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INSIDE THE ARCHIVE

TAKING DOWN A REMINGTON ARMY MODEL 1858

SALES DRIVE UP DEMAND FOR GUNSMITHS • KEEPING THE GARAND RUNNING • DAKOTA MODEL 10 SINGLE SHOT • A N...

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 104

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SAFETY & COMPLIANCE

Sales Drive Up Demand For Gunsmiths

BY AMERICAN GUNSMITH EDITORS AUGUST 2012

ORIGINAL PP. 2

According to a report in the Palladium Item (palladiumitem.com) gunsmiths could see more demand in the near future.

All-American Pawn, a firearms store in Richmond, Indiana, has seen what proprietor Jerry Oppy calls a “heavy” increase in sales. “We talked to ATF (The Bureau of Alcohol, Tobacco and Firearms)—they do all the federal background checks for us—and they are telling us that gun sales are up across the country,” Oppy told the news source. “People are buying concealed carry guns, a lot of smaller handguns.” The newspaper reported that the Federal Bureau of Investigation received about 187,000 applications for criminal background checks for firearm purchases in Indiana.

Last year, that figure rose to almost 346,000. Whether it’s for home protection, blowing off some steam at the range or just good old-fashioned patriotism, Americans are rediscovering their love of weapons in a major way. Of course, it goes without saying that it’s not just great that more Americans are exercising their Second Amendment rights, it’s also good news for adults who are thinking of going back to school to learn about gunsmithing.

If you’re a gun owner, you already know that proper maintenance is essential. You’re also probably aware of the skill that goes into making a reliable weapon—the

same quality that’s defined American firearms since Sam Colt first patented his six-shot revolver back in the 1830s. Guns made America the nation it is today, and a career in gunsmithing is a great way to continue this legacy of craftsmanship. All over the country, people are taking their love of guns and transforming it into a lucrative business.

According to the Spring Valley Tribune, Gabe and Lisa Stier, a husband and wife team from Minnesota, recently opened their own shop. The pair offer a wide range of services, including cleaning, repair work and customization of scopes, stocks, sights and triggers.

Gabe told the newspaper that the precise, methodical nature of the work appeals to him. “I have always liked getting into things and taking them apart,” he said. “Accuracy and safety are a huge part for me.” A lifelong firearms enthusiast, Stier decided to turn his knowledge and expertise into a career by enrolling in a gunsmithing course at a local technical school. Lisa told the newspaper that opening their own shop was a dream come true for the couple.

Increased sales of firearms, especially when it is met with increased opportunity and incentive to actually use them, such as organized shooting events, will increase demand for gunsmithing services. Promoting such things will always be good business.

PEOPLE & COMPANIES

Taking Down A Remington Army Model 1858

It took a while before this large frame revolver found a home with the military and became a popular sidearm in the American West.

BY CHICK BLOOD AUGUST 2012

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First, a gunsmith from Newark, Ohio had to design a unique means of rotating a cylinder that wouldn't infringe on Colt patents. His name was Joseph Rider. He received his patent, worked up a functioning example of the design, acquired two business partners and selected Remington as the revolver's manufacturer. It represented the first handgun to be produced by the Ilion, New York shoulder arms producer and was marketed as Rider's Double Action Pocket Revolver.

The only photo I've ever seen of that gun appears in the official, authorized history of Remington, *The History of Remington Firearms: The History of One of the World's Most Famous Gun Makers*. Masterfully researched, illustrated with more than 200 photographs and written by Roy Marcot, Editor of the *RSA Journal*, the quarterly publication of the Remington Society of America, the volume is well deserving of occupying a prominent place on your firearm reference shelves.

As a result of his supervisory functions centered on the production of his pocket revolver and its success in the civilian mar-

ket, Rider stayed on at Remington to design a second pocket gun. This one a single shot breech loader. It was a palm sized, brass framed, sand cast, smooth bore firing a .17 caliber ball with the propellant charge being only the fulminate of mercury contained in a percussion cap.

You may or may not have heard of it: The Remington-Rider Parlor It met military requirements, was the first large frame revolver produced by the Ilion, NY company and also proved to be very popular during the American westward expansion. The revolver is distributed by Taylor's and Company. Pistol. Only a few hundred were produced but Rider kept working on his parlor gun breech design until it could digest .22 caliber rimfire. The resulting pistols were intended to be concealable, personal defense weapons.

I maintain the conviction they never achieved that status but the little parlor pistol was destined to contribute to a Remington rifle that became and remains a legend. It seems the breech design of the Rolling Block and that of the living room popgun share similarities in many ways.

Obviously, size and caliber are not among them. Besides hiring Joseph Rider, Remington brought aboard another noted gun designer and elevated one already on staff in their quest for a large frame martial revolver. They were Dr.

William Elliott, a Plattsburg, NY dentist, and Fordyce Beals, who was moved up from his 1847 supervisory capacity on military rifle and carbine contracts. Elliott got somewhat sidetracked and begat several small caliber handguns with multiple rotating barrels, all highly collectable presently but all highly inappropriate for military use then or now. The promotion he received came a bit too late for Beals. He was, dare I say, "enticed" to join the Whitneyville Armory in New Haven in 1854.

There, he refocused his talents on handgun design and developed one destined to dictate the form of future Remington revolvers for years to come. Whitneyville management, having the same designs on the civilian market as Remington, decided to get in on the action by producing

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Beals's unusual looking "walking beam" revolver which, most importantly, did not infringe on any existing Colt patents. About 3000 of the walking beams were produced but Beals's earlier association with Eliphalet Remington III and the combined goals of greater civilian market penetration with large frame military revolver development drew Fordyce back to Ilion in 1856. For the next two years Beals focused on both his design challenges.

His initial civilian offering was the 1st Model Beals Pocket Pistol, a .31 caliber cap and ball revolver. At least one 1st Model large frame prototype was made for military trials. A The 2nd Model Beals, circa 1856-1857, was soon followed by the 3rd Model Beals. This was

sold to the public as a Belt Revolver because its barrel was an inch longer than the pocket pistols.

It was the features of the Belt Revolver when packed into the large frame shown in the accompanying photo of the resulting 1858 Army Model that finally gained military acceptance and ended the Remington quest. It must be added that the public acceptance of the Army and Navy models led to widespread employment of both on the still pretty wild and wide open frontier. And so concludes this little history lesson.

Field Stripping There were a considerable number of miles accumulated while walking on eggs during the development of the 1858.

Such light treading was declared mandatory in a maximum effort to avoid all conflicts with Colt patents. Evidently, the tip toeing achieved its objective. No one in the Colt legal department brought forth patent violation litigation. I doubt the same would be true today but perhaps I'm mistaken considering some obvious differences between the two revolvers.

Colt black powder revolvers of the day had no top strap. The 1858 boasted a substantial one. Colt barrels were held to the gun by a wedge. 1858 barrels were screwed into the frame. 1858 cylinder/barrel align-

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ment is achieved with a base pin and maintained when the loading lever has been swung fully upward to lock the pin rigidly in place. Colt cylinders were mounted on an arbor extending from the recoil plate. The desire or need for a rear sight was provided by a groove milled into the top strap of an 1858 and visible when the hammer is fully forward. If a groove existed on a Colt it had been cut into the hammer and the hammer had to be in its fired position to make the groove serviceable as a rear sight.

Once again I have deviated from my primary intent here so let's get on with it. Partially lower the loading lever (13) to release its hold on the base pin (21) and prevent the plunger (24) from engaging the cylinder (5). Withdraw the base pin far enough to disengage it from the cylinder. Half cock the hammer (2). Thereafter, the cylinder can be easily rotated out of the frame. Detailed Disassembly Remove the grip screw (54) but keep track of the grip nuts (43, 44).

Take the hammer to full cock, pull the trigger and ease the hammer back into the frame. Don't allow the hammer to slam forward. Its nose can get out of joint that way. Just loosen the mainspring screw (53) to take pressure off the mainspring (20) and

free it a little. Tap A The stud also points out an empty chamber on which the gun be safely holstered and carried hammer down during cowboy action events. the spring at its base to dislodge it from its slot in the grip frame.

The front trigger guard screw (31) is your next target. Back it out then pull the guard (26) forward and down. Invert the revolver. Up inside the frame you can see the trigger bolt spring (19) and its screw (35). Remove the screw and be careful you don't lose track of the spring. It may have to receive some special attention if you're getting complaints the pull is so heavy it hurts to pull the trigger. Check that out yourself.

If you can feel the pain, lighten the pull by carefully thinning the trigger bolt spring. Files or a Dremel tool or not needed as stoning will do and should only be applied along the outer sides of the springs tangs. With the revolver returned to an upright attitude, locate the hammer screw (37) and trigger screw (38) on the left side of the frame. Remove the trigger screw. The bolt (12) and trigger (10) will drop out.

Press down on the hammer until you can see the hand (7) and hand screw (52) sticking out of the frame. A small driver removes the screw. Pull downward on the

hand. It will come out along with its spring (18). In reassembly, the spring/hand assembly has to be installed from the bottom of the frame. Only now can you remove the hammer screw. The hammer is lifted free and you should take this opportunity to examine the roller (25) and roller pin (30) hiding within it.

Any binding of the roller will bring on binding of the hammer on the frame and a really rotten trigger pull. This can be corrected or avoided by polishing the roller but there's one problem with that. To polish the roller you have to separate it from its pin and that pin is in the hammer tight. It would be far better to push it out with an arbor press and reinstall it the same way. Lacking an arbor press, order several extra roller pins.

Maybe even three or four of them as the possibility of damaging the original pin in your efforts to free the roller isn't in the least remote. Having extras on hand will go along way in keeping the egg off your face—and your work. At least it has when yours truly has come up against tough nuts like press-fit and staked-in pins. Moving to the front of the frame, pull the loading lever half way down. Undo the lever screw (39). Remove the lever assembly and base



Remington Army Model 1858 (Specifications subject to change without notice) 1 Frame 2 Hammer Assembly 3 Barrel Cal.44 5 Cylinder Assembly Cal.44 6 Loading Lever Latch 7 Hand Assembly 9 Barrel Stud 10 Trigger 12 Bolt 13 Loading Lever 14 Nipple 15 Sight 37 Hammer Screw 38 Trigger Screw 39 Loading Lever Screw 43 Right Grip Nut 44 Left Grip Nut 47 Link 49

Link Pin 50 Plunger Pin 51 Grip Pin 52 Hand Screw 53 Mainspring Screw 54 Grip Screw 16 Loading Lever Latch Spring 18 Hand Spring 19 Trigger Bolt Spring 20 Mainspring 21 Base Pin 24 Plunger 25 Roller 26 Trigger Guard 27 Loading Lever Latch Pin 30 Roller Pin 31 Front Trigger Guard Screw 35 Trigger Bolt Spring Screw



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pin from the frame. When and if the link (47) or plunger (24) call for replacement they become accessible by drifting out the link pin (49) and plunger pin (50). The loading lever latch pin (27) serves to capture the loading lever latch spring (16) and latch (6). About all these front end pins: They all appear to having been beautifully flush-finished prior to bluing. Any work you are required to perform that involves one or more should be carried out with great skill and care.

The mechanical reasons are important as always but in this case function and cosmetics share equal billing. By now you've noticed there is a second cylinder present in the field stripped photo. I slipped it in there deliberately to move this discussion into one concerning the 1858 and caliber. More properly stated, that should read calibers. The Navy model 1858 was .36 cal-

iber, the improved 1858 Army model was .44 caliber and the cylinder that is available for the Army model is .45 Long Colt.

It is, as you might have guessed, a conversion cylinder and represents one of many that came along soon after The War of Northern Aggression/Conflict Between The States/Civil War/War to Free The Slaves (pick one) had ended. In 1865, government arsenals were bulging with black powder firearms. The new kid on the block was the "Fixed Cartridge" and the Federals wanted to upgrade their inventory. Normally my policy, and that of this publication, is to avoid providing load or reloading data of any description.

There is an abundance of such information readily available from projectile and powder manufacturers. All of it well substantiated. The conversion being discussed here is a unique, six round cylinder in .45 Long Colt. The cylinder and its back plate fit together

without screws or threads. Now please refer to the sectional drawing. In it the hammer has come into contact with a firing pin, driving the pin forward to ignite the cartridge primer.

The firing pin is housed inside an externally threaded sleeve called a farrow and is free to move laterally within it. The cylinder is fabricated from 4150 arsenal grade steel. The top plate uses 4140. The cylinder should never be mounted in a brass frame revolver. It is designed exclusively for a steel frame. Nationally available "Cowboy Ammunition" delivering a maximum muzzle velocity of 750 to 850 fps is the recommended specification.

Reloaders having a goal of emitting a large cloud with each discharge fired in their reenactments can reach it by charging each Long Colt case with 34 grains of FFG black powder or black powder equivalent. By the way, 34 grains is a maximum.

MAINTENANCE & REPAIR

Keeping The Garand Running

Praised by Patton, the world's first self-loading battle rifle remains popular. Here's how to keep US Rifle, Cal. .30, M1 going.

BY ROBERT K. CAMPBELL AUGUST 2012

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General George S. Patton called United States Rifle, Caliber .30, M1 (most commonly known as the M1 Garand), “The greatest single battle implement ever devised by man.” I agree, as there was nothing to compare with the Garand manufactured during the course of World War Two. Today, these rifles are often worn and in need of parts replacement.

The rifle is often accurate and accurizing is a concern but there are basic considerations that need to be covered with the Garand before we begin firing the rifle for accuracy. If the rifle isn't functioning correctly then a loading program isn't going to help. We will get the piece up and properly functioning before we do anything else. Most Garand rifles are over sixty years old, notwithstanding the new production Springfield M1 rifles that are basically identical to the originals.

A hard used Springfield would certainly show some of the same problems the original did. Some Garand rifles in circulation are made up from new parts with older parts in kits used to put the rifle together. As such, performance may vary. It is generally agreed that the later model production,

from the Korean War forward, is the most desirable and consistent as a shooter versus a collectible. Even the end run production rifles and the Beretta versions, both nice peacetime rifles, are getting pretty old.

Some are tired and in need of replacement parts. There is always the possibility of a rifle put together with less than first quality parts. Even though the new production Springfield M1 is a fine rifle, high round count versions just may give the same problems as older Garands. There is nothing wrong with the Springfield but some of us like the idea of deploying steel and walnut with a little history.

Whichever rifle you choose, Garands are firearms we all like to shoot and shoot a lot, however, many shooters desiring Garands don't always know what to look for in used rifles and a gun show pick may leave them disappointed. This report will help in servicing a fine old rifle, as the information may have been lost save for the resurgence of popularity of this old warhorse.

I have done considerable research—which I enjoyed a great deal—and now better know how to keep my modest battery of Garand

Rugged and reliable, the action seldom gives trouble. rifles operating as well as any others that I am called upon to service, examine, or modify. Let's go straight to the problem areas of the Garand, learning how to detail strip the rifle and how to handle shooting problems.

As is common with many firearms, there may be several possible causes for a given malfunction and a single design may have several faults. Wartime Garands had more than one gas cylinder design during the course of production. They all work basically the same but the later versions are the more desirable from a shooting standpoint. The potassium chlorate priming compounds used in World War Two-era military ammunition combined with environmental issues often caused corrosion.

The Pacific and China Burma India theater of operations were particularly harsh. When this corrosion attacked the gas cylinder, the result was often short cycles as allowed gas to flow past an eroded gas piston, resulting in less energy to operate the rifle. There were several stop gaps used during the war which were

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Treat them with respect if you attempt to polish the action. The hammer hooks may be polished if necessary but quite often the two stage trigger is smooth enough for service use as issued. basically field expedients. One was to cut perhaps 3/8 inch at a time off the operating rod spring to allow more exuberant recoil and a greater likelihood of function with less gas pressure.

Another fix often used in wartime—and I admit no personal experience with this one—was to clean up the corroded piston, weld up the front and polish to 0.527 diameter. This was an expedient when spare parts were not available near the front line. If done properly there is no reason it would not work. With the availability of good quality parts from

Amherst Depot (amherst-depot.com) and others, such work is no longer necessary. Just the same, it can be done and rather quickly.

As for the dimensions of the gas cylinder, they are exact. The gas piston should be 0.527 in diameter and the cylinder 0.5320 inside diameter. Occasionally an oversize gas cylinder will be encountered causing the same problem as a corroded piston. Gas runs around the oversize cylinder and pressure is lost. The only thing to be done is to change the gas piston. Note the minimum tolerance between the gas piston and cylinder is 0.005. Do not attempt a tighter fit!

There must be a certain amount of blow by or the action will cycle too vigorously. Short cycles are far more common than batter-

ing but a too tight. Simply check for the places the bolt rides and you will be on the money. The operating rod spring may be modified to an extent but care but be taken in addressing this spring, piston and cylinder could batter the rifle. A similar battering problem can be caused by too hot handloads.

A bent ammunition follower is another source of malfunctions, commonly caused by an attempt to jam the loaded en bloc clip into the magazine. The clip cannot be jammed into place and must be carefully lined up. The follower should be replaced if bent, however, I have enjoyed some success in carefully straightening the follower with a

KEEPING THE GARAND RUNNING CONTINUED

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The others deserve careful study but the operating principle is all the same. The clip ejector sometimes gives trouble and may be addressed. pair of needle nose pliers. A sure tip off of a bent follower is ejecting the clip on the seventh round instead the last eighth round. The follower guide may sometimes stick, causing malfunctions. A thorough cleaning and lubrication may help. If the cleaning and lubrication is not successful in restoring function the part may simply be replaced.

Other malfunctions may occur because of a dirty gas piston and a simple wipe down won't do. You cannot use gun oil as gas piston and cylinder must be thoroughly cleaned

with bore cleaner and inspected. An often overlooked step is drying the gas piston after cleaning. Leaving the parts wet with lubricant may cause short cycles. In its proper place, lubrication of the Garand is essential but the gas piston runs dry. As for the proper lubrication, certain areas need attention or the rifle simply will not function.

They are the locking lugs on the bolt, rear of the bolt and cocking lug recess that lies in the operating handle. A light oil film will suffice to keep these parts moving properly. This is the baseline for function. Another cause of malfunction is dirt, brass shavings and varnished lubricant entering and becoming encased in the locking recesses of the receiver.

This foreign matter prevents proper action of the bolt. Clear- They seldom give any type of trouble. It must be properly loaded.

If the bullets stick out too far in the cartridge case and run forward, they will not feed. ing and cleaning is the proper cure for this problem. The gas port may be cleaned after removing the gas cylinder. There is an old Army method of cleaning the gas port that sounds a bit rough but seems to work. Old timers swear by this technique. This procedure must be performed at the firing range and done while observing all safety rules.

With hearing and eye protection in place, triple check the rifle to be certain it is unloaded. Lock the bolt to the rear. With a fully

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A good hand will give a shooter with a box magazine rifle a run for their money. assembled rifle, two to three drops of oil are poured in the muzzle and allowed to seep down over the rifling and past the gas port. Load and fire two rounds. The oil is forced through the gas port and cleans the port. Clear the rifle (depress the clip release on the left side of the receiver if more than two rounds were loaded) and lock the bolt to the rear. Check the cylinder, swab the oil out and repeat if necessary.

This field expedient seems to work well enough, however, the port may be cleaned without firing. Taking care not to enlarge the gas port, carefully use a small rod to clean it out. The normal dimension for the gas port is

0.0805 and if it is enlarged the action of the rifle will be adversely affected. Remember, rearward action and the cocking stroke is controlled by gas pressure. Accidentally enlarging the port results in accelerated action and battering.

You may even damage the rifling if you clean too aggressively. I mention this because power drills and all manner of improper tools have been used to clean the gas port. I am sure the idea seemed good at the time but damage results. Finally, do not neglect gas piston alignment. If dropped, the piston may have been damaged. If out of alignment proper gas seal is not possible even if all parts are in specification.

Moving to the bolt, the ejector must lay flush across the face of the bolt until the cartridge has been fired. An ejector that is too long or that is blocked by debris may cause feeding problems. A sure sign of a too long ejector is the point of the bullet nose contacting the area at the top of the chamber during cycling rather than cycling into the chamber properly. The first round must feed freely into the chamber.

Check first for debris under the ejector, congealed powder and other sticky things that prevent proper function. Replace the ejector if needed. Loading Procedure When firing the Garand it is imperative that the proper ammunition be used. Handloaders know that me-

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The parts are not difficult to work with. dum burning powder works fine and attempts to hot rod the Garand results in a bent operating rod. Slow burning powder cannot be used in this action. At present, the best ammunition for the Garand is the Hornady Match Z#81170 using the 168 grain A Max bullet and clearly marked M1 Garand on the box. Using ammunition that is too lightly loaded will result in a short cycle while ammunition that is too hot will damage the rifle.

It is critical to learn the proper procedure with the eight round en bloc clips. And these are true clips, although most folks persist in calling magazines clips as well. Since most Garand shooters today have not been exposed to formal training, a primer is sometimes needed to prevent warped or bent parts. A skilled Garand shooter with a bandolier of ammunition can give a shooter with a detachable magazine rifle a run for his money. To load the Garand, begin with the bolt locked to the rear.

The hand moves to the bolt with the eight round en bloc clip held between the thumb and forefinger. As the hand lines the clip up with the slots in the receiver the thumb presses down as the back of the hand nudges the bolt back. The clip locks in place just as the back of the hand nudges

the bolt to the rear and the bolt releases, flying forward to load the rifle. Without this proper sequence internal parts related to the magazine may be damaged and the rifle will not function properly.

It is not unknown for a clip ejector to have a sharp point, sometimes from the arsenal and sometimes from honest wear. The ejector may not allow the clip to be fully depressed into the magazine if the ejector is too sharp. The tip of the ejector may be filed or ground if this is the case. More frequently, debris in the magazine causes problems. The clip latch moves the operating rod out of engagement as the rifle is loaded. If the rifle doesn't load properly something is wrong in the loading apparatus.

The operating rod catch may be sticking. Hooks on this catch must be examined for breakage and replacement with anew part is the only cure. As for ejection difficulties, there are several possible causes. A rough chamber is always a possibility. For several reasons the M1 chamber is more prone to corrosion than a bolt action rifle. Camming action in loading is not as strong with an automatic as with a bolt action rifle.

A copper brush and a liberal dose of Shooter's Choice bore cleaner may be used to clean the chamber. Another tip for prop-

er function is to polish the bolt. The bolt may be polished on the rear with a polishing cloth. The forward bolt lugs may be stoned for function and ejection. Extractors should also be checked at this point. Extractors are usually trouble free in the M1 Garand, but things happen with the best of rifles. Concerning trigger action, there are obvious problems with the Garand hammer.

When the hammer will not stay cocked, the hammer hooks are probably broken and the only recourse is replacement of the hammer. As for trigger action, there is a means of working it to an extent. When the rifle is cocked the hammer hooks to be filed are those toward the front of the engagement. These forward hooks may be filed with a needle file until they are smooth. We are actually reducing engagement so take care. Do not change the angle, just make the hooks smoother for a lighter release.

The Garand is a rugged, reliable and worthwhile rifle, but like any machine it will wear with hard use. Whenever I bring this rifle to my shoulder I respect its history and the men who used it. When I place one on the bench, it is with genuine affection I attempt to cure its ills. I feel that it is an honor to keep such an old warhorse healthy and running well. AG

PEOPLE & COMPANIES

Dakota Model 10 Single Shot

Two firsts for me, working with the Dakota Model 10 single shot action and a Kashmiri walnut stock blank, both provided by the customer.

BY DOMINIC PISANO AUGUST 2012

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For the past several years my work as a custom rifle builder has been about evenly divided between bolt actions and single shot rifles. The bolt rifles have been mostly Mauser 98s, with the VZ-24 being most prominent, and Winchester M-70s, both pre and post 64. As for single actions they have been mostly Winchester High Walls and Low Walls, both original and modern reproductions. However, I have never had the good fortune to work with a Dakota Arms Single Shot Model 10.

Recently, I had the pleasure of custom stocking not one, but two of them. Pleasure, yes, but this project presented unexpected challenges. Having visited the Dakota Arms plant a few years ago, I have since been enamored of the quality that comes out of Sturgis,

South Dakota, particularly with their Single Shot M-10. Here's what the Dakota arms web site has to say about this action, "Machined from pre-hardened billet stock, the rear of the breech block and receiver are solid walls of steel.

There are no cuts or holes that could allow escaping gases to reach a shooter's face. A crisp trigger pull and short hammer fall provide fast lock times. The tang safety is smooth and quiet, equally convenient for right or left handed shooters. A strong, positive extractor firmly grips both rimmed and rimless cases.

Straight tangs allow stock design with a high comb and good facial support, while minimizing the effects of recoil." It is truly a won-

derful action, simple in its elegance and very strong, capable of handling the most powerful of cartridges. As I began preparing to fit the stock to the action, I was impressed with the machining of the butt stock, also done by Dakota Arms. Altogether this looked to be a very pleasant assignment. However, I soon discovered a problem which I consider to be a serious design error.

The stock bolt does not screw into the rear of the frame as with most single shots that use stock bolts for butt stock attachment. Instead, it screws into what Dakota calls a stock mount. In both cases I wound up splitting the mounts in my effort to fit the butt stock tightly up against the frame of the action."

DAKOTA MODEL 10 SINGLE SHOT CONTINUED

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If this happened on one gun I would have considered it to be freak occurrence. But to happen twice indicates something seriously wrong. I immediately emailed Dakota and explained the problem. They responded and said they would send me two stock mount attachment mechanisms with the caveat that they were much beefier and stronger. In the meantime I decided to fit the butt stock to the frame using pipe clamps that I use for fitting Winchesters M-1885 High Walls and Low Walls which do not use stock bolts.

One way or the other, the job would be done properly. If I am not satisfied that the stock bolt mounts work I'll have my gunsmith make me stock bolts with the proper threads to fit directly into the frame. I should mention that in addition to not having worked with the M-10's before, the customer provided me with Kashmiri walnut stocks which were machined by Dakota Arms. These stocks proved to be of the hardest walnut I have ever had the pleasure of working.

It required that my files, rasps, chisels and other wood working tools be as sharp as could be in order for me to do the necessary

shaping needed in It's very slick looking. the course of preparing the stocks. While awaiting the stock bolt mount I fitted a Mc Millan steel butt plate and Dakota two hole grip cap as well as a gold ID plate. These will provide good canvases for the engraver to do his work. The stock was beginning to look like a winner.

While working with the pipe clamps to fit the stock tightly up against the rear of the frame I received the replacement stock bolt and the stock mount attachment

DAKOTA MODEL 10 SINGLE SHOT CONTINUED

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It's a dirty job but someone has to do it. and completed the job using it. The fitting of the action to the machined stock went smoothly after that when using the stock bolt and stock mount mentioned above. Though this action was new to me there were no unusual problems encountered. This rifle represents a lot of money and the customer is understandably very picky..

I needed to do a really superb job of fitting the forend and the butt stock tightly up against the frame with nary the smallest space between the wood and the metal. I was pleased with the results. It was then a matter

of sanding the forend and butt stock smooth as preparation for the application of finish. Due to the hardness of the Kashmiri walnut the process of finish sanding took much longer than it usually does. But, in away, this was good news because the application of finish went a lot faster than usual.

The density of the wood was such that the pores were filled in no time using Tru-Oil and mineral spirits in a 1 to 1 mixture, with a beautiful long wearing finish as the result. Next I disassembled the barreled action, cleaned it up and sent it off to Weldon Lister, Master Engraver, for a "full monty" engraving

job, which includes a sheep on one side and an elk on the other. This work is being done as this is written.

Also under way is the checkering of the stock which features a beautiful fleur-de-lis and ribbon pattern. All in all, this was an interesting and challenging project. Working with the Dakota Model 10 single shot barreled action, the initial problems they presented and working with Kashmiri walnut proved gratifying. I probably won't have an opportunity to see either the Dakotas nor the Kashmiri walnut again, but I remain hopeful. AG

MILLING

A New Scope Mount For Older Savage 112s

Finding a Picatinny scope base for older Savage Model 112 single shot rifles was difficult

BY NORMAN E. JOHNSON AUGUST 2012

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I had three Savage Model 112 rifles to mount scopes on, one long action and two medium actions. All three are older single shots and very accurate as target and varmint rifles. Earlier I had attempted to mount two-piece bases on one of the medium action rifles and couldn't reach reticle optical center until I milled 0.050 inch from the flat rear base. While the problem was likely due to how the actions produced at that time were made, it was real and had to be dealt with.

This required fitting both bases with bedding material to attain coaxial ring alignment. Fitting EGW Picatinny Bases Evolution Gun Works Picatinny bases are American made and come with four different length 6-48 Allen head base screws. The two shorter screws are made for the front base and are torqued to a recommended 20 inch/pounds. It is always best to The base is also available in 20 MOA for longer range shooting, be sure the receiver is clean and the scope bases be free of imperfections.

On this particular one-piece base I cut about an inch off the front, even This is one of the few available one piece bases made for the Model 112 Savage rifle with a flat rear receiver bridge. Four number 6-48 Allen head screws are used here. with the receiver ring, just forward of the front base screw hole. With the bases in position I used a pair of Leupold's very well made

A NEW SCOPE MOUNT FOR OLDER SAVAGE 112S CONTINUED

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As described in text, pointers show good preliminary alignment of the rings. one-inch PRW high rings. These rings have lift-off caps attached with four Torx screws in each cap. I used Brownells sleeved scope alignment rods to check the coaxial alignment of this setup and it checked out as right on. As is not well known about these sleeved alignment rods, they indicate alignment in two ways.

The preliminary test shows how the two pointers align while the more accurate test of alignment is precisely shown only when the longer of the two rods enters the opposing sleeve. It is entirely possible for the two pointers to touch with one scope ring pointing left and the other pointing right or vice versa. This is actually why the sleeved alignment rods were designed in this way and it's one heck of a feature.

Conclusions It's good to have a source of wellmade scope bases—made in the USA—that fit such a wide variety of guns at a reasonable price. These This is a Sightron target scope mounted with Leupold PRW high rings on an EGW Picatinny one-piece tactical base. particular Savage tactical scope bases, as are most of EGW's other mounts, are also available with twenty minutes of angle elevation (forward cant) built in as optional. For more information on Evolution Gun Works Inc. contact egw-guns.com. AG

MAINTENANCE & REPAIR

Maintaining The Charles Daly Field Grade .22LR

How to tear down, clean and put back together a Charles Daly Field Grade .22LR/Armstrong M14P.

BY DAVID W. MANNEY AUGUST 2012

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Recently, I took in several .22's in exchange for repair work. One of these was a Charles Daly Field Grade 22LR. Not knowing much about this gun, I started doing research to find out more. The first thing I found out was that Charles Daly or KBI has recently gone out of business (January 29, 2010) – sad, because the Charles Daly brand has been around since 1875. Manufactures from all over the world have produced guns for this brand.

This causes a lot of confusion when trying to find parts for the wide variety of guns that have been imported. I tried to find an owner's manual with no luck. The magazine was no good, since the feed lips were bent and dinged with marks from a pair of pliers. While looking for a new magazine, the name Armstrong came up as a possible manufacturer of this rifle. I ordered an Armstrong magazine for a M14P, which fit the gun and cycled perfectly. I now had a decent .22 for less than \$100.00!

There are two different manufactures of Charles Daly .22 rifles. The Field Grade was made by Armstrong and will have "Philip-

pines" stamped on the left side. The other is Superior II and will have "Charles Daly by Zastava" stamped. These were made in Yugoslavia. This gun was discontinued by KBI was later picked up by Remington as the Model 5. Remington later discontinued this gun after a run of only a few years.

The Armstrong is still made and imported, Armstrong Precision, Pahrump, NV 89060.) Numrich has some parts listed under Charles Daly Field Grade .22LR. The directions for this gun will also work for the Armstrong M14P. Century Arms just started selling the Armstrong bolt action but are not carrying parts for them at this time. Disassembly Remove the magazine by pushing the magazine catch to the rear and pulling down on the magazine. Make sure the gun is clear and unloaded. Place the safety in the Fire position.

Pull the bolt back while pulling the trigger and remove from the receiver. Loosen the take down screw and gently rock the receiver and barrel out of the stock. Once loose, finish removing the screw and separate the two. The take down screw remains in the

stock. The barrel take down stud will be loose in the dovetail and has dimples in the four corners to keep it there. There is no reason to take this off unless it damaged. In such a case, push it off to one side and dimple the new one in with a 1/16" short punch.

Remove the two trigger housing hold down screws to release the trigger housing. These screws have two different part numbers but are identical. With the trigger housing removed the ejector screw is revealed. Once this screw is loosened, the ejector will drop out of the receiver. The front sight hood can be tapped off towards the muzzle using a brass punch on either side. A single screw holds the front sight on. The rear sight is tapped off the left, again using a brass punch.

There is an insert in the rear sight that can fly out when removing it. The barrel is pinned to the receiver. The Charles Daly has a blind hole while the M14P is a through hole. If

MAINTAINING THE CHARLES DALY FIELD GRADE .22LR CONTINUED

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the barrel needs to be removed, drill and tap for a 6-48 screw. Use a one inch scope mount screw with a slide hammer to pop it out. Remove the barrel and finish drilling the hole and make anew pin. Trigger Disassembly All the pins have to be pushed out to the left side as the pins are serrated on the one side. The housing is also made of aluminum and is easy to damage by being heavy handed. Start by pushing out the safety latch pin (1). This will release the safety latch so it can be pulled out.

The safety latch has a ball swaged into place and there is a spring behind it. Best to leave this alone, especially if there are no issues with it. Next is the sear stop pin (2). When this comes out the sear spring will pop the sear out. Control the sear while removing this pin. With this removed, push the sear pivot pin (3) and the sear will come out through the top. The trigger spring is now visible, which is held by the trigger housing in the front.

Push the trigger stop pin (4) and trigger pivot pin (5), let the trigger drop down and remove the trigger spring by pulling out to the rear. The trigger can now come out through the top. The magazine catch pivot pin (6) is next, which will release the magazine catch to the front. There is no need to remove the magazine catch stop pin. Bolt Disassembly With the bolt cocked, the cocking cam stud retainer spring can be lifted out of the cocking handle.

Once the spring is out, the cocking cam stud retainer can be pushed back and the cocking cam stud lifted out of the firing pin. The cocking handle slides off leaving the firing pin and spring in the bolt. On the side is the firing pin spring retainer pin, which is under a lot of pressure, so be sure to control the pin and spring. With the pin removed the firing pin assembly will come out of the bolt. Lastly, the extractors can be removed using the tip of a screwdriver to hold the plungers down.

Rotate the extractors down and out. Cleaning And Polish This rifle had an occasional misfire due to light strikes on the rim. Firing pin protrusion was only 0.022". I cut the shoulder back at 0.005" at a time, rechecking as I went, to note the indentation on the rim of the case. I certainly did not want to go too far and start having problems with too deep of a strike. It turned out this gun needed to have 0.050". There was still the odd shot where the firing pin did not hit the rim of the case.

The body of the firing pin was very rough from machining as was the inside of the bolt. I polished the firing pin and bolt with 600 to 1000 grit sand paper. With the bolt held vertical, the firing pin should drop all the way down under its own weight. While I had the trigger apart, I also lightly stoned the sear and trigger engagements. These both were rough with machine marks and I only knocked down the rough edges and maintained the squareness.

MAINTAINING THE CHARLES DALY FIELD GRADE .22LR CONTINUED

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Trigger Reassembly All pins are identical, can be pushed in by hand and are 0.125" in diameter and 0.650" long with serrations approximately 0.150". Once the trigger assembly is assembled, drive in all the pins with a hammer. Insert the magazine catch from the front with the serration to the front. The pins will go in from the left. Put in the magazine catch pivot pin (6). Drop the trigger in and insert the trigger spring, making sure that it goes into the grooves in the trigger housing.

Pin the trigger with the trigger pivot pin (5) and then put in the trigger stop pin (4). Next, put in the sear and pin it with the sear pivot pin (3). The sear spring goes in vertically on the magazine catch. Pull the trigger back, push the sear down and put in the sear stop pin (2). Use a pick to get the spring to come back and sit in the flat for it. You will also have to center the spring on the sear. Finally, put in the safety latch and pin (1) into place.

Test trigger, sear and safety functions and when satisfied, tap in the pins. **Bolt Reassembly** To reassemble the bolt, a slave pin will be needed. Make one out of 0.125" diameter drill rod that is 0.350" long with one end rounded over to make it easier to push out. Put the firing pin spring and follower in the firing pin. With the firing pin in a vise held vertically, use a small punch to carefully push the spring down far enough to start the slave pin in the slot.

Now switch to a larger punch and push down on the slave pin to get it fully into the slot. This may require pushing and releasing a few times. Insert the firing pin into the bolt and line up the hole with the slave pin. Tap the firing pin spring retainer pin into the bolt, pushing the slave pin out. Holding the bolt vertically, drop the cocking cam stud retainer in place and put the cocking cam retainer spring on it.

Take the cocking handle, lower it down and twist until it seats the spring in the hole in the back of the cocking handle. Rotate the cocking handle and drop the cocking cam

stud into its hole. It will click and lock itself in place. Replace the extractors by placing the springs and plungers in their hole. Hook the extractors and rotate back into place. Test to make sure that they are seated properly. Reinstall the front and rear sights on the barrel.

With the barrel upside down, use a 1/4" dowel to hold the ejector in place while screwing the ejector back into the barrel. Attach the trigger housing using the front hold down screw. Push the trigger housing into alignment and install the rear hold down screw. The barrel assembly can now be placed back in the stock and secured with the barrel take down screw. To put the bolt back in, cock the bolt by holding the bolt and turning the cocking cam counter clockwise until it locks back.

With the safety in the fire position, pull the trigger and line up the lug underneath the bolt with the receiver. Slide the bolt into the receiver until the bolt is in battery. Release the trigger. Pull the bolt back and make sure that the bolt stops. AG



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1401 Barrel Receiver Cross Pin 1402 Barrel 1403 Barrel
Take Down Stud 1404 Barrel Take Down Screw 1405
Barrel Take Down Washer 1406 Ejector 1407 Ejector
Screw 1408 Front Sight Hood 1409 Front Sight Ramp
1410 Front Sight Screw 1411 Rear Sight Elevator 1412
Rear Sight Leaf 1413 Rear Sight Leaf Blank Insert 1414
Receiver 1415 Bolt 1416 Cocking Cam 1417 Cocking
Cam Handle 1418 Cocking Cam Stud 1419 Cocking
Cam Stud Retainer 1420 Cocking Cam Stud Retainer
Spring 1421 Extractor Left Hand 1422 Extractor Right
Hand 1423 Extractor Plunger 1424 Extractor Spring
1425 Firing Pin 1426 Firing Pin Spring 1427 Firing Pin
Spring Retainer Pin 1428 Firing Pin Spring Follower
1429 Hammer 1429-A Firing Pin Cross Pin 1430-A
Magazine Catch Insert 1430 Magazine Catch 1431

Magazine Catch Pivot Pin 1432 Magazine Catch Stop
Pin 1433 Safety Latch 1433-A Safety Latch Bearing
1433-B Safety Latch Bearing Spring 1434 Safety Latch
Pivot Pin 1435 Safety Latch Button 1436 Sear Charles
Daly Field Grade 22LR/Armscor M14P (Specifications
subject to change without notice) 1437 Sear Pivot Pin
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SHOTGUNS

Reader Forum

BY AMERICAN GUNSMITH EDITORS AUGUST 2012

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Spencer Shotgun Where can I get info on Spencer pump shotguns? I especially need disassembly and operation info. To begin, the Spencer is considered to be the first successful pump shotgun. It came on scene about 1882 and later in 1896. The action was unusual. The breech opened and rose up at the same time the ejection port opened downward on the bottom of the receiver. In 2008, a speed shooting record in the Cowboy Action discipline was set with a Spencer. The video is available on YouTube.com.

You'll also find an article with downloadable photos entitled "Repairing My 1896 Spencer Pump" on the CAS City website forum (cascity.com/forumhall). The guy who wrote it, Roscoe Coles, really knows what he is doing. In the same forum you'll also discover a Spencer Shooting Society with contacts if you'd like more information from them. Putting "Spencer Pump Gun" into your favorite search engine will reveal more.

In your searching please note there is a novelty store called Spencer's having nothing to do with shotguns. Following what initially seemed to be a promising link led us to this site offering things like Carmen Electra's Professional Pole Kit for in-home pole dancing practice among other Rand X rated items. Not what we were looking for but nothing we'd call "boring." Chipmunk Rifle A customer has brought me a Chipmunk Rifle .22 SL made in USA by Oregon Arms, Inc., Medford, Oregon.

This little rifle was in the cocked position, the bolt could not be opened and the trigger would not fire it. Inspection revealed the trigger sear was broken. Could you give me any contacts where I might find parts? I could make the part if necessary but I would prefer to buy it if possible. Instruct your search engine to locate

Chipmunk Rifle. You'll soon discover the rifle was initially brought to market as a result of efforts from a father/ son team of auctioneers and originally named the Davey Crickett.

Oregon Arms came in later and renamed it Chipmunk. Subsequently, the father/ son team acquired Keystone Sporting Arms, who still make the rifle Rick We may be mistaken but we don't recall the rifle being one that cocks on opening. This being the case, you can decock the bolt by pulling the cocking piece to the rear, hanging on to it and turning it clockwise. In any event, and assuming the Keystone-made guns do not differ from the Oregon versions, the former should be able to provide a replacement trigger.

Remington 3200 I am looking for information on disassembly, reassembly and adjustments for Remington 3200 over/under shotguns. I need to replace the firing pins and there appears to be a firing pin stop adjustment. To date, I have not had success finding literature on the 3200. We published an article covering the 3200 in the August 1996 issue. If you don't have a copy, disassembly/reassembly information appears in the The NRA Guide to Firearms Assembly, hard cover edition.

Regarding the firing pin stop, the yoke rod fits in the firing pin housing and is retained by two yoke rod nuts outside the back end of the housing. When the rod is installed there should be a slight clearance between the buffer spring, its washer and the firing pin retractor when the top lock is positioned forward. Travel of the firing pin(s) is adjusted with the yoke rod nuts.

When proper travel has been established—firm enough to ignite but not puncture the primer—the yoke nuts should be bonded together with a blue thread sealant to maintain it. Bill Reinhart Bill's Remington

Model 12A, Smith & Wesson Model 10 I have a Remington Model 12A that came in missing the retainer. I replaced it but found that it also had a problem with long rifle ammo, hitting the bullet on left side of chamber. The gun has been thoroughly cleaned but still hangs up. No problem with shorts.

Any thoughts on what could cause the problem? The S&W Model 10 works for five or ten rounds, then locks up. Neither the trigger nor hammer can be moved and it won't rotate the cylinder. After opening the cylinder to start over it works again but can't see any reason for jam. Mark It's possible the retainer, or guide, in your Remington receiver is for .22 Short, not .22 LR. The Model 10 could be suffering from excessive cylinder end shake.

As the gun is fired the cylinder is riding back into contact with the rear frame. This can be corrected with end-shake shims. Another possibility is a bent crane or ejector rod. This is a little more serious and can cause the cylinder to rotate eccentrically instead of in a smooth, circular path. The S&W Revolver: A Shop Manual by Jerry Kuhnhausen goes over how to repair this condition. If overly-hot handloads can progressively set the primers back to jam against the rear of the frame.

Finally, the trigger on a stock Model 10 should be allowed to return fully forward before being pulled again. Revolvers used by the top combat shooters have had major work performed to allow rapid fire strings in about one second. Jeri Mixed Bag I have in the shop a Stevens 67H, 12 gauge pump shotgun. The safety button, spring and detent ball are missing and I cannot find replacements anywhere. I've tried Gun Parts Corp, Bob's Gun Parts in Arkansas and several stores online. Can you give me

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any direction that I can try? I've heard that this gun is the same as the old Savage Model 30 but I can't find parts for that either. I'm sure this will set the purists to howling but I am stripping and refinishing a Mosin-Nagant Model 38 stock. It is a laminate stock and it seems to have an orange shellac finish. I'm planning on using Tru-Oil on it as the owner wants the orange look without the shellac. Any suggestions? I may be working on a Remington Viper that has a problem with the trigger group.

Apparently, the little tabs that hold the assembly in have broken off (I haven't seen it yet, this is what the owner has told me.) I've told the owner to write Remington and they would likely repair it for little or no cost, but he claims he doesn't have time and wants me to do it. Can I write to Remington about this or does the owner have to?

On the Stevens, check in with Jack First and call Brownells for a free copy of their Parts Source List for out-of-production firearms and warm up your fingers to do a lot of walking. On the Mosin-Nagant, you'll have to remove the shellac before you can apply anything else. How deeply the orange finish has penetrated into the wood will determine whether removal can be accomplished with the application of shellac thinner or a combination of thinner and sanding. All traces of the shellac coating have to be eliminated.

Then go to your nearest paint supplier, tell the honcho there of your customer's desire for an "orange look" and see what he can do to mix you up a quart or so of neutral Minwax tinted to the color required. Minwax can be built up to provide a very high gloss finish when allowed to dry completely between applications, which are rubbed into the wood by hand as with a boiled Linseed oil finish. Unless we're way off base, we think the Viper tabs you mention are an integral part of the receiver.

That being the case, call Remington, explain the problem and talk the resolution, if any, over with Customer Service. It's always best to contact the manufacturer directly rather than receive the information second hand. Jim Ithaca Shotgun I just had an Ithaca Single-Barrel Trap Gun brought in to my shop for a cleaning and inspection. The owner said it was a Flues Model. I have worked on these before but this one does not have the typical three screw trigger plate screws that I have encountered.

The serial # is 3440XX, which puts it into the Flues era, but disassembly of the action looks nothing like others I have seen. It has a two piece offset firing pin and a different action lock up. I have searched all my books and websites to find this gun without luck. Bob Johns Shogun Gunsmithing & Sales Our meager files on Savage single shot trap guns led us up a blind alley. Sorry, but we do know of a source you can contact. He is the official Savage/Stevens Historian. John Callahan, Westfield, MA 01085.

Federal Ordinance M1A I have in my shop a Federal Ordinance M1A that is denting the primer almost to the point of ignition upon closing the bolt. I took a empty primed case and on the third closing it fired, indicating the firing pin is moving free. The bolt face, ejector and extractor all OK. Rons Gun Get some GO/NO GO headspace gauges and check out the rifle for meeting GO conditions. We don't think you have excessive headspace. To the contrary, the primer hits indicate the barrel may be set too far back.

This might be corrected with a circular shim installed between the barrel shoulder and receiver and could definitely be corrected by installing anew barrel group. It would also be wise to make a chamber cast with Cerro-Safe and check it out against SAAMI specifications for the cartridge being used. Speaking of the cartridges, are they factory made or reloads? The latter may be on the hot side and driving the primers to the rear. AG

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