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INSIDE THE ARCHIVE

DISASSEMBLY AND REASSEMBLY OF THE KAHR P- SERIES PISTOLS

DATES FOR NEXT GUNSMITH CAREER FAIR SET BY BROWNELLS • COLD BLUING: RESTORING "FAMILY HEIRLOOMS" ON ...

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 069

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PEOPLE & COMPANIES

Dates for Next Gunsmith Career Fair Set by Brownells

BY AMERICAN GUNSMITH EDITORS SEPTEMBER 2009

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April 23 and 24, 2010, are the dates chosen for Brownells 4th Annual Gunsmith Career Fair. This industry-exclusive event will be held at Des Moines Marriott Downtown in Des Moines, Iowa. Both days will include career-improvement seminars, job-placement opportunities, as well as networking opportunities for soon-to-graduate gunsmithing students, recent graduates, and working gunsmiths.

Company CEO Frank Brownell said: "I was absolutely delighted with the way last year's event grew and the quality of the additional seminars was great. This year will be even better, I'm sure of that!" A spokesman for Para USA, one of last year's corporate attendees, had this to say: "Your career fair provided us the perfect opportunity to meet dozens of highly-qualified candidates in one location in a relatively short period of time.

We will be hiring several of the candidates we interviewed, and feel like we were able to recruit the type of employees we need for our company. Pete Brownell, company president said, "We see the Career Fair as an important networking opportunity for everyone involved. Last year, I saw a small group of students talking gunstock design with Jerry Fisher, one of the indus-

try icons. Attendees also had the opportunity to talk one-on-one with several other industry professionals, including the ATF.

Brownells, as you probably know, is the world's largest supplier of firearm parts, gunsmithing tools, equipment, and accessories. Stocking more than 30,000 items, the company supplies armorers, gunsmiths, and shooters worldwide. All of their products are backed by an unconditional lifetime guarantee. Check gunsmith-careerfair.com for further details on all the plans for the Brownells 4th Annual Gunsmith Career Fair.

On the day before the seminar starts (Thursday, April 22), tours of Brownells' Montezuma, Iowa, facility will be available. Attendees and employers are urged to register and book rooms and flights early, as several other major events are scheduled in Des Moines that same weekend. Need Some Extra Cash? If you would like to turn your gunsmithing ideas and expertise into cash (we pay pretty handsomely), I would like to discuss your article ideas with you.

Contact me, Keith Lawrence, Editor, at: American Gunsmith, Merritt Island, FL 32954; email voice@american-gunsmith.com; fax Editor Keith Lawrence Technical

PISTOLS

Disassembly and Reassembly Of the Kahr P-Series Pistols

Owners seem to love their Kahr pistols, and you'll love the fact that 'big or small' they all come apart and go back together the same way.

BY CHICK BLOOD SEPTEMBER 2009

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Kahr Arms has been turning out precision-made, compact double-action-only (DAO) pistols in 9mm, .40 S&W, or .45 ACP for years. Civilians who've purchased them for personal defense appreciate their durability, simplicity, and ease of use. And with the factors of reliability and flawless performance, the appreciation is shared by numerous law-enforcement agencies. The latest addition from Kahr Arms is the palm-sized P380.

Don't jump to the conclusion that the P380 is the weak sister in the Kahr family because of its caliber. While the bullet is lighter and the case is smaller than the 9mm, the bullet diameter is the same and some of the test results I've seen show that .380 hollowpoints outperformed 9mm FMJs for accuracy. What Kahr has come up with here is a "short nine" that weighs a touch over half a pound, is less than 5 inches long, just 4 inches tall, and only 3/4 inch wide. It carries six rounds, and comes with two magazines.

When it becomes available, the P380 will be able to accommodate the .380+P round. And why not? All other Kahr pistols can accept +P rounds. I'm betting that when the +P gets tagged onto commercial .380 ammo, gun writers will stop referring to the P380 as the "Mini-Kahr" and start calling it "the mouse that roars." (Note to self: When .380+P ammo gets into circulation, buy a few recoil springs for the P380 to keep in inventory.

The hotter loads are sure to wear down the OEM spring faster than ordinary .380s.) Like the other pistols in the Kahr P-Series, the P380 is a locked-breech design, which may help explain its minimal felt recoil in a handgun this light. The P380 has no conventional external safety, so it can't be sold in certain states requiring external safeties, despite its being DAO, striker-fired, and fitted with an integral striker block.

The striker block works like this: A spring-loaded block projects into a recess in the striker to keep it from moving forward until the trigger has been pulled fully to the rear. 45 ACP (shown here), a .40 S&W, and 9mm versions'plus anew .380 that's less than 5 inches long, 4 inches tall, and weighs just 10 ounces empty. The only downside to the system is the seldom-if-ever-encountered dud cartridge. How seldom encountered?

I can't recall the last time I heard nothing but the dull click of a firing pin on the primer of good quality centerfire ammo. Should a dud round ever get into the P380s chamber, however, the shooter must rack the slide to expel the offender, chamber a good replacement, and re-cock the action' an exercise the recoil spring of this pistol makes none too easy. The instructions and schematic

DISASSEMBLY AND REASSEMBLY OF THE KAHR P-SERIES PISTOLS CONTINUED

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drawing included here apply to all Pand TP-Series Kahr Arms pistols, regardless of caliber. (I used the P45 in preparing this article, but it's identical to the P380 except in size and proportions.) For the most part, you can use these same instructions when working with the Kahr CWand PM- Series pistols; they're almost identical to the Pand PM-Series pistols' with a few exceptions that are clearly spelled out in the owner's manuals that come with the pistols.

Of course, the owner of the pistol didn't bring you the manual, did he? You can send him home to get it (if he hasn't thrown it away), or own by calling Kahr or by visiting the com www.kahr.com). Field Stripping With the left side of the frame facing you, the magazine out, and the chamber clear, insert your thumb between the front of the trigger and the triggerguard. Draw the slide to the rear so the relief mark on it aligns with its twin on the frame.

When they're lined up, the slide stop and its frame cutout must be likewise. If they're not, you can't proceed with the disassembly, since you can't remove the slide stop. Now wrap your fingers (of the hand with its thumb through the guard) over the slide to keep the stop and cutout in line. This gets pretty tough. That recoil spring is going to test your determination, because you now have to bend your wrist so you can get at the right side of the frame.

The stud end of the slide stop is located under the ejection port and above the trigger. The plastic handle of a small screwdriver will be helpful in getting the stop moving to the left. When removed completely, it's withdrawn from the left side of the frame. Control any movement of the slide forward under tension from the recoil spring. This next step is important: Pull the trigger to release the striker and let the trigger return before pushing the slide off the frame. Now invert the slide.

Compress the recoil spring (#5) toward the muzzle slightly by pressing the back end of the guide (#6) until it clears the barrel lug. Grasp the lug, nudge it forward, and then lift to remove the barrel to the rear. I always mention a serious concern to keep in mind when cleaning firearms with major components made of polymer. After they've been field stripped, never use a harsh aerosol such as carburetor cleaner to clean a frame, trigger group, or slide unless you've checked with the gun's manufacturer first.

Some plastics are immune to these products and others aren't. In some cases, what's just dandy for cleaning automobile carburetors and brake drums can actually melt a frame, a slide, or a firing mechanism. Fortunately, there are effective products available that eliminate this possibility. I reported on one of Removing the plate-retaining pin (arrow) requires a special homemade tool described in the text.

DISASSEMBLY AND REASSEMBLY OF THE KAHR P-SERIES PISTOLS CONTINUED

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them, Poly Dunk, a few years ago. It's available in a bucket large enough to allow the total immersion of a pistol frame and it does a terrific job. Poly- Dunk is the brain at Cylinder & Slide I believe Brownell Detailed Disassembly of the Slide Invert the slide and insert a small tool between the backplate (#4) and the rear of the striker-spring guide (#23). The back end of the guide seats in a recess in the plate.

Push the guide far enough forward to clear it from the recess and leave the tool in place to hold the guide forward. The rear extractor pin (#27) is located in a hole about a third of the way up the right rear of the slide. Insert a jeweler's screwdriver in the opening and depress the pin. Don't expect any significant movement as a result and don't try for any. It doesn't take much before you can start moving the backplate upward enough to capture the pin along with the recoil-spring guide.

Place your thumb over the back plate. Keep it there while removing the small tool and pushing the plate upward. There's another job for the thumb to do: It has to cover the rear extractor pin hole when the hole gets uncovered in the plate removal. This avoids the loss of the extractor pin, its spring (#26), the striker-spring guide, its spring (#22), and eliminates having any of them hit you in the kisser.

The striker block (#7) is located just forward of the back plate slot and releases the striker (#20) when the trigger is fully pulled. For the present purpose, depress the block and remove the striker. When you sharply tilt the rear of the slide and tap it on your bench, the front extractor pin (#25), extractor spring, and rear extractor pin should fall out. If, after additional depressing of the block and tapping, there's no sign of them, you have a really dirty pistol on your hands. Press on regardless.

Using caution, detach the extractor (#24) from the front extractor pin and push the stuck-in parts to the rear with a dental pick or some other skinny implement until you can pull them from the slide Kahr P-Series Double-Action-Only Pistol (Specifications subject to change without notice) 1 Polymer Frame 2 Barrel 3 Slide 4 Backplate 5 Recoil Spring 6 Recoil Spring Guide 7 Striker Block 8 Striker Block Spring 9 Trigger 10 Trigger Spring 11 Trigger Spacer 12 Trigger Pivot Pin 13 Trigger Bar 14 Trigger Bar Spring 15 Cocking Cam 16 Cocking Cam Spring 17 Magazine Catch Body 18 Magazine Catch Spring 20 Striker 21 Striker Spacer 22 Striker Spring 23 Striker Spring Guide 24 Extractor 25 Extractor Pin (front) 26 Extractor Spring 27 Extractor Pin (rear) 28 Slide Stop 29 Slide Stop Spring 30 Slide Stop Spring Screw/Washer 31 Ejector 32 Cocking Cam Pivot Pin 33 Rear Sight 34 Front Sight 35 Magazine Body 36 Magazine Spring 37 Magazine Base Lock 38 Magazine Base 39 Magazine Follower 40 Sideplate 41 Sideplate Pin

DISASSEMBLY AND REASSEMBLY OF THE KAHR P-SERIES PISTOLS CONTINUED

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The screw requires a #6 Torx wrench to remove and reinstall. with your fingertips. Turn the slide right-side up and tap it on a padded surface to dislodge the striker block. Detailed Disassembly Of the Frame Have the following tools standing by: a 1/16-inch cup-pin punch, a jeweler's screwdriver, a dental pick (or something like it), smooth-jaw longnose pliers, a tongue depressor, and a couple of baby screwdrivers. I'll tell you how to modify each as well as when and how they're used. But wait.

Some Kahrs have polymer frames and some are made of steel. All steelframe Kahr pistols have grips. If you remove the grips, you can get at the internal parts. Not so with the polymer-frame models. They have a sideplate (#40) and a sideplate pin (#41). Before you go after the sideplate pin the wrong way and damage the frame, modify one of those baby screwdrivers. Start with one with a small, thin blade.

File or grind a square notch 1/16-inch wide by 1/8-inch deep in the middle of the blade, and then bend it slightly to resemble a tack puller. On its right end, the sideplate pin has

ahead. Its left end doesn't protrude very much from the right side. It looks more like a dimple. Center the cup-pin punch over the dimple and tap it gently to the right until the headed end of the pin has been raised out of contact with the frame enough to slip your freshly made "tack puller" between them.

The shaft of the pin will fit in the notch you made in the blade. Be gentle now. Pry up the pin until you can pull it all the way out with your fingers. This should result in a gap between the sideplate and the frame. You may have to sand down a tongue depressor to do this, but it has to slide between the plate and the frame until it's about halfway across the plate width. The plate, you see, is held to the frame by a couple of polymer tabs.

Rocking the tongue depressor carefully with a twisting motion will encourage the tabs to let go and the plate can be lifted free. This will give you a clear picture of the undisturbed Kahr innards. Make drawings, take pictures, or do whatever is necessary to help you remember what you see. This is the way things have to look after reassembly. The

trigger-bar spring (#14) can be released from the frame by reaching under the spring with the dental pick.

As for the trigger (#9), its spring (#10), and its spacer (#11), they're all held together by the trigger-pivot pin (#12). On steel-frame pistols, this pin fits very tightly and will never shoot loose, but the pin has had a tendency to loosen in polymer-frame models. To eliminate the problem, a very tiny pin has been added to fit in an equally tiny groove next to the trigger and is not shown on the schematic.

But the addition of this pin requires that the trigger-pivot pin be driven straight out from left to right and straight in from right to left. As soon as you drift out the trigger pin, the trigger spring and spacer will probably fall from the frame. To reinstall them, you have to modify another screwdriver. Its blade should be wide enough to span the entire spacer. File or grind an arc in the blade that just fits over the raised collar of the spacer, and then set your new assembly tool aside until later.

AT THE MOMENT, I'M ASSUMING THAT

DISASSEMBLY AND REASSEMBLY OF THE KAHR P-SERIES PISTOLS CONTINUED

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the trigger and its associated parts are on your bench and in a parts tray with other, previously removed components. Now take out the trigger bar to the rear from the right-hand side of the frame. Next come the cocking cam (#15), its spring (#16), the ejector (#31), and the cocking-cam pivot (#32). This pivot seats in a blind hole. Fortunately, you can get a jeweler's screwdriver under the pivot's head and pry it upward cautiously.

It's only a slip fit. (Thank you, Kahr engineers, for not giving us a press fit or other permanent means of securing this pin to the frame.) With the pivot removed, the cam, the spring, and the ejector will drop free. With a steel-frame Kahr pistol, the magazine catch is disassembled and reassembled like a Model 1911. On polymer-frame pistols, it's treated like a Glock. Reach up inside the magazine well with a dental pick and disconnect the magazine-catch spring (#18) from the catch (#17).

Afterward, you can push out the catch, but leave the spring attached to the frame. **Reassembly Tips** The beveled end of the front extractor pin must face away (outward) from the slide. The striker block is reinstalled. Fabricating the special tool required (from a small screwdriver) is described in the text. Figure 1. stalled before and retained by the extractor assembly and striker. Study Figure 1 as a reference.

In addition to the driver with the radius, you'll want a slave pin slightly smaller in diameter than the trigger pivot. Insert the trigger up through the guard and start the slave in from the left to maintain the trigger's frame relationship. Capture the spacer on the slave. There's a flat on the spacer. It seats on the bottom of the trigger. Connect the front of the trigger bar to the trigger. Capture the trigger spring on the slave. The straight leg of the spring should point upward.

Using the driver with the radius-cut blade, lightly press down on the spring and spacer to align them with the triggerpin hole. Push the slave through until it's flush with the right side of the frame, and stick a small piece of tape on both right and left ends of the slave to keep it in place temporarily. Pinch the trigger bar between the fingers of one hand. Your free fingers can be used to install the one leg of the triggerbar spring under the end of the bar. The other end fits into its frame slot.

Though I've neglected to mention it until now, an alligator clip comes in handy for holding the bar in place while you go about rebuilding the cocking cam/ spring/ejector assembly. There's a small hole in one side of the cocking cam. The end of the cam spring lives in that hole. House it anywhere else and you can't get the pistol back to-

gether without causing damage to the spring. Once the spring is properly in place, line it and the cam up with the ejector.

Push the pivot pin through them to reinstall the complete assembly in the frame. Now remove the tape, the alligator clip, drift out the slave pin with the trigger pivot, and snap on the sideplate and reinsert its pin. All the interior work is easier with a steel-frame Kahr. These you can secure in a vise with protected jaws, leaving both hands available. A polymer frame doesn't get along as well with a vise' padded jaws or no padded jaws.

Nevertheless, I found this polymer-frame pistol would accept a gentle squeeze applied to the sides of the recoil spring tunnel just forward of the trigger guard. How much squeeze? Just enough to keep the frame steady and both my hands free. Another thing comes to mind: When you finally reassemble the pistol, its slide might come to a sudden stop in the process of reunion with the frame. Why? The nose of the ejector has gotten in the way. Press down on the ejector and the problem will disappear.

Check out the function of the pistol and, if a range is close by, test fire it. If a range is nowhere nearby, you could buy a commercial bullet trap or (continued on page 20)

DISASSEMBLY AND REASSEMBLY OF THE KAHR P-SERIES PISTOLS CONTINUED

ORIGINAL PAGE 20

you could simply get a 55-gallon drum and fill it to the brim with water. The water-filled drum will be all right for handguns' as long as you fire straight down into the liquid. In previous articles on Kahr pistols, I've talked about the necessity for a 200-round break-in period. That's a minimum of 200 rounds, regardless of caliber. As for which particular brand of ammo to use, Kahr doesn't endorse one and neither do I. Take several brands to a range and see which one the pistol likes best.

Accuracy and reliability will tell the shooter which brand the pistol prefers. How about reloads? Like almost all gun makers, Kahr says don't use them. But they're 100-percent dead set against the use of lead bullets. When lead enters the equation, reloads or otherwise, it demands extra attention to cleaning and the bore should be attended to immediately after firing any non-jacketed slugs. I'll end this paragraph by referring back to the minimum 200-round break-in.

I have yet to come upon a Kahr of any caliber with a feeding problem that has been put through this break-in unless the problem has been caused by the dreaded "limp wrist. Frequently Asked Questions Here are the answers to some questions you might be asked: Q: "What if I still have feeding problems after the break-in period?" A: The break-in requires a minimum of 200 rounds. Do some more brand testing to be certain you've at least reached the minimum.

If a problem still persists Customer Service Q: "My pistol fails to chamber the first round when I rack and release the slide. What's wrong?" A: The shooter is either not pulling the slide all the way back or he's riding it forward. Tell him to try locking back the slide, inserting the magazine, and releasing the slide via the slide stop. This will mean carrying a gun with its chamber loaded,

but the passive safety system on a Kahr prevents discharge unless the trigger is pulled even when the pistol is dropped.

Q: "My slide locks back after every round. What's wrong?" A: Either the slide-stop spring is damaged or the magazine follower is broken. They'll have to be replaced. Q: "I've read that the slide-stop spring on Kahr polymer-frame pistols is easily bent. How do I protect it?" A: Insert the slide-stop pin at the 4 o'clock position and slowly rotate it to the 3 o'clock position before pushing it through the frame.

Q: "Why is it so hard to release the slide on an empty magazine?" A: The slide release has been designed to warn the user when the magazine is empty by holding the slide open. Under this condition, the release is very hard to depress. Remove the empty magazine, replace it with a loaded one, and depressing the release will be much easier. Q: "How about custom-carry modifications for my pistol?" A: Kahr do ut Cylinder & Slide does. None of their customers the warranty.

For example, one package includes a recrowned barrel for better accuracy, a throated and polished feedramp, a radiused and tensioned extractor, plus a smoother, lighter trigger pull. Additional packages can be added including tritium night sights, beveled edges and corners, even a high polishing of the slide. I'm told that Cylinder & Slide is up to their ears in custom work. So advise your customer there's no sense in shipping a pistol until after he talks to someone at Cylinder & Slide.

A rep will go over the packages and prices, give the gun owner an idea of when they'll be able to schedule the work. In the meantime, the gun owner will have ample time to get that minimum of 200 rounds out of the barrel of his new Kahr. I

FINISHING

Cold Bluing: Restoring “Family Heirlooms” on the Cheap

Many old guns have sentimental value to the family of the owner but no real monetary value to a collector. These guns are all good candidates for an inexpensive “facelift.”

BY LESLIE JONSSON SEPTEMBER 2009

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The restoration of a collectible firearm can be very expensive, and in most cases should not even be attempted. But what about the thousands'perhaps millions' of "family heirlooms" in attics and closets around the country? The guns I'm referring to have little real value to a collector, but hold lots of sentimental value for the members of a family.

More often than not, the "heirloom" we're talking about is grandpa's old "squirrel gun" that was put away years ago and has been recently rediscovered by his son who now wants to pass it along to the grandson. The question then becomes: How much is a family willing to spend to restore an "heirloom" that probably cost less than \$30 when grandpa ordered it from the Sears catalog or picked it up in the local Western Auto store back in the 50s? The answer to that question is usually: Not very much.

Probably not enough, in fact, to cover a complete stock refinish and recheckering job, not to mention the price of a hotbluing

job. So what do we do? Do we send the customer packing with a "sorry I can't help you"? Or are there some reasonable alternatives to the high costs of restoration? As it happens, I've done quite a few of these low-budget "facelift" jobs since I opened my shop several years ago, and I've been able to fill that niche between saying "sorry" and the high cost of gunmetal and stock refinishing.

A good example of what can be done "on the cheap" is the beatenup Savage .250-3000 Super Sporter pictured here. My older brother had gotten it from another commercial fisherman as repayment for money owed from sometime in the distant past. Superficially, the rifle was a mess. It functioned fine and my brother had used it for a few deer seasons, but most of its life had been spent on a commercial salmon trawler in the damp and salty climate of the Pacific Ocean.

The checkering was worn flat where it had rocked in the boat's rack. It was pitted and rusty, the finish completely gone. My brother knew it was somewhat rare, but with little collector appeal, and even in its present condition it had emotional value that he wanted passed along to a deserving descendant. It needed both wood and metal work before it could be passed along.

From the time I opened my shop, I couldn't justify the cost of hot-bluing equipment, and while slow-rust bluing is beautiful and relatively inexpensive in terms of equipment, it's a very labor-intensive process. That led me to do some research on cold-bluing options, some of which offer a reasonably priced alternative to the more expensive processes. Lately I've been using an eco-22caliber Savage 1899 takedown rifle was found by his son in the attic.

All of the bluing is gone, but it has a good bore and, after some minor adjustments, it shoots fine. The discolored area on the buttstock is a greenish mold.

COLD BLUING: RESTORING "FAMILY HEIRLOOMS" ON THE CHEAP CONTINUED

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friendly three-phase product called Blue Wonder, manu letely disassembling it, except for removing the barrel from the receiver, which is not necessary with this process. I then cleaned all metal and "de-blued" it in an overnight bath of Brownells' Steel White diluted 10:1. This is a nontoxic p H-neutral solution made with hot tap water, although I recommend wearing gloves anyway.

The instructions say to use a 5:1 dilution, but reasoning that I'm dealing with old steel, I've found that 10:1 works fine and makes the bottle last twice as long. As with any metal-finishing process, the surface preparation determines the final look, so the intensive part is the long and uneventful polishing and buffing. After that, however, the simplicity of the Blue Wonder process becomes evident.

First, you wipe the cleaner on the metal and heat the surface with a torch or hair dryer until it's hot to the touch, making sure not to bubble or burn the cleaner. Then you wipe the cleaner off and dab on the bluing. Now the surface color is blotchy, uneven, and flat, and you'll be wondering "what have I done?" (I guess that's why they call it Blue Wonder.) But never fear. After the bluing solution dries for a few moments, you wipe on the developer, and almost immediately a golden hue is evident.

To get a darker finish, you just keep repeating the "clean, dab, and develop" steps until it's dark enough. It doesn't look exactly

like hot bluing or slow rust, but considering how quick and easy it is, it looks quite good. Shortly after Novum Solutions introduced their Blue Wonder Gun Blue kit, they came up with a Gun Black kit, which I like even more than the original bluing. As with most things, the more you practice with it, the better the surface finish will be.

In time, you'll figure out those little technical tidbits that the package instructions can never get across to you. For example, if the surface is a bit too hot, the bluing solution dries too quickly; and if it's not hot enough, the "pores" in the metal don't get opened enough. On larger-sized pieces, it takes longer to apply, so you have to keep the surfaces at the right temperature (ideally 110 degrees F) while allowing a few seconds of penetration time for each dab.

Microscopic particles are actually binding themselves to the metal structure, which is why the manufacturer stresses that you keep shaking the bottle even while doing all of this other stuff. Yes, it does take some doing to get it right. But, relax, if something doesn't work out quite right, it only takes a few minutes to start all over again. That is, of course, unless you discover that your polishing job sucks, in which case the redo will take a little longer.

Now that I've gotten the hang of using the Blue Wonder products, I can show a customer an assortment of barrels and most won't be able to say which ones are factory blued and which are cold blued. On the Savage, the wood looked just as miserable

as the metal, but Brownells' Checkering Restoration Kit helped to solve the problem of the worn checkering (see "Recutting and Restoring Worn or Damaged Stock Checkering" in the March 08 issue). Then I used Blue Wonder's Wood Shine to bring back the luster.

It's not the equivalent of a hand-rubbed finish on new wood, but it's pretty darn close for a fraction of the cost. Conclusions As a skilled craftsman offering your services to the public, you need to advise your customers against doing anything that would compromise the value of a collectible gun. By the same token, you need to be up to date on what products and services are within your area of expertise and what alternatives are available that your customers can afford.

Today's cold bluing products are leagues ahead of what they were only a decade ago, and most of the "found" family guns are simply not collectible. In most cases, the "restoration job" is all about making the gun look nice for the grandkid. I'll give a customer a price on a hot-bluing job, and while they're dealing with the sticker shock, I'll pull out a few of my cold blued guns (which, by now, have set long enough for the chemical smell to dissipate).

And then, when I quote them a price on cold bluing, with wide eyes and smiles, my offer is usually accepted. I

PISTOLS

The M1911 in 10mm: Some Special Considerations

For most gunsmiths, building or tuning a 1911- type pistol in .45 ACP is like a walk in the park. But the path can be thorny when the 1911 is chambered for the 10mm cartridge.

BY ROBERT K. CAMPBELL SEPTEMBER 2009

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It took quite a few years, it seems, for gun makers and gunsmiths to learn how to make the 10mm cartridge run smoothly in the M1911type pistols. This knowledge is worth remembering, however, since there are both old and new commercial 1911 pistols available in 10mm, as well as pistolsmiths'both amateur and professional'who prefer the 10mm cartridge over the .45 ACP. The first pistol chambered for the 10mm cartridge was the ill-fated Bren Ten pistol.

The Bren Ten was a commercial failure for a combination of 45 ACP (left). As a result, fine tuning of the 10mm pistol demands considerably more care. reasons, but the 10mm cartridge survived due in large part to Colt's introduction of the Delta Elite in 1987.

Everyone remembers the problems with the first Delta Elites (they were quickly resolved), but the cures are not as widely known. (The framecracking problem was solved by adding a relief cut in the frame.) And there were and are other problems that were function-related, not wearrelated, that were common to the Delta Elite, the Gold Cup 10mm, the Elite 10mm, and various other Colt and non-Colt 1911s chambered for the 10mm cartridge. These are problems that are not common to .45 and .38 Super pistols.

In my experience, the new Kimber 10mm seems to be free of the ills of earlier 10mm 1911s, and Kimber seems to have made every improvement that was needed in the 10mm. And, to be honest, at least some of what I've learned about the 1911 in 10mm has come

from studying the Kimber. The 10mm is a high-pressure cartridge compared to the .45 ACP, and generates much more momentum than the .38 Super.

The mil-spec chamber of the 1911 is plenty strong enough to contain the 10mm, but power is always gained at some expense and wear may be increased. Slide velocity is also increased over the .45 ACP, and some type of extra-strength recoil spring is needed. The original Colt Delta Elite used several variations on the full-length guide rod, none of which were very workmanlike, in my opinion. The plastic original type was deemed "Mickey Mouse" by writers in the popular press.

Oddly enough, in preparing this article, I could not find an original guide rod for refer-

THE M1911 IN 10MM: SOME SPECIAL CONSIDERATIONS CONTINUED

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This Colt features the shock buffer combined with a Champion full-length guide rod and a 20-pound spring. Hence; it seems that none of them have survived. Poor spring technology led to reliability and accuracy problems. Too light springs proved to promote inconsistent locking and resulting poor performance. A heavier mainspring than the 16-pound .45-type was needed to ensure the slide locked properly and handled the 10mm pistol's recoil.

Some of us took a bit longer than others to understand what was needed to properly spring the 10mm. The recoil spring does not reduce pressure, but it certainly helps to contain pressure. The 10mm 1911 barrel begins to unlock after about an inch of slide travel. When dealing with heavy recoil springs, the effect of the mainspring must also be considered. After shooters realized that a 20-pound recoil spring was needed in the fullpower 10mm, all problems were not cured.

For example, if you install a full-power recoil spring in a pistol where the shooter has fitted a light mainspring in order to achieve a lighter trigger action or easier cocking, then much of the advantage of the recoil spring is negated. The recoil spring and the

mainspring must match. But for many years, fitting lighter mainsprings in the .45 was considered standard operating procedure. Things aren't quite so simple with the 10mm, however.

When a 10mm pistol exhibits function problems, the best approach is often to replace all the springs in one clean sweep. The matching of the hammer spring or mainspring with the recoil spring is almost an art form, and is not always well understood. The mainspring should be full power, and the recoil spring for the full-power 10mm should be a 20-pound spring. I recently bought a W. C.

Wolff spring set for the 10mm 1911 from Brownells. (The folks at Wolff understand the art of matching springs.) This set has a 20-pound recoil spring and a 24-pound hammer spring. But there is more to the game than controlling recoil with the hammer spring and recoil spring. Cycle reliability is also important and deserves some study. The heavy 20-pound recoil spring only changes rearward travel.

In other words, when the pistol is battering itself to death with a too-light recoil spring and we fit a heavy recoil spring, this new

spring only arrests the rearward travel. Forward travel is actually speeded up. When this situation exists, a weak or well-worn magazine spring will make itself known, often failing to feed the cartridge properly on the last round. Metalform is the only source I know of for high-quality, modern 10mm magazines.

With Colt 10mm magazines, a failure to lock open on the last shot or a failure to feed on the last cartridge in the magazine is common. Match the 20-pound recoil spring and the 24-pound hammer spring with anew Metalform magazine, and you'll solve a lot of function problems. Accuracy is adversely affected by poorly matched springs. A 10mm pistol that fires "patterns" instead of "groups" is probably suffering from mismatched springs and inconsistent lockup.

This has given the 10mm an undeserved reputation for poor accuracy. The weak springs simply don't bring the piece back into battery correctly. While we're on the subject of springs, your customers should be aware that heavy springs are demanding, and if the shooter is not doing his The author suggests considering future maintenance requirements when choosing a full-length rod.

THE M1911 IN 10MM: SOME SPECIAL CONSIDERATIONS CONTINUED

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part our work will go for nothing. Be certain he understands that the pistol must be held in a proper shooting grip. A limp-wristed hold guarantees a short cycle with the combination of full-power 10mm loads and heavy springs. Another factor that's often overlooked is that the slide of the Colt Delta Elite is heavier than that of the .45 1911. This is why the recoil calculation might call for a 24-pound spring in a standard 1911, but the 10mm actually runs well with a 20-pound recoil spring.

Of course, I'm talking about using full-power ammo such as the Cor Bon 135-grain 1,450-fps loads rather than the 10mm "light" loads that are in .40 S&W range ballistically. I don't always use a fulllength guide rod in a .45-caliber pistol, especially if frequent cleaning is going to be required. The one-piece guide rod continues to perplex some novice shooters, and the small hole in the rod begs an explanation.

I've seen a number of these rods that were bugged up because someone thought a punch or nail could be inserted in this hole and the rod screwed out. Rather, the slide is racked to the rear and a paper clip or thin wire is inserted into the guiderod hole. This allows the spring to be With the full-power 10mm load, this is the preferred type. The Springfield on the left has a rather sharp-shouldered beavertail, while the Kimber on the right features the preferred style.

While fulllength guide rods are considered an unnecessary complication to some, I think they're an asset in the 10mm. Some guide rods are more troublesome than others, but I've used the Champion guide rod coucompressed and the guide rod to be removed from the bottom of the slide during disassembly. Actually, I prefer the full-length two-piece guide rod. The two-piece rod requires an Allen wrench for disassembly.

The Allen wrench is applied to the end of the guide rod and the forward half is screwed out for disassembly. Another slightly different type is the recessed guide rod. With this type, a barrel-bushing wrench is used to depress the barrel bushing enough to remove the end cap. Either type is available from Brownells. I think it's a matter of personal preference, but I believe the two-piece rod is the easiest to service. This brings me to a strange malfunction I've seen only with the 10mm.

Somehow, a burr can develop on the reverse plug of a 1911 equipped with a full-length guide rod. The burr can be severe enough to hang up the guide rod. I suppose this is probably related to battering. Without a spare reverse plug on the shelf, I've polished and recontoured an offending plug with a Dremel tool and good function was restored. Another factor that should not be

THE M1911 IN 10MM: SOME SPECIAL CONSIDERATIONS CONTINUED

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overlooked'especially when building a 10mm pistol from parts'is comfort. Keep in mind that the 10mm has more recoil than the .45 ACP. Thus, any sharp edges, especially as found on the tang in some runs of Colts, can be uncomfortable. When choosing aftermarket accessories'even including grip panels't his greater recoil must be kept in perspective. A raspy handle may not be ideal today, when more shooters work on a keyboard than with a jackhammer.

Another poor choice for full-power 10mm pistols is a beavertail with a pronounced memory groove. This type of beavertail will slam into the hand under recoil. A more conservative profile is indicated for the hard-kicking 10mm. Rather than a beavertail with a pronounced memory groove, a beavertail that spreads the recoil across the palm will be much better. Feed reliability is seldom a problem with the 10mm.

The long and relatively slender case of the 10mm would seem to be prone to misfeed, but it seems that all the popular 10mm bullet styles feed reliably. The issues are more related to cycle reliability. I have encountered a number of ejection problems with the 10mm. This makes sense considering the heavier springs used with the 10mm automatic. This is one of the few cases in which an extended ejector actually proves to be an asset.

Among the oddest problems I've ever encountered is the problem of a 10mm 1911 with ejection port flash. Sometimes, flash at the port is a problem with a .45, but the 10mm is by far a worse offender. While this doesn't seem to be a safety issue, ejection-port flash is often accompanied by poor function. When the proper springs are fitted, ejection port flash usually goes away. I suppose the piece is firing and unlocking a bit too soon.

This seems to be the only explanation for ejection port flash, especially when we realize that the use of heavy springs most often cures this problem. One problem with the 10mm that concerns handloaders especially is damage to the ejected case, and I've seen some that were really chewed up. This is a malfunction waiting to happen, as the slide is striking the case before it is completely out of the slide window. There is always the possibility of a malfunction if the cartridge case is struck just right.

The ejector, it seems, is seldom at fault. In fact, the ejector is usually kicking the case out properly, but the slide is still managing to catch the cartridge case. I've found that tuning the extractor can help. Sometimes, I simply fit and replace the extractor with a Wilson Combat bulletproof extractor. Here again, we need to keep in mind the differences between the 10mm and the .45. The .45-caliber extractor really takes a dig in the extractor groove.

When fitting a 10mm extractor and working the small hump on the extractor body for a good fit, there are allowances to be made with the 10mm case. (I also often use the Weigand extractor-tension tool to reset extractor tension.) The 10mm should be tuned to take a little less of a dig in the extractor groove than the .45. When the extractor is properly tuned for the 10mm, beat-up brass is not a problem. I recently worked with a Dan Wesson Razorback. This is a 10mm pistol with an external extractor.

When the case was withdrawn from the chamber, the tension from the extractor made removing the cartridge case very difficult. External extractors set for the .45 as this one apparently was will not function as well with the 10mm. I bent the hook of the external extractor slightly and cured this problem. A final small problem I've seen is with the sights on a 10mm. Set screws are more likely to work loose under the recoil of the 10mm than that of the .45.

A little extra care with the 10mm' and possibly some non-permanent thread locker can help to alleviate this problem. While owners of the Kimber and other high-end 10mms might disagree, the M1911 is more finicky in 10 mm than in .45 caliber and certainly not as long lived. Still, with proper attention to detail, the 10mm can give the owner good service and an acceptable service life.

PEOPLE & COMPANIES

Fabricating a Fixed Ejector for Jarvis .22 Conversion Unit

The Jarvis .22 LR conversion unit for the M1911 uses a floating ejector which is prone to breakage and doesn't always fit every frame. Here's how to fabricate and install a fixed ejector in the Jarvis unit.

BY ROY SEIFERT SEPTEMBER 2009

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Fifteen or so years ago, I purchased a Jarvis .22 Long Rifle conversion unit for the M1911 frame. The unit never really worked correctly, because the floating ejector didn't fit my Colt 1911 frame. Not long ago I decided I wanted to see if I could make the Jarvis unit function reliably, so I dug it out of the box where I had it stored and went to work. Apparently, at some point in time I had broken the ejector, which you can see in the photo. The ejector fits into a slot milled in the side of the barrel.

It's not fixed into the slot in anyway; it's just floating. Just above that slot is another slot milled for the steel slide. Jarvis, Inc., no longer manufactures this unit, but has transferred the manufa Tactical Solutions www.tacticalsol.co Other 1911 .22 LR conversion

units use a fixed ejector mounted to the barrel. This seemed like it would be more reliable to me. I reasoned that if I mounted it with a roll pin instead of some other more permanent means, I could always remove/replace it.

Drilling the Barrel For the roll-pin hole, I wanted to get the hole as close to the inside of the slide-rail slot as possible without breaking through. Since the ejector slot is deeper than the slide rail slot, this should be the mid-point of the ejector, and leave plenty of clearance for the chamber and bore. With the 22 LR conversion unit. Note the broken floating ejector at the bottom. It broke at the bend. new ejector pressed against the inside of the ejector slot and pinned in place, it should not move.

I installed the barrel upside down in my machinist's vise so it was level. The top of the barrel was milled flat so I set that on a parallel. I positioned a 1/16-inch square-end bit 0.1825 inch back from the breechface and 0.09 inch in from the side. First, I milled a 1/16-inch flat on the bottom of the barrel at this point. This flat made sure the drill bit started correctly and didn't wander around. Then I took a #53 drill bit (0.059 inch) and drilled a hole through the barrel.

The #53 drill bit is slightly smaller than 1/16 inch, which allows a 1/16-inch roll pin to fit snugly. Fabricating the New Ejector I measured the thickness of the broken ejector and it came to a bit over 0.046 inch (3/64 inch). I purchased a Figure 1. Bend Bend

FABRICATING A FIXED EJECTOR FOR JARVIS .22 CONVERSION UNIT CONTINUED

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The hole can't intrude into the slide-rail slot, but also can't be too close to the inside edge of the ejector slot. piece of O1 tool steel 18 4 its ed a little less than 1/4 inch, so I knew that would give me more than enough stock to fabricate several ejectors (and make some mistakes). I carefully measured the original ejector so I could fabricate the new one (see Figure 1).

Even though I used a CNC mill (the "hobby" type), you can actually make an ejector using nothing more than a file. (It just takes longer with a file.) I used my CAD program to create a diagram of two ejectors. The 1/2-inch-wide tool-steel stock allowed me to cut out two ejectors side by side. I put the blank in my CNC mill and cut out the two new ejectors. I removed any burrs and then broke the sharp edges with a jeweler's file.

Next, I marked the ejector with a blue marker and scribed lines where I needed to make the bends. I put the ejector in a vise up to the top line and carefully bent it by hitting it with a small steel punch at the point it stuck up above the vise jaws. I lifted the ejector out to

the next line, and bent it the other way. It took some trial and error to get this right. I installed the ejector in the slot in the barrel and marked where the mounting hole should be drilled.

I removed the ejector, drilled the hole with the #53 bit, then pinned the ejector in the barrel to test for fit. The ejector fit tightly in the barrel slot, the barrel fit into the slide, and the entire unit fit onto the frame. To harden the new ejector, I hung it from a paper clip and heated it with a propane torch until it glowed bright red. I then quenched it in a cup of motor oil. After quenching the ejector, I reinstalled it in the barrel. The barrel fit onto the slide and moved with nothing binding.

The entire unit fit on my 1911 frame, and again, cycled with nothing binding. I tested the new ejector with an empty case and a loaded live round to ensure it would eject both. Finally, I took the unit to the range. I'm pleased to say that, for the first time in all the

years I've owned this unit, it functioned flawlessly. Spent cases eject with authority, and I can eject a loaded round if I get a misfire.

Conclusions/Recommendations When I purchased the original Jarvis unit, it came with two ejectors. (Which should tell you something.) I promptly broke one ejector the same day the unit arrived. And in trying to get the unit to function, I broke the other one.

This modification from floating ejector to fixed ejector has several advantages: First, with the fixed installation, you don't have to worry about getting the ejector aligned properly (which is one reason the floating ejector is so prone to breaking.) Second, the new ejector can't be lost because it's pinned in place. The new ejector is easy to replace if necessary by simply punching out the roll pin. And finally, my shop-made ejectors are affordable.

I don't know what Tactical Solutions is charging for a replacement ejector these days, but the piece of tool steel I bought cost less than two dollars and it will allow me to make at least ten ejectors. I

METALWORKING

Tuning the Remington Model 700 Firing-Pin Assembly

Internal friction inside the bolt of the Remington Model 700-Series rifle can produce inconsistent lock time and diminished accuracy. The problem is, however, relatively easy to solve.

BY NORMAN E. JOHNSON SEPTEMBER 2009

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Original caption: Right top: A Remington Model 700/40X firing-pin assembly is shown here in the spring compressor detailed in the March 08 article. The warp in the spring leads to a bind within the bolt, producing a sluggish and inconsistent lock time. Right bottom: The factory firing pin at the bottom of the photo shows the taper, which has been removed on the upper firing-pin shaft.

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A typical example of the kind of challenges that face the gunsmith is the reworking of the firing-pin assembly found on the Remington Model 700-Series rifle bolts. In this particular case, the reason I was asked to look at the rifle was a sluggish bolt assembly. The cause of the “warped” spring was the considerable difference in diameter between the firing-pin shaft and the inner diameter of the main thrust spring.

THE

The upper assembly also shows the sleeves used as a corrective measure to keep the spring straight. differences in diameter result

in a warped spring, which in turn produces drag. This drag can be considerable and tends to vary from one gun to the next. In some cases, lock time is more noticeably affected than in others. Fortunately, there is a simple measure that can be taken to remedy this problem, and the necessary parts in the corrective process can be made in the shop at minimal cost.

If you’re familiar with the Remington Model 700-Series, then you know that the shaft used for the firing-pin assembly is made with different diameters and configurations. Some are of the full inner-spring diameter, while others have a diameter well under the inner

diameter of the spring. Some are fluted with four grooves, while others lack this feature. Some are tapered, while others are not. And the weight of these shafts can vary considerably.

The smaller-diameter firing-pin shafts are the ones that result in warped springs, and the correction of this problem is what I’ll deal within this article. From the many bolts I’ve examined, these tapered, smaller-diameter shafts appear to be the ones used by Remington most often. Disassembly of the Remington Model 700-Series firing-pin assembly is best performed with a spring

TUNING THE REMINGTON MODEL 700 FIRING-PIN ASSEMBLY CONTINUED

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Original caption: Left top: At the top in this photo is the turned firing-pin shaft. Below it are the sleeve halves used to achieve a match-up of the inner bolt/spring diameter.

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Original caption: Left bottom: This before-and-after photo of the Remington Model 700-Series firingpin assembly shows the warped mainspring (top) and the altered firing-pin shaft with sleeves installed to straighten the spring (bottom).

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The drag or “hysteresis” of a crooked spring can dramatically affect lock time and thus the accuracy of the rifle. compressor. A spring compressor is available from Brownells or you can make your own unit, as I did. My spring compressor is detailed in my article in the March 08 issue of American Gunsmith. While the compressor makes the job easier, the firing-pin assembly can be disassembled and reassembled without special tools, if proper care is exercised.

The principle involved in my method for changing the diameter of the smaller firing-pin shaft to a larger one involves making and installing a split sleeve. The outer diameter of the sleeve is a few thousandths under the inner spring diameter. The inner sleeve diameter is determined by the smaller diameter section of the turned-down firing-pin shaft. Thus, before making the sleeve, the firing-pin shaft must be turned to a uniform size.

When the firing-pin shaft is put in the lathe for turning, chuck the shank end where the cocking piece attaches. Here, the tapered shaft is turned to the size most uniform along its axis. The metal removed will be along the taper for a length of about an inch. The entire taper need not be removed. A good, clean lathe bit cut will leave the

shaft dimensionally uniform for a good inside sleeve fit. Making the split sleeve is accomplished easiest by drilling a hole in a length of metal the size of the turned down firing-pin shaft. The part is then turned to the inner diameter of the firing-pin spring and cut to length. Following this, the piece is split lengthwise into equal halves. For this, I used a fine-tooth saw and just cut by eye as straight as I could. While most any machinable metal will work for this part, I used brass.

A smooth outside surface will help to eliminate friction for a more uniform lock time. The split sleeves are then put in place as the spring slides over the major diameter of the firing-pin shaft in preparation for a trial fit and final reassembly. A light coating of a lowviscosity oil over all surfaces is recommended. Conclusions The lock time of a rifle is negatively affected by any drag or friction as the firing-pin assembly is released and the cocking piece moves over the sear connector.

This is particularly noticeable when a kinked or crooked firingpin spring causes undue drag or friction. This condition is easily checked on the Remington Model 700-Series rifles by unscrewing the shroud and testing the firing-pin assembly for friction as it is moved forth and back inside the bolt channel. Any friction will affect accuracy to at least some degree. This procedure will greatly reduce the friction drag caused by a warped spring.

The cost involved is very low and the job can be accomplished in only an hour or two. I

FINISHING

Reader Forum

BY AMERICAN GUNSMITH EDITORS SEPTEMBER 2009

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Slow-Rust Bluing I just reread the March 2009 issue. The slow-rust bluing article described the process thoroughly. (Keep up the good work.) I'll be giving it a try soon. The question I have is about the color. How does it compare to common hot bluing? Or is there a common gun that has a finish that looks like slow-rust? When I give this a try I need something to compare my work to, as I'm not sure what to expect the color to look like. Thanks. The article covers merely one of many slow-rust-bluing processes.

All are time-consuming, but not all of them require the serious acids of the Neider process. Before finally making a decision on which method to use, we suggest you secure a copy of Angier's book mentioned in the article. Also, you might want to have a chat with Brownells, whose founder, Bob Brownell, based his early business on providing products for those in the bluing business. We know of no mass-produced gun whose manufacturer employs slow-rust bluing in its finishing. The cost is simply prohibitive.

If you could locate a Holland & Holland or a Purdy, you could see an example of the art carried to a fine degree. We once were invited by the present day manager of Purdy to examine one of their "best" over/under shotguns during a trip to the U. K. As you'd expect, it was

immaculate and when looking closely at the upper barrel, the depth of the bluing seemed infinite. Unfortunately, we were not told which method was used to finish the shotgun, since the finish is considered proprietary.

Incidentally, the price of that particular O/U was \$70,000. And that was several years ago. Ted Williams Rifle? I have a Sears Model 34 Series 583- 3401 Ted Williams .22-caliber semiautomatic rifle. I have general disassembly and assembly instructions, but I would like to remove the barrel for bluing and don't know if it is threaded in, pressed in, or pinned. My intention is to rust blue the barrel, magazine tube, and sight, and remove some slight nicks in the receiver.

I plan to use Brownells bake-on paint on the receiver and refinish the stock with tung oil. Any information you could give me would be greatly appreciated. Mason L. Jackson Murphy, North Carolina Looking through the cross-reference list in the Gun Part's catalog, the only Sears 34 we see was made by J. C. Higgins. This is puzzling, since J. C. Higgins products, like those bearing the name Ted Williams, were Sears' store brands that were produced by numerous original-equipment manufacturers. For example, the J. C.

Higgins Model 36 was produced and sold by High Standard as their Model 34, and the only Ted Williams firearm we see listed is aside-by-side that was made by Savage and sold as their Model 49. We suggest you send a photo of the rifle to The NRA Museum (Waples Mill Rd., Fairfax, VA 22030) and include a stamped, self-addressed envelope.

The folks at the museum maybe able to end the confusion regarding the original manufacturer, and then we may be able to advise you concerning the barrel once we know who made the rifle. Winchester Model 1001 Recall My son bought a Winchester Model 1001 shotgun while stationed overseas in the military. I did a Google search on it one day and found out that Winchester had issued a recall of that model due to a “safety” problem.

I told my son and he called them, only to find out that instead of fixing the problem, they would replace his gun with anew gun’d ifferent model, different manufacture. All he had to do was send it in. They said that they couldn’t fix it because they didn’t have the parts. Do you know what this “safety” problem is? He’s not ready to give it up yet, since the shotgun is so beautifully engraved and inlaid with gold. Thanks.

We believe your son’s shotgun is a high-end Model 1001, which has been out of production for several years and predates the current Browning- Winchester arrangement. We suggest you call Jerry Stevens at Nu Line Guns ext. 5), a former Winchester authorized service center. if anyone can answer your question, he can.

Replacing a Model 1400 Magazine Throat A customer recently brought me a Winchester 1400 MKII with a broken magazine throat. (The shells won’t stay within the magazine tube.) I have no idea how to remove or replace this plastic piece. Also, I have searched for a replacement part and have found that the part is either not available or ranges in price from a few dollars to as much as \$39, which leads me to believe that there are different parts with the same name.

I’ve also seen the parts listed as “one-piece” and “twopiece.” (The model in my shop has a one-piece part.) Any help you can provide on removing and replacing this part would be greatly appreciated. Purchase a replacement magazine end cap and install it on the mag tube, and then remove the trigger group from the receiver. Insert a couple of fingers up into the receiver where it joins the tube.

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FROM THE ORIGINAL PAGE

With a rubber, leather, or wooden mallet, strike the replacement end cap until you've driven it in just far enough to free the single throat. Then withdraw the throat from the receiver to the rear and downward. Next, locate a closed-end lug wrench large enough to fit over the tube but not the cap. Remove the cap temporarily, slide the wrench over the tube and replace the cap. Properly

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READER FORUM CONTINUED

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position the new throat and pull the tube forward by hand to trap the throat between the tube and receiver. Using the wrench (you can add some weight to its straight section), repeatedly run it from the interface with the receiver into sharp contact with the end cap. Keep this up until the throat is flush with the tube interface within the receiver. Finally, switch from the replacement to the original magazine end cap. The same procedure can be followed when faced with a two-piece throat.

Both one and two-piece versions were employed in making the Model 1400, but not during the same production run. For parts availability, contact Nu Line Guns. Browning Citori Problems I bought a very dirty Citori O/U 20 gauge at a gun show for \$200. I took it to my shop, did a good cleaning job, and test fired the top barrel.

I couldn't test the bottom barrel because it would go the way I angle the shell or try to open it up more, the shell won't fit. (I guess that's why it was only \$200.) I took it all apart and everything looks normal. I would appreciate your opinion on what might be wrong. Unfortunately, you may be right about the pittance paid. And you didn't mention whether the gun was a Type 1 (no engraving) or a Type 2 (engraved receiver).

Either way, when the gun fails to open, the action could be loose due to wear on the locking bolt or barrel lugs, a loose forearm bracket, or a worn hinge pin. The latter is rare but loose actions tend not to align properly. You can tackle the bracket by staking it approximately 1/8 inch to the rear of the front edge of the bracket cutout in the forend. Repair of the locking bolt, lugs, and hinge pin will probably require factory service.

Dykem or a magic marker can be used as an indicator to check for interference between the barrel "ears" and the receiver. If interference is present, any excess metal can be stoned away. This rubbing together doesn't usually accompany a loose action, however. Browning Buckmark Trigger Work I have a Browning Buckmark Camper with a terrible trigger; it feels like grinding metal when pulled. Do you have any tear-down and trigger-work info on this pistol?

The gun was purchased new and the trigger has always been difficult to pull. Thank you. It's too bad this series of Browning plinkers—including the Challenger models—have never been embraced by the accurizing aftermarket like the Ruger .22 has been. And we know of no pistolsmith who has worked over a Browning .22 pistol. As far as we know, this means that trigger work on the .22 caliber Browning would have to be approached the same as any DA/SA duty pistol, which tend to have horrendous triggers out of the box.

Basically, this entails reducing friction as much of it as possible without creating a negative effect on reliable function. You can use Arkansas stones, polish, and perhaps very fine emery cloth wrapped around a small, flat file. You don't want to recut the sear, but you'll polish its sides. You can do the same with the trigger, the hammer, and the trigger bar, and you'll want to put a shine on every pivot pin in the pistol.

Don't cut the mainspring, but make the mainspring plunger sparkle, including its upper end that interfaces with the hammer link. After all that, give the frame rails, slide frame rails, and the frame's trigger-bar recess a close examination under magnification and smooth up anything resembling roughness. Finally, remove all traces of grit from everything you've worked on,

lightly lubricate the parts, and reassemble the pistol. You probably won't take any pounds off the pull, but the trigger will feel lighter.

Incidentally, disassembly and reassembly of the Buckmark is covered by Gun Digest in their latest book on automatic pistols. Installing Poly-Chokes I could swear I've seen an article in American Gunsmith on installation of Poly-Chokes or other adjustable chokes on various shotguns, but going through my extensive collection, I can't find it. Am I crazy or am I just missing it? Thanks. While we have published an article (1993) on Poly-Choke ribs, we haven't done so for the choke.

However, in the past there were two methods of installation practiced. One requires the exterior of the barrel close to the muzzle to be machined down and then threaded in a lathe. The second method still requires turning down the barrel, but eliminates the threading by soldering a threaded adaptor to the machined area. The second is preferred by most gunsmiths, because there is less risk of over-thinning the barrel. The new Poly-Choke II series is made for shotguns that already have screw-in chokes.

We assume this series would simply screw in to replace the OEM choke(s). Since Brownells sells Poly-Chokes, you might want to check with them or with the manufacturer, Nitram, LLC M1911 Sight Swap. A customer brought in a Colt 1911 with target sights. He would like low carry night sights installed. The rear sight is a standard dovetail, but the front sight appears to be soldered into a 1/8- by 1/2-inch slot that goes clear through the slide. What's the best approach to installing night sights on this pistol? Thanks.

WE THINK YOU'RE INCORRECT REGARDING THE SOLDERED-ON FRONT SIGHT. THE SLOT

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(continued from previous page) width and length you describe sounds like it's standard for a staked-on front comprised of a blade and tenon. Remove the slide, recoil assembly, and barrel, and then invert the slide. Look closely for signs of soldering. If you see none, use a drift punch to knock out the sight from the inside. (Note: These staked-on fronts can be easily detached by capturing the blade in a vise then rocking the slide side to side until the blade breaks free.

Afterwards, a punch can be used to knock out any portion of the tenon left behind.) If your customer wants a Novak low-profile rear, the slide will have to be machined aft of the dovetail cut. This will require a mill or combination mill/drill. Trying to perform milling operations with a dedicated drilling machine will only result in damage. You must be very careful when installing night sights that glow in the dark. You can't pound on them without risk to their illuminating elements.

Tri Ji Con, for example, has gone so far as to design and produce a fixture for installing their night sights that eliminates this danger, but it is quite expensive. Whatever combination of rear and front sight is chosen, be absolutely sure their respective heights from the top surface of the slide are equal. Stock Finishing/Rust Bluing I'm having a lot of trouble removing dark oil spots from a stock where the metal was in contact with the wood. Any ideas?

I enjoyed Dan Herman's article on rust bluing, but I wondered at which step you could let it rest if I had to take a break. (My guess would be after carding.) Do you have any idea how Colt got those deep blue finishes on their 1930s revolvers and Pythons? One final thing: Do you know any tricks for saving or restoring lettering on guns getting restored? Thanks. For the oil spots try some whiting (from Brownells).

After carding is okay for a quick break, but after the piece has been returned to its oxidation cabinet (or wherever the rusting is taking place) prior to the next carding is the time to get a good night's sleep. We have no details on the bluing compounds used by Colt, but we doubt they employed slow-rust technology. It would increase production time and production cost dramatically.

It may have been the excellent substrate preparation that you noticed on these revolvers, or perhaps it was a proprietary mixture of chemicals that resulted in the deep finish. (They don't reveal their formulas, but some present-day bluing services come pretty close to matching those prized "Colt Blue" finishes.) The only trick we know of for engraving is to clean it out with a toothbrush and solvent. If it's too worn, however, your only alternative is to turn it over to a reputable engraver.

He would be able to slightly deepen what's left of the original. Fulton Shotgun Reassembly I have a Fulton double on the bench that needs anew firing pin or hammer and possibly anew hammer spring, causing the shotgun to misfire on one barrel. Getting it apart seems pretty obvious (drift out the hammer pin). My question regards compressing the springs and caps and reinstalling the hammers under tension and drifting the pin back in place. I've looked at the index for American Gunsmith and can find nothing on this.

Can you direct me to a source of help or advice, or was it was in an issue that I overlooked? Thanks. Fulton shotguns were originally produced by Hunter Arms, a company formed around 1915 in Fulton, New York, to manufacture L. C. Smith doubles. The Hunter/Smith relationship was maintained until 1950. Later, from 1968 to 1972, Marlin resurrected the L. C.

Smith. (Note: Doubles made in Fulton may have Damascus barrels and should not be fired with modern loads.) Disassembly instructions appear in the hard-cover edition of the NRA Guide to Firearms Assembly and the Gun Digest book on assembly/disassembly of shotguns. The tools and techniques for spring compression during hammer reinstallation are shown in the Gun Digest book. I can Gunsmith, address your email to ta letter to American Gunsmith Merritt Island, FL 32954.

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