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PRECISION ARMS WORKSHOP

AND THE AMERICAN GUNSMITH ARCHIVE

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INSIDE THE ARCHIVE

LEFEBVER SHOTGUNS

REMINGTON 552 • ORDORICA COVERS COLTS • SCOPING .22 SEMIAUTOMATIC PISTOLS • NEW ITEMS

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 192

DIGITAL ARCHIVE EDITION

Preserved for the bench.

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FROM THE ARCHIVE

New Subscriber Premium and Index

BY AMERICAN GUNSMITH EDITORS DECEMBER 2019

ORIGINAL PP. 2

Looking for ideas for our target audience of gunsmiths. We currently offer all new subscribers a premium by sending them a copy of our Learn Gunsmithing: The Troubleshooting Method book. See AmericanGunsmith.info/subscribe for details. We've been offering Learn Gunsmithing for some time now and are considering a different (or additional) premium. One idea considered was "American Gunsmith's MOST WANTED" which was "10 Projects, Fixes, and Upgrades Every Gunsmith Should Know".

What gunsmithing topics would be of more interest to you and add value to your subscription? For any readers that would like to weigh in, please send your response to me. Index Update This was long overdue. I've updated our Article Archive Index on the website. Visit AmericanGunsmith.info/index for details. The text index of American Gunsmith articles there covers all issues from April 2006 to January 2010.

Starting with the February 2010 issue and on, all articles published are added to the website as individual posts along with an abstract, sorted by category, and archived by issue date. The site's search feature as well as the "Find" feature of your web browser helps locate everything we've published since April 2006. I have digital copies of all American Gunsmith back issues since April 2006. As a current subscriber, you are welcome to a digital copy of a back issue article if you need it.

Important note, this is not a free-for-all "send me everything!" offer. If we have a previously-published article or two that will help you on a project, send me a request by email and I will help you. Shooting Events and Freedom Cabinet Giveaway As reported previously, we're giving away a Metal Art Biometric Fingerprint Freedom Cabinet Slider. Because the deadline is the end of December, you still have a chance to enter when this issue goes to print. To enter this giveaway, host a small, local shooting event.

An easy, quick, scored course of fire held during a local hunter sight-in is ideal but anywhere and any type of shooting event you choose works. Submit a picture of your event along with a short description to the Editor about your shoot and we'll put you in for the drawing. Winner will be announced in the next issue.

ORIGINAL SOURCE PAGE

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MAINTENANCE & REPAIR

Lefever Shotguns

Info on working the Lefever Nitro Special double shotgun.

BY MARK R. HOLLENSEN DECEMBER 2019

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I recently took in a Lefever Nitro Special double shotgun for some much needed attention. Although these shotguns can sometimes take on a life of their own when working on them, I knew the customer well and reluctantly decided to have ago at it. The complaints about this gun were that the left firing pin was broken, the barrels were loose fitting, and that my customer wanted me to go through it to determine if it was worth saving. This gun had been in his family the past 80 years or so I was told. The gun itself?

It celebrated its 96th birthday as of this writing! Doing some research on this specific model didn't turn up very much at all. I found no schematic that shows and lists every part for this shotgun. I did, however, find partial parts listings for the gun with drawings of the parts listed and some names associated with those parts. In the end, I found all of the naming conventions for each part on the Numrich Gun Parts website and used those to identify each part for this article.

There are a few writeups I ran across about the Lefever guns, some accurate and some not so accurate. It seems if there is a lack of factual information about a company or a specific line of firearms, it opens the door to assumptions and sometimes unsupported facts. So, I was reluctant to insert that information here. However, I did see one book about the Lefever for sale on Amazon.com; listed for \$5,000, if anyone is interested.

That being said, it seems clear that Daniel Myron Lefever was born in Hopewell, New York in 1835 and he passed on in 1906 while living in Syracuse, New York. In between that time, he essentially established This shotgun was produced in 1923 according to serial number information found. himself as a gun maker around 1869, later received a Lefever patent for one of his designs, and around 1879 becomes D. M. Lefever, concentrating on hammerless cocking lever guns.

A year later, he received a patent for the first successful hammerless shotgun manufactured in the United States. A few years after that, he was bought out and the Lefever Arms Company was then created. Later still, he formed the D. M. Lefever Arms Company. Sometime after that, Ithaca came into the picture and produced Lefever shotguns. Without going into any more detail about that, the serial number of the shotgun on my bench dates it at being produced in 1923.

Again, there are questions about serial number dating all Lefever guns, so this is a best-estimate for this shotgun and seems reasonable. The serial number on it is 124,xxx and this serial number was found on the receiver, barrels, forend iron, and on the bottom of the top lever, so they all matched. Looking at the barrels, I found "Lefever Nitro Special" imprinted on the right barrel and "Lefever Arms Co., Ithaca, NY" on the left barrel.

The gun is a 12 gauge, and, of course, the barrels were cut down shorter (20 5/8") most likely due to a bulged or badly dented

barrel in the past. It seems cutting the barrels down on these old guns is less of an exception. At least they kept the barrel length legal! Since the barrels were cut down, the chokes are as open as the bore is (no choke). The chambers were measured with gauges and found to be 2 3/4" long.

Inspection of the stock set this gun is now sporting found that it probably did not come on it when it left the factory in 1923. The forend is a wide beavertail and both the buttstock and forend appear to have been "fitted" to this gun in a rather crude fashion. The butt plate is a Fajen and the stock bolt was a hardware store galvanized screw bolt with a galvanized washer. Other than that, the gun was in rather decent shape for its age.

A quick check of parts house resources found that many of the parts are still available but not all of them. Numrich Gun Parts Corporation was the leader in having the most available parts that I could find. Since this gun was only in need of a firing pin, I ordered one up. Just know that the firing pin you receive is an aftermarket made product and not as stout as the one that the gun originally came with. But it did fit and work.

With shotgun in hand at the bench, I ran through all of my inspection, function, and safety checks and the gun pretty much operated as it should. I did find that the left side hammer sounded super sluggish when the trigger was pulled for that barrel. But the whole gun was sluggish. After measuring the barrels, I did find one small ding on the right barrel approximately 17

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The safety is in the ON position here. 1/8" down from the breech but nothing else wrong with the gun jumped out at me or was found during that inspection. So, the gun was prepped for disassembly and a much needed deep cleaning.

Detailed Disassembly Before we start, I must add that if you contemplate taking one of these (or any firearm) completely apart, make sure you have and use quality hollow ground screwdriver bits and an ample supply of tooling, including starter pin punches and drift punches that are longer in length than the typical punches out there. You will need a punch that can drift. You can clearly see the sears; the main-spring plungers, the trip "bar" and the top lever retention screw head down in the middle of the receiver.

Removal of that screw will allow you to remove the top lever. A pin all the way out of a receiver that is 2 1/2" wide, more or less. If you don't have the right tools or are not familiar with taking these guns apart, stop right here and take it to a qualified gunsmith that works on double guns. Just some words of advice... Now let's get started. Begin by removing the forend by pulling

downward and away from the barrels at the end of the forend, as it is held in place by a spring catch.

Open the barrels with the top lever and pivot the barrels off of the receiver. This typically suffices for routine cleaning and inspection. Continuing with full disassembly of the shotgun, remove the two buttplate screws and the buttplate itself. This shotgun did not have the original wood on it and the buttplate was a Fajen, so it too was not original. Before we remove the buttstock, use the appropriate sized (thin) screw driver bits to loosen the top rear tang screw and the rear trigger guard/plate screw.

Loosen them only at this point; you will see why as we continue disassembly. Now, with the buttplate removed and the two screws loosened, insert along flat-bladed screwdriver into the stock bolt hole and unscrew the stock bolt. The bolt removed from this gun was a hardware store bolt with a washer, so I am not certain if the original Lefever stock bolt has a lock washer with it or not. Anyway, remove the buttstock from the receiver by pulling rearward. You will now be able to see the inner receiver parts.

If you notice, you will see the tang spacer at the rear of the receiver. This spacer fits between the rear trigger plate screw hole and the rear top tang screw hole. The spacer has been relieved on each end. The end with the longer relieved area fits into the hole in the trigger plate and the shorter relieved end of the spacer fits into the top receiver tang screw hole during reassembly. Remove both screws that you previously loosened as they hold the spacer.

The reason you loosened them prior to removing the buttstock bolt is because the stock bolt screws into this spacer. If the stock bolt has been removed prior to trying to remove the two screws that secure it, the spacer can (and will) rotate while trying to loosen those screws. If you are already at this point, however, you can thread the stock bolt into the spacer and hold that secure while trying to loosen both screws.

When you remove these two screws, you will see that the bottom screw has a longer shank on it than does the top screw, so make note of this for reassembly. Next up, remove the trigger guard. With the bottom spacer

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This screw/stud captures the top lever coil spring. screw removed, rotate the trigger guard to the right a quarter turn and lift it out of the receiver hole that secures it forward of the triggers. Turning your attention to the two remaining screws located on the bottom of the trigger plate (these hold the trigger plate to the action), first remove the most rearward screw, then the front screw. As you loosen it, you will feel the trigger plate move upward as it is under spring pressure.

You will also see the rear spacer fall out. During reassembly, first position that spacer between the trigger plate and the top tang, holding it in place while replacing this screw you just removed. With the final screw out of the trigger plate, the trigger plate assem- These parts are secured in the receiver as one assembly. bly pulls right off. The spring pressure felt earlier where the two sear coil springs that are affixed to the trigger plate, so don't let these two springs get away.

All of the associated parts are attached to this trigger plate. Since we just removed it, let's disassemble it completely here. Begin by pulling the two small sear coil springs out of their seats in the trigger plate. Next,

remove the safety lever from the post pinned to the trigger plate. Drift the single pin out that retains the safety lever to the post, then dump out the safety lever cap, followed by the safety lever cap coil spring. Don't pull the post off of the plate as it is affixed.

To remove the triggers, first remove the two small set screws found on each trigger. These screws serve to prevent the triggers from falling down too far below the receiver line and also serve as resting posts for both sears. Once the two small trigger screws are removed, simply drift out the one trigger pin that retains both triggers to the trigger bridge. Under that bridge, you will see a wire spring (rectangular shaped) that is secured under the trigger bridge itself.

Back out the trigger bridge screw and remove both the wire trigger spring and the bridge. This completes disassembly of the trigger plate assembly. Moving back to the receiver, begin by removing the safety button by pulling the hooked end of the safety rod away just enough to get it out of the hole in the safety button, then pull the safety button out of the receiver from the top. Pull the safety rod out of the receiver.

You will see that this safety rod rides up against the top lever post assembly, so each time you open the gun or turn the lever, it will push this safety rod rearward and engage the safety to the ON position. With the safety button and rod now removed, remove the sears. Begin by pressing each sear lever upward to fire the hammers. Using along drift punch, drift the receiver pin out that holds the sears in place from left to right. Identify both the right and left sear by marking them now and before removal.

With both sears and the sear pin removed, turn your attention to the hammer assemblies. Begin by drifting the receiver pin that holds both hammer assemblies in place from left to right. As you drift out the pin, the first hammer will be under strong spring pressure. When you feel the hammer move onto your drift punch, place aboard at the rear of the receiver, then pull the drift punch out. This releases the hammer, mainspring plunger, and mainspring all at once, slamming into the board without getting lost.

RE-INSERT

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Remove this screw to allow the extractors to be pulled out from the rear of the barrels. Use the long drift punch into the receiver and finish pushing out the hammer pin for the right side hammer assembly. Same thing here, once the frame pin is removed, place the board up against the back of the receiver and then pull the drift punch out which will release the final hammer, mainspring, and mainspring plunger. You should always mark the hammers and mainspring plungers as left or right.

You can now dump the two hammer cocking rods out. Mark these as right and left and which end goes into the receiver first. With the hammer assemblies now out, turn the receiver upside down on the bench. In the center is a large headed screw down inside the receiver. This is the top lever screw and it secures the top lever to the action. Remove this screw completely and set aside.

Just behind this hole in the receiver is a small post-type screw called the top lever spring retaining screw with a coil spring up against it. Remove both this screw and the spring as this is your top lever spring assembly. I used a screwdriver bit that I bent at 90 degrees years ago to depress this coil spring back while using my other hand to unscrew the set screw from the receiver. I used this same bit to reinstall this assembly, too.

Now just pull the top lever coil spring out and on the other end of that spring you will find atop lever coil spring cap attached. To remove the top lever, first turn the receiver upright on the bench with the breech face facing you. Turn the top lever to the left (as if opening the gun up) to expose the edge of

the top lever post that is still connected to the top lever. Use a small punch to reach in the top of the action and place it on top of the top lever post edge.

Tap downward to free the top lever post from the top lever. Once you do this, pull the top lever out from the top of the receiver. With the top lever out of the way, you can see the top lever post has two small pins sticking up and those pins lock into the holes for them located in the top lever. Using a wood dowel or punch, tap the top lever post downward and remove it from the bottom of the action. During reassembly, you will insert this top lever post with the mill cut facing towards the rear of the action.

Insert the two pins into the bottom of the top lever to connect them. Remember the safety rod? The mill cut in the top lever post is where the safety rod rides when assembled into the frame. Remove the trip by pressing down on one end that is visible on the receiver where the barrels lock into place. Push down on that small pin and that will release the trip which is a rectangular-shaped pin that has a short leg and along leg. You actually pull the trip out from the bottom of the receiver.

The short leg is inserted in the front hole and the longer leg goes into the rear hole for it. You will also find the trip spring in that same assembly, so remove it now. Remove the firing pins. Using a very small flatbladed screwdriver bit, unscrew each firing pin retaining screw from inside the receiver. The firing pins can be dumped out and they do

not have a firing pin spring nested with them. Mark the firing pins with an Land Rto reassemble them in the same firing pin hole.

Finally, the only thing left to remove are the two cocking cams located at the front of the receiver. To remove these, drift the receiver pin out that retains them from left to right. Again, mark these as left and right side before removal and note how they fit in the receiver. With the receiver now stripped, turn your attention to the forend iron assembly. Remove the two wood screws that secure it to the forend and lift the assembly out.

To disassemble, remove the forend fastener screw, then the forend fastener bolt, and forend fastener coil spring. Turning our attention to the barrels, the only part left to remove is the extractor. It is held in place at the back of the barrels with a small set screw called the extractor retaining screw. This completes the disassembly of the shotgun. Reassemble in reverse. Here are a couple of tips for reassembly.

When installing the top lever coil spring and top lever spring retaining screw, place the receiver in a padded vise breech face downward, insert the top lever spring, then use the screwdriver bit bent at 90 degrees (if you have one) to compress the coil spring fully with your weak hand. Use your other hand with a screwdriver with the small retaining screw in place and install the small screw while applying pressure on the coil spring.

You don't want to allow the spring to push against this fragile screw during reassembly as you could cross thread it. Go slow and be careful here.



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When reinstalling the firing pins, don't bottom out the retaining screws. Insert the screws and move the firing pins to make sure they can move freely. Stop the screw once it fully captures the firing pins without binding against them. When installing the hammers, insert the cocking rods first, then the mainsprings with the mainspring plunger in place. Place the receiver in a padded vice and secure it breech face downward in the vice.

Next, use your weak hand to push up against the side of the mainspring and mainspring plunger while using your strong hand to place the hammer over the mainspring plunger tip and into the receiver slot. Using your strong hand and a screwdriver with a flat tip, press downward on the hammer and keep your weak hand thumb over the side of the mainspring so it doesn't jump out of the receiver while pressing the hammer downward to align it with the hole in the receiver.

Once you get the hammer pressed almost down, you can take away your weak hand and use it to pick up a drift punch. Work the punch into the receiver until you

capture the hammer with it. Then tap the receiver pin in to dislodge the pin punch until the receiver pin captures the hammer assembly. Do the same thing on for the next hammer assembly and finish drifting the hammer pin into the frame.

When you are ready to install the trigger plate assembly, turn the receiver upside down on the bench and start laying the trigger plate down into place. Make sure the short leg of the safety lever gets located in the safety button notch while getting the tang spacer in place.

Once you have captured these two items with the trigger plate, install the front trigger plate screw first and secure it while insuring the safety lever stays in the notch in the safety button and the spacer aligns with the two holes for it (bottom of spacer seats in the trigger plate hole and the top of the spacer seats in the top tang hole). If everything is correct, tighten that front trigger plate screw, then install the second trigger plate screw just behind it. Check the safety to make sure it works.

If it does, reinstall the trigger guard and then the two spacer screws (longer screw goes into the bottom of the spacer and the shorter one goes into the top of the spacer through the top tang hole). The rest of the reassembly goes pretty much like it did during removal. As mentioned earlier, the stock set on this shotgun does not appear to be the original. If you get one of these guns with loose barrels, first remove the buttstock and trigger plate and insure the top lever screw is tight.

In this case, the top lever screw was loose by a full turn. When I reinstalled the buttstock, the grip area prevented the top lever from turning fully, so whoever installed this buttstock did so without tightening the top lever screw first or the lever would have cleared the stock when rotated. Once the top lever screw was tightened fully, the barrels locked up just fine, so there was no need to re-work the barrel lugs or top lever/locking bolt.

When inspecting light firing pin hits, it is more than likely to be a deformed hammer. Inspect the hammers when out of the receiver. On this gun, the hammers were deformed in the area that makes contact with the firing pins and inner receiver area. You can use a ball peen hammer to take a lot of the deformed area out, shaping the hammer in that area for better firing pin contact when reassembled.

If the triggers seem sloppy or floppy in the trigger plate, bend the rectangular-shaped wire trigger spring legs so that more pressure is applied on the triggers when the plate is reassembled. If you take one of these in for a simple firing pin replacement, let your customer know that the entire receiver assembly must be disassembled to reach the firing pins. Quote your labor charges for disassembling the entire gun.

Finally, always check chamber lengths on the barrels, especially on guns that do not specifically say what the chambers lengths are. And don't forget to check the barrels for dings, dents, and heavy rust pitting in the bores and cracks. I realize that most customers feel the need to take these old guns out and fire them. And at times, I feel the same way too.



But you really need to communicate to the customer that these old guns were produced back in a time period where safety was not always the driving factor on whether a gun can or should be released for sale. That, coupled with the steels used way back then makes shooting these old guns questionable. In the case of this shotgun, the sears are vulnerable to breaking or slipping when closing the gun to cock it.

Although the safety works quite well when the shotgun is cocked, it is when the sear fails that the hammer(s) can drop when closing the action, hitting the firing pins—accidental discharge. So be extra safe if you do end up having to shoot one of these. When in doubt, don't fire the gun again and let your customer know he or she shouldn't either. It's just not worth it! AG

PEOPLE & COMPANIES

Remington 552

Getting up to speed with the Speedmaster.

BY ED NUTTER DECEMBER 2019

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The Remington 552 Speedmaster is a blowback semi-automatic .22 caliber rifle that has been in production since 1957 with a few changes. These changes include different stock designs, checkering methods, and the addition of the J- Lock safety. According to the owner's manual, the Model 572 shares the same basic shape but the 572 is a pump action. Both have a tubular magazine with varying capacity. This varying capacity is due to the rifle being able to fire .22 Short, Long, and Long Rifle cartridges.

According to the owner's manual, the magazine will hold 20 Shorts, 17 Longs, or 15 Long Rifle cartridges. Since it has a tubular magazine, it is not as fast to reload as a detachable magazine, such as used by the Ruger 10/22, for example. This can be mitigated to some extent by making a speedloader as I explained in my "Winchester .22 Speedloader" (June 2019) for the Winchester 190. These speedloaders are basically a tube with a plug in one end and a removable cap on the other.

This allows preloading the tube with the desired cartridges, remove the rod from the magazine tube, and carefully pouring them into the magazine tube. If you have multiple different rifles with varying capacities, make sure you don't get the speedloader tubes mixed up. Also, be sure to insert cartridges in the speed loader tube in the proper direction. The Remington 552 manual contains a very important warning.

After you unload the rifle by removing the rod from the magazine tube and pouring the cartridges out the end, the rifle may have two cartridges left in it; one could be in the chamber and another in the action. Moving the operating handle to eject the round from the chamber could load that second round into the chamber. You should pull the operating handle multiple times and check the chamber before considering the gun unloaded.

As with any rifle, but especially a .22 rifle, a good cleaning can help the rifle function to its greatest capacity. Disassembly is relatively straight forward. Like the 870, the 552 has

two pins to push out to release the trigger guard from the receiver. The trigger guard should be pulled down and towards the back of the receiver to be removed. Rather than disassembling the trigger assembly, I sprayed it out and brushed it off. If it is really dirty, it should be taken apart for cleaning.

Once the trigger assembly is removed, the cover plate in front of it can be as well. A large screw holds the forend in place. Once the screw is removed, the forend should be moved down slightly and pushed forward. The entire barrel assembly can be moved out of the front of the receiver. As you remove it, make sure the action bar/operating handle doesn't fall out of the bolt. The magazine tube has a small, rather delicate screw to remove. Be very careful with this screw and always use the proper screwdriver.

The magazine tube pulls straight out the front. As it is removed, the action bar, spring, and forend can be removed. Be careful that these Far

REMINGTON 552 CONTINUED

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When reinserting the pin, make sure it doesn't interfere with the firing pin channel. parts don't disassemble themselves faster than you planned due to the spring. The firing pin and extractor are held in the bolt by pins. Removing these allows for better cleaning of the bolt. At this point, once you have cleaned everything, the automotive repair manuals seem to be fond of saying, "Assembly is the reverse of disassembly." Then, they go on to the next topic. Sometimes, that is sufficient.

Other times, you run into snags putting something back together. With this disassembly, the biggest snag seems to be that you may need to hold the action bar, bolt, spring, forend, and barrel assembly together as you push them back in to the receiver. Otherwise, it might try to spring apart. Once everything is reassembled, it is time for a function check and a trip to the range for testing. Start close to make sure you're still on the paper and then proceed from there.

If the day is hot and you know where to look, you might catch a glimpse of the bullet as it arcs out to 300 yards. While it is not a magazine-fed autoloader, the Remington 552 Speedmaster is still a fun and accurate plinker. Maintain them well and 552 rimfires will enjoy along service life for your customers. AG While it isn't as stiff as a recoil spring in a 10mm 1911, it is still a spring under compression that may try to take on an uncompressed state.

HISTORY

Ordorica Covers Colts

BY RAY ORDORICA DECEMBER 2019

ORIGINAL PP. 10-14

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What can one say about gunsmithing the Colt Single Action Army? Probably “Don’t do it!” would be appropriate these days. Early in the 20th century it was common for gunsmiths to mess with them, and a lot of them were messed with, not always to the benefit of the sixgun. Out of that era came the epitome of a customized Colt single action, Elmer Keith’s famous Number Five, a 5-1/2-inch .44 Special.

It had a lowered hammer spur, altered back and top straps into something resembling — but not quite—a Bisley, a special positive-locking latch for the cylinder pin, custom sights, ivory stocks and full-coverage engraving. Lest anyone would suggest that Keith’s tampering with the gun destroyed its value, his Number Five sold recently at auction for \$80,500.

Today, with the vast array of modern handguns available not everyone knows everything about the At the time, the cost of the Uberti-made gun was \$200, but the price went up quickly after the author’s glowing review, despite its brass trigger guard and back strap. It is no longer offered by Cabela’s, but Uberti still makes it. It’s called the “Hombre” and is about \$500. 45

of 2001 had the curved-bottom trigger guard of early Colts and the rounded-front bevels to the cylinder.

The author blacked the brass parts chemically after some light engraving. old Colt single actions. I recall seeing the statement in print not long ago by a supposed gun writer who had no idea what the spur on the hammer was for... you know, the firing pin?! Those wonderful Colt revolvers that sold at the beginning of the 20th century for around \$15 apiece today bring at least 100 times that, and easily more than 200 times that if the gun in question is a decent one.

While genuine Colts are always costly, there have been many clones along the way, some good, some bad. Some decent ones are available today for only a few hundred dollars. They are more or less the same thing as real Colts, though many modern versions have opted for “safe” hammers with what a few of us used to call “flip-up hooky dookers” to effect firing. This is commonly a device that’s linked to the trigger, and interposes itself between the hammer and frame-mounted firing pin only when the trigger is pressed.

This permits the safe loading of all six chambers. Original Colts had a “safety notch” cut into the hammer that caught the sear and kept the firing pin off the primer of the chambered round. However, a solid blow to the back of the hammer could easily break that notch and fire the gun. Elmer Keith wrote of several instances of fully-loaded sixguns firing and shooting the gunny when the stirrup of the horse they were saddling fell off the pommel and struck the hammer of a holstered Colt single action.

This broke the safety notch and fired the gun. This failing of the design led users to keep an empty chamber under the hammer. Over the years, I’ve owned a few genuine Colts built to the original design. These were firstand second-generation examples in calibers from .38 Special to .45 LC. I had my first Colt SAA when I lived in Ann Arbor. It was a second-generation .45 with 5-1/2-inch barrel. Unfortunately I have no existing notes on it.

My recollection is that I didn’t shoot it much and sold it before I left Ann Arbor for Colorado in 1972. When I got to Colorado in the early 1970s I acquired a first-generation .45 LC Colt with 4-3/4" barrel made during the black powder era. It was a decent gun in solid shootable condition and, using some original fac-

ORDORICA COVERS COLTS CONTINUED

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The genuine one-piece grips (no in-between plate) were original to this Uberti-made six-gun. This one was too tight, hence the polishing of its surface. The barrel was tight at the threads. Some 200 fire-lapping rounds later the tightness was gone and group size had been cut in two, although a groove diameter of 0.451" and cylinder outlets of 0.455" are not conducive to best accuracy.

Research into the dimensions of any of your revolvers and especially old Colts can provide clues about what to expect on the target. tory-made black powder ammunition, I shot it on occasion. During my brief tenure in Denver as a gunsmith I manufactured a one-piece grip out of a solid block of fancy black walnut for that old bundook. The grip is solid walnut throughout, no spacer gluing two halves together. Inletting it was lots of work but well worth the effort.

I finished the grip with scores of coats of linseed oil put on hot over many years and kept it on my old Colt as long as I had the gun. A careful cut on the lathe brought it to the correct size. The only non-Colt safety item is a

spring-loaded catch that prevents the hammer from being driven forward against a chambered round by an inadvertent blow, as by dropping the gun onto a rock. The catch is visible just under the firing pin.

With all that work into making the one-piece stock I took it off the gun before I sold it. Years later I put that grip on another 4-3/4" Colt, made in the early 1900s, and when I sold that Colt I again kept the grip, which I still have. Time passed, I moved around, and one fine day I bought a .38 Special first-generation Colt, made in 1927, 5-1/2" barrel, from Skeeter Skelton's son Bart, who was a border-patrol agent back a few years. By then I was keeping track of each and every gun that passed through my hands.

My Red Notebook has each gun's specs, often the dimensions, number and date of rounds fired, and info on how well it shot. That .38 Special Colt's bore slugged 0.357" and the cylinder outlets were about 4 thousandths larger, enough to allow a small bit of misalignment of the notches. Its accuracy was outstanding. When I got done messing with

its innards (long story there) it shot to correct elevation but about one inch left at 15 yards. I never touched the sights, those results being plenty good enough for me.

About the same time, circa 1996, I bought a first-generation Colt SAA in .38 WCF, also known as the .38-40. This gun was made in 1901 and had a 4-3/4" barrel. The gun had a tight cylinder with outlets that measured 0.403". The barrel's groove diameter slugged 0.408-0.409". I wondered if that was correct, so asked my friend Mike "Duke" Venturino about it. His succinct advice was, "Shoot it!" So I did. It shot about 3 inches low at 15 yards with my modest smokeless load, but spit badly. Windage was perfect.

Accuracy was acceptable. The forcing cone was cut at about 45 degrees and showed some pitting. I cut a decent 11-degree cone in it using a neat tool from Brownells called the Revolver Chamfering Tool Kit. This eliminated the spitting. Its original cylinder bushing was pitted and loose, so I replaced it with anew one from Eddie Janis' "Peace-

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The fix was a wood dowel and emery paper driven by an electric drill. This was not necessary for the chambers, just the central hole. The author has used it on at least 15 revolvers and it's not even starting to get dull. Insert the rod into the bore and screw the tapered cutter to the rod. The Allen-locked handle goes onto the other end of the rod, which is kept centered by a tapered bushing (not shown). maker Specialists." That was one of the fine points about the early Colt sixguns.

They had the cylinder base pin which held the cylinder into the frame. That pin was surrounded by a collar or bushing within the cylinder that was replaceable in case things wore out. I got the replacement bushing and hand-fitted it with a file and diamond hone. Took a couple hours. When I was done there was zero endplay to the cylinder. I then shot the gun with black powder loads and to my joy it shot perfectly to its sights. To my sorrow the gun tied up, my zero-tolerance bushing not agreeing 45.

A little light oil on the cutter might be needed. A gentle pull and rotation by hand does the trick. Go slowly! It cuts very quickly, giving a gentle taper to the forcing cone. If desired, the final cut can be polished by wrap-

ping the cutter with emery paper and more gentle pulling and rotating. with all that charcoal. Of course that was a simple fix. That was a fairly accurate handgun, all told. A factory letter documented it as having shipped in 1901.

I've owned two .44-40s, one with a short barrel which I didn't much like. It had a nasty-looking barrel, though good dimensions between groove diameter and cylinder outlets. The groove diameter was 0.425" and the cylinder outlets 0.427". However, there was a tight spot in the barrel at the threads that I was unable to fire-lap out.

The gun never shot as well as I'd liked, neither with My first 7.5-inch Colt was my second .44-40, nickel plated, which left the factory along with 14 others, shipped to Winchester in 1897. I bought it 101 years later. It had replacement parts in the form of the ejector rod, its housing, and the cylinder gate. It came with a period slim-Jim holster decorated with chain and flower stamping. Best of all, it had the interesting name "Throssel" inside on the grips and the date 1904.

Richard Throssel was a Creek Indian who was adopted by the Crows and became a photographer who documented much of Indian life. I found a cache of his photos and other info along with a reproduction of his signature online, so I was able to verify that it was indeed his signature inside the grip. He went on to become a member of the Montana legislature. The gun was tight and shot quite well.

Like my 1901 .38- 40, the cylinder outlets were tighter than the groove diameter, being 0.427" for the cylinders and 0.430" for the groove diameter. One day I put four rounds into a group of 1.3 inches at 25 yards. Unfortunately the group was nine inches high and three inches left. Part of the available information on Throssel was not entirely to his light smokeless loads nor with the much more powerful black powder loads. The barrel had a bit of pitting and that didn't help.

That gun was from 1900. credit, depending of course on one's interpretation of the info. His Indian name was "Kills Inside of Camp," which we all know one should never do. Many hunters today, and I expect all old Indians, consider that action to be close to sacrilege. To Throssel's credit,

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The trigger-driven rising plate has been removed and a hardened pin is inserted into the hammer (arrow). The inserted pin strikes the frame-mounted, spring-loaded firing pin. Yes, this defeats the original safety device, but the author didn't want that stuff on his highly-custom, fully engraved firearm.

The staked-in device below it is a spring-loaded plunger that pressed outward on the sliding, interposing safety plate to prevent it from hanging up on the bottom edge of the firing pin as it was driven into position by the pulling of the trigger. He apparently was good at getting close to whatever he was going to shoot because his pistol wouldn't hit whatever he was aiming at, at much over 25 yards. Maybe he used a Winchester.

A couple decades ago I acquired a 1904 Colt Single Action .45 LC with a 5-1/2-inch barrel. It had cylinder outlets matched to the groove diameter, both at 0.452". Lo! It shot like a house-on-fire, five shots touching from offhand at ten yards. Unfortunately the group was 3.5 inches high at that range. The bullet strike was correct for windage, though.

I've found that the significantly hotter black-powder loads tend to overcome the failing to shoot to the correct elevation, but—sorry—I never tried that gun with black powder. The last one I'll mention is a 7-1/2" .45 LC Colt made in 1900 in which I shot black powder loads. These grouped well, but 4 inches high at 12 yards. However, with factory Remington loads the gun was on the money at 50 yards. Its

groove and outlet diameters were both 0.453". I shot cast bullets of 0.454" diameter.

In shooting these Colts and several clones the biggest problem with them was not where they shot for windage. The worst I've encountered, the Throssel gun, was three inches left at 25. The elevation strike was largely a matter of luck, and finding the right load usually gave decent or at least usable elevation. The big problem in the older Colts seemed to have been a lack of matching the cylinder outlets to the groove diameter. I learned long ago that correct dimensions mean a lot to revolver accuracy.

As most of you probably know, Smith & Wesson had, for many years, mismatched these two vital dimensions on their lovely .45 caliber revolvers, in both the 1917 and the Model 25, which was a target revolver. The groove diameter of the S&W guns, chambered for .45 ACP or .45 Auto Rim, were commonly 0.451" and the lands were not very high, or deep as you might say. But the cylinder outlets were commonly as big as 0.458".

There might be some excuse for this discrepancy in the early S&W 1917 guns, designed to shoot fully jacketed hardball rounds and have enough tolerance to operate under rough conditions of war, but there are no excuses for continuing the poorly matched dimensions into the Model 25 revolvers. Up in Alaska I finally got anew S&W Model 625 .45 ACP revolver with properly-matched cylinder outlet and bore size. I was not surprised it turned out to be the most accurate .45 revolver I've ever owned.

I shot the dickens out of it up there at Red Cabin, even recycling my cast lead once-fired bullets dug out of snow banks. Smith & Wesson finally got all the dimensions just right and it paid off in gilded accuracy. To make a revolver shoot well with relatively hard lead bullets, the cylinder has to lock up (with trigger held back and hammer down) solidly and truly. The hole in the cylinder has to align with the bore nearly perfectly.

The size of the outlet hole in the cylinder should be just slightly larger than the groove diameter in the barrel. Never smaller, because that makes the bullet undersize before it enters the barrel. Now, if the grooves are deep and the lands wide, as on the early Colts, the lands might get a decent grip on an undersize bullet and give decent accuracy. That was the case with a few of my early Colts with cylinder outlets nominally too small.

In other words, a lead slug, even hard cast, once sized down by the cylinder outlet might slug up when it hits the rifling to fill the barrel, with resultant acceptable accuracy. Or it might not, with lots of leading and lousy accuracy being the outcome. If the cylinder outlet is too big, a softer bullet can slug up before it ever leaves the cylinder, largely from the force of the explosion behind it, maybe even to some extent before it leaves the brass case.

The cylinder outlet will ensure the bullet is the correct size by swaging it before, or as, it enters the barrel. The lands will

ORDORICA COVERS COLTS CONTINUED

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Above and Ray got this gun in the white on request to the CEO of the original company back in 1995, engraved it in Nimschke's style—though Nimschke didn't generally engrave the hammer—and had the charcoal bluing and case coloring put on by Dan Cullity. The grips are genuine elephant ivory. The back strap and bottom of the trigger guard have the precise curvatures of early Colts. cause the bullet to expand slightly after it quits skidding and get a grip on the bullet, and the bullet will then seal the bore.

The bore ought to be uniform in diameter throughout its length. If the barrel has been forced into the threads at the frame there will commonly be a tight spot there, and this was extremely common in older Colts, certainly in all I've owned and checked. Slugging the barrel will tell the story. The lead slug will

slip easily through most of the bore but stop at the threaded portion. The tightness there can usually be removed by firelapping.

In my experience, this firelapping generally results in significantly improved accuracy and always results in a barrel that's a whole lot easier to clean. I thank my old friend Ross Seyfried for putting that bug in my ear. As to making a Colt SA with fixed sights shoot to the point of aim, if the gun is old and valuable I suggest leaving it strictly alone. If it's not a jewel, and assuming there are no significant problems with the gun, there are a few things you can do.

If These were marketed from the same building where original Colts were made. it shoots low you can carefully file the top of the front sight, maintaining the original contour. If it shoots high, you can add metal to the front

sight by extremely careful welding, being sure to protect the bore, and then file the new addition to the original contour. This procedure generally destroys the finish for miles around the weld area—unless you know some tricks that I don't—so refinishing will be in order.

Clearly one ought not to do that to any old Colt with any value whatsoever, and today that includes any and all firstgeneration Colts. That 'patina' was hard won, and must be left alone. If your Colt shoots right or left, and you're desperate and the gun is not a high-value collector's piece (i.e., rusty 2nd Generation or later) you can do what my friend Mike Venturino once did out of desperate frustration: Grab the front sight with a pair of pliers and bend it. Duke sez it worked just dandy. AG

PISTOLS

Scoping .22 Semiautomatic Pistols

With a good measure of creativity, the shooter-gunsmith is often able to reach new heights in accuracy accomplishment... even with the little .22 semiautomatic handguns.

BY NORMAN E. JOHNSON DECEMBER 2019

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As a devoted shooter, a wide variety of firearms have always been of interest to me, including handguns. Back in the early sixties I became particularly interested in semi-automatic .22 pistols. I had used these little handguns in sport shooting, hunting, and competition, exhausting most means of conventional testing of these fine little guns limited only to my visual acuity and the most efef holding them steady. Why Not Scope Little Pistols?

One day while shooting several .22 handguns, I studied it and wondered just how well it would shoot with a precision mounted scope. Several features had to be incorporated into such a unique 22 semi-automatic pistol scope mounting system, the author elected to use common one-inch inverted scope

rings, solidly positioned top-to-bottom. Shown here are inverted Redfield Jr. high rings, solidly interfaced together. The Redfield dovetail lock was removed to accomplish this. 22 semi-auto pistols.

The space between the top of the barrel and the bottom of the scope tube must be determined in providing proper height for the mounted scope lens housing to clear all parts of the gun. This was found to be 0.850 inches for those scopes I had in mind with ocular lens diameters no greater than mounting system. The scope bases would need to be solidly attached to the barrel and there had to be sufficient space front and rear for the rings.

The mounting system needed to solidly attach the scope above the front sight and the ocular lens housings had to be high enough

for the handgun slide to freely move beneath it. The total package needed to be well balanced and function well without flaw, as well as being aesthetically presentable. Of those three guns I would scope, two were target versions with 6 3/4-inch target barrels. The Browning Challenger also had a 6 3/4-inch barrel but of a lighter, sporter weight tapered to 0.540 inch at the muzzle.

Things appeared to be all go. I never attempted to alter trigger pull on these guns, being selfloading as they were. The Browning Challenger trigger broke at 2 pounds 10 ounces with minimal slack. Both the Hi-Standard Tournament Model and the Ruger Mark II triggers were just over 3 1/2 pounds with a very crisp feel.

SCOPING .22 SEMIAUTOMATIC PISTOLS CONTINUED

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A special tongue-and-groove was used by author in uniting these inverted rings with absolute precision. Other types of scope rings can be modified in mounting a scope to a .22 semi-automatic handgun in this way. Closer Detail The primary components in bringing this scope mounting concept to fruition turned out to be inverted pairs of one-inch scope rings from Redfield, Conetrol, and others.

As the illustrations here show, the vertically opposing pairs of one-inch scope rings made up an integral scope-ring and base combination with the top rings clamped to the scope, while the opposing, lower half of the ring set is clamped to the barrel. Special nylon split shims were used to interface the lower, one-inch scope rings to the respective barrel diameters.

This A pair of Conetrol inverted horizontal split rings along with a special adapter are used here to interface the opposing rings with conepoint jam screws. The lower half of the front ring is removed to show the nylon shim used to join the ring half to each respective barrel. The scope can easily be removed for open sight shooting by removing the lower ring halves. made up a most solid,

coaxially mounted scope with identical ring sets that could be reversed end-to-end or vertically.

Here I will cover the unique method that I used to interface or join the scope rings used in making up the various barrel-to-scope mounts—the heart of the system. First, the space between the top of the barrel and the bottom of the scope tube must be determined in providing adequate height for the mounted scope lens housing to clear all parts of the gun. This was found to be 0.850 inches for the scopes I had in mind with ocular lens or object lens diameters no greater than 1.50 inch.

A careful analysis of various scope ring sets revealed that high-height scope rings placed with opposing flat surfaces together provided the 0.850 inch required clearance. I chose the Redfield Jr. scope ring conversions for use on the Browning Challenger along with a Sightron 2.5-10x32 rifle scope. Other barrel combinations would require careful measurement. Scope parallax was corrected from 25-50 yards on all scopes I used. This would also enable shooting much past these distances as well.

Though the eye relief on these rifle scopes was shorter than some of the traditional pistol scopes I could have used, they worked out fine for my precision sighting, resulting in a brilliant sight picture as the reticle centered nicely through the scope exit pupil. The scope visual field is somewhat decreased at normal pistol eye relief, but it doesn't take long to get on target with a quick view over the scope and then through it. The resultant sight picture is very clear.

Attaching the opposing flat surfaces of the scope rings together was performed with utmost precision. I first milled off the dovetail portion of the front Redfield Jr. ring, leaving the milled surface perfectly flat and square. This ring was then inverted and solidly attached to the rear Redfield Jr. ring of the set, with flat surfaces squarely together. This would make up one of the two barrel-to-ring mounts needed. Another set of rings were fitted to match.

The ring parts were solidly joined together with a countersunk 10-32 flat head, hardened screw that passed through one ring

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22 semi-automatic pistols. From top, Ruger Mark II Target model with Conetrol split rings and a 2-7x Redfield scope; Browning Challenger with modified Redfield Jr. inverted rings and Sightron 2.5-10x scope; Hi-Standard Tournament model with Weaver-style inverted rings and Sightron 2.5-10x scope. This unique scope mounting method produced spectacular accuracy with all three .22 handguns, otherwise attainable only with a well-tuned rifle. threaded into the base of the other.

Coaxial congruity was assured by clamping all four rings to a one-inch rod for drilling and tapping in a milling vise. As completed, each ring set was a perfect match to the other. I had made up two similar ring sets using regular Weaver style rings milled down to fit and a set of Conetrol, low height, horizontal, split rings with a special adapter utilizing the cone-point jam screws.

Each of these ring-mount sets was totally interchangeable for scope mounting one handgun to the other by simply using the required barrel-to-ring split shims on the one-inch rings. Scopes can then be switched with minimal disturbance by simply removing the top ring halves and mounting another scope. Few things could be more convenient. As aforementioned, special halfround, fitted shims were used in attaching the one-inch scope ring to the respective pistol barrels.

This half of the joined ring set then essentially served as the scope base, along with the shims, which were made of black col-

ored nylon. These ring/base sets could actually be reversed or used at either end of the barrel or interchanged one gun to another. They are so compact and durable they would easily withstand the recoil of a heavy magnum cartridge. In the mounting process I used Brownells Sleeved Scope Alignment Rods to verify coaxial ring alignment, which proved to be perfectly concentric.

A well aligned scope, in this way, also serves to reduce barrel motion while firing—further improving accuracy. It becomes an integrated unit. This places the back of the scope turret housing just clear of the rear ring and the ocular lens housing just over the open rear sight with 0.150 inch clearance. Scope tube space over the receiver was 0.700 inch. All-in-all, things were very well balanced. The Browning Challenger weighed in at 3 pounds, 12 ounces and formed a mechanoaesthetic (my word) appearance.

Browning Challenger Testing Having tested the Hi-Standard Tournament Model and the Ruger Mark II Target Model with my mounting system, I knew what to expect in the way of performance with the Browning Challenger. Earlier I was using two of the older Redfield 22 pistol shows the rest method used in testing them. Outstanding accuracy was achieved, quite comparable to some rimfire target rifles. Sportster scopes with 3/4-inch tubes, course reticle, and a fair amount of parallax present.

Accuracy at 25 yards at that time was good, but I knew it could be improved. I had read accounts of best group, 25-yard accuracy of around 1 1/4 inches with open sights being delivered with the Browning Challenger—which I felt I could easily improve upon and I most certainly did. With all systems go, I was finally prepared to embark on some pretty serious evaluative efforts.

The optics and mount systems were far superior to anything I had ever seen or heard of being used on a semi-automatic .22 LR handgun, and my method of shooting this type of gun would be much improved. I would also be using some of the best ammunition available today. I had gone over the bores on these pistols with a special cleaning and lapping technique that was working very well on my match .22 rimfire rifles. My primary testing was at 25 and 50-yards.

I used a special, adjustable rest with the gun supported on medium firm, leather-covered sandbags. The square-bottomed pistol butt rests squarely and firmly on a level sandbag controlled by my firm right hand. I've always relied on the premise that sustainable, top-line accuracy with any gun hinges on precision of equipment coupled with a reliable and proven shooting technique. These elements, along with total familiarity with the individual gun and its ammunition are the prime ingredients for better shooting.

A PECULIARITY I QUICKLY LEARNED IN SHOOTING THE .22 RIMFIRES INVOLVES A

SCOPING .22 SEMIAUTOMATIC PISTOLS CONTINUED

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.22 pistol with special mount system designed by the author, used to achieve the ultimate precision from this spectacular little .22 pistol. As described in text, 25-yard, fiveshot groups averaged 0.286 inch with a 50-yard average of 0.478 inch. This is most unusual accuracy attained with a .22 semi-automatic pistol. Selected .22 rimfire ammunition was used in testing the three .22 pistols shot under ideal conditions.

Hyper velocity ammunition should not be used in semi-automatic pistols which operate on the blowback principle. 22 Sporter pistol shows a unique, balanced scope mounting system developed by the author in mounting a 2.5-7x Sightron scope. This is one-of-three .22 semi-automatic pistols mounted with this unique scope ring system. need to condition the bore as different brands or types of ammunition are used or following cleaning of the bore.

Not unlike most bores, including the high powers, this kink doubly applies to .22 rimfires when attempting to extract the highest degree of accuracy and precision from them. The latent accuracy within any firearm often goes quite undiscovered. The slide retains the firing pin and spring and the recoil spring re-

mains intact. The semi-auto pistols are well made, capable of extreme accuracy. 22 LR cartridges are suitable for use in semi-automatic pistols.

Those made especially for the .22 pistols like the Lapua Pistol King, CCI Pistol Match, et al, are perfect. The hyper velocity or those labeled "high velocity" should be avoided. by not knowing about conditioning the bore. This means firing a shot or more whenever there is a change in ammunition preceding any attempts at serious group shooting. This reestablishes the coefficient of friction within the bore.

I conducted such tests using all three of my scoped .22 rimfire handguns and the result was invariably the same. One must also be aware of temperature changes of rimfire ammunition, particularly the lower velocity, match types. Older .22 LR ammunition can pose a particular problem when cold as the bullet coating congeals. Temperature extremes should be avoided. Variance in ammunition temperature from one cartridge to another can also produce sporadic performance.

Uniformity in all aspects of shooting is an absolute requirement when trying for best accuracy. This information is valuable to the hunter as well. I had some of the best ammunition available, from such companies as Federal, Lapua, CCI, Remington, Winchester, Wolf, Dynamit Nobel, et al; some extraordinary performance was manifest here. For example, the 25-yard Browning 5-shot group average was 0.286 inch for eight groups.

Then, as I switched over to 50 yards with minimal disturbance of my rest, a 0.375 inch, five-shot group followed. This was followed by two more 50-yard groups, which measured 0.490 inch and 0.570 inch for a 0.478 inch, three-group, 50-yard average. This is almost beyond the realm of possibility with a .22 rimfire semi-automatic pistol, usually attainable only with a well-tuned match rifle. Considerably more testing was conducted at 25 and 50 yards and the three scoped .22 pistols compared quite closely.

Scopes remained perfectly sighted-in throughout long periods of shooting. Such performance adds a whole new dimension for the hunter too, extending the effective range of the pistols. AG

MACHINING

New Items

A tour of new items of interest for gunsmiths.

BY DEAN MEIER DECEMBER 2019

ORIGINAL PP. 19-20

Our industry has never had a shortage of new things. Here are some of the latest. Tormach Inc. (Tormach.com, was founded to provide quality Personal CNC machine tools at a price affordable to individuals and small shops. Ideal for gunsmiths, inventors, R&D professionals, or small manufacturers, Tormach brings Computer Numerical Control automation down to reachable price points.

The company's newest offering is their AF50 Autofeed Bandsaw, a programmable and fully automatic alternative to manual or semi-automatic bandsaws. This is Tormach's first bandsaw offering and complements the company's line of CNC milling machines and lathes. By combining a pneumatic clamping system and hydraulic feed control, the AF50 provides consistent and repeatable cuts. It operates on 115 Vac, single-phase power and cuts lengths from 0.157"-50" (4mm- 1270mm).

The pneumatic clamping system features an adjustable soft-squeeze, which reliably holds material from thin-walled tubing to 7-inch round steel bars. The AF50 provides automatic cutting and lists for \$5,495. A premium package that includes a heavy-duty flexible roller table, replacement blade brush, and coolant sells for \$5,832. To help new users of CNC machines, Tormach offers pre-sales consultation and CNC Workshops.

Their Path Pilot CNC control software can be learned online via their Path Pilot HUB website (hub.PathPilot.com). Ru Bee Ru Bee (Visible Assets, Ru-Bee.com, utilizes technology first introduced by Lockheed Martin to track firearms and similar sensitive items in large shops and armories using magnetic wireless technology, tags, and software. Their Allegro Weapon Shot Counter has better than 98% accuracy and uses dual comparators to distinguish between live and blank rounds.

Weapon information is automatically updated in the Armory2020 tracking software and can scan up to six equipment tags per second. Using magnetic sensors instead of RF (Radio Frequency) holds up better in harsh environments and can be read through and around metal, liquid, and people. Armory2020 is an integrated Weapons Visibility and Security System in use with issuance terminals at a shop or armory and has been trusted for security of transfers in some of most secure environments in the world.

Weapon Racks are outfitted with Ru Bee readers and ferrite antennas to provide on demand realtime inventories. Issuance stations automatically scan Ru Bee tags on weapons and other sensitive items as they are issued or returned to the Armory while ensuring personnel have the proper authorizations and qualifications to control the asset. Readers and antennas are also positioned at doors and gates to ensure no unauthorized asset leaves the controlled area.

Ru Bee tags and Armory2020 delivers 100% automated inventory scans at a speed of six tagged items per second, issuance transfers in under 10 seconds, and constant site security of assets. Ru Bee has been approved for use by the United States government in some of the most secure Department of Energy and Department of Defense sites.

CMC Remington Trigger CMC Triggers (CMCtriggers.com, released their CMC Remington 700 Ultra Precision Trigger using their patented Over Center Dynamic Locking System and adds to their aftermarket trigger line for the AR-15, AR-10, AK, and Glock as well. Compared to OEM and other aftermarket units, CMC's triggers provide a safety mechanism independent of pull weight adjustment, pre/over travel adjustment, and is comprised

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of a single internal precision S7 Tool steel investment cast component. It is manufactured to a 0.001" total tolerance and the company claims it is arguably the safest Remington 700 trigger on the market. The CMC Remington Trigger has an adjustable pull weight for longrange precision, tactical use, and hunting. No removal or disassembly of the trigger is required to adjust the weight from 8 ounces to 3.5 pounds, with a factory pre-set at 2.5.

For ease of trigger installation, an integrated bolt release catch is pre-installed and also made of S7 tool steel, coated with a proprietary blend of advanced PVD and Hexagonal boron nitride coating for a low-friction, protective surface. More durable than a stock Remington trigger, CMC provides a Satisfaction Guarantee and Lifetime Warranty.

Radial Delayed Blowback Fans of Jeff Cooper's cartridges and his "Thumper" concept will see future potential with this design from CMMG Inc. (CMMGinc.com). The Radial Delayed Blowback (RDB) system is anew operating system created from the ground up by CMMG to eliminate problems with traditional blowback operating systems found in pistol caliber AR-15s. With a traditional blowback system, the

only thing keeping the chamber closed is the weight of the bolt and the action spring tension.

As a result, the more powerful the cartridge, the more weight is needed to keep the bolt closed long enough to safely operate. With the RDB system the bolt must be forced to rotate and unlock itself before it will cycle. This slows things down enough for chamber pressures to drop to safe levels, ensuring reliable and safe operation without the need for heavy bolts or stiff action springs.

This allows for more potent cartridges than that commonly found with traditional blowback designs, with CMMG initially releasing their RDB Banshee chambered in 10mm. The Radial Delayed Blowback operating system incorporates a mechanical delay that forces the bolt to rotate, momentarily slowing the bolt carrier group, which allows chamber pressures to fall before cycling.

This mechanical delay allows for reliable function with a wide variety of ammunition and removes the need for a heavy bolt, buffer, and spring typically required in direct blowback systems. Radial Delayed Blowback cuts felt recoil, bolt velocity, and directs more gas down the barrel, which results in cleaner function. In addition to the

patent for the RDB, CMMG developed and patented their Bolt Catch Linkage System to allow a Last-Round Bolt Hold Open feature.

The 10mm RDB Banshee has a base weight of 5 pounds, 9 ounces and an overall length of 24.3 inches. One 30-round factory SGM Tactical Glock-compatible 10mm magazine is included. DVC Cleaning DVC Cleaning Systems (Dry Vapor- Cleaner.com, removes dirt, grease, grit, grime, chemicals, toxins, contaminants, and microorganisms, leaving surfaces clean, dry, sanitized, and free from chemical residue while using environmentally (and human) friendly solutions.

In use with a multitude of industries, chemical-free vapor cleaning with DVC's Purgo Spray uses a non-corrosive, 4% moisture spray to pressure clean with no residual wastewater to dispose of. For cleaning in caustic environments, Nee Rugo solution adds additional anti-corrosion properties to the items which are being cleaned. The DVC-169 system provides 190 PSI of cleaning pressure for 7-10 minutes with 2minute recharges in between and is foot pedal actuated, allowing both hands free for cleaning.

Other DVC systems offer even higher pressure and longer run times as needed. AG

FROM THE ARCHIVE

The New Wave

As a small-shop gunsmith, it's easy to feel overwhelmed by retailing giants. Here's some ways to keep ahead.

BY BILL SMITH DECEMBER 2019

ORIGINAL PP. 21-22

If you have a crystal ball and take the time to look into it, you will see the future of the gun business. Believe me, it is undergoing big changes. How does this affect you, the gunsmith? Well, let's review what is happening and after you rub last night's sleep out of your eyes and drink that second cup of energy, you just may be one of the more perceptive people that can understand, agree, and adjust your business to cope with the new wave. Let's hope so. This article is not a forewarning of impending doom.

It is a notice to advise you of what is happening, will continue to happen, and to get you to overhaul your flexibility so that you can continue to profit (?) and keep your place in the sun. So, pour a drop of Hoppe's No. 9 in your coffee (or however you take your bean juice) and read on. Retail Retailing is changing in most areas.

The only areas that are not are ones of such limited population numbers that they do not warrant the investment by the retailer to establish one of the big box "super stores" in that town. Even so, big online retailers can be having a similar impact.

Regardless of the small town escaping the super stores or shopping malls, the old retailers are losing business because everyone that has a reliable Internet connection and/or car that takes them to Neverland by spending a little time behind the wheel and offers a day's outing for the family. Yes, family, for the shopping experience at outlet malls or super stores is the land of enchantment and sales with many having a safe place for the kids to play while mother tries to bankrupt the old boy.

After all, this is her chance to get even after having to drive all those miles with the kids in the back seat trying to kill or maim one another. She is going to make damn sure her nerves are soothed by spending all she can. Remember in these cases, going out of town to the "big mall" is an expedition so take advantage of it. Going back a few years, I liked to do that. For me, it was a Sears that sold guns and ammunition and it was convenient to put it on the charge card. The same with J. C.

Penney's or Montgomery Ward. All of these have stopped with others like K-Mart and then Walmart to pick up. The giants are ever expanding their sporting goods departments. You can't beat their every day prices on guns and ammunition. Even with the recent silliness concerning ammunition sales, these giants will remain a factor. Another factor are the huge super market outdoor stores. Watch these stores.

Were it not for viable competition online, these stores would have invalidated that old standby, the mail order catalog. Local flyers and mini catalogs coupled with a shopping experience where customers can touch the goods rather than order from pictures and wait to receive it still holds value. Guns can't be shipped directly to consumers because of the laws covering them. Some states and local jurisdictions may have restrictions on mailing ammunition as well.

Even if big box stores arbitrarily reduce or stop their gun and ammo sales, they still carry more accessories than you do and at better prices than you have. The accessory business, such as slings, swivels, recoil pads, magazines, sights, mounts and the

like are all being packaged by the manufacturer for point of purchase sales. This is where you stop in for one particular item and end up seeing something else you like.

Grocery stores are the masters of this, in case you've ever wondered why common staple foods are placed past and through aisles loaded with items designed for an impulse purchase. Gunsmiths are going to get fewer and fewer accessory sales because of this and accessory packaging and marketing will continue to grow.

There is a lot of common sense in your realizing that it is ridiculous and unprofitable for you to carry a large inventory of accessories and ammunition (there never was any big markup on ammunition anyway) when your customer is only going to pick out the scope he wants, go to a bigger (and possibly lower priced) big box store to buy it, adding some additional items and perhaps some ammo on the way. But that's not all.

The latest trend in gun shops including full time gunsmiths is the awakening of the newest giant: Super Outdoor Sports Stores. These are raising their heads in every metropolitan area. They are huge (you can get lost for days in one) and they carry everything from maps to guns— all makes, models, and what not, along with everything to go with a gun from canned food to warm socks. They are truly super stores. You will find what you want and

THE NEW WAVE CONTINUED

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something you don't need (but end up getting anyway) in these stores. They are designed to cover it all so you have no need to look elsewhere. They have it. They also count on the fact that by the time you get through looking at everything and get to the department you really came in for that you are going to be too tired to go anywhere else and besides, the little gunsmith shop (including your small inventory) doesn't have the selection that is in front of them now.

It's an application of the grocer's approach for sporting goods. Pretty hard to have one or two Browning A-5s in your stock and still sell them when your customer is standing before 25 of them, with more in the back room. These new super sporting goods stores offer displays large enough for your customer to get an education in guns and he will buy from them, don't think he won't. If you aren't wanting to sell your shop by now, you should be.

But then, all gunsmiths think they are the answer to all gun situations and in their light-hearted way may ignore these facts. The retailing brains that figured out these super stores concentrated on one thing: A full service store. This means that there is a gunsmith on duty to mount that scope they just sold. While creating jobs for gunsmiths and encouraging more gunsmith schools graduates, this isn't going to help you if you run your own, small, independent shop. Not much anyway.

What To Do Now get that third cup of coffee, turn on the country music station, add two drops of Hoppe's in your cup, and we'll try to figure this whole thing out. First off, while the switch of new gun sales and sales of ammunition may be to these new stores, this fact will not be disastrous. You can close out your inventory slowly. As for ammunition, given recent changes

by some big retailers deciding to be faux politicians instead of merchants, this may open up ammunition sales for you.

Personally, I gave up handling that years ago so I am not sitting on a pile of inventory whatever happens. What these super stores can not do is trade. The personnel they hire to sell guns are right out of the men's wear section—and probably just last week. While they may have a gunknowledgeable manager, he can't or won't be able to trade satisfactorily.

It is a strange thing that a store will carry thousands of dollars worth of guns at an average mark up of 25% but won't deal on a trade in where the margin could be 30-40% and even 50%. Good for us for we can then settle down and make decent money on used guns. How do we do this? Let's assume that your customer has a gun—any gun that retails new for \$600. Perhaps he bought it from you, perhaps not, makes no difference. So the gun sold for \$600 originally, it is 90% condition and should resell for \$495.

You explain this to him—and if he has the brains of an Iver Johnson single barrel—he will agree. You further explain that you work on a 40% margin. If he can't understand and agree to that, your deal is dead right there. The 40% off \$495 brings his gun to about \$300, your cost. Naturally, he is going to tell you he would like to get more out of it, so you being an old horse trader give him this: "I agree you should get more, but you are asking me to buy it.

If I had an immediate sale for it and could turn it at once I would make you a better offer. However, buying it from you now and then hoping someone else buys it from me later—someone that may never show up—means that I'm taking on all the risk. If you want more money out of it, I will sell it for you at a 20% commission—would you like to do that?" Personally, I

am happy to work on someone else's money for 20% (forget 10%) and you should be too. Either way, you are being honest.

If he deals, you're getting the gun one way or the other and making money in the long run. This buying or trading is something that the super stores can't do. While, and it is unfortunate, we can't get all the used guns we want, the guns we get will bring us more profit and become a nice little sideline. We are going to get hurt on the sale of accessories, though it can be held down by the fact that you may be mounting a scope that was purchased from a large retailer (or online) that don't have gunsmiths.

Because of this you can sell the mounts and the service, which all adds up. While your sales for swivels and magazines may go down, there isn't much you can do unless you have sufficient funds so as to stock them and work on the premise that your customer will buy simply because he is in your shop. Take that approach if you will but watch your stock. As I see it, the sale of new guns, scopes, accessories, are going to falloff for the stocking gunsmith. What does this leave us with?

It leaves us with the same thing that we always had, only now we have to do a little more of it and maybe do it better. Capability, know how, fair price (for us) and above all, quality. Your customer may drive a Mercedes or an old pick up truck, but when any of them are coughing and breathing hard they have to go to the doctor. That doctor is you when a gun is involved. My approach is to convince all of you to sell yourself and your service. That's all. You area plumber in the gun world.

Stick to it and all will be well, and you can keep ordering more tools from Brownells. Best of all, you will be able to take your spouse out once in awhile. AG

MAINTENANCE & REPAIR

Reader Forum

BY AMERICAN GUNSMITH EDITORS DECEMBER 2019

ORIGINAL PP. 24

AR-15 Bolt Carrier Tilt I've been reading the multiple articles on AR-15 building by Joe Carlos and am still at a loss on the bolt carrier tilt issue. So, the proposed fix is to replace a nice long and smooth contact (ski) on the bolt carrier with a rough little bump (head of a screw) that is going to cause variations in bolt velocity and resistance between shots? Not only that, it seems as if this approach is going to damage the upper and receiver extension. Arthur Author Joe Carlos responds.

Many test fire groups have revealed clear improvement in my approaches. During my range testing I changed only one variable at a time, using the same carrier with and without anti-tilt pads. Groups were fired with the same lots of match ammo in many scores of different uppers. When I analyzed the data I determined that the groups fired with carriers having pads were on average 14% tighter. The pads are not causing damage. I have had these modified carriers in circulation with active competitors for years now.

Many of these shooters have shot out their original barrel (about 3,000 rounds) and sent their uppers in for a new barrel. I inspect each receiver under magnification and have only found light scuff marks where the pads

run. I maintain one lower for testing and that has seen around count deep into five figures and that lower hasn't displayed any issues. I offer my customers a money back, satisfaction guaranteed shop policy and nobody has returned a carrier for a refund due to any wear or negative impact on groups.

I don't claim that my approach to combating the accuracy robbing influence of bolt carrier tilt is the final word but testing shows it works. S&W "Victor" Have an old S&W Model Victor .32 caliber and would like to know where to get a manual or detailed reassembly info for it. Robert Blue Robin Guns, LLC The is no pistol or revolver made by S&W called "Victor." There was and still may be a .22LR target pistol of that name made by the old and the new High Standard company.

Last we heard it was still a great paperbuster. Perhaps the stamping on the pistol you mention was damaged? While it's not old nor in .32 caliber, Smith & Wesson does offer a .22 LR Victory pistol Unfortunately (or not, depending on who you ask) the S&W Victory bears no relationship with the former S&W lead pony in target shooting: The Model 41. Plenty of disassembly information on that pistol, but the Victory has been redesigned from grip to muzzle. AG M. S. L.

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