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DISASSEMBLY AND REASSEMBLY OF THE RUGER SR9 PISTOL

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ORIGINAL METHODS. MODERN ACCESS.

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FROM THE ARCHIVE

Another One Bites the Dust

BY AMERICAN GUNSMITH EDITORS FEBRUARY 2009

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As this issue heads to the printer in late December, the anti-gun Governor of the state of Illinois, Rod Blagojevich (D), was taken into custody on federal corruption charges. I anticipate that within a few days, the Illinois legislature will remove him from office, making Blagojevich the second anti-gun governor to go down in flames for “moral turpitude” this year.

Blagojevich, as you no doubt are aware, has been accused of conspiring to sell or trade President-elect Barack Obama’s vacant senate seat for personal financial gain. And earlier this year, anti-gun crusader Eliot Spitzer (D), then Governor of New York, was forced to resign over his involvement with a prostitution ring.

Oddly enough, both men were elected on promises to “clean up corruption.” Why do we find that those who would take the guns away from law-abiding citizens so often turn out to be hypocrites, if not outright criminals? In the Blagojevich case, U. S.

Attorney Patrick Fitzgerald released a 76-page FBI affidavit detailing an investigation that included courtauthorized wiretaps.

The affidavit contains transcripts of conversations where Blagojevich discussed exchanging the Senate appointment he controls for among other monetary rewards a salaried position with either a non-profit foundation or a labor organization or a cabinet post or ambassadorship in the Obama Administration. Obama’s home state of Illinois’one of the most anti-gun states in the country’has along history of political corruption.

In fact, the governor before Blagojevich, George Ryan, is currently serving time on federal corruption charges. What makes this particular arrest so outrageous is that Blagojevich knew he was already under federal investigation before he undertook to sell Obama’s vacant seat in the Senate. An Illinois businessman and political fundraiser with ties to both Blagojevich and Obama, Tony Rezko, was convicted earlier this year on numerous corruption, fraud, and extortion charges.

As part of the Rezko investigation, also headed by Fitzgerald, several others with ties to Blagojevich have faced charges. It was no secret that Fitzgerald’s continuing investigation of corruption in Illinois politics’an investigation that covers nearly six years’was focused on the Governor.

For Blagojevich to undertake such a blatant criminal enterprise while under investigation for other criminal acts begs the question: “What the hell was he thinking?” No one in the pro-gun community will be sad to see Spitzer and Blagojevich go, as both have pushed assaults on the Second Amendment rights of citizens during their time in office, and both have helped to promote an increasingly hostile atmosphere for gun owners in their respective states.

Ironically, as anti-gun as Blagojevich’s stance has been, he was in possession of a Firearm Owner’s Identification (FOID) card, which he was ordered to surrender when he was released on bond. Like I said, the man’s an anti-gun hypocrite at best, if not yet a convicted criminal. Editor Keith Lawrence Technical

PEOPLE & COMPANIES

Disassembly and Reassembly Of the Ruger SR9 Pistol

From a company long known for simplicity in handgun design, this pistol can be considered the exception. But, following these instructions, you need not shy away from working with it.

BY CHICK BLOOD FEBRUARY 2009

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There are some semi-autos that can be taken down easily and go back together just as easily. The Ruger SR9 isn't one of them. It isn't especially difficult to disassemble, but returning all those bits and pieces to their rightful places can hurt your brain, destroy your pride, and present a serious challenge to your manual dexterity. In light of Ruger's usually simple designs, this complexity came as no small surprise to me. You may have read or heard of a factory recall on the SR9.

The purported and often stated reason for it was "too heavy a trigger pull." Not exactly. It came to Ruger's attention that if dropped at a certain angle from a certain height with the safety "off," some original production SR9 pistols could discharge. That was all Ruger's management team had to hear. Production stopped, design changes were ordered, and extensive testing was done before the assembly line was allowed to start up again. Soon after, all previously made SR9 pistols were recalled for an upgrade.

Make no mistake. This upgrade did not result solely from the fear of New pistols currently coming off the line incorporate the redesigned trigger and wear a prefix of 331. litigation, nor is a design change something new for the highly respected manufacturer. Any fear that might exist is surpassed by along-standing insistence on product quality and serviceability, and any corrective action taken is swift. For example, when the late William B.

Ruger, Sr. learned there had been a single accidental discharge with one of his then-brandnew P85 pistols, he recalled them all for exhaustive testing and a modest alteration. This cleared the way for reintroducing the pistol as the P85 MK II'd despite the fact that Ruger's army of engineers never did reproduce the conditions claimed to cause the initial discharge. And when fire cutting of the top strap on the Ruger revolver chambered for the .357 Maximum threatened safe, extended-use operation, the same William B.

Ruger, Sr. stopped production forever. In my opinion, Bill Ruger had a great

DISASSEMBLY AND REASSEMBLY OF THE RUGER SR9 PISTOL CONTINUED

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deal in common with Walt Disney; they both insisted that anything done by their respective companies was done only one way: Right. With the SR9, a close examination of the schematic will reveal a significant difference between the original trigger system (shown in the inset) and that of the revised version. Notice the difference in the outer (#36) and inner triggers (#34) and the presence of two pins (#37) in the newer system. About those two pins: Like most others in the SR9, they're roll pins.

Therefore, a roll-pin punch must be used to move them. As I've often cautioned in these articles, if at all possible, do not drive a roll pin completely out. The first reason is that the diameter of a roll pin tends to shrink when it's removed from its hole. When a shrunken pin is reinstalled in an unshrunk hole, the result is a loose fit. The second reason concerns roll pins used in frames or firing-mechanism housings made of light alloy or polymer.

Reinstalling a roll pin in aluminum or plastic can not only damage the pin but the component into which it's being inserted. I know, I know. If you don't completely remove a pin, how do you go about lining up any holes the pin must pass through? The way I've done it is to go easily, starting the pin back in to capture, say, an ejector. As I move the pin inward very gently, I wiggle

the ejector back and forth or side to side until I feel the pin enter the hole in the part before continuing the reassembly. Tedious?

At times, but far better and less costly than damaging a major component. Of course, as you'll learn in a moment, there's no need to be concerned about the roll pins in the SR9s trigger, because you'll never remove them. Field Stripping This part is fairly straightforward. With the magazine out, the chamber empty, and wearing eye-protection, pull the slide to the rear and lock it open by pressing up on the slide stop.

Maintain the upward pressure; a strong recoil spring is applying plenty of tension and would like nothing better than to painfully trap your finger in the ejection port if the stop lever moves down and the slide slams shut. (Older readers will certainly remember the day they first encountered the infamous "M1 thumb.") Now that you've been properly alerted to a similar risk with the SR9, insert your fingertip into the ejection port and press on the front end of the ejector (#42) until it locks down.

If you prefer, the eraser end of a pencil will substitute for the fingertip, but unless you get that ejector out of the way, you've already gone as far as you can go with this gun. Now get your finger or the pencil out of the way, and press inward on the take-

down pin (#51) located above the trigger on the right side of the frame. This will start the pin moving out.

Move over to the left side of the frame without losing control of the slide, pull out the takedown pin, and ease the slide forward until you no longer feel recoil-spring tension. Then push the entire assembly forward and off the frame. Invert the slide assembly. Slightly compress the recoil spring (#27) to disengage it from its barrel-lug seat. Lift the spring up and forward for removal. To disengage the barrel from the slide, give it a little forward nudge before lifting it out.

When stripped down as just described, the SR9 can be subjected to a thorough, basic cleanup. Getting one ready for a detailed cleaning, an inspection, and possible parts replacement is another matter entirely. Detailed Disassembly In most of these articles, I approach the detailed disassembly in uninterrupted order beginning first with the slide, then the frame, and so forth.

I'll still follow that basic format here, but due to the complex nature of the SR9, we will be taking some side journeys into the vital subassemblies. The disassembly of the slide begins simply enough with it inverted on the bench. The rear sight should be positioned to the same side as your dominant hand. You have to depress

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Ruger SR9 Semi-Automatic Pistol (Specifications subject to change without notice) 1 Slide* 2 Front Sight 3 Loaded Chamber Indicator 4 Loaded Chamber Indicator Spring 5 Loaded Chamber Indicator Pin 6 Extractor Pivot Pin 7 Extractor 8 Extractor Spring 9 Rear Sight Elevation Screw 10 Rear Sight Leaf 11 Rear Sight Pivot Pin 12 Rear Sight Base 13 Rear Sight Elevation Spring 14 Rear Sight Lock Screw 15 Barrel* 16 Striker Blocker Spring 17 Striker Blocker 18 Magazine Disconnect 19 Striker Cover Spring 20 Striker Cover Plunger 21 Striker Cover 22 Striker 23 Striker Cross Pin 24 Striker Spring 25 Striker Spring Cup 26 Striker Shaft 27 Guide Rod Assembly 28 Camblock 29 Trigger Pivot Pin 30 Camblock Pin, Front Retainer 31 Camblock Pin Retainer 32 Magazine Disconnect Spring 33 Slide Stop Lever Assembly 34 Trigger, Inner 35 Trigger, Inner

Spring 36 Trigger, Outer 37 Trigger, Outer Pin 38 Magazine Latch Spring 39 Magazine Latch 40 Trigger Bar 41 Trigger Bar Spring 42 Ejector 43 Trigger Bar Lift Spring 44 Trigger Bar Reset 45 Trigger Bar Mounting Spring 46 Thumb Safety Assembly 47 Ejector Pivot Pin 48 Safety Detent Plunger 49 Safety Detent Spring 50 Camblock Pin, Front 51 Takedown Pin Assembly 52 Camblock Pin, Lower 53 Camblock Pin, Upper 54 Magazine Latch Pivot Pin 55 Magazine Latch Thumbpiece 56 Fire Control Housing Pin Original Trigger Parts 61 Magazine, 17 Round 62 Magazine, 10 Round 63 Fire Control Housing Note: For factory part numbers, obtain a copy of manual from Sturm- Ruger 57 Backstrap Pin 58 Backstrap Insert 59 Backstrap Bushing 60 Magazine Loading Tool

DISASSEMBLY AND REASSEMBLY OF THE RUGER SR9 PISTOL CONTINUED

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the blocker, then the disconnect, and move the striker forward before you turn your attention to the hole in the striker cover (#21). The cover plunger (#20) seats in that hole. With a proper diameter punch, depress the plunger and initiate the upward movement of the cover in its slide slots. Once the cover has been elevated enough to capture the plunger, remove the punch, place a finger over the rear of the slide, and remove the cover. The finger will hopefully prevent the loss of the plunger and its spring (#19).

After they've been set aside, preferably on a magnetic parts tray (from Brownells), you can withdraw the complete striker assembly (parts #22, 23, 24, 25, and 26). The striker shaft is polymer and the striker cross pin has been pressed in with factory-designed tooling. Without the tooling to assemble the striker group, you can't safely disassemble it. So don't. When you withdrew the striker assembly, it released its hold on the magazine disconnect (#18) and spring (#32).

Pick them out with tweezers and relegate both to the parts tray. Now turn the slide right-side up. The extractor pin (#6) is a roll pin driven from top to bottom, but remember my previous comments regarding all roll pins. The extractor spring (#8) is attached to the tail of the extractor (#7) and should come out with it. If not, go fishing. Also related to the extractor are the striker-blocker spring (#16) and striker blocker (#17).

After the extractor has been removed, invert the slide and tap it on a padded surface to free the blocker and spring. The roll pin (#5) for the loaded chamber indicator (#3)

can be drifted in either direction to free the indicator and its spring (#4). Both sights have been press-fit into their dovetails from right to left. Both can be drifted for windage adjustments. The rear sight has a locking screw (#14) that has to be backed off a trifle before windage adjustments can be made.

After making an adjustment, retighten the screw, but don't overdo it. Turning to the frame, there's good news—all the camblock pins (#50, 52, and 53) and the fire-control housing pin (#56) are solid instead of roll types. Those retaining the camblock (#28) are set up for removal from right to left in any order. Right to left works for the housing pin, too, but only after the ejector has been tilted a quarter of the way forward so the pin clears the ejector slots.

You'll know right away when the ejector has reached the right spot. The pin won't budge otherwise and don't force it. The camblock, fire-control housing, and trigger bar (#40) can be removed from the frame as a unit carefully. The camblock is started upward by prying it in that direction with a small screwdriver. No tool is employed in doing likewise with the fire-control housing. Instead, place your thumbs under the thumb safety levers and push upward.

Once both block and housing are loosened, lift them simultaneously from the frame. The trigger bar (#40) and complete trigger assembly will accompany them. Set the entire unit aside for further study and attention. (That study and attention shouldn't begin until you're confident you can link up everything to work like it did when the pistol left the factory.) On the left side of the

camblock is the block-pin retainer (#31). If it didn't fall off when you removed the block, pick it off with tweezers.

Beneath the retainer is a rubber O-ring (#30). It comes out next with the same tweezers and is followed by the trigger pivot (#29), which can be drifted in either direction to free the trigger assembly (#33 through 37). By the way, that O-ring has a specific job. It holds the camblock pin (#50) in place by surrounding the groove in the pin. Once the pivot pin is out, the trigger assembly will let go of the camblock.

I made a discovery at this point in the disassembly, and I'll interrupt this message to let you in on it. There's a spring that lives inside the trigger assembly that's not shown on the schematic. It's a close partner of the slidestop lever (#33), and one end of it fits into a tab on the inner face of the stop (also not shown). I'll describe the spring and how it fits the lever in the "Reassembly Tips" that follow this section. The photo of the stop's inside face should help you, too.

Okay, the camblock stands alone at this point. The trigger-assembly/trigger-bar/firing-control housing are still joined, and things are about to become more complicated. Here's how I was told to tackle them by one of Ruger's top assemblers in Arizona. I suggest you do it this way, too: The front loop of the trigger-bar spring (#41) is connected to the hole in the tab extending down from the bar. The rear loop is pinned (#45) to the housing. It stays pinned.

If the ejector is in an upright position, tilt it forward slightly. Grasp the bar with one hand

DISASSEMBLY AND REASSEMBLY OF THE RUGER SR9 PISTOL CONTINUED

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Original caption: Right top and bottom: The left side of the camblock/trigger/fire-control group is shown (top photo) as it appears when lifted from the frame.

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and the housing with your other. Start pulling the bar toward the front, being careful not to stress the spring. Tilt the front end of the bar down, move its rear away from the ejector, and allow the bar to return toward the housing. Disconnect the front loop of the spring from the bar. The outer trigger on the original SR9 (part #36 on the inset in the schematic) is far different from the same part #36 in the current version. Yes, the new design does bear a resemblance to the now-familiar Glock trigger.

Though the resemblance is apparent, the new SR9 trigger and that of the Glock aren't exactly the same. No instructions are made available for the disassembly of the trigger, and any repair of the assembly must be done by factory assemblers who have the special fixtures and jigs needed to perform repairs. I suspect, but haven't confirmed, that a complete trigger system for the SR9 might become available to serve as a drop-in replacement for a damaged unit.

After all, if a gunsmith knows how to remove the complete assembly properly, it can be assumed he's skilled enough to replace it with anew one. Hopefully, the powers that be at Sturm-Ruger will soon agree with me on this. To disassemble the fire-

control housing, the first item you want to remove is the trigger-bar lift spring (#43). It simply lies in its recess on the side of the housing. The thumb-safety assembly (#46) is tilted downward.

Immediately thereafter, outward pressure is applied to its side arms to remove it from its clip-like slot at the rear of the housing. Be warned: When those arms are taken out of their way, the upper detent and spring (#48 and 49) will scoot. A spring, when re-

The retainer spring in the block is marked "A." The O-ring retainer is located at "B." The lower photo shows the right side of the group. leased from captivity, will launch itself and any small part upon which it exerts pressure, so prevented their escape. Now disconnect the thumb safety from the housing. At the tops of the trigger-bar reset (#44) are two different angles. At its bottom, there's a tab fitting a slot in the housing. Pull the reset straight up and out.

You can drift the ejector pivot (#47) in either direction. But don't tilt the ejector for removal or remove it not unless you've got a plan in mind to prevent the lower detent and spring from a flight to freedom. This leaves the bar spring (#41) and its pin (#45), which should remain as they are. The back strap (#58) is domed on one side,

flat on the other, and reversible. Drift its pin (#57) in either direction, pull straight down on the backstrap, and the bushing (#59) usually falls out.

The magazine-latch assembly is disassembled by drifting the assembly pin (#54). Remember that it's seated in polymer. The pin extends A Bthrough the latch (#39) and releases it along with its spring (#38), which is seated in the latch. Pull out the thumbpiece (#55) and the SR9 is completely stripped. Reassembly Tips The loaded-chamber indicator spring seats in the slide.

Push it down in its recess, place the indicator over it, align the hole in the indicator with the indicator pin hole, and push the pin through to flush or slightly below both sides of the pin recess on top of the slide. Invert the slide to install the extractor. Preassemble the extractor and its spring. Insert the striker-block spring into the blocker, the blocker assembly into the hole under the extractor, and then the extractor and spring.

You have to push the magazine disconnect itself up into the slide when replacing the extractor to hold it in place while you align and install the extractor pin. The latter should end up flush with or slightly below

DISASSEMBLY AND REASSEMBLY OF THE RUGER SR9 PISTOL CONTINUED

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The trigger pivot (B) retains the trigger and slide-stop assemblies in the camblock. the top of the slide. Readdress the magazine disconnect next. Reinstall the spring in the body of the disconnect, flared end first. Position the assembled disconnect in the slide with the spring to the left. Depress both the disconnect and the blocker. Install the striker assembly under them until the striker comes to a stop. This holds the disconnect and provides clearance for the striker cover.

Assemble the striker-cover detent (plunger) to its spring and install them in their slide cavity. A punch is used to press the detent inward until it's flush with the outer edge of the cavity. Start reinstallation of the striker cover upward, keep it moving until it can capture the detent, pull the punch, and continue upward with the cover until you hear the "click" of the detent engaging

in the cover hole. Check the loaded-chamber indicator, extractor, and striker for free movement and then take a deep breath.

The frame and the entire fire-control housing await. For the frame, you begin with the magazine latch and its associated parts. Its thumbpiece must be inserted with the concave center facing to the rear. Why? The magazine latch has to ride in there. The latch spring has a shouldered end, which is B Apush against the rear of the latch. When doing this, insert an empty magazine to make certain it clears the latch.

Start tapping in the latch pin, remaining aware of the fact that it must pass through the latch and end up about 1/16 inch below flush on both sides of the frame. Admittedly, you're not likely to get this assembly all lined up for pinning on the first try. Having fun so far? There's even more fun to come with the fire-control housing. Begin with the lower detent and its spring.

Use a punch to push them both far enough into the housing to install the ejector. Align the ejector with its housing slot.

Starting at its top end, start pushing down on the ejector until you're stopped by the punch holding in the detent and spring. You're working blind here. There are two detents on the opposite side of the ejector. (They don't show up on the schematic, either.) Slowly pull the punch while resuming the downward pressure. If you time your movements correctly, the detent the punch has been holding in will click into one of those ejector slots.

Don't pull the punch completely out, and don't install the ejector pin just yet. It is a snug fit and will likely require some tapping with a nylon or the correct end to install when joining the two parts as one. Position both spring and latch in the frame. Once you're sure the concave section of the thumbpiece remains in position, use your index finger to

DISASSEMBLY AND REASSEMBLY OF THE RUGER SR9 PISTOL CONTINUED

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tainer and connect these rods with wire; these will become the "anode." You must be sure that the part you're cleaning is not touching the rod(s). Suspend the part in the solution with a steel cable or wire so that it makes a good electrical contact with the part. The part will become the "cathode." Connect the black negative lead to the part being cleaned' either to the part itself or to the suspending cable or wire'and connect the red positive lead to the rod(s). Then plug in the charger.

You will immediately begin to see bubbles. These bubbles are hydrogen and oxygen as the water breaks down. Allow the part to "cook" for three to four hours. The time really depends on the size of the part and the current of the power supply, rather than the amount of rust. After a short time, a foamy sludge will form on the top of the water. This is a normal byproduct of the electrolysis process and does not have to be removed. After you remove the part from the solution, immediately clean it and dry it off.

You'll find the rust is gone and any bluing is intact. Then coat it with good-quality gun oil or rust-preventive oil. In my test of this process, I placed the 1911 frame upside down on wooden blocks in the electrolyte solution, and I placed a rod with o-rings through the magazine well. I connected a 1.5amp trickle charger and left it on for about four hours. When removed from the solution, the frame was completely free of rust and the bluing was intact.

Conclusions/Recommendations The advantage to removing rust with electrolysis is that it will remove the rust'even from hard-to-reach places'without affecting the bluing. Remember to follow the cautions, and never use stainless steel for the anode. Although this method does a great job of removing rust, even from deep pits, it won't, of course, repair any pits or marks left by the rust.

For that, you might opt for one of the cold-bluing solutions, but that's a whole different article. control housing is difficult is an

outrageous understatement. Are you beginning to understand why I suggested it's best to leave the housing alone? If you have to disassemble it, I suggest you leave it for a slow day when your patience knows no bounds.

Now it's time to attach the trigger assembly and slide stop to the camblock. (The stop includes the spring mentioned earlier that's a no-show on the schematic, as is the side of the stop to which one end of the spring is attached.) Of course, if you took the time to check out the slide stop and its attached spring when you separated the trigger from the camblock, the reuniting of the two components would present no great mystery.

The instructions that follow, therefore, are to assist those readers who neglected to take a close look at the stop and spring: Just behind the hole in the slide stop there's a tab. One end of the spring has a pointed, bent end; the other end has a half loop and there's a full loop in the center for the pivot pin. The half loop slides into the tab. The complete loop is pulled up and over to the left side of the stop.

The total width of this subassembly equals the amount of clearance to be allowed on the trigger's left side. Position the camblock with its trigger end to the rear. Start the trigger pivot in from the right side until you can spear the trigger on it, while leaving sufficient room for the slide stop and spring on the left side of the trigger. The trigger pivot is pushed through to hold things together. Turn the camblock upside down.

Push the bent end of the stop spring left to clear the block, then down to seat it in its camblock notch. A small screwdriver is the right tool to use. A V-shaped notch ground or filed into the end of the screwdriver blade will provide greater control of the spring, which retains the lower camblock pin. Now reinstall the O-ring retainer. The next step is as tricky'or trickier't han most of what you've undertaken so far.

Once the fire-control housing, trigger bar, and camblock I (with trigger attached) are assembled, they have to be placed back into the frame in the same manner they were removed; in other words, as a unit. Start the block and fire-control housing into their respective frame recesses at the same time. This will take some finesse. After both are started, aligned, and the bottom tip of the trigger is aimed at its frame window, press downward simultaneously until the block and housing are halfway in.

Position spring #31 on its camblock outline, hold it there with a screwdriver blade, and push the block down all the way to seat it and capture the spring. All camblock pins are reinstalled left to right. The front camblock pin (#50) secures the front retainer. The upper camblock pin (#53) has a groove located a lesser distance down its shaft than the lower pin (#52). A sideby-side comparison will instantly tip you off to which pin is which. The upper-pin groove locks in that pesky pin-retaining spring.

The lower-pin groove does the same with the equally pesky slide-stop spring. With the fire-control pin (#56), it's a slightly different operation. This bugger has a flat on its head end that must be facing the underbelly of the thumb safety while being installed. How? Tilt the ejector one-quarter of the way forward, push in the pin until it stops, then pivot the ejector back to lock in the pin.

Reverse the steps taken to field strip the pistol, run a full function check on it with dummy rounds, test fire, and be proud of yourself when all goes well. Conclusions As I said at the beginning, the complexity of the SR9 is unusual for a Ruger pistol, and came as a big surprise to me. It's definitely not one of the pistols that owners should take apart to "make better." If an owner does, you can be pretty sure he'll be bringing it to you to reassemble. Charge him what your time is worth, but I

FINISHING

Removing Rust with Electrolysis

Here's a simple method for removing rust from a bluedsteel firearm without damaging the bluing.

BY ROY SEIFERT FEBRUARY 2009

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It's always a challenge to remove rust, especially from hard-to-reach places, and the challenge becomes even greater if the job requires that rust must be removed without affecting the bluing on the rest of the firearm. But there is a relatively simple way to do it using a process known as electrolysis. Awhile ago, I purchased an M1911type .45 automatic that on the outside looked to be in great condition. When I took it apart, however, I found the inside of the frame was covered with a patina of surface rust.

This gun was obviously stored somewhere in a humid environment for a very long time. Normally, the easiest way to remove surface rust is with fine steel wool and gun oil. But this method wouldn't allow me to get into all the crevices of the frame. Then I remembered reading an article about removing rust with electrolysis, and I decided to give it a try. Materials The items you'll need for a rust-removal project include a plastic container that will hold the part and the electrolyte solution.

A five-gallon bucket will work great for small parts. For the electrode, you'll need a steel rod. Use plain old mild steel, not galvanized (zinc-plated) steel, and don't use stainless steel (which will produce harmful by-products). You'll also need some clean water, and a box of Arm & Hammer Washing Soda—not baking soda. Arm & Hammer Washing Soda is a product of Arm & Hammer Co. Inc. Princeton, NJ. It is in your local grocery store on the shelves with the laundry detergents.

If you can't find washing soda, you can pour some baking soda (sodium bicarbonate) into a pan and heat it over low-to-medium heat. Water vapor and carbon dioxide will cook off, leaving washing soda (sodium carbonate). In addition, you'll need an automotive-type battery charger or other high-amperage power supply, as well as an assortment of O-rings or heatshrink tubing.

Cautions Always wear safety glasses and rubber gloves when working with this solution, as it is very alkaline and can cause

skin and eye irritation. And again, don't use stainless steel for the electrode or you will be producing some dangerous gases. The electrolysis process breaks water down into its component parts, hydrogen and oxygen, which together can be explosive, so work outside or in a very well ventilated area.

As a final caution, be sure your battery charger or power supply is unplugged before attaching or touching the leads. **Directions** In the container, dissolve a tablespoon of washing soda in each gallon of water to make up the electrolyte solution. Be sure the washing soda is thoroughly dissolved. Place the mildsteel rod through the part to be cleaned. Use O-rings or heatshrink tubing to prevent the part from touching the rod.

For large parts, place numerous rods around the inside of your container. Here, the O-rings were used to prevent the steel rod from touching the part being cleaned. The bucket shown was originally filled with kitty litter. If you don't have a cat, you could use the litter to fill shooting bags.

PISTOLS

Resolving 1911 Problems: Failures to Go into Battery

Usually, a failure to go into battery is a simple matter to cure, but sometimes the search for the cause can prove to be exhausting.

BY ROBERT K. CAMPBELL FEBRUARY 2009

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Among the most common issues with the M1911 pistol is a failure to go into battery. Many times, this is due to the fact that the 1911 is such a fertile field for “owner experimentation,” and thus is often modified with aftermarket parts of unknown origin. Add to that the fact that enthusiasts often use the pistol with many different types of ammunition—also of unknown or suspect origin—and it’s not surprising to see problems with a well-used pistol.

The failure to go into battery sometimes begins with a failure on the range, but could also occur when the piece is hand cycled with ammunition. On rare occasions, the 1911 will fail to go into battery with dry cycling. A simple check is the place to begin. First, make certain the pistol is unloaded and the magazine is removed from the handgun. Carefully control the slide and let it go forward slowly under control.

If the pistol is tight and properly fitted, it should be possible to stop the slide just short of lockup. If you rack the slide and release it to roll forward, it should lock tight. If the pistol does not lock tight when the slide runs forward, then there’s a problem. There are several problems that could cause the failure to go into battery, with differing degrees of seriousness. If anew barrel has been fitted, the first thing I’d look at are the locking lugs and the locking-lug recesses.

The extractor is another part that’s often the cause of a failure to lock up properly. (This will only be seen in a livefire test.) The extractor may not be properly tensioned or it may not be properly turned (or “clocked,” as we say). In other words, the extractor may be improperly installed or it may have slipped in the extractor slot. As for barrel fit, the tried

and true method of checking the locking lugs works. Dismount the slide and barrel assembly first.

Then simply press on the barrel in the dismounted slide and be certain it does not spring back out of the locking lugs. With the barrel locked up and the barrel bushing properly fitted, the barrel should not spring back off the locking lugs under pressure, but should lie in the lugs. Let’s look closer at the extractor. I have seen at least one high-grade pistol with a terrible fit on the extractor, and I’m talking about an \$1,800 pistol.

Another 1911 I examined had a beautiful trigger and a National-Match barrel, but had a homemade extractor! The extractor was cut from some sort of soft white metal. Be certain the extractor is properly cut and that it’s not too rough on the bottom. I’ve also worked with pistols that

RESOLVING 1911 PROBLEMS: FAILURES TO GO INTO BATTERY CONTINUED

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Sometimes, adjustments are needed, even to highend factory-made 1911s. had problems due to oversized barrels. These barrels not only had extra metal on the hood, but the hole in the link was also oversized. This link served to pull the barrel down as the slide moved backwards, and the barrel was then forced upward, locking against the slide pin. This might be good for accuracy, but is not necessarily ideal for reliability.

A point that's sometimes overlooked is the fact that the link tends to time the action of the pistol. As the slide moves to the rear (about 1/10 inch), the barrel only starts to unlock. When the barrel moves to the rear a bit farther, it begins to unlock as the link moves. A battery issue may arise from a link that's too long. If the link is too long, the barrel is held in the slide for too long. A tipoff to this is that the front of the locking lugs will be rounded by this action.

This problem can actually lead to sheared lugs, although in most cases the problem is recognized long before this point. After all, if

the pistol is not functioning correctly, it probably wouldn't be fired very much. I once saw a Star PD's 1911 variant where the lugs had been sheared in this manner. I couldn't be sure, however, if the problem was the fit of the lugs or if the lugs were made of steel that was too soft. The rear of the barrel lug may contact the frame if the link is too long as well.

In this case, the barrel is held for too long and the pistol takes a beating. Careful inspection can identify this problem before it results in a major repair job. At this point, we should also discuss a link that's too short. I have an opinion on which is the more common—too short or too long—and the too-long link seems to crop up more often. A link that's too short will unlock too early in the firing cycle. What happens in this case?

The pistol unlocks while there is still high pressure in the chamber, and the cartridge case still has more adhesion to the chamber wall. The result may not be dangerous in terms of a blowup, but the extractor will be

worked to a greater extent as it's stressed in pulling the case from the chamber. A too-long link can be recognized by an examination while the barrel and slide are in battery. Observe the radius in the link hole with the lower lug at the bottom and at the rear.

If the hole protrudes above the lug, you have a problem—and more load than the link was intended to carry. A recognizable indicator of a too-short link can be damaged lug feet. The pin that holds the link can become wallowed as well. A pistolsmith from whom I got much of my training told me that this situation is exacerbated by dropping the slide on an empty chamber.

As a result, I've gotten to the point where my skin crawls at the notion of dropping a slide on an empty chamber on any firearm, especially the 1911, but also the M1, M14, and M16 as well. This careless handling can lead to serious damage. Now, let's discuss the proper curve. If any is out of spec, problems will eventually show up as eccentric wear.

RESOLVING 1911 PROBLEMS: FAILURES TO GO INTO BATTERY CONTINUED

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The link on the stainless-steel barrel on the right is too short. Note the beat-up lower lug on the barrel. Observe the scratches on the frame of the link. The link is properly aligned in “linkdown,” as the books call it, when the radius of the hole in the link is at the center of a convex radius with the lug. This proper alignment is often referred to as “slightly past center.” Pins come in oversize increments, so you can adjust with oversize pins to the sloppiness of the pistol.

Overall, many production pistols “ride the link” to one extent or another, although few I’ve seen are really bad. There’s another cause of failure to go into battery that is link related. I hadn’t heard of this problem or the term until recently, but it’s called “stem bind.” A distinctive indicator is a “quarter-moon” mark on the spent shell casing fairly close to the cartridge case mouth. In this case, the barrel may be rising too quickly. A shorter link will delay this rise.

The difference falls into a very shallow few degrees of movement, but the shorter link is often enough to cure the stem bind. The barrel is moving forward and upward as the

barrel rides the link. The cartridge feeds into the chamber and moves the barrel forward. Thus, a shorter link may induce better feed. There’s a time-proven slide-stop test you can perform to test the link. Assemble the pistol normally, preferably with a blued-steel slide stop installed. Press hard on the pistol in battery.

Pull the slide to the rear and press the barrel down hard. The slide stop should not bind. (Remember to leave it hanging and not locked into the slide-stop slot). If the slide stop has been marred or has picked up marks at the front, the link is too long. When an extractor is said to have “clocked,” it means it’s moved one way or the other on the face of an imaginary clock. (continued on page 21) Markings at the rear indicate a too-short link.

I suppose a stainless-steel slide stop properly smoked would work just as well. There are a couple of other areas of concern. The barrel-lug slot in the frame should measure .365 inch. The barrel lug comes in at .360, so there’s not much clearance in this area. Another concern is endplay. This is simply play against the bolt face. There should be

little to no play in the barrel when the slide is open just enough to move the barrel with an unsharpened wooden pencil.

When a worn or poorly fitted barrel has end play, the wear on moving parts is greatly magnified. This is also a cause of headspace being transferred from the chamber to the extractor, something that happens very often with the 1911. In other words, the pistol no longer properly controls headspace with the chamber but with the extractor. These are the issues that come up fairly often with the 1911. Each can be remedied, and the fix is often simple enough.

A failure to go into battery can also result from a spring issue, but that’s relatively easy to remedy. Simply choose a new spring or a heavier spring. A lack of lubrication should be obvious, but it’s not uncommon to see a 1911 that won’t go into battery as a result of poor lubrication. Usually it will fire a few magazines and then begin to fail to lock. Some 1911s require a break-in period—usually 50 to 100 rounds is

RESOLVING 1911 PROBLEMS: FAILURES TO GO INTO BATTERY CONTINUED

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plenty. Once this break-in period is addressed with quality hardball ammunition, it's time for a good lubrication. Conventional wisdom says that a pistol that malfunctions within the first 50 rounds and then begins to smooth out and become reliable simply needed a break-in. If a customer reports that his pistol fired a few magazines and then began to malfunction, look first at lubrication as the probable cause.

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Solving lockup problems with the venerable M1911 is not always an easy task'in fact it can be pure aggravation'but the tried and true method of looking for "the weakest link" will eventually identify the cause. And once identified, the problem is usually easily cured. I

FROM THE ARCHIVE

Maximize Your Profit: Making Target Knobs for a Scope

A pair of custommade target knobs can be a simple and profitable add-on to a scope-installation job.

BY NORMAN E. JOHNSON FEBRUARY 2009

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As gunsmiths, our customers often seem to place us between a rock and a hard place. By that I mean that we're occasionally asked to do jobs that are just too small to bother with, while at other times the request is for something too involved and complicated to easily fit into our schedules. If it's a reasonable request, however, and the customer really wants the job done, I'll do everything. They were replaced with knurled target-type scope knobs. Here, the part is knurled and ready for forming.

I can make the customer happy' assuming, of course, I'm going to be able to charge my hourly billing rate. A recent project is a good example: Some rifle scopes lack a simple and effective way to adjust the elevation and windage. The time-tested coinslot adjustment screw isn't bad if the shooter happens to have the right size coin in his pocket. In my experience, the raised bar we see across some scope knobs is a poor excuse for an adjuster.

Where the adjusting detents on a knob resist easy turning, this form of adjuster is hard to turn between the tips of your fingers, and

there's no tool made to fit them. For these reasons, a customer recently asked me to make a pair of knurled brass knobs for a scope he brought into my shop. "Can you do it?" he asked. I told him the materials cost was next to nothing, and the labor shouldn't take more than an hour or so. The project was ago from that point on.

The original bars on these scope knobs measured 0.2 x 0.420 inch and were raised above the round base by a mere 0.1 inch. The part was attached to the reticle adjustment base by a pair

MAXIMIZE YOUR PROFIT: MAKING TARGET KNOBS FOR A SCOPE CONTINUED

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The original screws were used to attach the new knob. These new knobs are both convenient and attractive. of fine-threaded screws spaced 1/4 inch apart. These two laterally opposing holes and screws would be reused to attach the new adjusting knobs. The countersunk screws would pass directly through the new adjusting knob. Making the knobs was a straightforward job on the lathe. First I chucked a piece of 5/8-inch brass rod in the lathe with an inch and a half extending beyond the chuck.

I cleaned the piece up to a 0.60-inch diameter and knurled about an inch of it. From there, I turned a tenth of an inch of the shaft down to the diameter of the replaced part, which was 0.420 inch. Then I used a cutoff tool to cut the piece from the stock to a length of 0.20

inch. The edges of the knurled part of the knob were rounded using a flat file before final cutoff. To make the second knob, I duplicated this operation while the shaft was still in the lathe.

Next, I marked the screw-hole positions on the undersides of the knobs with a fine-point marker through the holes of the old knobs. A starter drill was then used to precisely start the holes. The four holes were then drilled at screw size through the knobs. The screw holes were then countersunk to allow freedom for the screw heads at a depth that allowed about 0.085 inch of screw thread to extend through the holes without bottoming out. Finally, I used the existing Phillips-head screws to attach the target knobs.

The slightly raised knobs still permitted the original knob covers to be used. Adjusting the knobs for windage and elevation was now easy and convenient with the thumb and forefinger. The adjustment increments were more easily felt with the new knobs, and the markings that indicate the knob positions were still easily read. Job done in less than an hour. Conclusions Target-type knobs were not available for this particular scope, and the original ones were not working well.

But making a pair of replacement knobs was a very practical project. The original screws were conveniently reused to attach the new parts, and the original caps were high enough to cover the new knobs. The customer was delighted with the results, and very happy to pay my minimum one-hour shop rate. I

PEOPLE & COMPANIES

Working the Winchester 1885 Single-Shot Rifle

Winchester's first single-shot rifle has been produced in numerous forms and variations by several different manufacturers' from its introduction in 1885 up to the present day.

BY DAVID R. CHICOINE FEBRUARY 2009

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Prior to 1885, Winchester had been known all over the world for their lever-action, repeating rifles. When the Model 1885 was introduced, it became Winchester's first single-shot rifle. The introduction of this rifle also marked Winchester's first use of the designs of firearms genius John M. Browning, which was the beginning of along and profitable relationship for both parties.

Out in Ogden, Utah, the Browning brothers had been manufacturing John Browning's 1878-patented single-shot rifles for several years on a relatively small scale. These rifles came to the attention of a Winchester sales rep, and eventually the manufacturing rights were purchased by Winchester in 1883. The Browning single-shot falling-block action was far simpler and more efficient than that of the Sharps, which was the standard of the day. John M.

Browning's action was not only strong and simple, it was lightweight, compact, and utterly dependable. The Model 1885 Single

Shot was introduced in that year, and Winchester continued its production up through 1920, producing an incredible number of options and variants along the way. The action was made in different configurations, including the so-called "High Wall," intended for large, powerful calibers, and the "Low Wall," designed for smaller calibers of medium to low pressure.

Rifles were also offered in many of the calibers available at the time, ranging from .22 Short rimfire up to the huge .50-caliber centerfire. One was even made as a 20-gauge shotgun. In all, something over 100,000 single-shot rifles, carbines, muskets, and shotguns were made by Winchester on this wonderful action design. Since that time, the excellent Winchester 1885 action—especially the High Wall variant—has been a favorite of single-shot rifle builders.

In more recent years, the modern Browning Arms Company sold a Japanese-manufactured replica of the 1885 single-shot from

1973 though 1983. This rifle was produced in several calibers, including modern cartridges like the 22-250 up to the 45-70. Starting in 1985, the company introduced their new Model 1885, which is still being manufactured in several variations, including a blackpowdercartridge rifle called the BPCR.

Model 1885s are available in Low Wall or High Wall configurations, and come in a variety of modern cartridges as well as some of the classic cartridges of the Old West such as .45 Colt, 38-55, 40-60, and the workhorse 45-70. The modern Browning-made replicas are very well made, look good, shoot well, and have proven to be very dependable. Browning and Winchester are now part of the same organization, so you may see rifles with either manufacturer's name.

Not to be left out, the Italian arms maker Uberti also manufactures a Author photos.

WORKING THE WINCHESTER 1885 SINGLE-SHOT RIFLE CONTINUED

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version of both the Model 1885 High Wall and the Low Wall rifle, and I have been fortunate enough to have had several examples to test over the last few years. These are available in several popular calibers from the .22 rimfire up through the 45/120. Uberti rifles are furnished with a color-casehardened receiver, breech-block hammer, trigger, and finger lever, which are all forged from super-tough 8620 steel alloy. On the good-looking Uberti rifles, the barrel, sights, and buttplate are blued.

With the Uberti action disassembled, you'll note the firing pin has been changed to a more modern, small-diameter, spring-loaded

free-floating type. Winchester's firing-pin retractor on the link is still there, although the only remaining function it has is to lift the hammer slightly up off the firing pin as the action is opened. The breech-block's face has been fitted with a removable firing-pin bushing that contains the new firing pin and its spring.

The only objection I have to the Uberti is that it places the hammer at the half cock position, rather than fully cocking the arm. This won't bother most hunters—in fact, it's a nice safety feature—but it does slow down target shooters who would appreciate having the self-cocking feature. Other than the modifica-

tions noted, the internal parts of the Uberti replica look as if Winchester could have made them, and I don't know of a better compliment.

In another variation from Winchester, Uberti uses the later High Wall coil-type mainspring to power the hammer; however, curiously they have retained the early Model 1885 under-barrel leaf spring as a lever-tension spring. Disassembly Instructions These basic steps will work for disassembling all Model 1885 Single Shots including the Winchester Model 1885

WORKING THE WINCHESTER 1885 SINGLE-SHOT RIFLE CONTINUED

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High-Wall and Low-Wall, the Browning Model 78, as well as the Uberti. Unless otherwise noted, I've used Uberti's parts nomenclature here, and the schematic drawing is courtesy of A. Uberti. 1. Start by making sure the rifle is unloaded. Grasp the rifle around the barrel and forearm wood with your left hand, being careful to point the muzzle in a safe direction. Open the action by pulling the finger lever (#89) all the way down with your right hand.

Examine the barrel chamber to be certain there is no cartridge in the chamber. If there is a cartridge present, reach in and manually remove it out the rear of the barrel. I make a practice of removing any live ammunition to a location well away from my bench. 2. To remove the buttstock, forearm, and lever spring, start by unscrewing and removing the upper and lower tang screws (#62 and 63). Then you can pull the buttstock (#57) off toward the rear.

Unscrew and remove the forearm screw (#183) and remove the forearm (#68) by pulling it down first from the front and then towards the muzzle. Unscrew and remove the lever-spring screw (#124) from the underside of the rifle's barrel (#3). The Winchester (Uberti)

Model 1885 Single-Shot Rifle (Specifications subject to change without notice) 1 Frame 2 Hammer 3 Barrel 10 Trigger 15 Sight 19 Trigger Spring 20 Mainspring 26 Trigger Guard 35 Trigger Spring Screw lever spring (#92) is now loose.

Note that early Winchester Model 1885s made before about 1910 used a leaf mainspring that was mounted 55 Rear Assembly 57 Buttstock 58 Buttplate 61 Rear Sight Windage 62 Buttplate Screw 63 Tang Screw 68 Forend 79 Extractor 89 Lever 92 Right Lever Spring 95 Firing Pin Spring 97 Breech Block 98 Firing Pin 99 Trigger Pin 101 Lever Screw 107 Lever Pin 119 Rear Screw 124 Lever Spring Screw 129 Firing Pin Bearing 167 Trigger Guard Screw 172 Forend Cap 174 Sear 175 Sear Spring 177 Block Pin 178 Hammer Pin 179 Sear Pin 182 Tenon 183 Forend Screw 217 Buttplate Gate Assembly 231 Buttplate Gate Spring 232 Buttplate Gate Screw 245 Bushing 294 Knock-Off 363 Sear Spring Screw 449 Link Pin 617 Link 661 Firing Pin Bearing Screw 662 Lever Spring Tenon under the barrel in the same fashion as Uberti's lever spring.

The early Winchester spring powered the lever and the hammer.

WORKING THE WINCHESTER 1885 SINGLE-SHOT RIFLE CONTINUED

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This allows access to the firing pin. 3. Disassemble the action by unscrewing and removing the two triggerguard screws (#167) from each action side. (Winchester called these “side tang screws.”) Now pull the triggerguard (#26), known as the “lower tang” on Winchesters, off the receiver toward the rear. Unscrew and remove the lever screw (#101). Winchester called this a “finger lever pin stop screw.” Now use a pin punch and hammer to drift out the lever pin (#107).

Pull down on the finger lever and, while holding the sear (#174) to the rear, remove the breechblock/hammer/lever assembly out through the bottom of the breechblock opening in the receiver. The extractor (#79) is now loose and will fall out the bottom of the receiver once the breech block is removed. Be sure to pay attention to how these parts fit together for later reassembly.

The breech-block (#97), hammer (#2), and finger-lever (#89) are disassembled by first removing the two large axle pins. (Drive

them out with a pin punch and hammer.) Uberti makes use of a coiled mainspring which is similar but simpler in design to the coiled mainspring used on post-1910 Winchester single-shots. For further breech-bolt disassembly, unscrew and remove the two firing-pin bearing screws (#661) from the front face of the breechblock (#97).

The firing-pin bearing (#129), the firing-pin spring (#95), and the firing pin (#98) can now be withdrawn from the front of the breech block. On Winchesters, remove the firing-pin retainer screw from the top of the breech block, and then the firing pin can be removed out through the rear of the breech block. 4. Disassembly of the trigger mechanism comes next.

The sear portion of the trigger mechanism is mounted in the upper-rear area of the receiver frame (#1) itself, but the trigger portion is mounted within the triggerguard. Unscrew and remove the searspring screw (#363) and the sear spring (#175) from the

underside of the receiver’s tang. Using a cup-tipped pin punch and a small hammer, drive out the sear pin (#179) from either side of the receiver. The sear (#174) can now be removed out the bottom.

Pay careful attention to the positioning of the sear for later reassembly. Unscrew and remove the triggerspring screw (#35) and the trigger spring (#19). Winchester called this the “knock-off spring.” The trigger (#10) and the knock-off are removed by first driving out their respective pins from either side of the triggerguard using a cup-tipped pin punch and hammer. Be sure to pay attention to the relationship of these parts for later reassembly.

That’s all there is to the disassembly. (I told you this rifle was simple.) Reassembly, as you might expect, is in the reverse order of the steps above. I

MACHINING

Reader Forum

BY AMERICAN GUNSMITH EDITORS FEBRUARY 2009

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Seeing Employment I recently reread your comments to Preston on “Learning Precision Machining” in the July 08 issue. I was interested in your comments about joining the American Pistolsmiths Guild and the American Custom Gunmakers Guild. I am a graduate of Trinidad State Junior College’s gunsmithing program, and many years prior to that I completed the North American Correspondence Schools “Gun Pro” program. I am currently working as a machinist and have been for the last few years.

I am finding it hard to find a gunsmithing shop that will hire a gunsmith without 3 to 5 years of prior experience. So until I do I will continue to work as a machinist and just be satisfied to tinker in gunsmithing. Back to the root of my question. Is there an advantage to being a member of either or both of these guilds, other than just the status of being able to say that you’re a member? Is there is an advantage to me in my position? How do I make contact with these guilds?

Any other suggestions you may have that might help me find a position in a gunsmithing shop would be appreciated. Thanks for your time and attention. Bob

Obarska Yakima, Washington The requirement for full membership in either guild is the submission and acceptance of gun work you have personally performed. This work is judged by senior guild members acting as inspectors. With the Pistolsmiths Guild, handguns you have accurized are submitted.

With the Custom Gunmakers Guild, you submit a rifle or shotgun you have fundamentally built and finished from purchased components or components you have machined yourself. (Note: In the latter case, a Manufacturer’s FFL would be required to keep everything legal.) With either guild, if your work is judged worthy you are offered membership. There is considerable industrywide prestige and respect to be gained from such memberships.

Other advantages include free access to the knowledge and expertise of fellow members and, with the Gunmakers Guild, one of the most extensive reference/technical libraries in existence. Whether membership in either guild will help you find employment is a question we can’t answer. We can say: It wouldn’t hurt. Your graduation from Trinidad should be a great advantage in finding a gunsmithing position.

READER FORUM CONTINUED

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There was an article in the November 08 issue about the success of the annual Gunsmith Career Fair sponsored by Brownells. The 2009 event will be held April 17th and 18th in Altoona, Iowa. Attendance is limited to gunsmithing students, graduates of gunsmithing schools, and practicing gunsmiths. Firearm manufacturers and manufacturers of firearm-related products with employment opportunities will be in attendance. We strongly recommend you send an email to or call Jamie Reed at Brownells and sign up.

Be sure to mention you area Trinidad grad. For additional information on the guilds, write to Marc Morganti, Secretary, American Pistolsmiths Guild (c/o Gemini Custom, LLC, Frankfort, KY 40601; american-pistol.com) and to Jan Billeb, Executive Director, American Custom Gunmakers Guild Cody, WY 82414). Reloading Troubles My reloads are showing pressure signs. This is a load I have used for some time and have never had trouble with it in this rifle. I have checked all the components and everything is correct.

What could be causing this? Willie Knox Baton Rouge, Louisiana It's possible for a reloader to create a headspace problem with his reloading dies. Most reloaders assume that if they screw their full-length sizing die

down against the shell holder, everything is correct. Not so. There has to be manufacturing tolerances on all things machined. As a result, when you screw the die down against the shell holder, you may be forcing the shoulder of the case back when you resize it.

On rimless cases, the case is headspaced on the shoulder. If the shoulder is forced back because of this condition, you have created headspace. To correct this problem, adjust the die as follows: Use lamp black or candle soot to blacken the neck and shoulder of a case fired in the rifle. Back the loading die off several turns and size the case. When the case is withdrawn from the die, you will be able to see where the black is wiped off the neck of the case.

Now adjust your die a little at a time until the die comes down just to the top of the shoulder. Then try the case in the chamber. If it chambers without resistance, your dies are now set up to produce zero-tolerance loads for that particular rifle. Taking Down the Ruger P95DC I have a Ruger P95DC in the shop that suffers intermittently from light primer strikes. Sometimes it will fire with a second trigger pull, other times not at all.

The primers are being very lightly indented, leading me to believe there is a problem with the firing pin/spring/firing-pin tunnel. This seems to be a pretty simple action, but this is my first time working on one. My problem is that I am unable to remove the right-side decock lever. I've removed the rear sight, firing-pin block, and the decock-lever return Vspring.

The left-side lever removes easily, but the right side actually contracts the firing pin and will not come out, and I cannot remove the firing pin until it does. Is there a detent of some type I can't see holding the lever in or a special process required? Thanks. The P95DC has a polymer frame and does not take down as simply as some of the other P-Series Ruger pistols.

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(continued from previous page) Removal of the rear sight and firingpin block are unnecessary. What should come off first is the extractor, which is retained by a spring-andplunger pin like those you've seen on watch bands. The right-hand safety comes off before the left-hand safety, and after the decock-lever spring is taken out. Removal of this spring is a problem even attendees of Ruger's armorers school wrestle with. A crosspin retains the spring and it's a bear to get out.

The pin must be depressed while a small screwdriver is maneuvered to grab and push it out. From your message, it sounds like you've already eliminated the lever spring. If so, congratulations on overcoming this troublesome process on your own. Now try the proper sequence for safety lever removal. If that fails, we think the pistol should be sent to the Ruger facility in Prescott, Arizona, for repair. Loose Winchester Model 12 I have a customer's Winchester Model 12, a 12-gauge pump.

It's old and has been used a lot for trap and skeet shooting. When I fire it, the bolt breaks open maybe a quarter to a half inch all on its own. All you have to do then is complete the travel to the rear with the forestock. It locks into battery well. I've never experienced this before, and want to repair it for an old friend if I can. The "lock

plunger"/slide release does have a small indent and a small amount of peened/flared metal on the front tip of the part.

I am thinking this might be the worn part and the source of the problem. We hope the problem is something simple like not keeping a grip on the forend or pulling back on it after shooting. (With the Model 12, the forend moves forward under recoil.) To check for more complex causes, look into a poor mating between the front of the action-slide lock and the rear of the action-slide arm, and check for a loose spring on the action-slide lock. In rare cases, the mag-tube band, which is silver soldered on, comes loose.

For any Model 12 parts you may need to replace, contact Nu Line Guns Erma 22 Parts? I have two (not one but two) Erma 22s in the shop with the thumb safeties flopping back and forth; in other words, no spring and ball. These are later production, very pretty guns with wood grips. They look a lot like Lugers. And except for the pot-metal receivers, they look to be well made. I took one of them down using the NRA disassembly book, removed the bolt-lock pin, bolt, barrel, and separated the upper receiver from the lower receiver. This let me see the safety shaft secured in back by a menacing snap ring with a hole in each end (for a fixture?) that will come half-way off. But I got scared.

The snap ring is the trigger block, and I can see no really good way to reassemble it on the back of the safety shaft once it's off. And this would have to hold anew spring and ball in the safety lever in place also. Can you give me some advice? Thank you! I have two of them to do. This is a sticky wicket you're trying to get through. Our search of the internet found no parts available for this pistol, but provided plenty of evidence that the Erma .22 is prone to breakage.

Before you give up, check with Bob's Gun Shop for parts. The next bit of bad news is that the gun does not disassemble and reassemble like the 9mm Parabellum Luger—even if it looks similar. The technically correct name is the KP-69 (aka Beeman P-08), and it's been out of production since 1986. The pot metal you refer to is probably a zinc alloy. The last known importers were Beeman Precision (in Santa Rosa, California) and Mandells Shooting Supplies (in Scottsdale, Arizona).

Neither of these companies are listed in the most recent Shooting Industry Guide. It's possible (but unlikely) that parts from the Stoeger Luger .22a far better pistol would work in the Erma. The current owner of Stoeger is Benelli USA. If you run out of options, they might be able to help you.

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