

Collecting and Shooting the Military Surplus Rifle



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Article Written by: Mark Trope

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**WARNING!**

*This article addresses an aspect of reloading. The information presented is a result of careful attention to instructions, observation, and experience. We offer no guarantee or warranty of any kind on the information presented and you should proceed with caution if you choose to try the techniques or products that we present. Reloading is not an exact science; we have no control over what you do or what you use. Therefore, you assume any and all risk involved.*

Governments consider small arms brass a one-time-only affair. It's required to hold a primer, powder & launch a bullet. They want it to chamber & eject reliably. What happens to it after that depends on whether it was fired in a peacetime or wartime situation. If it is a combat situation, it simply falls to the ground and is promptly forgotten. When ammunition is expended in peacetime, things are a bit different.

Anyone who has ever served time in the US Military knows that after being on the small arms range, all expended brass is policed up. In fact, the range officer is responsible for getting the expended brass turned in...I should know! The steely eyed folks turn-in point weigh the fired brass that has been returned. The turn-in point personnel know the weight of a case of loaded 5.56 ammunition. They also know what the expended brass from that case should weigh. The range officer is only allowed a small percentage of weight discrepancy for empties that may get lost in the sand. The recovered brass is later sold at

auction by the government. It then filters to gun shops or web based suppliers of surplus supplies. Foreign governments sell surplus or obsolete ammunition to importers.

No doubt about it, acquiring a supply of clean, boxer-primed, Mil-Surp ammunition or brass is a treasure trove for handloaders. Loaded Mil-Surp ammunition is usually priced well below commercial ammunition. Boxer primed surplus ammunition can be simply fired "as-is", and the brass used for reloads, or, the bullets can be pulled, powder charge removed and the loader's own powder & bullets used in the virgin, primed brass. However, once that boxer primed Mil-Surp ammunition has been fired, it cannot be reloaded until an important job has been done. Mil-Surp ammunition almost always has crimped primers. The crimp has to be removed before the case can be reprimed. In this article we will discuss crimped primers, and the various techniques to make brass reloadable after the initial firing.

Much ammunition is designated "*dual purpose*". It has to serve the needs of both the semi-auto infantry rifle and light machineguns. Headspace and chambers in many military rifles and machineguns is already close to maximum. Crimped primers help insure reliable functioning in such arms.



**Typical Ring-Crimp**

There are two different styles of crimp. The first is the **ring-crimp**. This is used in most US made ammunition and much imported ammunition. After the primer is seated, a circular crimping fixture stamps the case head area surrounding the entire primer. A ring of brass is pressed in to hold the primer from backing out.



### Typical 3-Point Stab Crimp

The second style is the **stab-crimp**. Stab crimping is usually 3 small points of brass pressed against the primer. It doesn't matter which type of crimp is encountered, it has to be removed before the brass can be reprimed. There are two methods of removing crimps, swaging and reaming.

The first method we will discuss is reaming. Reaming involves removing the crimp ring with a cutting tool. There are several tools that will handle the task. Most are made as an accessory to a company's case trimmer.

Wilson, [www.lewilson.com](http://www.lewilson.com) makes an accessory tool that fits in the **Wilson Case Trimmer**. The **Wilson Primer Pocket Reamer** cleanly removes the crimp ring, allowing new primers to be seated in the pockets. The tool restores the outer edge of the primer pock to its original profile before it was crimped.

Let's look at the Wilson system. The Wilson trimmer is one of oldest, and arguably the best trimmer on the market. For the full story on the Wilson trimmer, see the article, "The Home Stretch" <http://www.surplusrifle.com/shooting/brasstrimming/>. Wilson trimmers have more attachments available then a fancy vacuum cleaner! It's amazing the amount of jobs that can be preformed on brass. The Wilson system is almost a one-stop brass prep center.

The L E Wilson Trimmer can either be clamped in a vice; or an accessory base can be acquired. I'm really impressed with the base from [Lock, Stock & Barrel](#).

Wilson advises brass cases must all be trimmed to the same length *prior* to reaming the primer pockets. This is because ream depth will be determined by overall case length. That's a good thing. Even a mixed lot of brass, different lots #'s or even a group of cases of mixed manufacturers will all be reamed to the same depth as long as they are all the same length.

Simply sliding the cutter shaft out of the trimmer and sliding the reamer assembly is all that's required to install the Wilson Primer Pocket Reamer. After installing the reamer, loosen the setscrew that holds the adjustment bolt and back the bolt out several full turns.

Place one of the trimmed cases in the case holder and sit it on the trimmer rails with the case head facing the reamer. Make a trial cut, and adjust the bolt inward until the pockets are properly reamed. Once primers properly seat in the reamed brass, lock down the setscrew. The "try & fit" adjustment procedure will only have to be done *once* (for each caliber).

After the adjustment is set & locked in, take your caliper and measure the distance from the end of the adjustment bolt to the side of the adjustment bolt-retaining piece. Record this measurement. Then, next time you need to ream some trimmed brass of that caliber, just set the adjustment bolt to that distance and you are set.

The Wilson reamer *will not* deepen the pockets. It simply restores the radius so new primers can be seated. Once the reamer is set up, a group of cases can be processed quickly. A small brush should be used to remove shavings from the reamer's cutting surfaces. I

As stated before, case holders are required to position the brass on the trimmer rails. Looking at the Wilson chart reveals that have a total of 105 case holders. Often, a single case holder fits more then one caliber. For example, the 30/06 holder also fits the .270 Winchester, 280 Remington etc. They list 13 military rifle calibers and 3 military pistol calibers. I contacted Wilson about case holders for some of the more obscure calibers not listed.

| <b>Do they make holders for ALL calibers?</b>  |
|--|
| <i>As many Mil-surp shooters have rifles in obscure calibers, I wanted to know if Wilson would make a custom case holder.</i>  |
| <i>I contacted Joe Hills, the Shop Manager at L E Wilson. He advises that, "Wilson Tools does make custom Wilson Case Holders for almost any caliber if the customer can provide us with two fired cases. The time frame for the custom case holder is usually same day turn around upon receipt of the cases. We charge \$12.00 plus \$6.75 for S/H."</i> |

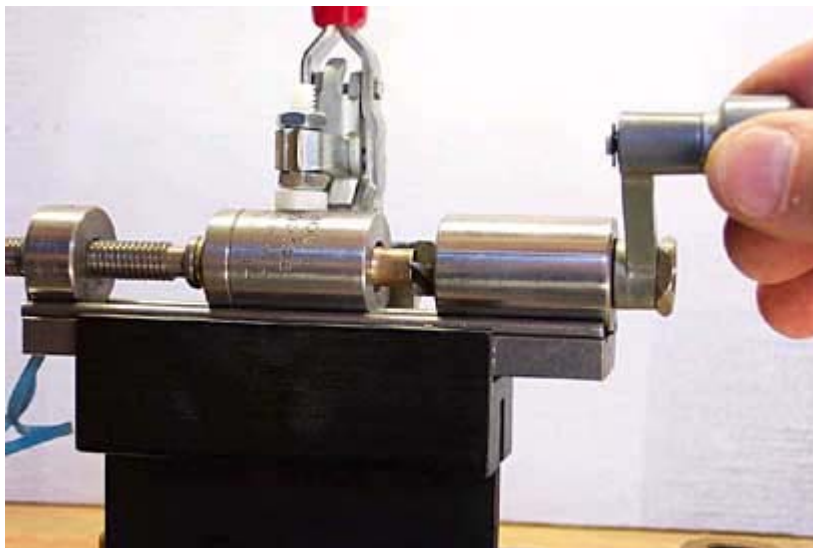
The folks at Wilson are enthusiastically committed to customer service. They make many products for the shooter and reloader. Their line of benchrest items set the standard for benchrest shooters. [L E Wilson](http://www.lewilson.com) can be contacted at: 404 Pioneer Ave. Box 324 Cashmere, WA 98815. Phone 509-782-1328 or Fax 509-782-7200 or at [www.lewilson.com](http://www.lewilson.com)



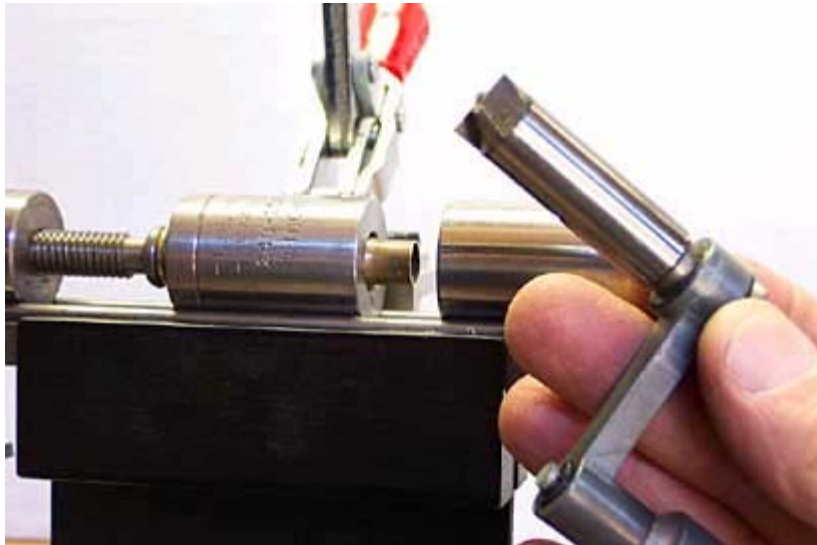
**Wilson Primer Pocket Reamer**



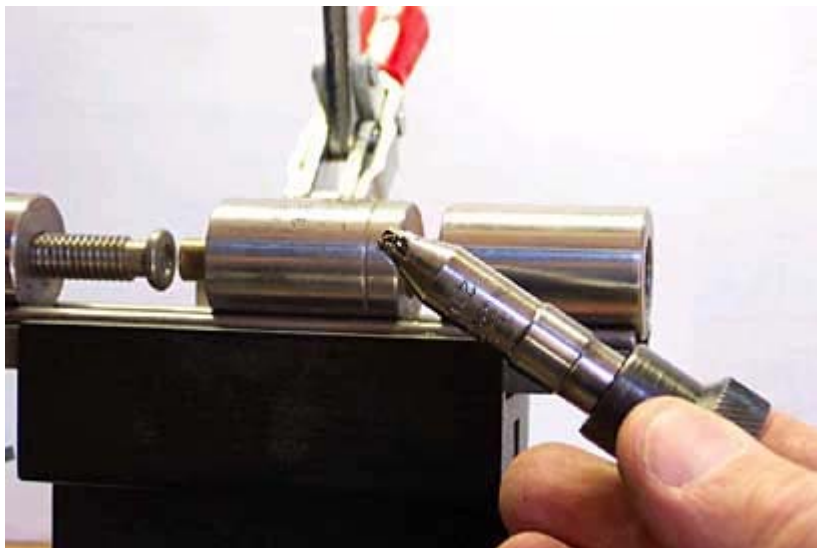
**Wilson Primer Pocket Reamer & Wilson Case Trimmer**



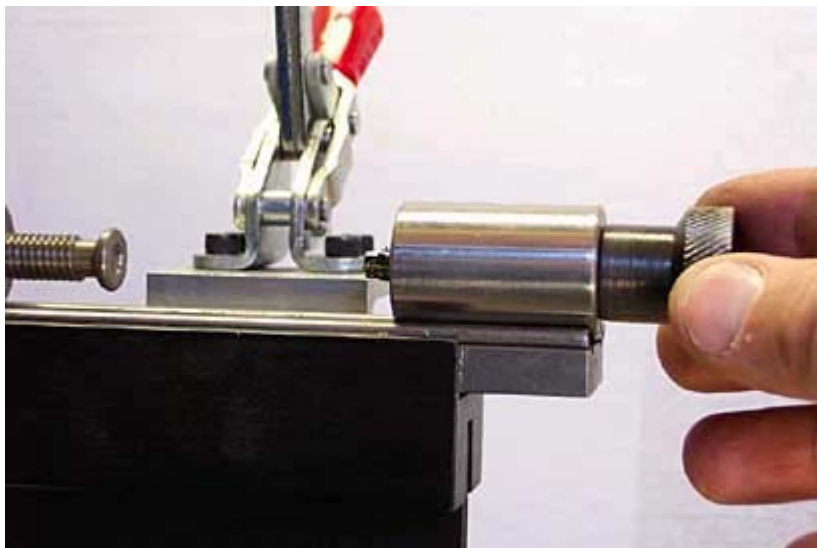
**Trimming Cases to the Same Length**



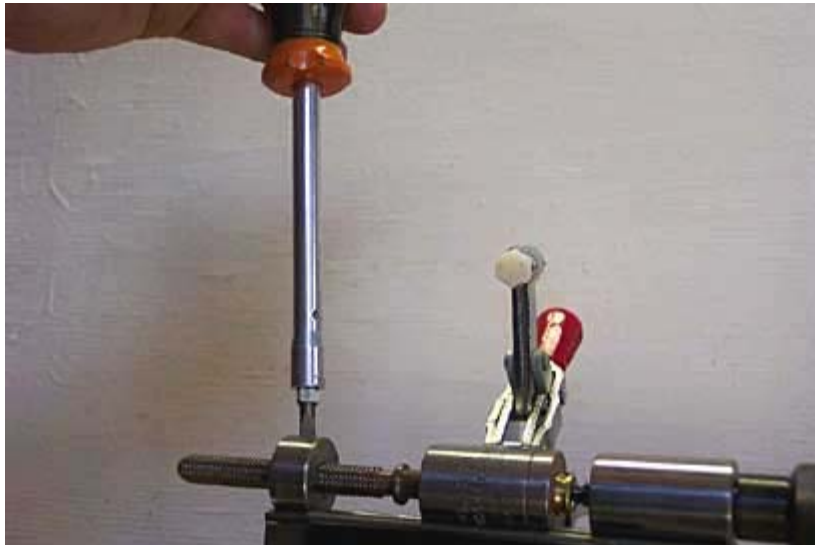
**Simply Slide Trimming Cutter & Handle Assemble Out then...**



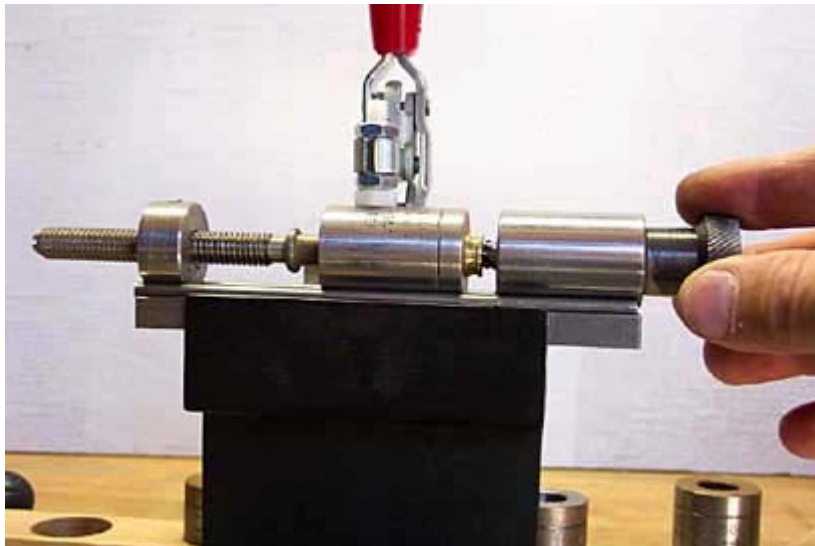
**Slide Wilson Primer Pocket Reamer**



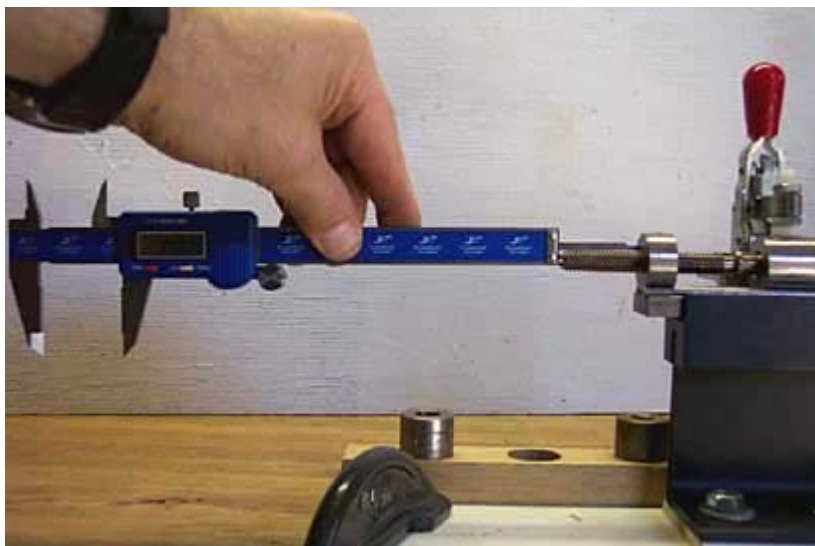
**Into Trimmer**



**Loosen lock screw, and turn adjusting bolt in while taking trial cuts. Once the cutter starts to shave the crimp, it is almost set.**



**Everything is set, it only takes a few quick twists for a perfect ream job.**



**Measure & record adjustment for future reference.**



**De-primed case, before reaming.**



**A finished and reamed case.**



### Reprimed!

The second method, swaging, involves pressing the brass back to its original position; the position it was in *before* it was crimped at the factory. **RCBS**, [www.rcbs.com](http://www.rcbs.com) makes such a tool.

The **RCBS Primer Pocket Swager** kit contains all the components to restore either large or small primer pockets. This die-like tool will fit virtually any bench mounted 7/8-14 threaded reloading press that accepts standard shellholders (there are a few, very old, out of production presses the Swager won't fit, if in doubt, email RCBS for specific presses).

To begin, snap either the large or small swager punch into the shellholder recess. Next, slide the release cup over the swager punch. Here, I ran into a slight problem. I was using my Redding Ultramag 700 press. It has a very thick ram. The spring clip that secures a shellholder to the ram was sticking out slightly once the swager post was installed. I simply removed the spring clip, and the release cup slip into place. This may, or may not have to be done on your press.

Next, thread either the large or small swager rod all the way into the die body and secure the rod with the lock nut. The ram is raised to full height. The assembled die body is threaded into the press. Thread the die body down until it touches the release cup. Now back the die body up ½ inch.

Lower the ram and place a case over the swager punch. Raise the ram and check the amount of swaging action. The usual "try & fit" adjustment procedure is utilized to get the correct amount of swaging for the primer pocket of that particular brand of brass. Once all adjustments are made and primers seat in the brass, the lock ring can be tightened around the die body with an Allen wrench.

The RCBS tool indexes from the internal web of the brass cases to control swaging depth, therefore, the instructions advise to group cases by manufacturer. Once the tool is adjusted for a particular brand of cases, it may swage either too deeply, or not far enough *for a different brand of cases*. Once again, a caliper can be utilized to measure & record the distance from the top of the die body to the top of the press for particular brands of brass.

Of course, if the RCBS Primer Pocket Swager is moved to another press, the adjustment procedure will have to be done again.



**RCBS Primer Pocket Swager kit**



**Swager punch being snapped into place (spring clip is still in place)**



**Release cup being slid into place (spring clip is now removed)**



**Release cup fully seated, primer punch protrudes**



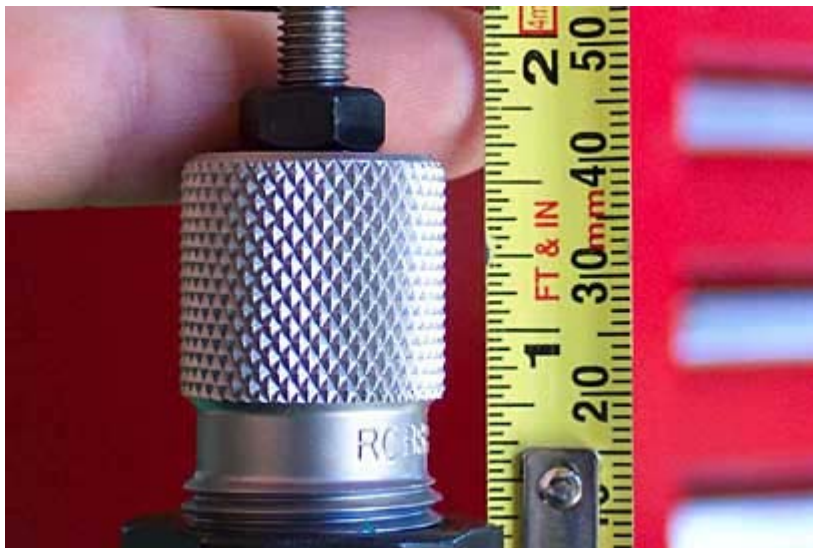
**Raising ram...**



**To top of travel**



**Swager die body with swager rod & rod lock nut installed**



**With ram raised to full height, die body is threaded into press until it touches top of release cup.**



**The die body is backed about 1/2 inch**



**Place a case over the swager punch...**



**Raise the ram to the full height**



**Slowly lower the die body while working the press handle, swaging the crimp on the primer pocket. Once the pocket is correctly swaged, tighten the lock ring around the die body with an Allen wrench.**



**Pocket is correctly swaged**



**Seating a new primer**



### **New primer installed without and problems**

Boxer primed Mil-Surp brass is an economical source of reloadable cases, once prepped they will give good service. Primer pockets need to be either swaged or reamed before new primers can be seated. Both the Wilson and RCBS tools worked perfectly.

If you are considering the purchase of a lathe type case trimmer, I've found none better than the Wilson. Trimming brass & reaming primer pockets are just two of the jobs this versatile tool will accomplish.

For the man who already owns a lathe-type trimmer other than a Wilson, or prefers not to ream primer pockets, the RCBS Primer Pocket Swager tool is the perfect solution.

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