



## A Rifle Comes Home

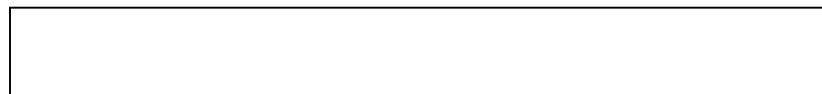
The legendary (Mil-Surp) Remington 40X .22 Match Rifle

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The US government has acquired rifles at various times in our history. The reasons can be varied. The most obvious is to arm our soldiers for war. Often .22 caliber-training arms are acquired to teach the skills required by the soldier. Rimfire training rifles are a much more cost effective way of training new troops marksmanship because of the reduced ammunition cost over the standard service arm.

For that purpose, many aperture sighted, 22 bolt-action rifles were acquired after Pearl Harbor. The contracts were awarded quickly. No research & development costs or time delays were incurred, as the rifles were standard commercial models. The only changes were a military style front sight blade and a dull military finish on both steel & wood. Later, after these rifles were deemed surplus, they were offered for sale to the fine folks who paid for them in the first place, the US taxpayer. Today, the [Civilian Marksmanship Program \(CMP\)](#) is charged with that mission

Not all the .22 rifles acquired by the government were meant to be a low cost substitution for battle rifles. Some were match rifles, to be used in marksmanship competitions by various groups. The subject of this article is a .22 caliber Remington 40X HB (*Heavy Barrel*) I recently acquired through the CMP. For the full story on the CMP, and the requirements for buying a rifle from them, go to [www.odcmp.com](http://www.odcmp.com)





Remington 40X in MidwayUSA Rifle Vise



U.S. Stamp, Caliber Designation (Note aperture sight base and rear scope base)

The Remington 40X was, and is, a pure match rifle. During the mid 50's, Remington developed the 40X based on a beefed up single shot bolt action. It was styled after and shared many parts with the Remington 722 at first and later the Remington 700. They had the Remington model 37 .22 match rifle, however, they decided to consolidate on one basic action. The consolidation translated into lower cost by not having to make two different actions. The military had acquired Winchester 52 C&D models and Remington 40X's to supply the various marksmanship groups throughout the years. In the last few years the government has declared these rifles surplus, and had them turned in to CMP for disposition.

The hardest part of the entire process was sitting on my

hands and waiting for the 'Lil White Truck (*FedEx*) to arrive after filing the required documents with CMP! The good folks at CMP do a great job of getting rifles shipped; I only had to wait 6 days after individual orders were being filled! However, I did get a few needed items together in the interim.



Gunsmith Screwdriver Set, Cleaning Patches, Solvent, Tap & Tap Handle, Bore Brushes, Acton Cleaning Tool, Brush, Bases & Rings, Spray Solvent, Bore Guide With Solvent Port (Inserted In Action), Stock Protector, Bore Tech Cleaning Rod



Action Recesses Being Cleaned



Knowing the 40x would require a complete cleaning, the first item I acquired was a bore guide. Bore guides serve two purposes. They keep solvent out of the action, however their main purpose is to keep a cleaning rod running straight, so it doesn't damage that all important chamber & lead. Gun and caliber specific bore guides can be acquired from [Bore Tech](#), [Sinclair](#), [Midway](#), and many others. Now that we have a proper bore guide, let's consider the cleaning rod.

Cleaning rods come in all price ranges and in several types. Jointed rods made from aluminum or steel are the least favored. A match grade rifle deserves a match grade cleaning rod. What constitutes a match grade rod? To begin with, it has to be a one-piece steel rod. Jointed rods loosen up and the handle bearings leave much to be desired. The rod can be coated or uncoated, since we will wipe the rod after every stroke with a clean cloth anyway. I prefer coated rods. I found Bore Tech coated rods to be the very best. The bearings in the handle just glide along, and they are marked if you want to calculate the twist rate in a barrel. I got my Bore Tech rod from [Lock, Stock & Barrel](#) and they really take pains when shipping a rod. They put it in a triangular cardboard shipping box and put a full-length wood stiffener in the box. A brass pierce-type jag, cotton, double-knapped patches, a nylon bore brush and any good powder solvent round out the barrel cleaning supplies. Another item is spray cleaner. Fully adjustable match triggers usually work best when clean & dry. After so many years, or when a rifle sits, crud usually filters down into the delicate trigger unit. The trigger unit should never be disassembled! Just remove

the action from the stock and liberally spray the trigger unit, flushing away any dust, dried oil or other crud. Ditto for bolts. They get the same spray cleaner treatment. Commercial, spray "gun cleaner" is available, however, plain spray "disk brake cleaner" from any department store works just as well. The next thing to think about is the wood.

The stock of a match grade mil-surp like the 40X doesn't require the harsh methods often employed on 100-year-old mil-surp rifles, which have stood line duty in muddy fox holes, dust storms and been handled by countless soldiers. Match rifles usually receive good care, and spend more time on the rack than anything. A very mild cleaning and the application of boiled linseed oil or tung oil should do for the stock. 6 to 8 large drops of oil, rubbed in hard with the hand, constitute one coating on the entire stock. Since this rifle was specified with an oil finish, only 2 or 3 coats are needed for the stock. As I had already decided to mount a scope, the next order of business was bases & rings.

The 40x is drilled & tapped (D&T) for action mount scope bases, barrel-block scope bases, a side-mount metallic sight base, and for a globe sight base at the front of the barrel. Some purists may say the only place a scope belongs on an older 40x is on the barrel blocks. For those who prefer them, have at it, I won't disagree with you. However, I wager they already have such a scope in their parts stash; those things are down right expensive!

The old Unertals, Lyman Super Target Spots and Redfield 3200's were, and are, fine scopes. However, these long type target scopes are trading on [ebay](http://www.ebay.com), for between \$500.00 and \$12,00.00, when in good condition and equipped with the special type rings. Since I'm not willing to pay up to 3 ½ times what a 25 + year old scope cost when it was new, I decided to go with top action mounts and a short, modern scope.

The correct Weaver top mount bases for the 40X are numbers 's 35 front & 36 rear. I only use original Weaver bases their quality is legendary. The cross bolt design isn't as pretty as some, but performance is where it counts, and Weaver bases perform. Selecting scope rings require some thought.

In a perfect world, all action tolerances would be exactly +/- 0. All drill and tapped holes would line up exactly with a perfectly installed barrel. However, it's not a perfect

world, and while Remington did take a lot of extra care in making their match grade rifles, there is still an acceptable tolerance level in any production arm. The goal is to install a scope with zero side pressure on the scope tube. Scopes are made to take a lot of linear or "back and forth" stress. They are not made to take lateral or side pressure. Stress free scope mounting can be achieved by two means. Once rings are installed they can be lapped, or rings with a floating center can be utilized. While I have lapped scope rings in the past, I chose to use rings with floating centers on the 40X.



Burriss Signature Pos-Align® Offset Insert Kit On Right

[Burriss](#), produces their fine Signature Series Rings. The Signature rings come with synthetic, floating centers. Installed per the included instructions, Signature rings allow the stress free mounting we seek. But, it gets even better, suppose an installation requires quite a bit of elevation or lateral movement to achieve zero? The Signature series rings come with 0/0 inserts; however, an inexpensive kit, the Pos-Align Offset Insert Kit is available with +/- 00.5, +/- 00.10, +/- 00.20 inserts. The inserts allow one to zero a scope to a rifle while hardly moving the scope's turrets very far from center on the X and Y-axis. Burriss Signature Zee Rings fit Weaver bases. We're almost ready to start assembling things, but there's one more job to be done.





Cleaning Threaded Holes In Receiver.



Bottom Tap Is Clean, Top Tap Cleaned Allot Of Dust And Old Oil From Threaded Holes!

Before mounting the bases, it's a good idea to chase the holes in the receiver with a 6/48 tap. Dust and dried oil can accumulate in the holes. We want a clean surface for the screw threads to lock into. Also, check the top of the receiver where the holes are. Stone away any raised burrs at the edges of the holes that would keep the bases from sitting flat on the receiver. Of course we're using a proper fitting gunsmith type screwdriver to mount the bases. Installing the Weaver action mounted scope bases required the rear metallic sight base, and original "Block" bases be removed. Filler plugs were placed in the 4 empty holes. Ring installation is next.



Burris Signature® Zee Rings With Inserts.

Except for the cross bolts, keep the rings fully assembled as shipped by the factory for the next step. The Burris Signature Zee Rings slide on the bases. They may be a bit tight, but line them up carefully and they will slide into place. Here's a trick. Once the rings are installed, slide the cross bolts in and tighten them up finger tight. Then push the ring forward toward the front of the gun. Now tighten the cross bolt. Recoil will want to move the ring forward as the rifle moves backwards in recoil. By seating it forward now, we will achieve a better zero. Recall we left the rings assembled? There's a good reason. Ring tops and bottoms are often machined and drilled and tapped together. That makes them matching pairs. Just because the rings have synthetic, floating inserts doesn't mean the steel ring caps should be mixed up, or even reversed.



Bases, Bottom Of Rings And Bottom Inserts.

With the bases and rings installed, the ring caps are removed and stored so they can be reinstalled in the exact position they were removed from. The inserts are set-aside for the moment. Using spray solvent, all shipping preservative is cleaned from the ring recesses. I use glass cleaner to clean the synthetic inserts. With the bottom insets installed, the scope can be placed in position. Scope position is best determined by the most common position the rifle will be fired in. A prone shooter will have a different head position, which affects eye relief, then an off-hand shooter. After placing the scope, the top insets and ring caps are installed. The caps need to be tightened evenly, in an X pattern. The next step is bore sighting.



Cleaned, Scoped, Given a light Coat Of Boiled Linseed Oil.... Ready To Shoot!

Bore sighting and zeroing is easy, you ignore the arrow markings on the scope turrets and use the advice a very capable shooter once gave, he said: "Chase the bullet." Once I looked at the process from that prospective, it made sense! Here's how. I place the rifle, sans bolt and scope turret caps, in a [MidwayUSA](#) cleaning / maintenance center. For years I used one I made from a few scraps of wood, a handful of screws, some carpet and a piece of threaded rod with 2 washers & nuts. Lacking either of these items, one can make due with sand bags. Measure the distance from the rifles muzzle to the ground. Set up a target with a bright orange or yellow center dot about 25 yards away. Set it at the same height as you noted for the muzzle, and you should be able to see the dot by looking through the bore. Adjust the

position of the rifle until the dot seems centered in the bore. Without touching the rifle, look through scope and the cross hair should be somewhere near the center dot on the target. Gently, without moving the rifle, adjust the scope turrets until the cross hair is center on the target dot. Look through the bore again to insure the bore is still centered on the dot. If it is, and the scope is still centered on the dot you now have mechanical zero. Mechanical zero will not take into account wind drift, etc. However, it will get you on target for final zero. This process works for metallic aperture sights as well.

Finally, the weekends here! It's time to fire the 40X. The 40X forestock is 2 1/2 inches wide, so I put a medium width bag in the Bald Eagle front rest. The rifle was set up on the front rest and rear sand bag. I started shooting at 50 yards. Since the action had been separated from the stock during cleaning, and the barrel was clean, a few settling in or fouling shots were fired. Some .22's require very few fouling shots, others may require quite a few. After the fouling shots, 3 shots were carefully fired at the center of the target. They grouped tightly, 1/2 inch to the left and 3/81inch high. Next, align the scope back on the center of the target by physically moving the rifle only. Since the scope was very close to zero as is, and there was a switchy cross wind blowing, I decided to use the scope turret adjustments only for this initial sighting in session. Carefully, without moving the rifle, adjust the scope turrets until the crosshairs align exactly with the center of the 3-shot group. The rifle is now zeroed to that lot of ammo for the prevailing range conditions.



Lapua Midas L, Upper Left 3 Shot Group From Bore Sighting.  
After Scope Turret Adjustment, Center 5 Shot Group,  
.167



Wolf Match Target, Group Size Center-To-Center, .224

The wind kept switching and I had to wait for it to steady down a bit, however I was able to get some very nice groups! Notice the Wolf ammo grouped higher and a bit right. The velocity difference accounts for the higher grouping. The lateral shift may have been a change in wind.

I'm extremely pleased with my Ex-GI, Remington 40X! My 40X went on duty in 1965 and retired from active service in 2004 I'm an Ex -GI myself, 1976-1996. So, two old soldiers get to spend their retirements together, but I'm the only one getting a monthly check!

Unfortunately, the 40X's sold out fast at CMP. However, they have other rifles available, they have new-in-the-box Kimber .22's, and they say sometime this summer they may have some Winchester 52's and some Harrington & Richardson M12's for sale. Check their site often; when rifles become available they sell out quickly.

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