

Collecting and Shooting the Military Surplus Rifle



**surplusrifle**

**BOYDS' GUNSTOCK INDU**

**Tennessee Gun**

OUR SPONSORS

Please make certain to visit our new Showcase of Sponsors! [More!](#)



Review by [Mark Trope](#)

[Adobe PDF Downloadable Version of Article](#)

It's great when large amounts of a very high quality Mil-Surp rifle show up on the market. It's even better when there is extremely clean, very accurate, non-corrosive surplus ammo available too. Such a combination guarantees the guns & ammo will be showing up on the ranges in large numbers.

It also means publications like Surplusrifle.com will sponsor postal matches. This way everyone gets to play, regardless if they are across town, across the country or across an international border. So what if an ocean or two is between us. That's what snail mail is around for. Isn't that right Ted (our match director)?

Regardless of whether a shooter's intention is formal competition, informal competition, or just plinking, he or she usually wants to wring all the possible accuracy out of a rifle. Open, metal sights are designed for "minute-of-enemy" accuracy. However, those with very sharp eyes (not this editor, at least not anymore) can do amazing things with battle sights!

Thoughts of scoping the rifle to see what it is *really* capable of are natural. However, many shooters balk at the idea of having their Mil-Surp rifles modified by drilling and tapping for scope bases. The rifle's owner wishes for a clamp-on scope base that is absolutely rock steady; but can be quickly installed, and just as quickly removed. The concept of going from the rifle's original iron sights to a scope and back to iron sights again almost instantly is *very* attractive ([Note.1](#)). It's also a *very* tall order ([Note.2](#))!

The Swiss K-31 is one of those truly super-accurate Mil-Surp rifles that's just aching to deliver all the accuracy it's truly capable of! Enter Pierre St Marie, the man whose company has all the products to make this happen.

**St Marie Graphics  
Box 2637  
Kalispell, MT  
59903**

The fine folks at St Marie Graphics have designed a clamp-on scope mount base for the K-31 that places the scope in a traditional, over-the-action position (or as close as possible), but does not require *any* modification of the rifle. Not only that, brass ejects without any trouble, and the bolt can be removed while the St Marie Graphics scope base is in place. Let's take a closer look at this item.



*figure 1*

Time to scope the Swiss K-31. The St Marie scopes base is made in steel and aluminum, either one works perfectly.

St Marie Graphics wisely designed the scope base so it sits as low, and as far to the left over the action as is **practically** possible. This places the scope in as natural a position for the shooter as possible, yet still allows ammunition to be loaded, brass to be ejected and the bolt to be removed.



Sounds simple, and it is



This Allen screw is threaded into the locking piece that holds the scope base to the action  
(An Allen wrench is supplied with the scope base)



**I've loosened the Allen screw, the locking piece has moved back away from the scope base, and it is now ready for installation**

The base is contoured to mirror the shape of the right side of the K-31 action. By loosening a single Allen screw on the right side of the St Marie clamp-on scope base, the piece on the scope base that locks the base to the right side of the action moves (sideways) away from the base. Once the lock piece moves away from the scope base, the scope base can be slip into place against the right side of the action. Once in place, the base must be *gently* slid toward the front of the rifle. There is only the tiniest bit of play when the base is first placed on the right side of the action; however, the scope base needs to be slid forward until it just stops. Do this prior to turning the Allen screw clockwise and locking the scope base down.



**Scope base has been seated, gently pushed forward, and is being locked into place by the Allen wrench. The flat platform on top has the 3/8 dovetail.**



**With the bolt removed, you can see the lock piece pulled in tight, securing the scope base to the right side of the receiver**

The reason for gently sliding the base toward the front of the rifle *prior* to turning the Allen screw clockwise and locking the scope base down is; under recoil the rifle will move backwards, but the base (any scope base and scope) will have a tendency to want to stay where it is at. By moving the scope base forward against the front of the action **prior** to locking it down, a better, and rock-solid zero will be achieved. OK, the base is now in place, gently slid forward and the locking retainer pulled in with the supplied Allen wrench. Now we can see about installing the rings. flat platform extends over the action. This platform has a 3/8 dovetail milled into it. The 3/8 dovetail runs the full length of the scope base. This allows the maximum degree of adjustability for scope ring positioning. Before we go any further, we need to discuss the proper type of scope rings to use with this scope base.



**These inexpensive, stamped, soft aluminum “.22 rings” ARE NOT acceptable for use with the 7.5X55 cartridge**

3/8 dovetail bases are most often seen on .22 and .17 caliber rimfire rifles. Many of the rings sold to fit 3/8 dovetail bases are made of soft, stamped aluminum. Additionally, they have very thin locking tabs and small, soft screws. Since .22 and .17 caliber rimfire rifles

develop almost no recoil to speak of, simple rings of this type are at least acceptable if not particularly desirable. However, such rings **ARE NOT** acceptable under the recoil of the 7.5X55! At best, the rifle will not hold zero. At worst, inexpensive, soft, stamped aluminum rings may fail, and your scope will go flying! I recommend **nothing less** than all-steel 3/8 rings. Several companies make all-steel 3/8 rings that will properly clamp the rings to the base and retain the scope.



**Millett all-steel scope ring. Notice the claw on the left side has been locked in tight**  
I happened to have a set of Millett <http://www.millettsights.com/online/pages/p8.php> all-steel 3/8 rings in my parts stash. The Millett rings have two steel “claws”, one on each side, to retain the ring to the 3/8 dovetail. Both claws are adjustable by way of small Allen screws. The reason for adjustability on both sides is to allow a degree of windage adjustment in the rings. This is tricky though. The claws have to be adjusted **evenly** on both sides or a scope tube could get bent!

First, I removed the ring top halves. Then I tightened a claw **on one side** of each Millett ring all the way down **before** seating the rings in the St Marie scope base’s 3/8-dovetail. I left the other claw loose enough so the rings would slide back and forth on the 3/8 dovetail. The rings were installed so the claw that was tightened down on each ring was facing the **left side** of the action. I did this for two reasons. Tightening one claw on each ring insures the rings will be aligned evenly when the scope is installed, and the scope tube wouldn’t get side stress imposed. Second, by placing each ring with the pre-tightened claw in 3/8-dovetail base so the pre-tightened claw was facing the **left side** of the action, the scope will be closer to the center of the action; placing the scope more inline with the barrel. Now we can place the scope in the rings and adjust eye relief.



**Ring bottoms slid into place, but not tightened. Scope in bottom of ring saddles so eye relief and reticule can be set.**

I looked in my parts stash again and came up with an older Tasco (Japanese produced) 4X40 scope with a Duplex reticle. Although this scope is around 20 years old, it has excellent optics and tracking. I optically centered both adjustment turrets before going to the range and mounting the scope ([Note.3](#)). When considering what scope to use, one must consider that a scope with too large a forward bell *may not* clear the K-31 rifle's original rear sight unless very high rings are used. The higher a scope is mounted, the higher the shooter will have to raise his or her head from the stock. That means less cheek weld. The combination of Millett ring height and the Tasco scope worked perfectly! The scope's forward bell clears the rear sight with a comfortable margin, yet still allows plenty of cheek weld for accurate shooting.



**Eye relief and reticle set, bottom of scope rings moved to approximate centers of for and aft scope tube sections.**

**(The battle scars on the scope tube are meaningless; it tracks perfectly)**



**Locking bottom of scope rings to 3/8 dovetail**

With the bottom halves of the rings placed in the St Marie scope base's 3/8-dovetail, I carefully placed the scope in the ring saddles. Next, I slid the scope back and forth until I had proper eye relief, and the scope was turned so the reticle was level. Then, while

holding the scope stationary, I *carefully* slid the rings back and forth until the rings seemed about centered on the front and rear one-inch sections of the scope tube. When everything looked right, the ring bottoms were locked into place on the 3/8 dovetail by tightening the Allen screws holding the retaining “claw” on the right side of the ring. The ring tops were then installed loosely. A quick check to make sure eye relief and reticule level were still correct; and the screws holding the ring tops were *evenly* tightened.

Everything covered in the preceding 3 paragraphs only took about 5 minutes to accomplish. The work goes quicker then the reading ([Note.4](#))!



*figure 12*

**Top of ring halves installed and carefully tightened in an “X” pattern**

Even though I took pains to *carefully and evenly* mount the base, rings and scope, since doing things in this manner will *always* get things straighter, I still expected to have to do some turret adjusting to achieve zero.



*figure 13*

**Note how forward scope bell clears rifles rear sight.**



**When rifle is shouldered, scope off set is hardly noticeable**



**Plenty of cheek weld with the St Marie clamp-on scope base**

Since it's easier to zero at a closer range, (especially when you are working with a clamp-on scope mount) a target was set up at 25 yards. I elected to use Swiss surplus ammunition to test this mount. There is plenty of it on the market, and it's all super quality. Of course the gun and barrel were clean before the start of the test. There was a wind blowing from west to east, and increasing in velocity.

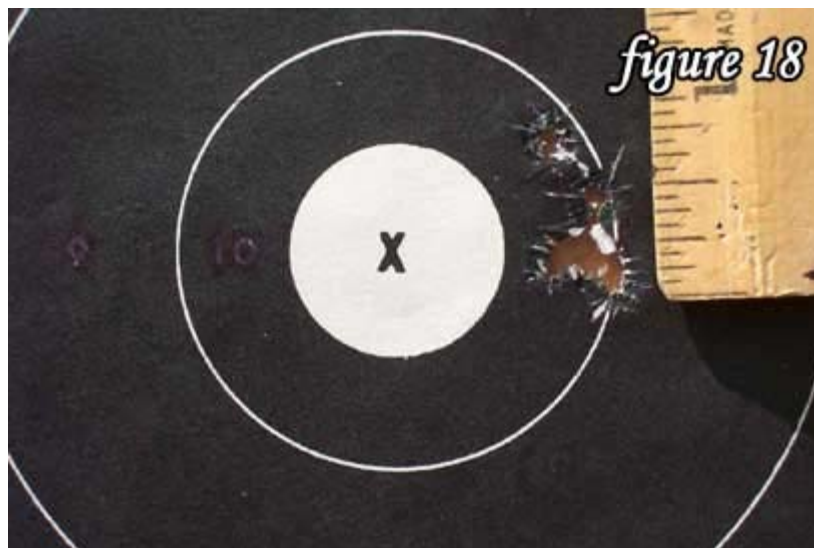


**Swiss surplus ammunition is extremely accurate and non-corrosive**

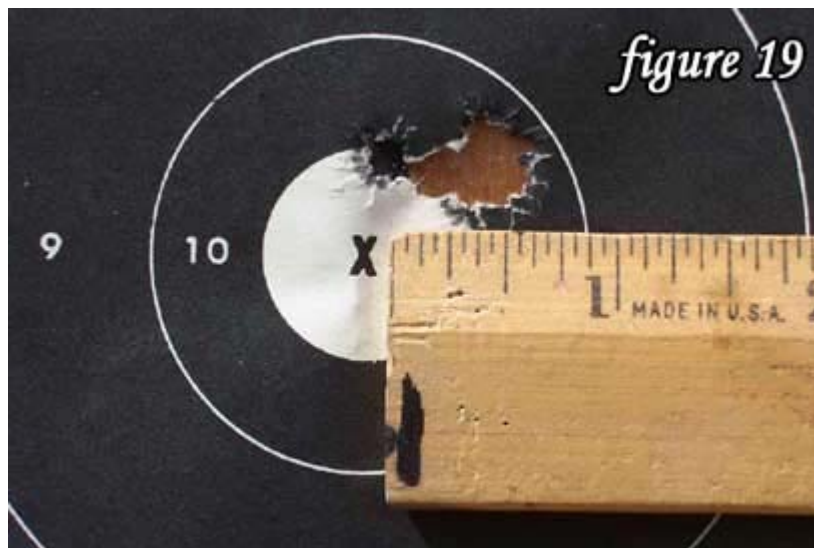


**First shot is in the 9 ring at 5 o'clock from a clean, cool barrel at 25 yards. The next 5 shots are at the bottom of the 10 ring. The scope is still optically centered! The St Marie scope base is sweet!**

I was somewhat surprised when the first shot appeared in the 9 ring at 5 o'clock! I was like; *"Wow, it's almost perfect as is!"* After that initial fouling shot, it grouped into a nice group at the bottom of the 10 ring. I was very, impressed.

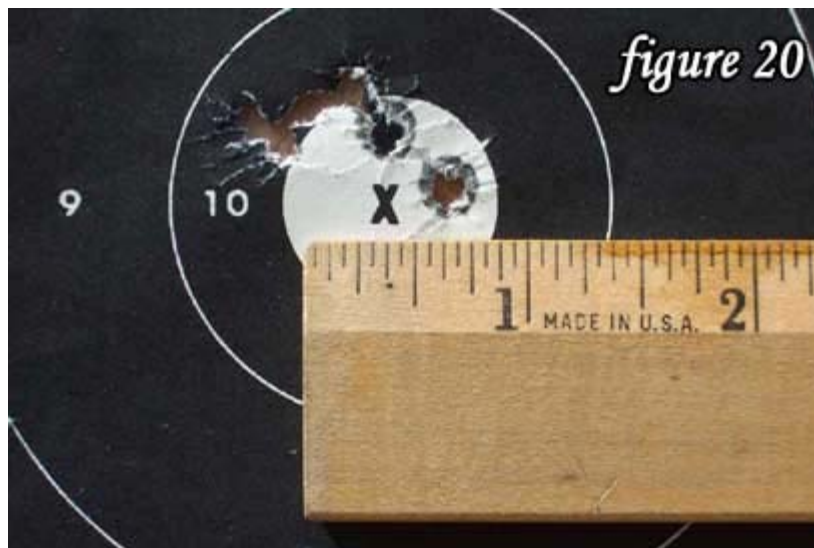


**First 50-yard target, a 35 MPH cross was blowing from left to right**



**Second 50-yard target, wind was gusting and pulling around by this time. This target was shot after giving the scope 5 clicks windage adjustment**

The wind was continuing to increase in velocity, and now it was throwing ugly gusts and blowing dust to boot. The target was moved back to 50 yards. Once again, a good group appeared. Now I was very, very impressed. I posted a new target. I gave the scope 5 clicks windages adjustment. Again I got another tight group, more to center this time. The wind was getting ugly, and grit was going down the back of my neck!



**First 100-yard target**



**Second 100-yard target**

The target was moved to 100 yards. The small, one inch white circle in the center of the target was almost completely obscured by the somewhat heavy Duplex reticle. I fired two 5 shot targets and was amazed to see the tight groups. All the shots were in the 10 ring, most were in; or at least cutting the X ring. A grand total of only 5 clicks windage was required to bring the rifle to 100 yard zero! Check out these 100-yard targets.

The St Marie Graphics clamp-on scope base for the K-31 Swiss rifle is an *extremely* high quality piece of equipment. I can recommend it without the slightest bit of reservation.

The mount is available in both steel and hardened (very hard) aluminum alloy. Either one will do for the Swiss K-31 shooter looking to scope their rifle. The St Marie Graphics clamp-on scope base allows a shooter to have the best of both worlds. The ability to have their rifle scoped, but not modified in any way, and the ability to switch almost instantly from scope to iron sights and back.

St Marie Graphics clamp-on scope bases and other St Marie Graphics products for the

Swiss K-31 rifles can be acquired from [www.grafs.com](http://www.grafs.com) and <http://www.brownells.com> Considering the quality of St Marie's products, and the fact that no holes will have to be drilled in the rifle ([Note5.](#)), the retail prices are *very* low. St Marie products are worth every penny, and then some.

#### Note 1

It was just such a situation that caused my friend Ted and myself to develop & build a no-drill / no-tap, clamp-on, build-it-at-home scope mount for our Mil-Surp H&R M12's a few years back. See article: <http://www.surplusrifle.com/shooting/hr12scopemount/index.asp>.

#### Note 2

Some companies produce "scout-type" mounts for various Mil-Surp rifles. However, these mounts do require disassembly and removal of the rifles original rear sight, assembly of the new base to the rifle, and the use of a long eye relief pistol-type scope.

These type mounts, while they work, are neither fast nor convenient to install or remove.

#### Note 3

Optically centered means the reticle is evenly centered between the extreme right and left adjustment, and the extreme high and low adjustment.

The best optics in any scope is dead center. The less a scope is adjusted to achieve zero, the better.

New scopes are optically centered when they leave the factory. A used scope must be optically centered before mounting on another rifle. Optically centering a scope is easy.

Carefully turn one turret until it stops turning. As the turret adjustment approaches the end, it *will* get harder to turn, slow down don't force it! Just turn it *gently* until it stops. Now slowly turn the adjustment turret backwards while you count the number of "clicks". Keep going until you get to the other side and it stops again.

Say for instance you count 120 clicks. Now all you have to do is turn the turret in the reverse direction, but only 1/2 the amount. Turn the adjustment turret back 60 clicks and that turret is now centered. Do the same for the other adjustment turret and you are finished. The scope is now optically centered, and ready to mount.

Don't be surprised if one turret has more adjustment then the other! It's not uncommon for one turret to have a total of 120 "clicks", and the other turret to have a total of 140 "clicks".

#### Note 4

To achieve a quick, tight zero; a scope needs to be axially aligned as close as possible with the barrel, *and* mounted without side stress imposed on the scope tube.

Take a look at the initial, 25-yard target. My friends, that target is why I pre-centered the scope reticle, and took all the pains to *carefully and evenly* mount the base, rings, scope. *Everything* was double checked *before* tightening the Allen screws.

Follow these rules, take the time to do it right, and scope mounting and achieving zero turns into a routine affair. It's just that simple.

#### Note 5

Most gunsmiths charge \$18.00 to \$25.00 per hole to drill & tap these days. Hey, his mortgage is just like yours & mine, due every month; and his kids need new shoes too.

[Adobe PDF Downloadable Version of Article](#)

Review by [Mark Trope](#)