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INSIDE THE ARCHIVE

THREE STEYR PISTOLS

RICH, FAMOUS AND ARMED • KIDS IN THE SHOP: A GUNSMITH'S LEGACY, PART ONE • FITTING A FOREARM HANGER EX...

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 097

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FROM THE ARCHIVE

Rich, Famous And Armed

BY AMERICAN GUNSMITH EDITORS JANUARY 2012

ORIGINAL PP. 2

I always find it amusing to see how non-gun owners view firearms. The New York Times ran an article about rich and famous people that <gasp!> actually own firearms. Here's an excerpt from The Rich, the Famous, the Armed by Jo Craven Mc Ginty. "Men and women. Democrats and Republicans. Doctors, lawyers, merchants and moguls. A remarkable, if relatively small, cross-section of New Yorkers legally own handguns, according to public records obtained by The New York Times.

Among the more than 37,000 people licensed to have a handgun in the city are dozens of boldface names and public figures: prominent business leaders, elected officials, celebrities, journalists, judges and lawyers. "Some expressed pride in their gun ownership, like the renowned divorce lawyer Raoul Felder, who readily posed with his .38-caliber Smith & Wesson.

Others, including David Breitbart, Yetta Kurland and Walter Mack, all wellknown lawyers, were irked to learn they would be included in an article based on the public records. "The 41,164 handguns registered with the Police Department include those owned by more than 2,400 people who live outside the city but have permission to bring their weapons here — people like Roger E. Ailes, the president of Fox News, whose license lists an address in New Jersey; John J.

Mack, the chairman of Morgan Stanley, who lives in Westchester County; and Sean Hannity, the conservative talk-show host, who lives on Long Island. "There are eight kinds of handgun licenses in New York, one of which is for dealers.

The most common restricts the weapon to the owner's home, but others allow license holders, including security guards, gun custodians and people who demonstrate a need for protection, to carry weapons with them. "Nearly 4,000 license holders — those who have a "carry business," "limited carry" or "special carry" license — can legally conceal their weapons.

The Times obtained the database of handgun owners from the Police Department after filing a Public Records Act request and a lawsuit; the police released ZIP codes but omitted street addresses.

The database also did not include the 14,602 retired police officers who are licensed to have weapons. "The Police Department issues a separate license for long guns: about 52,000 shotguns and rifles are registered, but the owners' names and addresses are not public records. "At Westside Pistol and Rifle Range, in Manhattan's Flatiron district, the owner, Darren Leung, said that there was a surge of new members after 9/11, but that the number had since fallen slightly, to 1,500.

About 20 or 30 members a day come by to take classes or to practice with paper targets in one of 16 enclosed 50-foot stalls. On the sidewalk outside on West 20th Street, the sound of gunshots from the basement range is not audible. "In a weird way, it's a kind of stress reliever," said William Rosado, an illustrator who regularly visits the range to fire his 9-millimeter Smith & Wesson. "It's something completely different than what I do for a living." "

PISTOLS

Three Steyr Pistols

Going “the full monty” with the new Steyr pistol series, once you get to know one the rest have nothing to hide.

BY CHICK BLOOD JANUARY 2012

ORIGINAL PP. 3-8

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Each of these brand new semi auto handguns includes a multifunction element marked with a 1.5. If you don't find one in the gun on your bench it isn't a member of Steyr-Mannicher's latest generation of concealed carry handguns. Multifunction what? It was new to me as well, however, without it the Steyr M-A1, C-A1 and S-A1 would make terrific surf casting sinkers. A multifunction element marked with 1.5 is the heart, lungs and upper GI tract for the new pistol series.

It's made of steel, gets inserted into the frame, includes the trigger and new safety devices. Because its Austrian designers decided that wasn't enough, the slide catch lever and the ejector call it home too. The A-1 series have much more in common than a multifunction element. They are all mechanically locked, recoil operated and compact. Their synthetic grip frames have been ergonomically designed to fit the hand comfortably, which they do. All use a reset action trigger system and have multiple safety options.

The latter allow the owner to personalize their applications. All are DAO and accommodate a move up, or down, in caliber with an available DIY conversion kit. Field Stripping For basic disassembly of these Steyr pistols you're advised to proceed in the following order. Scratch the advised. You must. If you haven't done Other calibers offered are .40 S&Wand .357 SIG. All pistols in the series are mechanically identical. so already, put on your eye protection. Remove the magazine.

Retract the slide to eject any live cartridge that may have been chambered. Lock the slide open. Visually and manually check the chamber. Release the slide to its forward position. Pull the trigger. Press in the

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integrated limited access lock with the index finger of your strong hand and pivot the disassembly lever downward. Pull the slide assembly off to the front. Invert the slide assembly. Press the recoil spring to the front and pull it upward for removal. Grasp the barrel by the bolt lock. Lift it up. Slip it to the rear and upward to free it from the slide. Going All The Way This is extremely important. Study the main schematic and parts list.

Anything appearing on the list as an “assembly,” “complete” or preceded by an asterisk (*) all translate as “No individual parts available.” No exceptions. If an A-1 series pistol comes your way with a damaged component falling within those just-identified categories its owner is in for the cost of a fresh, fully-assembled factory replacement which you simply install. These Steyrs are fundamentally modular handguns. I suspect they are setting a standard for more of the same to come from many sources.

The exception to the need for parts would be when the cause of the trouble within the restricted assembly is dirt. Here you are not aced out of providing a valuable service for which you can charge. For this privilege we can thank the golden hearts of the Steyr engineers and the information they have provided in the best damn Armorer’s Manual I’ve ever seen.

With it as my guide, I can steer you far enough into proper disassembly and reassembly of a restricted component to brush, flush or blow away any and all grit, gunk or other compacted crud. Just remember, you break anything and you buy the factory replacement. I said I could steer you through this. I didn’t promise you a cakewalk or procedures as simple as these disassembly articles normally contain. In most instances here you’ll be able to refer to the main schematic and parts list as usual.

Frequently, there will be drawings and/or reproductions of photos that appear in the previously praised Armorer’s Manual. The Manual also carries part numbers which mostly match those appearing in the main schematic parts list. In others, a step in the disassembly or reassembly may only refer to one of the sub drawings (A through H) on the main schematic. In still others, 5 stamped deeply on the multifunction element (A) confirms it’s a member of the family.

A manual drawings are used as an aid in familiarizing you with how certain systems in the pistol are designed to function, something that is always excellent information to possess with any firearm. I’ll begin with the indirect firing pin catch in manual drawings 8 and 9. The firing pin is blocked by the catch (10). When this safety is acti-

A

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vated the catch is supported by the catch pin (14) and lever (11) which rests on the multifunctional element (6). The safety is deactivated when the catch is moved back from its forward position by the trigger bar (16). It seems appropriate at this point to get into three other safety functions. Manual drawings 6 and 7 respectively relate to the activated and deactivated drop safety.

Beginning with drawing 7, when the trigger (arrow) is pulled the drop safety is deactivated but is automatically reactivated upon the trigger returning to its fully forward position. Now for the trigger safety. Refer to drawings 4 and 5. In the simplest of terms the safety (18) is located within the trigger (17). The protruding section of the safety engages the multifunctional element (6) blocking the trigger from moving to the rear.

When the shooter presses inward on the safety alone it rotates out of engagement with the element and allows the trigger to be pulled. The safety is automatically reactivated when the trigger has been fully released. It is up to the purchaser whether an A-1 series is equipped with a manual safety or not. Refer to manual drawings 11 and 12. The manual safety rod (26) appears on

both sides of the frame above the trigger guard. When both ends of the rod are pulled down the trigger is locked.

The safety (25) can be deactivated by pushing it upwards with the trigger finger. Hopefully, the A-1 Series handed you for service will have a manual safety. If not, there will be no manual safety rod present to push out in order to remove the multifunctional element for detailed cleaning or replacement. Since these rods carry an asterisk on the parts list and also due to its precisely positioned slot for the manual safety spring (28), the rod cannot be substituted for with a garden variety slave pin.

I am forced to suggest you make a call to Steyr. Sound greatly distressed. A highly A small blade screwdriver is inserted between the back of the extractor and front of the plunger when disassembling from the slide. valued, long time customer owns the pistol with no manual safety. The multifunctional element is in dire need of a thorough cleaning, yet, you cannot remove said element from the frame due to the absence of a manual safety rod.

You realize it is a restricted part but—you can choke up here a little for extra effect—in this case couldn't Steyr make an excep-

tion? Having great faith in your persuasive abilities, you should at least discover how to remove the element from an A-1 Series waiting on your bench with no manual safety. I'm going to assume you will not be faced with the complication of a missing rod and proceed accordingly.

These two Armorer's Manual illustrations provide DIY, detail for reassembling the trigger/trigger bar sub-assembly to the multifunction element. Complete details are provided in the text. B A You'll need a screwdriver with a 3.5mm blade. Insert it under the safety spring. Lift and disengage the spring from the rod then push the rod out of the frame left to right. Turn the disassembly lever counter clockwise to align with its disassembly mark on the frame. Push out the lever with your screwdriver.

Using the key (50) provided with the pistol, press inward on the key lock (23) then turn the lock 45 degrees counter clockwise. The element should now be free for removal. The key lock is to remain inside it for the moment. Firmly grasp the element between your forefinger and thumb. The thumb serves to trap the slide catch spring and the finger does the

THREE STEYR PISTOLS CONTINUED

ORIGINAL PAGE 6

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same with the key lock. Maintain the squeeze, lift up on the element until its ejector end clears the trigger slot in the frame and remove it forward. The trigger bar and manual safety assembly, if it has one, come out still attached to the element. The key lock, key lock spring (24), slide catch (30) and slide catch spring (31) are next for removal. The manual safety pin (29) awaits but you'd best first clearly note how that pin relates to the rest of components in subassembly "E" on the main schematic.

Do the same with trigger bar subassembly "C" before pushing out the trigger pin (22) and withdrawing the trigger spring (20) from the trigger. While there are several restricted parts in the slide (33) their number fails to exceed the number of them in the frame. Just enough to frustrate you? I think yes, but the only tool you'll need is that now familiar screwdriver. The slide plate pin (49) is spring loaded. Depress the pin with the driver and push out the slide plate (42) simultaneously with your thumb.

The plate pin and spring (41) will jump out without the plate to stop them. The firing pin (43) and its spring assembly (44, 45, 46) might have the same idea. Be prepared to prevent that so you can remove them at your leisure along with the plate pin and spring. A similar challenge awaits when addressing the extractor (39). Its pin (40) is also spring loaded. Once the extractor is out of its way, the pin can depart into the unknown.

It will never get the chance if you insert the driver blade between the pin and extractor, and then push the extractor forward. Keep the pressure on the pin, pull out the extractor and you are in total control of removing the pin and its spring (51) when you please. What remains for you is that seriously filthy element. It's been lying there awaiting the scrub away, flush away, blow away, blow dry and light lubrication mentioned earlier.

Drawings from the manual support the author's testifying to its excellence and encourage gaining a solid understanding of how systems function in a given firearm,

which is vital to properly servicing it. If necessary, you can indulge in a bit of wiggling of the catch or lifting of the catch spring to get at some harshly impacted area but remember the Golden Rule: You break anything, you buy the whole thing.

Not wanting to leave you pondering such a horrible fate, I prefer to begin concluding this denuding of Steyr pistols with far friendlier reassembly tips. 1. When reinstalling the trigger spring in the trigger, the trigger Though you will read of how this safety system operates, the two manual drawings above visually add greater understanding to the written words. safety must protrude above the trigger bar. 2.

The thusly pre-assembled trigger bar assembly is shown in manual photo #69 with the trigger pin pushed through to retain it and the bar swung upward to hook into the catch as per photo #70. 3. The combined element/trigger bar assembly unit is inserted back into the frame with the two tangs at the rear of the element going into their matching frame slots first be-

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While not appearing specifically on the long list of restricted components the drop safety itself interfaces closely with a number unavailable to anyone outside factory-designated service personnel. fore swiveling the unit down into place. 4. The disassembly lever is pushed in until it engages and has to align with its frame mark when rotated downward. 5. The manual safety spring notch on the safety rod must face upward during and after the reinstallation process.

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Despite Steyr reset action trigger safeties externally resembling other systems gaining popularity with many firearm manufacturers, do not assume they function exactly the same and vice versa. I've been staring at the parts list trying to rationalize on why items I'd consider as non critical are restricted while others, like the frame, which is always restricted by every other manufacturer, appears to be available to all comers.

I had to settle for a no decision other than maybe that's just the way things are in Austria.



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Steyr M-A1, C-A1 and S-A1 Pistols (Specifications subject to change without notice)

MAINTENANCE & REPAIR

Kids In The Shop: A Gunsmith's Legacy, Part One

For any skill, trade or culture to remain it must be passed on to the next generation. Gunsmithing is no different.

BY WENDELL DEANER JANUARY 2012

ORIGINAL PP. 9-12

'mI in the shop on a rainy day working on an old Mossberg bolt-action shotgun somebody brought in. The safety is erratic. Sometimes it works and sometimes it doesn't. I'm afraid some of its parts are worn and hard to replace, kind of like me. I suppose times such as these make one want to reflect. I can honestly say I've never seen a well-made tool I didn't want to own. I don't care if I can use it right now or not. Stick it somewhere and I'll find a use sooner or later, maybe much later.

I literally have a ton of tools in my shop. I've been collecting them all my life. I might be spotted prowling around yard sales, antique stores, and farm auctions. Every job goes easier with the right tool is an axiom. Many times a tool can do more than one thing like a caliper or other measuring tool being used to measure reamers, bullets, or holes in revolver cylinders.

Sometimes, like a Remington bolt spring removal tool, they are pretty specific, however, each has its place and I know your shop is full of tools, too. Some of mine have sentimental value. My grandfather had his hand on them. Half of my shop is filled with power tools such as drill presses and milling machines. I have grinders and power sanders and Dremel tools, everything and anything to help me in my work.

A lot of gunsmithing tools fill drawers and line the pegboard walls behind the two independent eight-foot workbenches each complete with their own six-inch vise and bank of fluorescent lights. Specialty tools such as action wrenches, jigs, chamber

reamers and the like all have their place. A dedicated area for rifle cleaning has a permanent position on another bench. One end of my shop is devoted specifically to reloading. Two reloading benches and a powder magazine are there.

Thousands upon thousands of bullets ranging from .22 to .416 caliber rifle bullets and .32 to .45 caliber pistol bullets line my shelves for use in testing and hunting. There is a bunch of rifle and handgun cast bullets. Muzzle loaders are not slighted as part of the shelves are filled with patches and round ball, sabots, and specialized black powder bullets. Boxes full of rimfires are tucked away awaiting range time.

Various reloading presses, both single stage and progressive, and scales, both mechanical and electronic, have their place on the benches and shelves. Loaded rounds and about a million empty cases and primers—OK, it just seems like that many—are all in places that only I have the catalog to. About fifty sets of reloading dies are there, too.

Shell holders, funnels, vibrating case cleaners, primer-seating tools, my collection of American Gunsmith, as many reloading manuals as I can afford, books and videos on gunsmithing and old reference works that I found by haunting used book stores, which can never be replaced, fill all the nooks. I have an area for knife-sharpening tools and stones, stacks of used targets (most of which I should toss) can be checked if I want to see what kind of group a rifle or pistol actually shot on a particular day.

My shelves hold spotting scopes and deer scents and old metal army boxes full of empty cases. Don't get me started on the fishing stuff down there. I've made room for Coleman lanterns and stick bows as well as compound bows and arrows. Last but not least is the computer I'm using to write this piece as well as holding all my reloading data generated over these many years. That's a partial list. I don't really know how I've stacked all this stuff in here over the years.

I think you get the idea and many of you small shop owners are in the same situation I am. What in hell is going to happen to all this stuff when I'm gone? I can't really sell out to another retailer and walk away when my shop is in my house. I don't want to split up my tools—a set of screwdrivers to this one, a set of punches to the other. All these tools together combine to make my shop and I'd like to see one of my grandchildren take it over. I have three grandsons and a granddaughter.

All of them are interested in guns and hunting. The oldest boy, at sixteen, also has the most interest in gunsmithing. I suppose it's just wishful thinking about what goes on after you're gone. I don't expect to have a cognizant dirt nap—heaven forbid, as I'll need the rest. After special gifts are passed on, an auction would probably be to the most benefit. But suppose we want to indulge ourselves and imagine we can leave something behind when we're gone. Let's think about kids in the shop.

First, let me put forth the disclaimer that I am not telling anyone what to

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do. If I wanted to do that I'd have been a cop instead of a gunsmith. I am trying to relate some anecdotes, topics, and techniques that have helped me with my students. If you have other ideas, help yourselves with whatever floats your boat. If I left one of my kids my special set of screwdrivers and another some pliers and hammers that grandpa used in his shop and could now be used in their home just to remember me by, that's all right. What, though, of a half century of knowledge?

Is it more important to leave behind irreplaceable knowledge from my mind or tools in untrained hands? Tools can be bought. Knowledge must be taught and learned. Therefore, I submit to you that most of the tools can go to the yard sale but let's bring the kids into the shop and teach them what we can. I didn't have a mentor. I had to learn a lot of techniques on my own. I also had to unlearn much hearsay and untruths overheard in the deer camps and gun shops I frequented.

How much easier it would have been if I had a knowledgeable hand on my shoulder. With that in mind, how do we get started? For one thing, we can't instill knowledge into a young mind that isn't interested in the first place. Sure, all the kids want to fool around with grandpa in the shop when they're little and easily distracted. Let them play with your vise and pound a nail, being careful to watch out for pinched fingers.

The ones that start to ask pertinent questions and show a real interest can be considered as eligible candidates to mentor. It's hard to imagine a child younger than twelve having a real desire to Duct tape protects both unworked metal from the file the gunsmith. For the sake of pictures we left the protective glasses off but the student should be wearing them. learn gunsmithing. The ones that do, what a treasure they are.

By allowing the youngsters to have access to your tools and shop under close supervision you will soon notice which of them will bene-

fit from more intense instruction. Children can be easily distracted. Many times having a problem and including them in the solution is the best teacher. It shouldn't be too complex at first, something simple such as a chipped stock or a .22 rifle that doesn't feed properly. Letting the child see how firearms can be broken and repaired can allow many lights to go on.

If the student already has his or her own gun, all the better. Cleaning and maintaining a personal rifle or shotgun is a real motivator. At any rate, field stripping and cleaning of the more common types of firearms that are likely to come into the shop is the best way to start out a young man or woman on their way to a gunsmithing career. Here is where the most important part of gunsmithing, safety, can be fostered in young minds. Years ago when I started my young ones in hunting, I positioned

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Different speeds for different bits and the mill's use on metal and wood should be discussed. Notice the student has his hands braced to give him better purchase of the work. the kids behind me in the field and then discharged a 12 gauge shotgun loaded with birdshot and pointed at the ground several feet in front of us in a safe direction. The noise, the torn up leaves and dirt gave them a visual impact that was hard to ignore. "Do you want to get hit by that?", I would ask. Believe me, none of them ever said yes.

Well then, don't point your gun at me or yourself or anything else you don't intend to shoot. It was a powerful lesson. Make sure they understand that when picking up a firearm it's always loaded until a check shows otherwise. These kids are not the unfortu-

nate children you read about in the paper that have unintentionally shot each other while "playing" with guns.

I have a gunsmith friend who thanks all his customers for not pointing the guns they bring in at him and for opening the actions before handing them over. I'm not sure what he tells the other kind. First Projects Stock refinishing is a good first project, especially if the student has an old gun worthy of the time it takes for sanding, shaping, and applying new finish. Being able to show off his or her work to admiring friends is a reward that leaves indelible memories.

Maybe the student can pick up some of his first business refinishing a stock for one of his friends, perhaps pro bono with payment being just the earned experience.

Understanding which firearms should be refinished and which should be left in original condition is another trait that separates the gunsmithing student from an eager boy wanting to get started with the sandpaper. In the illustration used for this article an old full-choked model 340 Winchester single shot 12 gauge has been selected for refinishing.

This gun has a lot of sentimental value but very little collector value. It was an inexpensive gun to begin with but has been carried by several members of our family for small game. It bears dings and scratches in places where it has been dropped on rocks, has a little surface rust and is in need of rebluing. It is going to make an excellent piece to learn on and will be passed down to another generation

KIDS IN THE SHOP: A GUNSMITH'S LEGACY, PART ONE CONTINUED

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of hunters who will be proud to use grandpa's old squirrel gun. I usually start teaching that the use of a sanding block is important and that many things can be improvised for this purpose, including erasers and wooden dowels and blocks cut to specifications integral to the job. Those old scrap flexible automotive hoses make a good backing for a lot of purposes and come in different sizes to fit a particular curve where around block is needed.

Show your student when to sand with the grain and when specialized techniques call for moving across it. Feathering the stock by wetting it and using a heat source to raise the grain cannot be overlooked. Explaining that these little "feathers" will rise later, after the stock is "finished", if not addressed beforehand and will save us from ruining an otherwise good job.

How to "clean out" checkering with a single-line checkering tool, a riffler and a veiner are some good techniques that may be included in this process. Explain the differences between 60 and 90 degree checkering tools and when each should be used. How to use a checkering cradle and adjust light to give the clearest picture for our work is a lesson that won't be forgotten. Grab our toothbrush again to brush out sawdust and apply anew finish.

For beginning woodwork Tru-Oil is an old favorite and a good finish to start with. It allows the student a "hands-on" approach when rubbing in the oil and emphasizes the need for proper drying times and using more than one coat to get the desired result. Since stock finishing can be a discipline in itself, these basic techniques will lay a good foundation for future projects. The idea is to train the student to teach him or herself by building on the fundamentals.

Staining, filling, and final finishing are three separate steps to be learned. How these jobs are tackled is up to the finisher. I once read about a gunsmith who used berries and real walnuts for stain. I think he boiled his own hides to get the oil for the finish he desired on his home-made muzzle loaders.

How to get from there from the high-tech, spray-on, bake-on marvels available to the gunsmith today to the wonderful luster of traditional hand-rubbed oil finish is the type of knowledge we are trying to pass on. The use of hand tools can never be neglected. Understanding the types and uses of files is a good place to start. There are many types of files but the ones we mostly use in our work are mill files, the bastard, second cut, and smooth. Needle files and other sizes, and diamond files have their place.

Show the student the differences in how these files are cut and give examples of when to use each. Teach how to hold a file in use. Stress the importance of not cutting on the back stroke lest the file be chipped or dulled. Explain how to draw file. Half-round, round, and "rat tails" should be represented. That old saw about throwing the student a chunk of steel and demanding that it be filed into an inch-square block is pretty much nonsense. Pulling stunts like that is a good way to lose a student's interest.

If there is one gunsmith's tool that must me mastered it is the stone. Every student should be thoroughly versed in the different types, such as Arkansas, India, ceramic and the other various synthetics. Not only are these stones used to smooth up a trigger or take off a burr, they are used to re-sharpen many of the tools in the gunsmith's chest. Chisels and stock-inletting tools must be kept razor sharp. Reamers need a touch-up now and again.

Any gunsmith worthy of the name should be able to sharpen a knife or scissors. I have always been a sucker for bidding on some of the old stones and sharpening tools found at farm auctions. If you want to learn how to sharpen almost anything ask a farmer. Think about screws for a second. Yeah, yeah, we're all looking for a good screw, but what about all the different types a 'smith can encounter? How to use a thread gauge should be included here.

There are machine screws, metric screws, wood screws, countersunk screws; with square-drive heads and slotted heads, torx, Phillips, pan head, button head, round head, fillister head, with high-low, self tapping, wood, metal threads and many more I can't think of right now, but you get the point. Then there are the drills that are metric, American and numbered which need to be paired with the screws you may want to use. How to keep a drill sharp is an essential skill for saving time and money.

I say take time as you go to thoroughly cover this subject. If you've ever had a split stock come in with a horrible, rusty wood screw stuck in it you know what I mean. One of the projects I have used to illustrate this concept is drilling and tapping for scope mounts on older rifle receivers. Matching the number of the drill 31 or 29 and the difference between 6x48 and 8x48 mount screws can easily be visualized and understood.

Allowing the student to drill and tap the holes under close supervision is something that can't be learned well unless it is actually undertaken with their own hands. Experience is always better than reading about it. If they break a tap, well, have a broken-tap remover on hand. It's another lesson on how and why not to do something. Don't throw your student into a pressured situation at first. Take the time to cover the subject thoroughly. Deadlines have their place but not necessarily in the classroom.

You must ask yourselves if you are up to taking on a student or would it be best left to someone else. I've had some rough teachers, I've had some gruff teachers, but I've been able to learn something from all of them. A good teacher learns from his or her student. Remember that and you cannot go far wrong. In Part Two, we will cover more tools and skills as well as address some business issues important to gunsmiths. AG

PEOPLE & COMPANIES

Fitting A Forearm Hanger Extension On The Knight KP-1 Rifle

Adding a much needed forearm hanger extension solves accuracy problems on some break-frame rifles.

BY NORMAN E. JOHNSON JANUARY 2012

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There are several styles of single-shot, break-frame rifles with accuracy problems traceable directly to the way the forend is attached to the receiver. The Ruger Number 1 and Knight KP-1 are notable among these. This treatise will deal with solving this problem on the Knight KP-1 singleshot rifle. The Knight KP-1 single-shot action is used on muzzleloader, centerfire and rimfire barrels. A different forearm is, of course, used to fit each style of barrel.

Unaltered, the forearm is attached to a short hanger which is an integral part of the receiver and locked in place with a special latch on the underside of the forearm. Each forearm style leaves the barrel free floating with no contact at any point along the barrel channel. In this way the barrel is allowed to vibrate freely as the rifle is fired. This approach is often thought of as away to deliver best accuracy from the rifle design.

However, such uncontrolled barrel vibration can also be the very cause of poor accuracy, typically manifesting as vertical stringing on the target. This is particularly true of lighter barrels using high intensity cartridges such as

the .300 Winchester Magnum, .30-06 Springfield and the like. My experience, thus far, with the Knight KP-1 rifle has included the .300 Winchester Magnum and the .30-06 Springfield which I why I mention these cartridges specifically.

The theme of this text will cover a KP-1 I modified chambered for .30-06 Springfield. Improving KP-1 Accuracy After much experimentation with the KP-1 rifle it was discovered and proven that applying forend pressure to the forearm greatly improved accuracy by dampening barrel vibration at a point near mid-barrel. This required the addition of a forearm hanger extension attached directly to the existing short forearm hanger on the Knight KP-1 rifle receiver.

The challenge then was to devise a means to fit and attach a forearm hanger extension. Close observation of the KP-1 receiver showed a milled slot extending into the forearm hanger. This precision milled slot provided a perfect place for a length of 3/8-inch square steel stock. The only alteration needed to fit the steel extension beneath the barrel was the

FITTING A FOREARM HANGER EXTENSION ON THE KNIGHT KP-1 RIFLE CONTINUED

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The escutcheon is positioned in the old sling swivel hole and sling swivel moved forward about an inch. addition of a short taper so the piece would slide back to the receiver. The reinforcement webs in the composite forearm were milled out to make room for the new hanger extension using a 3/8-inch end mill. This slot also served as a perfect forearm/ hanger guide. As a means of attaching the forend to the new hanger extension, the front sling swivel hole was used.

A 1/2-inch diameter brass escutcheon was countersunk at the bottom of the forearm. A hole for the number 10-32 attaching screw was drilled and tapped into the front of the forearm extension bar. A stainless steel

socket head screw was used. The original sling swivel was repositioned 3/4 inch above the forearm attachment screw. Contact Bedding The Forend Tip A major part of the forearm hanger application includes pressure bedding the forend tip.

The principle here involves dampening of barrel vibration tones (barrel whip), thereby improving accuracy. The amount of upward lift pressure at the forend tip is dependent on barrel diameter as well as caliber/cartridge intensity. In the case of the .30-06 barrel discussed here, the barrel at the pressure point measures 0.650 inch, which is comparatively small.

In this case controlled pressure between 6-10 pounds of upward pressure is applied. Brownells Steel Bed was used as a bedding material. plied near the tip of the forend. This is later controlled by loosening or tightening the forend hanger screw as accuracy is monitored. Following the usual procedure of epoxy bedding, the forend tip is masked and release agent is applied to the barrel. Brownells Steel Bed is used for the bedding, which forms perfectly around the barrel contour and sets hard as steel.

Sides of the forend are masked to prevent bedding material from making any un-

FITTING A FOREARM HANGER EXTENSION ON THE KNIGHT KP-1 RIFLE CONTINUED

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Torque is being applied with an Allen wrench. Shown above is the forearm with the newly bedded forend tip. wanted contact. Ample space must be allowed for bedding material beneath the barrel. As the epoxy bedding is applied, the forend is lowered 0.150 inch to allow room for a draw down by the forend tension screw if needed. I applied a wood spacer between the barrel and forearm extension hanger to control this pre-spacing as the epoxy bedding was applied and allowed to set.

Following clean-up, everything looked neat and precisely in place. Testing The Work For Accuracy With previous accuracy of the 30-06 Springfield barrel already known to be very

erratic, a marked improvement was anticipated. The scope was re-mounted on the carefully reassembled rifle. I applied approximately seven pounds of uplift pressure on the newly bedded forend tip and tested several five-shot groups using the same loads as those used prior to the work performed on this rifle.

In this particular testing I used wellprepared Winchester cases loaded with Redding competition dies. Accuracy results were immediately very encouraging as groups at 100 yards were now in the normal range for a 30-06 bolt action rifle. All undesirable vertical group stringing 30-06 Springfield with a Weaver target scope used in testing. From this picture one would not know a special

forearm hanger extension is used to hold the forearm precisely in position for improved performance. 30-6 rifle.

Groups inside the wavy lines were shot at 100 yards before forearm bedding. Note the vertical stringing. Two five-shot groups pictured in the rectangular square at right were shot after work was done to bed the forend using the forearm extension hanger. was now corrected. Where accuracy can be so dramatically improved with the simple addition of a forearm hanger extension and bedding the forend tip, it definitely should be done.

It is a very straightforward gunsmithing procedure and you are likely to see a very satisfied customer as a result. AG

FROM THE ARCHIVE

Continuing Education For Gunsmiths

A variety of venues for furthering your skills exist. We review NRA Gunsmithing classes and tour the Shilen Rifle Barrel Company.

BY BILL NELSON JANUARY 2012

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Would you like to improve your gunsmith skills? Want to learn new and better ways of fixing guns? Want to meet and learn from some of the best gunsmiths alive? Think you already know everything there is to know about firearms? Well, about sixty years ago my granddad taught me that there may be a dozen ways to skin a cat but if you only know ten of them you may not know the best way yet. So, I am always on the lookout for new things to learn.

I learned to work on guns as a kid because I didn't have the money to buy anything that wasn't broken. People that knew I was interested in repairing guns were always dragging up an old shotgun with a broken firing pin or some such. After reading many gunsmithing books I decided that I wanted to be a first class gunsmith. I didn't have the money to go to gunsmithing school so I got a job as a tool and die maker to learn the machinist skills required for the job.

I also started taking part time courses at local colleges. Metallurgy, physics, math and anything else I thought would improve my skills. So I learned gunsmithing the hard way, mostly by trial and error. I still yearned to go to a formal gunsmithing school but they were all far away. Marriage, kids, and supporting my family made that dream seem like an impossibility. But, I have always continued to look for new ways to continue my gunsmithing education.

I take NRA summer gunsmithing classes and tour as many firearms manufacturing plants as I can. I am a Federal Firearms Licensed Type 7 manufacturer and have been able to visit many other manufacturers, as well as two barrel makers. One of the barrel makers has an open house each year and anyone can attend. In this article I hope to bring information to other gunsmiths about the opportunities to continue

your education by attending NRA summer gunsmithing classes and the chance to tour a premier barrel manufacturer.

NRA Gunsmithing Classes About three years ago I started attending NRA summer gunsmithing classes. Think of this as a one or two week vacation with your peers where you learn new skills at the same time. The NRA summer gunsmithing classes are taught at the best brick and mortar gunsmithing schools in the nation. They are also staffed by some of the best gunsmiths in their fields of expertise.

There is a wide selection of courses available and you can learn almost any kind of gun and knife making skill that you may be interested in. The four major gunsmithing schools that participate in this program are Montgomery Community College in Troy, North Carolina; Trinidad State Junior College in Trinidad, Colorado; Lassen Community College, Susanville, California; and Murray State College, Tisho-

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Brownells furnishes instructors and chemicals for the classes, and a lot of freebies for the students. mingo Oklahoma. The selection of courses available can be found online at NRAgunsmithing.com. Check out the list at each school to see which scheduled course you would like to take. I have attended classes at both Murray State and Trinidad State and have met many new friends at both places.

The instructors are willing to assist at any level from beginner to expert and many of the students are full time gunsmiths, so there is a great depth of knowledge available on any firearms-related subject. You will have breakfast, lunch, and dinner with your peers and plenty of chances to discuss your projects with experts. There are places close to Murray and Trinidad where you can camp if

you wish and both schools have low cost dorm rooms available. The dorms are modest but cheap.

You can also buy a low cost meal ticket for the week at the school cafe. The food is okay and will keep you in budget if you can not afford five star accommodations. I especially liked Trinidad as there are plenty of things to see in the area and it is cool in the summer. Some of us bought out of state fishing permits, which were inexpensive, and went trout fishing in Trinidad Lake at night. The lake is only a couple of miles from the school and is a beautiful place to fish.

We caught trout and then went back to the school and prepared them on the outside grill. Delicious! Having attended courses there I can personally recommend Murray or Trinidad. The other two schools, while certainly good, are too far away for me to attend. Regardless of facility, I suggest that you look

into attending these NRA gunsmithing short courses regardless of your level of expertise. You will expand your networking group and polish your existing skills while learning new ones.

I am lucky to own a very well equipped shop but many of the people attending these classes do so for the chance to use a fully equipped machine shop for those special projects that they don't have the equipment for in their own shop. So, for a vacation you will never forget, new friends, and a great learning experience, try the NRA summer gunsmithing classes. I hope to see you there! In addition to attending a formal course, a tour of a manufacturer's facility can also be educational.

My most recent tour was of the Shilen Rifle Company at their Sixth Annual Shilen Rifle swap meet and open house. This annual event is next scheduled in the spring of 2012.

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Held in Ennis, Texas, the Shilen Rifle Barrel swap meets are fantastic events and has become one of the items on my annual must-do list. Any gunsmith interested in learning more about how precision rifle barrels are made while having a great time in the process should get on the email list for this event. There is a swap meet, factory tour, free food and drinks, drawings for free or discounted items and discounted prices on barrels.

The Shilen team—Wade Hull, Mikel Shilen, Bill Hull, Jennifer Hull, Dave Robinson, Ed Shilen and all the other employees—roll out the red carpet for all visitors. The swap meet portion of the event allows anyone to set up a table or drop a tailgate in the parking lot to sell or trade gun and hunting related items, provided all state and federal laws are obeyed. There are no fees or costs for setting up and there are some great items, as well as many great gunsmiths to talk shop with.

I always make new friends and extend my professional network at this event. Then there is the factory tour! Factory tours start at 8 in the morning and run through 11 AM with a tour scheduled every hour. During these tours the machines are running. You will get to see a blank barrel drilled in a deep hole gun drilling machine. It is then moved to a barrel reaming machine to ream the barrel prior to the rifling process.

Shilen barrels are rifled using the button rifling process and you will see the barrel moved to the button rifling machine where

the carbide rifling button is pulled through the barrel to make the grooves and lands. Next, the barrel goes to the hand lapping area where it is lapped and inspected with borescopes and air gauges to ensure that it is in tolerance. If it meets all specifications it then moves to the chambering department.

If you have questions at any time during the tour the Shilen team will be happy to answer them. Tours continue in the afternoon but no machines run then. If you get hungry, plant, Ennis, Texas. The machine in the lower right is an engine lathe converted into a rifle barrel reaming machine.

Thanks to Shilen Rifles, Inc for allowing me to take this photo for publication. there is complementary chili, Frito pie and drinks (coffee, water, tea, etc.) If you plan on going to one of these events you need to RSVP so that they can plan how many people to feed. Also, if you plan to set up at the swap meet, let them know in advance. When you get to the Shilen factory don't forget to sign up for the drawings! Drawings are usually held every thirty minutes from 9 AM through 1:30 PM.

The drawings are for Shilen items including caps, T-shirts, triggers, barrels, and the like. Some items are free, others are for 50% off. Everyone has a chance to win so don't forget to sign up. Finally, there are the "Swap Meet Barrels." These are barrels where customers ordered a certain contour or caliber and then changed their mind and wanted something different. In the name of cus-

tomers service Shilen let the customer change their order and then placed the barrel back in stock.

At swap meet time these barrels are offered at discounted prices. All warranties apply, so these are not low quality or factory second barrels. So, with a swap meet, factory tours, free food, drawings for free items, discounted barrels, and a lot of really great people; what gunsmith would want to miss this event? If you live close enough, or can travel to Ennis, Texas, you will not regret the trip.

Call or email the good folks at Shilen (jennifer.hull@shilen.com) to get on their email list so you will be notified of next year's event. This is usually in the spring around early March. I hope to see you there. Note, I am not affiliated with the Shilen Rifle Company, I am just a satisfied customer. So, plan ahead for next year. Get on a manufacturer's email list and start planning what gunsmithing courses you would like to take.

Those classes and tours can fill up fast and some classes have awaiting list of people wanting to enroll before registration even begins. Call in advance to see if there is awaiting list. I hope that you take advantage of these opportunities to improve your skills and add to your network of gunsmithing friends. AG

HISTORY

Working The Webley “WG” Model Revolvers

Adopted by the British Army in 1887, the Webley WG is robust, dependable and was one of the best big bore military revolvers ever.

BY DAVID R. CHICOINE JANUARY 2012

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The famous British arms maker Webley and Scott, formerly known as P. Webley & Son before it merged with W & C Scott, manufactured a wide range of revolvers starting in the late 19th century and up into the 20th. Webley produced quite a number of solid-framed revolvers, mainly with short barrels—under four inches in length—that included the wellknown Webley RIC (for Royal Irish Constabulary) revolver.

Another oft-talked about Webley solid frame was the popular and much-copied British Bulldog; a tiny, five shot, .450 caliber revolver designed for self-defense. Their early top break models, such as the WG Army Model began to appear in the late 1870s and were officially adopted by the British in 1887. One of the outstanding features the WG offered was its topbreak open barrel with automatic, simultaneous extraction of the fired cartridge casings.

The WG was chambered to accept the .476 Enfield cartridge used by its predecessor, the .476 Enfield Mk II, as well as the newly designed .455 cartridge, hence the .455/.476 caliber designation that appears on their barrels. These were at the head of along line of what would become the most well known of the British military revolvers. They were big, simple, robust, long-lived and dependable, large caliber pistols.

Indeed, Webley-designed, top-break revolvers ended up serving the Commonwealth well through many colonial conflicts and two World Wars before finally being phased out in 1964! As you begin to work on the WG, please take the time to note the lovely simplicity of its action and the truly fine machine work used to produce these component parts. The author has worked on a good many WG revolvers over the years and in my humble opinion this is the most robust and dependable of all the 19th century revolvers.

One other thing about the WG. If you have ever fired blackpowder cartridges in other 19th century revolvers or, perhaps especially, their clones, you will appreciate the way Webley mounted the cylinder on this model. The WG sports an ingenious gas ring system that was used to prevent the filthy blackpowder gases from getting into the cylinder axis and fouling the weapon. That was, and is, a common problem with almost all blackpowder cartridge revolvers.

Almost no matter how dependable the gun was propellant ended up being the gun's weak point. After an undetermined number of shots the cylinders may seize up due to accumulated powder fouling gaining entrance into the cylinder axis points. When that occurs the shooter is left with little recourse other than to disassemble the cylinder so he can clean and lubricate the axis points before continuing with his shooting. This sort of ugly scene just never happens with a WG simply because it has, quite likely, the

WORKING THE WEBLEY "WG" MODEL REVOLVERS CONTINUED

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most effective rotational gas block system ever devised for a revolver. I know some folks like to make fun of British firearms design but there is no denying that they sure got this one right. Disassembling The WG Unload. As we would before beginning any work with a firearm, let's take steps to assure the revolver is unloaded. Hold the gun firmly by its grip, being careful not to touch the trigger (#9) while at the same time keeping the revolver pointed in what you have determined is a safe direction.

Now use your right thumb to push down on the barrel catch (#10). The thumb lever for the barrel catch is located on the left side of the frame, below and to the left of the hammer spur. While still holding the barrel catch down, push down on the front of the barrel using your other hand (#2), continue, allowing the barrel to swing open fully. As the barrel is in the process of

opening you Just push down on the barrel catch thumbpiece as shown here, then push the barrel open with your other hand.

Doing this exposes the rear of the cylinder allowing the shooter instant access to the chambers. will note the automatic extraction system will eject any ammunition and/or spent cases that might have been left in the cylinder chambers. For safety's sake, let's be careful and remove any live ammunition to a separate location while you are working on the firearm. Removing the cylinder. Leave the barrel in the open position.

Unscrew and remove the cylinder retaining screw (#16), this screw has a fairly large slot because it was designed to be loosened with a coin so any soldier could easily remove it for cleaning. The cylinder assembly (#5) is now free, it may be pulled straight

off from the rear of the barrel. Detailed disassembly instructions for the cylinder itself will be described below. Remove the barrel.

Unscrew and remove the barrel pivot screw (#31) from the left side of the hinge making careful note of its position for later assembly. Working from the left side of the hinge, use a small punch, push the barrel pivot pin (#29) out of the hinge from left to right. The barrel (#2) is now free and may be lifted up, out of the frame hinge.

You may now use a small pick to reach up into the barrel hinge area and pull down the extractor cam assembly (#17) being sure you take Take out the cylinder retaining screw, which is designed to be turned with a coin (a US nickel fits nicely) and pull the entire assembly off to the rear. Be careful when reinstalling to make sure the slot in the base pin faces "down" and that the base pin hole lines up with the holes in the barrel.

WORKING THE WEBLEY "WG" MODEL REVOLVERS CONTINUED

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Dismantle the action. Unscrew and remove the grip (stock) screw (#25) and lift off the stocks (#40, left and right.) Unscrew and remove the two sideplate screws (#1), holding the revolver by the front of the frame over a padded workbench, use a wooden or plastic mallet to strike the left side of the grip frame a few short, sharp blows. This will loosen the sideplate enough to allow it to be lifted up and out of the frame. Never attempt to pry off a sideplate as damage will ensue.

Always use the "shock method" with a wooden or plastic mallet instead. Loosen the mainspring retainer screw (#13a) so that its flat edge is turned to a position that will allow the mainspring (#13) to be removed. While maintaining downward pressure on the "V" of the mainspring, slowly pull the spring out to the side then allow the spring to naturally open. As you re-

move the spring, make note of its position and where the two legs are meant to bear for correct assembly later.

The mainspring lever (#12) may now be lifted up and out of its seat in the frame. Remove it by working it out to the rear and as usual, making a note of its position as you unhook it from the stirrup (#8) at the back. Take out its screw and lift off the catch. The barrel catch spring is held into a dowel hole in the recoil shield by tension. Removing the catch relieves the tension so the spring can be removed. of the trigger for correct reassembly later.

Pull the trigger (#9) to allow the hammer (#6) to rise while holding the trigger to the rear. The hammer can now be lifted up out of the frame off its pivot (#26.) Allow the trigger to move forward. Pay special attention now to the trigger assembly (#7, 9 and 11) and see how these parts engage each other. Hold the hand (#11) to the rear far enough so it can clear the edge of the

frame, then carefully lift the trigger assembly (#9) up off its stud (#26) in the frame and out of the gun.

The hand will come out with its spring (#39) which is attached to the hand and acts to tension both the hand and sear. The barrel catch screw (#27) may now be unscrewed and removed, allowing the barrel catch (#10) to be slid toward the rear and off the frame. Note, when reassembling the barrel catch (#10) to the frame, use a pair of needle nose pliers that you have padded with leather to partially compress the barrel catch spring. Hold it out of the way while you install the barrel catch and its screw.

The barrel catch spring (#14) is held into the frame by a small dowel the fits into a hole in the right-rear of the recoil shield on the frame, it may now be lifted out of the frame. If required, the butt swivel (#23) may be removed by first driving out its retaining pin (not shown) and pull-



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1 frame 2 barrel 4 extractor 5 cylinder 6 hammer 7 sear 8 stirrup 9 trigger 10 barrel catch 11 hand (pawl) 12 mainspring lever ing the butt swivel down and off of the frame. The cylinder stop (#37) is the only part still mounted in the frame. It may be removed by unscrewing the cylinder stop screw (#36). Once you have lifted out the cylinder stop, its spring (#38) may be lifted up and out of the frame. Disassemble the cylinder.

Insert six fired cartridge cases into the cyl- 13 main-spring 14 barrel catch spring 15 base pin 15a base pin retainer nut 16 cylinder retaining screw 17 extractor cam assembly 18 extractor cam pawl (not shown) 21 extractor spring 22 extractor cam pawl spring (not shown) 23 butt swivel 23a butt swivel pin inder for support. Hold the cylinder in a padded vise, unscrew and remove the extractor screw (#30) from the front of the extractor (#4).

The extractor spring (#21) is pulled out from the front while the extractor (#4) may be pulled out to the rear and removed from the cylinder.

Note, the witness mark (dot) on one leg of the extractor must be aligned with the witness mark on the rear face of the Webley "WG" Model Revolver (Specifications subject to change without notice) 25 stock screw 26 hammer or trigger pivot pin (2) 27 barrel catch screw 28 front sight 29 barrel pivot pin 31 barrel pivot screw 36 cylinder stop spring screw 37 cylinder stop 38 cylinder stop spring 39 sear/hand spring (not shown) 40 grips (stocks) cylinder for correct reassembly.

The base pin retainer nut (#15a) is a LEFT- HAND thread, meaning it unscrews in a clockwise direction viewed from the rear. Using a large blade screwdriver, unscrew and remove the base pin retainer nut (#15a) from the rear of the cylinder. The base pin itself (#15) may now be pushed out from front to rear. Reassemble the revolver in the reverse order. AG

MEASUREMENT & INSPECTION

Reader Forum

BY AMERICAN GUNSMITH EDITORS JANUARY 2012

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Browning Tap And Die I want to purchase the proper tap and die for a Browning A-5 12 gauge shotgun. What is the size and pitch of the side plate front and rear trigger screws? Gary Atnip Indianapolis, IN Since we do not know the age of the shotgun, now discontinued from further production, please call Browning-Winchester ask for customer service and have the SN of the gun at hand. Tanker Garands After reading Mr. J.

Frank's letter in the November 2011 issue of American Gunsmith I could not help but reflect back to my instructor, Robert Mitchell, who taught classes at Lassen College on accurizing the M-1 Garand/M-14 Rifle. A problem inherent in Tanker Garands is the lack of engineering behind the conversion. The op-rod was designed to function with a 24-inch barrel. When the barrel is shortened, the op-rod cannot be correspondingly shortened and expected to function as on the normal gun.

First, because of a shorter barrel, the closer proximity of the gas port causes the gas to act faster on the op-rod. This means unlocking happens faster. Second, pressure drops quicker since the gas is expelled faster from a shorter barrel. Third, besides the gas affecting the op-rod sooner, the lightened op-rod moves faster than the normal op-rod. All these combine to make the action faster in terms of unlocking, extracting, ejecting and reloading.

Fourth, the helix cut in the op-rod that engages the bolt lug and controls the movement of the bolt was engineered for a cer-

tain unlocking time. Daniel P. Horn Huron, SD Perhaps most important are the angles engineered into the op-rod by John Garand. They were not intended for faster operations and therein lies the crux of the problem. Mere shortening of the rod does not ensure that the gun will function or if it does function, with the same life span of a normal size gun.

Beretta addressed the issue on their shortened BM-59 by engineering anew rod that was somewhat straighter than longer M-1 Garand op-rod. Beretta may have engineered other changes (smaller gas port, different recoil spring strength, modifying the helix cut), but not having one available for examination, I am unsure about it. I'm sorry but I cannot offer any solutions other than to examine a Beretta op-rod and start from there. More great information from a knowledgeable reader. Mr.

Yee is the author of Sharpshooters (1750-1900): The Men, Their Guns, Their Story, a book that will be of interest to all American Gunsmith Association members. Bedding Military Rifles I collect bolt action military rifles, such as Enfields, Mausers, Lee Enfields, and the like. I keep the best originals for my collection and make shooters out of the rest of them. I would like to see a segment on the bedding of military rifles with the original stocks, handguards and bands intact.

Kirk Theetge Hornsby, TN Your collection sounds rather extensive and though they are all bolt actions they are not precisely the same. To try and address all of them

with a single segment would be inadequate in comparison to a series of articles, each addressing a specific model. Therefore, and in hope of at least partially satisfying your request while also serving all our reader's varied interests, we shall generalize. Firstly, the barreled action and stock must be separated.

In those areas where the receiver, rear tang and recoil lug will be contacting it, the wood must be removed to accommodate application of the bedding compound. Where box magazines are involved wood removal is often required. Thickness of the compound after application generally runs between 1/8 to 1/4 inches. The intent of the bedding is to eliminate, or at least minimize, movement of the receiver in both lateral and horizontal directions.

Before it has completely cured, bedding compound that has oozed out between the wood and metal can be cleaned off with common white vinegar. Barrel bedding offers a choice between full length and only bedded to a point just ahead of the barrel/receiver union. Gary Yee Regardless of choice, the barrel channel has to undergo wood removal accordingly.

The objective here is to dampen or eliminate as much as possible the phenomena of "sympathetic vibration." This is best duplicated by laying out a length of clothes line, grasping one end and not too gently attempting to crack the rope like a whip. The rolling af-

READER FORUM CONTINUED

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fect you see moving from the handheld end to the free end of the rope are an exaggeration of sympathetic barrel vibrations. Some gunsmiths and owners believe these accuracyaffecting vibrations are best reduced with a full-length bedded and floating barrel. The thickness of a business card existing between the barrel and the bedding can accomplish this but a “pressure point” near the muzzle may also be desired.

Usually, this means applying as little as five pounds upward pressure on the front end of the barrel during the curing process. In many cases, pressure can be applied by installing a threaded nylon bushing in the stock just aft of the front sight, hanging a five pound weight on the muzzle and turning in the bushing until the barrel is dead level between receiver union and muzzle.

The free use of release agent on all metal surfaces is mandatory to avoid a permanent union between the stock and barreled action after curing. Canned automobile wax serves well for this purpose. Finally. You must realize any alteration to the original condition of any military rifle lessens its collector value, often considerably. CZ 82 Trigger I’m having single action trigger problems with a CZ 82. It ranges from a perfect pull, to a hammer release only to be caught the double action sear. This happens randomly.

The kicker is, the problem goes away if the pistol is held on its right or left side. I can only deduce the problem is that either the trigger spring (pin 15) or the sear spring (pin 30), as per the article in your April 2008 issue, is weak as I can see no mechanical wear and the gun is as clean as I can get it. Before disassembly of the “rats nest” of parts, I would like your opinion and the source and availability of pare parts. Ronald D. Roalson You may be having a problem no one else has experienced.

We’re on pretty safe ground in making that statement. The lead technician of the current and past importer of the pistol had never heard of this problem and went so

far as to query all his factory service staff. Like him, they had not heard of it either. We’ve drawn a blank here but are still willing to offer an educated guess. Something as yet unknown is terribly loose, or installed incorrectly, and is somehow falling into place when the pistol is extended in a sideways attitude.

We doubt it is caused by wear but you can’t actually see wear in a spring so that remains a possibility. The models CZ 82 and 83 were covered in our April 2008 issue. They are of different caliber but mechanically identical. Reprints should still be available (americangunsmith.wordpress.com/back-issues) We suggest you completely disassemble and reassemble your pistol as described in the article and fear not the “rats nest.” Just don’t rush it, catalog parts, and take pictures and notes as needed.

As for parts, CZ-USA and Century International Arms are likely to be your best bets. Striking out there will mean you’re facing a search in the aftermarket. Remington 1100 An ancient 1100 came in to my shop with a metal snap ring gas seal on the magazine tube. The tube has a groove for the seal ring. Is it possible for a standard O-ring to be used? Also, the lifter is weak. Can I get away with just replacing it with anew style lifter?

James Aebersold Saint Clair, MN Have the serial number handy when you call Remington Customer Service. We’re a bit uncomfortable about the O-ring substitute in that it might not be substantial enough to replace a metal gas seal. The present company, now part of Freedom Arms Group, may not be able to provide a replacement for the “ancient” 1100. If that is the case, Numrich Gun Parts Corporation Jack First or Nu Line Guns might supply one.

As for the lifter, our gut feeling is that the new style lifter won’t interchange with your old timer but check this out with Remington as well. AG

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