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INSIDE THE ARCHIVE

A HARD LOOK AT THE REVOLVER

A MIXED BAG • GETTING TO KNOW THE SAVAGE TRR-SR • INSTALLING ADJUSTABLE COMBS ON GUNSTOCKS • WORKING...

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 093

DIGITAL ARCHIVE EDITION

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MACHINING

A Mixed Bag

BY AMERICAN GUNSMITH EDITORS SEPTEMBER 2011

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Craig Constantine, Supervising Producer for Discovery Studios, is a producer working on a potential new series for the Discovery Channel that will show one-on-one competitions with machine teams building a variety of devices. The show will document the building of the machines against the clock, the troubleshooting of them and then revealing them in action with the work scored by a panel of celebrity judges.

A Mixed Bag The series is looking to go beyond the typical engineers or robotics specialists to people who are experts at making intricate, fine mechanisms. That is why gunsmiths are one of the professions that Mr. Constantine and Discovery is interested in. Gunsmiths, machinists and similar folks skilled at building and fixing mechanical devices who are up for showcasing their craft on national TV are urged to try out.

While candidates located on the West Coast are preferred to avoid logistical nightmares and costs, but the show will consider any person that is a good fit for the program regardless of distance. This is a great opportunity for gunsmiths to get positive exposure in the mass media. If you are interested call or email zenweasel@sbcglobal.net.

ORIGINAL SOURCE PAGE

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RIFLES

Getting to Know the Savage TRR-SR

Out of the box it only begins to look like a tactical rifle but it doesn't take much to complete the illusion for economic considerations.

BY CHICK BLOOD SEPTEMBER 2011

ORIGINAL PP. 3-7

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Before digging in to this new Savage I want to start out with a few comments about .22 rifles. More specifically, .22 rifles primarily intended for highly competitive target use. That would definitely include indoor gallery matches. Ever fired in one? Ever seen one fired? There, .22s are on steroids. Buck naked, meaning without the scopes they often wear and not further burdened with sizable hand rests for the offhand stage of a match, they'll weigh in at 10 to 12 pounds.

Their barrels will equal the diameter of a quarter – or bigger. The exit holes at their muzzles from which they'll expel 40 grain nuggets at ten bull's eyes no larger than the head of a common pin never exceed 0.224 inches. The steel of their receivers will be of far sterner stuff than required for the negligible pressure generated by a standard velocity .22 LR cartridge. They do share a couple of characteristics in common. All will be single shot bolt actions. All are members of the royal family among rimfires.

But wait. I haven't yet mentioned the shooters who pull the sensitive, light, crisply-breaking triggers of these rifles from

prone, kneeling/ sitting and standing positions, then peer after each shot through spotting scopes with 45 degree angled eye pieces. These folk, like their rifles, are a special breed. They arrive at the range packing gear enough, so it seems, for a safari. The hard case containing their smallbore rifle could comfortably house a Civil War-era Springfield Model 1861 Rifle-Musket, caliber .58.

Their shooting mat, shooting jacket, cleaning rod, a range box containing ammunition and a tall stand onto which they'll clamp their spotting scope are rolled through the door in a vertical, sturdier facsimile of a supermarket shopper's cart. When on the line, they wear the most efficient of ear muffs made totally impervious to any sound by first stuffing wads of cotton into the ears under the muffs.

This ear stuffing practice is not uncommon amongst the centerfire rifle and handgun crowd to enhance hearing protection. Among gallery shooters it's all about enhancing protection against distractions. I assure you, I have overheard verbal abuse surpassing that of a crusty Marine Drill Instructor dressing down a recruit hurled in

the direction of a Gallery Match observer who had the unmitigated nerve to laugh too loudly at a joke he'd been told.

The abuse originated with the competitor on target number three as I recall. She was in the prone position on her shooting mat, twisted her head around to locate her offender, lowered the barrel of her personal member of Royalty from its point of aim and switched on the deep blue invective. That this caused her fellow shooters far greater distraction belayed her not. Nor they. One by one, all turned their heads toward the offending laughter wearing deep, accusing scowls behind their shooting glasses.

The victim of their haughty scorn, thoroughly cowed, clamped his lips tightly together and, treading light as he possibly could, tiptoed out the range door backward before closing it—silently—behind him. I was frankly surprised he hadn't bowed his out backward as well. Isn't that how ordinary people are supposed to humble themselves when leaving the presence of those born of higher birthrights?

GETTING TO KNOW THE SAVAGE TRR-SR CONTINUED

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I only bring that up because the whole incident reminded me of a movie I'd once seen where an individual who had unknowingly offended a queen holding court and backed out of the vast, opulent chamber at the dismissive wave of Her Majesty's hand. All too many gallery competitors are like that one on target number three. Their rimfires are royalty. Ergo, they feel they associate with royalty and tend to sneer or be easily annoyed by those who do not.

Most of them would not allow a TRR-SR to be housed in the same gun safe as their titled shooting iron. The balance of this article, then, will ignore all royalty and bring into focus the interests of individuals who have an

affection for rimfire rifles of less than noble heritage. I, proudly, number myself amongst the latter. I still own and fire the little Winchester my Dad gave me when I was age five. It was serenely accurate then and remains so to this day.

I consider the TRR-SR to be a well thought out, well executed example of a rimfire lacking a posh pedigree while making itself warmly welcomed in a far larger market composed of citizens who have never been near a royal court and hold no desire to be remotely associated with one. They will find this rifle suits them well. Though the TRR is not a purist's idea of a tactical rifle it can be slight-

ly modified to look more like one. At the end of its barrel is a threaded stud normally protected by a twopiece cap.

Where permitted by local laws, a suppressor can be turned onto the stud thereby reducing risk of hearing loss to an air rifle level. In the event such sound suppressors are illegal for civilian ownership in a city, town or state, any macho desires or tendencies may have to be satisfied. When uncocked the cocking piece moves downward to the lower notch (B).

This view of the rear bolt body shows the cocking piece retaining pin (C) and the larger hole (D) in the rear body through which the hammer engagement pin is accessed. D

GETTING TO KNOW THE SAVAGE TRR-SR CONTINUED

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field with a muzzle brake. Both addons are available from Savage. I offer the following and will expect much critical email regarding it: A silencer-equipped TRR can serve as a useful substitute for a similarly-equipped larger caliber rifle in the tactical training of LEOs. Why? Indeed, why not. Suppose you were responsible for training in a 100+ officer police department.

Under present economic conditions and the budgetary restrictions they bring, there's no comparison failing to favor the discharge of several hundred rounds of twenty two caliber down range rather than an equal number of .223 centerfire rounds. After conversing with several tactical weapons types at this year's

SHOT Show I am very sure the ammunition cost differential has been a significant factor with some noted and even "wannabe" AR-15 producers.

You mean you haven't noticed An optional muzzle brake or suppressor can be attached to it. Above the stud is the protective screw-on cap. Savage bolts do not interchange. Each has been individually fit to one action and is suitable for no other without repeating the fitting process. the number of "look-just-alikes" being brought out, chambered for and working very well on .22 LR? Field Stripping You may wisely choose to Xerox and file the TRR parts list and schematic appearing with this article.

They do not show up in an owner's manual and, at the moment, no one at Savage. Weight of pull is adjusted with the unique, factory-supplied tool beneath the springs into which it is inserted. The simple instructions on how pull adjustments are actually made appear in the owner's manual. Savage seems to know when or if that will happen. There is also a distinct possibility the expanded drawing of the bolt assembly will never appear anywhere except in these pages.

Its Massachusetts manufacturer is particular to extremes when it comes to their rifle bolts. Whether rimfire or centerfire, each one is individually fit to its receiver then headspaced. A

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Savage TRR-SR Schematic Notes The section of the drawing showing a break down for the Accu Trigger has been eliminated since no internal parts are available from Savage Arms or in the aftermarket. Parts 1AA through 21 (e-clips) are sealed inside the trigger housing. The balance of the rest of the parts list starts at the back end of the rifle and works its way forward.

Iron sights have been listed but do not appear on the TRR-SR variation featured here. 12R Cocking Piece 12Q Cocking Piece Retaining Pin 12W Hammer 12X Hammer Engagement Pin 12Z Hammer Bushing 12V Main Spring 12Y Main Spring E-clip 12G Rear Bolt Body 12K Front Bolt Body 11G Firing Pin 33 Extractor Savage bolts are not interchangeable. They even wear the same serial number of the rifle to which they've been married.

As a result, a Savage rifle that happens to come your way missing its bolt must be returned to the factory for a new one. No ex-

ceptions. Like more and more Savage long guns, the TRR-SR features the firm's Accu Trigger. All any gunsmith or owner has a genuine need to know about these highly successful innovations is how to adjust them for weight of pull.

Those instructions 33A Retaining Clip 32 Cartridge Guide 20 Receiver 21 Recoil Stud 52 Barrel Pins 16B Rear Sight 16D Rear Sight Elevator 25 Barrel 17B Front Sight 18 Stock 19A Guard are described in detail within the owner's manual of any Savage rifle wearing one. There are absolutely no individual replacement parts available for Accu Triggers. I've never come across one that required any but if I had I knew the only repair possible would be a complete assembly. Again, no exceptions.

However, for those of you who have a deeper interest in exactly how the Accu Trigger works, all the details are revealed in my December 2004 American Gunsmith article dedicated to the subject.

Savage TRR-SR (Specifications subject to change without notice) 19B Guard Screws 19D Take Down Screws (10>15 in/lbs) 19I Magazine Plate 19H Magazine Plate Screw 7 Magazine Latch Guide 23 Bolt Guide 59 Spacer 19K Magazine Housing Studs (40 in/lbs) 19K Barrel Stud (Do not remove) 13A Magazine Housing Place the safety on, remove the magazine, inspect for an empty chamber, protect your eyes and turn the rifle upside down. A 9/64-inch Allen wrench backs out the two stock mounting screws (19D).

Separate the stock from the barreled action. Pull back firmly on the trigger, slide the bolt to the rear and remove it from the receiver. That's really as far as you have to go before performing a basic clean up on a TRR-SR but this is the right time to bring up a few more things. There are three studs, all identified as

GETTING TO KNOW THE SAVAGE TRR-SR CONTINUED

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19K, holding more components to the receiver. You never mess with the 19K stud which seems affixed to the barrel. It happens to be a key element in locating and securing the barrel to the receiver and is cross pinned in place. Start cranking on it and you'll ruin both the stud and the receiver. Prepare your large vise for action by padding up its jaws. I hope you have a automotive ignition kit. If so, get ready to use its 5/16-inch open end wrench.

If not, I recommend you venture out to an auto supply store and buy a kit. No open end 5/16-inch knuckle buster of standard thickness can do what the ignition wrench lets you do. Secure the rear bolt body (12G) between the vise jaws. Some of the pressure from the Main Spring (12V) has to be relaxed a bit by uncocking the cocking piece (12W), a/k/a hammer. This used to be a two-piece unit but is a single piece now. Squeeze and pull the back end of the hammer until you can rotate the part counter clockwise. Hang on.

Don't lose control guiding the cocking piece pin (12R) into the notch as indicated. The bolt is now uncocked and the main spring somewhat relieved. Only somewhat, though. Remove the rear bolt body from the vise. Replace it with the front bolt (12K). A small blade screwdriver gets slipped under one side of the firing pin/extractor/cartridge guide retaining clip (33A) between the clip and the underside of the front bolt body.

Carefully push the blade in to spread the clip away from bolt contact, then carefully work it upward until the clip can easily be flipped off. The firing pin (11G), extractor (33) and cartridge guide (32) can now be slid forward and out of the body. Don't get the guide and extractor mixed up. Mark with a "G" and "E" if necessary to ensure this doesn't happen. Set the front bolt plus its associated parts safely aside..

Move to a clear enough place on your bench so you can make up an important small tool you'll be using very soon to push back the mainspring far enough for it to be clear of its e-clip (12Y). The tool can

take a couple of forms. One is a six to eight inch length of thin, fl at stock with a hole equaling the diameter of the hammer's front shaft. The easiest to fabricate, and I think to use, starts out as a thin blade screwdriver.

Grind or file a "U" shape in the blade large enough to span the front shaft of the hammer. It will end up looking like a two-tine dinner fork. Pick up the ignition wrench. With the bolt rear secured back in the vise, grasp the bolt handle and pull it to the rear until the hammer bushing (122) is exposed. Engage the bushing with the wrench and get it moving a little. Just loosen the bushing and do not remove it yet.

Once you feel sure you can turn off the bushing all the way with only your fingers, put away the wrench until reassembly when the bushing has to be retightened on the shaft. Pick up the two-tine dinner fork you made. It can be pushed in between the mainspring and the e-clip prior to pushing the spring back far enough to get a hold on the clip with smooth, parallel jaw pliers and pull it off. The little dinner fork still has some work to do controlling the main spring and prevent a flight to who knows where.

And I, for one, am not taking a chance. A small, cardboard box or plastic bag might come in very handy before, during and after popping off the e-clip don't you think? Anyway, if you haven't lost control of the spring you can ease off any pressure still being applied, slide it forward and out, finish undoing the hammer bushing and remove the now-gutted front bolt body from the vise. The rear bolt body has a fairly large hole on the side opposite the bolt handle.

With all that was stopping you from doing it now gone from the bolt, grasp the hammer and start to slowly pull it to the rear. Slowly is good, slowly is wise because there is a small roll pin very near the cocking piece (12R). It's the cocking piece retainer (12Q). You can't push it out until it's visible through the fairly large hole just

mentioned. Until you have everything out of the front bolt body there's no way to get at the pin. The main spring's in the way.

Once the pin has been removed, the cocking piece can be pulled out. Note the channel milled in its midsection. It's there to accommodate the retaining pin. During reinstallation, alignment of that pin hole and that channel is critical, folks. Two studs (19Ks) are the keys to getting at the magazine latch group. The studs are turned in to 40 inch pounds. Break them loose starting with the rearmost stud and complete removal with your fingers. Lift off the spacer (59) then the bolt guide (23).

The magazine latch guide pulls out to the front, the front magazine housing (13A) to the rear and the Accu Trigger housing is retained by two screws. One more thing: If you need to remove the recoil lug (21), it is also turned in to 40 inch pounds and its thread contact secured with 242 Loctite. Make certain those threads receive a light application of the same blue fluid upon reinstallation. Loose recoil lugs make for major problems in any rifle. I really have to add something about the two barrel pins (52).

They've been match drilled during factory assembly, cannot be re-used and must be replaced with over-size pins. Savage is no longer offering these larger pins to the public and "repair" means the whole match drilling process has to happen all over again. You know what comes next? Right. the gun is going back to Bo Sox land where all that fancy, expensive equipment exists to "get 'er done." Finally, one last reassembly tip.

When reassembling the retainer clip, cartridge guide, firing pin and extractor to the front bolt body install the firing pin first, then the clip. Insert the guide and extractor between the bolt body and clip by their pointed/tapered ends. The distinct hook on the extractor and the slight hook on the guide should be positioned inward. Alternately and gently tap—do not "drive"—the two parts in until the clip snaps audibly in place. AG

PISTOLS

A Hard Look At The Revolver

merit. Here's how to handle your customer's hard-used handguns.

BY ROBERT K. CAMPBELL SEPTEMBER 2011

ORIGINAL PP. 8-12

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Among the best things to happen to revolvers have been IDPA matches. Quite a few personal defense shooters go armed with double action revolvers but their options for competition were limited. IDPA has gotten many of these shooters out and shooting in the respective classes. Another class of revolver shooters that practice hard by necessity are handgun hunters. These men and women fire their revolvers a lot and subject them to more use in a year than the common revolver in the dresser drawer sees in a lifetime.

You will not see one of these shooters with a .357 that is twenty years old but appears as new from setting in a drawer. These revolvers are used hard. When revolvers are fired in competition or fired a great deal with heavy hunting loads, the myth of revolver invincibility wears thin. Revolvers are durable and will stand lots of use, but not abuse. All revolvers will eventually have problems if used hard. Handguns are tools. They are meant to be used. They are a good investment but they can be worn out.

I am seeing the hard use revolvers with many more problems. Some of the problems are ammunition related, some are maintenance related and some occur simply

because shooters are not aware of the maintenance requirements of revolvers. They purchased the jam proof revolver without any idea of the need to occasionally tighten the ejector rod or cylinder latch screw. They misjudge ammunition. Some ammunition is too hot and it isn't just hand loads.

Or perhaps I should note that it is ammunition selection not always the ammunition itself at There is no reason they cannot serve another lifetime with reasonable care. fault. As an example, a heavy hunting load using cast bullets is fine for use in a heavy fame revolver but I have seen shooters deploy these loads in snub nose air weight revolvers. Naturally the handguns do not blow apart but small parts take a beating.

When revolvers chambered for the same cartridge may be had in weights ranging from twelve ounces to over fifty ounces, such a disparity of choices are common. Another note that is worthy of your consideration, while gunsmiths must be capable of testing firearms for accuracy in general, many revolver shooters are marksmen who have practiced long and hard in the discipline at which they excel.

If you need to test the revolver for two-inch fifty yard groups it may be the owner's responsibility or you may experience frustration. I can tune a revolver but not necessarily check it for accuracy on 150 yard metallic silhouettes, as one example. With this background in mind and realizing that the modern revolver shooter is also a high round count candidate who demands the best out of his handgun, just as a competitive 1911 shooter may, let's look at common problems encountered with the revolver.

Do not underestimate the skill needed to tackle the problems encountered with this seemingly simpler handgun. Cartridges Failing To Chamber Almost forty years ago writer Skeeter Skeleton penned a column as to a response to discovering that a .44 Magnum handload was crimped so tightly it would fit into a .44 Special chamber. This is a recipe for disaster. He issued a warning to all of us. By the same token occasionally shooters mix up range brass with sorted brass and load the wrong caliber.

IF THE ROUND WILL NOT CHAMBER, WE HOPE THE SHOOTER BRINGS A

A HARD LOOK AT THE REVOLVER CONTINUED

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All of the warnings apply when working with this revolver. sample of the round into the shop for examination. Some chambers are tighter than others. That's fine if perfect loads are used but most loads are not perfect. It is not uncommon to find a scarred or pitted cylinder wall. The reasons for such a problem are many. As an example, a working cop brought a lightweight Smith and Wesson .38 to the author for examination.

He informed me it was bulging some, but not all, fi red cases, even with target wadcutter-type loadings. I carefully inspected several spent cases and it was indeed bulging a case, but the culprit was simple. He had fi red several off brand hot loaded frangible loads noted for high pressure as he was sure this was the ideal .38 defense load. Note, this was def-

initely NOT the Cor Bon Glaser! One of his cylinders was bulged, not quite to a danger of cracking the cylinder, but bulged.

Oddly the bulge—almost a dent in the cylinder—did not bulge the outside of the cylinder noticeably but was such that it allowed the case head to swell and extraction was often difficult. Since the shooter did not wish to limit himself to owning a four shooter the only cure was anew cylinder, but he deferred. I carefully marked the offending cylinder with ascribe.

I advised him to replace the cylinder, but until then simply make certain the bulged cylinder was the last one up to fi re if he insisted upon carrying the piece as a backup for his duty pistol. At least he had four shots for

sure. A bastard solution but one suited to the case. If not cleaned, or damaged by heavy loads, the forcing cone may need a polish. On another occasion a shooter, as distinct from a gun owner who is not a shooter, brought in a Smith and Wesson Military and Police revolver.

This man like many of us is interested in seeing how well custom handguns perform and this one was in the bargain display case at the pawn shop. The barrel had been expertly shortened to 3 /12 inches and a toohigh but not badly-done front ramp sight was soldered on to the barrel. The barrel crown was very nice and so was the bluing. The revolver fi red low with standard 158 grain bullets, which would have been easy enough

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Cylinder rotation problems and bolt stop problems are the same general type with this handgun. to adjust by filing. The name of a British firm was stamped on the side plate indicating the revolver was one of the British counterparts to our own Victory Model. When firing standard .38 Special loads the case heads swelled too much to resize and reload, although they ejected without undue effort at all. The revolver had started life as a .38 Smith and Wesson caliber handgun.

The British had simply reamed out the cylinders to make the handgun more attractive to American buyers. So much for high quality British gunsmithing! The result was a sorry revolver that would no longer properly fire .38 Smith and Wesson cartridges as designed nor could it handle .38 Special loads. Cases bulged with standard 158 grain loads and a

+P would have been a disaster. I recommended anew cylinder properly chambered for one cartridge or the other.

The .38 Special would have been the most practical conversion. Well, not exactly a conversion but a return to original condition. This customer did not really wish to spend any more money on an inexpensive revolver and wrote it off to experience. I did not get the sight job either. This revolver is probably in a safe, or back in the pawn shop. Let's move on to something that may actually be repaired without fitting anew cylinder. Cylinder walls become corroded and even develop pits.

How often have you seen a revolver develop corrosion at the front of the outer wall of the cylinder around the areas that are most often

the target of holster wear? Interior corrosion occurs also, and often near the end of the cylinder. Hot gases eat You need to be familiar with every piece. This is an older Smith and Wesson, a Model 1917 variant produced in 1937. away finish. Once corrosion or pitting has developed, a very careful polish of the inside of the chamber will solve most of these problems.

Another problem is lead deposits in the cylinder. This occurs primarily in .357 Magnum revolvers. The problem is especially severe with shooters who fire thousands of rounds of soft lead .38s for every handful of Magnum rounds fired. I have had to take a copper brush to scour away lead deposits. Many police agencies once used lead training rounds with the softest alloy offered and this lead built up in the

A HARD LOOK AT THE REVOLVER CONTINUED

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Be careful as this sideplate holds the hand in place. In this photo it is obvious that the sideplate is properly snugged. The fitting seems almost seamless. These handguns were far more fragile than modern revolvers. forcing cone and chamber. Since the training rounds were .38s, when the .357 Mangum was fi red in the chamber, well, sometimes you had a burst forcing cone. Often a failure to fully chamber or a sticky extraction is traceable to a dirty chamber. Lead is a culprit.

A good stiff cleaning rod and repeated swabbing and elbow grease is needed. Remember, you cannot simply count on a cleaning rod and brush to clean the chamber as they are designed to clean the bore. You need a larger cleaning patch and copper brush. In a .38/.357 try using a .44 or .45 brush and

force the cleaning rod through the cylinder. You will be surprised at the amount of lead that comes out.

Often a lead ring will come loose first and this lead ring was probably right at the point of headspace for the cartridge. I have hypothesized that this lead ring could cushion the cartridge against the firing pin blow and result in a misfire but I have not personally seen it. Keeping the cylinder very clean but unlubricated will solve most of the problems encountered there. The second most common problem encountered in a failure to chamber is a fouled extractor star.

When powder falls under the star it builds up and may cause a failure to fully close the cylinder. This powder is usually deposited

upon the ejector star when the revolver is unloaded, but some finds its way from the breechface. There is always some powder ash or residue with even the cleanest burning ammunition. .357 Magnum loads are designed for longer barrel handguns and when fi red in the compact types there is almost always a good bit of powder residue.

The .45 Colt is also a smoky caliber despite the best efforts of handloaders. When this powder builds up under the eject star it must be carefully cleaned. I use a combination of spray aerosol and a toothbrush. The ejector rod is the source of several problems. Sometimes the rod is bent, typically due to mishandling. The cylinder may be Clean and inspect this area.

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It looks that way and the revolver will probably not be accurate. The test to check for a bent rod is to spin the cylinder and watch the end of the rod for wobble. slammed shut or, if the cases stick in the chamber, the ejector rod may be beat on a bench or barricade. I had seen it done! A simple test tells you if the ejector rod is bent. Open the cylinder normally and spin the cylinder, observing the ejector rod carefully. If the tip of the ejector rod seems to make a circle in the air it is bent.

I hope our customers do not normally beat people over the head with their revolvers, but the common police practice of “buffaloing” was the primary reason that the first deluxe Smith and Wesson revolvers used the protected ejector rod design. This simply proves that the problem of bent ejector rods has been around along time. A far more common problem is the ejector rod loosening.

When the rod loosens it is not possible to open the cylinder, appearing as if the ejector rod had grown in length and jamming the cylinder in the frame. The solution is simple. Carefully bring the revolver hammer back just slightly. The trigger may be pressed slightly to the rear to unlock the cylinder in the case of a hammerless revolver. With the hammer, or trigger, deployed properly the cylinder will rotate backwards. Move the cylinder in the opposite direction of normal rotation.

This will tighten the rod enough for the cylinder to be opened. At this point you should carefully snug the ejector rod tight. Tighten it by hand and then carefully wrap a heavy cloth or rag around the knurled end of the ejector rod and tighten it. Be careful with lateral pressure and do not bend the ejector rod. While this problem may occur with any revolver today we see Smith and Wesson Jframe defense handguns with this malady most often.

Another problem that causes cylinder bind is the forcing cone which can be caused for a number of reasons. The only real cure is to carefully file and polish the forcing cone. Be certain not to confuse forcing cone binding with cylinder endshake. Next we have problems with the cylinder failing to index. If the bolt stop is not releasing the cylinder the handgun cylinder cannot rotate so check the bolt stop first. Next check the hand.

If the bolt stop is releasing properly, the hand is probably not rising to rotate the cylinder when you are experiencing a failure to rotate. Point the muzzle to the ground and trigger the action. If the action rotates with the muzzle downward the hand is engaging, but the hand spring is not properly actuating the hand and gravity is doing the job. The handspring is a simple fix. There are some problems that show up only when the revolver is loaded.

One likely cause in this case is a problem with the firing pin channel or firing pin tunnel if the revolver refuses to rotate while the revolver is loaded. A high primer with handloaded ammunition will do the same thing, however, the rough firing pin opening is also common. The rougher the breech face area the more difficult rotation. With the revolver unloaded this will not show up. With the piece loaded, the back of the cartridge cases will scrape against the recoil shield.

There are several possible causes for these burrs appearing. The most common cause is probably dry firing the revolver. Dry firing is the cornerstone of marksmanship, however and a great aid to learning control of the revolver. Just the same, dry fire causes more wear on the firing pin of revolvers with a hammer-mounted pin. When the firing pin strikes the primer the blow is cushioned but with nothing in the chamber the pin over travels and this may result in bringing a burr up on the breech face.

For what it is worth transfer bar ignition revolvers seem far less likely to kick up a burr on the breech face due to dry fire. They also seem immune to problems caused by high pressure cartridges backing the primer up on the firing pin. (Continued on page 22)

A HARD LOOK AT THE REVOLVER CONTINUED

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Abuse Dropping the slide on an empty chamber of the automatic is abuse. The revolver equivalent of this is to slap the cylinder shut with a flick of the wrist. Working with a revolver that has been treated in this manner often shows a worn ratchet. In the worst case, the ratchet must be replaced. In a number of cases I have observed only one ratchet tooth was badly damaged, probably happening all at one time. In this case the ratchet tooth may be cleaned up and peened back into working condition.

Another common wear issue is the loss of the cylinder latch. The cylinder latch will work loose, particularly when a lot of heavy loads have been fired. Have you ever seen a row of trade-in police revolvers in the pawn shop? Often enough one or more will have a mismatched cylinder latch, likely because the latch fell off and was never recovered. This is particularly troublesome with light revolvers, a combination of practice with heavy loads and jarring from being carried in an ankle holster.

A rather serious problem I see from time to time comes from home gunsmithing. The last piece that I repaired was a Smith and Wesson 629, among the last handguns in the world you wish to have an accidental discharge with! The owner elected to perform a home trigger job. Instead of working the trigger nose he Another common fault with revolvers is when someone has shortened the trigger return spring. This is less expensive to repair and is usually done to enhance shooting the revolver double action.

With double action shooting I've learned to fire, reset, fire, reset and the cadence of fire works just fine. Monkeying with the return spring will produce a re-

volver that often is slower than the original and unsatisfactory in every way. If the spring has been clipped the clip marks where the spring was cut look rugged and rough while the Smith and Wesson factory spring is smooth and polished on the ends. Another cause of problems that cannot be overrated is a bent hammer.

If the hammer is bent it will not always strike the firing pin correctly and the receiver or frame may be marred. The West German police were so concerned with SIG hammers being dropped they special ordered an undercut hammer with their service pistols. The hammer spur would collapse if the pistol were dropped on the hammer, making it obvious during inspection. While the SIG pistols are self loaders, a revolver hammer Endshake is common with Magnum revolvers.

Endshake is simply excessive play in the cylinder allowing it to move from the front to the back easily. Accuracy is adversely affected by this and the revolver may even spit lead. A rule with all firearms is that once eccentric wear begins it proceeds quickly. It may take 10,000 rounds to produce endshake but after this point the revolver will proceed to a rattling wreck situation quickly. The cylinder, ejector and extractor are disassembled and end shake bushings are installed to cure this.

A single bushing will usually do the trick, but sometimes two or even three are required with well worn revolvers. Revolvers are still bastions of reliability and very popular. But they are not perfect and demand attention to detail. As long as folks use revolvers hard we will have plenty of business. AG

RIFLES

Installing Adjustable Combs On Gunstocks

A shotgunner's rear sight is his eye and comb height sets the placement. This modification allows the shooter a custom fit.

BY WALTER GASKINS SEPTEMBER 2011

ORIGINAL PP. 13-16

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As most shotguns do not fit individual shooters as delivered from the factory, this modification will allow a gun to be adjusted to fit. Unlike a rifle, shotguns do not have a rear sight, so your eye is the rear sight and placement is critical. An adjustable comb will allow you to adjust the gun so you are looking down the top of the barrel (rib). Target shooters especially have to have a gun that shoots where they are looking. This would also be a useful modification on most field guns.

This is not only a profitable modification for the gunsmith, it is usually requested by target shooters in the summer when most gun repairs have slacked off. To do this modification properly you will need a jig to hold the gunstock securely in place while cutting the stock and installing the hardware. (see diagram) This is a jig that I designed and had built at my local machine shop. The material I used for construction of jig might be a little heavier than needed, but seems to work well for me.

The hardware kit I normally use is made by Custom Shooting Products and purchased from Brownells (part #365-102-000, Adjusting Stock Hardware.) The brass Adjustable Disk Kit is also available in stainless steel

(part #365-102-100). This hardware will work for most applications unless the stock bolt is too close to the top of the comb.

Most Berettas and Remington 1100's will require a different kit (part #365-104-000, Adjustable Plate Kit) which requires inletting into the stock but the plate is thinner allowing use where the stock bolt hole is closer to the comb. Also, on guns like the Browning BT-99 an oval cutout in the stock will. Plans for building this jig are included in this article. not leave enough wood but you can glue a dowel of the proper diameter into hole to have enough material to drill into.

Disk Kit Installation First, remove the stock from the receiver and cover entirely with masking tape. Following instructions included with the kit, mark the cutout location. At this point clamp the stock into a jig making sure the top line of the comb is parallel with the jig. Snug wing nuts on wrist of the stock and, using existing butt plate screws, secure stock into tail stock of jig, making sure the stock is level. Second, follow instructions supplied with kit.

I have found the easiest way to smooth a piece that is cut out is by using a belt sander. Smooth

INSTALLING ADJUSTABLE COMBS ON GUNSTOCKS CONTINUED

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cut in the stock by mounting jig in a bench vise and use a fine cut wood rasp held 45 degrees across the parallel of the stock. Cut until any high spots are removed. Run your finger along the cut and you will feel if any high spots remain. Finish this step by sanding the cut with 120 grit sandpaper on a small sanding block until the rasp cuts are removed. At this point, I differ from the kit's instructions. I prefer to drill 5/8-inch holes into the comb piece first.

Using 3/8-inch dowel center jigs inserted into the comb inserts, I install the comb inserts into the respective holes but do not glue yet. Lay the comb cutout back on the stock making sure of good alignment along the center line and side to side. Tap the comb

lightly with a rubber hammer transferring the exact location of the comb inserts to the stock. Now transfer the jig and stock to your drill press vise and proceed with drilling the stock as per the manufacturer's instructions.

Prior to gluing anything in place lightly sand the outsides of the hardware to remove any oxidation and to improve adhesion of the glue. As the posts are normally longer than required I usually trim approximately a quarter inch but check with shooter first to find out how much vertical adjustment is needed. Now assemble the hardware and glue using a high grade epoxy.

While the glue is setting up install the comb onto the stock so that everything will be in proper alignment when the glue sets up

When drilling #21 holes, I have found it is better to use a 1/16-inch or smaller drill bit. With the drill press set on warp speed drill the pilot holes, then set the drill press back to standard speed before drilling #21 holes. Tap the holes with a 10/32 tap and apply stock finish to the cut.

If installation is being done on a gun whose stock bolt hole is too close to the top of the stock a plate hardware kit is used instead. The basic difference is the plate must be inset into the stock as the plate hardware is thinner. If customer desires a soft top comb, keep the stock securely mounted in the jig, mark and cut a half inch piece out of top of the comb stopping approximately one

INSTALLING ADJUSTABLE COMBS ON GUNSTOCKS CONTINUED

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inch from each end. This can be a square-ended cut with slightly rounded edges. Remove masking tape from the comb. Use quarter inch crafter's foam, available from fabric, hobby or craft stores, and glue it into the cut using Contact Cement. Read and heed the warnings as this can be a very dangerous material. Glue two to three layers of foam into the cut making certain the foam sticks up higher than the cut as it will be sanded flush later.

Secure the pieces with a carpenter's parallel clamp until the glue is thoroughly dried, then sand excess foam down to bare wood using belt sander, removing all fin-

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ish from the comb in the process. We are now ready to finish. Before covering, remove the set screws from the comb, then cover with Naugahyde vinyl. Remove backing from the Naugahyde before gluing to the comb using Quick Set Epoxy being careful to spread epoxy only on the wood and not the foam. Stretch Naugahyde tightly over the comb and hold until dry.

Trim off excess covering and run the comb across the belt sander one last time. Retap the set screw holes through

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Adjustable Comb Installation Jig Author Walter Gaskins, owner of Sure-Fire Shooters Supply in Des Moines, Iowa, designed this jig for installing adjustable combs on shotguns. To perform this modification properly a jig is needed to hold the gunstock securely during

stock cutting hardware installation. the covering using a 10/32 tap. This will remove any excess epoxy from the screw holes. Adding a soft-top to your adjustable comb work is worth an additional \$25.00 or more.

Before returning the gun to your customer, break all edges of the cut, both comb and stock, using sandpaper to remove any sharp edges. Apply your shop sticker to side of stock and return to your now happy customer. AG

HISTORY

Working The Dan Wesson Revolver

A classic switch barrel revolver, manufacture of the Dan Wesson may be no more but you're likely to run across them.

BY ROBERT K. CAMPBELL SEPTEMBER 2011

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Like several other modern revolver manufacturing companies including Charter Arms and Smith and Wesson, Dan Wesson has gone through several reorganizations. This seems to be normal in the late twentieth century, but Dan Wesson also moved plants. Taurus and Smith and Wesson were once joined under the Bangor Punta conglomerate and we have seen losses and revivals of other names. It appears at present that manufacture of new Dan Wesson revolvers is gone for good.

There are other good revolvers on the market but certain attributes of the Dan Wesson are truly unique. When a firearm is unique it often means that the system is troublesome. As an example, the Dan Wesson revolver was sometimes lauded as one of the most accurate double action revolvers ever made. This is true, but once wear sets in and the owner has lost the barrel wrench the revolver would not hit

squat. The single most unique feature in the design was the interchangeable barrel system.

While other change barrel systems have been attempted the Dan Wesson design is both practical and affordable. The problem is the majority of Dan Wesson revolvers were purchased with a single barrel. Even though the factory supplied a barrel wrench to adjust the barrel and barrel cylinder gap, most users simply fired the firearms as issued. Over time the barrels become loose and the wrenches have been misplaced.

The interchangeability of barrels is handy in some ways, as a four inch defensive revolver may become an eight inch barrel hunting handgun with a simple barrel change. This system might have more appeal in a jurisdiction in which the number of handguns is limited, such as Germany. With each barrel change you 357 Magnum. This is a simple revolver that features a sideplate but is modular in other design features.

They must be kept up with or the revolver cannot be adjusted. have the same grip, handle and sights as well as the same trigger action. The Dan Wesson offers easily changeable grip panels as well. The single most popular and numerous of the Dan Wesson handguns is the 15-2, offered in Pistol Packs or Hunter Packs with extra barrels in .357 Magnum. The barrels may range from two inches to ten inches in length.

Although there are reports of longer barrels I have not personally seen a Dan Wesson barrel longer than ten inches. Lets look at the barrel locking mechanism. Like all barrels this is a threaded tube, but here the barrel fits into a larger shrouded tube. Incidentally, this is not too different from current Smith and Wesson production. Both ends of the barrel are threaded, as compared to one threaded end in

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standard revolvers. One end fits into the frame while the other fits the outer shroud. When taking the revolver down with the supplied tool the act of unloosening the shroud partially unwinds the inner barrel from the frame as well. The final removal of the barrel proper is accomplished with the fingers. The outer shroud is necessary in order to produce a fixed sighting plane. No matter where the barrel is started into the frame the shroud and its sights are constant.

The one end of the barrel screws into the frame and the other tightens into the barrel shroud. The shroud uses a recessed nut to tighten the barrel. This is a relatively simple system that makes for great versatility. Another benefit is the fact that when good and tight the barrel vibrates very consistently, making these revolvers very accurate—when in good tune. The method of barrel changing is simple. The tool is placed on the shroud and the internal nut is turned.

The nut is loosened, then removed, and the shroud pulled away. The barrel is turned until it removes. To replace, insert the feeler gauge in front of the cylinder and screw the barrel in until this is a snug, but not tight, fit. This feeler gauge was supplied with the barrel and is used to set the barrel cylinder gap. The original feeler gauge was pre-set. You screw the barrel into the frame until the tube is snugged up against it. The factory feeler gauges were usually set at .006, which is considered an optimum gap.

Knowing this, if the factory gauge has not survived you can make one up or use a standard feeler gauge of the same thickness. With the barrel installed the shroud is fitted over it. There is an index pin in the frame to aid in alignment with a matching index hole in the shroud. The index pin and hole are lined up and the shroud is then tightened with the barrel nut, which is placed on the barrel and

tightened. There is no grip frame. into the barrel shroud. This tightens the shroud and the barrel together.

The Dan Wesson was designed for efficient manufacture and was among the first new revolver designs in over eighty years. The energy to supply the hammer is manual as with all revolvers but the springs are stainless steel coil type. The revolver is held together by Allen screws for the most part. Since the Dan Wesson does not use a leaf spring in the butt there is considerable leeway available in design. The grips fit on a simple stud or tang that extends from the frame.

The revolver is similar internally, as far as simplicity, to the Colt MK III revolvers. Both made good use of modern engineering principles and economical manufacture. Incidentally the original Dan Wesson production run featured

WORKING THE DAN WESSON REVOLVER CONTINUED

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a barrel nut that was outside of the barrel shroud. This made the barrel shroud's extension, used for locking in the frame, quite odd in appearance. The original design did not require a special tool, however, the appearance was deemed unattractive so the later design with its buried barrel nut was released. The new design works fine for changing barrels quickly but it was discovered that the barrel nut works loose under the recoil of Magnum cartridges.

A shooting competitor who knows what he is doing would have no problem with this tiny bit of extra maintenance and would find the trade off a happy one considering the good accuracy of the Dan Wesson. But the casual gun owner or hunter might not even be aware of the problem until accuracy was lost and the barrel cylinder gap began spitting lead or jacket material. Accuracy is negatively affected and so is velocity as more propellant gas escapes from the barrel cylinder gap.

While troublesome there is another perspective. A standard type revolver requires considerable, expensive attention to take care of a barrel and cylinder gap problem. The Dan Wesson requires occasional adjustment and nothing else. How often does the barrel and cylinder gap need to be checked to avoid problems? A rule of thumb is every 500 rounds of full power .357 Magnum ammunition and more often with the .44 Magnum revolvers, or every six months as an alternate.

This is a modest program that will keep a Dan Wesson revolver operating. When addressing the Dan Wesson design, remember that frequent cleaning is needed or barrels become stuck. Soaking the barrel and shroud thoroughly in a release agent is recommended when the situation reaches this level. To disassemble the revolver, make certain the revolver is unloaded. In order to disassemble

the revolver, first remove the barrel and shroud as outlined. Next, simply swing the cylinder out and off of the crane.

It is a little more difficult to separate the cylinder from the ejector rod. The knurled tip of the ejector rod must be retained by a padded pliers set. Next, insert two empty cartridge cases into opposite cylinders and use them to unscrew the cylinder from the ejector rod. This will release the extractor, ejector rod bushing and ejector spring for cleaning and adjustment. To remove the grips, simply find the hole in the underside of the grips and remove the screw.

If you are lucky enough to have the original combination tool you are in good shape, otherwise a 5/32 Allen wrench is useful. To expose the action a 5/64 Allen wrench is used. The two screws on the sideplate are screwed out to reveal the action. The combination

WORKING THE DAN WESSON REVOLVER CONTINUED

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Like most side plates this one is fitted so take care in disassembly, tool may be used if you have one. Lift the sideplate carefully, remembering that the hand is under spring tension. The hand spring is unhooked from a groove in the rear of the hand and the hand spring may be removed. Cock the hammer and tighten the long sideplate screw into the mainspring guide by using the hole in the bottom of the frame spike. Pull the trigger and lower the hammer.

You may now draw the long arm of the trigger return spring outward from the trigger and allow it to travel in an arc downward until tension is relieved. The trigger and firing pin connect, the hammer, the trigger spring and the bolt may all be lifted from the frame.

This is similar to disassembly of the Ruger action in some ways. Reassembly is in reverse, being careful that the stub arm of the trigger spring is positioned to the rear of the frame-mounted hammer pivot pin.

The hand spring has the shorter arm bearing on the forward surface to the firing pin disconnect. The longer arm hooks into the hand groove. Maintain fingernail pressure against the top tip of the hand to prevent the hand from flying apart. Now, we come to vital maintenance. The cleaning of the barrel threads and the rear barrel face is indispensable when maintaining this revolver. The revolver must be as clean as possible before reassembly.

The Dan Wesson is not a terribly complicated revolver but it is different. It is also rugged enough that most of the time all that is needed is simple adjustment and cleaning. At present, the barrel wrench and shims are available from CZ USA for a very reasonable forty three dollars. They are quite frankly a must have. Unfortunately spare barrel and shroud outfits are often priced equal to the priced of a used Dan Wesson revolver.

Just the same, these are interesting handguns sure to give good service if properly maintained. A little bit of knowledge and the proper tools will outfit for the future. AG

FROM THE ARCHIVE

Firearms Guide Review

A comprehensive resource for all gunsmiths and gun lovers, the DVD-based Firearms Guide a valuable reference.

BY AMERICAN GUNSMITH STAFF SEPTEMBER 2011

ORIGINAL PP. 21-22

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Impressum Media has released what may be the ultimate reference for all types of gun cranks. Their Firearms Guide is billed as the first reference guide about guns available on DVD. On the disk are details about tens of thousands of guns and ammunition available from hundreds of manufacturers around the world. The DVD is divided into five sections. The general reference guide presents over 50,000 models of firearms, air-guns and ammunition from 425 manufacturers. Every model is searchable with 14 different criteria.

Once selected, the firearm is presented with a write up of technical specifications, features list, suggested prices and one to twelve pictures, presenting the firearm from different angles and in different finishes, stock types and stock materials. Each picture can be

clicked to be shown full size on the screen and over 27,000 of the included images are high resolution and print-ready.

The firearm's typical available chamberings are cross linked from the firearm and the included ammunition and ballistics database can be searched from there. Favorite firearms can be tagged and the Firearms Guide program creates a tiny file on your computer's hard drive to keep track of what you like. If you desire a hard copy the print feature sends a one page synopsis and picture formatted for your printer.

The second section of primary interest to American Gunsmith readers is the schematics library featuring over 1,550 schematics with parts lists from 130 manufacturers. In addition to the expected search feature by

gun and/or manufacturer, the schematic can be enlarged to zoom in on specific parts and can be printed out. The Firearms Guide also contains a FFL Locator database of over 60,000 gun dealers in the United States with phone numbers and addresses. Dealers can be searched license type, by state and ZIP code.

The last two features are more novel. The USA-EU Ammo Caliber Chart shows comparisons of a given Each model is searchable with 14 different criteria. cartridges name in the United States in English measurements and the equivalent European Union name in metric and vice versa. Finally, there is a list of 500 printable targets consisting of various game animals, silhouettes, crosshairs, sight-in and plinking targets in both color and black and white.

The Firearms Guide requires a computer running Windows and a DVD drive. Unless you're a Mac user or a Linux nerd, your machine likely works. Once the disk is inserted, Autorun kicks in and the program starts. No software is installed and an internet connection is not required. The DVD carries a suggested retail price of \$39.95, including free shipping anywhere in the world. Impressum Media also offers wholesale pricing.

Starting with an order of at least ten units, retailers and shop owners can purchase copies at a 40% discount, or \$23.97 each. This also includes an polished the hammer notch. With the handgun cocked for single action fire you could push the hammer forward with your finger. This is a very dangerous situation! You cannot stone or build up the hammer and this one had to be discarded.

The single action trigger action of Smith and Wesson revolvers is usually just fine and, in any case, this one was handled all wrong which led to an expensive repair. acrylic counter display unit for point of purchase sales, free shipping and an additional free bonus copy for your personal use. Further discounts are offered for larger orders. Impressum Media Firearms Guide, firearmsmultimediaguide.com AG spur may also be bent and broken. I have seen spurs broken off.

One of the last of these was broken off by a rather large gentlemen who carried a Smith and Wesson Model 29 four inch barrel revolver in an open top holster. He knocked both the rear sight and the hammer spur off of his revolver when he was exiting his truck. This was common during police service and a main reason why most police service pistols are fixed sight. If the hammer spur is only bent the spur may be heated and bent back into the proper relation to the hammer. The hammer is removed and placed in a vise.

Heat is applied while the hammer spur is carefully adjusted.

MAINTENANCE & REPAIR

Reader Forum

BY AMERICAN GUNSMITH EDITORS SEPTEMBER 2011

ORIGINAL PP. 23-24

Charles Daly Shotgun I need information about an operating handle for the Charles Daly gasoperated shotgun that KBI imported from Turkey. This is a pretty reliable shotgun when properly maintained, with one exception. The operating handle has a bad habit of snapping off! I have had about a half dozen of these shotguns all needing anew operating handle. To be fair, KBI usually sent me the new handles at no charge. Recently, I tried to order another one but was told that KBI is out of business.

Could you let me know who has the parts? I notice that the shotguns are still being offered for sale. Who is importing these guns? Ben Hubbard Hubbards Outdoor Products We've struck out on who, if anyone, has replaced KBI. But whomever is selling the Daly line now should be able to provide leads to new charging handles. There's nothing on the Charles Daly web site except a letter from Michael Kassnar, former KBI boss, notifying all viewers that the KBI/Daly association has ended.

This doesn't bode well for those needing parts, leaving them with a search of the after market. Check in with Numrich Gun Parts Corporation, Jack First and call Brownells for a free copy of their parts source list. In regard to your comment that the handles had a habit of breaking off, we suspect there may have been some lack in material quality involved. When you manage to locate replacements, you may want to harden them prior to installation.

Baker Jig For S&W Can you refer me to a source for a Baker Round Butt Fitting Guide for S&W Kor Lframe revolvers? Midway USA has had it listed as "temporarily unavailable" for about two years. (Product # 263-717). Brownells used to offer Baker jigs and fixtures. Check in with them to see if they still do. Please note that guide was aluminum. You had to be

very careful when working down the steel grip frame to avoid getting into the softer metal.

Once upon a time we were told of a method to make square S&W grip frames round without the guide. Seemed like it would be quite satisfactory so we tried it. You might want to give it ago, too. Attach a pair of round butt grip panels to the square butt Kor Lframe. Scribe around the panels to mark the frame. Remove the panels. Grind down to just short of the scribed lines. How short? About the width of a 0.5mm pencil lead.

Re-attach the round butt panels and finish off the frame-to-grip fit by hand with a belt sander wearing afine grit belt. Polish, degrease and blue the metal or send the naked frame to S&W for a hot bath. Alternately, you could attach the round butt panels, skip the scribing and take the metal down to get a nice steel-to-wood, or plastic, interface. This method would require as much or more care as would be necessary with the aluminum guide in place.

Finally, call Pacific Tool and Gauge in White City, OR (pacifictoolandgauge.com). When we entered Baker Round Butt Guide on our search engine, PTC popped up strong on our monitor. Schematic Availability I am a fan of Chick Blood's articles and notice that he nearly always includes a schematic of whatever firearm he is writing about. It would be very helpful to me if I had access to schematics such as these for my work. Where are some sources to obtain them?

Wendell Deaner Anytime anyone says something nice to me about my articles, all too rare a happening these uncertain days, I am prompted to bend my injured Bill Donnelly spine and painful hip further than normal in attempting to assist. All my disassembly/reassembly articles are founded on factory engineer or service

technician inputs. The selection of firearms to be covered is not based purely on sales but on the general public interest in a given item.

In most cases a schematic is included in the owner's manual and a reproduction of it used in the publication. Owner's manuals including schematics are becoming increasingly difficult with off-shore items of German or Russian manufacture due to their respective—and highly erroneous—belief that a copy of their gun could be made from a schematic! This is absurd, of course, as detailed technical drawings (blueprint) or, more likely today, CAD and CNC computer files are needed.

A call to any US manufacturer, or even importer such as European American Armory, can secure you a copy of an owner's manual for a currently made or inventoried gun. Request that a schematic and parts list be included. It's out of production guns that present the headache. Expectedly, the longer out of production the more intense the pain.

Often, the age of the firearm predates the use of schematics and a silhouette-style, fl at layout of individual parts, inadequate as it may be except to count the number of components, is all that is available. A sectional drawing as exhibited in Jack First's Volume II, on the other hand, can be equally useful as a schematic. Do not overlook the Internet. A large majority of major US manufacturer sites frequently offer downloadable digital copies of their manuals. Many other sources exist outside of the web.

Gun Digest has published a large book of over 900 schematics. The NRA Firearm Assembly Guides for both handguns and shoulder arms contain schematics and Brownells offers a goodly number on their site as well. The NRA Museum does not provide schematics though I have had

READER FORUM CONTINUED

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occasion to wish they did. Another, less obvious source are various groups dedicating themselves to the products of a single maker, such as The Remington Society and The Winchester Collector's Association. A list of these organizations along with contact information can be found in the rear pages of a Gun Digest Annual.

Usually, merely typing in the make and model of a gun on your web browser will turn up more information that you'd ever care to have, and all too much of it seems to concern the sale of a subject firearm by its present owner. Of course, I've written over 150 articles for American Gunsmith. I don't recall any one of them ever lacking a schematic. So you can start your collection with those. FN 5.7×28mm I'm looking for a bolt action or falling block rifle chambered in FN 5.7×28mm.

Any news from current manufacturers about one being introduced? This new cartridge is a dandy varmint round for small animals but I don't want a semi-automatic. Stu Grell Grell's Gunsmithing We didn't see anything at the SHOT Show but there are plenty of bolt action .17 HMR rifles and almost as many chambered in .17 MKII to choose from. Falling blocks are not as plentiful but you may want to consider the Savage Model 30, a clone of the old Stevens Favorite.

Of course if cost is no object, we're reasonably comfortable with suggesting Shiloh Sharps in a 5.7×28mm chambering and the Remington Custom Shop might be approached on building you a Rolling Block as well. PTB 7762 Pistol The pistol in question is a Swedish Husqvarna-built, M1887 7.5 Brevet Nagant. This six cylinder revolver is marked "PTB 7762 L No, A4852". What does the PTB stand for? I would also like to know chamberings these were made in and what ever you might have on this pistol.

Husqvarna was a Swedish manufacturer no longer in business with a US importer. The 7.5 stamping it carries is a caliber, like .32 ACP. On the "PTB" our guess is

a partial "Pistol T. Brevet." The Nagant is a revolver originally designed and chambered for the 7.62 Nagant cartridge by Belgians. A different cylinder made the use of caliber .32 possible. You can find considerable information about the design by typing in "Nagant Revolver" into Google.

To pin down exactly what you have in hand, photograph the gun and send pictures and a query to the NRA Museum, Waples Mill Road, Fairfax, VA 22030. To secure a straight-from-the-horse's-mouth answer, email the same info to what is left of Husqvarna Don't worry about their reading English. The last time we were in Sweden everyone spoke it as well, or better, than we did. Remington Rolling Block I am working on a Remington Model 1 Rolling Block Serial #BBI 266XX.

I understand that the cartridge info is stamped on the bottom of the barrel forward of the forearm. This one is stamped "44 ctg'e S" and I need help with what this means. The forearm is missing and it has a cleaning rod loop near the end of the barrel. I cannot figure out how forearm is retained. There is a very wide dove tail and a small (approximately 1/16 inch) hole under the forearm area. The cleaning rod must have gone between the barrel and forearm.

Donald Phillips As far as the caliber markings, and due to an article on the Buntline Special Revolver we recently published, we suspect the "S" indicates a smokeless powder cartridge rather than a black powder one. Lupe Vargas The attachment of the forearm is another matter. An article on the Rolling Block appeared in the September 2007 issue. You may find your answer there. If not, call Remington and ask for the Custom Shop.

At last report they were building Rolling Blocks and are likely to provide a definitive response. Meanwhile, hopefully a member of the Remington Society among our readers might send you a note. AG

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