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ARCHIVE ISSUE NUMBER

INSIDE THE ARCHIVE

DISASSEMBLY AND REASSEMBLY OF THE ROSSI TUFFY SHOTGUN

GUNSMITHS: A CHANCE TO GET INVOLVED? • TAKE AN INSIDER'S LOOK AT THE SAVAGE ACCU STOCK • BUILDING THE ...

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 070

DIGITAL ARCHIVE EDITION

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IN THIS ISSUE

Contents

A complete guide to the searchable editorial work preserved from October 2009.

2 Gunsmiths: A Chance to Get Involved?

AMERICAN GUNSMITH EDITORS • ORIGINAL PAGES 2

3 Disassembly and Reassembly Of the Rossi Tuffy Shotgun

CHICK BLOOD • ORIGINAL PAGES 3-7

8 Take an Insider's Look At the Savage Accu Stock

CHICK BLOOD • ORIGINAL PAGES 8-9

10 Building the Gunsmithing Library: Part 1, The Classics

STEVEN R. KERN • ORIGINAL PAGES 10-14

15 The Custom M1911: Fitting An Aftermarket Thumb Safety

ROBERT K. CAMPBELL • ORIGINAL PAGES 15-17

18 Making 'Invisible' Repairs In a Broken Stock

DOMINIC PISANO • ORIGINAL PAGES 18-19

20 Making a Custom Fiber-Optic Front Sight

ROY SEIFERT • ORIGINAL PAGES 20-21

22 Reader Forum

AMERICAN GUNSMITH EDITORS • ORIGINAL PAGES 22-24

FROM THE ARCHIVE

Gunsmiths: A Chance to Get Involved?

BY AMERICAN GUNSMITH EDITORS OCTOBER 2009

ORIGINAL PP. 2

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Participation in target-shooting sports is growing at colleges around the country, and the launch of anew grant program by the National Shooting Sports Foundation (NSSF) will provide even more opportunities for student-athletes. According to the NSSF, many young target shooters want to continue participating in their sports when they go off to college, and in some cases, students are applying to colleges and universities based on the quality of the schools' intercollegiate target shooting programs.

NSSF's Collegiate Shooting Sports Initiative will provide financial and informational support to strengthen existing target-shooting programs and help form new club and varsity teams in shotgun, rifle, and pistol. NSSF recently announced the program at the national championships of the American Trapshooting Association's youth program called AIM. Participation in college shotgun sports has grown remarkably in recent years.

Between 2006 and 2009, the annual ACUI Intercollegiate Clay Target Championships has seen a 40-percent increase in participation, with 37 schools and 337 clay-target shooters competing in last spring's championship. Much of the increase can be directly attributed to high-school students graduating from programs like the NSSF-developed Scholastic Clay Target Program and 4-H, and then continuing to compete in college.

More than 30,000 young people have participated in clay-target shooting in the Scholastic Clay Target Program alone, so it's only natural that athletes from that program would jump at the chance to continue competing in the collegiate ranks, just as athletes in other sports want to do. "The NSSF Collegiate Shooting Sports Initiative should breathe life into underfunded activity teams that would have to go scratching for funds in order to compete with recognized varsity teams," said Bruce Hering, coach at Southeastern Illinois College.

"This grant program looms big for those schools." Hering said the grants will also help schools with new or fledgling programs to meet the growing demand among students for target shooting.

Following the recently completed national championships for the Scholastic Clay Target Program, Hering said, "You wouldn't believe the number of parents and high-school students asking about college teams and scholarships. There's great interest out there in pursuing target shooting after high school." A total of \$75,000 will be made available to qualifying colleges or universities to start new competitive shooting teams or support existing teams.

Each grant recipient will receive up to \$7,500 in matching funds from NSSF. Anyone interested in starting or strengthening a college shotgun, rifle, or pistol team can find resources and grant opportunities at Editor Keith Lawrence Technical

PISTOLS

Disassembly and Reassembly Of the Rossi Tuffy Shotgun

The Tuffy looks like, loads like, and handles like the old Snake Charmer. But underneath its skin, it's a somewhat different animal.

BY CHICK BLOOD OCTOBER 2009

ORIGINAL PP. 3-7

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According to our friends at Rossi USA, the new Tuffy shotgun is as close to the old Snake Charmer as anything that can be purchased new in the U. S. these days. If you aren't familiar with it, the original Snake Charmer was a .410- or 28-gauge break-open single-shot. Its combination of light weight, small size, and pistol-grip stock made it popular with backpackers, small-game hunters, campers, and anyone who prefers a compact shotgun for home defense.

The history of the little break-open shotgun design makes an interesting story. In my opinion, the primal ancestor of this shotgun design was the H&R Handy Gun. The Handy Gun, a .410 or 28-gauge single shot with an 8 to 12-inch barrel, dates back to the 1920s. In its pistol-grip configuration, some might mistake it for the modern-day Thompson Contender. The Handy Gun ran afoul of the 73rd Congress in 1934, when the lawmakers passed Statute 1236—otherwise known as The National Firearms Act (NFA).

This bill defined a number of “regulated” or Class II firearms as being subject to registration, additional taxation, and ownership

transfer/transport controls. In addition to machine guns, short-barreled rifles and shotguns were classified as “Title II weapons.” Included in the language of act was a catch-all category called “Any Other Weapon” (AOW). This insidious gem allowed ATF to make its own decision regarding any firearm it concluded should be subject to Class II regulations.

The agency subsequently decided the Handy Gun, essentially a short-barreled smoothbore pistol, was one of those firearms. It didn't reverse that conclusion until recently, when the Handy Gun was reclassified as a “curio and relic.” And yes, the NFA of 1934 still allows ATF to decide what it considers to be an AOW. In any case, after the Handy Gun I would place the H&R Topper pistol next in the family tree.

The Topper's action was basically a copy of the Handy Gun, and the somewhat longer Topper filled the niche for a .410 with a short barrel for many years. After the Topper, I think the next generation was the H&R Handy Rifle. No, that's not a typo; somebody at Top of page: The Snake Charmer is no longer made in the U. S., but this clone, produced by Taurus

International and sold by Rossi, is a ringer for the real thing. The only thing missing is the old moniker.

H&R decided to get cute with the spelling of the word “handy.” And yes, I know the Handy Rifle is a rifle, but it was also available as a smoothbore. Following that, one H. Koon of Dallas, Texas, came along, and combined the Handy Rifle's break-open action and short barrel with a radically new stock configuration. Koon's gun, chambered for the .410, was given the curiously odd name “Snake Charmer.” The Snake Charmer—or a version thereof—is still being manufactured, though not in this country.

The rights to the shotgun and its name were acquired by a French company, Verner-Carray, in 2001, and lately they've moved their manufacturing operations to Izmir, Turkey. The other current manufacturer is Taurus International, whose domestic marketing partner, Rossi, includes the shotgun in their line as the Tuffy. At present, it's available solely in .410 gauge in either a matte black or stainless finish. The Tuffy reportedly has more powerful ejectors than the orig-

DISASSEMBLY AND REASSEMBLY OF THE ROSSI TUFFY SHOTGUN CONTINUED

ORIGINAL PAGE 4

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It took the author less than a minute to field-strip the one pictured here. Inal, four updated safety features including the proven Taurus Security System, storage for five shells in the buttstock, along with a visible indicator—a window, actually—to let the shooter know when he's running low on ammo. Field Stripping The forearm-assembly screw (#32E) is backed out (counter-clockwise) enough to disengage it from the barrel assembly (#A).

Then pull the forearm (#43H) down and forward to separate it from the barrel and receiver. Finally, press the opening lever (#50) down, pivot the barrel in the same direction, and back it out of the receiver. Don't lose the assembly nut (#31); its location is indicated but the part is not shown on the schematic. And don't lose the O-ring (#39). Boy, that was quick. Detailed Disassembly The stock halves are held together by three Phillips-head screws (#105, 106, and 107).

They're not of equal lengths, so keep track of which one came out of which hole. Backing them all out will allow separation of the halves (#100F and 101F). Do the separating carefully, maintaining a level plane, to avoid jarring any part of the magazine assembly (#102F, 103F, and 104F) out of place. (If the worst happens, though, the order of replacement is 104, 103, 102.) Now back out the receiver screw (#40), remove its spring washer (#96), and the stock holder (#99).

All the receiver assembly pins are numbered 27, and all the internal parts of the receiver are related to four of these pins. They're all the same size To remove it, the pin must be drifted out toward its head end. and all are drifted from left to right— with one exception, which I'll tell you about when we get to the area affected. One of the pins retaining the trigger guard is a #27, and the other, the trigger guard pin (#52), is smaller in diameter.

The remaining pin, larger in diameter than the rest, involves the manual safety. Because it is a good bit more complex than the remainder of the rifle, let's skip the rest of the receiver for the moment and concentrate on the extractor assembly. This assembly is held to the barrel by three pins. There are two extractor-stop pins (#8) and the extractor-lever pin (#12). Drift the upper stop pin out to the right, withdraw the extractor (#6), and then slide the extractor spring (#5) out to the rear.

Drift the lower stop pin left to right to free the rear of the extractor lever (#10), push the lever pin (#12) out to the right, and remove the lever from its slot. The lever spring (#11) may or may not accompany the lever. If it chooses to remain behind, it can be removed after the lever is out of its way. Like all springs, the lever spring has a talent for getting lost. So be alert. So much for the extractor assembly; let's get back to the receiver.

Remember, all receiver-assembly pins drift left to right except one, and I'm getting close to telling you which one

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Rossi Tuffy .410-Gauge Shotgun (Specifications subject to change without notice) A Barrel Assembly 5 Extractor Spring 6 Extractor 8 Extractor Stop Pin 9 Front Sight 10 Extractor Lever 11 Extractor Lever Spring 12 Extractor Lever Pin 15D Barrel Pin 16 Firing Pin 17 Firing Pin Spring 20 Locking Plate 21 Trigger Guard 23 Trigger 25 Trigger Spring M Hammer Assembly 26M Hammer in the next few paragraphs. Right now, though, push out both the large and small trigger-guard pins from the left. Remove the guard (#21).

The trigger (#23), trigger lever (#45), trigger spring (#25), and locking-plate spring (#38) will come with it. If you can take a photo of the guard assembly, do it now. If you can't, refer to the photo of it included here, and use it as a final check on your guard 28M Hammer Spring Pin 85 Hammer Lock Assembly 27 Receiver Assembly Pin 29 Hammer Spring E Forearm Assembly Screw F Stock Assembly 100F Stock, Right 101F Stock, Left 102F Magazine Cover 103F Magazine reassembly prior to pinning it back into the receiver.

The hammer pin retains the hammer (#26M) and hammer spring (#29). No surprise to that, but the entire hammer-lock assembly (#85M) is inside the hammer

and you don't want any of it to escape. If that happens, there's probably no sense trying to locate what's been lost.

Call Taurus International for replacement parts. 104F Side Window 38 Locking Plate Spring 39 O-Ring 40 Receiver Screw 43H Forearm 45 Trigger Lever 46J Transfer Bar Lever 47J Transfer Bar 48J Transfer Bar Pin 49 Transfer Bar Lever Spring 50 Opening Lever 52 Trigger Guard Pin 68 Manual Safety Lever 69D Manual Safety Stop Pin 70 Manual Safety Locking Ball 71 Manual Safety Locking Spring 83 Manual Safety Pin 84 Manual Safety Rod 96 Spring Lock Washer 99 Stock Holder 105 Rear Stock Screw 106 Lower Front Stock Screw 107 Upper Front Stock Screw The next left-to-right pin retains the locking plate (#20), transfer bar (#47J), the transfer-bar lever spring (#49), the lever (#46J), and the transfer-bar pin (#48J).

Those last five parts have to be preassembled before they're reinstalled. I'll be getting to that headache in a moment. Now comes the right-to-left assembly pin. It retains the opening lever (#50), firing pin (#16), and firing-pin

DISASSEMBLY AND REASSEMBLY OF THE ROSSI TUFFY SHOTGUN CONTINUED

ORIGINAL PAGE 6

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Inside are the extractor spring, lever, and lever spring. spring (#17). Keep the firing pin and its spring under control as you separate them from their retainer. While both do fit in a hole inside the top of the receiver, there's a possibility of flight, or at least a lurch for freedom, when pressure is taken off the spring. Next examine the manual safety. Note that the safety pin (#83) is larger at one end than at the other.

The pin must be drifted out toward the large end in order to lift the safety lever (#68) free. Now pay attention to this next part: The safety rod (#84) houses a spring (#71) and ball (#70). I suggest you swallow your pride as I did and employ the ever-reliable, totally bulletproof plastic-bag technique when remov-

ing the rod. Of course, the safety lever comes into contact with those wee objects secreted in the rod, so when the lever is taken out, said objects are likely to be quickly discharged from the rod.

Reassembly Tips First off, this is not a tip; it's a must. You will need at least three slave pins. One will equal the width of the trigger and trigger lever. The second will do the same with the locking plate/transfer bar. The third will equal the width of the trigger guard. Let the The author detected a residue building up where the pin has to travel and scrubbed it away after this photo was taken. photo of the guard assembly be your guide to how it should appear before being reinstalled in the receiver.

The multiple photos of the locking plate/transfer-bar assembly accomplish the same for that component. Admittedly, anyone not accustomed to the task of preassembling the locking plate/transfer bar and trigger groups will find it trying, at least, and possibly downright frustrating. My suggestion for making it less so is to install the trigger spring and the trigger, using the trigger to compress the trigger spring.

The slave pin matching the width of the guard is inserted to retain the trigger, and then backed out enough to allow inserting of the trigger lever. The slave is pushed back through to flush with the "ears" of the

DISASSEMBLY AND REASSEMBLY OF THE ROSSI TUFFY SHOTGUN CONTINUED

ORIGINAL PAGE 7

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Right and far It's shown here with the required slave pin still in place. guard, and the locking-plate spring inserted into its hole in the trigger housing. When the guard is reintroduced into the receiver, align the slave with the large assembly-pin hole in the guard. Use the third slave pin (mentioned above) to push out the bly pin halfway to hold them in place.

Then insert the opening lever into its slot at the upper right of the receiver, align its hole with the pin restraining the firing pin, and push the pin through. trigger slave, but leave the pushing pin in the trigger assembly. Install the guard with the smaller guard pin first. The larger diameter of the rear assembly pin will eject the slave pin. The locking plate/transfer bar can be preassembled by "building it" on a normal length assembly pin. First on is the locking plate, and second is the transfer-bar lever.

Withdraw the pin enough to insert the transfer-bar lever spring. The short, bent end of the spring is seated under the lower retainer cut on the locking plate. The longer bent end must sit in a groove cut in the tab of the transfer bar. Push the building pin out with the slave pin (the one that matches the subassembly's width).

When you ul- The arrow points to the slave pin. timately position the locking plate unit in the receiver, which I'll describe later, push out the slave with the assembly pin. (The factory probably has special fixtures which make the assembly of these two criters less vexing. But if they do, the fixtures are not available to the outside world.) This is the order of reassembly when both pre-assemblies have been dealt with: First, install the firing pin and its spring in the rear of the receiver.

Install an assem- ■ The preassembled locking plate/ transfer bar is inserted into the receiver from the bottom. Align the assembly with the second hole from the top of the receiver, and insert a full-length assembly pin. Then push the pin through to dislodge and expel the slave pin, and seat itself flush with the left side of the receiver. The hammer is also inserted from the bottom of the receiver and positioned next to the opening lever.

Before the assembly pin can be pushed all the way through, the hammer spring must be aligned with its hole in the hammer. Lift up the open lever to move the locking plate forward. Push the hammer spring as far back as it will go in the receiver. The tip of

its bent end should eventually line up and ride between the grooves on the trigger guard. Align the trigger guard with its holes in the receiver. Install the smaller of the two guard-retaining pins.

Double check the alignment and push out the trigger/trigger-lever slave with the larger guard-retaining pin. Make sure the pin doing the pushing ends up flush with the left of the receiver. Insert the safety rod from the right side of the receiver. The safety spring is installed through the smaller hole on the left side of the receiver and into contact with the rod. Place the safety ball on top of the spring.

Align the safety lever with the rod, push down until it rotates while in contact with the ball, and then install the safety lever pin to hold the assembly in place. Finally, lay the stock holder in the right half of the stock, place the left side atop them, and screw both halves together tightly. Now all you have to do is to reverse your field stripping to complete the reassembly.

PEOPLE & COMPANIES

Take an Insider's Look At the Savage Accu Stock

This innovative polymer molding provides a rigid, one-piece assembly that keeps the action from moving in any direction, producing significant improvements in accuracy.

BY CHICK BLOOD OCTOBER 2009

ORIGINAL PP. 8-9

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Question: Which manufacturer holds a dominant position with accuracy-obsessed, cost-conscious varmint and target shooters? Answer: Savage Arms. That answer probably didn't come as a surprise to you, and I know I'm not the only one who believes that no other mass producer of bolt-actions has made more advancements in rifle accuracy than Savage, all the while keeping the prices reasonable.

To me, this is especially interesting because the venerable Savage Model 99—unequaled as a high-power sporting rifle until 1950—

was a lever action. In 1950, Savage introduced the bolt-action Model 340, which was succeeded in 1958 by the Model 110.

This basic platform remains in use today and is the action on which the modern-day Savage line-up is built. (A complete report on the Savage Model 110 appeared in the June 01 issue.) Top of page: This new Savage rifle wears the new Accu Stock and has the almost-new Accu Trigger as well. The newest models have a smooth barrellock nut, a bolt release on the trigger guard, and three action screws. Older models can be identified by the notched barrel-lock nut, a receiver-mounted bolt release, and two action screws.

The company's successes notwithstanding, Savage suffered a diversity of marketing problems and the company's fortunes declined in the 1980s. Fortunately, Savage didn't completely succumb to the pressures as some other gun manufacturers were forced to do. In 1995, the company was acquired, refinanced, and reorganized by Ronald Coburn, an individual dedicated to the shooting sports in general and to Savage Arms in particular.

Coburn put together a post-recovery team that was determined to build on the price/performance edge of the Model 110, bringing it up to an accu-

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B A racy level that's still unmatched by its peers. Perhaps the most dramatic result of this team effort came in 2003 when Savage rolled out the Accu Trigger™. The Accu Trigger, covered in our December 04 issue, dramatically improved the function and accuracy of the 110 platform. Since then, the advantages of this new trigger have been extended to Savage's big-game and rimfire rifles. Six years after its introduction, most rifle manufacturers have developed and are offering their own answer to Savage's Accu Trigger.

While some of these triggers do offer adjustability and relatively low pull settings, none of them offer the foolproof safety system of the Accu Trigger. (It's patented). With the new trigger designed and in production, the Savage team turned its attention to the way barreled actions and synthetic stocks are joined together. Why the emphasis on synthetics? In the past 15 years, the use of thermo-setting polymers and injection molding has soared.

The synthetic stock might not appeal to the purists among us, but it does offer some benefits. For the consumer, a synthetic stock mean less weight, no concern over splitting, warping, or the absorption of

moisture, plus a high resistance to the occasional and inevitable bumps and bangs. For the manufacturer, the synthetic stock means reduced cost. Perhaps you've seen one of those massive rotary duplicators that carve out eight to ten wooden A B stocks at a time.

If you have, then you probably know that the hardwood blanks are expensive—especially since most of that expensive wood gets turned into an eruption of sawdust and wood chips. And then there are the salaries and benefits of the operators who must stand by in shifts to feed the machine and fix it when it goes berserk. By contrast, injection molding of plastic is a quick and clean process. Despite the advantages to both the consumer and manufacturer of molded stocks, there was still a problem to be solved.

Plastic tends to "migrate" when torqued. This can occur when a sling on a rifle is cinched down for offhand shooting, when a bi-pod is added to the forend, or when a rifle is placed on a bag or rest. In some cases, the weight of the rifle alone is sufficient to bring the barrel and forend After "nesting" the stock, the screw is tightened to force the wedge into rigid contact with the barrel

lug and hold it tightly against the rail. into contact. Then, when the barrel gets hot, the contact tightens up.

This can result in a rifle that starts printing vertical groups with an inch or more separating each point of impact. After a lengthy evaluation of the various plastic stocks available—thermo-set, laid-up, and resin poured—the Savage team decided to concentrate on injection molding. This is the least expensive method of producing a high-quality stock to exact tolerances that require no fitting.

With a stock injection molded to precise tolerances, Savage still needed to eliminate the accuracy problems related to torquing, heating, lifting, and shunting. Savage came up with a three-part solution called the Accu Stock™. First, there is the "backbone." In order to give the stock rigidity, an aluminum rail that measures 14.5 inches long by 1.75 wide was designed to run from the full length of the action area to nearly the end of the forend. Included in the rail design were undercuts on both lateral sides.

The plastic flowed into these under molding conditions, (continued on page 14)



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bonding the rail and the stock together, and preventing movement in any direction. “Nesting the action” (rather than bedding) was the next innovation. The rail is provided with “lips” that wrapped around the action. Installing the action screws actually pulls the action down into the rail, thus producing better metal-to-metal contact than pillars or V-blocks. Nesting also gets rid of any canting, rotation, and floating by the barreled action within the stock.

The third part of the Accu Stock system is “wedging the lug.” When a rifle recoils, its recoil lug will move forward and/or aft. Not any more. The Accu Stock system includes a steel wedge and a dedicated screw. This screw is partially tightened before the action is fully nested, and the wedge applies pressure to the barrel lug, holding it tight against the rail. Once nesting has been completed, the wedge screw is fully tightened.

The result of all these improvements working together is a rigid, one-piece assembly that prevents the action from moving in any direction. The Accu Stock reportedly produces as much as a 50-percent accuracy improvement over the same rifle with a conventional stock. The Accu Stock is featured only on certain rifle models, and only on 2009 and newer versions of those models.

For the latest information on which models feature the Accu Stock, call Savage or check their website. And here’s where the Accu Stock gets really intriguing for the gunsmith: There have been some conversations held at Savage HQ about producing an Accu Stock for other brands of rifles. Don’t get too excited, though; if that happens at all, it’s not likely to be in the immediate future. ■

FROM THE ARCHIVE

Building the Gunsmithing Library: Part 1, The Classics

When you're beginning to build your library, you have to start somewhere. These basic books—in circulation for decades—are a good place to start.

BY STEVEN R. KERN OCTOBER 2009

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For the would-be gunsmith just starting out, the choices in books must seem intimidating in the extreme. Where do you start? In my opinion, you start at the beginning—with the basics. In this article, I'll tell you about some of my favorite basic books—books that have helped to launch an untold number of gunsmithing careers. And then in future issues, I'll tell you about some of the books I've found invaluable on more advanced and specialized areas of gunsmithing.

I'm sure it wasn't the first book on gunsmithing ever published, but it might be the most well known, and it was very instrumental in helping me get started. That book is titled simply *Gunsmithing*, by Roy Dunlap. Originally published in 1950 by Thomas G. Samworth, a publisher who specialized in these special-interest titles, this book has been continuously updated and available for many years. My copy is a second edition, dated 1963.

This edition has artwork featuring the late Alvin Linden working in his Wisconsin shop. Later editions are available from web vendors like Amazon.com or auction sites like e Bay; the newest edition has a different cover illustration and is available from outfits like Brownells or Barnes & Noble.

Gunsmithing has 35 chapters covering subjects like setting up the shop and purchasing tools, to various metalworking skills such as soldering, brazing, welding, and heat treating.

Roy was one of those rare gunsmith/craftsmen who did it all, working in both wood as a stockmaker and a metalworker installing custom barrels, along with fabricating an assortment of target shooting accessories. Since his shop was built around target shooting and later silhouette shooting, he made complete rifles for both sports. Some of his items were so popular they were used by military teams as well as Winchester and Remington factory teams.

Eight separate chapters in *Gunsmithing* are devoted to the design, fabrication, and finishing of wood gunstocks. (Alternate materials for stocks, especially molded fiberglass, were still decades away.) There is also a substantial amount of data and dimensions on various cartridges. *Gunsmithing* contains a wealth of detail on various personalities involved in the trade, both prewar and post-war, including names like Joe Pfeiffer, Bliss Titus, Tom Shelhammer, and W. A. Sukalle.

One of Dunlap's later chapters, "Ornamentation of Wood and Metal," contains memorable illustrations including game scenes on a Ballard receiver by Arnold Griebel and also an early-model Winchester 52 target-rifle presentation piece modified by stockmaker Thomas Shelhammer and engraved by Rudolph Kornbrath. This later piece was recently sold at an auction for \$65,000!

Dunlap did no such fancy work himself, and didn't even like to checker pistol grips on his target rifles, but he certainly recognized the great work of others. All in all, *Gunsmithing* is a great book and a great first choice for anyone wishing to build up a set of references. Its only weakness is a lack of coverage on firearms created after the late 1950s. But, of course, there are other books that do that. An earlier book, mentioned in Dunlap's dedication, is Clyde Baker's *Modern Gunsmithing*.

Baker, born in 1893, came from an earlier era. His book was first published in 1933, and he died at a relatively young age in 1943. The copy of Baker's book I have is a revision by well-known author J. E. Traister. (Traister was the original editor of *American Gunsmith*.) As with Dunlap's book, this one was also published by Stackpole.

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Modern Gunsmithing includes 34 chapters with nearly 600 pages of details on nearly every gunsmithing-related subject imaginable. The late Townsend Whelen contributed chapters titled "Rifle Barrel Design and Fitting," "Chambering and Barrel Work," and "Cartridge Design." Whelen had the good fortune to live much longer than Baker, and his experience in charge of the Frankfort Arsenal as well as positions on the U. S.

Army Ordinance Staff gave him unmatched experience in the development and manufacture of military small arms and ammunition. Modern Gunsmithing is a great companion book to Gunsmithing. While both books overlap and cover the same subjects, they aren't identical and it is worthwhile to own both. Both Dunlap's and Baker's books are written in a conversational style.

It's easy to imagine sitting in the author's shop listening to him explain some particular point, and then having him follow up with a demonstration as well. The Modern Gunsmith by James Virgil Howe—a two-volume set—is quite different from the aforementioned books. With Howe, the reading experience is like sitting in a college professor's classroom combined with tours of then-current firearms factories. Howe had an even broader experience than either of the other previous authors.

Prior to writing The Modern Gunsmith, he was in charge of the Small-Arms Experimental Division at Frankford Arsenal, where he worked closely with Townsend Whelan. He also helped found the custom gun firm of Griffin & Howe in

New York city, which still exists, many decades later. I believe he was also the editor of The American Rifleman magazine for at least several years in the 1950s. Howe's book was first published in 1934, then re-released in 1937 and again in 1941.

The copies I have were reprints from June of 1945. The publisher was Funk & Wagnalls and the result is something more akin to a college text in both appearance and content. The first volume of The Modern Gunsmith has 29 chapters and 170 illustrations in over 400 pages of material.

Topics covered include how to saw planks from a log, how to "remodel" various service rifles, instructions for fabricating hand tools and checkering cradles, how to sharpen drill bits, details on the Lyman #48 receiver sight and the #103 tang sight, and—among other things—details on both etching and engraving.

The second volume further expands with additional material on the previous subjects, plus information. A final book from the World War II era I want to suggest is Professional Gunsmithing by Walter Howe. (I've been unable to determine if James V.

Howe and Walter Howe were related or if the two authors with the same last name is just a coincidence.) Walter's book was published in 1946 by Stackpole Books, which, like Samworth, was one of the main publishers of firearms books of the day. (It appears to me that Thomas G. Samworth was first employed by Stackpole. Volume II pole and later started publishing firearm tool making, die making, and details on iron and steel, including heat treatment.

Chapters 8 through 14 cover rifle-barrel design and fitting, barrel tools and their construction, barrel drilling and reaming, rifling, barrel turning, chambering and headspacing, relining, striking and polishing, and finally bluing and browning. In the middle of all this is a chapter on the design and conversion of guns for the .22 caliber Hornet. The latter includes information from the man who helped create that cartridge, Captain G. A. Woody.

In overall size, Volume II of The Modern Gunsmith is equal to Volume I in that there are another 28 chapters and 400 pages of material. In looking at both volumes, it seems that Howe finished Volume I and then felt there was more to add on many of the subjects in Volume I, plus a number of other topics that just had to get some coverage. Volume II includes information on bullet swages and caseresizing dies, as well as the construction of bullet molds.

There is also a lengthy chapter titled "Restoration and Preservation of Antique Firearms". Volume II concludes with what the author describes as a "Supplement," which encompasses ten more chapters and over 60 pages covering topics such as a safety analysis of materials used for barrels and receivers, barrel stresses and strains, finishes and surfaces, high-velocity experiments, and details on gunpowder.

The Supplement concludes with information on semi-automatic military weapons, with details on the Johnson, Pedersen, and Garand rifles.

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arm titles on his own.) Unlike the other books, which dwell on gunsmithing tools and techniques, Walter Howe's book deals primarily with the business side of gunsmithing, including topics such as business setup and customer relationships, shop setup and equipment, special tools and fixtures, and handling guns taken in for repairs. Much emphasis is placed on reviewing costs and pricing work.

From Chapter 1, Howe's cardinal rules of running a gunsmithing business are: 1) Be exemplary in the handling of guns at all times; 2) don't make promises you can't keep; 3) keep abreast of all the latest models and calibers and stay informed on the latest technical developments in the arms and ammunition field; 4) Know and live up to all the laws regarding traffic in firearms, ammunition, and components thereof; 5) don't compromise with safety in repair work; 6) don't take on jobs that are beyond your abilities or facilities; and 7) know your customer.

These business rules are just as important today as they were 60 years ago. However, some of the calculations of various costs

and pricing are just a tad obsolete. Costs and wages have inflated greatly since this book was published, but the principals of calculating overhead and developing prices remain the same. There are some common chapters in all of these books, particularly with respect to shop equipment.

On this subject, Walter Howe has some different ideas and goes into some different areas, such as designs for firing-pin protrusion gauges, a tool for removing revolver cylinder ratchets, a revolver recoil-plate tool, a shop-made stockbolt screwdriver for two-piece stocks, ideas for bore-examination mirrors, and a plunger-tube rivet-set.

In addition, Howe covers special taps for thread chasing, barrel-dent removers for shotguns, special clamps for oneand two-piece stocks, a vise for holding pins, a magazine-dent remover, and fabrication of both bottoming chisels and rasps. In my opinion, if a copy of Walter Howe's book can be located, it would be an asset to any professional's library. Conclusions Any of the volumes mentioned here have much to say to today's gunsmith, despite having been published years ago.

Although much time has passed, many if not most of the firearm designs the gunsmith deals with on a daily basis are even older than these books. Of course, none of these authors anticipated the conversion of the Colt M1911 into what are know today as a "race gun," and they certainly weren't aware of the "black guns" so in demand by today's shooting public. But when you're starting out to build a gunsmith's library, you want to start with the basics, and any of these authors can provide that for you.

The availability of these books is not exactly good, with only Dunlap's Gunsmithing on sale at Brownells. Copies can often be picked up through the classified sections of gun magazines, through used-book dealers like Amazon.com, and they regularly appear on the online auction websites like e Bay. My favorites, in case you're wondering, are James V. Howe's two-volume *The Modern Gunsmith* and *Gunsmithing* by Roy Dunlap. ■

PISTOLS

The Custom M1911: Fitting An Aftermarket Thumb Safety

The GI-type safety lever is usually one of the first things to go when upgrading a 1911-type pistol. Here are a few to consider in the process.

BY ROBERT K. CAMPBELL OCTOBER 2009

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Back in the 1960s, Col. Jeff Cooper coined the phrase “consensus pistol” to refer to a modified M1911. The phrase came from the fact that the consensus of 1911 shooters believed that the original GI-type pistol needed a speed safety, a good set of sights, and a better trigger. Thus, one of the first modifications to the M1911 that became popular was the extended thumb safety, also called a slide-lock safety.

Both terms are correct, of course, but I tend to call it a thumb safety, since it’s manipulated with the thumb. The extended safety is desirable because it’s easier and faster to work than the GI type. Over the years, what’s considered to be a “speed safety” has grown in size up to the huge “gas-pedal” safeties that are used on some competition guns. Some of these gas pedals have found their way onto carry guns, usually with poor results.

When coupled with a tightly fitted concealment holster, the oversize safety has a tendency to get rubbed into the “off” position. Today we have many good designs available that allow greater speed and certainty in manipulating the safety, without a worry over snagging the safety on clothing or a holster. A number of the new 1911s come with good safety levers straight from the factory, but many are strictly milspec guns with small safety levers and thus there is still a demand for aftermarket safeties.

After growing up with GI guns, I find the modern types are invariably better than the GI types, but there are differences to be considered. Individual shooters may prefer one to the other. Ed Brown, Wilson Combat, Caspian, and others produce safety levers and Brownells offers these and other choices. So let’s look at the techniques and procedure used to fit a thumb safety lever. All will require fitting.

We will look at basic fitting and also tips that should help when something goes wrong. Installation of the thumb safety requires a good knowledge of the 1911. In fact, you don’t want to work on any part of the safety system on any gun without being sure you know how it works. Fortunately, the 1911’s thumb safety is about as simple as we find on any pistol. First, strip the frame of its internal parts.

Examine the chosen safety, and be certain the pivot pin is an easy fit in the frame. The pivot pin should slip in the frame snugly, but not require undue effort to seat. If the pivot pin is not an easy fit, my first step would be to polish the pivot pin. It is highly recommended to polish parts and never the frame itself. Of course, you may be working with a virgin frame or

THE CUSTOM M1911: FITTING AN AFTERMARKET THUMB SAFETY CONTINUED

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In this case, the author is testing the fit of the Ed Brown slide-lock safety. The safety pivots smoothly and the safety lug moves freely, one that's seen thousands of rounds of ammunition. If polishing the pivot pin of the safety lever does not give the results you want, you may need to deburr the hole in the frame. Of course, occasionally, a safety will drop right in without any need for fitting at all. (But don't count on it.) Next, be certain the safety lug passes through the frame.

A narrow pillar file can be used on the safety lug if necessary. This operation requires attention to detail and a bit of finesse. With the

safety properly filed and fitted, be certain you're able to press the safety lever home and hard against the frame for a good fit. Often, a safety lever will not fit completely flush against the frame. To cure this problem, you'll have to use a slightly oversized drill to bevel the edge of the hole in the frame.

The small slot in the safety lug is usually deep enough to allow an easy pivot but sometimes it's not. If the safety-lug slot is too narrow, you'll This is the proper procedure. The grips are also specially modified. need to use a jeweler's file or needle file, as they're sometimes called. You must also

check to be certain the safety extension clears the plunger tube and grips. On some pistols, the safety extension will be found to be out of spec as delivered from the factory.

The 1911 grips support the plunger tube, and you must be aware of the plunger tube when fitting a thumb safety. For example, I recently fitted a striking combination of grips that properly supported the plunger tube but conflicted with the 1911's safety. The grips were polymer rather than wood, and I was leery of applying too much heat in trimming them. Work-

THE CUSTOM M1911: FITTING AN AFTERMARKET THUMB SAFETY CONTINUED

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Alternately, you can order a grip with the proper safety cut already made. Most makers call it an “ambi cut.” ing a little bit at a time, however, I managed to trim them to the proper fit. After all, the safety was already on and properly fitted. If, during fitting, the safety contacts the plunger tube or grips, the safety extension can be lightly filed. Many shooters prefer an ambidextrous safety, and this is really the only option for a left-handed shooter.

On the right side of the 1911, the sear and pivot pins extend ever so slightly. These pins must be ground down and made completely flat to allow the use of an ambidextrous safe-

ty. These pins must be removed from the frame for the work to be performed. Naturally, stainless-steel pins are the simplest to deal with since they don’t require re-finishing. Blued steel can be touched up quite nicely, however, with cold blue.

The right-hand grip panel must be ordered to accommodate an ambidextrous safety or else you’ll have to carefully cut and/or grind a portion of the grip so that the ambidextrous safety’s tab can fit under the right-hand grip panel. The fit should be snug, but However, It’s a simple matter to recut the ends of the pins for an ambidextrous safety installation. still allow the safety tab to freely move.

If you’re installing an ambidextrous safety, be certain the connecting pins fit properly and the two sides fit together properly. (I’ve seen some that didn’t.) When you’ve fitted the safety to the frame, check to be certain that the safety sits flush and fits in the frame properly with proper movement. For final fitting, the frame should be reassembled except for the thumb safety, slide lock, and slide-lock safety.

Don’t attach the safety spring and plunger in the plunger tube just yet, and follow these steps: 1) Cock the hammer. 2) Slide the safety into place. The safety will strike the back of the sear. (continued on page 21)



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3) If you're replacing a safety with an extended type, the original will be a great help as a template for proper fit. The tip of the hooked section of the safety lug must be filed until it just slightly slides behind the sear. Positive engagement is necessary. If the safety requires too much effort to engage, remove it. There will be drag from the sear, evident from the drag marks. Polish the drag marks away lightly and smoothly and you should have proper fit.

Remember, polish lightly when performing this operation; it's quite easy to polish away too much material and ruin the safety lever. There are a couple of tips that may be an aid in fitting the slide-lock safety. If the plunger tube does not have sufficient tension, you may wish to dimple the sample where the tip of the indent meets the safety. A fairly common complaint is sharp edges on the safety, especially if the pistol is used for concealed carry.

Naturally a stainless steel safety is easier to work with and does not require refinishing. If you're going to re-finish the pistol, don't overlook the sharp edges of the thumb safety when you're doing your polishing. Finally, perform a safety check. Cock the hammer, push the safety to the "on" position, and pull the trigger firmly. Now remove your finger from the trigger and push the safety to the "off" position. The hammer should not fall. This is a check for proper safety fit and also for sear engagement.

With the hammer cocked fully to the rear, slowly press the hammer a little further to the rear and listen carefully. If you hear a slight metallic click, then the thumb safety is not fully engaging. The click is the sear slipping. In this case, you'll probably need to start over with anew thumb safety.

Fitting a thumb safety isn't rocket science, but it requires care in fitting, and oftentimes it requires a little more experience than what might be evident from the little instruction sheet that comes with the part. ■

MAINTENANCE & REPAIR

Making 'Invisible' Repairs In a Broken Stock

A cracked or broken stock doesn't always require replacement. The answers to a few simple questions will determine if a nearly invisible repair is possible.

BY DOMINIC PISANO OCTOBER 2009

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From time to time, I get a request from a good customer to make anew stock to replace an old one that has broken. I follow the same drill each and every time I get such a request. Before I even discuss making anew custom stock, I tell the customer to let me see the broken stock in order to determine if it's repairable. This is especially important if the stock is made of a highly figured expensive hardwood. Making an invisible (or nearly invisible) repair in a broken stock is not as easy as it might seem.

A lot of work and craft goes into the process, and it's difficult to charge enough for the time it takes. Consequently, I tend to do repair work only for repeat customers. Once I get the stock in my hands, I examine it carefully to determine if indeed it is repairable.

Typically, the questions I ask myself are: 1) Is it a clean break, rather than a stock that has been severely splintered? 2) Is there wood missing at the break point, and if there is, is it only a minor amount of missing wood? 3) What cartridge is the gun chambered for, and after mending, will it hold up? (This is especially important with Magnums.) And finally, 4) How did the break occur?

I ask the last question mostly out of curiosity, but also to determine if the stock is likely to break again at the repair point. Actually, I've uncovered some interesting anecdotes over the years with this question. For example, the Rolling Block stock shown in the photos here was broken during a burglary. The customer told me his At this point, the break can be clearly seen in the center of the photograph. Once the rough sanding is complete, the break will be hard to spot. home was burgled and trashed.

The Rolling Block in question was smashed until the stock broke at the wrist. It was indeed a sad story as the home was sprayed with catsup, mustard, and other foods. Clearly a case of pure meanness. But I digress.... In the case of this stock, I looked it over carefully and it didn't seem to present a problem with the first three questions listed above. Besides, the Roller was rebarreled to 22 LR, and it's rare to see one in that cartridge. I deemed it a worthy project and took it on.

While it was of high quality, the Rolling Block stock was not checkered. And I always consider a stock to be unfinished if it is not checkered. Thus, after ascertaining the mend would be practically invisible after checkering, I explained the procedure and the cost to the client and he gave me the go-ahead. There was a small triangular piece of wood missing on the upper right portion of the

MAKING 'INVISIBLE' REPAIRS IN A BROKEN STOCK CONTINUED

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wrist adjacent to the tang, which I determined I could also repair. I then cleaned up the break to be certain that no small splinters of wood were left to affect the fit of the two pieces. If done correctly, the parts should fit together like a jigsaw puzzle. My next challenge was to figure out how to hold the two parts of the stock together after applying the adhesive. The Rolling Block does not have a stock bolt which would have worked perfectly, so I rigged up a system using an old bicycle inner tube.

The trick is to tightly wrap the stock end for end without disturbing the fit of the broken parts. Once I figured that out, it was time to go to work. There are a number of modern glues on the market today that will produce strong bonds in wood. Some cabinetmaker's glues, in fact, are so strong that the wood

will break elsewhere rather than where the original break occurred. But cabinetmaker's glue won't fill gaps; to be effective, it requires joints that are clean and tight.

I ruled them out, as the joint in question was quite irregular. For that reason, I chose an epoxy—Brownells Acraglas—for this job. Acraglas will fill in any voids, and once it's cured, it's as strong or stronger than the wood surrounding the break. I mixed up a batch of Acraglas gel (1:1 epoxy), added a bit of brown dye, and liberally spread the epoxy on both surfaces. After affixing the inner tube, I set the stock aside overnight.

Since this break was virtually perpendicular to the long axis of the barreled action, I simply set the rifle down on the butt using the

weight of the rifle itself to hold things together. (The action was fitted with a bull barrel weighing in the neighborhood of 12 pounds.) The next day I unwrapped the inner tube to take a look, and I must admit that I could have done a better job of wiping away the excess epoxy that oozed from the repair.

That excess had to be sanded away before I could determine the degree of success of my work. Once it was sanded, I was pleased. I knew that the repair would be invisible after refinishing and checkering the stock. While in the process of repairing the Rolling Block, I received a second broken stock to repair. This one was a C. Sharps reproduction Winchester M1885 High Wall. The customer told (continued on page 21)

MAKING 'INVISIBLE' REPAIRS IN A BROKEN STOCK CONTINUED

ORIGINAL PAGE 21

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me that the stock was sent to a stockmaker for fitting, and when it was returned in the mail it was broken in two. This was clearly a case of inadequate packaging. This stock met all of the aforementioned criteria and I took photos of the repair to show the clamping that I used. This stock, unlike the Roller's stock, was broken transversely, therefore requiring a different clamping technique. There are no set rules for these repairs; you simply work with what you have.

The High Wall stock was prepared with the action in place, therefore a liberal amount of release agent was applied to all metal surfaces to ease disassembly after the epoxy cured. The Rolling Block stock was refinished

in the usual manner and, after allowing the finish to fully cure, the stock was checkered. The customer was pleased with the results, as the break is nearly invisible. The High Wall stock is now completely finished and this break is also virtually invisible.

I am still in the process of checkering the stock. As I mentioned at the outset, mending a broken stock might seem easier than it really is. But if you use my four questions as a guide to what is repairable, you can be reasonably sure of success. And what greater pleasure could there be than saving a truly beautiful piece of wood? ■

MAINTENANCE & REPAIR

Making a Custom Fiber-Optic Front Sight

Here's how to make a fiber-optic sight in the exact profile your customer wants, and how to increase your profit on the installation.

BY ROY SEIFERT OCTOBER 2009

ORIGINAL PP. 20-21

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All of my 1911s and my .22-LR conversion kits have a fiberoptic front sight.

For regular daylight shooting, both indoors and out, the fiber rod collects light and displays it as a glowing dot, which I think is perfect for quick sight alignment. But when I went shopping recently for a replacement front sight for one of my conversion kits, I couldn't find exactly what I wanted. So I decided to make my own. I started with an extra-wide sight blank from SDM Fabricating Inc.

I've used SDM's sight blanks to fabri- This extra-wide sight is steel in the white and will require finishing when completed. Refer to the text for depth info. The 1/16-inch fiber-

optic rod is then installed in these holes. cate many different types of front sights depending on the application. This particular sight blank is 1/8-inch wide, which provides plenty of metal for the 1/16-inch fiber rod. I leveled the sight in my machinist's vise, making sure the bit didn't touch the ends of the vise.

Then I took a 5/16-inch ball-end bit and milled out the center of the sight to a depth of 0.16 inch. This cut allows more light to enter the rod, and the U-shaped cut has no sharp corners, which helps to keep the sight from cracking. The height of the blade was 0.245 inch. After making the cut, 0.085 inch of metal was left. This is enough to provide

plenty of strength for the sight installation and use. Next, I rotated the sight so the end was up in the vise.

I set-up my mill so a 1/16-inch square-end bit was centered between the edges of the sight, and 1/32 inch down from the top. Using the 1/16-inch bit, I plunged a hole in one end of the sight. I then turned the sight over and plunged another 1/16-inch hole in the other end. These holes are to hold the fiber optic rod. I carefully removed any burrs using a flat jeweler's file, then cleaned the sight with acetone and cold-blued it. I purchased two packages of 1/16inch fiber-optic rod from Oakridge

MAKING A CUSTOM FIBER-OPTIC FRONT SIGHT CONTINUED

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A roll pin can still be used to install the sight if it is below the level of the rod. Hobbies and Toys (www.oakridgehobbies.com). One of the packages was green and one was red, which seem to be colors most shooters prefer. Each package contained 10 pieces of 1/16-inch rod, each 12 inches long. The fiber rods are made by Plastruct, Inc. (www.plastruct.com). This is enough fiber rod to make hundreds of sights. I cut a piece of the green fiber-optic rod 1/8 inch longer than the length of the sight.

I then installed it in the sight, leaving 1/16 inch exposed on each end. I took a match and “ballooned” each end so the rod would stay in the sight. These ballooned ends also provide a larger dot. Now the sight is ready to be installed. If I need to change the rod, I can simply

cut it in the middle, remove the cut pieces by withdrawing them from either end of the sight, and then install anew rod.

Conclusions/Recommendations Depending on the make and model, a fiber-optic front sight can cost anywhere from about \$25 to over \$100. And this is despite that fact that most of these sights are pretty much the same; they’re all basically a square blade with one or two U-shaped cuts and a piece of fiber rod. A sight blank and the little piece of rod costs me a lot less than even the least expensive factory-made fiber-optic front sight, and I can get the exact profile and dovetail I want.

So the next time you have a customer who wants to upgrade to a fiber-optic sight, you might want to sell him a sight blank and do the fiber-optic part yourself. ■

READER FORUM

Reader Forum

BY AMERICAN GUNSMITH EDITORS OCTOBER 2009

ORIGINAL PP. 22-24

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Feedback: Rechambering The Arisaka... In the 1980s, I experienced the identical situation of bulged cases as Reuben Cole described in his letter "Rechambering the Arisaka" in the Reader Forum column in the July 09 Issue. My experience led me to investigate the reason, at first suspecting an oversized chamber as did the editor who answered Mr. Cole's question. I subsequently acquired several Type 38 rifles and one Type I (Italian manufactured).

I made chamber casts of all of them for comparison, and determined that the chambers were all within very close agreement with each other. I eventually concluded that the cause of the bulged cases was not oversized chambers, but rather undersized cases. My investigation was documented, and was published in Handloader magazine (September- October 1984). I recommend that Mr. Cole read a copy of my article in that issue before he initiates the rechambering of his rifle.

By reforming readily available cases, the problem can be solved quite simply. By the way, my bulged cases were manufactured by Norma, but I suspect other manufacturers used similar dimensions for their products.

James Taylor Thanks for the tip, James. AMT Backup Disassembly I have an AMT Backup pistol in .22 LR in the shop that needs a replacement extractor. Numrich has the part, but I can't find any instructions for disassembly.

I've looked through my copies of American Gunsmith going back to 2002, and my Gun Digest books don't show any AMT products. Any help will be appreciated. Name not given Update your Gun Digest books with the latest edition on automatic pistols. It includes the .380 Backup, and the .22-caliber version takes down in the same manner.

Winchester Stock Removal I have three Winchester Model 50 auto shotguns, two in 12 gauge and one in 20 gauge, and all have the following issue: To remove the stock, it appears you need to remove the buttplate, then reach up inside the stock to remove a buffer lock and unscrew the inertia rod from the receiver-extension tube. This gets the stock loose, but the inertia rod is still captured and won't slide out of the stock. Therefore, the stock won't come free from the gun.

I'm at a loss as to what to do next to get the stock free from the gun. All attaching parts and pins seem to be captured or hidden. Any ideas? Michael Helgerson We had to dig way back for the official field manual on these shotguns published when Olin Corp. was in control of the late U. S. Repeating Arms. This is what it said: Remove the buttplate and buffer lock. Insert a bladed driver into the buffer-lock slot in the buffer plug. Undo the plug.

Ease the plug out of the stock; it's under tension from the closing spring. Do not allow the plug to escape and get lost. The spring and inertia rod are then withdrawn from the stock hole. You might want to check with Jerry Stevens at Nu Line Guns ext. 5) to be certain that subsequent engineering changes didn't invalidate the above instructions. But don't bother calling Browning/Winchester. The Model 50 predates their present arrangement by about 50 years.

NEF Extraction Problem A customer recently brought me a New England Firearms Handi Rifle in .270 caliber with an extraction problem. When the gun is opened, the extractor drops down below the case rim before it tries to extract. The chamber was kind of rough, but after polishing it there was no change. The only thing I can think of is that the extractor is caliber specific and the wrong one has been installed. Your help and advice would be appreciated.

Kenneth Wright The extractor on the .270 model also serves the .308 and .30-06 models, so it is not caliber specific. The extractor can bypass the case head on closing the action due to a fouled chamber or dirty ammunition. You may have eliminated the possibility of a dirty chamber due to your polishing effort, but how about the brass?

You should also make certain the extractor cut in the breechface is spotless, and check the extractor for vertical movement. (It's spring loaded.) Excessive motion could allow the component to get out of position and might indicate a weak spring. If this is the case, replace the spring and extractor. If you don't get positive results from the above actions, your only option would be to return the rifle to NEF for factory service.

Remington Trigger Adjustment Do you have any info on how to set the trigger pull weight on the X-Mark-Pro trigger on the Remington Model 700? I just had a gun dealer order me a Model 700 VTR with the X-Mark-Pro trigger, but they sent me last year's model that has to be adjusted from the inside. The 2009 models adjust from the outside with a tool, but this is not the case with mine. Thanks. R. J. If you told your dealer to order you a M700 with the new X-Mark-Pro trigger, then you didn't get what you ordered.

We'd have a chat with the dealer about that. If the chat doesn't solve the problem, we suggest you call Remington and purchase a 2009 Mark- X-Pro trigger. We're pretty sure the old and new models of the trigger are readily interchangeable. If you don't want to do that, dig out your August 07 issue of American Gunsmith. In it

ORIGINAL SOURCE PAGE

22

READER FORUM CONTINUED

ORIGINAL PAGE 23

you'll find an article on how to adjust the older M700 trigger. Firing Pin for Commando? I have a customer with a Commando Mark III .45-caliber semi-auto from Volunteer Enterprises Inc., Knoxville, Tennessee. He lost the firing pin. I need help locating a firing pin or drawings that would help me make one. Thank you for your help in this matter. Tim About all we can tell you is that the carbine was made by Commando Arms in the late 1970s and was patterned after the Thompson sub-machine gun.

It's possible that a firing pin from the Thompson could be the solution, but we suggest you check with Kahr Arms present maker of the "Tommy Gun," to check on interchangeability. Remington Model 552 Ejection A customer brought in a Remington Model 552 .22 Short-only that was not ejecting properly. After a thorough cleaning, I test fired it and it was ejecting; however, it would not cock the hammer. I disassembled it again and checked it over.

I found the extractor-spring seat was protruding slightly into the ejector groove. I remedied that and test fired it again. It still won't cock. The hammer face had some burring on the edges, so I stoned them off. The chamber is smooth with no burrs. I did another test fire with the same results. The only other defect that I've found is that it needs anew buffer pad. Do you have any suggestions? Robert A.

Scott Failure to cock with the M552 can be caused by a defective hammer or sear notch, a faulty disconnect or connectors, or a binding bolt or trigger. Replace any damaged parts, check for proper reassembly of the disconnect, and if all else fails, you might have to return the trigger-plate assembly to Remington for factory service.

Hi-Standard Model W-100 Reassembly A customer brought me a Hi-Standard Model W-100 "Double-Nine" revolver in a plastic bag.

He told me it looked so simple he decided to take it apart and clean it. Apparently, he wasn't thinking ahead to the time when he'd have to put it back together. Well, I have it now in pieces. The customer provided me with the Hi-Standard drawing of the parts breakdown to help me put it back together. The picture looks straightforward enough, except for the two springs numbered 7380, and another one, with a number that's not legible.

It's located to the right of the hammer and left of the hand. (The number looks like it might be 7185). I can't find a step-by-step procedure for reassembly. Can you help? I looked at all the AG magazines I have and cannot find it. Not popular, I guess. I told the customer that my efforts will far out-price the value of the gun, but he wants it back together. Joe Grisafi The only schematic we can locate for the Double Nine revolver appears in the Numrich Gun Parts catalog.

There is no part 1785, but the spring you describe appears to be the hand spring. Beyond that, we can't help you with detailed reassembly instructions. All of the Hi-Standard info in our files are devoted to their pistols. Winchester Short-Cycling? I have a Winchester Model 1894 .44 Magnum rifle. I purchased it new and have used it for cowboy-action shooting with .44 Special ammo for a number of years—maybe 3000 rounds. Lately I've been having a problem.

When I'm running the lever for speed I'll have a cartridge jump out of the magazine and under the carrier, which locks up the

gun. I have to remove the magazine spring and follower to get out that cartridge and any others left in the magazine. This is after the rifle has picked up a cartridge and chambered it. Could it be as simple as I'm shortstroking it, or could something be worn or out of adjustment? Any ideas on what could be wrong, what to check, or what to replace would be appreciated.

Mike Geiman With speed events using a lever-action, it is important that the cycle of extraction, ejection, loading, and chambering be completed in a deliberate manner. The trigger should be allowed to fully return to its at-rest position between each cycling of the action. Your problem does sound like a classic case of short-cycling, although you should check for signs of wear or weariness in the feed-back mechanism, particularly the cartridge guides.

Meriden Firearms Parts I have a customer who owns a Meriden Firearms Pocket Pistol and wishes to restore it. I've exhausted all my sources in trying to locate parts for this pistol. Do you know of anyone who might have parts for this firearm? The overall condition of the gun is fair; it's just missing some parts. Thank you for your assistance. Mike Dill This little revolver went out of production in 1915 and—due to its need of parts—its condition would likely be rated "poor." At most, it's worth \$50.

We suggest you secure a free copy of Brownells' "Parts Source List" and begin making phone calls. We expect you'll probably run up some serious long-distance charges before you find any parts. Remington Model 11 Ejection I have a Remington Model 11 that a customer brought in because it would not eject. The ejector is okay, and I

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(continued from previous page) replaced the extractor. Now it will eject as long as there are no rounds in the magazine. It appears that, on firing, the elevator brings the next round up too soon and prevents the spent case from ejecting. How would you approach this problem? Gary Are you sure of the ejector? It's integrated with the barrel extension. Also check the setup of the friction rings in the recoil system. They have to be arranged according to the ammunition being used.

Then inspect the carrier/carrier-latch assembly. A worn or weary part there could be a candidate for replacement. And make sure there's nothing loose with the cartridge-stop components. Hard-Functioning Bolts I have a Turk Model 48 and two Russ 91/30s, one a rifle and one a carbine. All three have bolts that are hard to operate as I empty the magazine. By the fifth shot, it takes quite an effort. Is this normal? John A Dempsey Westmont, Illinois Normal? No.

Check your chambers against SAAMI specifications by making a cast of Cerrosafe (from Brownells). The chambers may be worn and the cases are swelling to fill them as the rounds are fired. This would cause the bolt to balk because extraction has become difficult. If the erosion is serious,

you're probably looking at replacing the barrels. But maybe you'll get lucky. Use a good bore light to examine the chambers. It could be they're a little rough and simply need a polishing.

We hope that turns out to be the solution, as polishing the chambers whole be a lot less expensive than new barrels. Marlin 22 Feeding Problem I sent you an email recently about a Marlin .22 with feeding problems, it was jamming about every other shot, you advised me to try polishing the extractors, I tried this and it seemed to correct the problem, but the owner returned it and said it was still jamming. I shot it about 100 times and it did not malfunction once.

Could this be a problem with the ammunition he's using? I didn't ask him how often it jammed. John H Murdock You fired it 100 times with no jams? That sounds to us like the problem is with the owner, and it's not an uncommon one. You didn't mention or post a letter to American Gunsmith Reader Forum, Merritt Island, FL 32954. whether the rifle was tube-fed, leveraction or semi-auto. If it's a semiauto, there may be an urge on the owner's part to see how fast the magazine can be emptied.

As often happens in such cases, the trigger is not allowed to return to a fully forward position before being pulled again. When rapid fire is attempted with a lever-action rifle, the problem of trigger return is compounded by short stroking. If at all possible, accompany your customer to a range and observe the shooting session. Two things will be accomplished (possibly three). You'll see how the gun is jamming, how often, and find out why for yourself.

And bring along a box of the ammunition you used in your test firing. If your ammo works and his doesn't, he'll simply have to switch brands. Even then he may have to give up trying to make a "machine gun" out of his Marlin. BSA Martini Schematic? Where can I get a schematic (parts breakdown) for a BSA Martini International MK 2 action? Doug La Blanc BSA stands for British Sporting Arms, based in Birmingham, U. K. Gun Digest shows the current importer is BSA Imports, in Ft., Lauderdale, Florida.

If you can't get a phone number for them from information, send them an email at You should also consider purchasing two books, both available from De Haas Barrels The books are titled Single Shot Rifles and Actions and Mr. Single Shots Gunsmithing Idea Book.

SEARCHABLE ISSUE RECORD

Archive index

Gunsmiths: A Chance to Get Involved? American Gunsmith Editors	2	The Custom M1911: Fitting An Aftermarket Thumb Safety Robert K. Campbell	15-17
Disassembly and Reassembly Of the Rossi Tuffy Shotgun Chick Blood	3-7	Making 'Invisible' Repairs In a Broken Stock Dominic Pisano	18-19
Take an Insider's Look At the Savage Accu Stock Chick Blood	8-9	Making a Custom Fiber-Optic Front Sight Roy Seifert	20-21
Building the Gunsmithing Library: Part 1, The Classics Steven R. Kern	10-14	Reader Forum American Gunsmith Editors	22-24

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