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A TECHNICAL JOURNAL OF CRAFT, REPAIR & RESTORATION

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INSIDE THE ARCHIVE

WORKING THE TAURUS PT92

VIOLENT CRIME DECLINES • DISASSEMBLY AND /REASSEMBLY OF THE EZ9/EZ40 PISTOLS • CLASSIC BOOKS: PART THR...

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 078

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FROM THE ARCHIVE

Violent Crime Declines

BY AMERICAN GUNSMITH EDITORS JUNE 2010

ORIGINAL PP. 2

Preliminary statistics released by the FBI for the first half of 2009 show that violent crime continues a downward trend that began in 2006. The figures show crime falling in all categories — robbery, aggravated assault, motor vehicle thefts, etc. — with murders down a remarkable ten percent from the previous year.

These statistics undermine a favorite argument of anti-gun groups and some mainstream media that “more guns equal more crime,” especially when you consider that the decrease in violent crime from late 2008 through the first half of 2009 occurred at the same time that firearm sales were surging. The FBI numbers are showing a decline of violent crime even while gun ownership increases.

The most popular firearms selling during the time these numbers were compiled included handguns and modern sporting rifles (AR-style rifles), two types of firearms that anti-gunners never miss an opportunity to demonize.

Law-abiding handgun owners have been filling concealed carry classes across the country and AR-style rifles, already a staple of Across-The-Course and Three Gun competition, are gaining acceptance even among the traditional hunting demographic as the available chamberings are increased and offered for a variety of game.

The Boston Globe reported that the number of gun permits issued in Massachusetts surged by more than fifteen percent over the past two years, reversing nearly a decade of steady decline and marking a pronounced departure for a state known for its antigun sentiment.

The rise in gun permits and purchases there is reflected by National Instant Criminal Background Check statistics showing an increase of 25 million background checks from a total of 75 million to 100 million initiated by Type 01 federally licensed firearms retailers between April 5, 2007, and April 4, 2009. These background checks are required under federal law and serve as a gauge of sales. Crime is down and gun ownership by law-abiding, responsible citizens who pass a mandatory background checks at retail is up.

Don't let anyone get away with telling you that “more guns equal more crime.” NEW Editorial Address Just when you thought you had the new guy pegged, he up and moves again. Our editorial office has a new mailing address: American Gunsmith, 14439 NW Military HWY STE# 108 PMB# 410, San Antonio TX 78231 Moving is a royal pain and I will not be doing that again anytime soon. I promise I'll stay put! Now that you know the new address, how about sending me something?

Turn your gunsmithing ideas and expertise into a check sent to your mailbox. I want to discuss your article ideas with you. Contact me at our new editorial office.

PEOPLE & COMPANIES

Disassembly and /Reassembly Of The EZ9/EZ40 Pistols

Identical except in caliber, repair or replacement of two assemblies in these new Serbian pistols must be left to Serbians.

BY CHICK BLOOD JUNE 2010

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The story of these defensive handguns begins with a new cannon foundry (1851) in the Serbian town of Kragujevac, about 80 miles south of Belgrade in former Yugoslavia. Then and there, the firearms manufacturing entity Zastava came to be. Ever since, the town and the company have remained inseparable. The foundry cast its initial barrels in 1853, several of which became the nonsense components of Polish field pieces in 1855.

The caisson-mounted boomers looked like a World War One-era French 75mm but lobbed an 85.6mm shell that must have made them considered to be the railway guns of their day. At the turn of the 20th century, the cannon foundry name was changed to the more expansive Military Engineering Works and Zastava rapidly grew the complexity of its product line along with product quality.

Production of military, law enforcement and civilian firearms became prolific and included a box magazine-fed military bolt-action, fine double shotguns, the Radon B2 submachinegun, tanks featuring twin, turret-mounted cannon and a belt-fed, bipod-supported, shoulder-stocked 20mm anti-tanker. A flood of really well made Kalashnikovs came along after Zastava temporarily got out of the car manufacturing business. Cars? You bet. For over 50 years the company was the Serbian national car maker.

Then, as a result of poor European economies, Zastava was absorbed by Fiat into its world-wide operation. In the deal, Fiat poured 700 million Euros into building a brand new factory. Sound familiar? Look up "Chrysler Deal, 2009." With the grips removed, a through cleaning is possible.

DISASSEMBLY AND /REASSEMBLY OF THE EZ9/EZ40 PISTOLS CONTINUED

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o shorten this lengthening history lesson and get on with the EZ pistol, suffice it to say the last vehicle produced by the Fiat/Zastava union was the Yugo Sana. In all fairness, a major reason for the car's short life and disappearance was a thorough NATO bombing of the factory during the regional wars of the early 1990s that tore Yugoslavia apart. Nevertheless, Zastava returned to car making in 2000 and its firearms production, thanks in part to US importer European American Armory, has prospered.

I personally became aware of Zastava with an article on its Model 88 pistol in our August 2008 issue. Before actually receiving the EZ, I assumed it to be an upgrade of the Model 88. To say I was wrong would amount to gross understatement. The only roll pin currently present in the pistol is indicated (A). There is no similarity between the two as a mere glance at their respective schematics and specifications makes obvious. Dissimilarities begin with magazine capacity. The Model 88 is a single stack.

The EZ is mechanically identical regardless of caliber, holds 10 or 15 rounds depending on caliber. Further disassembly should be left to the factory! A Bon caliber and is, in my opinion, more complex in its take-down/reassembly. Lest you forget my earlier words of warning, should the gun be brought to your attention as a bag of individual pieces, there are two assemblies in the pistol you can't do anything with. Not you. Not personally. Having alerted you once again, A

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it's worth mentioning that the EZ is the fifth generation of the Crvena Zastava (CZ) 999 and Zastava CZ05, primarily used by present day Serbian security forces. Field Stripping Before getting into the particulars, a note on the parts list. Don't get confused as the writer did. They don't identify parts in Serbia the way we do this side of the pond. Where the list says "cover" it means grip panel, or grip insert.

Where it says "axle" it means pivot pin except when it says "lock," which is really a pin that secures another component of the pistol in place. As for the otherwise unidentified Axle #57, its purpose lies in the vicinity of the magazine follower. The unofficial moniker I chose to give it? The Magazine Follower Lock Axle. Among all the axles and locks in the EZ only one is a roll pin. This could change so check the pin you're about to drift before attacking it with a punch.

Eye protection on, magazine out and chamber checked for empty first, please. Pull the slide all the way to the rear with one hand while holding the grip frame with the other. With the thumb of the grip hand, lift the slide stop into engagement with its slot in the slide, thereby locking it open. Maintain your hold on the grip. Use the fingers of your free hand to release the barrel by rotating the barrel link (34) ninety degrees downward.

Grasp the slide securely with your unoccupied hand and depress the slide stop (10) with the thumb of your grip hand. Hang on to the slide as you ease it forward and off the frame. Invert the slide. Mildly press the recoil spring guide (44) forward and lift it from its barrel engagement.. Withdraw the guide and spring (47) to the rear. Lift the breech end of the barrel to pull it back and out of the slide. The EZ is now stripped down and ready for a cleaning. So far, no problems.

Detailed Disassembly The slide remains inverted. Remove the lock (45) which retains the firing pin (40) and spring by drifting the lock in either direction. Depress the firing pin lock (41) and lift it along with its spring (42) from the slide. The extractor (39) is swaged in place. It isn't easy to remove but with the help of needle nose pliers you can pull it out. The loaded chamber indicator is one of the assemblies you've been warned to leave alone.

It, like the extractor, is also swaged in and so it must remain. A special tool is required to remove or reinstall it and that tool doesn't even exist on this side of the Atlantic. Sure, EAA in Florida knows how to fabricate the tool. They could handle the job but the service charge would have to include time, labor and material cost for tool making. Rule One for slide disassembly: Hope loaded chamber parts aren't in the plastic bag.

Rule Two: If they are, tell the person who handed you the bag they'll be getting a larger bill for services than expected. Rule Three: Explain the Florida requirements, then offer the alternative of shipping the slide and parts by air to Zastava Arms, 34000 Kraqujevac, Kosovska 4, Serbia with a replacement request while settling back in a nice, comfortable chair until it gets done and is shipped back. Of course, the latter is also at the owner's expense.

Despite all temptation to the contrary, on certain guns keeping all hands off certain components is not merely the wise thing to do. It is the only economically prudent thing to do. The loaded chamber indicator of an EZ pistol is perhaps the prime example of things best left alone. Then again, maybe it shouldn't be classified as prime. You see, there is another EZ assembly that must be similarly ignored for all the same reasons and left to the factory.

I'll be getting to that one as I take you through frame disassembly. Please pardon me while I interrupt these instructions for a bit of hard-earned advice. If you sell as well as service, upgrade or otherwise work on what you sell as I once did, take the time to point out such items as the EZ loaded chamber indicator to a purchaser and stress the A

DISASSEMBLY AND /REASSEMBLY OF THE EZ9/EZ40 PISTOLS CONTINUED

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1 Front Sight 2 Rear Sight 3 Frame 4 Screw Insert 5
Lever Holder 6 L. H. Lever 7 R. H. Lever 8 L. H. Lever
Spring 9 R. H.

Lever Spring 10 Slide Stop 11 Slide Stop Spring 12
Trigger Lever 13 Trigger Lever Spring EZ9/EZ40 Pistols
(Specifications subject to change without notice) 14
Trigger 15 Trigger Axle 16 Locking Insert 17 Sear 18
Sear Spring 19 Sear Axle 20 Sear Spring Limiting Shaft
21 Triggering Lever 22 Hammer 23 Hammer Axle 24
Hammer Spring 25 Spring Guide 26 Rest 27 Rest
Spring 28 Rest Axle 29 Ejector 30 Magazine Catch 31

Magazine Release Button 32 Magazine Catch Spring 33
Magazine Catch Axle 34 Barrel Link 35 L. H. Cover 36
R.

H. Cover 37 Cover Screw (4) 38 Slide 39 Extractor 40
Firing Pin 41 Firing Pin Lock 42 Lock Spring 43 Barrel
44 Recoil Spring Guide 45 Loaded Chamber Lock 46
Firing Pin Spring 47 Recoil Spring 49 Magazine Body 50
Follower Spring 51 Follower 52 Magazine Bottom Lock
53 Magazine Bottom 54 Loaded Chamber Indicator 55
Loaded Chamber Lock 56 Loaded Chamber Spring 57
Axle

DISASSEMBLY AND /REASSEMBLY OF THE EZ9/EZ40 PISTOLS CONTINUED

ORIGINAL PAGE 7

problems that will be created if they are removed or otherwise tampered with. It's good for business now and more of it later. Agreed? Thank you and now on to frame disassembly. Back out all "cover" (i.e., grip) screws (37) to remove the right and left hand "covers" (35 and 36). Start on the left side of the frame with the left hand lever spring (8). It lifts off. Do the same with the left lever (6). Move to the right hand side of the frame and pull off the lever spring (9) and the lever (7).

The right and left levers pivot on a stud-like trunion that isn't removable. The sear axle (19) drifts in either direction to free the ejector (29), the sear (17), the triggering lever (21) and the sear spring (18). It's a good idea to study the relationships between these parts, make notes and/or drawings of what you see and refer to them for reassembly. Do this before taking these parts out of the frame because when the axle is removed they'll all come out somewhat separated. Drive out the hammer axle (23).

The hammer will rise up a little when you do. Push the hammer forward to disengage it from its rest (26) and rest spring (27). These are held together by the rest axle (28). Study this assembly as you did the sear group before drifting part #28. Note how #27 sits atop #28 and must be so positioned for reinsertion in the frame.

The strut (25) and hammer spring (24) are lifted out as a unit.

The lever spring (13) has what EAA refers to as "a two-way dog," one end of which inserts in the trigger lever assembly. Study

this prior to removing the spring. Now pull out the barrel link and lift the locking insert (16) from the frame. Beware the slide stop spring (11). It should accompany the insert but may elect to take off on its own and gets lost real easy. The slide stop (10), trigger lever (12) and trigger (14) are all retained by the trigger axle (15).

This axle has a screw head on the right and two slots — one larger, one smaller — on one side. This side has to be rotated in a certain way in order to reinstall the locking insert in the frame. What certain way? There is an angle on the insert block that allows it to cam over the axle and slide back into place. Look at the angle on the block and orient the axle accordingly. You'll have to play with this axle/block relationship.

There's no exact way to describe what "play" means except to state the axle has to be at a slight, but matching, angle to the block angle. Back to disassembly. Lift the trigger lever (12) a little and move it toward the rear. Lift the lever a little more and the trigger (14) will fall out. Remove the lever. The other nightmare lurking within the EZ awaits. It is the magazine catch assembly (31, 32 and 33). If those parts somehow found their way into the bag the gun has to go to Florida.

Here is a skimpy idea of what you'd be up against if you tried putting it back together yourself. The magazine axle has to be driven outward. There is a spring and plate which pressures the release button and the plate while applying pressure against the grip frame wall. The Zastava factory uses a

fixture to put together the catch assembly. They sure don't get it done with their fingertips. Neither do the service technicians at European American Armory.

Even there, it often takes two hours and three hands to assemble and install this small bundle of frustration back inside the frame. Reassembly Tips Other than those already provided in the course of describing the detailed take-down of an EZ, when you remove the insert block note how the slide stop spring fits into it. The slide stop itself has a bottom slot for the end of the slide stop spring (11). The spring pushes the stop to the rear and tensions it.

This applied tension is necessary to allow the slide stop to function as one and for parts 6 and 7 to perform their slide release/decocker duties. I hope I've made it clear: Tension as applied by the slide stop spring is very important to the proper function of an EZ pistol. For reasons previously emphasized, there are no reassembly tips for the loaded chamber indicator and magazine catch assemblies. They're beyond your help.

As for the balance of a CZ, it goes back together in reverse order but with another reminder. The angles of the trigger axle and insert block either match up or the pistol refuses to be reassembled. Anyone trying to strong arm submission will likely succeed in delivering serious damage to the frame that can extend to several vital internal parts. The flip side of this disaster is the dubious distinction of creating the world's first, Zastava-designed fishing sinker. AG

FINISHING

Classic Books: Part Three, Metalworking

In this final installment of the Gunsmithing Classics series of books we look at the works of the old masters of metal.

BY STEVEN R. KERN JUNE 2010

ORIGINAL PP. 8-9

At this point in our review of Classic Books we initially reviewed the general gunsmithing books and followed with several books on working with wood (October 2009 and February 2010, respectively.) We will now conclude with working in metal, specifically, with books on metal working and metal finishing for the gunsmith. Like all the other classics in this series published in the World War Two era, these books were first printed long ago and original copies are rarely found. Advanced Gunsmithing by W. F.

Vickery was first published by Samworth in 1940. Firearm Bluing and Browning by R. H. Angier was printed in 1936. Fortunately, subsequent editions on both books have been published since the original dates and, in fact, Angier's book is currently available through Stackpole (StackpoleBooks.com, My copy of Vickery's book is a Wolfe Publishing reprint from 1988.

Advanced Gunsmithing In the frontpiece of Advanced Gunsmithing, Vickery described his book as follows, "A manual of Instruction in the manufacture, alteration and repair of firearms in-so-far as the necessary metal work with and machine tools is Concerned." A very succinct and accurate summary of the next 400 pages and twenty chapters to follow. The author has restricted the scope of Advanced Gunsmithing to barreling, chambering, action and the other related metal working operations involved in those components.

It was Vickery's intent to do a companion book on stock work, but, to my knowledge, this never happened. It was also the author's intent for Advanced Gunsmithing to accompany another volume titled Elementary Gunsmithing, by Perry Frazer. Frazer's book was published by Samworth in 1938, however, I have never seen a copy. In addition to developing skills in the metalworking mentioned, Vickery also urges gunsmiths to be willing to give some time, at a small profit, to experimental work to fulfill a customer's desires.

Instead of the typical initial purchase of shop equipment and assorted hand tools, the author discusses the first metal working power equipment to get: A lathe. As everyone making chips with a lathe learns, this basic power tool is only a fraction of the cost of tooling up and the list of accessories is nearly endless.

Lathe chucks area natural accessory, but the author also provides details on mounting a protractor on the headstock, a micrometer carriage stop, milling attachment (if a mill is not available) and a tool post grinder. A drill press and a disc grinder complete the author's machine recommendations. Of course, there are also a wide range of reamers and drills necessary as well to accompany the power equipment.

The initial chapter on metal working technique is called "Barrel Changing." Here, the author covers working on rifles, pistols and shotguns, handling each type differently, with respect to work on removal of

the existing barrel and then reinstalling a replacement. A careful reader will pick up some interesting pointers on working with square threads on the Springfield, Krag, and Enfield rifles. There are also some illustrations on detecting crooked barrels by looking at shadows in the bores.

In the following two chapters, Vickery reviews chambering, boring, and reaming tools, then rifling tools and the rifling of barrels. A final chapter on the related topic of barrels is reboring and rechambering. This information takes eighty pages. The author then moves on to chapters covering topics as diverse as action work, sights, shotgun repairs, dealing with .22 and other rimfires. These chapters, about thirty pages each, are taken to provide review, analysis and fixes for the issues involved.

More assorted but briefer chapters follow in subjects as diverse as revolver and pistol work, cleaning, clearing, and lapping barrels, working with hand tools, firing pins, soldering and brazing, forging and welding, and heat treatment. Bluing gets over twenty pages of descriptions, but as we will see there is much more to say on this subject. The author concludes with discussion of both cartridge case and bullet dies. Most major metal working operations for the gunsmith are covered in some detail by Vickery.

As time has passed there are now more fixtures and vises available for this kind of work, many of which were non-existent in the author's era.

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Above left and Also, he did not deal in model-specific work for the most part, but used generic categories in discussing procedures. Still, *Advanced Gunsmithing* has much to contribute to any gunsmith's library. *Firearm Bluing and Browning* R. H. Angier's book, *Firearm Bluing and Browning* preceded Vickery's *Advanced Gunsmithing* by several years. Indeed, Vickery's chapter on Bluing, in his own words, is limited to technique and shop practice in polishing and bluing the metal work.

Angier is left to describe the various formulae of bluing and, by one count, lists nearly 300 choices!

In his preface, Angier states, "Browning of irreproachable quality in no way depends on completeness of equipment or even on special manual skill, but above all on patience and the care taken in carrying out the very simple stages of the process: these pre-assumed, results in every respect equal to those characterizing the work of the finest luxury gun makers are obtainable with the simplest domestic means." Although *Firearm Bluing and Browning* is not a huge book (the actual length of Angier's book is only about 150 pages!) it is very comprehensive.

The book has seven sections but the meat of the material is in section II, "Browning Process;" section III, "Preparation of Bluing and Browning Solutions;" and section IV, "Browns/Blues Instructions." Like the difference between red and white wine — where the color is created as a by product of when the skins of the grapes are removed from the process — the difference between browning and bluing is based on steps taken to process the formation of rust which has been artificially created.

If the rusting process is essentially left to itself the result will be a brown appearance, however, if the rusting process is modified by the subsequent action of boiling water or steam the result is a black finish. Angier moves quickly to provide a process suitable for a small scale shop. This process has seven steps and some of the steps may be repeated several times, so the complete process may likely take several days.

To avoid a lengthy delay and maintain production volumes in a large factory, the author provides a second process suitable for large scale production and complete results within a single day. Of course, the devil is in the details and Angier goes in to great detail on how to handle each processing step, with precise instruction on how to proceed and, equally important, things not to do. The first step is degreasing, typically in boiling water with perhaps a five percent (Continued on page 22)

CLASSIC BOOKS: PART THREE, METALWORKING CONTINUED

ORIGINAL PAGE 22

caustic lye solution and then rinsed again in a similar bath. A second step is derusting, denickelling, pick ling, and matting. The third step is applying the solution followed by the fourth step, rusting. Typically, in small shops, this process is be allowed to occur naturally. In large factories the procedure can be accelerated. Darkening, as produced in the US, is created by a second boiling. Scratching, a sixth step, removes some of the loose rust by wire brushing either by hand or mechanical means.

A seventh step, neutral izing, is not always needed but is necessary to prevent after-rusting when using certain solutions. An optional eighth step, retouching is sometimes used but many will prefer to omit this as the results are frequently erratic. A final and absolutely required step is fixing or, as some would call it, finishing. In this step, the object of the preceding efforts is oiled to prevent any further rusting action.

In addition to oiling, Angier suggests specific alternatives such as waxing and lacquering may be used for the same purpose. Nearly twenty pages are taken up with instructions and procedures for the processing steps. Angier then moves on to preparations of solutions. Readers who enjoyed chemistry in their educational background will feel much at home with this material. Others would likely prefer to purchase their materials from either Brownells or Dulite.

In the prewar period when this volume was first published people were, by necessity, far more self-reliant and likely used a formula to assemble their own solutions. Also during that time what passed for safety is far different than today. I would not be surprised to learn some of the materials listed are no longer available to anyone, except perhaps on the most limited basis. Even if available, the safety equipment likely required to handle these materials is likely cost prohibitive for smaller shops.

Nonetheless, the author provides about thirty pages of material for those who dare to proceed. Angier then provides the largest chapter of the book, a section on solutions and working instructions. Much of the material in this chapter would best be described as a wide variety of formulae. Two main groups of the formulae described are those with iron-free browns and those that contain iron. Within these two groups are additional subgroups such as metallic salt 1 through formulae with 2-3-4-5 metallic salts.

This chapter is concluded with information on combined browns, (seven distinct formulae using two or more browns in succession) and collective browning with twenty formulae useful for groups of parts treated all at once which can not be brushed due to surface features and other miscellaneous methods. A final finishing process is described by Angier. He refers to what was known at the time as phosphatizing.

Unlike all the proceeding processes, this procedure was not intended for metal coloring, rather, it was used for its greater rust-proofing abilities compared to other coloring processes. This process was widely used on military small arms of World War II. At that time it was also known as parkerising, based on the name of a licensee in Detroit, Michigan.

As a final note, I would suggest in the strongest manner that anyone interested in proceeding with these materials and processes carefully consider all of the potential safety issues and hazards! In a small shop, if ventilation is not available, initial mixing and experimentation should be done outside. These procedures are not the sort of thing to be attempted in the basement or inside your house!

Appropriate safety equipment should be included as well with a combination of safety goggles, face shields, gloves and aprons. AG

HISTORY

Custom Stock Repair

Be it cracks, chips, or splits, sooner or later you will be faced with stock repairs. Some are minor and easy to fix while others need more consideration on the approach.

BY ROBERT COLES JUNE 2010

ORIGINAL PP. 10-13

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This article focuses on the repair of a laminated vintage 1960's Bench Rest M98 Mauser .300 Weatherby Magnum covering how to use different glues and epoxies to repair major splits along with re-enforcing pins for additional strength. The first step to any fix is identifying an appropriate repair method and forming a plan. When this rifle came into my shop it represented a classic piece of Bench Rest history with the old school rails under the forearm and bottom of the butt stock.

An aluminum diamond plate bottom piece supported the leaded forearm. With a total weight of 63 pounds including the rails, keeping things tracking smooth on the bench bags was not a problem. I couldn't even consider scrapping this stock and fitting new wood to the action — this is a piece of history! This rig would have to be made good as new and restored to its old shooting glory once again.

Upon first inspection several areas of the maple/walnut laminated stock needed some deep thought and consideration on the best methods for repair. First, the

thumbhole grip area was split completely through along with deep splits in the cheek area continuing up to the thick receiver tang. One large chunk of laminate was wedged out from the side, just rear of the trigger guard. To finish off the damage, several finger cracks weaken the cheek area on top of the butt stock. How to repair this?

I looked around the shop and noticed some bedding compound that would serve as an excellent bonding agent. It was the Pro-Bed 2000 (part of my initial impression was that it was a total loss due to the extreme damage. #643-447) available in eight-ounce containers at Midway USA (MidwayUSA.com). Pro-Bed is already brown in color and mixes into a firm paste-like form that won't leak out of the holes. This filler was used to replace the missing pieces of wood to reshape the stock.

I also used a CA glue (Cyano-Acrylate), better known as super glue, for the finger cracks. My preferred glue is available from Highland Woodworking ([Highland Woodworking Highland Woodworking.com](http://HighlandWoodworking.com)) as they carry a large variety. I needed something very thin so I ordered the Formula #146121 available in a

two-ounce bottle. The last glue needed was something to bond the deep splits. I chose Tite-Bond III wood glue. I recommend purchasing fine tip syringes with Tite-Bond as this allows you to put the glue right where you want it.

Both can be found at a local hardware store. Now that those decisions were made, I completely stripped the stock of the barreled action and all the metal attachments knowing the entire stock would need to be refinished anyway when the repairs were completed. With all the damage to the stock, the first step will be to replace some of the wood to reform the shape and to add strength so the finish can be removed without further damage. Then the crack repair would be blended in.

I did some carving with an X-Acto knife to remove enough wood to allow room for the epoxy and to have a flush fit on the laminated wedge when I replaced it. A dry fit on the laminate wedge proved to be a very good fit. Next, I needed to pry open the cracks along the top side of the buttstock which would allow me to fill the cracks using the syringe filled with Tite-Bond III wood glue.

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A bit of thought proved otherwise! Pro-Bed 2000 was applied first, then I moved on to injecting the wood glue, pumping Tite-Bond in until it oozed out. I wiped the area clean tightly clamped the joints and left the stock clamped for three days to allow for a full cure. A note regarding epoxy cure time. Even though the left over epoxy on the bench has hardened, the epoxy under pressure in the stock will need more time to fully cure. Be sure to follow the manufacture directions to allow for a full cure.

The next step required installing stock re-enforcement pins. I chose to make my own out of 1/8-inch hardened bolts. After cutting the bolt heads off, I used a Dremel tool with a cut-off wheel and cut a slot into the bolt end for turning into the newly-drilled pin hole. The location of the pins were placed where the stock was split completely through to hold things together and prevent it from pulling apart at the joints in the future.

I filled the holes with some marine-grade epoxy, available from a local hardware store, again using a syringe and turned in the pins until they were below the finish lines. This

allowed me to hide the holes with colored epoxy when finishing later. Letting this cure I This added needed structure to the glue and epoxy treatment. now have a solid and stable stock that can be stripped and sanded to expose crack lines that will be filled with the CA glue.

The stock finish was stripped with an off-the-shelf liquid finish stripper. The results exposed several small finger cracks on top of the cheek rest that were filled and bonded together with CA glue. I flooded the repair area with the CA glue, keeping it wet to allow the glue to wick into the wood. Once

CUSTOM STOCK REPAIR CONTINUED

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enough CA glue was applied I used a rag with mineral spirits to wipe the surface clean of excess glue. This allows the final finish to adhere properly, without residue. Next, I touched up the low epoxy joints with colored epoxy and sanded it to a blended and flush surface finish. Refinishing the stock is another project in itself and certainly another article.

I chose the vintage look and my preferred hand-rubbed method and am enjoying the satisfaction of preserving what was initially

thought to be a hopeless project. Conclusions The day may come when you are faced with the decision to repair or replace a broken stock and I must admit upon first inspection it looked bleak and beyond repair. Only after carefully considering several repair methods did it become a reality to fully repair and strengthen this stock that will endure for years to come.

Remember, epoxies and glues all have there purpose in crack repair. Be sure to carefully consider the repairs to pick the best adhe-

sives Below left and A very nice example of bench rest history successfully restored! to repair the crack, chip or chunk. When finished, the rifle snugged up perfectly into the repaired vintage laminated stock. It had turned out beautifully! The cracked joints blended nicely and nearly undetectable.

The satisfaction of knowing repairs this complicated can be done and having that satisfied customer is the very best advertisement you could have. AG

PEOPLE & COMPANIES

Scoping the Older .22 Rimfire Single Shot Rifle

Drilling and tapping older .22 single-shot rifles for a scope base is an uncomplicated gunsmithing procedure. However, attention to detail and precision will result in a better job.

BY NORMAN E. JOHNSON JUNE 2010

ORIGINAL PP. 14-16

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Common among older singleshoot rifles that can be scoped we find the Iver Johnson Models X and XX(2X); the older Remington Model 133; Savage/Stevens Models 3 and 4, or even the Savage/Stevens Model 71 Favorite; and the old Winchester Model 67 or the like. In this treatise, installing a scope on a Winchester Model 67 will be covered in some detail, serving as a typical example. Back when some of these .22 rimfire rifles were introduced there were few, if any, telescopic sights available.

Neither the rifle receivers nor the barrels were drilled and tapped for scope base screws. Adding a scope enhanced the shooting pleasure for many as it served to improve the shooter's ability to better use the rifle's accuracy, particularly for older eyes. The Winchester Model 67 bolt-action, single-shot rifle was made from 1934-63. The rifle had a 27-inch barrel and weighed five pounds with open rear and bead front sight.

The rifle also was made in smooth bore and commonly used with bird-shot on smaller vermin and pests. With its round-bolt, pull-back style hammer and swing-up, blade-bolt safety, this single-shot rifle fired .22 short, long or long rifle ammunition. The owners of this particular Winchester Model 67 rifle brought them to me with a four-power Tasco scope with one-inch rings and a one-piece Weaver-style base with integral 3/8" dovetail.

The scope had Here a chunked center-drill is used as a spot-facer before the tap hole is drilled to proper depth. a 40mm objective lens that would need to clear the barrel — after removing the rear sight. My first impression told me it should work, so I placed the rings atop the scope and held the assembled unit over the barrel where it would be mounted. The objective lens housing was well clear of barrel contact and scope eye relief was perfect.

The bolt handle cleared the ocular lens and the scope held in place didn't appear as if it would interfere with single-shot cartridge

loading. The swing-up leaf-type safety would clear the eyepiece of the scope just fine. The existing baseto-barrel radius didn't match perfectly, but four drilled and tapped 6-48 attaching screws would provide more than sufficient stability for any kind of hunting and target use. The customer urged me to go ahead and mount the scope, re-finish the rifle and give it a good test.

Drilling and Tapping Holes The receiver is much too short for scope base application rearward of the ejection port so a one piece base attached to the barrel was the way to go. As a means of performing the scope base mounting, a common drill press would work for drilling the screw holes in the barrel using a drilling vise. However, I chose to use a milling machine with its precision vise and in-line drilling feature. The milling machine vise is ideal to hold the barrel, and to align and drill the screw holes.

THE MILL

SCOPING THE OLDER .22 RIMFIRE SINGLE SHOT RIFLE CONTINUED

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Drilling depth is controlled to within a few thousandths in this way. More than sufficient barrel thickness is provided for screw hole depth on the Model 67 barrel. chuck also works perfectly to align the tapping wrench directly over the screw holes. The mill feed stop provides controlled drill hole depth as the holes are drilled and tapped. The moveable mill bed conveniently provides perfect screw hole alignment for all screws.

Most gun nuts with some mechanical ability would enjoy taking this sort of job on, however, attention to detail is important as the screw holes are positioned, drilled and

tapped. With the barreled action out of the stock and the bolt withdrawn, I could see more than adequate barrel thickness for the screw holes. This Weaver-style scope base had randomly spaced holes for standard 82-degree 6-48 screw heads.

I selected the two pairs of holes from the six in the base located near the front and rear of the universal base. The base fitted nicely between the breech end of the barrel and the 3/8inch dovetail slot where the open rear sight was removed. Each type of rifle would require some changes in base screw arrangement, which usually isn't a problem. As the

barrel is clamped into the padded jaws of the mill vise it must be parallel to the vise jaws to assure uniform screw hole depth.

The bar 22 rifle barrel using four 6-48 counter sunk screws. The base used here is a Weaver with integral 3/8" dovetail. rel and receiver must also be positioned so the top of the receiver is parallel with the vise jaws at topdead center. Most milling machines and drill presses have a drilling or milling depth control and this must be used while drilling for screw holes. The next step is to be sure the drill is directly over the barrel center. Here I place a center drill in the

SCOPING THE OLDER .22 RIMFIRE SINGLE SHOT RIFLE CONTINUED

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Barrel mounting proved to be an ideal place for the base. High rings placed the scope well above barrel for object lens clearance and bolt handle clearance. Access to loading port left sufficient room for singleshoot loading and case ejection. 22 rifle set in the stock. Barrel was drilled and tapped for Weaver style base with integral 3/8-inch dovetail at the top.

One-inch Tasco high rings elevate the scope for ideal clearance over barrel while providing clearance for bolt handle and cartridge loading. chuck and bring it down to barrel contact and, both visually and with calipers, locate center of the barrel. With this done, I carefully place the scope base in position to determine the first screw hole position. The rear hole was drilled and tapped first using a center drill to start the hole to avoid drill walking.

Then, with the first hole drilled and tapped, the base was fastened to the barrel with one of the 6-48 screws. Here we must be sure there are at least six threads into the base hole and check that the screw doesn't bottom out in the hole as the screw is torqued down. At this time with the base attached with a single screw, carefully place along straight edge along each side of the scope base, extending it along the full length of the barrel.

Check both sides to see that the base is in true alignment with the barrel. This serves as a double check of alignment. A scope base precisely parallel with the barrel and receiver helps to assure a centered scope reticle for windage adjustment. This helps

to avoid running out of scope reticle adjustment as well. With the base in place, held by the single screw, put a small center drill in the drill chuck and mark the remaining three screw holes.

This is best accomplished by moving the mill bed and visually guiding the center drill directly above each of the scope base holes that you wish to drill and tap. Then, with the center drill directly above each scope base hole, mark each hole location by advancing the center drill about 1/16-inch into the barrel. The base is then removed and the remaining screw holes are drilled and tapped. At this point double check the drill stop to verify hole depth.

Be sure the drill bit is sharp and of the correct size — a number 31 drill is used for tapping 6-48 thread holes. Also be sure the drill bit is placed firmly in the drill chuck to prevent slippage. Use a bottoming tap to finish threading each hole. Blowing the chips out of the partially threaded hole is advised, along with the use of good thread cutting oil.

The steel in these old barrels isn't very hard — most likely 4140 chrome moly — but use care in tapping the threads to avoid the possibility of stripping a thread or forcing the tap. It is best to cut a few threads and then carefully back the tap out and blow all chips from the hole. Removal of any burrs around the tapped hole can be done with a chamfering tool or a fine file. The base can now be attached to the barrel by torquing all four screws firmly in place.

It is not necessary to use a thread bonding material because of the low recoil produced by the .22 rifle. The completed job finds a very securely attached base that won't shoot loose. A well-aligned scope base enables the user to sight-in the rifle within the range of the scope reticle adjustment knobs. Here is where attention to base alignment pays off with the mounted scope directed straight down the barrel.

Bore sighting and sighting-in the rifle presented no problems with plenty of scope reticle adjustment in all four directions. Before shooting the rifle, I cleaned the bore thoroughly with JB bore cleaning compound and finally with a bronze brush and Shooter's Choice. I couldn't resist performing a bore examination before testing the rifle. I used a Hawkeye bore scope to do this. Somewhat to my surprise, the bore had survived the many years of use and showed very sharp, clean lands and grooves.

Testing the Rifle Following bore sighting, the rifle was tested using two brands of ammunition. These included Federal's "Champion" standard velocity, and PMC's high velocity 40-grain solid lead bullets. Both are ideal, meatsaving bullets for small game. The owners wanted the rifle sighted-in at 25 yards. Accuracy produced by the old rifle was excellent with all groups under an inch with both brands of bullets.

The mounted scope was high enough over the receiver not to interfere with loading and shell ejection of (Continued on page 22)

the single shot rifle, making it very practical for hunting and target use. Lots of rabbit and squirrel hunting was planned for the old Model 67 and the owner's young son was planning to use it for target practice too. Surely the newly mounted scope breathed some new life into the old gun and by the way the young hunter looked at the rifle, I was rewarded for my efforts in more than one way. Your gunsmithing efforts can be rewarded similarly.

More hunters and shooters are looking to scopes on their older guns which include a number of the older .22s and even single-barrel shotguns used for shooting slugs. With a bit of innovation on the part of the gunsmith most of these guns can be improved to enhance the shooting pleasure for your customers. AG

ORIGINAL SOURCE PAGE

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PISTOLS

Working the Taurus PT92

Similar to Beretta's 92F-series, this humble handgun is doing yeoman service. Here's how improve one coming across your bench.

BY ROBERT K. CAMPBELL JUNE 2010

ORIGINAL PP. 17-22

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I am aware of literally dozens of Taurus PT92 handguns in service with citizens as personal defense and competition pieces. Quite a few police officers of my acquaintance fancy this Taurus as well. Among a very few nations with a handgun heritage approximating our own, the Philippines have recently adopted the PT92 as a service handgun for police. The low bid was not their consideration as the pistol performs well. The Taurus is best known as a clone gun of the Beretta 92 but there are differences.

The Beretta 92 was in use as a military service pistol in Brazil and the machinery used to build the Beretta was purchased by Taurus. The original Beretta 92 used a frame mounted safety and a non-Browningstyle push-button magazine release. Beretta would later put a Browningstyle magazine release and a Walther P38-type safety and decocker into the design. The Taurus features a Browning magazine release but continues to use the frame mounted safety of the original Beretta.

The PT92 is properly termed a selective double action pistol. While the trigger action allows a first shot double action press, the pistol also may be carried cocked and locked, hammer to the rear and safety on and the safety may be placed on during tactical movement without the need to decock the hammer. This SDA (Single-Double Action) is also represented by the CZ75, the Daewoo DH51 and a few special editions from Beretta and SIG, among others.

The Beretta 92 and the Taurus PT92 share engineering that is readily identifiable as descended from original German designs as the oscillating wedge lockup was first used in the Mauser 1896 pistol. This lockup was later adopted by the Walther P38 pistol. The long drawbar used to cock and release the hammer is nearly identical to the Walther P38, as is the safety/decocker of the Beretta. This family resemblance is important.

During US Army trials several Beretta pistols suffered slide fractures much like the Walther P38 originally did. It is notable that when the P1 Walther — an aluminum

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Caution should be used as safety function may be inhibited. Beretta grips fit the Taurus OK but when modification is undertaken to make room for the Taurus safety levers the function of the safety may be impeded. The main difference is the slide mounted safety/decocker. The Beretta 92 features a slide mounted decocker. Otherwise, the pistols are quite similar. frame variant of the P38 — was introduced the only changes apparent in the slide are slight variations to increase the strength of it to prevent fracturing.

Internally and externally the P1 is appears nearly identical to the P38. Remarkably, despite long and hard use by Brazilian police and military and our own pistol competitors, the PT92 has not suffered such problems, at least to the best of my knowledge. Improving the PT92 The reliability of the PT92 is at least comparable to any other 9mm pistol, however, like any handgun, the PT92 may have an occasional problem. Early PT92s were not completely feed reliable with all bullet styles.

My impression is that the pistol was reliable with 115 grain bullets such as the Winchester Silvertip and Federal 9B but sometimes did not feed well with the Hornady 124 grain XTP and the Speer Gold Dot 124 grain JHP. The longer nose bullets sometimes hung on the chamber. The cure

is to lightly polish the feed ramp and chamber. Often a very light touch with the Dremel is sufficient.

The design features a nearly straight-into-chamber feed but the longer bullets sometimes hang up and a bit of a polish on the top of the chamber usually remedies this. The PT92 is a relatively inexpensive handgun and maintenance is often ignored. I have seen quite a few high round count handguns badly in need to new recoil springs. When the original has lost an inch of free length it is long overdue for replacement. The 13-pound spring of the original is sometimes replaced with a 16 pound spring from Wolf.

While this does slow battering, however, the original recoil spring is quite reliable even when firing with the weak hand, one handed. This is a positive sign of reliability. If the original spring is replaced with heavier spring reliability should be tested. Sights Sights are problematical. If possible, the best bet is simply to purchase a PT99, the adjustable sight version. Drilling out the sights and enamel ing them in contrasting red and green is among the few choices.

The handy little Nightsighter dots I have used on several handguns are an aid with the Taurus as well. These little dots require careful handling but area nice addition. To

apply, clean the original sights with the supplied alcohol rub and let the sights dry. Use a very thin knife to pluck the Nightsighter dot from its packet and position the dot with a toothpick to press it into place. Allow a day or so for the dot to dry in place. A warning concerning aftermarket sights.

There are aftermarket adjustable sights available for the Taurus that fit into the existing dovetail, however, the front sight is not replaced and the aftermarket sights must extend past the frame of the pistol to allow the same relationship as the original sights. As a result, the aftermarket sights protrude from the rear of the slide. While they seem to work OK they are prone to snagging and cannot recommend them for service use.

There is little else to be done with the Taurus sights other than simply painting them. Tightening Up the Taurus There are several types of Beretta and Taurus loading blocks. The newer the better as the newer types have remedied the difficulty with older types in cracking. It was once considered standard operating procedure to replace the loading block at 3,000 rounds. Interestingly, some years ago I did a survey among armorers and gunsmiths who worked with

WORKING THE TAURUS PT92 CONTINUED

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The chamber and feed ramp have been lightly polished to improve feed reliability. Often, the Taurus does not feed lead bullets well and a polish will help feed them better. Occasionally they bind and become bent and must be replaced. the Beretta. One was a giant Midwest concern. The results were contrary to my own prediction as they each told me that the hardest ammunition on the Beretta locking wedge was the 147 grain load.

This conclusion was reached after examining pistols from agencies using this load and am certain it is due to momentum. In contrast, agencies using 115 grain +P+ law enforcement load suffered less problems. It would still be wise to order anew locking block and

pin for a high round count PT92. To strip the pistol for a routine tightening and replacement of the wedge, first remove the slide from the pistol.

You need only remove the magazine, clear the chamber by locking the slide to the rear, and rotate the takedown lever. The slide lock is released and the slide runs forward under hand control. Turn the slide upside down and push the actuator pin in the bottom rear of the wedge. The wedge will pop up and you may remove the barrel from the slide. The barrel is removed out the bottom of the slide. To remove the wedge a retainer pin is driven out. As you examine the wedge, look for even wear patterns.

Evenly rounded surfaces are common but eccentric wear is different and the sides of the There is a slot in the bottom of the drawbar that accepts this spring. Another end goes into a small hole in the frame. The portion on top will ride under the drawbar in a slot. wedge may not match. Even wear is simply removal of finish, producing bright spots and loss of a tight factory fit. Simply installing anew locking wedge will tighten the piece up and increase accuracy.

Often enough anew locking wedge may be installed with little or no fitting. A word on accuracy and the wedge. I am often surprised at how

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accurate this basic design is despite the fact that there is little or no support of the forward part of the barrel. A tighter wedge does seem to add to accuracy. To insert the wedge, it is placed in the barrel and the retainer pin driven in. There are usually no issues in fitting to the barrel, only fitting to the slide. For most wedges a bit of break in with good lubrication and a full power 9mm load such as Winchester's 124 grain USA works just fine.

A rule of thumb is ammunition hot enough to function the original German Luger make good break-in loads. Some commercial ammunition isn't loaded this hot and may not function a tight gun. Since the Beretta 92 and the Taurus have evolved over several generations some fitting of the wedge is often required.

I am not a history professor and am not completely conversant with the generations of locking wedges, but there are at least three Beretta types and all will fit the oldest or the most modern pistol with a bit of fitting. My experience shows that when the wedge binds it tends to bind on only one side. Smoke marking or etching the part will let you know exactly where the bind is. Once you have discovered the wear marks and learned where to polish, fitting is elementary. Never file the slide!

You may fit several wedges over the years and you should file the wedges, not the slide. Polish the "wings" (lugs) towards the front (muzzle end) to adjust the piece for a good lockup. Usually the new wedge will be slightly oversize. The rear parts of the wedges are the lugs that actually are responsible for lockup and the rear part is the most important. You can polish the front until they just fit and the rear will retain a tight lock. Once the slide is rolling it will overcome resistance.

Again, use plenty of lubricant and full power loads for break in. Barrel Fit I have used aftermarket barrels including the Bar-Sto and Jarvis with excellent results. I have to admit I have not fitted a custom barrel to the Taurus PT92 but I have fitted several to the Beretta. The difference should be conversational at best. When fitting anew barrel I use the old locking block and pins in order to avoid confusion in fitting.

Following this procedure, if you have a problem you are certain it is actually the barrel rather than the locking block. Going with anew barrel and new wedge at the same time may confuse the issue. Once While a hoary design at the least, it usually works well enough. The P38 is the brightly polished unit. The locking wedges work well enough but should be inspected from

time to time for eccentric wear. The polished wedge of a Walther P1, bottom, is sharper and shows less wear than the high round count PT92, above.

The locking wedge must be examined from time to time for eccentric wear. Replacement is straightforward. barrel fit is confirmed you may wish to fit anew wedge. The barrel moves in the frame by contact with the locking block. A drop-in from Bar-Sto actually was a drop-in fit and performed well in the Beretta and let a gun capable of four-inch, five-shot, 25-yard groups become a two inch. However, in a tighter barrel some fitting will be needed.

If the wedges are properly fitted and the barrel binds against the breech face there is a need for polishing the rear of the barrel. Carefully mark the areas and judge the degree of filing and go just a little at a time. The pistol is very easy to break down and reassemble to check fit and the slow-but-sure method is best. The only filing I have had to do is a slight amount on the rear of a barrel in fitting. Results vary on accuracy improvement. As I mentioned, one pistol gave a significant improvement.

Some factory pistols from Taurus are plenty accurate for the price and need little help. With a loading program identifying the best and most accurate loads, many

WORKING THE TAURUS PT92 CONTINUED

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will group five shots into two-and-a-half to three inches at 25 yards. My experience with the Beretta shows that some of the Italian Berettas, particularly the stainless steel versions, are slightly more accurate, but with custom barrels improvement is often significant. One Beretta fitted with a Bar-Sto barrel would group five rounds of Cor Bon Performance Match into two inches at twenty five yards on demand and occasionally a little less.

Trigger Work The Beretta's main fault compared to other pistols is the long double action trigger press and unfortunately this is maintained in the Taurus clone. Achieving a super smooth let off isn't in the cards but some improvement is possible. Lets look at the procedure. First, depress the upper arm of the trigger bar spring from the draw bar. This will allow the trigger bar to be removed from its notch. The slide lock is then pulled out, removing both the magazine latch and the magazine lock spring.

The trigger pin is drifted to the left, allowing the trigger and trigger spring to be removed. The hammer spring cap spring may then be drifted out. Remove the roll pin at the bottom of the solid non-removable mainspring housing. The cap then comes out the bottom of the grip. Most 92s have a lanyard ring that offers good control of the cap. The hammer pin also holds the safety on the PT92 and it is tapped out to release the hammer and hammer strut. The sear pin is then drifted out, releasing the sear.

This sear is a robust part of good proportions. The sear and its spring will release into the magazine well. You may go further for a detail strip but this is all that is required for action work. I highly recommend *The Official NRA Guide to Firearms and Firearms Assembly, Pistols and Revolvers*. Unfortunately Stoen Publishing is currently out of business and we only hope the book will be picked up by another publisher. There are several approaches to the Taurus trigger.

One that has much merit is simply to clean the parts and thoroughly lubricate them with a quality product such as Tetra Lube. This simple action makes for a smoother double action trigger press and the single action press may feel smoother as well, but the typical single action press of the Taurus is heavy.

As an example, a quick canvas of my SIG P-series double action pistols shows that all have a crisp four-and-one-quarter-pound trigger press and my Armalite AR24 breaks at a clean five pounds, although it does have the modest backlash typical of the CZ75 types. The Taurus PT99 illustrated broke at nearly seven pounds according to my RCBS gauge. This is heavy and the inherent positioning of the trigger finger with a double action pistol makes it too heavy for good work.

The only means we have to reducing the trigger is to stone the sear. First, I recommend using a Sharpie or the large and handy "Sharkie" marker to coat the sear with black color. Get the surface evenly coated. Stabilize the sear in a padded vise or fixture and carefully stone the sear. The marking should be gone, all evenly, if you expect improvement. This careful polish should leave the sear much smoother and result in a crisper let off.

The PT92 sear is often rougher in appearance than the Beretta but may be made smooth for an improved action. **Warning On One Procedure** An old trick is replacing the factory mainspring with one for a 1911 type handgun. I admit this procedure often results in a lighter action, usually dropping the trigger compression a noticeable amount. While this is fine for a competition handgun, some thought should be given this expedient.

As an example, a decade ago at my police department I discovered a previous administration had purchased a considerable quantity of Egyptian surplus 9mm Luger ammunition on the cheap. There were two problems First, the ammunition was corro-

sive, something the folks who had purchased this ammunition did not know. A couple of SIG P226 pistols actually picked up some corrosion and it was my job to clean, lubricate and scrub the handguns. Second, the ammunition suffered about a 25% misfire rate.

The author was given the better part of 1,800 rounds of ammunition to for training, keeping it out of circulation with our expensive SIG pistols. After all, the new chief reasoned, I liked cleaning guns! While such a windfall is nice but misfires are madding. I was involved in training a neighboring agency that issued the Beretta 92 and invited my friends in on the practice sessions.

The Beretta 92 ended up suffering a much lower misfire rate, perhaps 10%, as the hammer fall is heavier and primer impact correspondingly more reliable. That is exactly the reason so many military 9mm pistols have such heavy mainsprings. I have modified the Beretta with the Colt 1911 mainspring with good results, and they seem to crack off prodigious amounts of practice ammunition. But the original pistol is designed to ignite primers anywhere in the world and we must keep that in mind.

Other Cautions A common complaint is that the trigger will fail to reset. What has occurred most of the time is that the trigger spring has become unwrapped during reassembly and disassembly is required to set this correct. I have actually seen Beretta pistols in which this spring is loose in the gun but the trigger still resets. The trigger pin will press out when this occurs, an early sign of trouble. It is surprisingly common to see Beretta grip panels modified to fit the Taurus.

The Taurus features frame mounted safety levers as opposed to the slide mounted safety of the Beretta and I cannot recom-

mend this practice because there is a chance that safety function will be impeded by modified grips. The major makers offer grips for the Taurus as well as the Beretta and they are not particularly expensive. My impression of the Taurus is much the same as that I have of the Beretta. The pistols will give good service but they are not as rugged as the Browning High Power or Colt 1911 in long hard use.

There are steps that may be taken to make the pistols both smoother and more accurate, but as long as shooters are using this pistol normal wear on the locking blocks and fitting custom barrels will provide you with business. AG

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METALWORKING

Reader Forum

BY AMERICAN GUNSMITH EDITORS JUNE 2010

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Guns in a House Fire I recently acquired a numbers of rifles that had been burned in a house fire. The wood and glass stocks are completely gone, most of the aluminum on the firearms and scopes was melted, and the remaining steel was liberally quenched with afire hose. My intent was to clean up the remains to use as working models of various actions for use as training aids in my hunter education classes. However, the inevitable happened.

With a few new springs the actions work and I now wonder if there is any way the steel can be tested or re-tempered to make the guns safe to fire. One of the rifles, a Model 94 Winchester, has quite a bit of nostalgia value and this is driving the question as well as the concern of having a working barreled action of questionable condition into which someone could possibly insert alive round. We did an article on fire damaged guns in the April 2002 issue.

Hopefully, you have retained your copy since we doubt reprints of issues dated that far back are still available. Suffice it to say that according to your description of the guns' condition, considerable damage was done by the heat of the fire. This would lead us to conclude that major metal portions as well as internal parts have lost structural integrity.

A thorough clean-up must be the first step accomplished. With that accomplished, all firearm elements must be tested, re-heat treated and then test fired remotely. Lacking a machine rest along string tied to trigger with the gun bound secured to a tire and no one but you within to conduct such a test. Restoration of fire damaged guns depends on the degree of damage and the depth of a customers pockets.

In your case, the obvious incineration of wood, polymers and metal have presented you with firearms almost always certain to structurally fail disastrously. S&W Ejector I have a S&W Model 19 chambered in .357 Magnum. I removed the ejector out of the cylinder and noticed the star and ratchet pad had slid up the tube about .014". I never seen anything like this before. Is the star and ratchet pad pressed-fit to the tube? I can tap the star and pad back down the tube, but I don't think it will stay.

Is it possible that I can Loctite it? There is no place to stake it in place. This gun had been shot a lot and it was given to me. Forget the glue and sealant. Locate and purchase anew or perfectly re-habilitated extractor star assembly.

Many years ago, while attending one of several Smith and Wesson Armorers School sessions and the lead instructor told all present, "If you forget anything we've tried to teach you buy a copy of A S&W Shop Manual by Jerry Kuhnhausen." We did and think you will also find it excellent reading. Jim Mershon Jerry does include some guidance on the filing and fitting of ratchets but this is a testy, difficult operation and definitely not advised for those who haven't undertaken it on more than one occasion.

If you count yourself among the less experienced, we suggest you call Power Custom to whom filing and fitting extractor star assemblies to S&W revolvers is second nature. Traditions ALS 2100 20 gauge I have a customer with a broken Traditions ALS 2100 twenty-gauge shotgun. I trying to find a parts break-down for that model. Traditions says they can't read their copy very well and cannot give me the part name or number of the broken part.

I need to replace the bolt carrier on which the bolt rests as it travels back and forth within the receiver. My lengthy description of the part doesn't seem to help them very much. Has American Gunsmith done any articles on this shotgun to include a schematic or do you know of any source that might have a parts breakdown? John Funk John's Gun Repair & Sales We've never delved into the Traditions line but the S&W 1020 is similar. Contact S&W and they might be able to turn up a schematic on the 1020.

Replacement of Firing Pin I'm trying to fix a broken firing pin in a J. C. Higgins Mod 31 .22 LR. Is there any information that will make the job easier? Jerry Spadorcio Roy Waldvogel You have three options. One, if you can reassemble it, do so. Have the reunion TIG welded and smooth up the weld joint. Two, tack the broken pieces together with epoxy and use it as a model to turn off of. Turned anew pin from drill rod stock.

Three, call Jack First, Gun Parts Co. or Brownells for a copies of their parts source list and shop for anew replacement. Winchester Model 70 A customer contacted me with a problem. He has a post-1964 Model 70 chambered in .300 Winchester Short Magnum and is having trouble with the bolt. He claims that when you flip the safety off the gun fires without touching the trigger. Was there a recall on this particular model? It has the standard three position safety. I wanted to check before I started repairs.

JR Weaver Mountain Man Gun Works Dismantle the bolt, check all components for wear or work marks and replace as necessary. Inspect, flush out, lightly lubricate and air dry the trigger group. Install anew safety. If this fails to correct the problem, re

READER FORUM CONTINUED

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turn the rifle to Browning-Winchester for factory service. It is in a dangerous condition. We think someone has been messing around with the firing system who had no business doing so. Trap Gun Work I had a friend who was a gunsmith and trapshooter. He was teaching me but, unfortunately, passed away before I could find out what he did to his shotguns that made them shoot so well. Using his shotguns, I've won shoot offs from distance, even beyond the "fence." All I had to do was stack the beads and lead.

His guns were BT- 99s with no removable chokes and a back-bored barrel. What work did he likely do to make shoot accurately at distance and hold the pattern? W. E. Skip Belfeul A list of what your late friend might have done, including any fixed-choke work, lengthening forcing cones and custom-fitting his gunstocks, would only be guesswork on our part. If you have or can borrow one of his guns, take it to an experienced scattergun gunsmith to examine in detail.

If no such person is known to you, send a letter to Browning-Winchester requesting a quote on having their factory service personnel perform the examination. Webley & Scott .455 Revolver I am working on a Webley & Scott Mk4 in .455, but cannot find any info on detailed disassembly/assembly. I did find an overview and picture in the NRA pistol book, but that was not as detailed as what I am used to from your fine magazine. Can you point me in a direction or tell me how to get the back issues covering that pistol?

I want to do a trigger job to lighten the trigger which is currently at eight pounds. We've not covered the Webley recently enough to assure the availability of a reprint. We'll point you in another direction, The Gun Digest Book of Firearms Assembly/Disassembly Part II - Revolvers, Second Edition. It also contains reassembly

tips. As for your desire for a lighter trigger pull, remember this was a British military handgun intended for close-in combat.

Unless you can locate a spring kit — perhaps from Brownells — about all you can do is polish what's inside as brightly as possible without altering engagement angles. This pretty much limits your polishing job to the sides of the internal components and the inside of the frame. CZ Mod 82 I have picked up a CZ Mod 82 at a very reasonable price, however, the weapon needs a barrel since all of the grooves are worn out of it.

If you could inform me on the best way to remove the old barrel since all of the disassemble manuals that I have researched does not explain this step. Also, are the Makarov barrels interchangeable with this weapon? William David Ah, the lure of a price tag and how easily it extracts dollars from the pockets of too-hasty purchasers. One glance at what appears to be a usedup barrel should tip said buyer that additional expenses lie ahead.

As we recall, somewhat dimly, barrels on the CZ are either pinned or pressed in. We hope for your sake they are pinned. We have no specifications on Makarov interchangeability. For precise answers to those parts of your query, and perhaps anew CZ barrel as well, contact Century Arms at One last thing. You might be very lucky and those grooves are not shot out but merely filled with fouling. A Lewis Lead Remover hand tool, available from Brownells, has long proven to be a resolution to that problem. Jeff B.

Clauss Wischo KG I have a Wischo KG Erlangen from Germany. Where can I get information and parts for it? Rebecca Rice Look in the back pages of a recent Gun Digest for the list of manufacturers. Unless the gun has the name of an importer on it, your only source for parts would be direct from the German manufacturer, if they export them. AG

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