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ARCHIVE ISSUE NUMBER

INSIDE THE ARCHIVE

RUGER ULTIMATE BULLSEYE UPGRADE, PART TWO

MTM CASE-GARD • WORKING THE COLT 1908 • SHOTGUN ADJUSTABLE COMB INSTALLATION TRICKS • BORE THROATIN...

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 168

DIGITAL ARCHIVE EDITION

Preserved for the bench.

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GRINDING

MTM Case-Gard

BY AMERICAN GUNSMITH EDITORS DECEMBER 2017

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The High-Low Shooting Table is a portable, adjustable benchrest-style shooting table for left and right handed shooters capable of standing between 18" to 55" tall.

Stabilized with three legs and footings that wedge into the ground, the High-Low Shooting Table was designed for field use or uneven ground, as well as angled areas such as a hillside. The 17" x 33" table surface is large enough to hold rifle or handgun rests, along with ammo and tools.

The comfortable, lightweight, portable stand is produced with a ridged, engineering-grade polypropylene top that is available in a dark earth color. MTM lists this with an MSRP of \$139.99. MTM Case-Gard The Gun Cleaning Rod Case was designed to secure up to four rifle and shotgun cleaning rods up to 47" within its foam padded interior. Each rod is held in an individual slot, preventing rattling and damage to the rods during transportation. The case includes room for storing patches, jags, and brushes.

Cleaning equipment is organized into a single, transportable container. Available in red, MTM lists this at \$29.99. Finally, the Tactical Mag Can was redesigned specifically for .308 magazines and can hold 10, 20, and 25 round magazines for .308 AR platform rifles, along with 10 and 20 round magazines for M1A and M14 rifles. It features a reinforced, O-ring seal, making it water-resistant, and a latching system that locks the magazines tightly into the case, protecting them during transportation.

The Tactical Mag Can holds up to 14 magazines individually secured in pre-cut, closed, military-grade foam. Measuring 17.2" x 10.7" x 9.2" (H) with a double padlock tab and molded-in stacking ridges makes it practical for storage. Suggested retail is \$27.99. Contact MTM Case Gard at MTMcase-Gard.com or

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MEASUREMENT & INSPECTION

Working The Colt 1908

Here's how to work on Colt's 1908 .25ACP Vest Pocket pistol.

BY MARK R. HOLLENSEN DECEMBER 2017

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I must admit, I have had a number of these little gems come into my shop over the years, and most come in with the same issues— either missing parts, or disassembled and brought in a small plastic bag. Recently, another one made its way to my bench for reassembly and inspection. It is none other than the infamous little Colt Model 1908 Vest Pocket, a hammerless pistol chambered in .25ACP.

Quite a bit of information has been written on this little pocket pistol that can be readily found in books, magazine articles, and Internet searches, including historical information about the specific years each serial number blocks were manufactured by Colt. For starters, this little pistol was purportedly and internally at Colt referred to as the Model “N”.

According to Colt record keeping, the company manufactured it between 1908 and 1947 with the final ones being shipped. Not many parts to contend with on this model. Note the lugs on the barrel and the firing pin (striker) type. out in 1948. Due to the volume of these guns manufactured—approximately 420,000+— you will more

than likely run across these in your shop in need of parts, or for inspection and cleaning, or all three.

They are regarded as moderately collectable guns, especially the models with serial numbers that have four or less digits. This little Colt came with a 2" barrel, had an overall length of 4 1/2" and an unloaded weighed of 13 ounces, making for a compact little pocket gun. The early guns (serial numbers lower than 141,000) had two safeties. After that, a third magazine disconnect safety was added.

A description of this added safety quoted in the original owner's manual says, “If a cartridge remains in the chamber of the barrel and the pistol is left in a cocked position when the magazine is withdrawn, the arm cannot be fired even if the trigger is pulled because the Safety Disconnecter positively breaks all connection between the trigger and sear.” Finishes for the M1908 were available in blued and polished nickel, while some were known to have been silver and/or gold plated, as well as having engraved 25ACP Vest Pocket Model Pistol. editions.

Grips for this gun were available in checkered hard rubber or walnut, with special order pearl and ivory grips being offered and available at one time. This gun is similar/identical to the FN Model 1906, if you run across one of them. Regarding the gun that recently came into my shop, it was a 1926 manufactured pistol and according to the total number made that year, it appears to be a late year model. The owner of this pistol brought it to me in a plastic bag, along with some new parts he had ordered for it.

This gun often has missing parts, most commonly the mainspring, mainspring guide rod, and the safety assembly (spring and spring detent plunger.) This specimen was no exception, other than the customer had already purchased the replacement parts. He wanted me to be sure that the gun was reassembled correctly, that it was fully inspected for proper safety function, and test fired. He was very proud of his little collect-

WORKING THE COLT 1908 CONTINUED

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Being often overlooked, the panels and receiver should be removed and wiped down whenever cleaning to help prevent this type of damage to the gun. The short leaf on the spring faces out from the receiver. I found and wanted to be sure it would still function properly. Inspection of the parts provided by the customer found that all parts were accounted for and his ordered parts were the correct ones for this make and model.

The fact that this little pocket pistol has only 30 parts makes it a very simple, yet interesting. Also shown is the sear stop pin in the receiver. This pin should not be removed. design. I say 30 parts, counting all of the numbered ones on the schematic, and adding in the two grip panel escutcheons that are absent from any schematic I have found to date.

The good news is that most of the parts are still readily available from most parts houses, but for how long remains to be seen.

I have also found aftermarket. Disassembly Turning our focus back to the pistol on the bench, let's disassemble it now. Begin by—yes, you know—making sure that the magazine is removed, the gun is unloaded, and that you physically pull the slide fully to the rear and visually inspect the chamber to insure no live rounds are in the gun. You can lock the slide to the rear via the slide lock (also used when light cleaning) if that assists in visually inspecting the gun for any live ammunition.

Once you know that the gun is safe, begin by closing the slide and pulling the trigger as the gun should not be cocked when disassembling. Holding the gun in your weak

hand, push the slide back about 3/8 of an inch (I actually align the front of the slide to nearly even with the front of the receiver) and hold it open with your weak hand thumb. You should be able to see the barrel lugs that line up with the slots inside of the slide at the ejection port.

With your free hand, grasp the serrated cuts located at the muzzle of the ket parts available for this little Colt as well, but hesitate to name those parts companies here as they might not have or make them anymore. barrel. With the barrel lugs lined up with the slots in the slide, twist the barrel a quarter turn to the right (clockwise as you face the muzzle of the gun.) After making this quarter turn, ease the slide and barrel forward and off of the receiver. Important: Use your weak hand to cover the firing

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These parts essentially fit together when properly seated in the frame. The barrel lugs are shown for reference in the ejection port but should actually be interlocked with the lugs inside of the slide. Those same lugs will ultimately be turned down and interlocked with the lugs in the top inside of the receiver. pin assembly as you move the slide forward as this is where parts can be (and most often are) lost.

Note here how the firing pin, mainspring, and mainspring guide rod fit up against and into the round tab or ear protruding up from the very back of the receiver. The mainspring guide rod fits into the round recessed area of that tab when reassembling. Also take care to insure that the safety is in the correct Off position.

Looking at the original owner's manual, it states, "When slide is removed, care should be taken to see that the Slide Lock Safety is not pushed upward as this will release the Slide Lock Plunger and Spring causing them to fly out and become lost." The firing pin, mainspring, and mainspring guide rod can now be removed from the slide.

With those parts safely removed, separate the barrel from the slide by giving it a quarter turn back to the left (counterclockwise), allowing the barrel to drop out rearward from the slide. Remove the recoil (retractor) spring and guide rod (parts #20 and #20 in schematic.) The gun can now be routinely and adequately cleaned at this point of disassembly.

Remember when cleaning to always remove the stocks (grips or grip panels) as time, elements, dirt, and other corrosive materials seem to work their way under them, causing rusting and pitting, especially with the wood grips that tend to soak up corrosive materials. This is probably the most overlooked cleaning area of this or any other similar gun typically made by gun owners. So, remove the grip panels now. Detailed disassembly of the pistol begins here, so let's turn our attention to the slide.

To remove the extractor, turn the slide upside down. Using alike-sized pin punch, drift the pin out from inside of the slide and out through the top. While drifting this pin out, cover the extractor so that it and its spring does not depart from your bench rapidly. Inspect this spring as it is prone to rusting and replace as needed. This little spring can cause ejection jams and often is the main jamming culprit next to a broken extractor or bent magazine lips. This completes the slide disassembly.

Moving back to the receiver, with the stocks or grip panels already removed, begin by removing the grip safety pin located at the bottom of the grip panel area of the receiver. Applying pressure to the grip safety allows the pin to simply be pushed out with a pin punch. With the pin removed, lift out the grip safety from the bottom and work it out of the receiver. Pay close attention to how the sear leaf spring is in posi-

tion before removing it. The small end of the spring faces the grip safety when reinstalled.

Just pull it out of the back of the frame. Remove the magazine release/catch as it shares the same frame pin as the grip safety. Note the small detent pin sticking up on the magazine catch as the hole in the sear leaf spring seats over this pin when reinstalled. The next step is to remove the safety. Lay the receiver on its right side, place a finger over the back area of the receiver, and then turn the safety upwards. This will release the safety detent and safety detent spring.

The covering finger prevents the spring and detent plunger from leaving your work area. With the spring and detent plunger removed, just wiggle and pull the safety out of the receiver. Moving on, use a small like-sized pin punch to remove the sear receiver pin. This pin comes out easily as well with no hammer needed unless rusted in the hole. With this pin removed, work the sear and trigger bar/ disconnecter out of the receiver. Pay attention as to how both were in the receiver before removal.

You will see a receiver pin still in the frame that is not necessary to remove—the sear stop pin. It does not need to be removed for cleaning or even rebluing and the factory tells us to leave it in place. You can now

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It appeared on this gun that someone was not sure how to disassemble it, resulting in damage to the lugs on the slide at the ejection port and a deep scratch on one of the barrel lugs. It is always best to seek the assistance of the owner's manual when taking guns down for routine cleaning, especially if one is not familiar with a particular design. remove the trigger by drifting the trigger receiver pin out from right to left. You will need a small hammer for this one.

Once the pin is drifted out, tilt the trigger backwards and push out the rear of the frame into the magazine well. You will have already noticed one more part still in the receiver: The magazine safety disconnect spring.

This little horseshoe spring is fitted into receiver rails or cutouts and the factory also tells us to leave it in place unless absolutely necessary to remove it (say for bluing or repair.) That is due to the fact that you must bend the spring a bit to work it out of the receiver and this can cause breakage. If you have a Model "N" below serial number 141,000 or so and it does not have this disconnect, that is OK because it was manufactured without it.

The absence of this part does not automatically mean it is missing, only that it may be the older model. Just check to be sure before ordering a replacement part. This completes the detailed disassembly process. Reassembly As we often see with instruc-

tions like this, reassembly is in reverse. Begin by installing the trigger, then the trigger bar/disconnector, making certain to install the disconnector properly and in correct relation to the sear.

It helps to install both the disconnector and sear at the same time for proper alignment with each other. Using a pin punch as a slave pin will better enable aligning them and to push the sear receiver pin back into place. Again, a hammer is almost never needed for this pin. Once you are certain they are in the correct position, reinstall the safety assembly.

Insert the safety detent plunger and safety plunger spring into the hole in the left side of the receiver, then push the safety in with the thumb plate being positioned straight up with the receiver (the same position you placed it in when removing the assembly.) Once the safety is pushed down into the frame, use a large flat pin punch to depress down on the safety detent plunger and at the same time, turn the safety forward so it captures the detent plunger and spring.

Don't turn the safety too far back when checking for proper fit or you may be on the floor looking for the parts! Reinstall the magazine catch and be sure that the detent pin on the catch faces up towards you and away from the inside of the magazine well. With the safety in place and in the "Off" position, install the sear (trigger, safety, and magazine catch) leaf spring.

The spring should have the tabs first installed into the receiver at the top, placing the two small leaves over the sear and back of the trigger disconnector. Once covering them, push the bottom of the spring down and into the receiver with the small end of the spring facing out (towards you) and make sure that the hole in the spring fits over the raised detent pin on the magazine catch.

After checking to make sure this spring is properly in place, work the grip safety into the receiver at the top and push down and into the receiver at the bottom against the small leaf of the sear spring. Holding the grip safety in place with your weak hand and applying pressure until the grip safety pin hole aligns with the receiver hole, insert the grip safety pin. Again, no hammering required.

At this point, the grip safety should be working and all that is left to do is to replace the grip panels or stocks back onto the receiver. Do not over tighten the screw as you can easily break the old hard rubber panels or pull the right side panel escutcheon through the walnut grip if not careful. This completes assembly of the receiver. Back to the slide. Install the extractor spring and extractor into its slot in the slide using along pin punch as a slave pin to align and hold the extractor in place. Insert the

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1 Receiver 2 Slide 3 Barrel (.25 ACP) 4 Extractor 5 Extractor Spring 6 Extractor Retaining Pin 7 Firing Pin 8 Mainspring 9 Mainspring Guide 10 Trigger 11 Connector 12 Trigger Pin extractor pin into the hole inside the bottom of the slide and tap back into place, forcing the slave pin out the top as you drift this pin back into the slide.

Next, prepare the firing pin, mainspring, and mainspring pin guide rod into an assembly and push the firing pin assembly into the track in the slide with the firing pin lug facing up inside of the slide. Install the barrel pushing it into the opening in the slide and forward until you can align the lugs on the barrel with the lugs in the slide. Once aligned, turn the barrel a quarter turn so that the lugs are engaged with one another.

And before you forget, insert the recoil (retractor) Spring Guide into the hole below the barrel lugs in the receiver.

Carefully seat the slide onto the frame while aligning the mainspring guide rod with the round tab or ear that protrudes up

at the back of the receiver and the recoil guide spring with the front of the slide. The tab at the rear of the receiver holds the mainspring guide rod in place when assembled correctly.

Pull the slide to the rear until the front edge of the slide is almost aligned with the front of the receiver and then turn the barrel to the left or counterclockwise to lock the lugs into the bottom of the receiver lugs.

Allow 21 Recoil (Retractor) Spring Guide 22 Magazine Catch 23 Magazine (Complete) 24 Magazine Spring 25 Magazine Follower 26 Grip Panels or Stocks 27 Grip Panels (Stocks) Screw 28 Safety disconnect Not Shown: Grip Panel Screw Escutcheon (left side not threaded) and Grip Panel Screw Escutcheon (right side threaded). the slide to move forward and into place. If done correctly, the gun is now reassembled.

Work the slide a few times to make sure it is working correctly and then pull the trigger on a snap cap or dummy round in the chamber. But it won't fire? Ah, yes, that little horseshoe spring you left in the receiver when cleaning it is the magazine safety cut-off and that means the pistol won't fire without a magazine in place. Insert an empty magazine and test the action for proper operation. It should lock up and drop the striker as designed. And there you have it.

As mentioned earlier, these guns typically come into the shop with missing parts or with jamming issues. Most often the missing parts are (including the magazine itself) the safety detent and spring, the recoil (retractor) spring and guide rod, and the firing pin, mainspring and mainspring guide rod. These parts are pretty much still available for purchase (except the original magazines) but I suspect the day will come where they too will dry up.

Especially the striker-type firing pins as they are more costly to manufacture. Typically, the guns will work fine once all parts are accounted for and installed correctly. Some aftermarket magazines don't work very well in these old guns and I have found that they require "lip manipulation" to allow for proper feeding, extraction, and ejection. With nearly a half million of these being manufactured, you will undoubtedly have one or more come across your bench.

They have a somewhat simple design and are kind of fun to shoot as well. I have found that ball ammunition works the best with some hollow point cartridges causing feeding problems. So test them with ball ammo when checking proper functioning. Hopefully you will get a chance to work on one of them one day as they are quite intriguing and more importantly, they are an old Colt! AG

FINISHING

Ruger Ultimate Bullseye Upgrade, Part Two

We finish our Ruger Bullseye upgrade by completing the trigger job, internals, magazine, and grip.

BY DAVID ALLEN DUMEAH DECEMBER 2017

ORIGINAL PP. 8-13

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Last issue we completed a tear down of a Ruger Mark I or II pistol for Bullseye and started in on improving the trigger. We'll finish that and wrap up our build. Use of aftermarket sears and hammers can be a good way to improve a Ruger's trigger but does not remove concerns regarding safe function. It is necessary to have the sear pulled into the hammer notch securely, removing all internal tolerances when the safety is engaged.

Aftermarket match-grade parts generally have some sear movement when the trigger is pulled and it's important that any movement be adjusted out. I have found that minimal movement here creates two levels of trigger pull. There is the original which is set by a 5/32" drill shank followed by a smack with a four-ounce hammer can do the trick. the hammer and sear during normal reset.

The other is the secondary level—which can be dangerously light—set by the pull of the trigger with the safety engaged and

moving the sear slightly away from full engagement of the hammer notch, creating an unpredictable trigger let off. This is totally unacceptable. Make sure when the safety is engaged it actually pulls the sear into the hammer notch firmly, removing all of the remaining tolerances of the fire control system.

The way to do this is to take the safety out and put a 5/32" drill shank through the hammer pivot pin hole, set it up in a vise so that the top hook of the safety is the highest part, and give it a good smack with a four-ounce hammer. What we are essentially doing is bending the hammer hook closer to its axle point. If you are careful and don't use anything too heavy, it does not take much. It most likely will raise proud metal on either side of the tip of the safety which needs to be filed or stoned off.

Done right, it makes the safety engage a little on the tight side. If it is too tight for the safety to engage comfortably as you pull that button down, gingerly take a slim pil-

lar-type file and lightly remove a stroke or two off the front edge of the notch. Reinstall and check, continuing until you can pull the safety down while firm pulls on the trigger don't generate any motion at all between the sear and the hammer. That's where you want to be.

If using aftermarket parts you should be able to get a relatively accurate trigger weight at this time. I have seen very few sear/hammer arrangements that were commercially made that didn't need some safety adjustment. For those who decide to cut their own, it is a trial-and-fit situation. Most leagues set rules regarding minimum trigger weights for competition. They are reasonable and attainable. Remember, YOU are responsible for every trigger that leaves YOUR shop.

It is not uncommon to slightly back cut the sear to reduce creep if necessary, however, a little goes along way. Again, you will need to make sure that the safety is working as described above.

RUGER ULTIMATE BULLSEYE UPGRADE, PART TWO CONTINUED

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The next item to be attended to is be the mainspring housing. Retained in the mainspring housing is a mainspring latch, mainspring detent ball (A41 or A04100) ball bearing, a mainspring (A20-1 or KA20100) and a plunger (A25-1 or KA02509). We will replace the heavy mainspring with a Wolff reduced power mainspring. This reduces trigger pull substantially while not compromising rimfire ignition. Unfortunately, this is a very challenging procedure.

Drive the mainspring housing latch pin (A26-9 or A02602) almost all the way out. Be sure to have a stout rag handy as the ball bearing will come out with The heel release extension with trimmed thread protector. great force and is frequently lost. It is not a bad idea to have a few extras around. The size they take is 7/32" and local hardware stores won't likely have extras in that relatively odd size.

However, this size is used in quality front wheel hubs of Italian bicycle wheels and a call to the local bicycle shop may prove fruit-

ful. As a last resort, they are available as a Ruger/Brownells part, but who wants to slow the job down that much? I remove the remaining plunger and spring and set them aside. I then modify a buff by using a plastic .22 caliber cleaning brush wrapped with apiece of linen and covered with rouge compound. Run that buff on the inside of the mainspring housing channel.

Chuck up the mainspring plunger proper and buff it also. After all the buffing is done, wash all the parts thoroughly and began reassembly. Reassembly is rather challenging, so pick a time of the day that works for you. The way I successfully replace the mainspring plunger spring and ball bearing is in a rubber-jawed vice.

Clamp the mainspring housing horizontally in the vice and install the plunger with anew Wolff reduced-power spring and begin to slide the tail end of the mainspring housing latch in its appropriate channel. The ball bearing needs to go back in. If you had the misfortune of removing the mainspring hous-

ing latch pin completely, put it in a pin vice and slightly taper one end to assist getting it started into the mainspring housing.

To begin the reassembly, take an ordinary hex screwdriver with no bit installed and slide it over the stub tail of the mainspring housing latch. This provides the ability to steer the lever where needed. With the tail of the mainspring housing latch trapped in the slot of the mainspring housing by the rubber vise jaw liner, start the mainspring detent ball with your non-dominant hand. Pinch the ball bearing up against the bottom of the mainspring coil and catch it with the edge of the takedown lever.

You will be required to balance the pressure with your hex drive screwdriver. A slightly smaller slave pin will help in positioning the mainspring housing latch and hold it there. When you get the mainspring housing latch to its appropriate location, try to tap the mainspring housing latch pin back in. After achieving alignment, fin-

RUGER ULTIMATE BULLSEYE UPGRADE, PART TWO CONTINUED

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Remove enough for a smooth release but don't go through. ish driving the mainspring housing latch pin flush and restake the ends as necessary. This is a good time to check the staking on the bolt stop pin (A26-2 or A02602). I bring this up here because I have seen them come loose. When and if the bolt stop pin works loose, it is almost impossible to remove the mainspring housing assembly without serious cosmetic damage to the frame. The last and final area I work on is the magazine.

There are several very good tutorials online concerning proper tuning of Ruger magazines, however, avoid removing any metal unless it is absolutely necessary. I usually buff the feed lips extensively on the exterior and use a Dremel to carefully buff the feed lips on the internal sides. I also buff the front internal surface of the magazine frame where the

bullet nose rides. This area tends to accumulate bullet lubricant that impedes reliable feeding. Shinier is better.

It is necessary to address the channel that the follower button rides in on the MK II models due to the larger button and bolt stop function. Remove all burrs with a piece of sandpaper (400-600 grit) over a 60-degree cut block of wood or use a Cratex buff in a Dremel if you have one. I then smooth out any casting burrs on the plastic follower proper. Grips If the customer decides to go with a Volquartsen target rubber grip, make accommodations to allow easy magazine removal.

This is an extremely popular grip and most likely one you'll encounter. To facilitate easy magazine removal, modify the magazine latch (A5 or A00501) by drilling and tapping a vinyl-covered stainless steel stud in the base all the magazine latch. It is possible to buy a complete magazine latch with extension as

an after market part, however, with Rugers one has to remember that the upper barrel and lower grip assembly are held together by a partial interference fit and a partial lock fit.

The barrel and the lower may not necessarily engage at the same depth from gun to gun or even within the same pistol. The magazine latch determines the height of the magazine feed lips in the barrel receiver assembly. If the magazine latch you have is working well, it's best to keep that one in the gun. Unfortunately, I have seen Rugers that "high feed" with all magazines, allowing the empty case leaving the chamber to become knocked off prematurely by the secondary feed lips of the magazine.

This is something that is frequently overlooked and much maligned. To put the magazine latch stud in, don't remove the magazine latch as it is difficult to remember the spring orientation to get it back in. It can be

RUGER ULTIMATE BULLSEYE UPGRADE, PART TWO CONTINUED

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put in a couple of wrong ways and sort of work. I count four slots from front to back in the serrations, center and punch it, and make a blind hole with #29 drill on the angle pictured here. I thread the blind hole with an 8-32 end tap, cut a stub of 8-32 threaded screw, and Dremel a screwdriver slot in the end. Be sure the stud is long enough to get a hold of, but short enough to not protrude past the base of the installed grip.

Add a blue Loctite, snug the stud into the blind hole, and slip a thread protector trimmed to length over the exposed threaded stud. To finish, the magazine itself must be modified slightly where the plastic base of the magazine meets the magazine frame proper. There will be an edge of proud steel that will catch the magazine latch if it is not relieved, making digging the magazine out of the rubber grip quite challenging.

I use a band sander and slightly taper the back tip of the magazine frame so it will be flush with the plastic base when finished after removing the base plate and internals. When this has been accomplished and the

magazine is in place, a pull and hold on the magazine latch stud will allow the magazine to fall freely from the magazine well. Continuing reassembly, move on to the barrel receiver assembly. Place your dirt shield in the recess of the barrel and rotate to its proper location.

Place the barrel on the lower, being sure that the tongue of the dirt shield is inside the magazine housing and not slipping through the cut out in the trigger guard. Align the barrel and the lower as accurately as possible and tap them together. To check to see if you are close, insert the bolt stop mainspring assembly from the top down and see if it will go all the way through easily. If it does not, either the barrel is not back far enough on the lower or it is not clocked properly.

Make the necessary adjustments so that the bolt stop pin will drop in and out easily. Place the hammer in the fully cocked position being careful not to let the hammer ("devil's") strut get caught on the sear spring stop pin. Should it get caught—as it so frustratingly so does—use the mainspring housing latch to

push the hammer forward, freeing the hammer strut from the sear spring stop pin to allow a retry. Tip the pistol in such away that the strut falls away from the sear spring stop pin.

With the hammer in the fully cocked position, install the bolt assembly. Sometimes, the bolt may act like it is bumping into something solid and does not want to go fully forward. Should this happen, gently rotate the bolt clockwise and counterclockwise slightly while pressing forward and it will find its way home. With the bolt fully forward, move the hammer into the fully fired position. To do so, rotate the pistol muzzle down and pull the trigger.

Using the mainspring housing latch, push forward on the hammer proper. The hammer should move forward. Take the mainspring housing assembly and install the bolt stop through the bottom and into the barrel receiver upper. This is where that slight dimple I recommended you Dremel into the yoke rivet of the recoil spring

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assembly comes into play. The final seating of the bolt stop up through the bolt and recoil spring assembly will be much easier. The final step, and frequently the most frustrating, is closing the mainspring housing latch successfully. The least frustrating method requires knowledge of what is going on under the mainspring housing assembly. You are trying to capture the tip of hammer strut in the cup of the mainspring housing plunger. You can easily misalign these.

Tipping the muzzle upward and looking to see the strut free hanging vertically downward is a good start. Slowly close the mainspring housing and if the strut-to-plunger is properly aligned, you'll feel a springy resistance while seating the housing before closing the mainspring housing latch. Manually cycle the bolt to confirm assembly. This is a good time to check safety function as well as the final trigger weight using dummy snap caps.

This weight may be different than the weight achieved while you were reworking the fire control section.. This can be at-

tributed to a flaring of the lower when attaching the upper. Be sure that your trigger weight is at an acceptable safe level. The preand post-travel stops can be adjusted to suit. Be careful to not over adjust the pre-travel stop as the system will not reset if you adjust it too precisely.

The reset on these models is quite audible and I generally am quite generous with the adjustments to ensure 100% reliability. Even with that dialed in, it is far superior to the original arrangement. A touch of some fingernail polish to hold the set screws and you're done. Mark I builders who choose to use the Volquartsen rubber grip will have to make a small modification in the grip to make it 100% usable with that unit. The grip panels on the MK I and II are designed to hold the hammer pivot pin in place.

Since there is A1 Bolt stop pin A26-3 Bolt stop pin pivot A20-1 Mainspring A25-1 Mainspring plunger A41 Detent ball A7 Housing latch A26-9 Housing latch pivot A38 Recoil spring assembly A13 Firing pin A35B Firing pin stop A39-1 Rebound spring A39 Rebound spring support no

Volquartsen MK I grip, there will be a void in the grip to accommodate the bolt stop thumbpiece (A04700) of the Mark II. This void will need to be filled in to assure the hammer pivot pin does not drift out to the left.

I A22 Extractor A25-J Extractor plunger A25-J1 Extractor spring A100 Grip frame/trigger guard A5 Magazine latch A26-1 Magazine latch pin A27-7 Magazine latch stop pin A12 Trigger A34 Trigger pivot A34-1 Trigger pivot lock washer A34-2 Trigger spring A25-H Trigger spring plunger Ruger Mark I (Specifications subject to change without notice) A11 Disconnecter complete A18 Hammer A25-5 Hammer pivot A26-E Hammer bushing A10 Hammer strut A26-4 Hammer strut pin ASC Safety complete A19 Sear A26-8 Sear pivot A31-A Sear spring A26-3 Sear spring stop pin routinely use three pieces of closely cut credit card super glued together and super glued into that rectangular spot.

It works very well. As a rule of safety, I always explain to the customer that this par-

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Ruger MK II (Specifications subject to change without notice) AN-37 Bolt stop assembly A00100 Bolt stop pin A02602 Bolt stop pin pivot KA011 Disconnecter assembly KA0220 Extractor A02510 Extractor plunger KA20300 Extractor spring KA01300 Firing pin A03500 Firing pin stop A01800 Hammer A02505 Hammer bushing A02605 Hammer pivot ticular pistol is no longer a picnic plinker. It is designed for formal Bullseye competition in a controlled environment.

Should it begin to double, discontinue using the pistol immediately and bring it back for service. I personally have never had one come back in. Ruger factory parts are of exceptional quality and durability. Thoroughly check over your work.

Safely test fire and A01000 Hammer strut A00501 Magazine latch KA20100 Mainspring A04100 Mainspring detent Ball A00700 Mainspring housing

latch A02602 Mainspring h's ing latch pin KA02509 Mainspring plunger A20000 Rebound spring A03900 Rebound spring support recheck your work, including any changes that may have occurred after the test fire, including the final trigger weight.

It is a relatively protracted procedure, however, the final results area unit that will easily keep up with the expensive, finicky, and difficultto-get-parts-for European specificuse .22 competition pistols of the day. As always, safe shooting.

AG AN-53-100 Safety assembly A02511 Safety detent plunger A20200 Safety detent spring A01901 Sear KA02601 Sear pivot pin A02603 Sear spring stop pin A01200 Trigger A03400 Trigger pivot pin KA04200 Trigger pivot retainer A20400 Trigger spring A02508 Trigger spring plunger

SHOTGUNS

Shotgun Adjustable Comb Installation Tricks

Unsophisticated mechanics can help with adjustable comb installation in difficult cases.

BY SERGEY LYALKO DECEMBER 2017

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Shotgun fitting is a popular custom service and I'm seeing it growing. While not anew idea—the gun stock has been changing over the centuries to become more functional and convenient—it took along time to develop an understanding among shooters how fit of the shotgun stock plays a major role in placing the shot where it is expected. Shooting at flying targets requires pointing rather than aiming and this pointing is a rapid and intuitive motion, combined with concentration on the flying target and leading it.

In such conditions, with limited time and multiple variables, only the correct fit of the gun can insure the impact is where the shooter intends, all other mistakes excluded. Normally, misfit means a physical inability of the shooter to line up the leading eye with the top rib. In other Aluminum plates may be round or rectangular and are 0.25" thick. words, the projection of the rib-line cannot be placed into the center of the eye, though trap shooters often require "high-rib" adjustment to lead the raising target.

Misfit often happens with an overly-high comb, insufficient cast-off or length, or other dimensions of the stock inconsistent with the body proportions of a particular shooter. Even if a line up can be achieved—at the cost of inconvenient and awkward shouldering—it is a misfit. Such an awkward shouldering means some muscles are abnormally tightened to achieve a sighting picture.

The concentration on the flying target and trigger pull distracts attention from the muscle control and the body relieves muscles, shifting the point of impact. That mostly goes unnoticed since the recoil smashes these subtle feelings. To eliminate problems with misfit there is a process of fitting the gun to a shooter.

Fitting Process Fitting the gun to a shooter is a process of changing the stock geometry so the aiming eye of the shooter is lined up with the top rib of the shotgun while the gun shouldering remains comfortable and correct. This correct shouldering means several things, but at the very least the

shooter's cheek should be firmly placed on the comb and the stock-butt should be properly on the shoulder.

With this achieved, fit will be provided by changing several adjustable parameters of the stock, such as drop at the comb, drop at the hill, cast, length of pull, and pitch. Sometimes there is a need in changing the configuration of the pistol grip, mostly dependent on the size of the shooter's palm. Another, non-obvious adjustment is the angle (twist) of the buttplate. In some cases, this may prevent the canting of the gun.

I've found in my practice this mostly happens not because of the buttplate position, as many would think, but because the shooter is intuitively moving the ribline closer to his eye. Regardless, it's normal for some of the mentioned five dimensions to need changing for a particular shooter. There are some fine publications on shotgun fitting and

SHOTGUN ADJUSTABLE COMB INSTALLATION TRICKS CONTINUED

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The hollow tunnel does not allow proper installation of the Graco hardware for two reasons. First, there is not enough wood for holding the part strong enough after gluing. Second, milling a 0.25" recess and gluing the base would completely obstruct the access to a stock-screw. I specifically recommend Stock Fitter's Bible by Rollin Oswald and Gunfitting: The Quest for Perfection for Shotguns and Rifles by Michael Yardley and Paul Roberts.

I find these books promote solid understanding of gun fit and uncover hidden reasons behind the lost targets. Making Adjustments The oldest method of changing the stock dimensions for fitting is bending it in a special cradle with heat applied to the grip area. Such bending, though, is best suitable for the traditional, straight English stocks that are finished with oil. It is easy to heat their slim grip area through the thickness of the wood, which is necessary for the efficient bending. Traditions have changed.

The stocks around the world have become bulkier, have pistol grips, thick combs, and are often finished with epoxy. Also, over-and-under shotguns and some side-by-sides have a steel stock-screw holding the action and stock together. All these features are obstacles for bending. While bending is some- The dimensions are not critical but a 1" width allows usage of the 1" end mill for preparation of the recess.

The base is then glued to the wood by side flanges. times still used, it no longer is the best option for fitting anymore and many bulky stocks have been damaged during attempts of bending them. There are a number of alternative solutions, including hardware for adjustable combs, buttplates, and their combinations with recoil-suppressors. Among the most popular manufacturers are Graco, Breako, CSP, and others. More and more guns appear with factory-installed adjustable stocks.

It does not exclude, though, the need for custom installation of adjustable combs by the gunsmith. Acquiring hardware, however,

does not solve all the problems. The subject of this article is solely related to problems of the adjustable comb installation on the shotguns. Adjustable Comb Installation Normally, installation of the adjustable comb is straightforward. The gunsmith locates the empties in the stock, accordingly cut off a portion of the stock, and install the set of the available hardware.

Cutting out apart of the stock with a band-saw requires some attention for producing a straight and parallel cut. For this matter I use a simple jig along with paper-tape on the stock to protect from scratches and to draw cut lines. Some similar steps were described by Walter Gaskins in his September 2011 article, "Installing Adjustable Combs On Gunstocks." Gaskins also shows how to provide a soft leather cover on the comb.

Some shooters find this feature useful for reducing recoil into the cheek and more comfortable for touch. This type of recoil, though, is a result of the shotgun swinging around the

SHOTGUN ADJUSTABLE COMB INSTALLATION TRICKS CONTINUED

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From left to right, 10-24 stage screw with turned-reduced head, standard stage screw before reducing the head, post showing 10-24 thread, shallow recess to accommodate the square protruding through the plate, and the installed post with slot for screwdriver. shoulder by the muzzle flip. In many cases, this flip and resulting recoil can be reduced by porting the barrels and providing a proper pitch of the stock. But let's get back to our major subject.

After cutting the comb you need to install hardware for enabling fourway (up, down, left, and right) comb adjustment. In most cases, gunsmiths choose Graco Adjustable Comb Hardware (graco-corp.com, because it's simple to install and use while being inexpensive. Graco bases may be either round or rectangular. The round ones are easier to install—just mill two recesses one-inch in diameter and a quarter inch in depth and glue the bases in. The disadvantage of these bases is they may be misaligned during installation.

This problem is taken away by the rectangular base, but making an accurate rectangular inlet for it takes more effort. I often round the ends of these bases in order to use the same 1" end-mill as for the round bases. In both cases, depth of the wood at the inlet area should be sufficient for complete deep-

ening the base to 0.25" into the wood while having some support under its bottom. Unfortunately, quite often, cutting the comb of the sufficient depth brings you right into the hollow stock tunnel.

Sometimes the rectangular base can still be installed in the hollow tunnel by gluing it to the walls but the major problem is that, no matter what, the base is thick and blocks at least 0.25" of the tunnel. This is often enough to prevent even a screwdriver or socket wrench from reaching the head of the stock-screw, let alone removing the screw from the stock.

Cutting the shallow comb to avoid reaching the tunnel is not the answer since the shallow comb disturbs the shooter with sharp edges of the cut and does not have enough depth for installing the bushings. Naturally, the biggest obstacle for the installation in such cases is a thickness of the Graco-like bases. Installation Solution Facing this problem quite often, I finally put it to an end by significant reduction of the base thickness.

My main principle for achieving this is using reverted 10x24 carriage bolts and a thin hi-carbon, channel-shaped 3/64" steel plate. The bolt head should be turned down to a same thickness of 3/64" or about 1mm. Note the thin profile of the new hardware and the

turned-down screwhead as compared to the original screw. I've provided a drawing of the plate with dimensions used in my practice.

The dimensions are not critical but for installation of this plate into the stock it is convenient to have 1" width for using the 1" mill to prepare the recess in the wood. The slots for the bolt-squares prevent the bolts from rotation when the posts are screwed upon them. The posts need to have the thread corresponding to the thread on the carriage bolts. I use bolts with 10- 24 thread. The posts need a shallow relief for the square protruding through the base upward.

For putting torque on the post, a simple slot on the top is made wide enough for using screwdriver, coin, or other flat object. The base is attached to the stock by gluing into the channel milled in the wood. No screws are needed. The wide sides of the base provide enough area for holding it strong. I use J-B Weld Wood Weld. Once the base is completely installed along with the plate with posts, you are ready for the comb.

The comb portion is not discussed here because it is straightforward and does not present any surprises. As usual, two bushings are installed into the comb and threaded holes are provided in each bushing for the set screws. AG

RIFLES

Bore Throating With Precision And Control

BY NORMAN E. JOHNSON DECEMBER 2017

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No single chambering reamer will form a leade to meet the needs of all handloaders and shooters. Bullet shapes and lengths, as well as rifle loading restrictions, dictate this. Therefore, it may become necessary to alter the existing bore throat or leade as shooting needs and conditions dictate. The typical chamber, along with its leade, will conform to SAAMI specifications. If it didn't, you couldn't use just any brand of ammunition to fit your rifle.

But this doesn't provide much solace for the handloader who may wish to use a variety of bullets, or a specific bullet, to fit one's needs. This handloader may find it necessary to seat longer bullets at a depth well into the case 5x47 Lapua has a 140 grain bullet seated well into the space that could be used for powder. These 6.5mm bullets for the .260 Remington cartridge range in weight from 95-140 grains. Throat lengthening may need to be considered. neck, even well into the powder column.

Boat tail and flat base bullets also can present a unique problem as well as bullet ogive configuration and makeup. It may be

useful to explore leade alteration options. The rifle throat or leade will conform to SAAMI specifications in the vast majority of instances where a shooter handloads a given cartridge. But, if a handloader wishes to load a bullet longer, the bore throat may need to be lengthened. This can be accomplished with a special throater offered by reamer manufacturers.

These throaters are caliber specific with standard or custom bullet ogive configuration. Proper use of a throating reamer should be thoroughly understood, and here I shall provide some proven procedural help that has served me well. Throating Guides Here I shall describe a precision throating reamer guide that is fundamentally easy to make and use. For each cartridge throat you choose to lengthen, you will need a fired case for that chamber.

Be sure the fired and deprimed case fits freely in the chamber of the rifle being worked on and that a bullet fits freely into the mouth of the case. I use a body die to full-length size these cases. Drill the back end of the case out to the hole size of the

throating reamer flutes. The pilot may be removable or solid, and is machined to precisely ride the lands. Use of the throating reamer to final size the hole to exact size is ideal.

Throating reamer shanks are normally 1/4" so reaming a case head to this size for calibers under .25 is fine. Though throating could be accomplished through the drilled-out case head as a guide only, the chambered case is used as a twofold purpose, including a means of precise depth control. The throater depth control stop consists of a collar that fits the quarter-inch shank of the reamer. The collar has a set screw to restrict throating entry beyond a precisely determined depth.

With the collar at pre-determined contact with the case head, it is firmly locked into position.

BORE THROATING WITH PRECISION AND CONTROL CONTINUED

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The finished hole will be the maximum diameter of the throating reamer which passes through the case neck. The 0.2560" diameter pilot fits inside the bore lands of a .260 Remington's 0.264" groove, indicating the lands are 0.004" deep. A precise throating job tapers the lands without cutting into the rifling grooves. This alerts us to the challenge of performing a perfect throating job. Throating Procedure Set Up Here we are dealing with a procedure akin to the forming of the finest chamber.

As a bullet-seating control, have a seated bullet in a sized, unprimed case at the original seating depth and one at the selected, new seating depth you want. Measure these two cartridges for over-all length and carefully note the difference. At this stage I gently insert the throater into and through the chambered guide cartridge to determine throater bore land contact. Do this carefully so the reamer cutting flutes are making gentle contact with the throat lands and not straddling them.

Try this a few times until you get a precise feel for correct throater flute land contact. Then, as a means of determining the new throater reamer depth, place a feeler gauge between the case head and control collar and tighten the collar set screw. Double check this depth a few times to be sure the throater flutes are making contact with the beginning of the lands and not falling between them.

The space you see between the case head and locked collar will be altered throat depth and should coincide with the new bullet seating depth. Leade Depth Operation The rifle barrel must be held steady in a perpendicular or horizontal position. The collar must be thin enough to leave room for the throating reamer "T" handle. Always be sure the control cartridge is fully inserted. This method of throating could be performed in a lathe but it is not necessary when using the control guide as outlined here.

With a coating of cutting oil, the throater is inserted into the fully chambered case. You may feel the pilot engage the outer surfaces of the lands. No resistance should be felt here. Note the space between the case head

and the stop collar. Advance the throater very slowly while turning it with feel to locate throater flute contact or resistance. Resistance tells you cutting is taking place. This is normal. Here I gently advance the reamer and make full turns of the handle.

A double check of the depth collar will show how far you may have advanced. If cutting offers much resistance, withdraw a few thousandths and resume the throating procedure. Don't despair if the throating procedure appears to go too fast. The throater is essentially self-feeding and you are shaving off only the few thousandths of land metal. As you feel the stop collar come to rest it will turn freely and you are finished.

At this stage I withdraw the throating reamer and guide case, blow out the chamber with compressed air, and clean the bore. A bore scope will show the extent of the altered lands forming the new throat. It is not unusual to see a trace of remaining lands where the throater didn't cut into the rifling grooves quite as deeply as the reamer throat before it. This will have little, if any, effect on the bullet.

BORE THROATING WITH PRECISION AND CONTROL CONTINUED

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The function of the feeler gauge, stop collar, and “T” handle are shown. This results in a most precision method of throating. Lap Polishing The new throat will reveal some reamer marks on the riflings, despite your best efforts, just as the chambering reamer did before it. This is normal.

I lap-polish the new throat with tight-fitting patches of 3M 30- Micron grade (400 US Mesh) lapping The cartridge case is inserted into the pre-reamed short chamber as the datum line of the case shoulder contacts the partially reamed short chamber. These cartridge-specific short chambers are used as a precise means of bullet seating for the newly

throated bore throat. This leaves the new throat ready to shoot without the usual shoot-clean regimen. paper.

About 30 passes of a few tight patches and this lap polishing will do the trick. You won’t need further throat break-in but you will need to check the new bullet seating depth in the new throat. This changes the bore/case expansion ratio to some degree and the resultant powder charges—hence pressures. Expansion ratio is the result of dividing the volume of the powder chamber, with bullet seated, into the powder chamber and bore combined.

The handloader has some leeway in powder charge with bullets seated farther into the lands. This was quite apparent to me in load-

ing some 6.5mm cartridges and is part of the web we gunsmith handloaders weave. Conclusions The observant handloader may need a deeper leade or throat with some bullet/cartridge combinations. I have experienced these benefits, particularly with the smaller 6.5mm (.264) cartridges that can use all the case capacity available.

This is particularly true of the 6.5x47 Lapua right through the .260 Remington and 6.5x55 Swede with longer 140 grain bullets. The method of altering the throat or leade as I have described herein is precise, safe, and stands to improve one’s shooting where the needs are well thought out. AG

PEOPLE & COMPANIES

Making M70 Ejector Pins

Making a gun part may prove less complicated than ordering one, particularly when the part is needed in a hurry. Here's how I made a Winchester Model 70 ejector pin.

BY NORMAN E. JOHNSON DECEMBER 2017

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Such was the case when a competitive shooter alerted me of his urgent need for an ejector pin for his Model 70 Winchester rifle. When I told him I could make one in a hurry and it would be faster than waiting on an ordered part, I got the go ahead. Making The Ejector Pin As a pattern, I removed the ejector pin from one of my Model 70 rifles. Removal is accomplished by pushing out the roll pin retainer with a small punch. This frees parts for removal.

The small spring is quite powerful, requiring eight to nine pounds of pressure to push the ejector pin flush with the bolt face surface. If it slips off the tool used to seat it, it can fly away—never to be seen again. Placing electrical tape over the part can prevent a lot of

trouble while removing or replacing the ejector assembly. A number 29 drill was used to make the part. Such steel is ideal for hardness and is readily machinable. The ejector pin is 0.138" diameter.

With the donor drill shank in the lathe, a quarter inch of the tip is turned to inner spring diameter. It would then fit freely into the compressed spring. The ejector pin retaining slot is 0.212" long and 0.070" deep. A slot is formed with a good machinist's file. Tolerances here are quite close.

Ejector Pin Assembly A comparison of Pre-1964 Winchester Model 70 ejectors and those The temper of the steel is ideal for ma-

chineability and durability for this gun part. manufactured later with push-feed action show a quite marked functional difference.

As the loaded or fired cartridge is withdrawn from the chamber on the Pre-'64 Model 70, it moves freely and straight back as the case is pulled by the extractor to the length of the case mouth or tip The punch holds the spring loaded ejector pin in place until removed. On withdrawal, the pin can go flying if not properly held. of a loaded bullet. The case rim then engages the ejector tang which passes through a slit in the underside of the bolt.

The tip of the cartridge case or loaded cartridge then moves diagonally upward and rearward as drawn back by the extractor and is thrown from the rifle.

MAKING M70 EJECTOR PINS CONTINUED

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With each rifle, inertial force, thrust upon the case rim, throws the case upward and outward out of the rifle and free of the shooter's face. Faster bolt withdrawal will sling the case considerably farther with the Pre-1964 Model 70s. The later push-feed M70s are limited to the spring loaded ejector, providing 0.085" of eight to nine pounds of force to expel the case or loaded cartridge out and away. bolt will be at maximum thrust to eject cartridges.

Extending the bottom of the ejector pin slot by 0.025-0.050" will increase extractor thrust on full bolt withdrawal. A slightly longer

spring-loaded ejector travel from 0.085" to a maximum of 0.110" will send cases flying a bit farther on bolt withdrawal. This can be accomplished by extending the slot cut out at the bottom of the ejector by 0.025". In so doing, be sure the ejector plunger surface can be pushed down flush with the bolt face or it will bottom out while chambering.

Conclusion On my target and benchrest rifles I often reduce ejector spring pressure by as much as 50%. I don't want cases that will be handloaded flying off to the side. Also, I want all the feel I can get while chambering rounds. Withdrawn cases normally fall from

the bolt onto the loading ramp. Competitive shooters using the magazine need the benefits Far left and Even the smallest of parts perform a vital function on a gun. of a working ejector.

Many of these trained shooters don't even take their eye off the sight as around is extracted and ejected, and anew round is chambered. So this tiny little part, weighing only eight grains and a half inch in length, does indeed serve a vital purpose. AG This angle is the result of the ejector pin pushing on the case rim while still held by the ejector.

SAFETY & COMPLIANCE

FFL Compliance Manager

Online FFL compliance and retail managers may be an ideal fit for your business. Epicor offers a cloud-based option.

BY DEAN MEIER DECEMBER 2017

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Record keeping sucks. It's tedious and boring, humans are notoriously bad at it, but it remains totally necessary for any successful business. This is especially true of gunsmiths or other firearm sellers as a failure to track transactions and comply with the Bureau of Alcohol, Tobacco, Firearms and Explosives can create legal problems, thus adding to the paperwork burden.

The Government Paperwork Elimination Act along with industry requests led the ATF to develop e Form 4473 for Windows and Mac OS X operating systems to ease completing Federal Firearms Transaction Records (ATF Form 4473.) However, as of January 16, 2017 the e Form 4473 is deprecated and no longer available for download from the ATF due to a new version of the ATF Form 4473 being released and a lack of update to the existing software to use the new format.

Many businesses and tech-savvy entrepreneurs have found cloud-based solutions to be an ideal fit. While it makes for a popular buzzword, cloud computing is simply using someone else's computer and software via a network, commonly the Internet. Such systems can then be accessed with any Internet-

enabled computer and a common browser, eliminating the need to install, update, store, and backup your own software and data for a given use.

Epicor Software (Epicor.com) has created such a system specifically for FFL compliance in conjunction with Orchid Advisors (Orchid-Advisors.com). Epicor specializes in industry-specific software for manufacturing, distribution, retail, and service businesses with both cloud and on-premises tools. Orchid Advisors specializes in software, growth, and compliance solutions to the firearms and outdoor sporting goods industries and has a staff that includes attorneys and ATF advisors to stay up on current policy.

Epicor's FFL compliance system is designed to streamline transaction entry, reduce non-compliance risk, and generate the necessary reports for ATF inspections or inquiries. Accounts are established and priced according to business size. A new user creates an account based on their sales numbers. A Home Based FFL account works for one FFL holder with up to 250 firearm transactions per year. Standard FFL works for a business with multiple FFL holders and up to 2,500 annual transactions.

Large FFL doubles this to 5,000 transactions and this can be expanded for larger Enterprise-level businesses. Each account is accessible with one user, however, additional users can be added. Once logged in to your account, firearms transactions are logged using a built-in "assistant" that steps through the process. ATF-compliant reports for inspections and traces can be generated with one click. Bound book accuracy or inventory reconciliation can be done any time with the included tools.

Your customers can supply their information through your account just as easily on a tablet, laptop, or other Internetcapable device. The FFL Compliance Manager also integrates with Epicor's Eagle retail business management system. This includes inventory management tools, integrated accounting, real-time analytics on sales and inventories, and personalized customer contact management. For FFL holders with retail shops, the combination of both provides dealers a comprehensive solution for the entire business.

To learn more about the Epicor FFL Compliance Manager, email Epicor at or call AG

READER FORUM

Reader Forum

BY AMERICAN GUNSMITH EDITORS DECEMBER 2017

ORIGINAL PP. 24

Held Gun Policy? I opened my shop a few years ago. Recently, I had a customer who has not picked up their completed firearm for months. What is the general recommendation on how to handle this? We'll pose this to the readership. How do you handle this in your shop? Paul Mazan offers his take: Laws differ from state to state and sometimes from city to city. If you have a lawyer—and being in business, you should have—check with him/ her. Otherwise, check with the city, county, or state attorney's office.

In my limited experience, there may be a minimum time without contact before you can do anything and that will vary. You will also probably have to show a good faith attempt to contact the owner and have proof in the form of registered mail receipts or letters returned as undeliverable. Your rules on what and how to get the property declared as abandoned and your ability to take ownership based on the value of the work done will most likely be a local matter.

Tightening The .30 Carbine I just bought a used Iver Johnson M1 Carbine. The bolt slide hangs up occasionally when pulling it back manually. I cleaned and lubed everything but it still hangs up. Other than this, it fires perfectly. Is this a sign of a worn bolt or other parts? James Vessels Author RK Campbell responds. Without having the firearm on hand, here is my best guess. Replace the original recoil spring with one from Wolff Gunsprings (gunsprings.com, Do not use the extra power spring.

Check the gas piston to be certain it is only moving about a quarter inch. It's also possible the extractor and ejector are sticking, not the bolt. If you buy anew bolt with anew extractor and ejector, that might fix it. Order of priority would be to try the recoil spring, then gas piston, and then the extractor and ejector. M1 Carbine Thanks so much for the great article on the M1 Carbine in the September 2017 issue.

My father's troop ship was hit in the fog when someone by mail a Big Sandy, TX 75755. one zipped when they should have zagged and was forced to port in Algeria, Africa. My mother worked for the Royal Air Force there. They married and here I am! During his service, my father carried an M1 Carbine and I have one as well. I collect every article I find on these and appreciate yours. Bill Linscott New Boston, NH Author RK Campbell: Thanks so much for reading! I appreciate your comments, so very interesting.

Talk about making the work worthwhile! Universal Carbine I am in need of an operating handle for a Universal Carbine with a square side. Any help other than Numrich will be appreciated as they haven't had this for months. Tim Kenneth W. Wright Wright Enterprises of Texas Search "Universal Firearms", scroll to the bottom, and three links to sites with parts for the Carbine, M1, .30 Caliber are listed.

While you're at it, click on "Universal Firearms Corp." There's an abundant amount of information you may want to download as reference. Dozens of companies were enlisted by the War Department to produce the Carbine during WWII. There were a far lesser number who produced it for the peacetime market. During the war the variety of the companies enlisted include many who had never manufactured a firearm.

Among these were Singer, of sewing machine fame, and International Harvester, famous in every farming community across America. The surviving carbines both produced are considered highly by collectors. But the rarest, and therefore most collectible, of all wartime M1 Carbines are those made by Rock Ola. Otherwise famous for the Juke Boxes that kept the bobby soxers hopping at high school dances or in malt shops from 1942 to 1945. AG

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