Stranger things have happened, but I'm not giving my blessing on this project until I'm sure this scope will do what it's supposed to do in the field.

We've already had one failure with the rings coming loose on the range. This would be a disaster in the field. The challenge to keep

the mount tight can be met with an application of Loctite. What gets me is that the mount itself stayed tight as a drum while the rings came loose.

I was thinking about drilling a small, blind detent hole in the top of the barrel underneath the rear mount screw as a stop to eliminate any side play whatsoever but opted to just used blue Loctite to the ring screws once satisfied with the set up. We shot the rifle about thirty more times without any loosening. I think the rings loosening under recoil will be cured with Loctite. We will try this rifle for as many range sessions as we need to make sure it can withstand the rigors of field use.

I'M LOOKING FORWARD TO HAVING MY CUSTOMER REPORT SUCCESS. AG

HISTORY

Machined Stocks In Classic Custom Rifles, Part 1

Even starting with a pre-shaped stock leaves plenty of room for artistry in a custom rifle project.

BY DOMINIC PISANO MARCH 2012

ORIGINAL PP. 11-15

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1613-P11-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1613-P11-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1613-P11-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1613-P11-F02

My long time stock turner retired several months ago and sold his business and patterns to an old protege of his. At least I knew where the business was going. That's the good news. Unfortunately, illness and unexpected surgery caused delays in taking on work. What a bummer. Meanwhile, I am in the process of trying out another firm to do some of this work for me. After going through the Internet for several days I decided on one located in Washington state.

The person I found has a terrific reputation and I have known of him for many years. His web site is excellent and spells out in some detail everything one needs to know about his work and proficiency. Subsequently, I sent out two projects along with appropriate blanks just to see the quality of his work. The first was a two piece project for a Martini M12-15 along

with my own pattern. It was returned several weeks later and the machining was excellent.

The other project was for a pre-64 Winchester M70 that I was building for my son. It was a beautiful piece of English walnut, however, there was one serious caveat to consider. The stock turner's web site clearly stated that the exterior of his stocks are turned oversize to allow for individual tastes and design concepts to be incorporated. This is an excellent idea and one that I have no quarrel with.

The problem was the machine stock was returned with several features which I do not care for but I fully expected that. Let me explain. Over the years I have taken certain measurements from stocks which I thought to be the ideal in terms of design and function. These have been carefully recorded so that I developed a record of the most beautiful stocks regardless of the inherent beauty of the wood. Now I understand that one

can not just simply go by some mathematical formula and wind up with a thing of beauty.

There are many other factors involved. I use the annotated measurements as a guide whenever I take on a project. Both the client and I will know before hand what our goals are in terms of the finished product. These measurements are taken from the trigger location to the cheek piece and shadow line, as well as the profile of the wrist/pistol grip. That aside, I thought the machined stock was hugely oversized, especially the cheek piece and wrist/ pistol grip areas. The forend was also rather full.

I like the rear edge of the cheek piece to be ten inches from the trigger location with the shadow line an appropriate distance beyond and in a pleasing curve that follows the outline of the cheek piece proper. As you can see in the accompanying photos the cheek piece was well beyond the ten-inch requirement

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1613-P12-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1613-P12-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1613-P12-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1613-P12-F02

Wood removal gives some idea of the task to shorten the cheek piece. that I had mind. The figure used for the distance from the trigger to the wrist/pistol grip is 4 1/2 inches, give or take. This makes for a nice open grip that is very pleasing to the eye and functional to boot. You can see a lot of wood must be removed from the aforementioned pistol grip area to meet my requirements. I must reiterate that none of this surprised me as the stock was returned to me exactly as was stated on the web site.

It was now up to me to take advantage of the oversize situation and create, if you will, a beautiful stock. Time to go to work. First and foremost I sharpen all of my chisels. There's nothing quite as aggravating as finding out your chisels won't cut during an exacting task. I know it's a pain in the neck task but it will save you time and frustration in the long run. The latter can cause a general upset which can damage your ability to do your best work.

The next decision is to determine whether to tackle the overlong cheek piece first or the wrist/pistol grip. I chose the cheek piece because it was the bigger task and I thought best to get it done while still fresh and focused. Before we begin, some notes on the tools. The patternmaker's cabinet rasps are made especially for wood filing where a smooth finish is desired. Edges are cut—have teeth—and taper slightly from tang to front.

The unusual tooth design eliminates most “filling” problems, does not gouge into wood or snag cross grain. This is probably the most useful wood rasp for “almost final” shaping and finishing. They are coarser than wood files. No clog files cover every operation from rough shaping to final contouring of combs and grip areas. With heavy pressure the wood rolls off at an incredible rate. For finish work the weight of the file alone will make sawdust cuts and cuts smoothly across the grain.

These have an unusual no clog design and safe edge. A safe edge refers to files and rasps which do not have any teeth on the edges. These are excellent tools for outlining, such as the edge of a shadow line where you want to trim wood away from the edge but not from the flat part just next to it. I carefully begin the task of shortening the cheek piece by chiseling away as much excess wood as possible.

I believe the term is “hogging out the wood.” Once I had the project started I alternately used chisels, rasps and Sur Form tools to cut the new cove which runs down to the shadow line. I like to outline the shadow line at this point because that gives me a sneak preview, if you will, of the final result. From there, it's just a matter of gradually forming your new cheek piece and shadow line.

I begin this work by using my rat tail files to start the new cove, beginning with the small one, working up to the medium and then the large. I use the Sur Form rasp whenever I can to smooth things out. As the cove develops I use larger and larger half round rasps to bring the shadow line as even as I can make it all around the edge of the cheek piece. When done, this is a good time to take a break before tackling the oversized pistol grip and putting the finishing touches on the shadow line of the cheek piece.

The pistol grip is best tackled by first mounting the grip cap. This will give you the correct angle of the grip and determine the amount of wood to be removed. By angle I refer to the line formed by the cap where it joins the wood, which should point to the heel of the stock for the best classic appearance. Set the cap at the 4 1/2-inch mark, plus or minus, from the trigger as described earlier as the ideal location. Use the try and fit method to fit the cap.

It does not have to be a perfect fit yet as you are using it as a guide for slimming the wrist and pistol grip. There is a considerable amount of material to be removed. I use any and all tools available to do this task, such as a coping saw to remove excess wood from the front of the pistol grip. If I had a band saw I would have gone much (Continued on page 14)

MACHINED STOCKS IN CLASSIC CUSTOM RIFLES, PART 1 CONTINUED

ORIGINAL PAGE 14

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1613-P14-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1613-P14-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1613-P14-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1613-P14-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1613-P14-F03. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1613-P14-F03

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1613-P14-F04. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1613-P14-F04

The chisel must be sharp during this job. further up the wrist carefully removing wood. Once again, use a variety of rasps—the patternmaker's rasp is ideal for this task—depending where the excess wood is located and rasp away until you are just about at the edge of the cap. I try to maintain the sharp edge on the cap for appearance sake. In fact, if the edge becomes too rounded off, I replace it with a clean new cap. I'm very careful at the rear edge of the cap.

This is definitely not the place to get crazy about removing excess wood. I want to have this area fair into the butt stock bottom line in a graceful manner. Be certain to keep the bottom line straight. No perch belly here.

For final shaping to the edge of the cap I use a variety of electric sanders of which I have several, such as a mouse (for getting into tight places), three random orbital sanders with different grades of abrasive paper (80, 100 and 220) and a square orbital sander 60 grit paper in it used exclusively for heavy duty sanding. Once I am satisfied with the overall shape of the grip cap area I proceed to sand wood from the wrist to carefully shape the stock with a pleasing line that sweeps down from the receiver.

While time is of the essence, I do not want to lose focus because of fatigue, either mental or physical, so I generally put the stock away until the following day to do the final work

on the cheek piece and the wrist and pistol grip. The new shortened cheek piece is ready for final shaping. For this task we need several different tools like safe edge files and no clog files, both in different sizes, and around Sur Form rasp.

We want to clean up the new shadow line and make it flow smoothly from the top end near the heel and around to the front end, near the wrist. I do most of this work with the safe edge rasp and the aforementioned no clog files which also have a safe edge. No clog files do not tear away wood as do regular files and rasps with individual teeth. They actually plane the wood away because they have semi circular cutting edges.

MACHINED STOCKS IN CLASSIC CUSTOM RIFLES, PART 1 CONTINUED

ORIGINAL PAGE 15

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1613-P15-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1613-P15-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1613-P15-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1613-P15-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1613-P15-F03. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1613-P15-F03

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1613-P15-F04. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1613-P15-F04

Unevenness anywhere the old shadow line left off and the new is being shaped is cleaned up. This is where the no clog files come in handy. When it comes time to even up the former shadow line with the area just behind it I am very careful not to take away too much wood. I also make certain which way the grain is flowing, keeping in mind the natural curve of the stock behind the cheek piece. I need to be certain it matches the curve on the off side of the stock.

Believe me this an easy mistake to make and one that is nearly uncorrectable. I use a very large no clog file for this task. When I think the job is complete I look at the shadow line to determine if there are any rough or uneven

spots. If there are I use 100 grit abrasive paper wrapped around a dowel or small rubber hoses of various diameters to make the corrections, working slowly and carefully. From time to time as the situation warrants, a half round no clog file is used to smooth things out.

The last thing is to tightly wrap a piece of 100 grit abrasive paper around a small piece of wood that has been carefully squared off and cleanup the edge of the shadow line. Of course when I do this task on the rear of the shadow line I'm sanding. They include rat tail files in small, medium and large sizes, patternmaker's cabinet rasps in various sizes,

Sure Form files and a brush to clear away wood chips and saw dust. across the grain. Sorry folks, it can't be helped.

I use progressively finer abrasive paper in grits, up to 220, to reduce the scratches caused by sanding across the grain. The final clean up is with the no clog file. This tool can cut across the grain if used with care and leave everything silky smooth. Then I sand smooth with 320 grit abrasive paper wrapped around a sanding block, working with the grain. I'm ready now to move on and complete the task of creating a custom classic stock out of a machined stock. That's in a follow up article. AG

MAINTENANCE & REPAIR

U. S. Rifle, Caliber .30, M1 Garand Overview

This is a synopsis of the required maintenance of the Garand M1 and some accurizing measures to consider that may enhance performance.

BY NORMAN E. JOHNSON MARCH 2012

ORIGINAL PP. 16-19

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1614-P16-F01. Know the rights holder? Please ask them to contact us.
AG-2F8C9B9B87-A1614-P16-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1614-P16-F02. Know the rights holder? Please ask them to contact us.
AG-2F8C9B9B87-A1614-P16-F02

Mr. John C. Garand developed the Rifle, Caliber .30, M1 which was adopted as the standard shoulder weapon of the US Army in January of 1936, and soon after by the U. S. Marine Corps. The M1 Garand replaced the bolt action M1917 widely used by the military as the primary shoulder weapon. The 30-06 Springfield cartridge is the interchangeable ammunition used between the two weapons. My introduction to the M1 Garand was in February of 1952 as a US Marine during the Korean War.

I was quite amazed at what I saw in this 9+ pound, 43 inch rifle. Overall balance was quite good. The peep rear-sight and flat top blade front-sight served our sighting needs perfectly. The Garand semi-automatic rifle is gas-operated and uses an en-bloc style clip holding eight rounds of 30-06 Springfield ammunition. A small amount of gas passes through a port at the muzzle into a cylinder, which in turn initiates action of a springloaded operating rod.

The operating rod, from below, extends backward engaging the bolt. Rearward thrust rotates and opens the bolt, pushing it fully rearward as it extracts and ejects a fired case. At the same time the firing mechanism is cocked. On termination of the bolt's rearward thrust it is immediately carried forward by the spring-loaded operating rod, chambering another round from the clip. When the last round is fired and ejected, the clip is ejected upward leaving the bolt in the open position ready for anew clip of ammo.

Operation is very smooth and positive. As the Korean War escalated M1 rifles were produced in abundance by Springfield Armory, International 30, M1. The rifle was developed by John C. Garand. This particular rifle was manufactured by Harrington & Richardson Arms Co. during the post WWII era. Nearly five and a half million M1 Garand rifles were manufactured. From top, trigger assembly group and clip with eight rounds of ammunition. Center, barrel and receiver group.

Note the long operating rod which extends from the bolt through the front handguard into the gas cylinder near the muzzle. At bottom, stock group with sling. A convenient lowering and removal of the trigger guard permits separation of the parts we see here. Harvester and Harrington & Richardson. It was at this time I really got into shooting the M1 Garand.

We practiced for hours on end without ammunition from all the required positions that would soon be used in final qualification—many of the shooting positions I had never assumed as a civilian. With the M1 Garand in my hands I had no trouble shooting “Expert Rifleman” in qualification. With a production rifle, just as it was issued to me, accuracy was quite amazing. Maintenance And Cleaning As Marines, we were instructed in how to keep our rifles shooting and ready for action. Not unlike other

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1614-P17-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1614-P17-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1614-P17-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1614-P17-F02

rifles, the old M1 Garand required proper care and cleaning. There really was no mystery involved in the process. The M1 field strips quickly and easily by simply lowering the trigger guard and pulling the trigger assembly downward. The barrel and action can then be separated exposing all parts for inspection and cleaning. The combination tool, which is stored in the buttstock, along with a tooth brush or small paint brush, a few rags and a cleaning rod were all that was needed to keep our M1s shooting well.

Following cleaning, a light coat of oil should be applied to camming surfaces like the bolt, operating rod, bolt lugs, bolt camming lug on hammer and top of hammer. Excessive oil or lubrication would tend to attract dust or dirt and should be avoided. Recommended bore care of the M1 is not unlike any other target or sporter rifle. Care must be taken as the bore is cleaned from the muzzle. The bore of a battle rifle was wiped dry and often left uncleaned for extended periods of time.

The chamber should be cleaned with the chamber brush on the combination tool, and dried completely. The gas cylinder and piston require periodic cleaning as well. These may be cleaned with a very mild abrasive or solvent, but not steel wool. The gas system was designed to operate dry and any oil applied here would be used only for

longterm storage. A well maintained rifle will out perform a poorly cared for rifle any day whether it is used as a sporter or in combat.

M1 Accuracy Improvements Early tests on the M1 Garand delivered approximately 1 3/4-inch groups at 100 yards. For a semi-automatic production rifle, made to specifications at different plants, this was very acceptable performance for a military rifle and worthy of an excellent marksman.

The late Colonel Townsend Whelen, a renowned rifleman and skilled handloader, stated in his book *Why Not Load Your Own*, "If you have an 8 to 9 pound hunting rifle that averages one and a half minutes (1 1/2-inch group at 100 yards) with a certain handload, you have a jewel of a weapon and load." I believe most shooters and hunters would tend to agree with his mentation written more that 50 years ago, even though accuracy standards have come along way in the interim.

Be all this as it may, there are some measures that can be taken to Not unlike accuracy bedding other rifles, the M1 Garand offers good bedding possibilities to help improve accuracy. Note how the operating rod passes through the front handguard and rearward to the bolt. The operating rod must be absolutely straight and move freely for best accuracy. Accuracy improving mod-

ifications can be applied here by removing the metal liner and bedding the floating handguard to the middle band (ferrule).

The M1 Garand actually has a number of shaky, moving parts that can contribute to inaccuracy. enhance the accuracy and performance of the Garand, at least to some degree. The following is not so much a "how-to", but more of a "what-todo" in the accuracy improvement arena of the M1 Garand—points to arouse your thinking. Most owners of a vintage Garand wouldn't allow anyone to touch their rifle with thoughts of accurizing it, for obvious reasons.

Thus, as accuracy improving measures, some might find the following helpful: Glass bedding the action, reworking the handguard, reworking the gas cylinder and smoothing a few things out on the trigger. Those with experience in bedding bolt action rifles can apply their skills in bedding the M1 Garand. Good, stable wood-to-metal contact is the primary objective. The skilled technician or gunsmith will immediately recognize the surfaces where bedding material is most useful.

Ingredients like release agent, masking tape, modeling clay, and the like will all be needed. Brownells bedding materials will be unbeatable

U. S. RIFLE, CALIBER .30, M1 GARAND OVERVIEW CONTINUED

ORIGINAL PAGE 18

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1614-P18-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1614-P18-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1614-P18-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1614-P18-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1614-P18-F03. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1614-P18-F03

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1614-P18-F04. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1614-P18-F04

The gas cylinder lock screw retains the gas cylinder which can be removed with the combination tool stored in the stock. This is removed during gas cylinder servicing. The flat blade of the front sight is protected by laterally opposing wings. Elevation graduations are in 100-yard increments to 1200 yards. Windage adjustments are made with a calibrated knob on the right side. Later M1 rifles had a finger operated bar to lock the rear sight adjustment, and Steel Bed is a perfect choice.

A very careful study of the rifle and its action area must be attempted before the job. Not unlike any other stock-to-metal bedding, the objective is to settle down those loose parts, thereby reducing the accuracy robbing harmonics. Accurizing the M1 Garand hand-

guard involves complete free-floating of the barrel and operating rod so the end result finds the barrel floating within the handguard and the handguard attached firmly to the rifle via the lower band.

Removal of the handguard liner is required to make space for the barrel. Where barrels are subject to rapid fire heating, the use of a bonding material that withstands at least 500 degrees is strongly recommended. J-B Weld will be a fine choice here. Attention to the gas cylinder assembly can be a bit tricky, akin to fitting a piston into an engine cylinder. Excessive tolerance will result in poor operating rod function. A carefully reworked piston and cylinder may be required in attaining proper specifications.

Lastly, the operating rod must be straight and without bind. Some machine shop work will likely be required in the gas cylinder department. It is easily removed from the rifle by pulling the trigger guard downward. Disassembly of the trigger allows for stoning and polishing of certain parts. The photo on the left is a bifurcated side view of the uncocked hammer and the same hammer in the cocked position in the right picture, and should be left to a gunsmith or someone with machinist skills.

On to the trigger/sear assembly. As Marines we were instructed "hands off the trigger aside from inspection and cleaning." Admittedly, the trigger on the M1 Garand is far from smooth and crisp. For proper function and

U. S. RIFLE, CALIBER .30, M1 GARAND OVERVIEW CONTINUED

ORIGINAL PAGE 19

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1614-P19-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1614-P19-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1614-P19-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1614-P19-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1614-P19-F03. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1614-P19-F03

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1614-P19-F04. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1614-P19-F04

safety, the trigger pull must remain at a 4 1/2 pound minimum. The rifle I used in conducting these tests ranged between 4 pounds, 7 ounces and 4 pounds, 11 ounces, with a pull movement of 0.150 inches. The M1 Garand trigger assembly weighs 12 ounces and can be removed to polish the sear and trigger surfaces. Extreme care must be exercised in stoning and polishing the sear and bifurcated hammer surfaces. The hammer has laterally opposing camming surfaces and work on these is best left to a qualified gunsmith.

Either way you'll still end up with a fairly long trigger creep and a 4 1/2 pound minimum pull, albeit much smoother. Conclusions This is a somewhat condensed

overview of the accuracy measures that can be applied to make the M1 Garand semi-automatic rifle perform better. You will need to use your own good judgment on which measures, if any, may apply to you and your rifle and who does the work—you or a qualified gunsmith.

Accuracy largely depends on a serviceable barrel, without which further accuracy measures may be of little avail. Bores should be carefully examined with a good bore scope. Your expectations must be realistic and will depend on good marksman- Precision work on the gas cylinder assembly is likely to enhance the accuracy of the M1 Garand. Improving the fit between the gas cylinder

and piston is a job for a qualified machinist or gunsmith who must know these required tolerances.

The best group is shown here, using 150 gr. FMC Ball ammo, shot into a very respectable 1.509 inches. ship skills. While cutting larger group sizes by one-third or even one-half may be possible, reducing two-inch groups to one-inch may be a far more difficult task. I was rather pleased to be able to take an unaltered M1 Garand rifle, nearly six decades after leaving the US Marine Corps, and shoot a 1.509 MOA 5-shot group at 100 yards. That's pretty good testimony for an old service rifle. AG

FINISHING

SHOT Show 2012

Here's your newest new from Shooting, Hunting and Outdoor Trade!

BY AMERICAN GUNSMITH STAFF MARCH 2012

ORIGINAL PP. 20-22

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1615-P20-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1615-P20-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1615-P20-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1615-P20-F02

SHOT Show set attendance records with 61,000 people, 36,383 buyers 1,600 exhibitors and 2,466 media. Of course, that includes goods for gunsmiths. Epilog Laser Imagine a computer printer that puts intricate engraving on metal, checkering on wood and is capable of working with nearly any other material. That's what Epilog Laser's line of computercontrolled CO2 lasers does. After creating a graphic or pattern in a manner similar to printing to paper, you send the job to an Epilog unit.

Instead of ink, a laser vaporizes controlled bits of material. Engraving materials include wood, acrylic, plastic, glass, leather, corian, fabric, coated metals, anodized aluminum, ceramics, mylar, pressboard and more. The laser can cut wood, acrylic, plastic, delrin, cloth, leather, melamine, paper, rubber, veneer, cork, among others. Useful for a host of gunsmith projects and a variety of other custom work.

Contact: epiloglaser.com, Defiance Machine Makers of high end custom bolt actions that are becoming popular among top long

range competition shooters. Their base action, the Rebel, features a Remington 700 footprint for ease of stock selection and available in Medium, X-Medium, Long, and X-Long lengths to accommodate a large variety of factory chamberings and extended length handloads.

The Titan and Renegade actions are for the .50 BMG and .408 Chey-Tac and the Mutant action was purpose-built for the Eliseo Chassis System "tube gun" (competition-shootingstuff.com). Defiance Machine is also the manufacturer of the new Butler Arms USA XX12 competition shotgun (butlerarmsusa.com). Contact: defiancemachine.com Secure Firearm Products SFP offered two new products this year for gunsmiths. For 1911 builders is the All In One, a universal tool that combines a bushing wrench with a firing pin stop tool.

This allows safely depressing the firing pin while removing or installing the firing pin stop. Available in aluminum or high density nylon. The Recoil Spring Tes- Its CO2 laser can engrave nearly any surface, including

wood, metal, leather, and works like a printer. ter and scale quickly and easily tests the actual weight of a recoil spring.

Contact: securefirearmproducts.com Swift-Blackburn Gun Metal Noted for their famed Scirocco and A-Frame bullets, Swift Bullets moved into gunsmithing parts by acquiring the Blackburn Bottom Metal Company from Ted Blackburn. Mr. Blackburn continues to serve as a consultant for Swift and has been noted by custom rifle makers for his signature bottom metal and custom trigger parts for the Mauser 98 since 1964.

Swift purchased all rights, manufacturing equipment and parts to make Blackburn products turn-key and will maintain sufficient inventory to have items on hand for immediate shipment. Contact: swiftbulletss.com/blackburn-gunmetal Dave Manson Precision Reamers Manson and company have two new releases for 2012. The first is their

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1615-P21-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1615-P21-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1615-P21-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1615-P21-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1615-P21-F03. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1615-P21-F03

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1615-P21-F04. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1615-P21-F04

The included scale pulls on the rod and shows the actual weight of the spring. The All In One (bottom) is a firing pin stop and bushing wrench tool for the 1911 available in nylon or aluminum. new Gritters-type Indicating Rods, for those who prefer the Gordy Gritters (gordysgunsmithshop.com) approach to indicating a barrel. Available in five spindle sizes for caliber ranges of .17-.20, .22-6mm, .25-7mm, .30-.470 and .50-.510. The second is anew line of torque drivers for gunsmiths.

The Shop Use Torque Driver offers a 10-80 inch-lbs. range and has been tested for actual conformance to ensure high consistency in use, unlike cheaper models. The Multi

Torque Driver is intended for field use. Developed in joint with BORKA Enterprises this unit measures 12 different torque outputs from 15-72 inch lbs. with an accuracy of +/- four percent, not as precise as the Shop Use model but still accurate and for almost half the price. Both torque drivers include a selection of bits useful for gun work.

Dave Manson is interested in working with gunsmiths and writers. Used tools from published writing projects are available at a discount. Call for details. If you publish an article featuring the use and mention of a Dave Mason tool the company will refund your purchase price, so send that article to American Gunsmith!

Contact: mansonreamers.com Powder River Precision Makers of custom parts Springfield XD pistols, PRP offers trigger kits And includes a selection of bits useful for gun work. with re-engineered components that offer improved trigger pull and a shorter reset. The parts are legal for the Stock and Production divisions of IDPA and USPSA competition. PRP also offers a set of punches purpose-built for XD work.

While at PRP's booth Rob Leatham visited, saying this is what he runs in all his XDs and fully endorsed the company with, "If you work on XDs you need these parts." Contact: powderriverprecision.com

SHOT SHOW 2012 CONTINUED

ORIGINAL PAGE 22

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1615-P22-F01. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1615-P22-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1615-P22-F02. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1615-P22-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1615-P22-F03. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1615-P22-F03

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-2F8C9B9B87-A1615-P22-F04. Know the rights holder? Please ask them to contact us.

AG-2F8C9B9B87-A1615-P22-F04

The three surrounding punches are purpose built for XD work. Nowlin, Inc. Nowlin helped pioneer Cathode Electrode Discharge Machined (ECM) rifling in pistol barrels and has been a maker of high-end 1911 parts. The second-generation company under ownership of John Nowlin Sr.'s oldest daughter, Angela-Nowlin Reagan, announced that their big 2012 item will be a commemorative 1911 to honor company founder and American Pistolsmith's Guild honoree, John Nowlin Sr.

Contact: nowlinguns.com JGS Precision JGS's newest tool, the Tapered Shank Bore Reamer, allows installation of the reamer by tapered shank mount. After reaming it is press fitted within 0.15-0.20 short of the shoulder, giving a 0.0015-0.0020 press fit. Press fitting cuts down on tail whipping and more versatility to use with your current tooling. No silver solder prevents premature breakage and warping. Contact: jgstools.com MDS, Inc.

MDS, maker of optical and video equipment for gunsmiths, announced their SV-100 USB Borescope Camera. Compatible with both MDS and Hawkeye bore scopes, the SV-100 is a camera that captures and records video taken while inspecting a bore via USB. This can feed to a computer monitor in real time to show a customer or recorded to a video file and saved for later viewing. MDS bore scopes are at an attractive price point compared to Hawkeye as well. Contact: mdsincorporated.com AG

READER FORUM

Reader Forum

BY AMERICAN GUNSMITH EDITORS MARCH 2012

ORIGINAL PP. 23-24

Parts Source List As was mentioned in these pages but may have been missed, your Technical Editor, Chick Blood, has been getting all too many “undeliverables” from his email responses to reader inquiries. In each case, copies of queries received are retained and a double check on the email return addresses are found to match those appearing in the original query. Nevertheless, a small stack has built up regarding the need for parts. Most are from readers who have struck out with Gun Parts or Jack First.

To those readers and all others suffering a similar fate, do not give up. Brownells offers, at no cost, a multi-page parts source list for out of production, or no longer imported offshore produced guns. Making a call to Montezuma, Iowa, is all you have to do to receive that list. Add it to your permanent files. It's further recommended that you keep track of the long distance calls you will be making and add their estimated cost to your service charge.

When he was open to the public, Chick used to secure a fee to cover these expenses before accepting any old timer of a gun, one whose importer had gone out of business or was originally made overseas and was missing parts up front. Remington Nylon 77 I have a Remington Nylon 77 with a magazine that doesn't latch completely. I would like to clean it thoroughly but am unsure what to use on this firearm as it has a plastic-like stock. I have not found any assembly/disassembly diagrams in your magazine.

Any help that you may lend would be appreciated. You wouldn't have found an article for the Nylon 77 in this publication as we have never done one, only on the Nylon 66. The 77 went out of production in 1972 while the 66 lasted through the late 1980s. We checked Brownells web site

for a schematic on the 77 with no luck but Auction Arms (gunauction.com) turns up a reproduction of the 77 instruction manual available for purchase.

Also, your search engine will lead you in several directions for information, parts and the like when you point your browser to NylonRifles.com. As for the polymer stock you'll have no reason to be concerned if you contact Cylinder & Slide, Inc. (cylinder-slide.com) for a bucket of their Universal Dunk-Kit cleaner, safe for steel and polymer alike. We recommend quick action on the instruction manual.

H&R Revolver I have an H&R revolver manufactured in Gardner Massachusetts, Model 733 (SN: AX0006XX) chambered in S&W .32 Long. The cylinder will not turn when the trigger is pulled or when the hammer is cocked. It seems the cylinder arm is coming up and out, but not far enough to engage the cylinder. I would lean that this cylinder arm is worn too far. I will try Brownells for parts first, but it may come that I'll just scrap the weapon.

The cylinder arm you refer to is called a hand or pawl, depending on the manufacturer of the revolver. Your description indicates it is seriously worn and no longer contacts the cylinder ratchets. The spring which moves it forward into contact could have grown too weak to do its job anymore or could be broken. You'll probably be wanting replacements for both. There-in lies your biggest problem.

The original manufacturer, H&R, is no longer based in Gardner, became H&R 1871, was absorbed by Marlin and, about two years ago, was swallowed up by what is now The Freedom Group along with Marlin, Remington, and more. Even if you could contact the Verlin present entity, we couldn't provide a phone number. Beyond

that, we have every doubt such a contact would be fruitless since the present entity didn't manufacture the gun.

To be brutally honest and frank, we believe The Freedom Group has erected its own version of an “iron curtain” or, more accurately, spread an iron blanket over its acquisitions. If we didn't have a few direct line phone numbers remaining in our files we have yet to uncover new ones for the acquired companies. We fully intend to melt down or unravel said curtain or blanket during our SHOT Show visit. Meanwhile, contact Brownells for a complimentary copy of their Parts Source List for out-of-production firearms.

If it does turn out to be the ratchets, getting them back up to specs equals brain surgery. M1917 Scope Mounting After reading the December 2011 issue I noticed in the article “Scope Mounting The US Model of 1917 Eddystone/Enfield Rifle” by Norman Johnson the rear screw hole of the front scope base is positioned in the top receiver locking lug. On any two locking lug action no holes should be drilled into the lugs.

In Europe any action drilled like this is automatically rejected as being “out of proof” and is considered unsafe to use. We don't know what the SAAMI regulation is but it's better safe than sorry. There is ample space to position the screw holes further forward. Wayne E. Barry The recent article on scope mounting the M1917 clearly shows pictures of a tapped hole in the rear of the front receiver ring.

Unfortunately, this is a problem because the rear portion of the front receiver ring includes the locking lug seat that supports the bolt lugs. In a M1917 receiver this would include about the last 0.420 inches of the front ring. Receivers drilled

READER FORUM CONTINUED

ORIGINAL PAGE 24

through the bolt support can be ruined by the screw hole and the practice has long been considered unsafe and unnecessary. See an admonition by authors Wallack and Hawley on pages 90-91 in *The National Rifle Association Gunsmithing Guide*. Avoidance of the bolt support zone also allows an open hole for easier tapping and permits spot annealing for those receivers that may require it.

Drilling and tapping holes in bolt action rifles should be done only after careful measurement to identify no-drill areas such as locking lug seats, and in the case of M98 Mausers, the inner shoulder used to head-space the barrel.

Kuhnhausen's *The Mauser Bolt Actions: M91-M98, A Shop Manual* identified the remainder of the front receiver ring as a "safe drilling zone." In the case of the M1917 and M1914 Enfields the front receiver ring excluding the lug support and all of the rear ring would be considered a safe drilling zone. This leaves plenty of room for standard hole patterns and allows the use of mounts such as the one piece M70-AH, which can use the existing rear sight hole in appropriately contoured receivers.

For those that lack access to a milling machine Weaver-style front bases can be used on same-height receiver rings. Blank M98 Mauser bases also can be cut to proper length to cover milled slots (which can be filled by soldering a steel insert in place) in

those receivers that have them. Author Norman Johnson responds: As indicated in the article, the same scope was remounted using the existing 6-48 size screw holes using a tap to clean up the existing threads.

Loctite Threadlocker was used to lock the new screws in place. Aside from aligning the bases, the scope was essentially remounted on the rifle just as it was brought to me. I do not know who the original gunsmith was who performed the work on this rifle. The customer has used this rifle quite extensively without incident. I will, however, pass this information on to the owner of this rifle.

In an effort to be thorough, I explained in detail the work I performed to the rifle as reported in my article to Dave Bennett at the Brownells Technical Department. When asked if he saw any problems with this, he said the scope mounting as done would have no weakening effect on this very strong action regardless of rearward screw placement. He further commented on this exceedingly strong action and that one could do virtually anything you want with it.

Winchester 24 In a past issue of *American Gunsmith* you published a problem I was encountering with the lack of a cocking lever spring on a Winchester 24 double shotgun. As I learned, the key to the issue was that the cocking lever pin, which also retains the torsion cocking lever spring,

had either been cut off flush with the sides of the receiver, or this particular model variation was built without a cocking lever spring.

Once I obtained the correct (longer) pin to retain the cocking levers and spring the correct orientation of the spring became obvious. Harold However, regarding the real complaint of difficult opening and closing of the gun, the cause was narrowed down to extreme tension between the forend hanger lug, forend iron and the barrel pivot portion of the front of the receiver.

Once the interfering fit of the forend iron window and the barrel forend lug was gradually relieved the barrels began to open and close more reasonably and smoothly. Proper adjustment here made for a good fit. Don Evidently, the Buckinghams (Trenton, TN) contact we suggested worked out. Good. Often, with this type of specialist that limits inventory to one or a few obsolete lines, small parts such as pins tend less to be tossed into the wrong holding bin.

Secondly, most doubles that develop a resistance to opening and/or closing do so because something is binding. Discovering exactly what is causing the annoyance usually occurs after an application or two of indicator fluid or, lacking that, a dark color magic marker. AG

SEARCHABLE ISSUE RECORD

Archive index

Hunting Is Safe! American Gunsmith Editors	2	U. S. Rifle, Caliber .30, M1 Garand Overview Norman E. Johnson	16-19
Savage/Stevens Model 512 Insights Chick Blood	3-7	SHOT Show 2012 American Gunsmith Staff	20-22
Mounting A Scout Scope On A Military Mauser Wendell Deaner	8-10	Reader Forum American Gunsmith Editors	23-24
Machined Stocks In Classic Custom Rifles, Part 1 Dominic Pisano	11-15		

Rights and corrections. Images without confirmed permission remain reserved in place. Authors, photographers, and rights holders may contact editor@gunsmithmag.com. Corrections to searchable text are tracked against the source-page record.



American Gunsmith

The complete searchable archive of a technical journal devoted to craft, repair, maintenance, machining, and restoration.

GUNSMITHMAG.COM • EDITOR@GUNSMITHMAG.COM