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DIGITAL ARCHIVE EDITION

PRECISION ARMS WORKSHOP

AND THE AMERICAN GUNSMITH ARCHIVE

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ARCHIVE ISSUE NUMBER

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A PRIMER ON AR-15 PROBLEMS

JOHN M. BROWNING DAY · DISASSEMBLY/REASSEMBLY OF THE STEYR AUG BULLPUP, PART 2 · BUILDING A CUSTOM M…

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AMERICAN GUNSMITH

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PEOPLE & COMPANIES

John M. Browning Day

BY AMERICAN GUNSMITH EDITORS MARCH 2011 ORIGINAL PP. 2

In recognition of his lasting contributions to the development of firearm design and the military defense of the United States, the Utah State Legislature officially designated January 24, 2011 as John M. Browning Day. A native of Ogden, Utah, John M. Browning is widely considered the world's greatest firearms designer, and many of his gun designs remain popular around the globe to this day. The official commemoration took place on January 24th at the Utah State Capitol Rotunda in Salt Lake City.

Activities throughout the day included a display of many rare, historic and unique Browning firearms and modern military aircraft. Utah Governor Gary Herbert made a formal presentation of the resolution to Christopher Browning, the great grandson of John M. Browning, at the noon ceremony on the capitol steps followed by a fly-by of F16 fighters from Hill Air Force Base in Ogden. Still on the agenda for the Utah State Legislature's 2011 session is a resolution by Rep.

Carl Wimmer (R-Salt Lake) designating the Browning-designed 1911 pistol as the Official Utah State Firearm. 2011 represents the 100th anniversary of the adoption of Browning's 1911 .45 caliber automatic pistol by the US Army. After a full century of service this pistol design remains in active military use with US special operations forces and is more popular than ever among civilians, gun collectors, competitive shooters and law enforcement officers. Amen! Free Money For Shooting Ranges!

The National Shooting Sports Foundation has awarded grants totaling $231,796 to nine shooting facilities through its Range Partnership Grant Program.

New marketing strategies designed to motivate individuals, particularly youth and inactive shooters, to participate in organized shooting events dominated this year's winning proposals. "With target shooting participation at a record high, this is the perfect time to encourage millions of active shooters to share their passion for our sports with a youngster or adult newcomer," said Steve Sanetti, president of NSSF, trade association for the firearms industry. "Shooting ranges serve as learning and training centers for our sports and these grants help ranges remind people in their communities that they can get a supervised, safe introduction to shooting close to home." Said Melissa Schilling, NSSF's manager of recruitment and retention, "We've seen how successful these grants can be in fueling growth at shooting ranges around the country.

More people are interested in shooting than ever before, and the proposals NSSF has funded remind them to give shooting a try." Through independently conducted research and polling, the NSSF has found the 40 million Americans would attend an organized shooting event if invited and 40 percent of those who attend an event return for more.

SAFETY & COMPLIANCE

Disassembly/Reassembly of the Steyr AUG Bullpup, Part 2

A look at Austria's famed military rifl e. Getting further into and maintaining the trigger mechanism group of this Austrian-built, military bullpup-style rifl e.

BY CHICK BLOOD MARCH 2011 ORIGINAL PP. 3-5

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For those of you who have read the first part of this article on the Steyr AUG, and even those who haven't, I'll start with a warning. When initially stripping down an A3 leave the safety on. Otherwise, you might inadvertently pull the trigger and release the hammer forward. Do so, and you can begin forgetting about removing the trigger group from its home in the butt stock. The hammer is under pressure from two springs, one on each side, and both are very strong.

Groping into the butt with a hook of some sort and latching on to the hammer in an attempt to recock it is unlikely to be successful. The rifle will have to be reassembled to a point where you can manually cock the bolt. This will put plenty of leverage to work for you in resetting the hammer. All this frue-frue can be avoided if the safety remains engaged to block the trigger and sear. The sear, by the way, doesn't resemble any part of the same name and function you've likely seen before.

My Abest analogy is that it looks more like a fairly long, two-tine table fork made from drill rod. Before adding more information on the sear, the trigger mechanism itself merits further discussion. The trigger is a "pull through" system, similar to the Glock "Safe Action" system. The accompanying diagram shows the trigger mechanism at full cock with the sear engaging the hammer and the drop safety activated.

Should the rifle be dropped muzzle downward while cocked, this safety (16) rotates forward to block the trigger group slide (8). After it has done its job, the safety returns to its original position. Moving right along, I'm assuming you'll have no problem removing the trigger group from the butt once the hammer was released. Press down on the cocked hammer (5) and separate the slide (8) from the assembly. There are two identical mechanism pins (9). A 4mm drift is used to push them out right to left.

The rearmost pin is the first but don't push it all the way through the mechanism body (1). B Only go far enough to withdraw the bolt retaining lock (12). Apply the drift to the front mechanism pin and push it clear out of the body. This accesses the trigger spring (13) and disconnector lever pin (11) for removal. Return to the rearmost mechanism pin. Push it out the rest of the way to remove the drop safety and its spring. Drift out the hammer pin (15).

Remove the hammer with its right spring (6) and left spring (7) attached. After memorizing how the springs and hammer are united remove the springs. Don't get them mixed up. The right side spring can't be made to reinstall on the left side of the hammer. The same is true of the left hand spring and the right side of the hammer. Oh, I suppose these springs could be bruteforced into submission but if they were the entire trigger group would be useless. Let's try to do things the way the Austrians intended.

The hold open catch (2) is located at the extreme rear of the trigger group. It has two holes in it. The lower one opens to a slot. Working from inside the body, use a 2mm diameter drift to push out the catch pin (4) from the upper hole. What's in the lower hole, the one with the slot, is the coupling pin (17). Lift up on the hold open The sear (A) has engaged the hammer and the drop safety (B) is active.

Should the rifle be dropped muzzle downward while cocked this safety rotates forward to block the trigger group slide.

catch until the coupling pin pops out far enough to align with the slot then slide the pin down and out of the trigger group. Remove the catch and its spring (3) as a unit. Separate the two components. Make A Reassembly Tool Your primary material can be a fl at of cold-rolled steel. I prefer a fl at of Aluminum for easier machining. You could also use rounds but sooner than later you'd have to solder or spot weld a spacer between them.

The Steyr factory assemblers employ what they calla "fit up" aid for hammer installation. You're about In this position tighten the trigger screw (2) and trigger washer (3). to build your own because they are not available outside the factory. It would be great if they were but since they aren't I'll simply state that reinstallation of the AUG A3 hammer without one can generate a massive migraine.

Though he couldn't, or wasn't allowed, to provide exact dimensions I could pass along, Steyr's top domestic gunsmith told me the tool resembled a tuning fork. Each of the open ends on the tool has a single hole center drilled in it slightly larger than the diameter of the hammer springs and about 1/8" deeper than their straight leg. Once drilled, the "fork" has to fit up into the body through the two rectangular openings at its bottom.

If round stock is your choice of base material, this is where the previously mentioned spacer comes in. It must be wide enough to allow easy passage into and upward through the rectangles while serving as a handle for the open end of the tool. Flat stock would require a slot to be machined out between the fork tines. The question likely to be arising at this time Start with the rearmost pin (A) don't push it completely out. Remove the front pin (B) to access the trigger spring (C) and the disconnect lever (D).

is, "Where should I drill the holes in the two fork tines?" Here is the answer. With the springs mounted on the hammer, measure the distance, center to center, between them. Transfer this to the upper ends of the fit up tool. The next question likely is, "How is the tool used to reinstall the hammer?" The springs are on the hammer with the long leg of each spring corresponding to its hammer recess. Insert the tool into and upward through the rectangular body slots.

Capture the shorter spring legs in the tool holes you drilled for them. Maintain contact as you position the hammer with its cartridge impact end upward. Continue the contact as you slide the hammer down into the body.

Align the hammer pin holes, install the pin and withdraw the tool. 1 BODY, TRIGGER MECHANISM A3 SA 2 CATCH HOLDING OPEN A3 3 SPRING, CATCH HOLDING OPEN 4 PIN, CATCH HOLDING OPEN 5 HAMMER SA 6 SPRING SA, HAMMER RIGHT Improved Trigger Pull As you have seen in the diagrams here, the sear engages the hammer. While the sear is made of metal, as you would expect, the hammer, however, is constructed of a polymer material. There is the rub, so to speak.

You can carefully polish the sear engagement angles and its nose but that is it. Period. To remove the sear for the polish job, and maybe to add a drop or two of molybdenum disulfied-laced hydraulic fluid afterwards, use a size three hex wrench and a set of smooth jaw parallel pliers, available from Brownells, of course.

Referring back to the diagram on trigger fitting procedure on the bottom of page 4, back off the trigger screw (2) and pull the sear (6) from the butt subassembly (1) with the pliers. 7 SPRING SA, HAMMER LEFT 8 SLIDE, TRIGGER MECHANISM 9 PIN, TRIGGER MECHANISM 10 LEVER SA, DISCONNECT 11 PIN LEVER DISCONNECT 12 LOCK, BOLT RETAINING Sear Adjustment The clearance between the trigger (4) and the butt subassembly should be checked and adjusted if necessary.

Insert the trigger into the butt assembly and install the sear from the rear of the butt. Push it forward until it stops. Install the cocked trigger mechanism and secure it with its retaining pin. Slide the sear back until it rests against the trigger mechanism guide but does not release the hammer. Tighten the trigger screw and washer (3). Combining Parts I and II, you should be able to maintain all AUG A3 Bullpups that come your way. I suggest you hang on to your fit up tool.

There are sure to be a goodly group of gun owners who fancy the idea of a lightweight, quick-handling short rifle that puts out long barrel rifle performance. AG Steyr AUG Trigger Group (Speci cations subject to change without notice) 13 SPRING, TRIGGER 14 BOLT RETAINING, SUB-ASSY. 15 PIN, HAMMER 16 DROP·SAFETY, SUB-ASSY. 17 COUPLING PIN A3

RIFLES

Building a Custom Mauser, Part One

Once commonly available (and cheap!) as surplus, Mausers were routinely used in sporterization and customization projects. With a little prudent selection they are still good actions to build upon.

BY WENDELL DEANER MARCH 2011 ORIGINAL PP. 6-9

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The 1950s and '60s was the heyday of military rifle sporterizing. Thousands, if not hundreds of thousands, of rifles were brought into this country after World War Two. Model 98-style Mausers manufactured in various factories in various countries flooded the American market. As I remember back then, in those pre-1968 Gun Control Act days, these rifles could be purchased for less than twenty five dollars and ordered through the US mail!

The guns ranged from pristine prewar examples to slave-labor built weapons that may have been safer to stand in front of than fi re. In addition, many other countries bought surplus rifles to be refurbished and stockpiled for their own troops' use. South American countries ordered a vast amount of Mauser rifles in what we Americans might think of as odd calibers and configurations.

The different models, calibers, and specifications of these rifles are worth a book unto themselves and several have, in fact, been written. All this is an indication that prudence should be exercised when selecting a rifle to sporterize. Most of the tools, parts, and how-to information available today centers around the large ring 98 action. There are shorter and longer Mauser actions with large and small receiver rings and different length barrel shanks.

For our purposes we will use a standard 98k large-ring Mauser action as the basis of our project. Afi nished custom 98 Mauser (top) and an unaltered military model. One other thing worth mentioning is that since millions and millions of these rifles have been produced in one form or another (some estimates put the total at approximately one hundred million), collectors have a legitimate claim on good specimens.

I think if you have a Mauser rifle with matching numbers on the bolt, action, etc., you should not touch it without first checking its collector status. This goes for any Mauser model — 93,95,96 and 98. The action on the rifle used in these articles was purchased by the Yugoslavian government for their use. It was then imported into this country when they released a large number of them. The Yugoslavs ground off the German markings and stamped the Yugo Communist torch and star on top of the front receiver ring.

The Preduzece 44 armory number was stamped on the left side along with "Mod.98". The serial number is on the other side of the receiver ring. Bolt numbers and action numbers did not match. These guns have no collector value and area little rough but are good candidates for building a hunting rifle. Like all large ring Mauser actions, this one had a 1 3/8-inch (1.4") diameter front receiver ring. The actions screw holes are 7 5/8-inches (7.83") center-to-center.

If your action measures anything else the difficulty and expense involved in customizing it could far exceed the value of the finished rifle.

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The PREDUCE 44 stamped on this model 98 Mauser action indicates that it was imported in a huge lot from Yugoslavia and has no collector value. It will is a good base for work and will make afine shooter. Everything needs to be degreased and a little polish here and there. Some can be modifi ed or replaced. All can be used as is depending on the gunsmith's preference. A little filing and a little grinding, can make a big difference. What is the difference between sporterizing and customizing?

Afi ne line at times as one man's sporter is another man's custom. This process ranges from removing a little excess wood and declaring it good to go, to starting with a bare action and the sky is the limit. For our purposes sporterizing will be transforming a military rifle into a usable hunting tool using components that are available today.

This series of articles is for the gunsmith, amateur or professional, who wants to learn and understands that the costs involved, including tools and time, would be more economically spent hiring the services of a gunsmith rather than taking on this task if they are only interested in having one rifle. It is also for the shooter that really desires a hunting rifle built from a surplus Mauser they can be proud of. Also, and perhaps most importantly, any cats that I skin here are going to be done my way.

I hope all of you can pick up some tips and techniques that you can add to your own repertoire when working these wonderful rifles. We will instruct how to transform a full-stocked military rifle into aus- It comes with walnut blocks sized for different barrels and a blank that can be fitted to whatever barrel you are working on. It must be fastened to a dead-solid bench.. Unfortunately the barrel vise shown is no longer available, although another, again from Brownells, is stocked in their catalog.

No matter what you've been told a pipe wrench has no place in rifle disassembly. able hunting rifle the sportsman or woman can take afield knowing it is safe and functional. Building a rifle like this will be more expensive than buying a commercial rifle from a major manufacturer, but the gunsmith will be in charge as to how much or

None of them are toxic and all can be used in the shop. The gloves can help to ward away hot sparks and eye protection is mandatory. Do not get impatient and try to hurry this process or you will heat the action to the point where it may need heat treatment to repair its integrity. This step is only necessary when using Weaver-type scope mounts. how little custom features such as stock, good wood, checkering, bedding, barrel contour, finish, caliber, sights, etc. are used or modifi ed.

Let's get started by assuming you have selected the proper type of rifle and are ready to begin taking it apart. There is no sense in spending time detailing how to take the stock off this rifle. It is very straight forward. A few barrel bands, a couple of screws, etc., and the wood is off leaving us with the barreled action and its components.

What we want to keep is the action, the bolt release lever and its pointed retainer screw, the magazine spring, follower and magazine box, as well as the floor plate and action screws along and the complete bolt. Keep the old main stock for now, but the rest of the parts may be relegated to the trash bin or another project. The first step is separating the action from the barrel.

I have actually read in another magazine that a good way to do this is clamp the bare barrel in a vise and use a large pipe wrench to twist off the action. I suppose the writer assumed that after chewing up and cracking a half-dozen actions one might be left with one that was still suitable. We will use barrel and action wrenches that are specifically made for this purpose. These tools are not cheap, nor should they be. They are sturdy and will last forever given proper care.

Brownells and Midway USA have several barrel vises available and all will work as advertised. The one we will use was manufactured by B-Square, but apparently it has been discontinued. That is a shame as it was inexpensive and worked well. It has an aluminum insert to fitour barrel that goes in a steel holder that tightens on the barrel just behind the rear sight.

Since the insert cannot be brought over the rear sight, the barrel is cut off with a hacksaw — 16 to 18 teeth per inch are fine — leaving several inches in front of the chamber intact. A large, heavy action wrench, also available from Brownells, which fits the contours of the action perfectly is clamped onto the action. Note these wrenches have a bottom piece specifi c for large and small-ring actions. The barrel will be held stationary as the action is turned off.

Now, guess what happens when one piece of steel is screwed into another and left to sit somewhere for sixty years? That's right! They can become very tight, almost as if they were welded together. So who ya gonna call? I turn to my old, cheap friend Liquid Wrench and another product from Lawson Products Inc. called Non-Flammable Penetrating oil which is available in 15 ounce spray cans.

Using a homemade holder consisting of two-inch PVC pipe capped on one end and cut long enough, the action end with the barrel stub is dropped into a few inches of Liquid Wrench and left there, sometimes for as long as three weeks. Every day we pull it out and spray some Lawson's on the joint. You can actually see the joint suck this stuff up as it foams.

When the time comes to break the action from the barrel stub you will hear a smart click as the first bond is broken then the action should turn out easily as sending a canoe downstream. The threads will be wet if the penetrating oils have done their job. The first barreled action I ever broke down was with the aid of a handy little barrel vise available from Midway USA. It consists of a wood insert to hold the barrel that fits inside a large clamping device that attaches to a solid bench.

Two large bolts allow the clamp to be very tight and once that beautiful "click" sound of the initial break is heard it works very well. Some serious elbow grease is needed to get this vise tight enough to hold the barrel securely and finding

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Above and something solid enough to mount it on is another challenge. Another tool I have found that I now use exclusively in my shop for this purpose is a floor-standing twelve-ton hydraulic press. This press is still available from a company called Enco and I highly recommend acquiring one. I have two of them, one for my gun shop and one for the garage. They really are inexpensive for what you get.

Brownells has a small hydraulic press for the same use and I have seen homemade barrel holders that seem to work perfectly as well. Take your pick. The barrel stub is locked in the barrel vise. I usually sprinkle a little rosin — available inexpensively at any music store — on the inside of the insert and the vise. It may not be necessary but it helps my confidence. With this accomplished the vise is centered in the hydraulic press. Pressure is applied by pumping the handle until the vise is held good and tight.

Be careful not to apply too much pressure or you can actually damage the vise or the press. This thing is powerful! Keep tightening the bolts as the press gives more leeway until either they cannot be tightened anymore or the vise has bottomed out. The action wrench is attached to the action and a large cheater bar in the form of a thirty-inch length of 1 1/4-inch galvanized pipe is slipped over the wrench handle to give it more torque. You can't beat a cheat!

The weight of the press is usually enough to hold everything securely as you break the action away from the barrel. Once this is done the rest is just easily turning the action off the barrel. After you have the action in your hand, inspect it thoroughly. Look for any hairline cracks, problems with the locking lug area, straightness, etc. Is this action worth the time and expense of converting it? If your answer is yes, let us proceed. There are several steps I use when starting with a bare action.

Which step to take first is not carved in stone, but I would recommend that you have afirm idea of exactly what you want to do with this action. Creating a list is not a bad idea. Here's mine. First, decide what scope mounts you want to use, such as a one piece or Weaver type. I like both but usually use Weaver bases as they are strong, light, and inexpensive. I have used them on rifles chambered in .375 H&H Magnum with no problems.

One downside is that Weaver rings require grinding off the top of the back receiver ring to fit them and an extra hole must be drilled and tapped. Go slow here and do not heat up the action unnecessarily. Stop when you are almost to the point where the mounts will fit and then finish up by hand using fi les and abrasive paper. The first time you start whacking away on an action like this can be intimidating because if you screw up the action goes in the trash.

Just go slow, follow the original contours, and check your progress often. It's not as difficult as it seems. Note that Number 46 Weavers are used as a front base and Number 45s are used for the rear. Next, after you decide on your mounts, the next step can be to polish the action and do what we can to improve the cosmetics. You will need some way to hold the action as you work it. My article in the May 2010 issue of American Gunsmith "Building a Mauser Holding Fixture" would be helpful reading in this regard.

A commercial holding fixture is available from Brownells. (Continued on page 22)

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Remember, this rifle may have been dragged across half the battlefi elds of Europe, so it's bound to have a few scratches and dings, not all of which we can get rid of. I suppose a few scars here and there give the piece some character. Usually these actions are cosmetically challenged as they came from the wartime manufacturing process. Speed not beauty was essential at that time and doing the best I can to transform these actions into something that will not break a mirror has become an art form with me.

Hours can be spent on one small nick. For me, this takes up more time than any other step, but there comes a point to just step away and stop when you are satisfi ed with the result. Polishing metal is the province of another article and I recommend various treatises on the subject by numerous authors. There is no substitute for experience in this area, so go to it. Just remember to try and keep all corners sharp.

One of the axioms of metal polishing is to maintain the original polishing lines as they came from the manufacturer on the finished piece. Sometimes these old actions are so rough I don't believe it matters. Metal polishing is accomplished by going in one direction then changing 90 degrees and sanding out the lines of the previous polish. Plan your polishing by grit to achieve the directions in which you want to finish.

I usually finish around the tops of the receivers and lengthwise on the sides and it seems to work out OK using that rule of thumb. Use abrasive wet and dry paper available from any auto supply store. Start with 120 or 180 grit and finish up to around 220-320. Any fi ner than that and I find that the cold bluing we will use later won't want to adhere as well as on a rougher surface.

Always use a sanding block, not to mention a little ingenuity using dowels, rubber erasers, or custom cut blocks to get into some of the crevices you will encounter. Backing the paper with duct tape before cutting it to shape will greatly increase its working life. Some really rough places, such as the bottom outside rails, may need the services of a sanding drum on a Dremel tool to start.

Like I said, this is probably the most time-intensive part of the whole operation so a little power won't hurt as long as you do a good job, however I've found high-powered grinding wheels and polishing cards to be more power than I need. These "down and dirty" approaches will speed up the process but they can dish out serial numbers and generally won't do the kind of job you can necessarily be proud of. Next time we will continue to work our Mauser 98 action until we're ready to rebarrel. AG

HISTORY

Removing Pinned And Welded Muzzle Devices With Basic Tools

Have a muzzle device you need gone? Here is a simple process for gunsmiths who lack access to a mill or lathe.

BY STEVE ADELMANN MARCH 2011 ORIGINAL PP. 10-14

Most gun enthusiasts remember the dark days of the early 1990s, when bills such as the "Violent Crime Control and Law Enforcement Act of 1994", better known as the Assault Weapons Ban were passed into law.

Fortunately, a large chunk of the AWB's nonsensical provisions were sunset into the pages of history in 2004, however, one remnant of the AWB left many semi-automatic rifles, ARs in particular, floating around with muzzle brakes and flash suppressors (hereafter referred to jointly as muzzle devices) that have been pinned and welded in place, as per BATFE regulations. Recently I've had several customers bring ARstyle rifles in for work that required the removal of such muzzle devices.

Since my mill and lathe still reside in a friend's warehouse several states away, removing these devices with basic tools was my only option short of replacing otherwise good barrels altogether. The most common job requiring the removal of an AR's muzzle device is free floating the barrel with a fully-round free float tube. Second to that is swapping a standard front sight assembly (FSA) with a lower profile gas block.

In most cases, either action requires the FSA or gas block to be removed from the barrel via the muzzle. Removing a pinned and welded muzzle device with an end mill is pretty straightforward but when heavy equipment is not available, basic hand tools, a high speed rotary cutter and some patience are all that are needed to accomplish this task. Parkerized muzzle devices normally show a contrasted spot at the pin location due to the different device and weld metals.

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If pins are not directly opposite, only one can be used to locate a cut. The most common BATFE-approved method of pinning and welding a muzzle device requires drilling through the rear portion of the device into the threaded portion of the muzzle. Short sections of steel rod are interference fit into the holes and welded over. The welds are then fi led, ground or milled down to match the muzzle device's outer profile. Finally, the muzzle device is refinished.

The pins used in this method will destroy muzzle threads if force is used to break the muzzle device free while unscrewing it, as more than one AR owner has learned the hard way. A word of caution before proceeding. Consult all applicable local and state laws before removing a pinned and welded muzzle device. Some states may have provisions in their laws that prohibit removable muzzle brakes/flash suppressors or threaded muzzles.

You should also determine whether or not you have a short barreled rifle (SBR) as defined under the National Firearms Act of 1934. Under NFA rules, a barrel that is less than sixteen inches or an overall rifle length of less than twenty six inches places along gun into the SBR category and must be registered as such, unless a muzzle device is permanently attached to bring the rifle In this case I've cut away the section of the device that was in line with my cut location.

While you could also leave this section intact and extend your cut line the full length of the muzzle device, Ifi nd this method is faster and prolongs the life of the cutoff wheel. In this example I was working my way down to 11/64", with a marking at 10/64" to warn me that I'm getting close. to greater than these mandated SBR lengths.

If your customer brought you a registered SBR, BATFE guidelines should allow you to perform routine gunsmith services on it but you must be aware of the appropriate regulations and stay in compliance with all NFA rules. In the event the rifle has a barrel shorter than sixteen inches and a pinned/welded

REMOVING PINNED AND WELDED MUZZLE DEVICES WITH BASIC TOOLS CONTINUED ORIGINAL PAGE 12

brake that brings barrel length to over that, unless you have a Class II Special Occupational Tax stamp allowing you to manufacture NFA firearms, you'll either need to replace the muzzle device with another that brings the barrel to a legal length or replace the barrel assembly with a longer one. Identifi cation Job number one when preparing to remove a muzzle device is to determine whether or not it was pinned and welded in the first place. Several indicators help this process.

If the rifle is a semi-auto with a removable magazine and is known to have been sold during the 1994 to 2004 AWB window, there is a good chance the muzzle device is pinned and welded. If the carbine is not registered as an NFA firearm and the barrel is shorter than sixteen inches without the muzzle device's length figured in, the muzzle device brings length to a full sixteen inches it should be pinned and welded.

If I suspect a pinned and welded job I move on to visual inspection using a good light looking for the telltale circular discoloration that normally indicates such a job. They're most often encountered on the opposite sides of a muzzle device but occasionally I come across single pinned devices. I Cut carefully to avoid contact with the barrel once through the baffle. use the same process for a single or double pinned muzzle device.

If you see no visual indications of pins or welds, apply heat to the muzzle device to loosen up any thread locking compound before carefully trying to loosen it. If it won't budge after applying moderate loosening pressure, stop. Unless you plan to scrap and replace the barrel, proceed with caution until you confirm or deny whether or not the muzzle device is pinned and welded.

You not only stand to damage barrel threads but excessive torque on a pinned and welded muzzle device could result in damage to the aluminum upper receiver caused by the barrel extension's steel index pin breaking free of the index pin slot. Starting Points Once a pinned and welded job is confirmed, I use a combination of

Once the crack is visible, no further cutting is necessary and it's relatively easy to split the device away. The crush washer just to the rear of the muzzle device provided a buffer for the cutoff wheel, preventing barrel damage. tools to split the muzzle device into halves by cutting down close to the barrel's muzzle threads from both sides. I use the pin locations as my guide to begin cutting.

I've found that locating just off one side of each pin allows the cuts to free the muzzle device from the pins once enough metal has been cut away. Muzzle devices with two pins tend to be pinned on opposite sides which facilitates removal nicely. If your cuts don't directly oppose each other, unequal pieces of the muzzle device will be cut.

The smaller of the two will fall away easily once cut through, while the larger piece may still encircle enough of the barrel threads that it cannot be removed without another complete cut to further section it. That will add another 1/3 to your labor time. The Cuts Before beginning my cuts I position the barrel in a padded vice horizontally so that the muzzle device is as close to the vice as possible. This position helps stabilize the barrel for later steps.

I've found that a rotary tool with a reinforced cutoff wheel such as Dremel's #426 wheel effectively cuts a line parallel to the muzzle device's long axis. Before starting, I measure the muzzle device's outside diameter at the point where I plan to make my cuts. I subtract from that number the average OD of that type of threaded barrel and divide the difference by two. This is my depth of cut to reach the threads. For example, most .223 Remington/5.56 NATO AR muzzles are threaded ½-28 threads per inch.

Measuring several threaded muzzles gives me a range of 0.495 to 0.498-inches. A smaller OD at the threaded muzzle means more metal has to be cut away so I use the lower OD measurement of 0.495 in order to err to the safe side. For example, a recent muzzle device calculation had a muzzle device OD of 0.847 and a threaded muzzle OD of 0.495. Subtracting 0.495 from 0.847 yields 0.352 inches, which is the total cut depth of both sides added together.

Dividing 0.352 in half gives a 0.176-inch depth of cut to reach the threaded muzzle on each side. I subtracted an additional 0.005 for a cut depth of 0.171 on each side to add in a larger margin for error since these cuts are being made with a rotary tool. Obviously this is not precision work. All of the error margins stack up to require more effort in the next step but that's far preferable to finishing removal only to find a longitudinal cut across the barrel's threads.

I use a steel six-inch rule to measure depth periodically as I make cuts. I've found that cutting approximately half the depth on one side before beginning the cut on the opposite side, and then alternating between the two, works best. Most muzzle devices have a sort of ring in front of the muzzle just forward of the threads that serves as a baffle to aid in braking. This baffle needs to be cut through on both sides to allow the muzzle device to be split.

Since a cutoff wheel will often get too close to the actual muzzle and crown when cutting through this baffle, once I'm close I reposition the muzzle device so that it's held vertically in a padded vice and switch to a hacksaw. If your rotary

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The drilled channel the pin was inserted can be seen on top of the barrel threads in this photo. cuts are directly opposing, the hacksaw blade will glide nicely through both sides of the slot you're created. Slowly cut until you breach this ring of steel. Once through, I return the barrel to a horizontal position and complete my cuts on either side to the required depth. My goal is to get to that 0.005 buffer I built into my depth calculation.

The rear portion of the muzzle device closest to the step in the barrel's OD will be diffi cult to cut to full depth because of the cutoff wheel's semi-circular cut profile. You'll likely be several thousandths shy of full depth in this area. If a crush washer or other thick spacer was used to time the muzzle device you'll have a small safety buffer to keep from cutting into the barrel step. Cracking the Nut Once the cuts are at their required depth the goal is so split the muzzle device away in halves.

I use a large fl at-blade screwdriver — the wedge-shaped carpenter's type, not a hollow ground gunsmith's bit — with a small hammer and nail puller to crack the muzzle device, literally. This is done by methodically working on each cut with the nail puller and hammer, while incrementally driving the fl at-blade driver into the front of the muzzle device along each cut in turn, working from front to back. I work on one side, then rotate the barrel 180 degrees and work on the other side, repeating as necessary.

This is where adequate barrel support is a must since you'll be lightly hammering the tool into each cut as you attempt to overstress the muzzle device. Depending on the type of muzzle device being removed I sometimes find it easier if I peel it back like a banana from the front. This helps stress the muzzle device within the cuts so that they eventually crack. Once I see a crack form at the bottom of either cut, I know I'm on the downhill stretch.

I'll next attempt to work the opposite side to force a crack there as well. It is not critical to have cracks within both cuts but it will help. Once cracks are evident, I no longer drive any tools towards the muzzle. To prevent damage to the barrel I pry the two halves of the muzzle device apart until they pop off. Most often, one side will fall away and the other will need to be gently tapped off due to the pins continuing to hold it in place.

Be very careful not to allow contact between any tools and the barrel at any time. Being too aggressive on any one step can result in severe damage to the threads or crown. Clean Up If you use caution in the removal process, the only reminder of the pins and welds will be the holes drilled into either side of the threaded muzzle.

After cleaning off several years worth of carbon and thread locking compounds, I chase the threads with a ½-28 die, check the condition of the crown, re-cut if necessary and proceed with the rest of my work. Removing a muzzle device with simple hand tools is not a difficult process as long as you take the time to do it right. Salvaging an otherwise good barrel is well worth the effort and saves your customers undue cost. In the end, everyone is happy.

Steve Adelmann is a retired Special Operations Soldier and 21 year veteran of the US Army. He owns Rifleman Consulting, LLC & Citizen Arms, writing and building custom rifles for freedom loving Americans. Go to rifl emanconsulting.-com or citizenarms.com for more information. Sources: BATFE-Firearms Enforcement atf.gov Dremel dremel.com AG

RIFLES

A Primer On AR-15 Problems

Despite decades-old war stories, AR-15 rifles are rugged and reliable. However, not all ARs are created equal and even the best can have their moments.

BY ROBERT K. CAMPBELL MARCH 2011 ORIGINAL PP. 15-18

During the past decade I have dealt extensively with AR 15 type rifles. With a son in the military and my experience with patrol rifles, I have collected quite a body of information on the subject. In fact, one of my abstracts is cataloged by the National Institute of Justice. Even the occasional AR-10 and Magnum types have crossed my bench.

Having wrestled with the sea stories and myths, I have found the AR-15 to be a reliable system, but we must begin our quest for knowledge with the fact that not all ARs are created equal. For starters, parts guns in particular are suspect. Some do not have properly heat treated components and others may not have properly staked bolts. A quality rifle such as the Armalite, Bushmaster or Colt will run along time given proper maintenance but some of the others can cause concern.

There are many problems that crop up with the AR 15 but most of them are caused by poor maintenance. Firing the rifles a lot without cleaning is a big problem you will see often. Some brands of ammunition can be worse than others. The least expensive rounds are often blamed for problems but the truth is their low cost allows the shooter to fi re more. If the rifle is not maintained and the next session is undertaken with merely a squirt of lubricant and no real cleaning the ammunition is not totally to be blamed.

All ammunition is not created equal, but all rifles must be cleaned. When approaching a troublesome AR I always have a few questions on hand for the owner.

They are: “Has the rifle previously malfunctioned?”, “Was it reliable at one time or has it always been a problem?”, “Is this a production gun or one made up from parts?”, and “Is the rifle in the break in stage?” If we have suspect parts coupled with amateur assembly there is an obvious track to take in our study, but if it is a quality rifle that begins malfunctioning we have another route to take. Decide which path will be the most profitable in locating the problem. Keep an open mind.

Many problems are ammunition related. Handloads and even loading dies cause problems. I cannot help but wonder why a nation issuing the 5.56mm round would ever declare thousands of rounds surplus and not simply shoot them in practice. Global economics may demand the stuff be sold for a pittance, but from the quality of some of the surplus ammunition I have tested if I were

to receive Winchester or Federal ammunition on US assistance, well, I would dump my home grown ammunition as well — or grind it into fertilizer. But that's me. This is food for thought for those who purchase surplus ammunition, wherever it is manufactured. Some ammunition is lacquer coated which can cause a powder residue and lacquer to become baked into the chamber. If the rifle is dry, then sloppy maintenance is another issue. Afi ring test will be undertaken at some point.

For what it is worth, I keep on hand Winchester USA 55 grain "White Box" ammunition for firing tests. It is neither the cleanest nor the dirtiest ammunition but if the rifle does not work with Winchester it is sick and need treatment. A thorough cleaning is first followed by lubrication. Then we get into the basics of trouble shooting. If Ifi nd a certain problem then I also have a cure. 1. A failure to eject. Check the extractor spring and the ejector spring. 2. Short stroking.

If short stroking is not caused by friction from a lack of cleaning, then there is a gas leak. In one of my recent examples, the bolt carrier key was a culprit in this type of problem. As it turned out, the bolt carrier key was not properly staked in a parts gun. 3. Staking. Take a look at the carrier. The key is held in by two hex head screws and must be staked in. Nothing else is acceptable as no amount of Loctite will solve this problem. I have This is trouble waiting to happen.

These can be real trouble spots. done the operation with a punch and hammer, punching the key around the knurled screw heads. I have seen several cases where a loose key actually allowed the case to stick to the chamber and the case had to be beat out with a cleaning rod. Avoid this! 4. Gas rings. A common problem is a broken gas ring and usually shows up on high round count rifles. Keep an eye on the gas ring and keep several on hand. 5. The bolt.

The gas tube is built onto the bolt unlike the system used with the M1 Garand and M14/M1A1 rifles. The tappet-style gas system of the M1 Carbine was an evolutionary

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This is the first step of the internal checks. Often a firing test is mandated. step toward the AR-15 as a low maintenance rifle. They are low maintenance, not no maintenance. 6. The gas block. The gas block is on the barrel and should be a snug fit. Aftermarket gas blocks are not always the right fit. I am not picking on aftermarket parts but original parts are often the best bet, particularly if the rifle is destined for critical use. In checking the gas block, screw it down and hope for the best.

The main area of concern is that the gas block inlet and barrel gas port are properly aligned. Ejection/ Extraction The extractor pulls a case out of the chamber and the ejector kicks it out. The AR ejector actually causes the case head to pivot on the extractor hook and to be forced out of the ejection port. Too little spring pressure and the spent case is caught in the ejection port. The usual signs of extractor/ejector trouble are trapped cases, heavily dented cases and erratic ejection.

When the rifle is functioning properly with standard loads the AR-15 is a very consistent rifle. When bench resting one of these rifles for accuracy I often find a neat stack of brass a few feet from the rifle. Extractor problems put a kink in this performance. There are ways of adjusting tension if the cases are being ejected too vigorously. As a rule I do not like clipping springs but clipping a coil on the ejector spring is an option when extraction is erratic.

Interestingly, carbine-length AR-15 firearms require more ejection strength than rifles, so keep the springs full length with the short barreled versions. A common problem with the AR- 15 rifle is the extractor. Early M16 rifles had problems caused by an unfortunate combination of poor powder choice and a lack of maintenance. Today, foreign produced ammunition and poor choices in These magazines have all been proven reliable for hard use. handloads may partially recreate theses problems.

When addressing extraction issues the first thing we need to understand is that extraction difficulty may or may not be due to mechanical factors. If the extractor is leaving a pronounced imprint on the cartridge case or actually taking a gouge out of the brass, it is the extractor is doing the business. The chamber may have been cut rough or become rough from corrosion or a lack of cleaning. Remember too that the gas impingement system of the AR-15 may allow dirt into the chamber.

When addressing chamber inspection we need to thoroughly examine the chamber and determine if a cleaning or polish is needed. Because a clean chamber is so important, I begin maintenance

If not installed properly these can alter the harmonics of the rifle and may affect function and accuracy. by using a .38 caliber brush to thoroughly swab the chamber. I look to other problems as well. As an example I use small base RCBS dies for loading the .223 and recommend these dies to all shooters shooting AR-15s, but any number of handload related problems still crop up. Just the same, experience indicates a properly sized cartridge case feeds and extracts just fine with most standard die sets.

Improperly sized brass fails to feed and hangs up on the top of the chamber. Some 5.56mm loads are pretty hot and I have seen factory loads blow primers although it is not common. The higher pressure loads produce greater chamber adhesion presenting more problems. The case is designed to expand but not remain expanded to the chamber as extraction begins. If the customer is an enthusiastic handloader or long range competition shooter, a hard look at his ammunition is in order.

If stronger loads are desirable or mandated then a stronger buffer string, such as available from W C Wolff (gunsprings.com), is needed. Often this single addition solves many shooting problems. The extractor spring has gotten much attention here and Buffer Technologies offers an extra power spring that solves other problems. The objective of such springs is to keep the extractor tight against the cartridge case and the bolt.

My normal recommendation is to utilize an extra power spring, however, in some cases this extra effort may limit the fl ex of the extractor as it snaps over the case rim and may even lead to higher pressure. The jury is still out if this extra power spring should be a standard re-fit, but if the rifle in question is a quality rifle and it is currently working I vote to leave it alone. If there are extraction issues, then fit the kit.

There have been cases of cartridge case shoulder set back from too much extractor tension or the extractor failing to snap over the case rim at the proper point in the feed cycle. If you have a rifle displaying excess pressure signs without much in the way of explanation, make a point to live fi rearound and then check the chambered round for case shoulder set back. It just may be extractor related.

A standardized step that often reaps benefi ts is to carefully address the extractor itself with good old fashioned handwork. This includes polishing just the leading edge of the extractor. The leading edge should be clean and smooth, burr free. Finally, check the magazines! There are a lot of crappy, poor quality magazines on the market, too many to enumerate. I recently ordered a case from Bravo Company. They have worked fine and so have the plastic Lancer magazines.

Possibly the top of the tier is the excellent Heckler and Koch magazine. AR-15 Check List This is my checklist for every rifle that comes in. Even in the case of a rifle with an obvious problem this checklist will still help you spot the less obvious. I begin by clearing the rifle and field stripping it. Bring the cocking handle and the bolt back to look into the receiver. Examine the hammer springs. Both should be firmly on the sides of the hammer pivot, intact and unbroken.

The hammer and trigger pins in the receiver should be a flush fit. If they are not, a securing spring is out of place. Examine the receiver for dirt, crud, and other debris. Moving to the bolt and bolt carrier, check the carrier key for movement. There should be none. If there is, the the key needs to be restaked. Check the bolt. The lugs should be sharp and clean. No chips or cracks are acceptable. Make sure they are oiled and greased. The ejector should not move at all with hand pressure.

The extractor must have a bit of fl ex but a tool of some type is needed to check this fl ex, as it should not be finger tight. The extractor is vital to functioning. The gas rings should be checked. An easy way to check them is to extend the bolt as assembled inside the carrier and then stand the bolt on a bench or other fl at surface. If the carrier collapses toward the bench the rings are worn. Function Testing Pay attention to detail here as we expect different things from the rifle during this test.

Clear the rifle and cock the bolt. Let the bolt drop on an empty chamber. The hammer must not fall. Place the safety on safe and hold the trigger back with about ten pounds of force. The hammer must not fall. The hammer must not fall when the rifle is placed off safe either. Move the safety to the fi re position and release pressure on the trigger. The hammer should not fall. Now repress the trigger to drop the hammer. Keeping the trigger pressed, cock the bolt.

FROM THE ORIGINAL PAGE

You should hear a reset or light click as the hammer resets on the disconnect hook and into the sear notch of the trigger. Hold the trigger down and rack the bolt several times to check for disconnect function. These tests and checks are simple but important and go along way toward detecting problems with America's Black Rifle. AG

FROM THE ARCHIVE

SHOT Show 2011

BY AMERICAN GUNSMITH STAFF MARCH 2011

ORIGINAL PP. 19-22

Nobody can make everyone happy all the time but the NSSF seems to be trying. SHOT honcho Chris Dolnack has said the response from last year is a general consensus for hosting SHOT in January and that Las Vegas is the preferred venue site over Orlando. Also noted was the Sands Expo Center's labryinth layout, oft compared to navigating a plate of spaghetti. Like it or not, the SHOT will remain there for the next few years at least.

From my perspective the NSSF seemed to address the complaints and made things easier to find. So what did we find? Business Starting with items of interest for large shops and businesses we'll start with the Wiseman Universal Receiver Unit. Built by Bill Wiseman and Co. (wisemanballistics. com) this is a fully adjustable and modular unit capable of industrygrade ballistics. The base price starts $14,900 with accessories addition but it can be set up for testing any cartridge.

On the manufacturing end CG Tech (cgtech.-com) is offering is ideal for high level ballistics testing. Vericut CNC simulation and optimation software. Available for 32 and 64 bit processors running Windows or Unix-based operating systems, Vericut Composite Simulation reads in the actual numerical control program for a variety of supported CNC machines and completes a real-time The Cradle can also be mounted on a bench mount.

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The beads are available pre-filled as shown or empty with additional lengths of fi ber optic rod to unlimited customization. multi-axis 3D simulation of all the cutter/grinding machining based on your actual CNC machines. For the retail space Business Control Systems Corporation (businesscontrol. com) has a number of point of sale systems that integrate with their hosted online sales solution specifi c to FFL sales.

The Fire Works-JV is an BATF-compliant system integrating inventory, purchasing, retail and online sales. State and Federal background checks and forms can be filled out and completed instantly with a quick scan of the purchaser's driver's license. Tools and Parts Berry's (berrysmfg.com) Versa Cradle is a modular mount that can be pivoted in any direction with a fl ick of a lever, yet remains totally rigid when set and can take a large variety of fixtures from vices and a number of cradles.

The unit is available as a floor mount, C-clamp or permanent bench mount. Mounting Solutions Plus (mountsplus.com) is offering Build Your Own rail kits complete with rail blanks and milling blocks for customization. Their new Tri- Link Shotgun Gunsmith Kits has the components to add fi ber optic beads Varying rear sights are available, including fully-adjustable Merit diopters. The included thumb piece allows the pins to be pressed into place.

The steel Beretta parts replace the plastic factory units. for 12 customer shotguns. Expanding on the ever-popular AR-15 line, KNS Precision (knsprecisioninc. com) is offering a rear sight rebuild kit to add micro adjustability to any unit. For trigger jobs on customer guns, the Hammer Trigger Pin Assembly Guides allow pins to be removed and internal parts captured in one push.

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New to the line of tooling available from Dave Manson (mansonreamers.com) area Military Rifle Muzzle Re-Crowning Kit, 96 degree Feed Cone Reamer, and a 705 Bolt Body Counter Bore. Also new is Shotgun Muzzle Facing Cutter, a hand tool that squares a variety of gauges. The company is still offering free tools to anyone publishing an article featuring a Dave Manson product. Brownells added the Glock- Worx Fulcrum trigger to the catalog. A competition-grade unit, this greatly improves trigger pull and reset.

Available in Large and Small for .45/10mm and 9mm/.40 caliber Glock, respectively. Pillar bedding sleeves are nothing new, usually offered in aluminum. New to the catalog are sleeves made of G10 fiberglass, available in two lengths. Good magazines maximize reliability and

SHOT SHOW 2011 CONTINUED ORIGINAL PAGE 22

The Scope Mount Drill Fixture on right works in the same fashion but each of four guides are adjustable to accommodate a large variety of receivers and hole spacings. the new AR-15/M16 Feed Lip Gauge keeps them in check. Working like a headspace gauge, you'll know when a mag is out of spec. Williams Gun Sight (williamsgunsight.com) expanded their Fire Sights line by adding complete elevation and windage click adjustability to the new units.

Both the Scope Mount and Shotgun Bead Fixtures have a scissoring action that clamps and perfectly centers over the receiver or rib. Unlike other units that merely center, these fixtures have hardened bushings that keep the drill bit and tap centered, preventing walking or an angled hole. AG

PEOPLE & COMPANIES

Reader Forum

BY AMERICAN GUNSMITH EDITORS MARCH 2011 ORIGINAL PP. 23-24

Remington XP 700 I recently received a call from a customer with what seemed to me to be an unusual request. He has a XP 700 and would like to have 4 barrels installed (individually, of course), headspaced and witness marked so he can later swap them out himself depending on what cartridge he wanted to shoot. He claimed he was going to use a properly-sized loaded round to check the headspace and planned to purchase a vise for the swap-out.

After recovering from my shock, I explained to him that swapping barrels was no easy task, involving a considerable investment in tooling. Secondly, headspace was no measurement to be taken with makeshift tools. He backed away from the idea after I expressed my grave concern over the safety of doing these swaps himself and because I declined to do the work. This lead to him asking if I would be willing to swap barrels for him when he wanted to change calibers and this leads to my question.

Have you ever known of barrels being changed out on a regular basis on a receiver such is found on the XP 700? Is there a chance of wear or other negative affects to the receiver and barrels if they are constantly stressed by disassembly and reassembly? If changing the barrels on a reoccurring basis is not a problem, what frequency would be safe? I am looking for input so I can advise the owner and possibly accomplish this in a sensible, safe manner.

Any advise will be greatly appreciated, although I am hesitant to accept this work. A sensible, safe manner would be to stick with barrels Remington produced for the XP 700. This would assure compatibility with the receiver and maintain any warranty still in effect. The 700 is a strong receiver but should your customer have an urge to try belted magnums in an XP not intended for magnums the result could be explosive. Winchester 97 I have a Winchester 97 12 gauge pump take down shotgun.

The gun has not been shot for a very long time and I am in the process of restoring and repairing some problems it has, such as cutting off the bulged barrel. My goal is to get the gun back into shooting shape. I have heard about some really old shotguns that shot 2-1/2-inch shotshells. Was the Winchester 97 ever chambered for 2-1/2-inch shotshells? How can I check to see what mine is chambered for?

I am a little confused about what the actual chamber measurements would be for a 2-1/2 or 2-3/4-inch, or for that matter a 3 or 3- 1/2-inch chambering. I know this gun has what I calla chamber ring inside the receiver that adds about 1/4-inch to the length of the chamber that is actually inside the barrel. Careful you don't shorten the barrel to less than legal length for civilian use. The minimum legal length is eighteen inches from front of the receiver to the end of the muzzle.

You can secure official chamber specifications from SAAMI saami.org) but we aren't certain the Model 97 was ever chambered for 2-1/2-inch shells. We're fairly certain it long preceded the longer magnum shells. Once you have the specs, make a chamber cast with Cerro Safe, available from Brownells, and compare the casting to the specifications. Dale Annis Annis Arms Ellendale, DE Savage 219 Do you know where I can get disassembly instructions for an early model Savage 219?

I have one and it needs service as the firing pin will not retract. We do not but the Savage historian might. Contact John Callahan, Westfield, MA 01085. While you wait on Mr. Callahan, try squirting some CLP into the firing pin opening and subsequently pressing inward on the pin a few times. It could be frozen in place by fouling. If this doesn't cure the problem then likely the firing pin or its spring is broken.

M1890 Feed Problem I have been working on a Rossi copy of the Winchester Model 1890 for a couple of weeks and cannot figure out what is wrong. The rifle will fee one round from the magazine perfectly but if a second round is put in the magazine it will jam every time. I can look into the action and see that the second round (the one in the magazine) is against the bullet of the first round (the one in the carrier) and is preventing the carrier from pivoting up in line with the chamber.

It appears that the shell stop in the carrier is not working, but no matter what I do it will not catch the second round. I can work the action slowly with nothing in the magazine and the carrier will stick in the down position but if I work it sharply it functions every time. The rifle is very old and wear is probably a factor. Do you have a picture or a drawing of the shell stops profile or any suggestions?

Stacey Jones Walter Erspamer The Model 1890 was almost the immediate predecessor of the Winchester Model 62A. Directions for disassembly and reassembly of the latter appear in the The Official NRA Guide to Firearms Assembly, available from the NRA at nrastore. com. We see a couple or three possibilities for your problem. It is likely a worn magazine throat, a worn out cartridge stop, or a weak carrier spring. A drawing of this does appear in the aforementioned NRA publication. Dennis Hoehne

Polish P-64 I have just purchased a P-64 through J&G Sales and am researching these firearms, such as locating the owner's manual, assembly/disassembly exploded view drawings and schematics. Gene Smith Covenant Resources You should have fired right back at J&G when the pistol arrived sans an owners' manual. From what we have uncovered in Small Arms of the World, published by Stackpole, the Model 64 is disassembled similarly to the Walther PP and PPK.

There is also a drawing of the Model 64 trigger linkage along with a note that the magazine catch is at the bottom of the grip and the safety catch on the slide blocks the trigger. Winchester 62A Mis ire I have a Winchester 62A that misfires if any rearward pressure is put on the fore end slide. If it is held forward it fires every time. Examination shows that with rearward pressure the bolt rises enough for the firing pin to not hit enough of the cartridge rim to fire.

This gun is in 99% condition with very little bluing wear inside the action. I therefore surmise that it has done this since new. On the left side of the firing pin is a triangular protrusion I will calla "boss." This boss slides into a cut in the side of the receiver locking the bolt down until firing pushes it ahead to release from the cut. In the locked position this boss allows the bolt to lift about 0.020", thus causing a misfire.

I changed the firing pin, which has no bluing wear, with anew one from Winchester with no improvement, not that I expected any. The cut in the bolt that the firing pin boss slides in is only about 0.002" larger than the boss so it is a good fit. This leaves only a too high or too wide cut in the receiver allowing the boss to move up in the receiver while in the locked position. It's hard to believe Winchester would make a rifle where lock up is nonadjustable let alone let one with this problem leave the factory.

Any help will be greatly appreciated and keep me from banging my head on the wall! Serial number range is 302XXX. We have been receiving an unusually high number of queries on the 62A but it has been around since 1939 so we're not overly startled. The locking system of the Model 62, which replaced the Model 1890 in 1932, was designed so the slide handle could be moved a fraction of an inch to the rear before any opening movement of the bolt occurred. The Model 62A returned to the Model 1890 locking system.

Any premature movement of the slide handle initiated movement of the bolt both to the rear and upward. Therefore, your misfires are very likely being caused by the design of the rifle. A second possibility exists. Due to its age the rifle may have developed a headspace problem. We have our doubts about this since your query indicates little to no wear apparent in the action. You can double check the condition of your rifle with .22 LR headspace gauges.

Regarding your comment about "non-adjustable lock-up," as required by law, SAAMI and insurance companies, every firearm is proofed and additionally test fired before it is released for shipping by every domestic manufacturer. This was true when Winchester was Winchester, became US Repeating Arms and it remains true in its newest incarnation as Browning/Winchester. Beyond that fact, the matter of adjusting lock-up, which a manufacturer also refers to as "qualifying," is a required element of the preshipping process.

Qualifying includes assurance that existing headspace meets specifications. Out-of-spec guns are corrected prior to leaving the factory. This correction can be a relatively simple matter, such as installing a larger locking bolt on a Model 1894 but can require refacing of the receiver and setting the barrel back as might be required on a Winchester lacking a separate locking bolt, such as the 62A. Keep forward pressure on the slide handle and we believe your misfires will cease. AG Frank Borgeson Scottsdale, AZ

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