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INSIDE THE ARCHIVE

WORKING THE WINCHESTER MODEL 1873/1876 AND MODERN REPLICA

OBAMA SHOWS ANTI-GUN CARDS EARLY • DISASSEMBLY AND REASSEMBLY OF THE RUGER P345 PISTOL • SOLVING AC...

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 061

DIGITAL ARCHIVE EDITION

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FROM THE ARCHIVE

Obama Shows Anti-Gun Cards Early

BY AMERICAN GUNSMITH EDITORS JANUARY 2009

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According to the National Shooting Sports Foundation (NSSF), firearm sales in 2008 rose 10 percent over 2007, and ran 15-percent higher in October alone. And these figures might be on the low side. My friends at Passport Holsters saw a 30-percent increase in the second half of 2008, which shows every sign of continuing into 2009. Clearly, it's gun-owners' concerns about anew administration in Washington that have been fueling the boom in firearms and accessories.

Personally, I've been resigned to a less gun-friendly president (and Congress) since the night of the election, but I'd hoped the Obama/ Biden team would have more important issues on their agenda (like the economy, maybe?) that would keep them occupied for awhile. And I had assumed that, as smart as Barack Obama seems to be, he'd be smart enough to wait until after he was reelected in 2012 before he started polarizing the people with unpopular legislation.

But apparently, in my rush to give him the benefit of the doubt, I overestimated both his intelligence and his commitment to unite the American populace with solutions to problems that actually exist. He hasn't even taken office yet, and last week, his administration's agenda for curtailing the Second Amendment rights of law-abiding Americans was posted on his website. Curiously, the Obama/Biden gun-control agenda is missing from the website today, as we go to press.

So maybe there is someone in his entourage smart enough to realize that he should at least wait until he's inaugurated before he starts alienating people.

In any case, President-elect Obama has stated that he is opposed to concealed-carry laws; he's stated that he would make permanent the expired "assault-weapons" ban of 1994 that banned firearms based on cosmetic appearance; he's promised to repeal the Tiahrt Amendment, which restricts

public access to sensitive, lawenforcement-only firearms-tracing data; and he's called for "childproofing" all firearms.

And perhaps most telling of all, he's appointed Rahm Emanuel, the chief architect of the Clinton/Gore guncontrol agenda, as his chief of staff. For what it's worth, Mr. Obama, I have some advice for you: You would never have been elected if it weren't for the votes of millions of law-abiding American gun owners. Those gun owners elected you to fulfill your promises.

Those promises were to fix the economy, stabilize the housing and stock markets, restore our standing in the world community, create jobs, ensure social security, and help us provide affordable education for our children. Keep those promises and you will go down in history as a great American president. But you were not elected to rewrite the Constitution. Mess with the Bill of Rights and you will quickly become less popular than your predecessor. Editor Keith Lawrence Technical

PEOPLE & COMPANIES

Disassembly and Reassembly Of the Ruger P345 Pistol

Whether it's with or without the accessory rail, both versions of this pistol are taken down and put back together in exactly the same way.

BY CHICK BLOOD JANUARY 2009

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Some pistols, primarily those showing up on law-enforcement and military duty belts, wear Picatinny-type rails from which flashlights and laser devices are suspended. You seldom see a Picatinny rail on a handgun purchased for civilian personal defense or concealed carry...too bulky. I'm not about to start an argument with a SWAT team or a Special-Ops squad, but there's a school of thought that warns against hanging a light source under a muzzle.

Reason being, that light reveals the position of the individual carrying the gun. Moreover, if the beam happens to be emanating from a laser, it will not reach its point of aim if it's raining, snowing, foggy, smoky, or if a cloud of dust gets in its way. Then there's the possibility that the batteries for the device have died, and the shot must literally be taken in the dark.

These, in any case, are the reasons why I've always stressed extensive practice with lower no-light glow sights for my law-enforcement customers, and why I encourage civilians to rely solely on their use. Sturm-Ruger, of course, did not consult with me on my concerns about lights and lasers, but I'm sure we're in agreement that a .45 will top a lesser caliber any day for

duty or personal defense. They decided to produce a .45 that could find a home in either market, and the result was the P345 introduced in 2004.

Two models are made. The P345PR has the Picatinny-style rail and the P345 does not. Other than this appendage, both pistols are mechanically identical. Neither, at this time, is available with a decocker feature. I understand low demand was the reason. Field Stripping The chamber is empty, the magazine has been taken out, the safety is "on," the muzzle is pointed in a harmless direction, and you're wearing eye protection. Right? Good. Now we can get started.

Pull the slide fully to the rear and lock it there by pressing upward on the slide stop (#54). Keep pressing upward on the stop, and insert the eraser end of a pencil into the ejection port to push the ejector (#46) down and forward until it locks in its lowered position. (Fail to do this and you can go no further.) Take a firm hold on the slide and press down on the stop. Ride the slide slowly forward until the vertical index mark on its left side aligns with the disassembly nub on the same side of the frame.

This small projection is located above the leftside grip. Push inward on the right-

DISASSEMBLY AND REASSEMBLY OF THE RUGER P345 PISTOL CONTINUED

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hand end of the stop and remove it to the left. Keep the slide under control as you move it forward and off the frame. Invert the slide, and lift up on the camblock/recoil spring assembly (#27 to 30) to dislodge it from the barrel lug (#31) and withdraw the assembly to the rear. The barrel, now disengaged from the assembly, is removed in a similar manner. This is as far as the owners' manual advises a P345 owner to go. Hopefully, your customers will take that advice to heart.

But if they're anything like my customers, they probably won't. You'd be surprised how many plastic bags full of brand new parts arrive at the Ruger factory repair center every week. On the other hand, maybe you wouldn't. Detailed Disassembly And Reassembly Tips You must have noticed it by now. The rear sight base has a set screw. Loosen but do not remove the set screw. There are several small things hiding under the sight base.

Among them are the firing-pin block plunger (#10) and the magazine-disconnect spring (#7). If you take the set screw out completely before moving the sight base from left to right, the plunger will enter the vacated hole and stop you in your tracks. Sure, you might be able to bulldoze the base and keep the sight moving. Don't. You'll lose the magazine-disconnect spring to a flight of fancy.

So go easy, move the sight only enough to reveal the plunger, place your finger over it, move the base a little more, and control the upward thrust of the plunger spring (#9). Repeat this action with the disconnect spring before pushing the base from the slide. It's okay now to lift out the loaded-chamber indicator (#5) and its spring (#4). Both are also held in place by the rear-sight base. Now you can go after parts #7 through 10. You're now ready to address the extractor-pivot pin (#3).

This is a roll pin so arm yourself with a roll-pin punch and don't drift the pin out all the way downward. When the extractor (#13) has been pushed outward from the slide by its spring (#14), None of the springs in this pistol can be called a "pushover." How each one interfaces with its related parts must be carefully studied prior to removal. you've gone far enough.

In addition to making reinstallation of the pin easier, leaving it partially installed eliminates a problem with this type of retainer: Roll pins tend to shrink after going through repeated take outs and no longer fit as tightly as they should. At this point make sure the safety is still "on" and the slide inverted. Your objective is the safety-lever retainer (#16). On one end of the retainer there's a slot. The straight end of the retainer spring (#15) rests in this slot.

Lift the spring from the slot and push the retainer out from right to left. Then lift the bent end of the spring from the left safety (#19) and remove the safety in the same direction. Note the two pins attached to the safety. The upper one goes through the hole in the safety strut (#17). Upon removing the safety, the strut will drop from the slide. Afterwards, you can pull out the right safety (#18). The firing pin (#26) and its spring (#25) are removed to the rear.

Inside the left safety area detent spring (#20) and plunger (#21). It takes a set of thin, long-nose pliers to extract them, but I suggest you don't. The story is much the same with the locking safety assembly (#22, 23, and 24). These parts work together to defeat the firing system of the pistol when the internal locking key (#57) is inserted in the frame and turned. Yes, it's possible to get the locking assembly out of the slide by driving out the locking pin, but a big-time problem occurs if you do.

You'll break off the "ears" on the pin. What you break you will have to replace, or you'll have to hand the pistol back to its owner without its internal locking system' a definite no-no. As for removing the front sight, it drifts from left to right. However, at the factory the sight is installed with a press, and you know how tight press-fits can be.

DISASSEMBLY AND REASSEMBLY OF THE RUGER P345 PISTOL CONTINUED

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1 Slide 2 Front Sight 3 Extractor Pivot Pin 4 Loaded Chamber Indicator Spring 5 Loaded Chamber Indicator 6 Magazine Disconnect 7 Magazine Disconnect Spring 8 Firing Pin Block* 9 Firing Pin Block Spring* 10 Firing Pin Block Plunger* 11 Rear Sight Assembly 12 Rear Sight Lock Screw 13 Extractor* 14 Extractor Spring 15 Safety Lever Spring 16 Safety Lever Retainer 17 Safety Strut 18 Safety, Right 19 Safety Assembly, Left 20 Safety Detent Plunger Spring 21 Safety Detent Plunger 22 Lock Pin 23 Lock Plunger Detent Spring 24 Lock Detent Plunger 25 Firing Pin Spring 26 Firing Pin 27 Recoil Spring 28 Buffer Spring 29 Camblock 30 Slide Stop Detent 31 Barrel* 32 Trigger Bar Spring 33 Trigger Bar* 34 Trigger 35 Trigger Plunger Spring 36 Trigger

Plunger 37 Hammer Assembly* 38 Hammer Pivot Pin 39 Magazine Latch 40 Trigger Pivot Pin 41 Blocker Lever* 42 Sear Spring 43 Sear* 44 Ejector Spring 45 Ejector Pivot Assembly 46 Ejector 47 Magazine Latch Spring 48 Hammer Spring Seat 49 Hammer Spring Detent Ruger P345 Semi-Automatic Pistol (Specifications subject to change without notice) 50 Hammer Spring 51 Hammer Strut 52 Hammer Spring Seat Pin 53 Sear Pivot Pin (2) 54 Slide Stop Assembly 55 Frame w/Accessory Rail Frame w/o Accessory Rail (not shown) 56 Magazine, Complete (8 Shot) 57 Internal Lock Key *Factory fitting required.

Note: Factory numbers appear in the owner's manual, and are obtained from Sturm-Ruger

DISASSEMBLY AND REASSEMBLY OF THE RUGER P345 PISTOL CONTINUED

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This is normally the time in a pistol article when I'd move on to the frame disassembly. I'm going to depart from my usual format, however, and discuss reassembly tips for the slide first. When placed back in the slide, the lug on the right side of the firing pin must face to the right because it interlocks with the right safety and the right safety holds the firing pin in place. But not so fast; the flange on that safety mates/aligns with its groove on the slide.

The upper pin of the left safety goes through the safety strut and enters the upper hole in the right safety. Of course, this means the lower-left safety pin engages the bottom hole in the right safety, so take care when lining up the safeties. Invert the slide again and place the safety "on." Reinstall the bent end of the safety-lever spring in the left safety and start in the safety retainer. Depress the short leg of the spring so you can push the retainer over it and through the spring coils.

The short leg of the spring has to engage its cut in the retainer when you let up on the pressure on it. Once that's happened, push the retainer all the way in the slide. When re-securing the extractor and its spring with their pin, make certain the pin is either perfectly flush with The two must be aligned prior to field stripping in order to remove the slide stop. or slightly inside the level of its

hole in the slide. This will avoid any dragging against the frame. Reposition the slide right-side up.

The firing-pin block, block spring, and plunger are next in that order. They're followed by the loaded-chamber indicator, magazine disconnect, and disconnect spring. To get them all in the slide, turn in the rear sightbase set screw until it's absolutely flush with the bottom of the base. Push down on the block plunger and move the sight from right to left to capture it. Depress the disconnect spring with the blade of a small screwdriver and move the base to capture it.

Now that you have all the bits and pieces trapped beneath it, carefully drift the base into alignment with both sides of its dovetail. Turn in the set screw, but not too tightly. Still not reinstalled are the barrel and camblock assembly. The recoil spring is smaller at one end than the other. The small end has to be fed onto the bushing first or the pistol will stop working. The fit will be snug between bushing and spring. The bushing and camblock itself are pressfit.

The slide-stop detent has atop and bottom side. Its hooked ends are to be positioned downward and find a home in the slide stop to retain it. Okay, now I'm finally getting around to the frame. After you drift out the sear-pivot pins (#53), the ejector will pop up. Good news here; these are not roll pins and can be moved from either side. Once they're

out of the frame, you could forge ahead to take out the sear block (#43) and its spring (#42). Not forging ahead is the right thing to do, however.

First memorize how the spring engages the sear block and the blocker lever (#41) before disturbing them. As a matter of fact, before removing any spring in any gun, it's a good idea to commit to memory or make a rough sketch of how it relates to the parts it acts upon or engages. Drift out the trigger pivot (#40) left to right, but when you do, take care not to lose the trigger plunger (#36) or its spring (#35). They're going to be taken out in a few minutes.

The front end of the trigger-bar spring (#32) is seated in the frame. Raise it out of there. The spring's opposite end, the small circular one, will probably remain attached to the bar. It's more or less secured in a small groove located within the inverted Ushaped cut toward the back end. Once the trigger (#34) has been slid off the trigger-bar stud, the aforementioned plunger and spring can be plucked from the trigger with your fingertips or a pair of tweezers.

A delicate touch is suggested when separating the spring from the trigger bar. You may want to temporarily secure the frame between protected vise jaws, since what follows could require two free hands. The ejectorpivot assembly (#45) has a plunger at

DISASSEMBLY AND REASSEMBLY OF THE RUGER P345 PISTOL CONTINUED

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B A both ends. These fit into small holes on each side of the frame. Press down on the pivot and in on both plungers to free the ejector for a lift out. Pause and take a magnified look at how the ejector spring (#44) is positioned. If you fail to reinstall it exactly as described later on, the ejector will not work. For the moment, concentrate on the hammer-strut seat pin (#52). It's under considerable pressure from the hammer spring (#50).

Take a firm hold on the upper frame, place its lower rear section on your bench top, and press down on it to force the hammer-spring seat (#48) upward. This will reduce pressure on the pin and you can push it out with a 3/32inch punch in either direction. Ease off the spring seat to prevent loss of the hammer-spring detent (#49) and the hammer spring. When they're out of the way in the grip frame, the hammer strut (#51) will fall out.

Moving right along, tap the left side of the frame with a nylon or rawhide mallet to jar the hammerpivot pin (#38) to the right. Pull the pin to the right side with your fingertips, remove the hammer (#37), and locate the magazine-latch spring (#47). Its top end is slipped into a very small hole on the right side of the frame above the trigger

guard. A 1/16-inch punch is used to maneuver the spring out of the hole, and then lift it upward and out of the frame.

As soon as you do this, the magazine latch (#39) will fall out. Take note of another very The trigger pin extends through the frame; the hammer pivot does not, and should be fully seated in its recess as described in the text. This is how the assembly should appear after reinstallation in the pistol. small hole in the body of the latch itself. Into that hole will be inserted the straight leg of the spring on reassembly. I'll address that operation and some other frame-reassembly tips next.

The magazine latch is installed from the right. Starting at the top of the frame, thread the long leg of the latch spring into the latch hole. Press the spring into its groove in the right side of the frame with your index finger to keep it in place. Reemploy the 1/16-inch punch to get the upper end of the spring back into the hole it came from. If your finger is too thick to make this happen, no problem; forget the finger and partially install the magazine to retain the spring while you see to that bent end.

When putting the hammer back in, grasp its top end, insert the bottom end into the magazine well, lift it up and to the rear, then align and install its pivot. One part of

the hammer assembly isn't shown on the schematic. It's a small roll pin near the hammer base. Don't remove it. The upper end of the hammer strut has to engage this pin, so start with the frame upside down. Place the hammer spring on the strut, and pick up the hammer spring detent.

You've probably noticed the detent has one flat and one domed end, but in case you haven't, this is important: The domed end is the end that goes into the hammerspring seat. Unless it does, reinstalling the seat pin is impossible. What I say to do next might sound like it's coming your way a little late in frame reassembly. Not so. When you installed the hammer pivot, did you seat it fully on the right side of the frame? Are you sure? It may look as though you did, but assurance is required.

Tap the head of the pivot with a rawhide mallet. Now you're positive. From here on, things become a little trickier and more complex. Preassemble the ejector with its pivot pin through both coils of the spring. The long leg of the spring has to be positioned as shown on the schematic. Cutouts in the frame accommodate both pin plungers. Grasp the ejector at its top, and pull it toward the rear of the frame.

When the plungers snap into their cutouts, the ejector is back in'as long as the longer leg of the (continued on page 21)



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spring doesn't enter the magazine well from its intended location in the frame. Pivot the ejector forward before hooking up the back loop of the trigger-bar spring into its bar cutout and sliding the bar into its frame slot. Reattach the front end of the spring to the frame. Spear the trigger with the stud on the bar. You may want to rest the frame on its left side while you replace the spring and plunger in the trigger.

Hold or tape them temporarily in place, align the trigger and trigger-pivot holes, move the frame to upright, and start in the pivot pin. It has a notch in it put there to engage the plunger. Depress the plunger with the 1/16-inch punch, move the pin in further until the notch and plunger align, and then pull the punch. The ejector remains forward. Hold the upper end of the blocker lever between your fingertips. The little stud on the top rear of the trigger bar and the lower notch on the lever have to mate.

Align the related holes and install one sear pin flush with both sides of the frame. Pick up the sear between the same fingertips by its top, align all holes, and start the second sear pin in until it's flush with the inside of the sear. There's a slot for the straight end of the spring at the back of the sear and a small notch for the bent end of the spring on top of the blocker lever. More tricky stuff is just ahead. You can't muscle the spring into submission.

You have to maneuver it at an angle so you can drift the second sear pin through the spring coil and onward to a flush meeting with the right frame. All this sounds like it'll result in a pounding headache, but the P345s frame reassembly is actually easier than that of the older P85.

I

FROM THE ARCHIVE

Solving Accuracy Problems: First Check the Fit of the Grip

Many times, what a shooter believes is an accuracy problem is simply a case of a gun that doesn't come naturally to a point. Thus, the first thing to look at is the grip.

BY GERRY RITACCO JANUARY 2009

ORIGINAL PP. 8-10

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Sometimes, poor accuracy is attributed to a gun or its ammunition, when the problem may be something much more basic; namely, the way the gun physically fits—or doesn't fit—the shooter's hand. My intention here is not to address all the areas associated with “fitting” a gun to a given shooter, but rather to offer an example of one of the most overlooked areas, the grip and the grip-to-barrel relationship. This, in fact, is what determines if a gun shoots naturally where it's pointed.

There are many styles of handguns and many different grip styles, some with changeable backstraps that determine how the gun fits the hand. It's the relationship between the barrel and the grip and how this relationship is maintained in the shooter's hand that determines how well a gun “points.” Think of the relationship this way: When you point at an object with your index finger, whether you're right or left handed, your finger points to exactly where your dominant eye is looking.

This is a function of hand-eye coordination, which is something we all started to learn as children. You can help a customer determine which eye is dominant by having him point at an object with both eyes opened.

Then have him close one eye at a time and look at the object with the other eye. The eye that is in line with the finger and the object is the dominant eye.

I've found that, in order for a gun to maintain this coordinated picture between the hand and eye, the gun's barrel must point in exactly the same direction as the shooter's finger does when he points at an object. This is where the fit of the grip comes in. A proper fit of the grip actually helps in two areas: First, when shooting instinctively, and second, when trying to acquire a sight picture. Instinct shooting, of course, involves shooting without a sight picture.

The Western-style point-and-shoot show-down, such as shooting from the hip, is a prime example. Close-quarters tactical shooting or shooting in lowlight conditions when the sights can't be seen is another example of a case where the gunner must simply point instinctively and shoot.

Even when the sights can be plainly seen, if the gun points where the index finger naturally points, it's easy to imagine how much less wrist adjustment is needed to line up the sights with the target, and thus target acquisition is faster and easier. The eyes are

merely verifying that the gun is pointing at the correct spot, and improved accuracy is bound to result from a proper fit and a gun that points naturally.

So, the next time a customer asks a question like “can you make my gun more accurate?” or makes a statement like “this gun just doesn't feel comfortable in my hand” you should be wondering if what you're dealing with is a “fit” problem. The project detailed in this article provides a good example of properly fitting a gun to the hand. The fit of this revolver was so remarkably poor that it does a great job of illustrating the problem and at least one possible solution.

You'll probably find that most revolvers and semi-autos are not this far off, but the principles for correcting the problem are exactly the same. Of course, fit is an individual thing and what may be way off in one person's hand may be a perfect fit in someone else's. This classic Western revolver, however, didn't properly fit anyone's hand that had tried it! Take a look at the first photograph. The flare at the bottom of the grip along the backstrap is typically Western, although it is seen on some other

SOLVING ACCURACY PROBLEMS: FIRST CHECK THE FIT OF THE GRIP CONTINUED

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Above left and types of revolvers such as duty guns. The shape of the grip is what determines how the gun fits the hand and where the barrel points in relationship to the index finger. This may sound obvious, but apparently it is not obvious to all gun makers or all gun owners.

The way to identify a grip problem is to have your customer hold the gun as if ready to shoot, with the finger on the trigger as shown in the second set of photographs. (Make sure the gun is unloaded and pointed in a safe direction.) Have the customer withdraw the trigger finger while maintaining his grip and let the gun point in its natural, relaxed direction.

At this point, you might want to measure the angle between the pointed finger and barrel using a protractor, or mark the angle by taping a couple of pencils onto a piece of paper at that same angle, which you can measure later. This will tell you how much “tilt” needs to be removed and gives an indication of the modifications needed to get the proper fit. As you can see in the photograph, the gun points high or up from where the finger is pointed.

Thus, if the shooter tried to point and shoot naturally, the shots would go high. Even trying to align the sights would re- The extreme “flare” on the original grip is the cause of the misalignment between the trigger finger and

barrel. require an abnormal amount of wrist movement to compensate for the grip angle, which would be difficult and possibly even painful to maintain. Accuracy, in that case, would be sure to suffer. So, how can this problem be corrected?

The approach I took with this Western-style pistol will work with most revolver frames, but similar modifications would not be as easy with a semi-auto because of the mechanisms in the grip-frame area. Nevertheless, this approach should trigger some ideas (pun intended) and may help in getting the correct fit for your customer. The next photos show a “bird’s-

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head-style' grip next to the original grip, showing the difference along the backstrap. Notice the flare of the old grip. This flare is what forces the hand to be at the wrong angle to the barrel. The solution here was to remove the flare and install the bird's-head-style grip, which curves in the opposite direction. In this case I purchased anew backstrap to modify, which was easier than trying to recreate the upper portion of the backstrap where it attaches to the frame.

I cut the backstrap just before the point where it began to flare, and attached a frame I made of cold-rolled steel. This was blended into the cut backstrap, and attached with two countersunk #6-32 button-head screws and some urethane glue. The new shape produced an angle that was much more natural in the shooter's hand. Also, the original gun did not feel "balanced" because the original grip frame and trigger guard are made of aluminum alloy and the remainder of the gun is steel, making it top heavy.

So, making the grip frame from the heavier steel and lengthening it by about 3/4 inch to fit the hand better also produced a better balance. The final photographs

show the results with the new grip in place. The gun now points in the natural direction of the pointing finger; the shooter's hand is in a comfortable, relaxed position while holding the gun; and the line of the knuckle is inline with the barrel.

In other words, the gun now points just like the index finger, and the bullet tends to go where the shooter instinctively points. Also, when using the sights, there is no more contorting of the wrist to get the barrel lined up with the target. This is what you want to accomplish for your customer.

In this case, the gun owner didn't want to detract from the original design and value of this pistol in the event that he choose to sell or trade it at a later date, so the new grip frame was made to mount utilizing the same front strap (part of the trigger guard) and mounting holes. This is something to consider when making modifications to a gun, as some changes could render the gun a "one-owner" pistol.

You should make your customer aware of this as many people might rather trade for anew, better fitting, pistol rather than diminish the value of what they have by making permanent changes. This pistol can be returned to original at any time and the owner will keep the original grip. Try to accomplish this whenever possible. Your customer will appreciate having a better fitting gun that hasn't diminished in value.

The new grip panels I used here are two pieces that replace the original one-piece grip, but this was my decision and I could have gone the other way. I made these grip panels as well, but you can probably find offthe-shelf grip panels and shape anew frame to accomplish the same thing. This is where you can use your imagination, especially if you have the ability to do your own woodworking.

Although I haven't run across such a case, it's reasonable to assume that a poor fit between grip and hand could cause the barrel to point down from where the index finger naturally points, instead of up as in this example. In this case, you would have to correct the problem by adding material where I removed it from this gun, bringing the barrel up into alignment with the index finger. How can we accomplish the same thing with a semi-auto pistol?

First, as previously discussed, when a customer brings you a pistol you should check to see where the barrel is pointing in relation to their index finger. Semi-autos are not as likely to have an exaggerated problem like this Western-style pistol, but the same problem can still exist. Also, keep in mind that the smaller the pistol, the shorter the sight radius, and thus a small amount of misalignment can really affect where the pistol points. Some of the newer pistols come with replaceable backstraps.

If this is the case and the ones offered don't give the proper fit, you may be able to modify one or make a custom backstrap. You can use modeling clay, tape, and strips of wood to temporarily build up a section of the original grip for a proper fit. The pliable clay also allows you to customize the grip to your customer's hand shape. Grip size and how the finger sets on and reaches the trigger are other things to consider when making these changes.

Conclusions When addressing accuracy problems, first check the fit of the gun in the shooter's hand. If you think you can improve the fit, set up a means of taking measurements needed for the modifications. If you can make temporary changes to see if the modifications will get the results he wants, all the better. Once you establish that the changes will work, you can make them permanent.

Some guns, of course, could be such a poor match to a shooter's hand that it may be more practical and cost effective to recommend a different gun altogether, but the fit of most can be improved with minor modifications. That's a decision that has to be left to you and your customer. I

ORIGINAL SOURCE PAGE

10

RIFLES

Tuning Up the Bold Premium Trigger for the Small-Ring Mauser

With some simple modifications, the inexpensive Bold trigger can be made to perform like triggers costing much more.

BY ROBERT COLES JANUARY 2009

ORIGINAL PP. 11-13

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“**m**I constantly fine tuning my custom-built Swedish M96 small-ring Mauser. This is a bench rifle so a very light trigger-pull weight is favorable. But trying to find a lightweight aftermarket target trigger for the smallring M96 can be frustrating, since most of the high quality target triggers on the market are for M98 large-ring Mauser. However, I discovered t small-ring Mausers, and I purchased the Bold Model #OP'94/96 with the outside safety.

The Bold trigger is of very good quality, highly adjustable, and proved to be quite easy to fine tune. My goal was to tune this trigger down to one pound of pull weight, and I was able to make it perform as well as triggers that cost three times as much. The Bold Triggers sell for under \$40 retail. They're made to fit rifles from various manufacturers as a dropin replacement, and they're adjustable for creep, overtravel, sear engagement, and pull weight.

The factory minimum pull on these triggers is 2.7 pounds, which is actually quite heavy for precise target or varmint work. I'll explain in a moment what I did to modify the trigger (while keeping all the needed safety functions). Keep in mind, however, that this modification will void the manufacturer's warranty.

Modifying the Trigger-Pull Weight It goes without saying (but I'll say it anyway) that the firearm must be unloaded when installing the aftermarket trigger, and at all times when any tuning is done on the trigger. Once the trigger is installed on the action using the instructions included with the Bold trigger for your specific firearm, you can proceed with the following tuning process. First remove the front upper Allenhead screw.

This is the creep and pull-weight spring tension. (On my trigger, I found this spring to have a slight burr on one end, which I cleaned 1 up.) To reduce the tension weight

of the spring (and thus produce a trigger lighter than 2.7 pounds), I slipped the spring over a small round screwdriver shaft so that it would spin freely, and ran it gently across my bench grinder to reduce the outside diameter of the spring. This must be done in small increments, so go slowly and feel your way along.

A pass across a wire wheel will smooth out any roughness on the spring. After that I lightly lubed the now-reduced spring with CLP (available from Midway USA) and reinstalled the spring, the Allen screw, and the lock nut. Next I checked the pull weight with a trigger-pull gauge, taking several readings and averaging them. I then adjusted the screw tension. I found that a one-pound pull weight was quite easy to obtain and locked it in on that setting.

If the pull was still too heavy after reducing the spring, I could have clipped a coil off one end (continued on page 15) 2 3

TUNING UP THE BOLD PREMIUM TRIGGER FOR THE SMALL-RING MAUSER CONTINUED

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of the spring to reduce it further. This spring is the only one I needed to modify to reduce the weight of the trigger pull. All of the other springs associated with this trigger were left unmodified and required only a bit of fine tuning. Adjusting Trigger Overtravel Overtravel is adjusted with the overtravel screw, which is the front lower screw. With the bolt locked in battery, you turn the screw in until the trigger is solid and will not move.

Then, keeping light pressure on the trigger, you turn out the screw until the trigger moves enough to release the sear, and then turn the screw out just slightly more to provide adequate clearance. Then you simply tighten the lock nut to hold the screw in position. This setting will prevent any added rearward movement from the trigger that could throw off the shot.

Adjusting Sear Engagement On the rear of the trigger is a very small Allen screw that is used to adjust sear engagement. (Turning the screw out increases sear engagement.) Again, with the bolt locked in battery, turn this screw out until the bolt will not lift to

open out of battery. Then turn the screw in until the bolt unlocks, and then in slightly more. With the sear engagement adjusted in this manner, you end up with more engagement than was set at the factory.

I felt the added sear engagement was not noticeable due to the now lighter trigger pull, but you can adjust for less sear engagement if slam fires are not an issue. Now, with the bolt closed in battery and the safety "off," give the action a few taps with a rubber or nylon mallet to try to "trip-release" the trigger. Also, open and close the bolt several times with quick hard strokes. If the trigger holds and will not trip, you're all set.

If the trigger trips, turn in the pull-weight adjustment screw (the front upper Allen screw) to increase the trigger pressure slightly and try again. When you have achieved the desired setting, apply a small amount of thread-locking compound to the adjustment screws to hold everything tight. I like to use Loc Tite #242, available at most hardware stores. This will hold very

well, but you can still remove the screws with hand tools at a later time if the need arises.

Conclusion/Recommendations I installed the Bold Premier Trigger on a custom M96 small-ring Mauser and tested it extensively at the range. The pull weight was fantastic (for a bench-rest rifle) at just one pound, with that "breaking glass" feel. The overtravel was set to prevent any excessive trigger jerk. Even with my modifications, the operation of the safety was of major importance, of course, but was never an issue.

A finely tuned trigger will only complement an otherwise accurate rifle; there are many other factors that combine to produce the ultimate accuracy including correct operation by the shooter. Nevertheless, with a little time and tinkering, a low-budget \$40 trigger can perform like one costing much, much more. Moreover, turning a budget trigger into a good performer will certainly impress your customer, and could mean he has more cash to spend on other accuracy modifications. I

SHOTGUNS

Scoping the Benelli Nova Shotgun

The Benelli Nova shotgun has a few unique features to consider before mounting a scope base, but these tips will make the job go smoothly and easily.

BY NORMAN E. JOHNSON JANUARY 2009

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The Benelli Nova shotgun's aluminum receiver bridge is covered by a fairly thick layer of plastic. It has a grooved flat surface across the length of the receiver that serves as a good place for a one-piece scope base, and, in fact, there are scope bases specifically made for the Nova model. So when a customer brought me his Benelli Nova shotgun with a number 428M one-piece Weaver base, I gave things a good look. He wanted a Red Dot sight installed on the shotgun, which is a good choice for slug shooting.

This sight fits the Weaver base, locking into one of the cross slots. On close inspection of the gun, there is ample aluminum thickness for scope mounting. The plastic coating over the receiver' albeit quite thick' offers no appreciable threadholding strength, but the cast aluminum beneath it is more than ample for

the #8-40 screws. The Weaver base is equipped with four #8-40 slotted 82degree flat-head screws of 0.585-inch length.

Only two of these screws can be used at full length, as the two rear screw holes must be tapped. The front two screws must be cut to 0.419 inch overall length to avoid contact with the barrel shank. There is sufficient aluminum material for thread depth for these two shortened screws. Mounting the Base The procedure I followed was to mount the receiver in my milling vise, and use the drill chuck for drilling and as a tapping guide.

I used a center drill for precise centering of the screws, maintaining linear travel of the milling bed to position each screw hole. A #28 drill was used as a tap drill for the #8-40 base screws. The two front screws, as mentioned, were shortened to an overall length of 0.419 inch. These screws must be inspected for length after each one is tightened. To

avoid weakening or stripping the threaded holes, the screws must not be over-tightened in the aluminum receiver material.

As a word of caution regarding tightening screws in aluminum, the following guidelines are a good place to begin: Any #8-40 screws in steel would be torqued to about 27 inch-pounds, while an #8-40 screw in aluminum should be more like 15-20 inch-pounds. This, of course, depends on how many threads are tapped in the screw hole. As a rule of thumb, the minimum thread depth in steel should be equal to the diameter of the hole. In aluminum, more is better.

The average person's hand strength is sufficient to break a base screw or strip the threads in steel, and certainly it would be easier to do in aluminum. Common sense goes along way here. While I did not use a thread-bonding com-

SCOPING THE BENELLI NOVA SHOTGUN CONTINUED

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This mounting system provides a rigid, trouble-free system that stays sighted under extreme hunting and shooting conditions. Conclusions Normally, scope-base mounting on a shotgun poses no problems. However, shotguns with aluminum receiver such as Loc Tite, it certainly would be a good idea where a heavier scope is mounted on a shotgun with heavier recoil. Iers of

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varying thicknesses require more attention to detail. Threads must be cut cleanly and to full depth for the maximum screw-holding strength.

A one-piece base adds rigidity to the mounting system, and #8-40 screws are preferable to the commonly used #6-48 screws. Properly mounted, these mounts will provide years of troublefree service.

HISTORY

Working the Winchester Model 1873/1876 and Modern Replica

The popularity of the classic Winchester lever-actions has been renewed and restored by a new generation of replicas.

BY DAVID R. CHICOINE JANUARY 2009

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Winchester's Model 1873 is well known to shooters today, and in fact is one of the few firearms that became an instant classic almost from the day it was introduced—not coincidentally—in 1873. The new Winchester '73 rifle was a real improvement over what had previously been considered the “world-standard lever action,” the original Winchester Model 1866 repeater, known to many as the Yellowboy for its brass frame.

The older Model 1866 was a great gun and very well liked, but its underpowered .44rimfire cartridge limited its usefulness. Like the Model 1866, the Winchester Model 1873 also used a tubular magazine under its barrel, but from the start the '73 was manufactured with an iron frame and was chambered for a more powerful new centerfire cartridge, the .44 WCF, or the 44-40 as it is better known.

The New Haven firm manufactured the 1873 Model for 46 years until 1919, when a grand total of about 720,000 weapons had been produced. Originally chambered for the .44 WCF, later versions of Winchester's Model 1873 were offered in .38 Winchester

(38-40) and .32 Winchester (32-20) center-fire WCF calibers. All of these rounds are also handgun cartridges, of course. Roughly another 19,000 Model 73s were also manufactured to shoot .22 rimfire caliber.

The majority of standard production 1873s were made in a blue finish, with the lever, hammer, firearm cap, and buttplate beautifully contrasting in a color-case-hardened finish. Some early guns (and a few made later on special order) were produced with an optional color-case-hardened receiver, with the barrel and magazine tube either blued or browned. Model 1873s were cataloged in a carbine configuration having a lightweight 20-inch round barrel or as muskets with a 30-inch barrel.

By far, however, the most popular version was the 24-inch barreled rifle, which came in both octagonal and round configurations with a half-round/octagon offered as an option. Winchester's Centennial model, the Model 1876, introduced three years later, was really sort of an over-Top of page: The Winchester Model 1873 was one of the most popular rifles of all time, a popularity

that has been revived by its modern replica. Pictured here is the Uberti Model 1873 short-rifle replica.

Author photos. sized and elongated version of the Model 1873. A large-framed repeating rifle, the 1876 was introduced to fill the need for a more powerful rifle than the 1873. Thus, the 1876 Model was chambered for many big-game cartridges of the day as well as a few rounds that Winchester introduced specifically for this rifle. The lineup included such powerful calibers as 40-60, 45-60, 45-75 and 50-95 calibers.

Popular as it was, the 1876 was largely superseded by the much stronger Winchester Model 1886, but the company continued to manufacture the 1876 model on through 1897, producing a total of 63, 871 weapons. The classy '76 was available as a 22-inch round-barreled carbine, as a rifle with a 26- or 28-inch round or octagon barrel (the most popular version), as well as in a musket configuration with a 32-inch round barrel.

One enthusiastic owner of the Winchester Model 1876, who was also among the best-known big-game hunters of the day,

WORKING THE WINCHESTER MODEL 1873/1876 AND MODERN REPLICA CONTINUED

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Original caption: Right top: Remove these screws and the buttstock can be pulled off toward the rear. Right bottom: Expose the action by removing the sideplates. Once they're off, the links can be lifted out from either side of the action. was none other than Theodore Roosevelt. Basic Disassembly The instructions will work for both the Model 1873 and 1876, and use the somewhat more modern Uberti 1873 parts nomenclature. The instructional steps will also work for Ubertimade modern replicas and similar firearms.

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Differences between the modern clones and the original Winchester rifles will be noted where appropriate. These differences are limited primarily to the bolt/firing pin area and the magazine-tube area. 1. The first step, of course, is to be sure the rifle is unloaded. Hold the rifle by the barrel or the wooden forearm with one hand, pointing the muzzle in a safe direction, and twist the lever hook (#542) until it faces side to side. The lever hook is located behind the lever loop on the lower tang.

This unlocks the lever, allowing it to be opened. Next, open the action by pulling the lever (#89) down all the way with your other hand. At this point, check to be sure there is no cartridge in the barrel chamber, and look closely also to be sure there is not a cartridge laying in the carrier block (#7) inside the action. If you see a cartridge in the carrier, the rifle will be loaded when you close the lever.

To unload a rifle with a loaded magazine, again be sure to keep the muzzle pointed in a safe direction; and keeping your fingers away from the trigger at all times, operate the lever to the fully open and fully closed positions several times to expel any cartridges in the magazine. Do this until no more cartridges are expelled from the action. Play it safe and remove any live cartridges to another location in your shop. 2. The buttstock and mainspring come next.

Unscrew and remove the upper tang screw (#63) from the upper tang (the rearmost of the two screws located behind the hammer), then unscrew and remove the lower tang screw (#62.) The buttstock (#57) is now loose and can be removed from the action (#1) by pulling it straight to the rear. To remove the mainspring on both Winchester and Uberti 1873 Models, open the lever (#89) just slightly and loosen the mainspring-adjustment screw (#53). This is the forward-most screw on the lower tang.

Then unscrew and remove the mainspring screw (#36), which is located directly behind the mainspring-adjustment screw. You can now simply unhook the mainspring from the hammer stirrup and remove it from the action. On the 1876 Model, with the hammer all the way down, use a small brass punch and hammer to drive the base of the mainspring to either side until it becomes disengaged from its seat on the lower tang. Unhook the mainspring from the hammer stirrup and remove it from the action.

Before we do any of this, however, let's make note of how the mainspring fits into the action. On the 1873 and 1876, during reassembly the hooks at the front of the mainspring must be manually engaged with the ears on the hammer link (#115). (Winchester called this part a "stirrup.") On 1876 models, after engaging the stirrup, the rear of the mainspring is compressed using a pair of spreader-type pliers or

WORKING THE WINCHESTER MODEL 1873/1876 AND MODERN REPLICA CONTINUED

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Original caption: Left top: The Model 1873's lower tang assembly, carrier, and lifter are shown here removed. Left bottom: On the 1876 model, the rifle's lower tang is manufactured as part of the receiver. Another difference between the 1873 and the 1876 is the 1876's mainspring seat on the lower tang, for the screw passes over it. Lift the mortise-cover stop out of the recess in the receiver top.

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a hardwood wedge until it will slide back into its seat in the lower tang. 3. Remove the sideplate and mortise cover by unscrewing the sideplate screw (#123), then tap the screw head with a plastic screwdriver handle or mallet. This will push the rear of the right sideplate (#73) away from the frame, and then that sideplate can be pulled completely off. Now reach back through the opening with a length of hardwood dowel and tap the inside rear of the left sideplate (#74) to remove it in the same manner.

The loading gate or ladle (#127) located in the right-hand sideplate (Winchester called this part a "spring cover") can be removed by taking out the ladle screw (#128). The "dust cover," in Winchester terminology, is a mortise cover that consists of a sliding plate on top of the receiver that keeps dirt out of the action. Uberti calls this mortise cover a "protection running" (#218).

Unscrew and remove the protection-running screw (#233), then slide the protection running all the way back until it comes off its

rails and off the receiver to the rear. Be careful here. A small coil spring and ball detent (#234 and 284) are located under the protection running near the cartridge opening on top of the receiver. On Winchesters, unscrew and remove the mortise-cover screw, then slide the mortise cover all the way back off its rails.

As you're sliding the cover back, you may have to use a small screwdriver blade to push down the mortise-cover spring as the hole

As you do this, take note of its position for correct reassembly later. Unscrew and remove the mortise-cover spring screw and the mortise-cover spring will lift off the receiver top. 4. We'll remove and disassemble the links and the lower tang next. Lift the left (#84 and 86) and right (#83 and 85) link assemblies out of the respective sides of the frame. On the 1873 only, unscrew and remove the two trigger-guard screws (#167) from either side of the receiver.

On a Winchester these are called "lower tang screws." Tilt the rear of the triggerguard (#26) down and pull it out of the receiver from the bottom. Winchester calls this part the "lower tang." The 1876's lower tang is made as part of the frame and is not removable. Unscrew and remove the lever screw (#101). Lift up slightly on the lifter arm (#90) and pull the finger lever (#89) straight down and out through the bottom of the receiver.

Push up on the carrier block (#7) and remove the lifter arm (#90) down and to the rear until it can be removed through the lever opening in the receiver bottom. Now push down on the carrier block (#7) and take it out of the receiver. On the 1876, in order to remove the lever from the action you first have to drive out and remove the lever pin (#107). Be careful to support the off-side of the top of the lever with a steel bench block while the pin is being driven out. 5.

TO REMOVE THE BREECHBLOCK AND FIRING PIN FROM THE UBERTI REPLICA, USE

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Uberti (Winchester) 1873 and 1876* Lever-Action Rifle (Specifications subject to change without notice) 1 Frame 2 Hammer 3 Barrel 7 Carrier Block 15 Sight 19 Trigger Spring 20 Mainspring 26 Trigger Guard 36 Mainspring Screw 53 Mainspring Adj. Screw 57 Buttstock 58 Buttplate 61 Rear Sight 62 Buttplate Screw 63 Tang Screw 67 Firing Pin Extension 67 Firing Pin (Win.) R Firing Pin Retractor (Win.) a small pin punch and hammer to drive the firing-pin stop (#104) out through the side of the breechblock (#97).

The firing pin (#98), the firingpin extension (#67), and the firingpin spring are now free and can be withdrawn out through the rear of the 68 Forend 72 Cam Lever 73 Sideplate, Right 74 Sideplate, Left 79 Extractor 83 Rear Link, Right 84 Rear Link, Left 85 Front Link, Right 86 Front Link, Left 87 Trigger, Lower Portion 88 Trigger, Upper Portion 89 Lever 90 Lifter Arm 91 Safety Bar 92 Lever Spring, Right 93 Lever Spring, Left 94 Safety Spring 95 Firing Pin Spring receiver.

The breechblock (#97) can be removed by first tilting it all the way down as it is pulled toward the rear.

On the original Winchester rifle, with the bolt assembly forward, use a small pin punch and hammer to drive 96 Magazine Spring 97 Breechblock 98 Firing Pin 99 Trigger Pin 101 Lever Screw 104 Firing Pin Stop 105 Link Pin, Rear 106 Link Pin 107 Lever Pin 108 Extractor Pin 109 Cam Lever Pin 111 Safety Spring Pin 112 Hammer Link Pin 113 Magazine Follower 114 Magazine Tube Plug 115 Hammer Link 118 Magazine Tube 123 Sideplate Screw 124 Lever Spring Screw 127 Ladle 128 Ladle Screw 167 Trigger Guard Screw 178 Hammer Pin 216 Forend Protection 218 Protection Running 224 Protection Running Guide 225 Protection Running Bearing 233 Protection Running Screw 234 Protection Running Spring 237 Lever Hook Spring 238 Lever Hook Pin 240 Trigger & Lever Screw 275 Magazine Tube Bearing 281 Magazine Tube Bearing Pin 283 Forend Protection Screw 284 Protection Running Sphere 542 Lever Hook *1873 parts shown; 1876 parts are similar, but larger. out the front link pin.

Next, pull the firing-pin retractor (R) down and out of the breech bolt. Take note here of the position of the firing-pin retractor for later reassembly. The firing pin is free and can now be pulled out through the rear of the receiver. The breech

WORKING THE WINCHESTER MODEL 1873/1876 AND MODERN REPLICA CONTINUED

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Original caption: Left top: This photo shows the Uberti firing pin disassembled from the bolt. The bolt is shown in the correct position for removal from the receiver. Left center: This is the Winchester firing pin disassembled from the bolt. This is an 1876; the '73 is identical, but slightly smaller. Left bottom: The entire Uberti 1873 magazine tube and forearm is shown here disassembled.

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bolt can be removed by pulling it to the rear and then tilting it all the way down. 6. Disassembling the hammer-trigger and the parts in the lower tang begins with pushing the safety bar (#91) up while you simultaneously pull and hold the trigger (#87) to the rear. (Remember that Uberti calls the tang a trigger guard.) Now use a pin punch and hammer to drive out the hammer pin (#178), and then lift the hammer (#2) up and out of its recess in the trigger guard (#26).

Unscrew and remove the trigger and lever screw to free the trigger spring (#19) and the safety spring (#94), which can now be lifted out of their recess behind the trigger. Use a pin punch and small hammer to drive out the trigger pin (#99) and then you can lift the trigger (#87) and the trigger upper portion (#88)“ which Winchester calls the “sear” out

of the trigger guard. The safety bar (#91) is removed by first driving out the safety-spring pin (#111).

The lever lock can be disassembled by first drifting out the lever-hook pin (#238). This will allow the lever hook (#542) to be pulled out from the bottom. The lever-hook spring (#237) is lifted off the top. 7A. To remove the magazine tube and forearm from Uberti rifles, unscrew the magazine-tube plug (#114) located at the front of the magazine tube (#118). The magazine spring (#96) and magazine follower (#113) are then free to be removed out the front of the tube.

Unscrew and remove the two forend-protection (cap) screws (#283)“there’s one on each side of the forend cap”and then slide the forend cap forward slightly. Use a small pin punch and hammer to drift out the magazine-tube bearing pin (#281) from the magazine-tube bearing (#275) and you’ll be able to pull

the magazine tube (#118) out toward the front. Once the tube is clear of the forearm wood, tilt the front of the forend wood down and pull the wood forward off the rifle.

The magazine tube is turned toward either side of the rifle one-quarter turn to free the magazin tube bearing from its dovetail cut in the bottom of the barrel. On Winchester rifles, unscrew and remove the magazine-plug screw from the bottom-front of the magazine tube. The magazine cap will now be loose. Insert a screwdriver blade into the slot at its front and give it a quarter turn in either direction. The cap can now be pulled out the front of the magazine tube, along with the magazine spring and follower.

Unscrew and remove the two forend-tip (cap) screws’you will see one on each

This is identical to the Winchester rifle except for the way the mag cap is secured.

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Use care not to let it get away when you slide the cover back. Winchester uses a leaf spring with a screw. side of the forearm cap and then slide the forearm cap forward slightly. Use a small pin punch and hammer to drift out the magazine-ring pin from the magazine ring, and pull the magazine tube out toward the front. As the mag tube comes clear of the forearm wood, pull the forearm wood down at the front and forward off the rifle.

The magazine tube is now turned toward either side of the rifle a quarter turn, freeing the magazine ring from its dovetail cut in the bottom of the barrel. 7B. The carbines are a little different. To remove the magazine tube and forearm on Uberti carbines, unscrew the magazine-tube plug from the front of the magazine tube. The magazine spring and magazine follower are now removed out the front of the tube. Unscrew and remove both band screws from the front band and the forend band.

Remove the magazine tube by pulling it straight out the front. Slide the forend band forward, then the forend can be pulled to the front and off the gun. The front band is rotated 180 degrees and slides forward off the barrel, followed by the forend band. On Winchester 1873 carbines, unscrew and remove the magazine-plug screw from the bottom front of the magazine tube. The magazine-tube cap can be pulled out the front of the magazine tube, along with the magazine spring and follower.

Next, unscrew and remove the front and rear band screws from the front and rear magazine bands. Pull the magazine tube straight out the front and off the weapon. Slide the rear magazine band forward and off the forearm wood, and then the forearm wood is tilted down and pulled off to the front. The forward magazine band is rotated one-half turn and slides off over the sight base, followed by the rear magazine band.

Winchester 1876 carbines use a front magazine band that's different from all other Winchester carbines (not illustrated). Unscrew the front band screw and pull off the front magazine band. The rear band is removed just like the 1873 carbine. Once the bands are off, place your thumb over the front of the forearm to contain the magazine cap and spring, and pull down on the front of the forearm wood until the cap and spring pop out.

The magazine cap and spring can be removed out the front of the magazine tube, and the forearm and tube can be removed from the barreled receiver, along with the magazine follower. The magazine tube can now be pulled out either end of the forearm wood. Reassembly of any of these rifles or carbines, whether a Winchester original or a Uberti replica, is a simple matter of reversing the order of the disassembly process. I

PISTOLS

Reader Forum

BY AMERICAN GUNSMITH EDITORS JANUARY 2009

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Identifying Walther Model 4 I recently acquired a Walther Model 4, second modification (dovetail rear sights), serial #975xx, from the family of a WWI veteran. A German-issue holster and one magazine came with the handgun. It is chambered for .32 ACP (7.65mm). My research into this little gem shows that it bears all the normal Walther markings on the left side of the slide, plus the German markings for smokeless powder and military-issue approval.

Additionally the left side of the trigger guard is stamped "AS." My references state there should be markings on the right side of the slide; however, this piece has none. Walther was not able to provide a pedigree for the piece, citing the removal of all pre-war records from their plant offices following WWII. Would American Gunsmith or perhaps a reader be able to establish when this handgun was manufactured, to which branch of the German military it was issued, and its value as a collectible?

Start by sending a photo of the pistol to The NRA Museum (Waples Mill Rd., Fairfax, VA 22030). Include a stamped, self-addressed envelope. They can provide a confirmed ID, but they don't give information on value.

Once you know what you have, you can probably find out what it's worth from The Blue Book of Gun Values. Kel-Tec Trigger Work I have a Kel-Tec, PLR16 pistol. This little gun is fun to shoot, but it has a 7- 1/2-pound trigger pull. What can I do to bring it down to around 3 to 3-1/2 pounds? Thanks.

If you're able to disassemble the trigger group, deburr and highly polish all the primary elements of the firing mechanism (without altering the engagement angles). Then flush off the polish residue and lubricate lightly before reassembly. That won't "lighten" the trigger, but will likely make it much smoother. To actually lighten the pull, check with Kel-Tec to see if you can secure anew trigger and sear spring.

Upon receipt, send the springs to Wolff Springs and they maybe able to provide lighter but fully functional replacement springs, which you can install to bring pull weight down hopefully to not less than 3- 1/2 pounds. Proper Bore Sighting Do you know of any product on the market that would allow me to boresight a rifle at 25 yards? I don't have a shooting range and my landlord does not want me to put one in even if it's just to sight in rifles.

I have tried using a laser bore sight, but you can't see the laser at 25 yards day or night. Thank you. You must be trying to work with a seriously weak laser, but let's begin at the beginning. If you're using a scope, make certain the rings are perfectly aligned with each other. Any deviation will cast the scope off bore and could even damage it.

When the internal ring diameter is 1 inch, alignment can be roughly judged by placing a 1-inch wooden dowel to bridge the front and rear rings prior to tightening them in their base. A far more precise method is to use Brownells' two-piece, sleeved scope-alignment rods (#080 918 000AA). Each rod is sharply pointed on one end. When the two pointed ends touch each other, your rings are lined up. These rods fit both 1-inch and 30mm rings, and they'll also indicate clearly whether the scope base requires shimming.

If you're not using a scope, you're looking through iron or electronic sights. In any case, the laser you're working with seems unsuitable. On page 329 of Brownells catalog #60, you'll see two laser bore-sighting tools: The Site-Lite and the Aimshot. Both are caliber specific and carry lasers in excess of 600nm wavelength. The Aimshot is inserted into the chamber, while the Site-Lite goes in the muzzle. More non-laser devices appear on page 330.

The most economical among these is the Simmons, which includes individual bore spuds that fit any caliber from .177 to .50. The Simmons closely resembles the Bushnell bore-sighter we've used for many years, but remember this: No matter how good the bore-sighter, final sight adjustments must be made with live ammunition at a firing range. The bore-sighter will put you on paper, but final adjustments will be necessary to put you in the black. That's an old rule that predates the laser, but still holds true today.

Replacing Mauser K-98 Sight Hood What is the secret of replacing the front sight hood on the Mauser K-98? The owner had removed the front sight hood to clean the front sight and could not get it back on. Neither can I. It's a spring steel that fits into a slot in both sides of the front-sight mount. Nothing I do can get the thing spread wide enough to slide into place. Any assistance would be appreciated. If there's a secret to removing the hood, the secret has been well kept.

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On the rare occasions we've been faced with a too-tight front-site hood, the following technique's not a "quickie" has proven to be a safe means of spreading the gripping rails apart without damage: Turn down a hardwood dowel or round of coldrolled steel to give a tight fit inside the hood ring. Secure that assembly, hood downward, between padded vise jaws. The insert will help to prevent crushing the hood. The "clamping" section faces upward and clear of the hood.

Using some form of wedge possibly a cold chisel or wide-blade screwdriver's pread apart the clamping edges, checking the fit to the front ramp frequently. Whatever you do, don't

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READER FORUM CONTINUED

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use heat. Heat will take the spring out of the spring steel, and if you go too far in the spreading you'll end up having to purchase anew hood. Now, pray tell, why did your friend remove the hood in order to clean the front sight? The sight could have been cleaned with any good-quality solvent on a pipe cleaner or a .17-caliber phosphor-bronze bore-scrubbing brush. Hamilton Rifle Drawings I have a Hamilton rifle in my shop and I can't find any info on it. Can you help me find a schematic?

I don't know if parts are missing. Any help would be appreciated. Thank you. The Hamilton Rifle Company was established in 1898 in Plymouth, Michigan, and ceased all production in 1945. We can't say how old your rifle is, since you made no mention of a model number, but the last Hamilton, the Model 55, came off the line between late 1941 and early 1942. (And only one was made.) In any case, as far as we know, there are no schematic drawings in existence.

If there's a patent number on the gun, however, you can secure a copy of the patent which normally contain many drawings by sending a check for \$3 to the U. S. Patent Office, Certification Branch (1213 Jefferson Davis Hwy., Suite 300, Washington, DC 20231). Installing an Ambidextrous Safety Is there an issue that covers the installation of the Wilson Combat ambi thumb safety on a 1911 pistol? If not, what are the instructions? Thank you for your help.

You didn't say whether your M1911 is a Series-70 or Series-80, but we'll assume you ordered the appropriate ambidextrous thumb safety for the pistol you're working with. Regardless, the instructions for installation are provided by Wilson Combat and include an advisory to secure the services of a gunsmith experienced with do-

ing the job. This advice is not given lightly, since these are not "drop-in" parts by any stretch of the imagination.

They interact, or are supposed to, with vital components in the back of the pistol like the sear, hammer, plunger-tube assembly, and even the hammer pin. A significant amount of fitting to close tolerances is demanded. This precludes the use of tools like the Dremel or coarse files. As a result, there is no simplified method of going about the task.

Custom gun makers and manufactureremployed gunsmiths often spend up to a year acquiring the skill and knowledge before actually tackling the installation of an ambidextrous safety on a customer's pistol. As long as you're prepared to invest the time and study before moving onward, purchase both volumes of Jerry Kuhnhausen's Shop Manuals on the .45 ACP (available from Brownells). If you are not, seek out a gunsmith familiar with the job or ask Wilson Combat to handle the installation.

Storing Beretta Double I've just purchased a Beretta 687 shotgun and don't want to store it with the hammers cocked. I place a snap cap in each chamber, but when I pull the trigger, only the bottom firing pin goes forward. When I shoot the gun with ammunition, both barrels fire with no problem. What's going on? Will Holden Centerville, Maryland Your shotgun has what's called an inertia block that shifts under recoil to activate the other hammer for your selected firing sequence.

On your tangmounted safety, you have a barrelselection device, which allows you to choose which barrel you want to fire first. To select the under barrel to shoot first, shift the selector over so that one red dot is exposed. If you require that the over barrel shoot first, move the selector so that

the two red dots are exposed. By shifting this selector back and forth, you can pull the trigger on each chamber and relax the firing-pin spring tension.

Another, simpler method to get the inertia block to shift over is to hold the forearm of the shotgun in your left hand tightly and, with the heel of your right hand, whack the butt end of the recoil pad smartly. This jolt will shift the inertia block over so that the other hammer is activated, allowing the trigger to be pulled and thus relaxing spring tension. Using this method, you won't inadvertently reset the selector to fire the wrong barrel first.

Removing an AK-47 Front Sight I purchased a Century International Arms AK-47 Bullpup and want to install a C-More or Docter optical sight. Like all AKs, the front sight is so tall that I will be looking right into it with the sight. I removed the small muzzle break (it's a standard left-hand thread) but I'm not certain how the front sight is secured. There are two pins in the front sight which I can remove (I think), but I'm not sure if the sight itself is swaged on, soldered on, or held in some other fashion.

Could you please advise me on this? Thanks. You're right, You can remove the two pins. Precisely how the sight is attached to the barrel can vary, though, depending on the factory where the AK was manufactured. The importer, Century International, should be able to tell you how yours is affixed. Shotgun-to-Rifle Conversion? Is it possible to create a double-barrel rifle in .30-30 caliber using a "Hunter" shotgun s/s action? I've been told "yes" by one gunsmith and "no" by another.

Anything is possible, but this is not a project most gunsmiths would undertake. We'd suggest the services of a

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(continued from previous page)
gunmaker/metalsmith instead of a gunsmith for this conversion. To locate one, contact the American Custom Gunmakers Guild Spot Bluing? What's the best way to touch up bluing or rust spots on gun metal? I've read all of your articles on the subject in the past few years, and have tried a number of products, but I can never get the color to match. Any advice you can give me would be greatly appreciated.

Lincoln Reeder Phoenix, Arizona
Unfortunately, you'll never get a perfect match when touching up a bare spot on a blued gun part. You can, however, get a decent color and the rust protection that a firearm needs. There are a number of "cold bluing" solutions on the market, and every gunsmith has his favorites and keeps them close at hand. For a quick and reasonably dark touchup, try Birchwood Casey's Super Blue or Brownells T-4. These solutions are applied cold, and with a few applications will give a decent color.

Be careful not to contaminate the bottle of solution by dipping a used applicator in it. To avoid this, pour a little of the bluing solution into a bottle cap and dip your applicator (Qtip) into the cap. If you need to blue a screw head or the end of a pin, you might try simple heat bluing. This requires a little bit of practice, but with a small propane torch you should be able to get ei-

ther a good black color or the royal-blue color found on screws and pins on many expensive double guns.

The trick to heat bluing is to go slowly. As the part heats up, it will first turn a yellow "straw" color. From this point, it will turn blue very quickly, then black. If you go too far, you will lose the black color, but it can be easily repolished and done again. Some gunsmiths like to quench freshly heatblued parts in linseed oil. For a more durable dark touch up, we like Brownells Oxpho-Blue cream.

This solution is intended to go on cold, but we have had great success by heating the part with a propane torch and applying the bluing solution to the metal at the point where the liquid just sizzles when it goes on. Care must be taken not to overheat the steel, since many older firearms have soft-soldered ribs, sights, and barrels. The best temperature for the steel part is probably just under 200 degrees.

Apply the solution heavily with a shop rag and rub it in well. Immediately after applying the bluing solution, card the metal thoroughly with 00 steel wool. With a clean rag, reapply the bluing solution sparingly (while the barrel is still a little warm).

This second application should give you a good color and a reasonably durable touch up. We have used this method of touch-up

bluing after soldering front-sight ramps onto barrels when a complete hot blue could not be sold. The Oxpho-Blue and heat method can be used to reblue an entire firearm if necessary. You can get a very good finish by first glass beading apart (a shotgun barrel, for example) and then heating it evenly and carefully with a torch while holding it on a chamber mandrel in a vise.

Then pour a large amount of Oxpho-Blue cream into a shop rag and apply it quickly from end to end. Card the entire barrel with 00 steel wool, and reapply the solution. This can be a handy method of returning some value to a used gun, or as a fast bluing alternative after resoldering a rib on an old double-barrel shotgun. Sharpen a Reamer? Is it possible to sharpen a reamer that's gotten dull? If so, what's the proper way to do it?

Miles Dumond Falls Church, Virginia
The correct way to sharpen a straightflute tapered reamer like Brownells' long forcing-cone reamer is to stone the top surface of the blades. However, you should be aware that this practice will change the dimension of the finished forcing cone. Since this dimension is not critical on a longchamber forcing cone, careful stoning of the top surface should revive the tool.

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